

2. MAINTENANCE

FUEL LINE	2-2	DRIVE CHAIN	2-21
FUEL STRAINER SCREEN	2-2	DRIVE CHAIN SLIDER, CHAIN GUIDE, GUIDE SLIDER AND ROLLERS	2-24
THROTTLE OPERATION	2-3	DRIVE BELT	2-24
OIL PUMP AND OIL LINE (2-stroke separate oil supply motorcycles)	2-4	BELT CASE AIR CLEANER	2-25
CARBURETOR CHOKE	2-5	FINAL DRIVE OIL LEVEL	2-25
AIR CLEANER	2-6	BATTERY	2-26
AIR CLEANER CASE DRAIN TUBE (off-road motorcycles and ATVs)	2-7	BRAKE FLUID	2-27
CRANKCASE BREATHER	2-7	BRAKE SHOE WEAR	2-28
SPARK PLUG	2-8	BRAKE PAD WEAR	2-28
VALVE CLEARANCE	2-9	BRAKE SYSTEM	2-29
ENGINE OIL	2-11	BRAKE LIGHT SWITCHES	2-30
ENGINE OIL FILTER	2-13	HEADLIGHT AIM	2-31
ENGINE OIL FILTER SCREEN	2-14	CLUTCH SYSTEM	2-31
DECARBONIZING (2-stroke engine)	2-15	SIDE STAND	2-33
CARBURETOR SYNCHRONIZATION	2-16	SUSPENSION	2-34
CARBURETOR IDLE SPEED	2-17	SPARK ARRESTER (USA only)	2-35
RADIATOR COOLANT	2-17	NUTS, BOLTS, FASTENERS	2-36
COOLING SYSTEM	2-18	WHEELS/TIRES	2-36
SECONDARY AIR SUPPLY SYSTEM	2-19	STEERING HEAD BEARINGS	2-38
EVAPORATIVE EMISSION CONTROL SYSTEM	2-19	WHEEL ALIGNMENT (FOUR TRAX)	2-39
TRANSMISSION OIL (2-stroke engine)	2-20		

NOTE

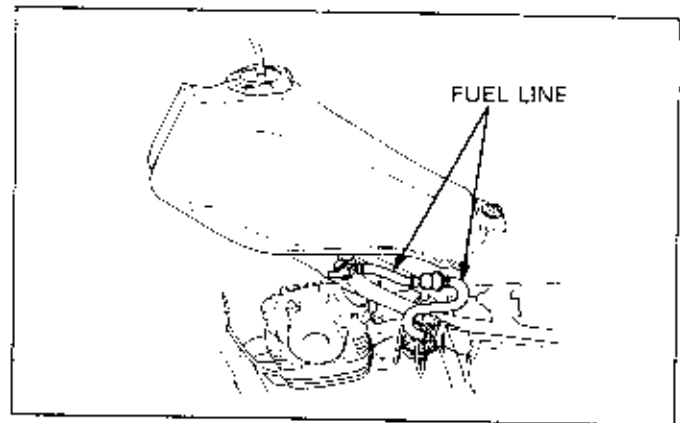
- This section covers the normal inspections and adjustments that are necessary to maintain the vehicle in good condition. Perform this maintenance at each scheduled maintenance period. Refer to the Model Specific manual for the proper maintenance schedule and applicable items.

FUEL LINE

Check the fuel line for:

- Gasoline leakage
- Loose or improperly positioned line clip
- Deteriorated or damaged line

Replace any defective parts.



FUEL STRAINER SCREEN

Turn the fuel valve to "OFF" position.

Remove the strainer cap below the fuel valve, and drain the gasoline into a suitable container.

⚠ WARNING

- Gasoline is extremely flammable and is explosive under certain conditions.

Work in a well ventilated area. Keep cigarettes, flames or sparks away from the work area or any area where gasoline is stored.

Remove the O-ring and strainer screen.

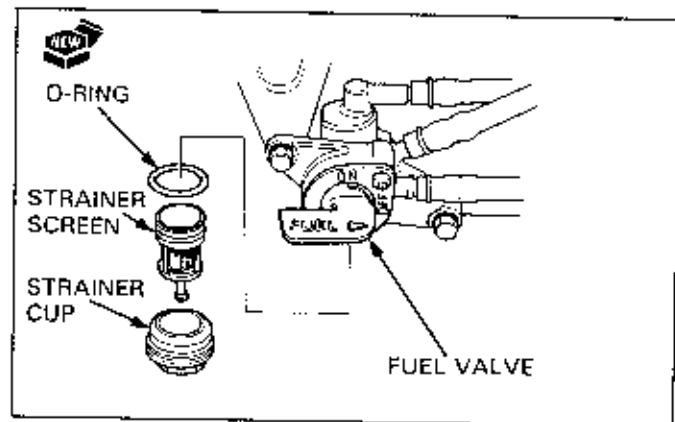
Clean the cup and strainer screen with non flammable or high flash point solvent.

Replace the O-ring with a new one.

Reinstall the strainer screen, O-ring and cup, then tighten the cup to the specified torque.

CAUTION

- Overtightening the cup may break or deform the O-ring, causing a fuel leak.



THROTTLE OPERATION

Check for any deterioration or damage to the throttle cable. Check that the throttle automatically closes completely in all steering positions.

If the throttle grip does not return properly, lubricate the throttle cable and overhaul and lubricate the throttle grip housing. If the throttle grip still does not return properly, the cable may need replacement.

With the engine idling, turn the handlebar all the way to the right and left to ensure that the idle speed does not change. If idle speed increases, check the throttle grip free play and the throttle cable connection.

▲ WARNING

- Reusing a damaged or abnormally bent or kinked throttle cable can prevent proper throttle slide operation and may lead to a loss of throttle control while riding.

Throttle free play should be checked and adjusted as follows:

Throttle grip free play is correct if there is a prescribed amount of play on the outer circumference of the throttle grip flange.

Throttle lever free play is correct if there is a prescribed amount of play at the tip of the throttle lever.

Minor free play adjustments can be made with the adjuster on the throttle grip side.

Loosen the lock nut and turn the adjuster to obtain the desired amount of free play.

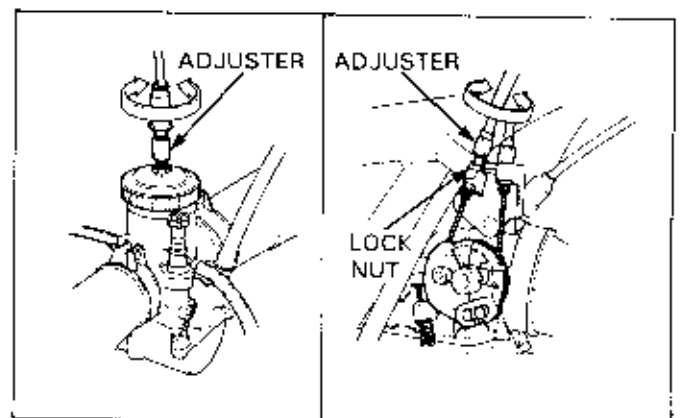
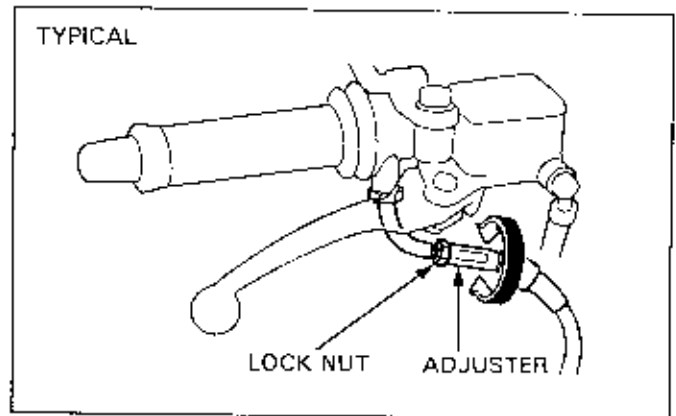
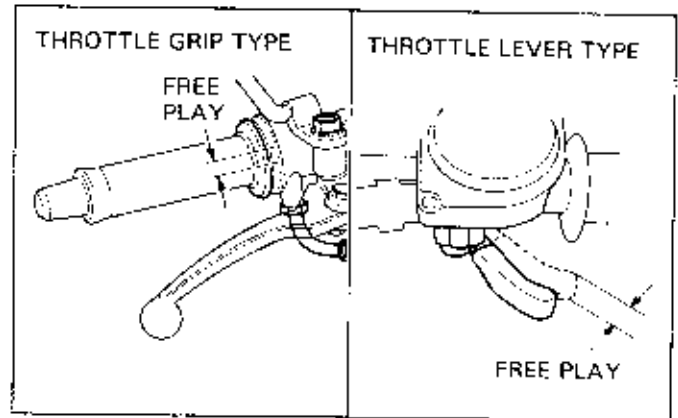
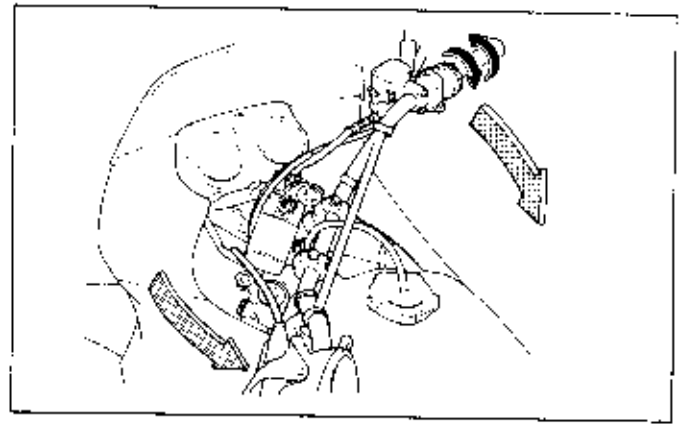
Tighten the lock nut after the adjustment has been made.

If the adjuster has a boot, reposition it properly after adjustment is made.

Major adjustments are made on the carburetor end of the cable, with one of the adjuster types shown here.

With a forced opening/closing-type throttle, the adjustment of free play can be made by loosening the lock nut on the pull side of the cable and turning the adjuster.

Tighten the lock nut after the adjustment has been made.

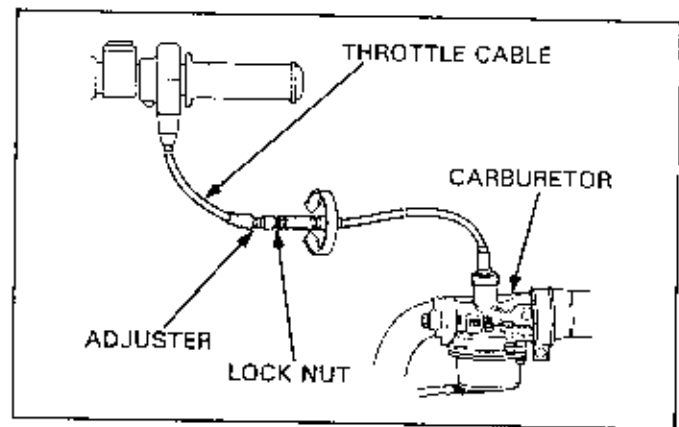


MAINTENANCE

If the throttle cable has an adjuster anywhere within its length besides the ends, major adjustment is made there.

Adjust the free play by loosening the lock nut and turning the adjuster.

Tighten the lock nut after the adjustment has been made. If the adjuster has a boot, reposition it properly after adjustment is made.



OIL PUMP AND OIL LINE (2-stroke separate oil supply motorcycles)

The oil supply on some 2-strokes is controlled by a throttle cable that is coupled with an oil pump.

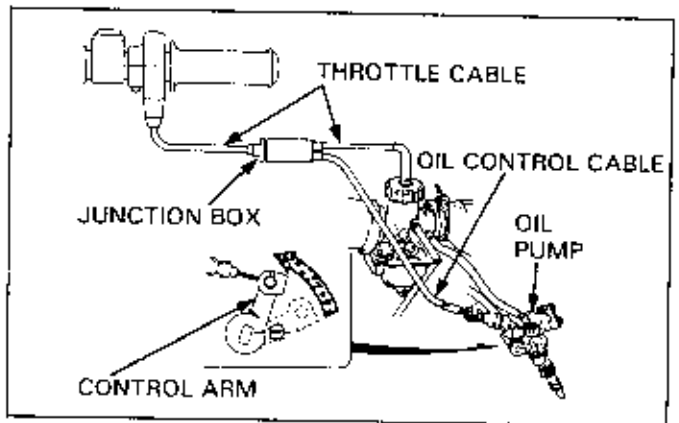
Oil flow is regulated, in a direct relation to throttle movement and position, by a combined oil control/throttle cable that simultaneously moves the throttle slide in the carburetor and a control arm on the oil pump.

When the inner cable of the oil control cable stretches, the amount of the oil flow changes and is not suitable for the size of throttle opening. Therefore, it is necessary to inspect and readjust it periodically.

There is a matching mark on the oil pump that must be aligned with the matching mark on the control arm, pump body, etc. Refer to the Model Specific manual before making any adjustments.

Oil line

Check the oil line for leaks, deterioration or damage: Replace parts if necessary.

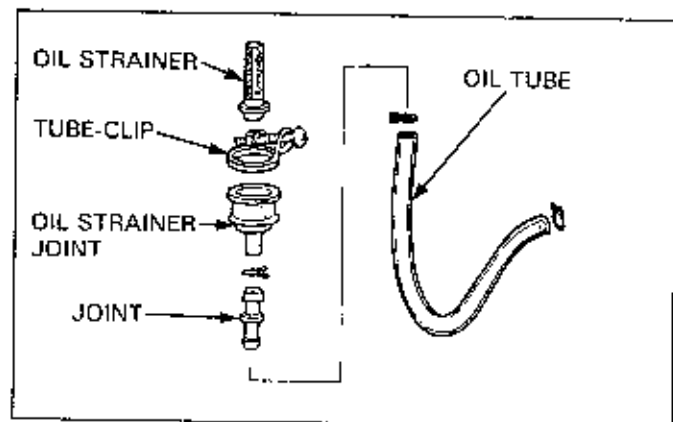


Oil strainer

Loosen the tube clip located on the bottom of the oil tank. Drain oil into a suitable container.

Remove the oil strainer joint from the bottom of the tank.

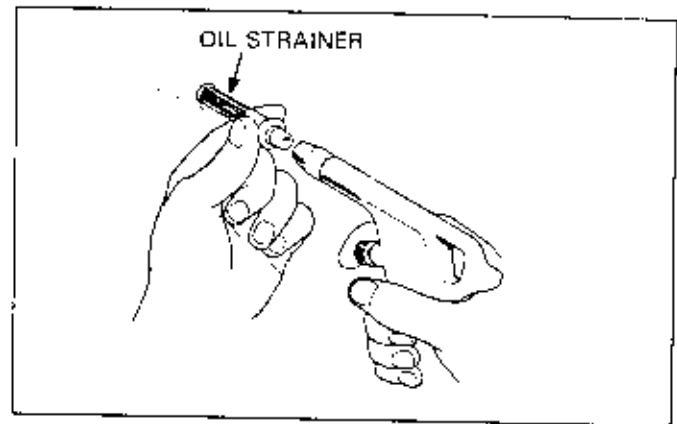
Remove the strainer screen.



Clean strainer screen by blowing it out with compressed air. To replace screen, reverse the removal procedure. After pouring 2-stroke engine oil back into the tank, be sure to remove the air in both oil tube and oil pump (See page 4-11).

NOTE

- Check each part for oil leakage after completing the oil strainer cleaning and oil tube and pump air bleed procedures.



CARBURETOR CHOKE

MANUAL CHOKE

On the manual choke system, check to see if the choke lever (or knob) can be opened and closed completely.

Inspect the choke cable to see if it is bent, crimped or damaged in any way.

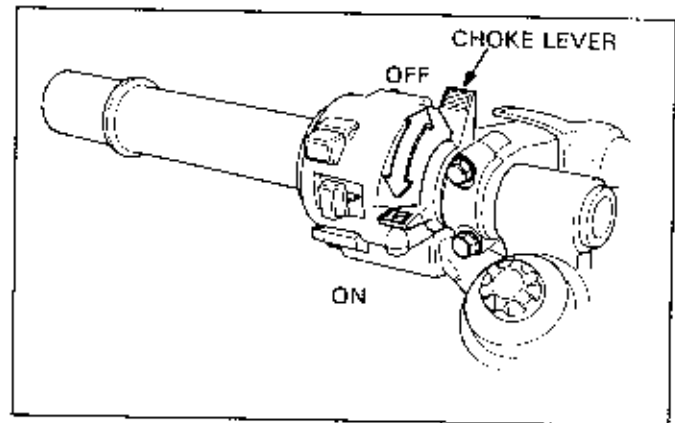
⚠ WARNING

- Reusing a damaged or abnormally bent or kinked throttle cable can prevent proper throttle slide operation and may lead to a loss of throttle control while riding.

Check to be sure that cable movement is correct on machines with manually operated chokes.

Check by pushing with your finger to see if there is a maximum of 1–2 mm of free play in the inner choke cable when the choke lever is in its completely off position.

If the amount of free play is not sufficient, loosen the cable clamp screw and adjust the play of the inner cable by moving the position of the outer cable. Tighten the cable clamp securely when the adjustment is complete.



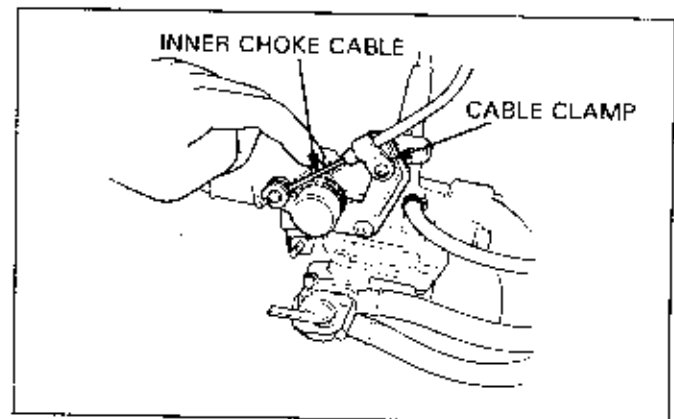
BYSTARTER CHOKE

The choke action on motorcycles equipped with auto by-starter-type choke system can be checked by the way engine starts and runs.

NOTE

- Difficulty in starting before it is warmed up (easy once it is warmed up): starter valve is not completely opened (off).
- Idle speed is erratic even after warm-up (imperfect combustion): starter valve is not completely closed (on).

When the above-mentioned symptoms occur, inspect and overhaul the choke system according to the procedures specified in the Model Specific manual. If you find nothing wrong with it, proceed with the overhaul of the other items on the breakdown diagnosis list.



AIR CLEANER

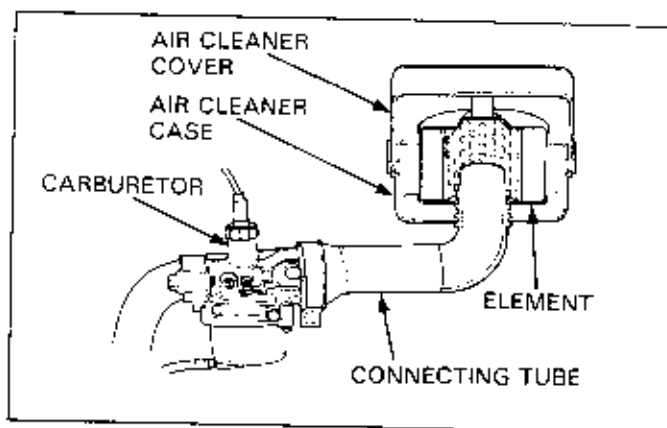
When the element becomes dirty, the air/fuel mixture will become too rich.

Periodic cleaning or replacement is necessary. Vehicles used in dusty areas require more frequent inspections.

When replacing the air cleaner element, be careful of the following points.

NOTE

- If the element joint has a rubber seal, the joint will become more airtight if a small amount of grease is applied to the seal.
- Check to see that both the air cleaner and the holder are properly secured and do not contain any dust or dirt.



Oiled Urethane Foam Element

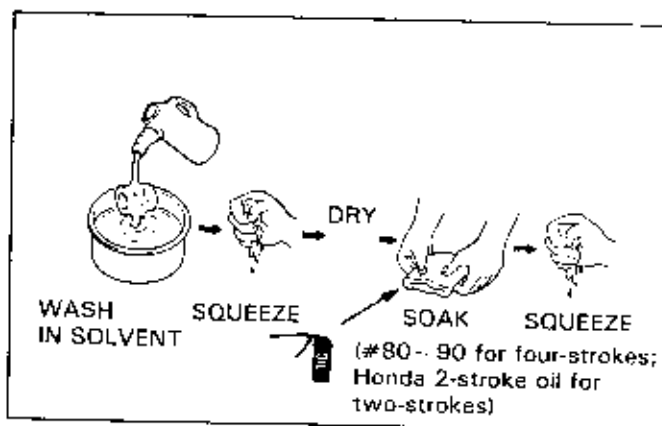
Remove the air cleaner from the holder and wash away any accumulated dust or dirt, by gently squeezing it in non flammable or high flash point solvent.

WARNING

- Using gasoline or low flash point solvents for cleaning parts may result in a fire or explosion.

CAUTION

- Cleaning the element with gasoline or any acid, alkaline, or organic, volatile type oil may cause improper ignition, deterioration of the element, or a loosening of the element adhesive.



Be sure to allow the element to dry thoroughly before applying oil. Otherwise, the oil will be diluted by the solvent and the filtering ability of the filter will be much less effective.

Spread clean #80-90 gear oil (4-strokes; Honda 2-stroke oil for 2-strokes) on the element, rubbing in thoroughly over the surface with both hands, and then squeeze out any excess oil.

CAUTION

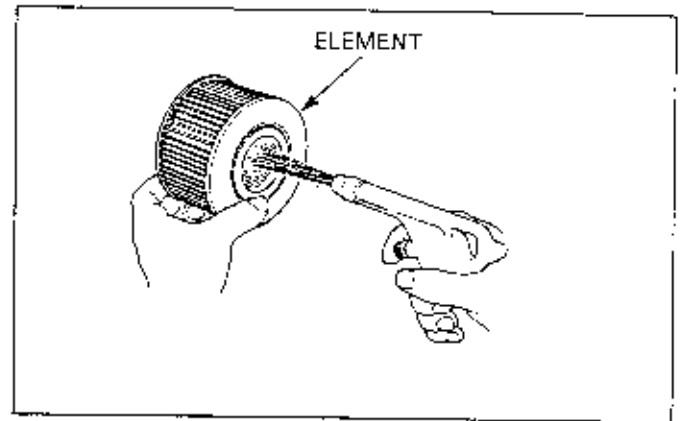
- Using air filter oil when riding in extremely dusty conditions prevents premature engine wear due to dust/dirt drawn into the engine. Apply air filter oil to the entire surface of the element and rub it with both hands to saturate the element with oil. Squeeze out excess oil.

Paper Element

If the surface of the element is dirty, remove the dust first by tapping the element gently. Then, blow away any remaining dust on the surface of the filter with compressed air from the inside (or carburetor side) toward the outside.

Viscous Paper Element

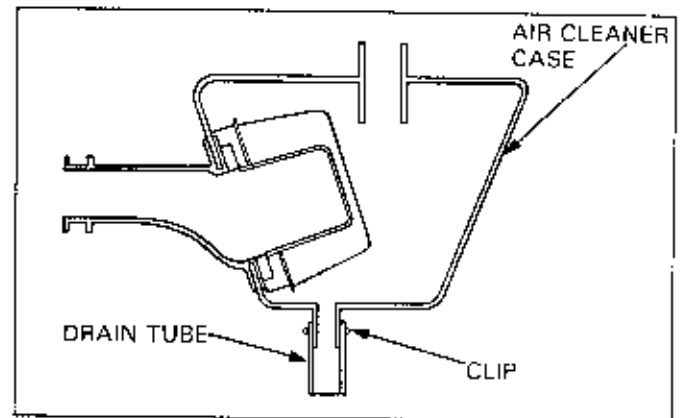
This particular type of paper element cannot be cleaned as the element contains a dust adhesive. These must be changed periodically.



**AIR CLEANER CASE DRAIN TUBE
(off-road motorcycles and ATVs)**

Loosen the drain tube clip and remove the drain tube to empty any accumulation of fluids or dirt from the air cleaner case into a proper container.

Check the drain tube for damage and replace if necessary. Reinstall the drain tube and set the clip in place.

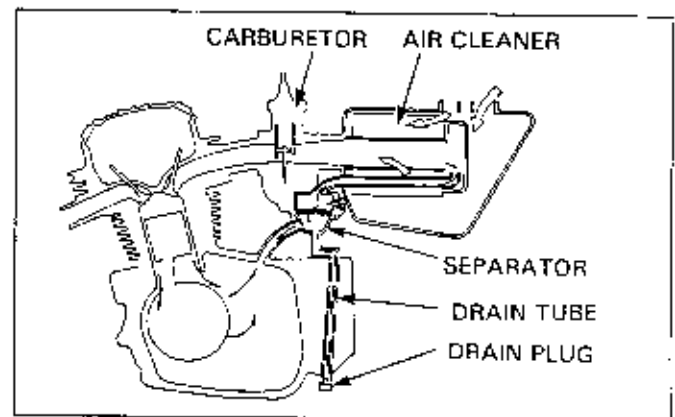


CRANKCASE BREATHER

Some motorcycle engines are equipped with a closed crankcase system to prevent discharging crankcase emissions into the atmosphere. Blow-by gas is returned to the combustion chamber through the air cleaner and carburetor.

A breather separator is necessary within the system to prevent moisture from contaminating the engine. Vapor is allowed to pass through the air cleaner and into the engine to be burned off. Moisture is collected in a sealed drain tube. Periodic maintenance is to remove the drain plug and drain deposits into a suitable container, then reinstall the drain plug.

A portion of the drain tube is transparent so it is easy to confirm the amount of accumulation.



MAINTENANCE

SPARK PLUG

NOTE

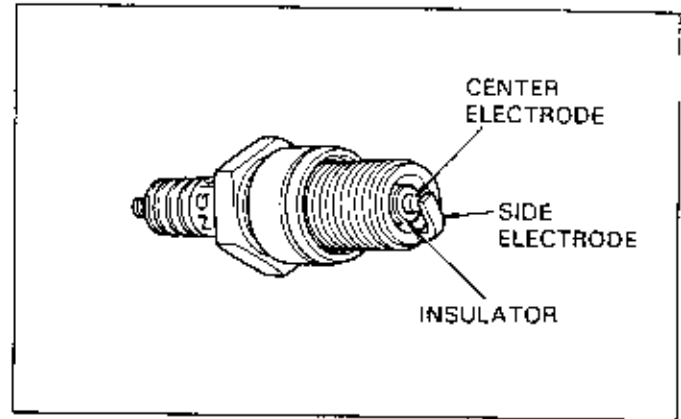
- Clean around the spark plug seat with compressed air before removing, and be sure that no debris is allowed to enter the combustion chamber.

Remove the spark plug cap and then remove the spark plug and inspect or replace as described in the Model Specific manual maintenance schedule.

Inspection

Check the following and replace if necessary.

- insulator for damage
- electrodes for wear
- burning condition, coloration;
 - dark to light brown shows good condition.
 - excessive lightness shows faulty ignition timing or lean mixture.



REUSING A SPARK PLUG

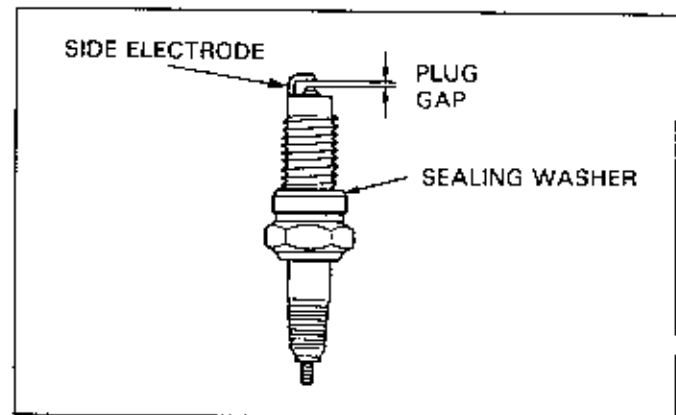
Clean the spark plug electrodes with a wire brush or special plug cleaner.

Check the gap between the center and side electrodes with a wire-type feeler gauge. If the gap is not as specified, bend the side electrode to adjust.

Replace the spark plug in the cylinder head and hand tighten. Torque to specification.

CAUTION

- Make sure there is no dirt or debris on the seat of the spark plug hole before inserting the spark plug.
- To prevent damage to the cylinder head, hand-tighten the spark plug before using a wrench to tighten to the specified torque.



REPLACING A SPARK PLUG

In the case of new spark plugs, set the gap with a wire-type feeler gauge. Install and hand tighten, then tighten about 1/4 of a turn after the sealing washer contacts the seat of the plug hole. Reused plugs should be tightened to the specified torque.

Do not overtighten the spark plug.

CAUTION

- Overtightening the spark plug may damage the cylinder head. Be sure to use the proper spark plug torque.

VALVE CLEARANCE

Adjustment is unnecessary on motorcycles equipped with hydraulic lash adjusters (hydraulic tappet). However, appropriate clearance is needed between both the intake and exhaust valves and the valve opening/closing mechanisms in all other 4-cycle engines. This clearance allows a change in the size of the valve by thermal expansion as the heat of the combustion chamber is transmitted to the valve.

If there is too much clearance, it may result in engine noise (tappet noise). If there is too little clearance, the valve is pushed during the heated period, causing a drop in compression, resulting in bad idling and, eventually, burned valves.

NOTE

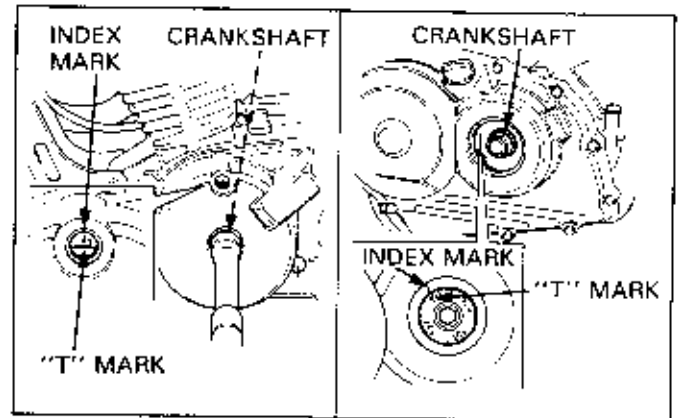
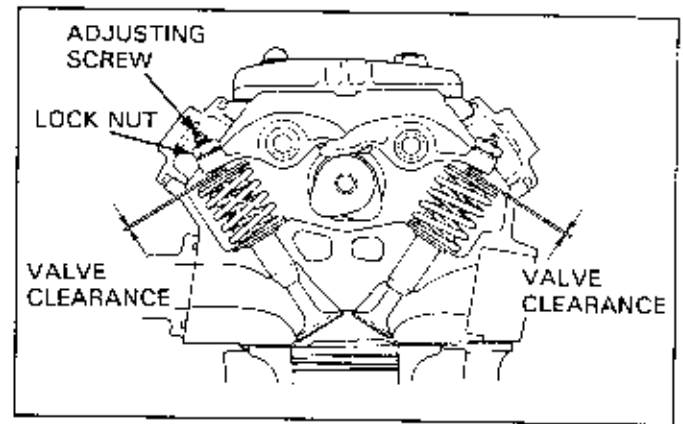
- Inspect and adjust the valve clearance when the engine is cool (under 35°C/95°F).

Inspection and adjustment of valve clearance should be performed with the piston at top dead center of the compression stroke. This position can be obtained by confirming that there is slack in the rocker arm when the stamped "T" mark on the flywheel rotor and the index mark on the crankcase cover are aligned. If there is no slack in the rocker arm, even when the T-mark and index mark are aligned, it is because the piston is moving through the exhaust stroke to top dead center. Turn the crankshaft one full rotation and match up the T-mark again. The piston will then be at the top of the compression stroke (top dead center). On in-line 4-cylinder engines with the firing order 1-2-4-3, the inspection of valve clearance can be conducted by rotating the crankshaft twice. After the above procedure has been properly carried out, the inspection and adjustment of all cylinders is complete.

(In-line 4 cylinder engines are numbered 1-2-3-4 starting from the left cylinder.)

Cylinder at top of compression stroke	Cylinder number			
	#1	#2	#3	#4
#1	IN,EX	EX	IN	—
#4	—	IN	EX	IN,EX

On V-twin and V-4 engines, inspection and adjustment are performed by placing each cylinder in the compression, top dead center position.



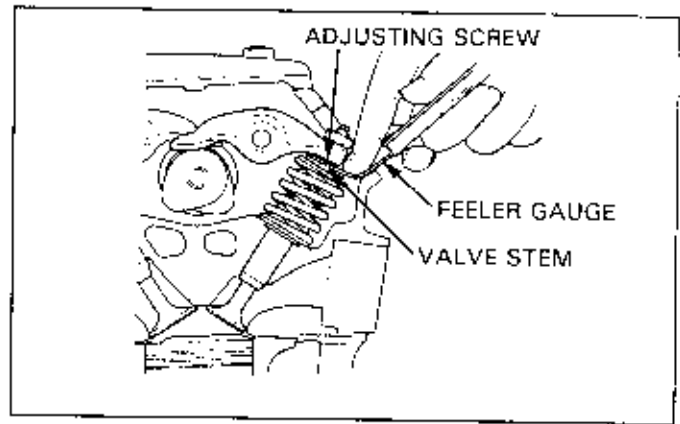
MAINTENANCE

The valve clearance adjustment is correct when the specified feeler gauge fits snugly, but the next size larger feeler gauge will not fit in.

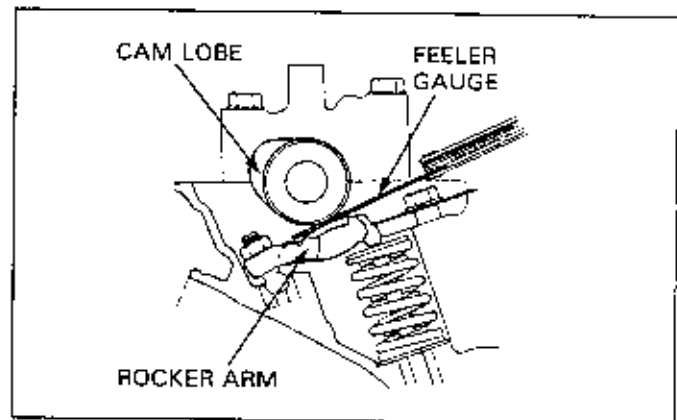
NOTE

- On motorcycles that have a decompression mechanism which lifts the valve when starting the engine, the adjustment for decompression must be carried out first in order to provide an accurate valve clearance inspection.

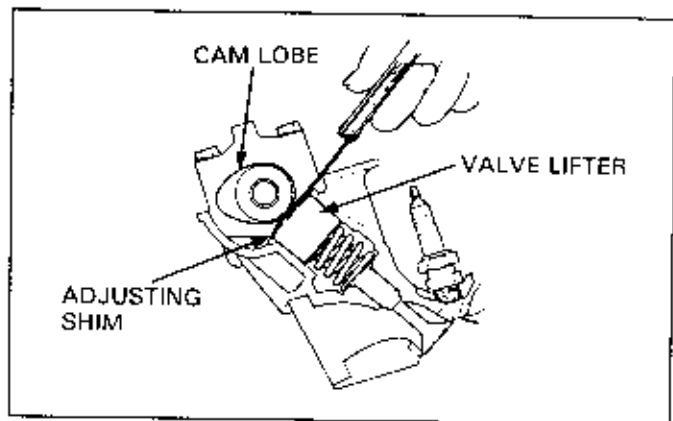
Valve clearance inspection on engines with common, screw-type adjusters is measured by inserting a feeler gauge directly between the end of valve stem and the adjusting screw.



In the case of one-sided ball-joint type engines, the clearance is measured by inserting the feeler gauge between the rocker arm and the cam.



In the case of valve lifters in direct push-type engines, the clearance between the cam lobe and lifter or shim is measured with a feeler gauge.



If adjustment is needed, loosen the lock nut and the adjusting screw and insert the proper dimension feeler gauge. Proper intake and exhaust valve clearance dimensions are given in the Model Specific manual.

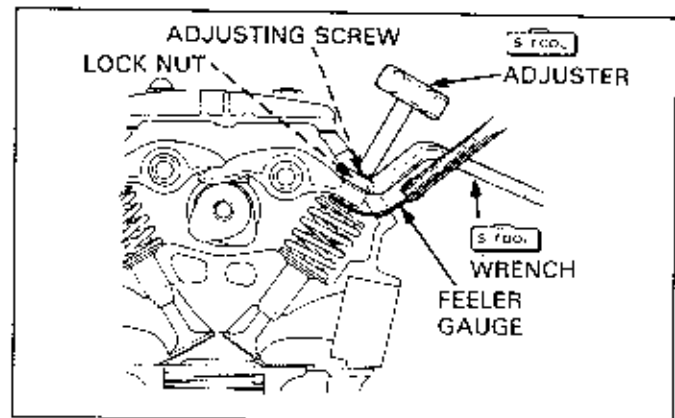
Turn the adjusting screw and adjust the clearance until the inserted feeler gauge can only be pulled out with a little difficulty.

Leaving the feeler gauge inserted, and being careful not to turn the adjusting screw, tighten the lock nut to the designated torque.

CAUTION

- An improperly tightened lock nut may loosen and cause engine damage.

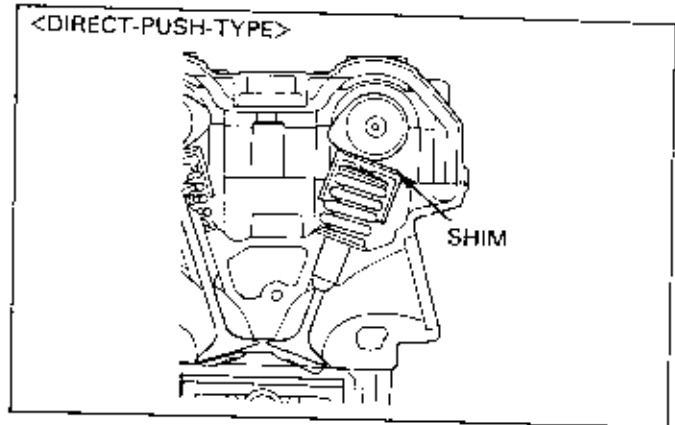
Be sure to use any special tools specified for valve adjustment.



When the lock nut is tightened, the clearance may change. So be sure to recheck the clearance after tightening the locknut.

Adjustment is properly carried out only when the feeler gauge can be pulled out with a little difficulty. If tension on feeler gauge is too great or too little, readjust.

In the case of valve lifters in direct-push-type engines, change the shim and adjust the valve clearance. Refer to the Model Specific manual for the appropriate adjustment method.



ENGINE OIL

NOTE

- Do not screw in the oil cap/level gauge when checking oil level.
- The oil level cannot be correctly measured if the motorcycle is not supported perfectly upright on a level surface.
- As the oil is gradually consumed, it is necessary to periodically check the oil level and replenish the oil volume to its proper level.
- If the oil level is too high, overall engine performance and the actuation of the clutch may be effected. Too little oil may cause engine overheating as well as premature wear to various parts.
- If a different brand or grade of oil or low quality oil is mixed when adding oil, the lubricating function deteriorates.
- Check the oil level only after starting the engine and allowing the oil to circulate through the engine thoroughly. It is especially important to run the engine before checking the oil level on a dry sump engine, due to the comparatively large volume of oil.

4-stroke, Wet Sump Engines:

Start the engine and let it idle for a few minutes.

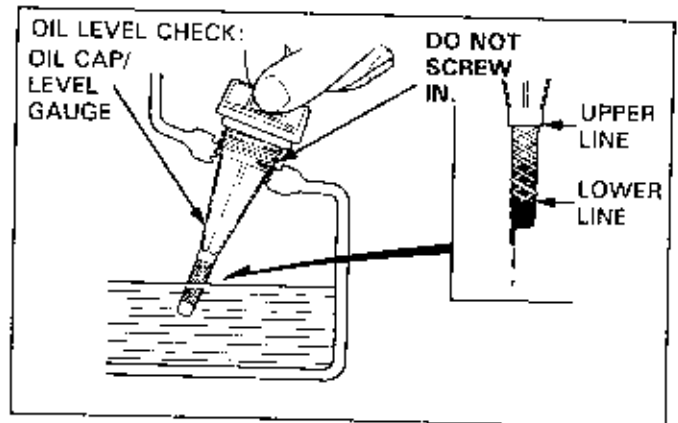
Stop the engine, remove the oil level gauge and wipe the oil from the gauge with a clean cloth.

Two or three minutes after stopping the engine; with the motorcycle in an upright position, insert the level gauge into the engine without screwing it in.

The engine contains a sufficient amount of oil if the level is between the upper and lower lines on the gauge.

If the oil level is near or below the lower line, add the recommended engine oil up to the upper line.

Refer to the Model Specific manual for the recommended oil.



MAINTENANCE

4-stroke, Dry Sump Engines:

Start the engine and allow the engine oil to warm up thoroughly.

NOTE

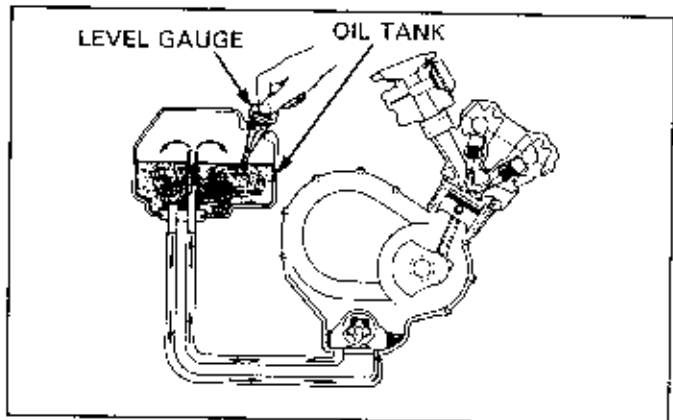
- Do not snap the throttle or the oil level reading will be inaccurate.

Allow the engine to idle for about 3 minutes and stop the engine. Remove the oil level gauge immediately and wipe it clean. With the motorcycle in an upright position on a level surface, check the oil level by inserting the gauge into the oil tank without screwing it in.

The engine contains a sufficient amount of oil if the oil level is between the upper and lower lines on the gauge.

If the oil level is near or below the lower line, add the recommended engine oil up to the upper line.

See the Model Specific manual for the recommended oil.



Leak Inspection:

Inspect to see that there is no oil leaking from any part of the engine, oil pipes, oil hoses, etc.

If any oil leaks are detected, perform the proper maintenance to correct the problem.

Oil Change:

In 4-stroke engines, sludge can build up, due in part to the gas which blows past the piston rings and the gasoline composition contaminates the oil, causing a weakening of oil's performance. To alleviate this contamination problem, change the oil periodically.

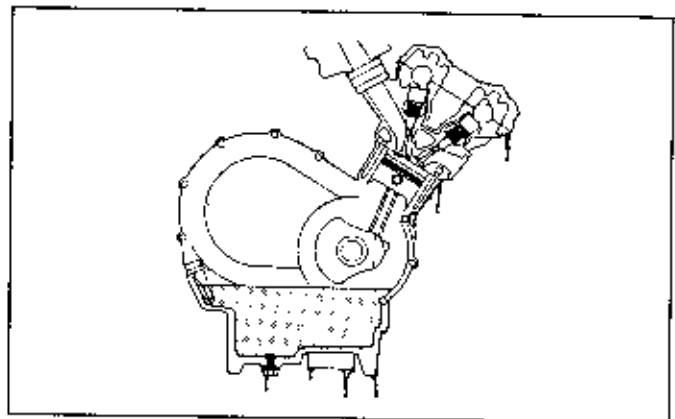
Because many newly machined surfaces are moving against one another for the first time in new motorcycle engines, a noticeable amount of powdered metal circulates with the oil during this early stage of use.

Therefore, it is extremely important to change the engine oil and to replace the oil filter or clean the oil strainer screen at the first maintenance interval (after 1,000 km/600 miles) in order to prolong engine life.

See the Model Specific manual for oil change intervals.

NOTE

- Draining the engine oil while it is still warm is the most rapid and efficient method.



Remove either the oil level gauge or filler cap to allow rapid draining.

Remove the oil drain bolt at the bottom of the crankcase and drain the oil.

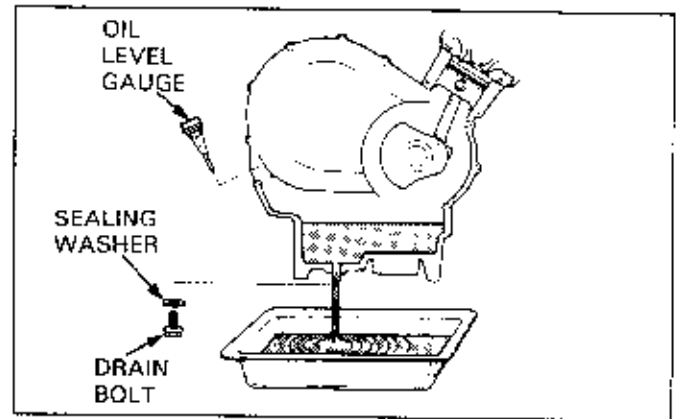
WARNING

- Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap as soon as possible after handling used oil.

After the oil is completely drained, clean and install the drain bolt and sealing washer and tighten to the designated torque.

NOTE

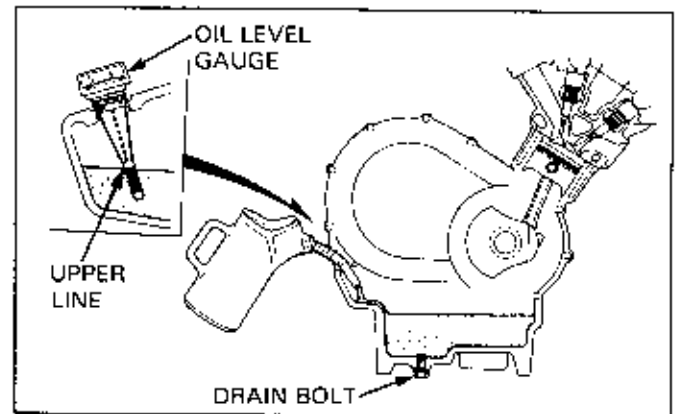
- Replace the sealing washer if it is damaged.



Pour the recommended engine oil into the engine through the oil level gauge/filler hole. The oil filler hole and cap are separated from the oil level gauge on some engines.

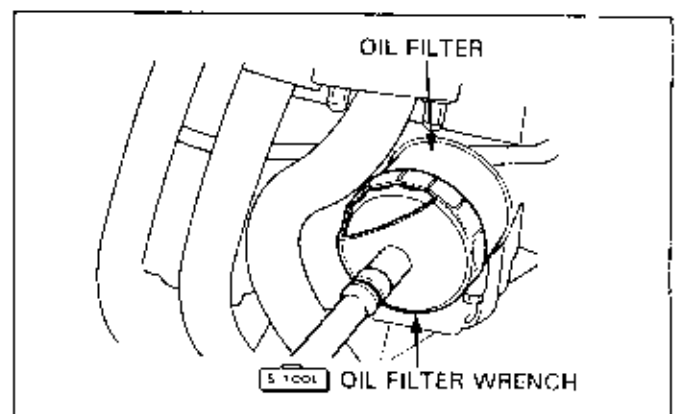
Pour in the oil, periodically checking with the level gauge until the upper line on the gauge is reached.

Install and tighten the level gauge and/or filler cap after replenishing.



ENGINE OIL FILTER

Small dust particles and metal dust which do not filter through the net-type oil strainer screen are trapped by the paper oil filter. When the filter is clogged, the oil flow is reduced and contaminants may reach various parts of engine by way of the relief passage, causing premature wear and possible damage.



MAINTENANCE

Cartridge-Type Paper Filter

Cartridge-type oil filters are removed using a filter wrench.

⚠ WARNING

- Engine and exhaust system parts become very hot and remain hot for some time after the engine is run. Wear insulated gloves or wait until the engine and exhaust system have cooled before handling these parts.

Clean the filter area of the engine with a clean cloth.

Spread engine oil thinly over the O-ring of the new filter and attach filter to the engine.

Tighten the oil filter with the proper filter wrench.

🔧 TOOL

Oil Filter Wrench

(For small-type cartridge)

07HAA-PJ70100

(For large-type cartridge)

07912-6110001

Torque (Small-type cartridge): 10 N·m (1.0 kg·m, 7 ft·lb)

(Large-type cartridge): 18 N·m (1.8 kg·m, 13 ft·lb)

Confirm that there is no oil leakage by starting the engine after the engine oil has been set at its proper level.

Run the engine for about a minute, then stop it and inspect carefully for leaks.

Element-Type Paper Filter

Remove the oil filter cover and replace the filter element. Reinstall the cover with a new O-ring.

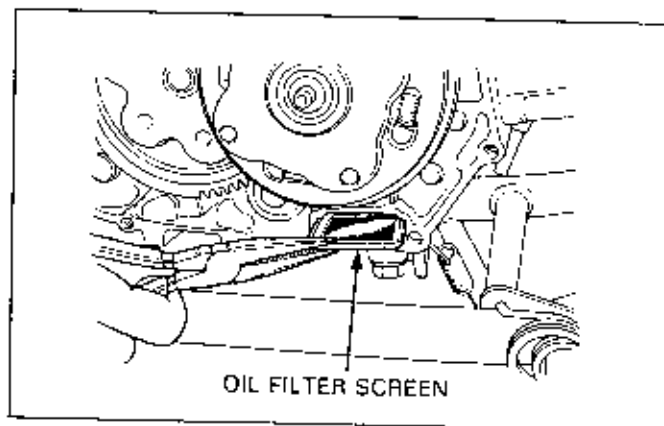
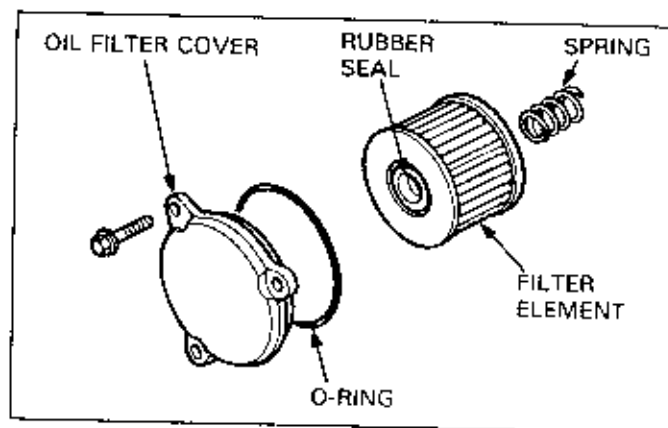
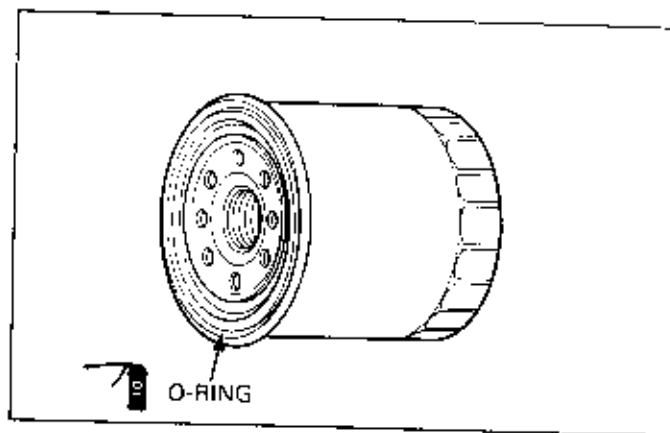
NOTE

- Install the element with the rubber seal side facing out, making sure that the spring is installed between the element and crankcase.
- Replace the O-ring on the filter cover with a new one.

Replenish the engine oil with the proper type and viscosity, and to the proper level. Always run the engine and check for oil leaks after an oil or oil and filter change.

ENGINE OIL FILTER SCREEN

Check to see if there is any dirt or debris on the oil filter screen which might hinder the flow of oil. Remove and clean the screen in solvent if any deposits are found on the screen. Refer to the Model Specific manual for oil filter screen removal, cleaning and installation procedures for specific models.



DECARBONIZING (2-stroke engine)

Carbon accumulation occurs more rapidly in 2-stroke engines than 4-stroke engines because 2-stroke engines burn engine oil. If the build up of carbon is not removed periodically, the carbon accumulation increases to an excessive amount, causing hot spots on the cylinder head and piston crown. This may cause knocking due to preignition and may cause poor engine performance. Accumulated carbon in the exhaust port hinders the flow of the exhaust, causing a drop in power output. Therefore, removal of accumulated carbon should be performed according to the maintenance schedule in the Model Specific manual.

CAUTION

- When removing carbon, be careful not to damage the combustion chamber, piston and cylinder.

Take off the cylinder head and remove the carbon from the piston crown when the piston is in the top dead center position.

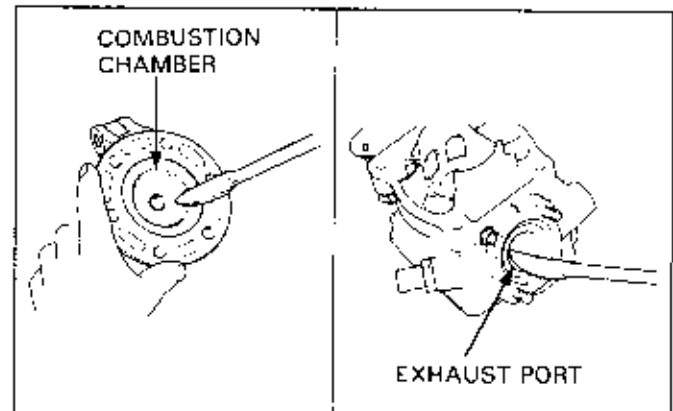
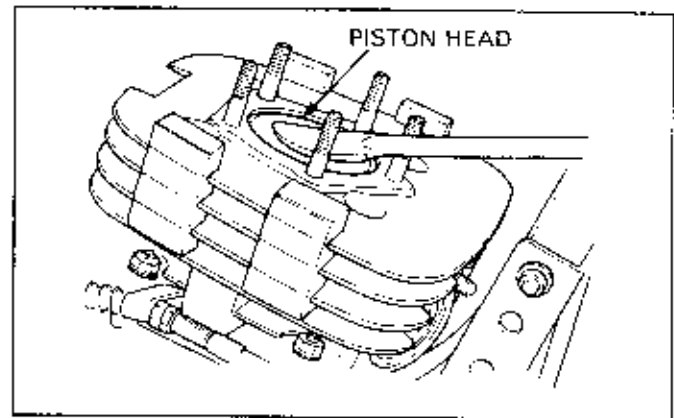
Remove carbon from the combustion chamber area of the cylinder head.

Take off the cylinder and remove accumulated carbon from the walls of the exhaust port.

Remove any remaining carbon within the cylinder.

In liquid-cooled engines, be sure to remove carbon particles that may have fallen into the coolant jackets around the cylinder by blowing them out with compressed air.

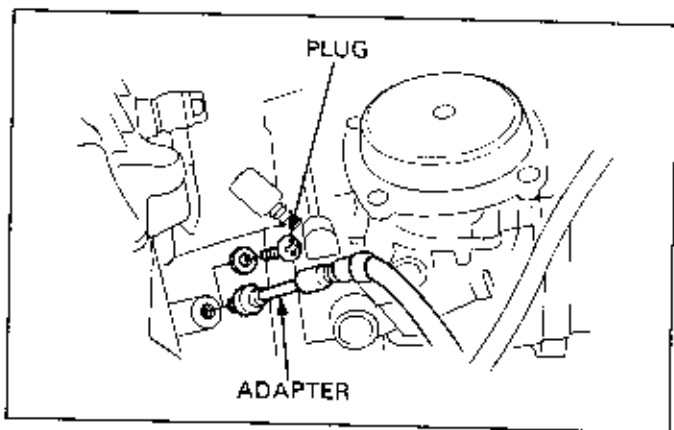
Refer to the Model Specific manual for the proper procedures for cylinder and cylinder head removal and installation.



CARBURETOR SYNCHRONIZATION

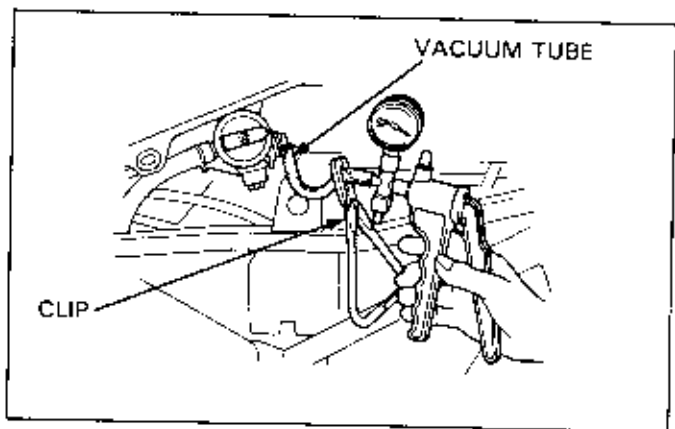
NOTE

- Carburetor synchronization adjustment is required to adjust the throttle valve opening, and to synchronize the vacuum in each carburetor's intake port, whenever 2 or more carburetors are reassembled.
- Synchronize the carburetors with the engine at normal operating temperature, the transmission in neutral and the motorcycle on its center stand.
- Carburetor numbers match the cylinder number.



Remove the plugs from each cylinder head port and install the vacuum gauge adapters.

If the motorcycle is equipped with the fuel auto valve, disconnect the vacuum tube from the intake manifold of the carburetor, draw vacuum and pinch the tube with a clip as shown.

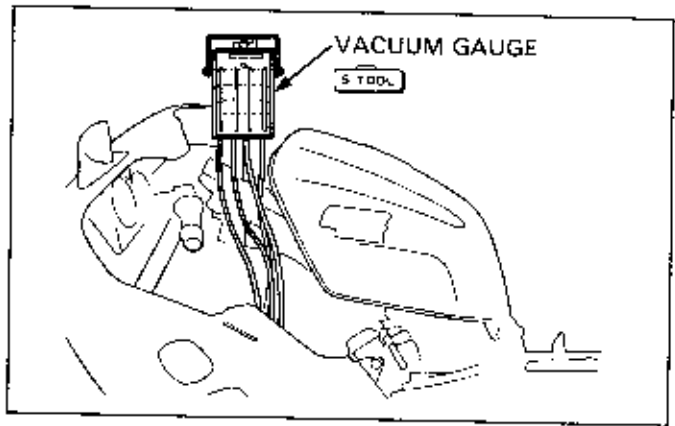


Connect the vacuum gauge.

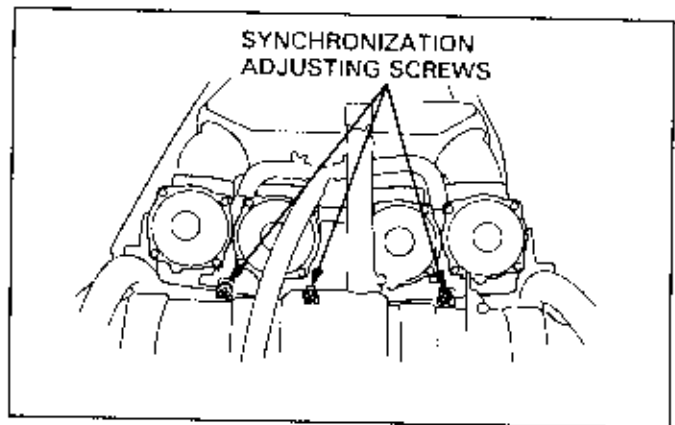
5 TOOL

Vacuum Gauge

07404-0030000
(for both two and four carburetor engines)
07404-0020000
(for dual carburetor engines)



1. Adjust the idle rpm to the specified idle speed. (Refer to the Model Specific manual for the specification.)
2. Turn the synchronization adjusting screw so that the difference between the vacuum in the base carburetor's intake port and the vacuum in the other carburetor's intake port is below the specification. (Refer to the Model Specific manual for base carburetor, location of each synchronization adjusting screw and difference in vacuum between the carburetors.)
3. Be sure that the synchronization is stable by snapping the throttle grip several times.
4. Repeat steps 1 through 3 for each carburetor.
5. Snap the throttle grip several times and recheck the idle speed and differences in vacuum between each carburetor.



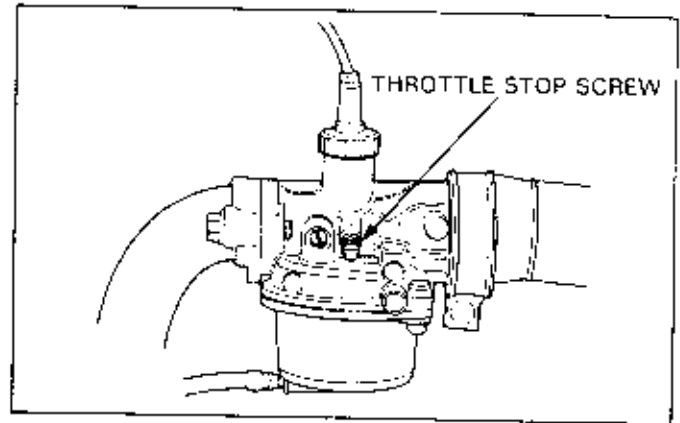
CARBURETOR IDLE SPEED

Check for any unusual noise while the engine is idling. If noise is detected, investigate with a stethoscope to locate the source. Carry out the appropriate maintenance inspection, depending on results of noise investigation.

Check to see that the engine speed increases smoothly from idle. Check the idle speed and adjust if necessary by turning the throttle stop screw.

NOTE

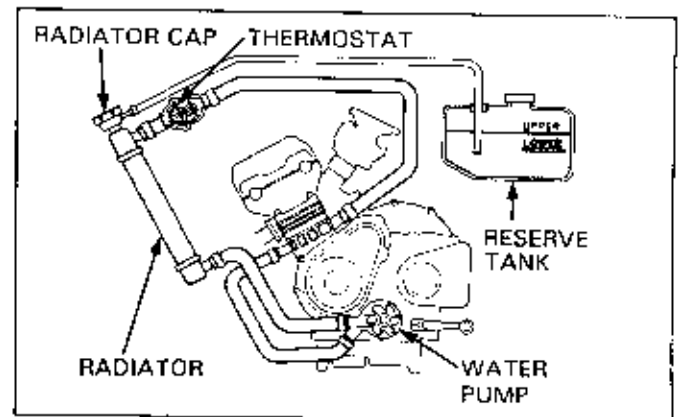
- Check and adjust after first warming up the engine. There are differences in idle speed between hot and cold engines.
- Place the vehicle on the center stand or support upright on level ground when checking and adjusting the idle speed. If the vehicle is tilted, there will be fluctuations in fuel flow from the carburetor which prevents an accurate determination of the idle speed.



RADIATOR COOLANT

WARNING

- Wait until the engine is cool before removing the radiator cap. Removing the cap while the engine is hot and the coolant is under pressure may cause serious scalding.
- Radiator coolant is poisonous. Take care to avoid getting coolant in your eyes, on your skin, or on your clothes.
- If coolant gets in your eyes, flush repeatedly with water and contact a doctor immediately.
- If coolant is accidentally swallowed, induce vomiting and contact a doctor immediately.
- KEEP OUT OF REACH OF CHILDREN.



Coolant evaporates naturally, so check it regularly.

Coolant is both an antifreeze and an anti-rust agent.

CAUTION

- Be sure to use the proper mixture of antifreeze and distilled water to protect the engine.
- Use distilled water. Tap water may cause the engine to rust or corrode.

MAINTENANCE

LEVEL CHECK

Always check the coolant level with the motorcycle in a vertical position on a flat, level surface.

Always check the coolant level at the reserve tank (not the radiator) after the engine has been warmed-up.

Check to see if the coolant level in the reserve tank is somewhere between the upper and lower lines.

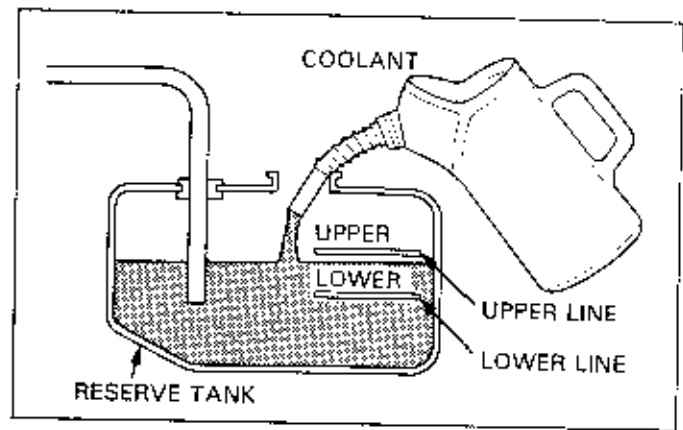
If the level is somewhere between the upper and lower lines or below the lower line, add a 50/50 mixture of antifreeze and distilled water to the upper line. (See Coolant Mixture Preparation page 5-6)

Check to see if there are any coolant leaks when the liquid level decreases very rapidly.

If the reserve tank becomes completely empty, there is a possibility of the air getting into the cooling system. So, be sure to remove all air from the cooling system as described on page 5-7.

NOTE

- The effectiveness of coolant decreases with the accumulation of rust or if there is a change in the mixing proportion during usage. Therefore, for best performance, change the coolant regularly. (See page 5-6)



COOLING SYSTEM

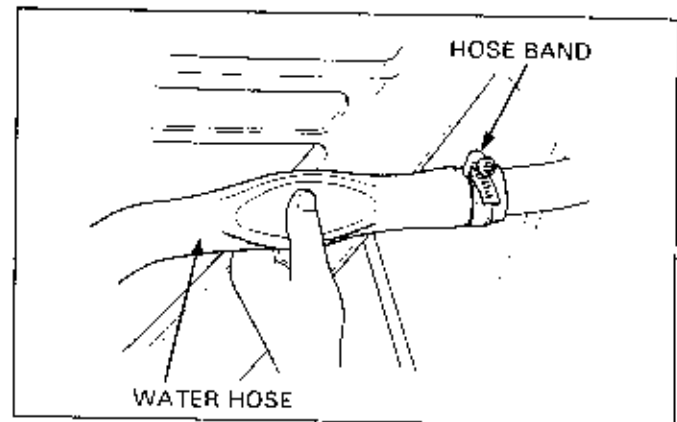
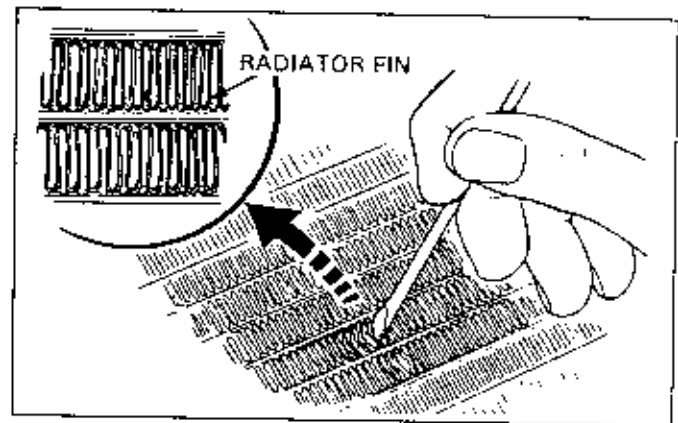
⚠ WARNING

- To prevent injury, keep your hands and clothing away from the cooling fan. It may start automatically, without warning.

Check the radiator air passages for clogging or damage, straighten bent fins with a small, flat blade screwdriver and remove insects, mud or other obstructions with compressed air or low water pressure. Replace the radiator if the air flow is restricted over more than 1/3 of the fin surface.

Remove the body panels and fuel tank, and check for any coolant leakage from water pump, water hoses, and hose joints.

Check for any deterioration or damage to the water hoses. A rubber hose deteriorates naturally over time due to heat and wear. If the hose deteriorates too much, it will rupture due to the pressure in the cooling system. Squeeze the hose and look for cracks.



SECONDARY AIR SUPPLY SYSTEM

⚠ WARNING

- To prevent injury, keep your hands and clothing away from the cooling fan. It may start automatically, without warning.

NOTE

- The secondary air supply system introduces filtered air into the exhaust gases in the exhaust port. The secondary air is drawn into the exhaust port whenever there is a negative pressure pulse in the exhaust system. This charged secondary air promotes burning of the unburned exhaust gases and changes a considerable amount of hydrocarbons and carbon monoxide into relatively harmless carbon dioxide and water.

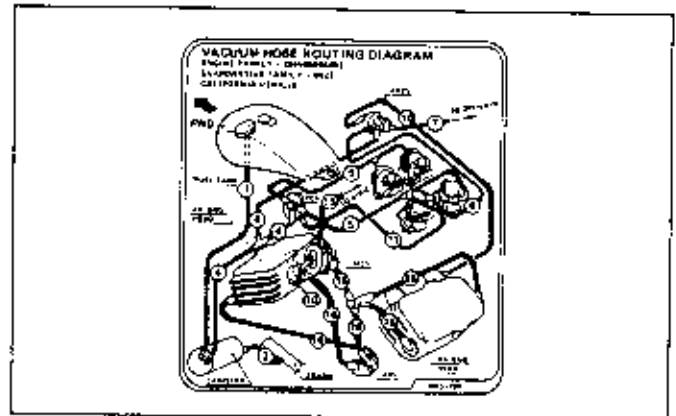
Check the air supply tubes between the valve and exhaust ports for deterioration, damage, or loose connections. Make sure the tubes are not kinked, pinched, or cracked.

NOTE

- If the tubes show any signs of heat damage, inspect the reed valve in the system for damage.

Check the vacuum hose between the intake pipe and valve for deterioration, damage or a loose connection. Make sure the hose is not kinked, pinched, or cracked.

Refer to the vacuum hose routing diagram label for hose connections.



EVAPORATIVE EMISSION CONTROL SYSTEM

⚠ WARNING

- To prevent injury, keep your hands and clothing away from the cooling fan. It may start automatically, without warning.

NOTE

- Fuel vapor from the fuel tank is directed into the charcoal canister while the engine is stopped. When the engine is running, the purge control valve opens and fuel vapor in the charcoal canister is drawn into the engine through the carburetor. The tubes deteriorate naturally due to wear and time. Check the condition of these tubes at the intervals specified in the Model Specific manual.

Check the hoses between the fuel tank, canister, purge control valve (PCV), air vent control valve and carburetors for deterioration, damage or loose connections.

Check the charcoal canister for cracks or other damage. Refer to the vacuum routing diagram label for hose connections.

VEHICLE EMISSION CONTROL INFORMATION UPDATE
HONDA MOTOR CO., LTD.

THIS VEHICLE HAS BEEN ADJUSTED TO
IMPROVE EMISSION CONTROL PERFORMANCE
WHEN OPERATED AT HIGH ALTITUDE.



ALTITUDE PERFORMANCE ADJUSTMENT INSTRUCTIONS
ARE AVAILABLE AT YOUR AUTHORIZED HONDA DEALER.

TRANSMISSION OIL (2-stroke engine)

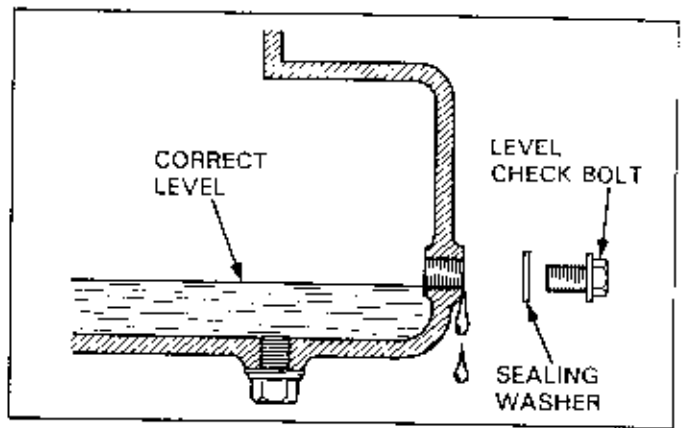
Check for oil leakage over all sections of the transmission. Check the oil level.

Excessive oil leakage necessitates disassembly.

With the engine stopped, remove the oil check bolt and make sure that the oil level is up to the lower edge of the bolt hole. Refill to the lower edge of the oil level check bolt hole with the recommended oil if the level is low.

NOTE

- Oil level checks should be carried out on level ground with the vehicle on the center stand or while in an upright position.

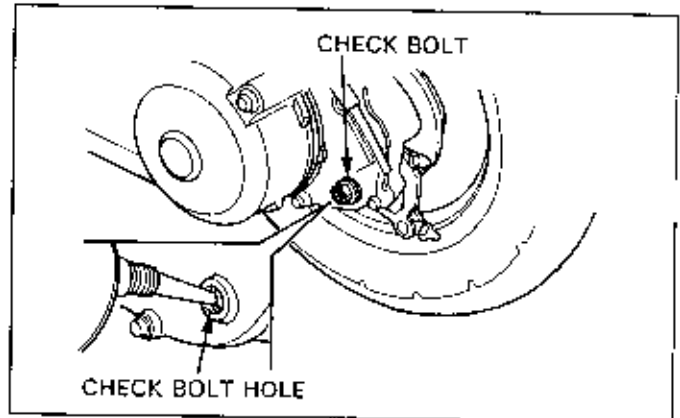


In scooters, check for leakage and oil level of the final reduction gear case in the same way as for the engine.

Remove the level hole cap from the gear case and check whether the oil level comes up to lower edge of the hole. If the level is low, refill to the lower edge of the hole with the recommended oil.

NOTE

- Oil level checks should be carried out on level ground with the vehicle on the center stand or while in an upright position.



Transmission oil change

Two stroke engine transmission lubrication is achieved by the spray of transmission oil within the sealed crankcase. Compared to 4 stroke engines, there is little oil degradation, and the period for change is longer.

Consult the Model Specific manual for the proper oil change interval.

⚠ WARNING

- Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to wash your hands with soap as soon as possible after handling used oil.

NOTE

- Oil is more easily drained when the engine is warm.

Remove the oil filler cap.

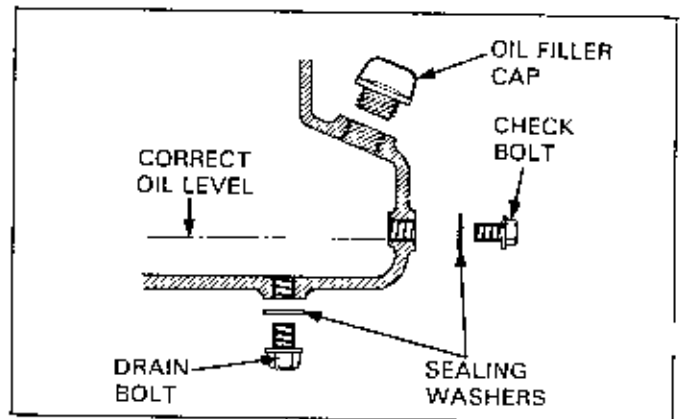
Remove the drain bolt located at the bottom of the crankcase and drain the oil.

When all the oil is drained, clean the drain bolt with its sealing washer and tighten to the designated torque.

NOTE

- Be sure to replace the sealing washer if it is damaged.

Remove the oil check bolt, and refill to the prescribed level with the recommended oil. Replace the check bolt or cap.



DRIVE CHAIN

ADJUSTMENT

▲ WARNING

- Inspecting the drive chain while the engine is running can result in serious hand or finger injury.

When there is too little slack, a change in the distance between sprocket centers, due to suspension movement, results in excessive tension on the chain.

In this condition, the chain and transmission or crankcase may be damaged, and the large amount of friction adversely affects the running performance of the vehicle.

Too excessive slack in the chain leads to large oscillations when the vehicle is running.

In this condition, the chain may come off the sprockets or damage parts it contacts.

With the vehicle in neutral, support on the center or side stand. (Some models need to be checked with the rear wheel raised. Refer to the Model Specific service manual for details). Check the slack in the chain at the mid point between the two sprockets.

(On models with a chain tensioner, loosen the tensioner before checking).

Carry out the following procedure for adjustment:

Loosen the rear axle nut until the wheel can be moved.

Loosen the adjuster lock nut, turn the adjuster nut or bolt and adjust the play.

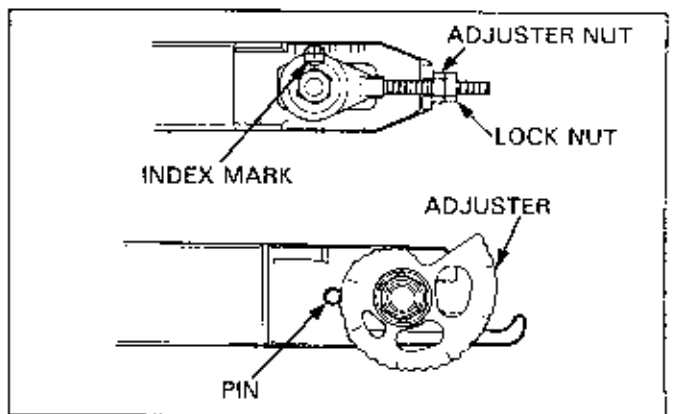
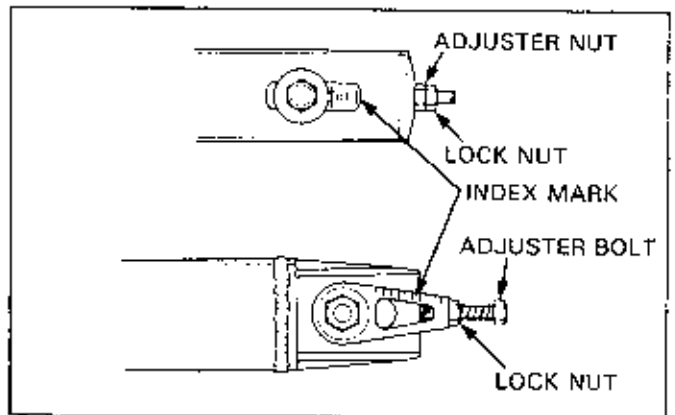
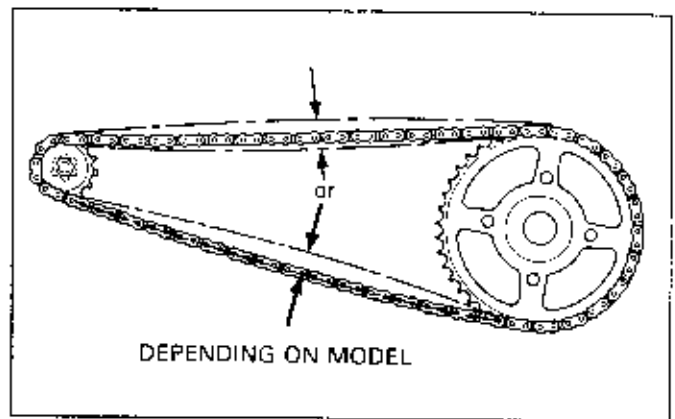
On snail cam types, rotate the adjuster plates.

A scale is included on the adjuster. Be sure that the reading on the scale is the same for both sides.

CAUTION

- If the adjustment value is not the same, the wheel is out of alignment and can cause excessive tire, sprocket and chain wear.

As the rear suspension moves through its travel, the distance between the drive and driven sprocket centers varies. Therefore, it is important to adjust the chain so that it has at least the minimum amount of acceptable slack when the sprockets are farthest apart—or when the center of the drive sprocket, swingarm pivot bolt and the rear axle are in alignment. The Model Specific manual provides a proper dimension for each model based on this minimum slack and maximum distance position, but it is measured in a much more convenient suspension position.



MAINTENANCE

After adjustment, retighten the axle nut to the specified torque.

NOTE

- Pulling the lower chain row firmly up toward the swing-arm when tightening the axle nut helps ensure that the adjusters on both sides are seated against their stops and that the axle is in proper alignment. Always check to be sure both sides are adjusted to the same marks on the adjustment scales.

Re-check the chain play.

Tighten the adjusters and lock nuts.

Adjust the rear brake pedal play. (This step can be omitted in the case of disc brakes).

Adjust the rear brake light switch actuation point (on cable operated rear drum brake models).

If, after adjustment, the adjuster's alignment mark is within the red zone of the chain wear indicator label, replace the drive chain and both sprockets (Only for vehicles with an indicator label affixed).

NOTE

- Always replace both sprockets when replacing the drive chain for optimum wear characteristics.

After replacing and adjusting the drive chain, attach a wear indicator label so that the alignment mark is at the start of the green zone.

On models without a drive chain wear indicators measure the length between the chain's pins as shown in the figure and replace the chain if the prescribed limits are exceeded.

Drive chain length (41 pins, 40 links).

CHAIN SIZE CODE	PITCH		STANDARD mm (in)	SERVICE LIMIT mm (in)
	mm	in		
415-420-428	12.70	0.500	508 (20.0)	511 (20.1)
520-525-50	15.875	0.625	635 (24.0)	638 (25.1)
630	19.05	0.750	762 (30.0)	766 (30.2)

Some endless chains require removal of the swingarm for drive chain replacement.

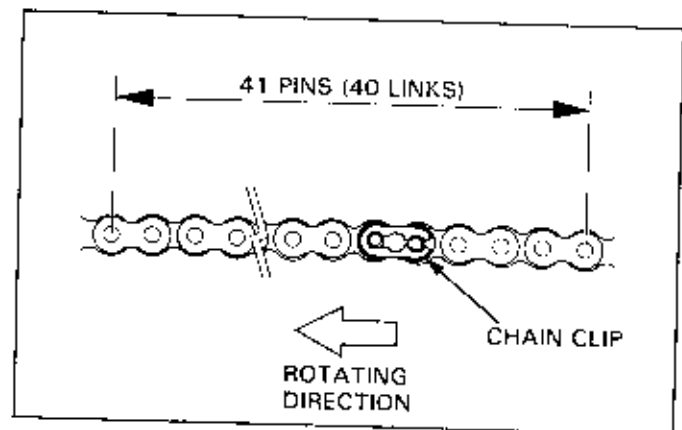
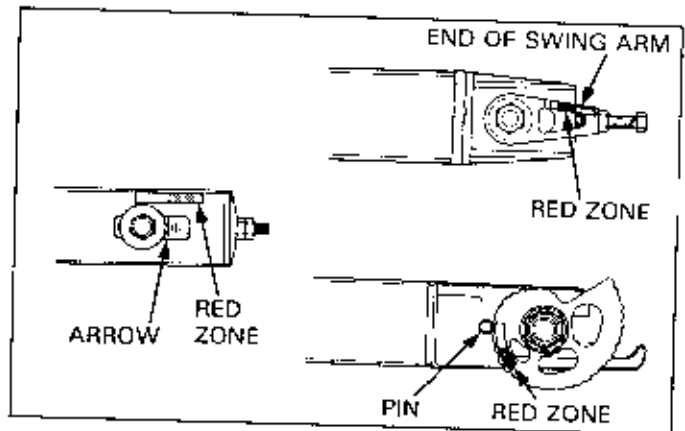
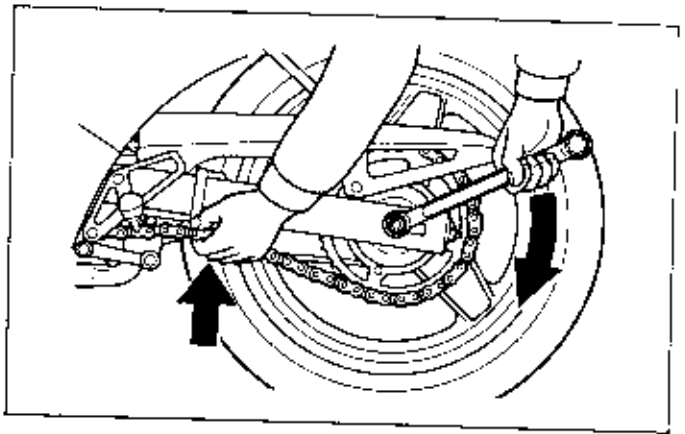
Others use a special tool to remove and install the master link.

The outer plate of this type of master link is secured by expanding the ends of the pins with the special tool.

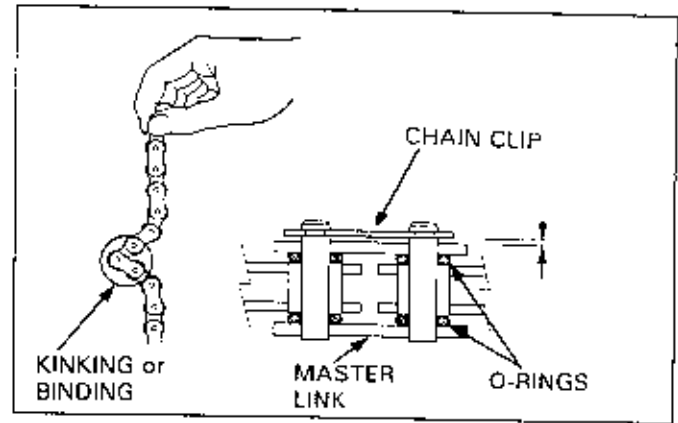
Position the masterlink clip so that its open end is opposite the normal rotation of the chain. This prevents the clip being knocked off through contact with the chain guide or passing objects. Check that the clip is fully seated.

CAUTION

- Improper positioning of the masterlink may cause the drive chain to come apart and possibly damage the crankcase, rear wheel or exhaust.



Check that each chain link pivots freely on the pins. Where binding is light, apply a little cleaning oil or paraffina making sure that it penetrates. When the stiffness has been removed, lubricate the chain. On chains with O-ring, quickly wipe off the cleaning fluid or paraffin oil, and thoroughly dry the chain. Replace the chain if stiffness of the chain cannot be alleviated, the movement of the links is not smooth, or there is damage to the link plates or rollers. Master links with O-rings have 4 O-rings fitted between rollers and master link plates. Install the O-rings as shown in the illustration to the right and fit the chain clip to the pins. Be sure there is no gap between the master link plate and the clip.



Cleaning and Lubrication

Adherence of mud and dirt, and lack of lubrication severely shortens the life of the chain. Cleaning and lubrication should therefore be carried out periodically.

[Chains with O-rings]

CAUTION

- Chains with O-rings should not be treated to the following cleaning and oiling procedure. This treatment will cause degradation of the O-rings and loss of grease, thus shortening chain life.
- Do not use steam or a high pressure water washing. Use a chain spray containing a cleaning agent or use gasoline to clean the chain.

Clean dirt off the chain with suitable detergent, dry completely and thoroughly, and apply #80-90 gear oil.

Wipe off excess oil to prevent it from flinging off when in operation.

[Chains without O-rings]

Remove dirt from the chain with cleaning oil or paraffin, dry completely and thoroughly, and apply #80-90 gear oil or a suitable spray-on chain lubricant.

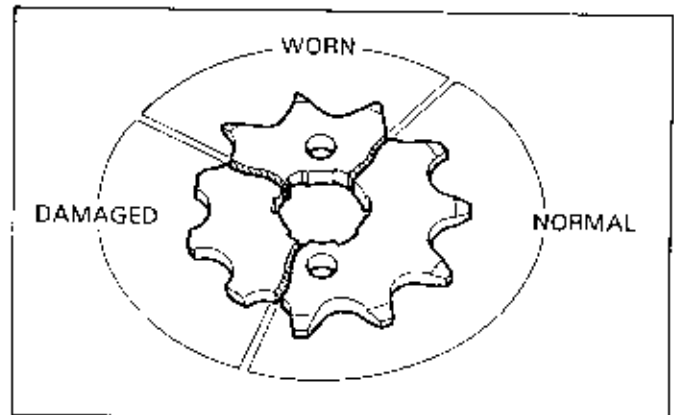
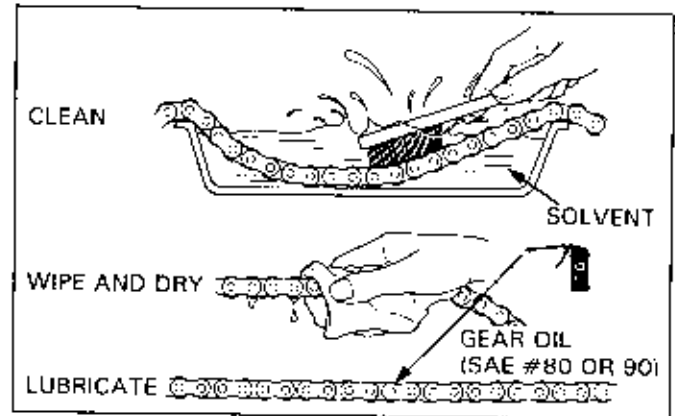
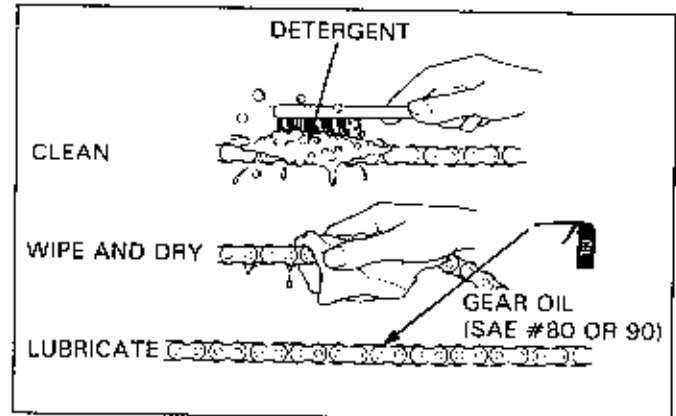
Wipe off the excess oil to prevent it from flinging off when in operation.

Check for wear and damage to the drive and driven sprockets.

CAUTION

- Be sure to replace the chain and sprockets as a set. The combination of an elongated chain and new sprocket(s) or the combination of a worn sprocket(s) and a new chain will result in rapid wear of the new component(s).

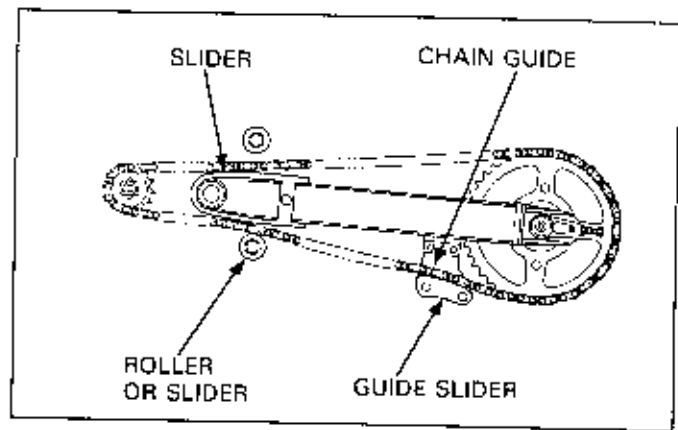
Check for looseness of the attachment bolts or nuts on the drive and driven sprockets, and if loose, re-tighten.



DRIVE CHAIN SLIDER, CHAIN GUIDE, GUIDE SLIDER AND ROLLERS

Together, the drive chain slider, chain guide, guide slider and rollers all do their part to keep the chain running in its proper path, while preventing it from cutting into the swingarm, frame or other components.

Each of these components is made of a type of plastic that offers minimal friction and wear. Still, periodic inspection for wear or damage and replacement is necessary as these parts deteriorate.



The chain slider, attached to the front of the swingarm near its pivot point, must be replaced when the depth of its wear grooves reaches a depth specified for each particular model. Failure to replace a worn slider will result in chain damage to the swingarm and damage to the chain.

Off-road and dual-purpose motorcycles are fitted with a chain guide that ensures that the chain is guided directly to rear sprocket. The guide itself should be checked for proper alignment as it can be bent through contact with passing objects, rocks or crash damage. Straighten or replace as necessary. A plastic guide slider centers the guide on the sprocket with minimal friction and prevents the chain from wearing the guide. A wear window is often provided to aid in determining a replacement time.

A lower chain roller, or a pair of upper and lower rollers are used to take up excess slack in the drive chain as the rear suspension compresses and extends to its furthest points. These rollers also help prevent the chain from cutting into other components on the motorcycle, like the airbox or exhaust on some motorcycles, when the suspension is near or fully compressed. These must also be periodically inspected for wear, damage and security of mounting.

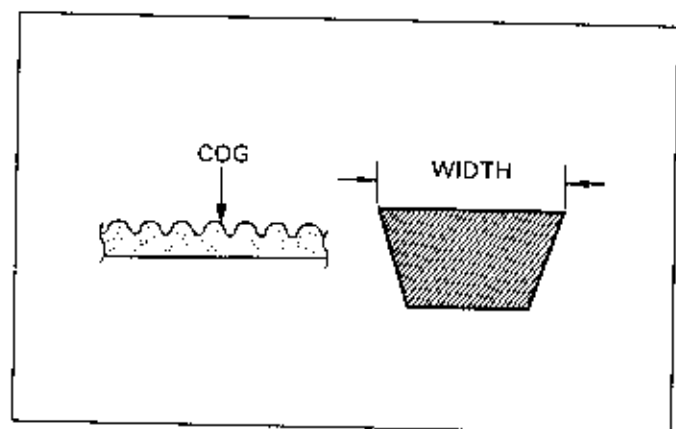
DRIVE BELT

A drive belt is used on the Honda V-matic belt automatic transmission.

The belt must be checked periodically according to the maintenance schedule shown in the Model Specific manual.

A worn or damaged drive belt may cause a loss in scooter performance.

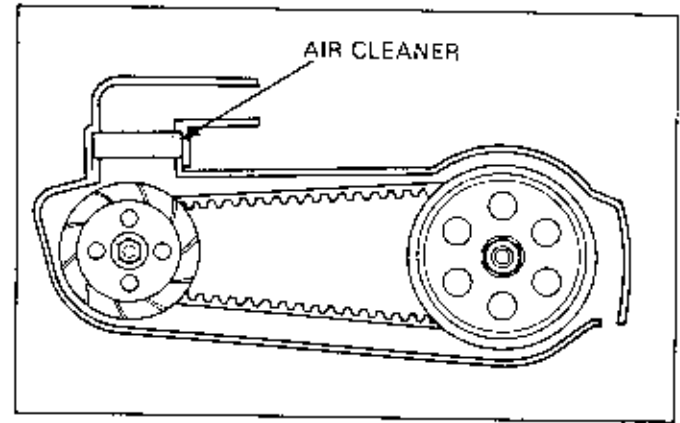
Remove the drive belt cover (see the Model Specific manual) and check the drive belt for wear, cracks or peeling of the cogs or plias; replace with a new one if necessary.



BELT CASE AIR CLEANER

On scooters with a cleaner element in the air inlet to the drive belt case, remove the element and clean.

Wash the element in water and dry it thoroughly before reinstalling.



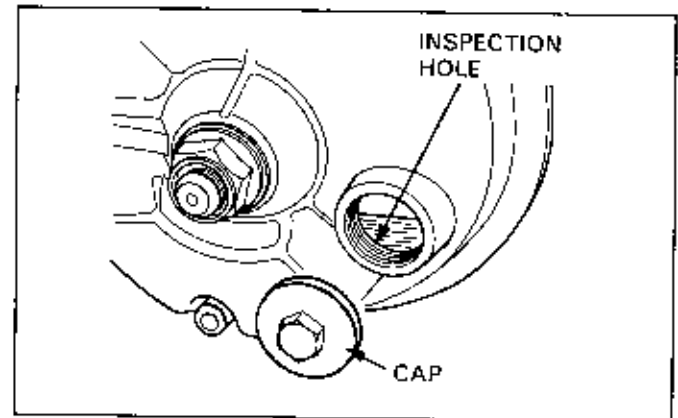
FINAL DRIVE OIL LEVEL

Check for leakage and proper oil level.

Remove the inspection/level hole cap from the gear case and check that the oil level is up to the lower edge of the hole. If the oil level is low, refill to the lower edge of the hole with the recommended oil.

NOTE

- Oil level checks should be carried out on level ground with the vehicle on the center stand.



OIL CHANGE

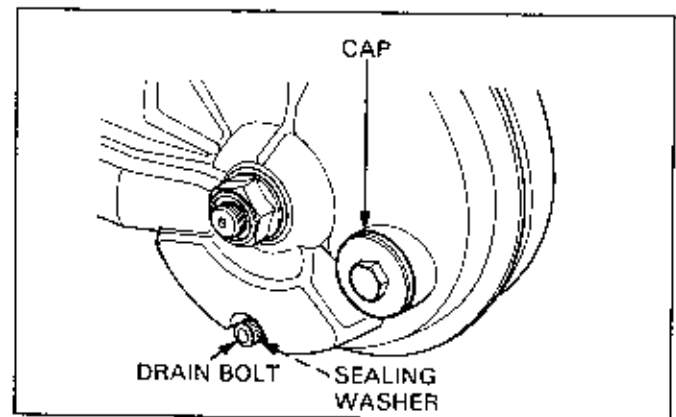
Refer to the Model Specific service manual for information on the oil change interval.

Remove the level hole cap from the final gear case.

Remove the oil drain bolt from the lower portion of the gear case, slowly turn the rear wheel and drain the oil. When the oil is completely drained, clean the drain bolt, replace the sealing washer and tighten to the specified torque.

NOTE

- Replace the sealing washer if it is damaged.



Refill to the prescribed level with the recommended oil.

Coat the level hole cap O-ring with oil and replace the cap.

Tighten the cap to the specified torque.

MAINTENANCE

BATTERY

Fluid level

Battery fluid level checks are unnecessary on MF (Maintenance Free) batteries.

Open type batteries should be checked for fluid level.

⚠ WARNING

- Do not allow battery fluid (sulphuric acid) to come into contact with the skin, eyes or clothes as it will cause burning. If acid is spilled on you, be sure to wash off quickly with large amounts of water. If battery fluid enters the eyes, wash with water and consult a physician.

Check for cracks in the battery case.

If the battery's electrodes show accumulation of a white substance (sulphation) or heavy deposits are observed at the base of the battery, the battery should be replaced.

Check the level of each cell by the UPPER and LOWER level lines inscribed on the side of the battery.

If levels are approaching the LOWER level line, remove the battery, take off the filler caps and refill to the UPPER level with distilled water.

Check the battery capacity with a battery tester (page 22-9). If the battery tester is not available, check the gravity of the battery fluid (see below).

CAUTION

- Always refill batteries with distilled water. Tap water contains minerals that will shorten the life of the battery.
- Filling the battery above the UPPER level mark may cause spillage while riding and subsequent corrosion of vehicle parts.

After refilling, replace each of the filler caps firmly and re-install the battery.

Follow the instructions on the battery's CAUTION label. Make sure that the breather tube is correctly positioned, and not kinked, trapped or bent in such a way as to obstruct the passage of air.

CAUTION

- If the tube is blocked, the battery's internal pressure will not be relieved, the breather may come off, or the battery could crack as a result.

Specific gravity of fluid

Checks are unnecessary in the case of MF (Maintenance Free) batteries.

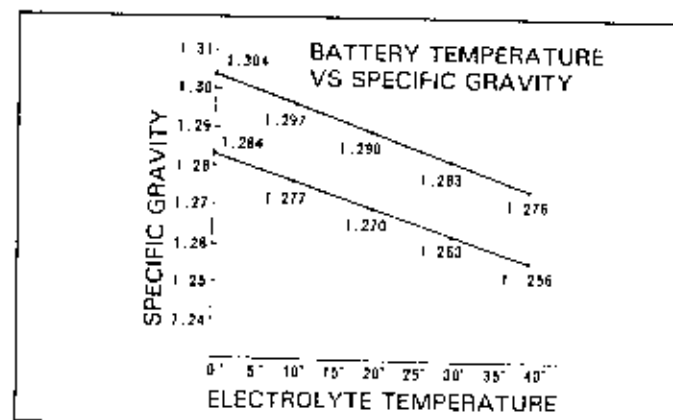
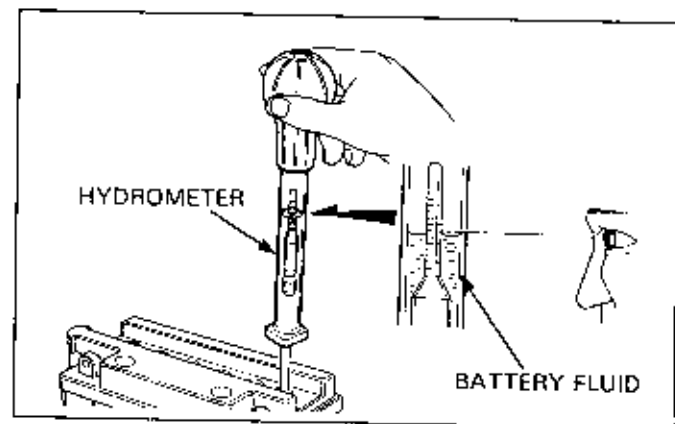
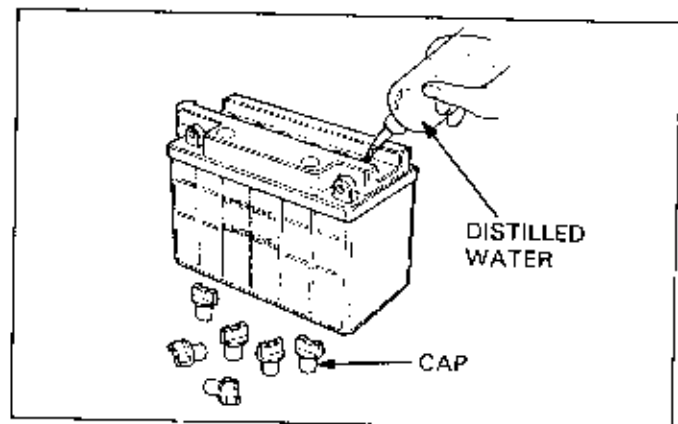
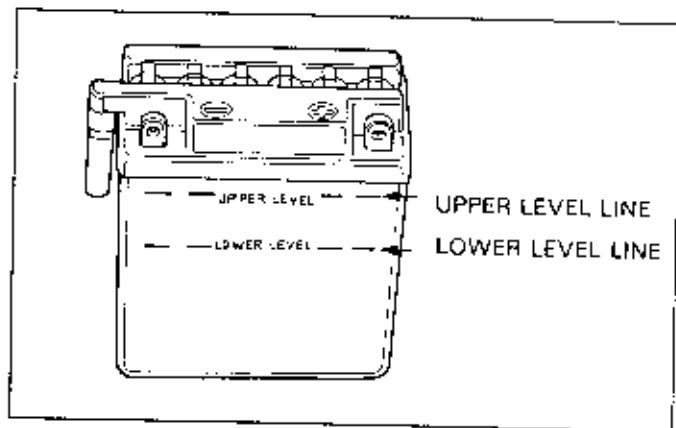
The specific gravity of the battery fluid should be checked on open type batteries.

Measure the specific gravity of each cell with a hydrometer.

Specific gravity of fluid at 20°C (68°F)

Fully charged condition 1.27–1.29

Low charge condition 1.23 and below



NOTE

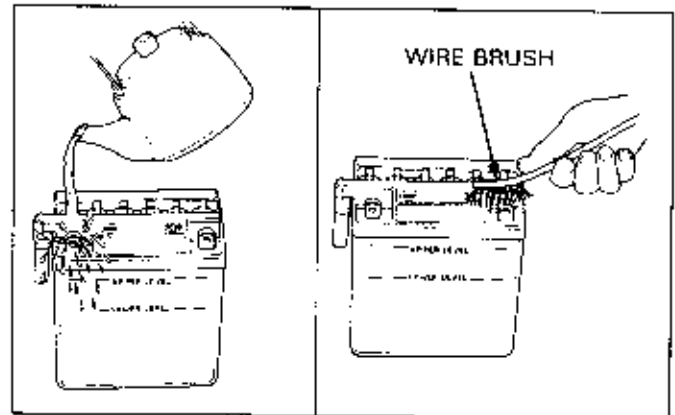
- If the difference in specific gravity between cells exceeds 0.01, re-charge the battery. If the difference in specific gravity is excessive, replace the battery.
- There is a change in specific gravity of approximately 0.007 per 10°C change in temperature. Be sure to consider this when taking measurements.
- Reading of the hydrometer's fluid level should be taken in the horizontal position.

Refer to section 22 for details of battery testing and charging.

Condition of terminal connections

Make sure that terminal connections are not loose. If corrosion is evident, remove the battery, wash rust with warm water and use a wire brush to remove completely.

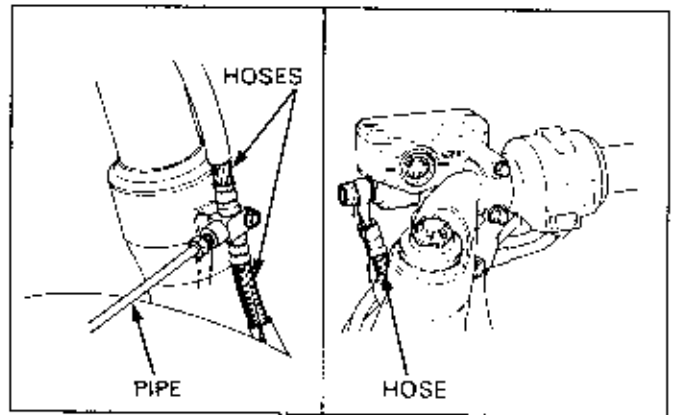
Reconnect the battery and lightly coat the terminals with grease.



BRAKE FLUID

Firmly apply the brake and check for fluid leakage from the brake system. If there is any leakage of fluid from any part of the system, quickly replace the damaged parts.

Check for degradation and damage of the hoses, pipes and joints. Check for looseness of joints and clamps. Also make sure that hoses and pipes do not come into contact with mechanical parts when the fork is turned, or due to vibration when the vehicle is running.



Before removing the reservoir cover, turn the handlebar until the reservoir is level.

Place a rag over painted, plastic or rubber parts whenever the system is serviced.

CAUTION

- Brake fluid will damage painted, plastic or rubber parts.

Refill with the recommended fluid.

WARNING

- Mixing incompatible fluids can impair braking efficiency.
- Foreign materials can clog the system, causing a reduction or complete loss of braking ability.

MAINTENANCE

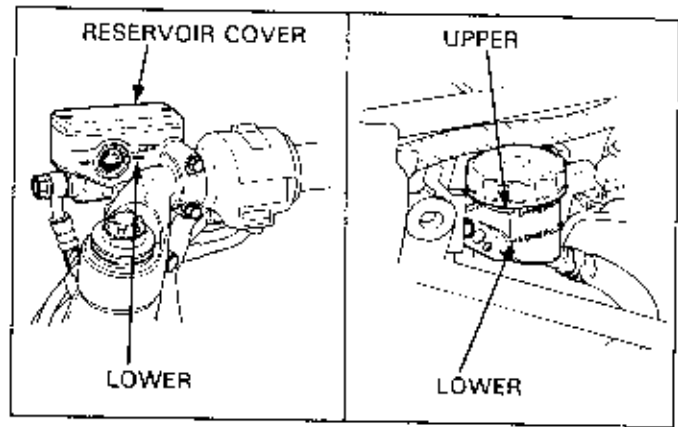
When the fluid level is low (i.e. near the LOWER level inscribed on the reservoir) remove the reservoir cover and diaphragm, and refill to the UPPER level.

Check the brake pads for wear when refilling with brake fluid. A low fluid level may be due to wear of the brake pads. If the pads are worn, the caliper piston is pushed out, and this accounts for a low reservoir level.

If the brake pads are not worn and the fluid level is low, check for leakage.

⚠ WARNING

- A leak in the brake system can lead to reduced braking efficiency and possible loss of braking ability.
- The recommended brake fluid differs according to models. Certain models take DOT 4, and others take either DOT 3 or DOT 4. Do not use DOT 3 standard brake fluid in a model designated for DOT 4, brake failure may result.



BRAKE SHOE WEAR

If the wear indicator arrow aligns with the "Δ" mark on the brake panel when the brake is applied, remove the wheel and brake panel and check for shoe wear.

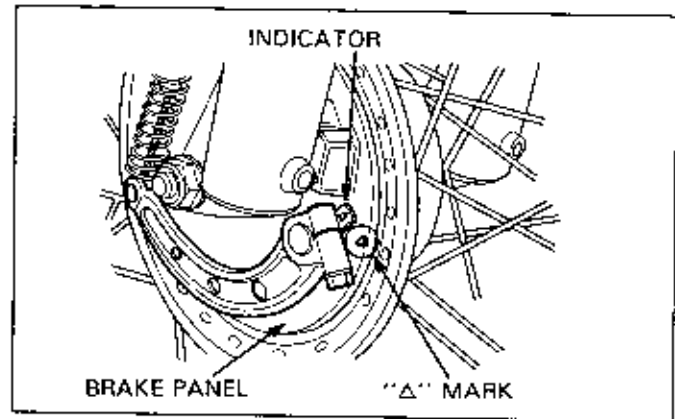
NOTE

- If no adjustment remains before the wear indicator limit is reached, this indicates excessive wear and the brake shoes need to be replaced.

Specific brake shoe checks are listed in the Brakes section of the manual.

Inspect the brake drum for wear or damage any time you remove the wheel and brake panel.

If the brake drum shows any signs of cracking or excessive corrosion that cannot be removed with emery cloth, be sure to replace it.

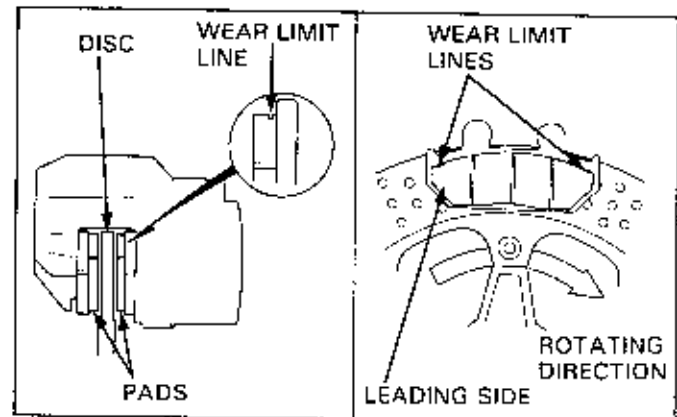


BRAKE PAD WEAR

Replace pads as a set if worn to the brake pad wear limit line (or wear limit groove).

A quick visual inspection can be made at the leading edge of the pads (where the disc enters the caliper).

However, if this proves difficult, a check can be made at the indicator on the caliper marked by the arrow (▲).



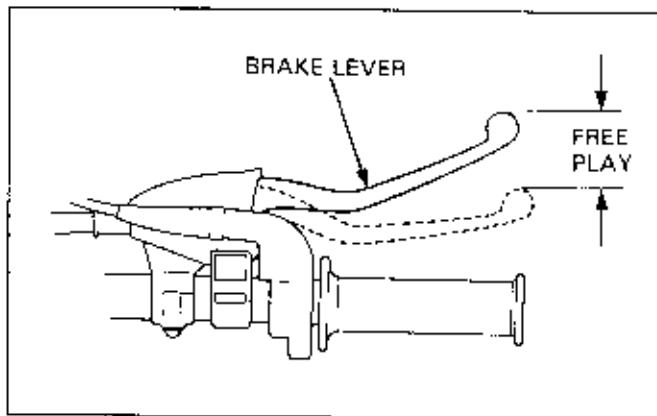
BRAKE SYSTEM

INSPECTION FOR AIR IN SYSTEM

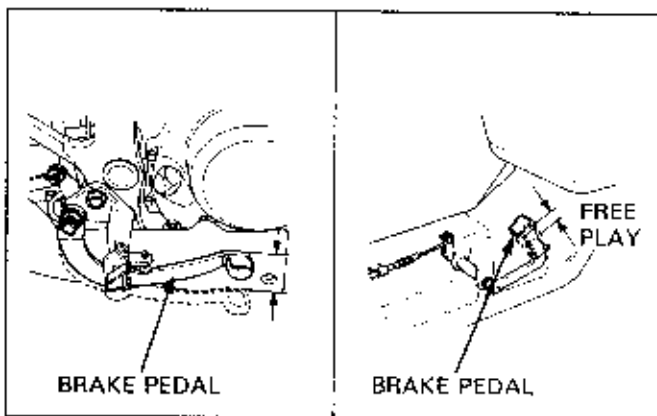
On hydraulic brakes, firmly apply the brake lever or pedal, and check that no air has entered the system. If the lever or pedal feels soft or spongy when operated, bleed the air from the system.

FREE PLAY ADJUSTMENT

On mechanical brakes, measure the free play at the tip of the brake lever or pedal as indicated here and below.



Brake pedals on scooters should be measured for free play as indicated here.



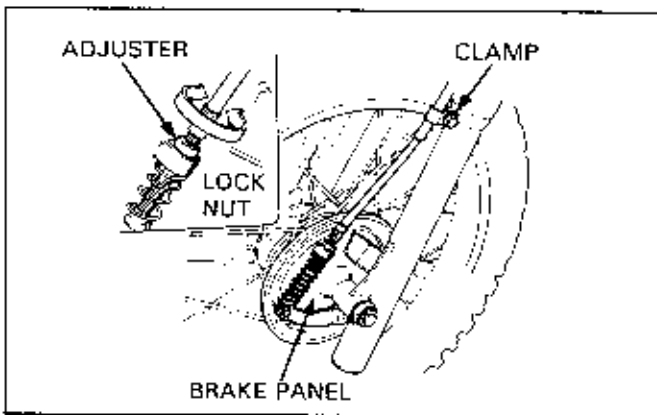
Make adjustments for free play on cable-operated brakes at the end of the cable.

Major adjustments are made on the brake panel end of the cable.

Loosen the lock nut and turn the adjuster nut to correct play at the lever.

NOTE

- If the upper adjuster (on the lever) is screwed in most, but not all the way before adjustment is carried out, subsequent adjustment by use of the upper adjuster can be conducted more easily.
- When the brake cable is fastened to the fork by a clamp, loosen the clamp before making brake adjustments.

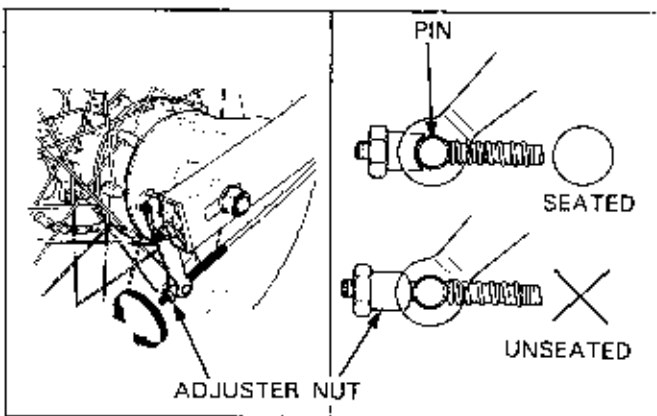


Secure the adjuster nut and tighten the lock nut on completion of adjustment. Be certain to tighten the fork cable clamp as well.

In cases where there is only an adjuster nut, as on many rear brakes, turn the nut to adjust the brake pedal free play.

NOTE

- The adjuster nut's indentation and brake arm pin should seat against one another as shown here in the upper right portion of the illustration to the right. If they do not seat, there may be a change in brake play when the adjuster finally seats in its proper position.



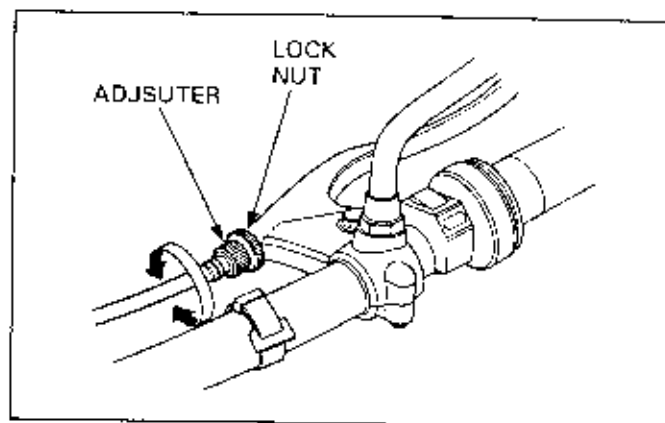
Check for play after adjustment.

MAINTENANCE

Minor adjustment is made at the lever end of the cable. It is necessary to turn back the lever dust boot to gain access to the adjuster.

NOTE

- There may be damage to the adjuster if it is positioned too far out, leaving minimal thread engagement. When there is more than 8 mm of threads showing, screw in the adjuster most, but not all the way and make adjustments on the brake panel end of the cable.

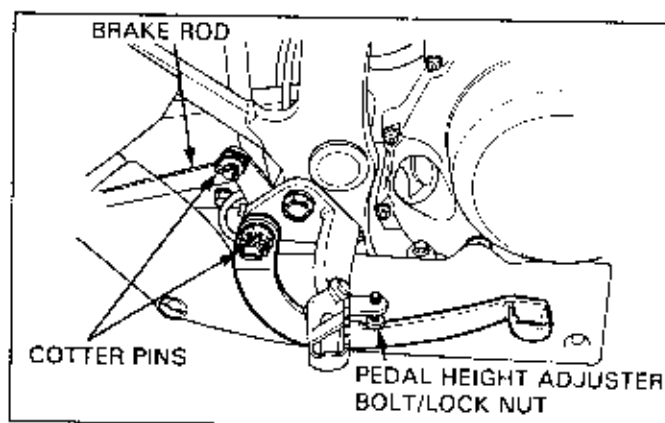


Check for looseness of the following:

- Brake lever and pedal fasteners and adjuster lock nuts
- Brake torque rod fasteners
- Brake rod, cable (mechanically operated drum brake)
- Brake arm (mechanical linkage drum brake)
- Caliper attachment bolt (hydraulic disc brake)

Check that the cotter pins on the brake rod, torque rod etc. are securely in place.

Operate brakes independently while riding in order to determine the effectiveness of each brake.



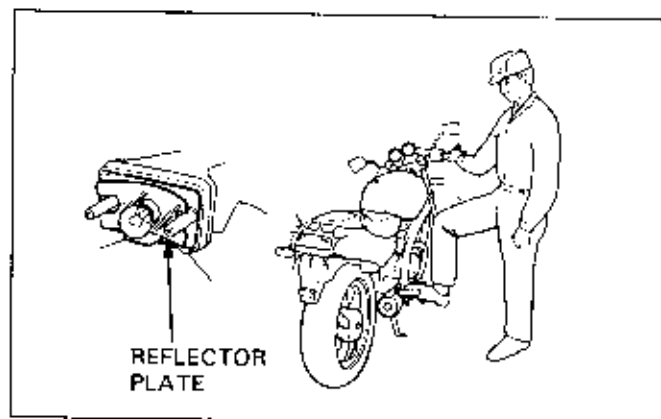
BRAKE LIGHT SWITCHES

Check the brake light switch operation and adjustment by applying the brakes. Visually inspect for any damage and make sure the reflector plate is clean within the light.

Adjust the rear brake light switch so that the brake light comes on just prior to the brake actually being engaged. If the light fails to come on, adjust the switch so that the light comes on at the proper time.

NOTE

- The brake light switch on the front brake lever cannot be adjusted. If the front brake light switch actuation and brake engagement are off, either replace the switch unit or the malfunctioning parts of the system.
- Make all rear brake light switch adjustments after the height adjustment and the brake pedal free play adjustment have been made.



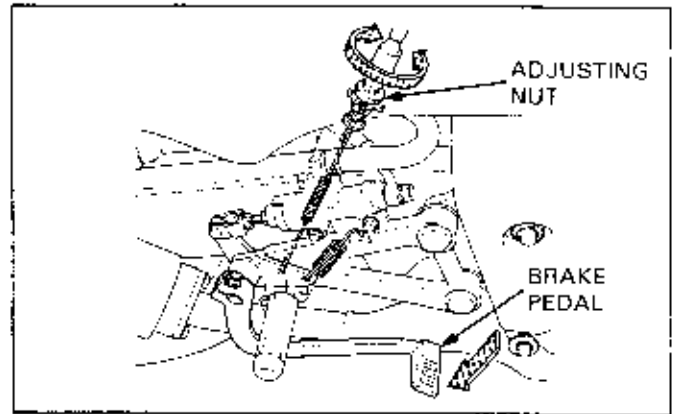
Turn the adjusting nut on the brake light switch and not the switch body and wires to make switch actuation adjustments.

Be sure to hold the switch body firmly while turning the adjusting nut.

CAUTION

- Allowing the switch body to turn during adjustment can break the wires in the switch.

After adjustment, recheck to be sure the brake light comes on at the proper time.

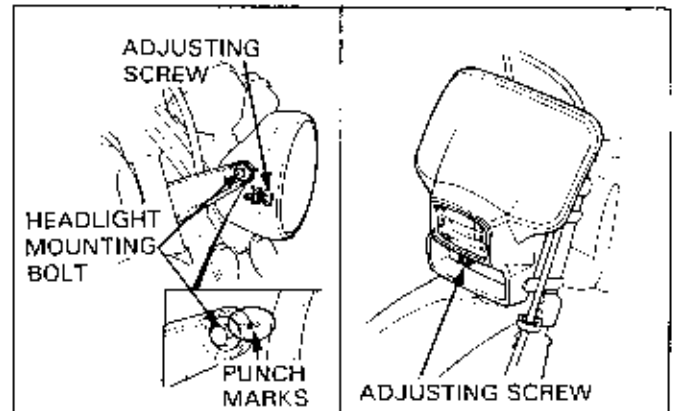


HEADLIGHT AIM

To make a vertical adjustment, loosen the headlight mounting bolts, matching the punch mark on the case and the bracket by moving the headlight up or down. Some motorcycles have an adjusting screw on the bottom of the headlight. In this case, turn the screw to make the vertical adjustment.

For those having an adjusting screw on the side of headlight rim, turn this screw to make the horizontal adjustment.

On some models the headlight is completely encased. The adjustment can be made either with the light beam adjustment knob on the back of the light case or with a remote-type cable and knob. Refer to the Model Specific manual for the proper adjustment method.

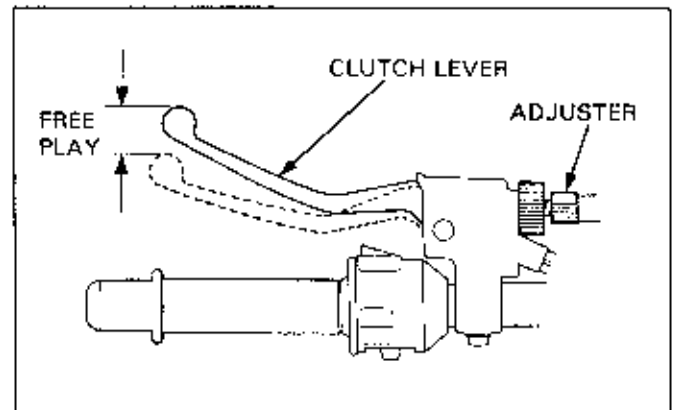


CLUTCH SYSTEM

Check the play at the end of the lever on cable operated clutches. A lot of play results in clutch drag and stiffness in operation of the shift pedal.

Too little play, however, results in clutch slippage.

When the clutch play is not adjusted within the prescribed amount, correct this using the adjuster located at the end of the cable.

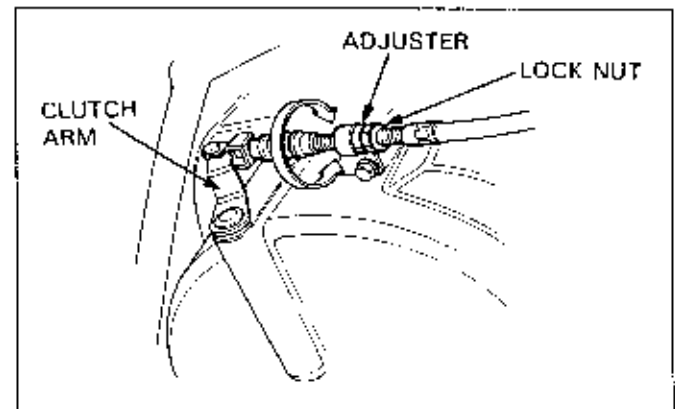


Major adjustment is carried out at the clutch arm. Loosen the lock nut and turn the adjuster nut to adjust play.

NOTE

- Before adjusting cable play at the clutch arm, screw the adjuster at the lever end of the cable in most, but not all the way. This makes subsequent adjustment at the lever end easier.

After adjustment is complete, hold the adjuster nut securely while tightening lock nut.



MAINTENANCE

Minor adjustments are made at the lever.

On models equipped with a dust cover, turn back the cover to allow adjustment.

Loosen the lock nut and turn the adjuster to correct the play.

CAUTION

- The adjuster may be damaged if it is positioned too far out, leaving minimal thread engagement.

When more than 8 mm of thread is showing, screw the adjuster in most, but not all the way, and make adjustments on the clutch arm end of the cable.

On models with the adjuster located within the length of the cable (i.e. not at the end), loosen the lock nut and turn the adjuster to alter the play, in the same manner as described above.

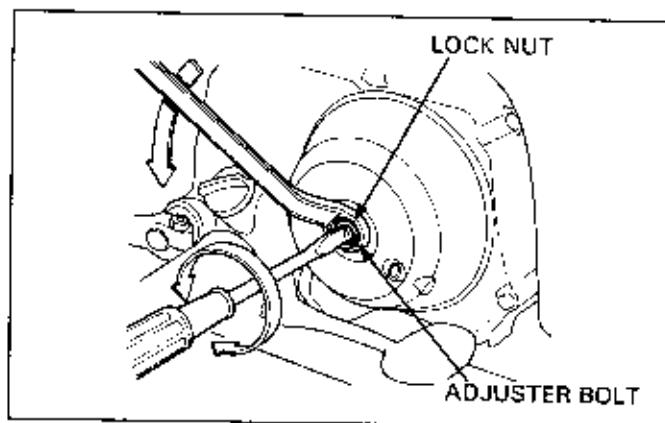
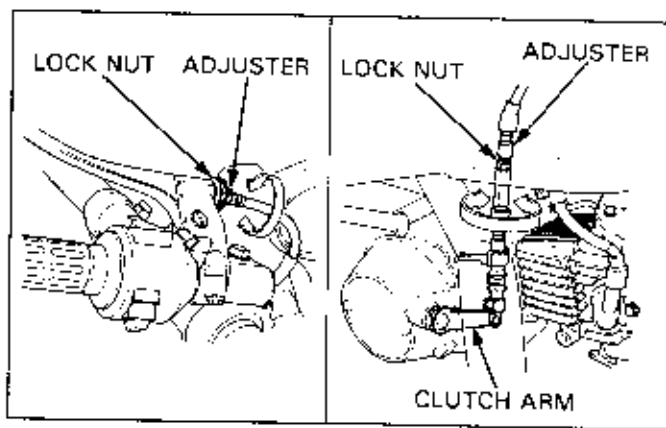
On centrifugal clutch

Loosen the lock nut, tighten the adjuster bolt by about 1 turn, then screw it back in until pressure is felt on the bolt.

From this position, loosen the bolt 1/8 to 1/4 of a turn and tighten the lock nut.

NOTE

- When tightening the lock nut, be sure that the adjuster bolt does not turn with it.
- Check the operation of the clutch after adjustment.



Clutch fluid level

Adjustment for play cannot be made on hydraulic clutches. However, a check should be made of the fluid level.

If the level is near the LOWER limit inscribed on the reservoir, remove the reservoir cover and diaphragm, and refill to the UPPER level with the proper type of fluid.

Before removing the reservoir cover, turn the handlebar until the reservoir is level.

Place a rag over painted, plastic or rubber parts whenever the system is serviced.

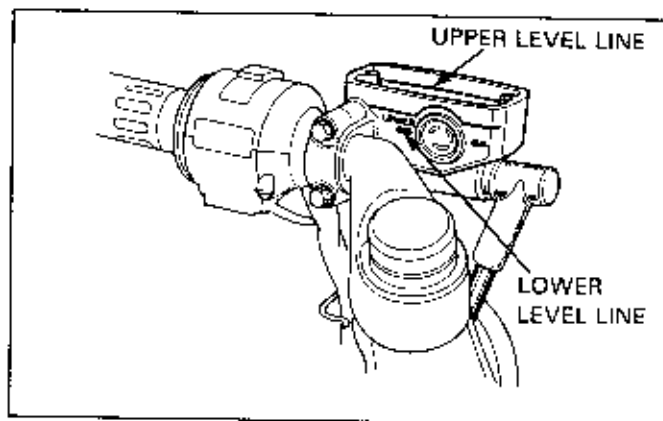
CAUTION

- Spilling fluid on painted, plastic or rubber parts will damage them.

Refill with the recommended of fluid.

CAUTION

- Mixing incompatible fluids can impair clutch operating efficiency.
- Foreign materials can clog the system, causing a reduction or complete loss of clutch ability.



SIDE STAND

Conventional Type

Check the wear of the side stand rubber.

Replace it if it has become worn.

Support the motorcycle in an upright and level position, using a support (use the center stand if available).

Hook a spring scale to the end of the side stand rubber and check the load before the stand starts moving.

Acceptable load measurements for side stands:

2–3 kg (4.4–6.6 lbs) (Road-type)

3–5 kg (6.6–11.0 lbs) (On/Off Road type)

If the stand moves too easily, tighten the pivot bolt and recheck. If it still does not have the required tension measurement, replace the return spring.

See if the side stand moves smoothly and retracts fully. If not, grease the pivot.

Check the side play on the side stand.

If it is too great tighten the pivot bolt.

Recheck and if it is still too great, replace the parts as necessary.

Dual Motion Type

The side stand should lower easily to its first stop, then lock after moving farther forward to support the motorcycle as the rubber touches the ground.

When the motorcycle is lifted upright, the stand should automatically move to the first position, and retract when kicked up.

If the side stand does not move freely, disassemble it:

Remove the return spring at the retracted position. Remove the pivot bolt and remove the side stand assembly from the frame.

Check the following parts for wear or damage:

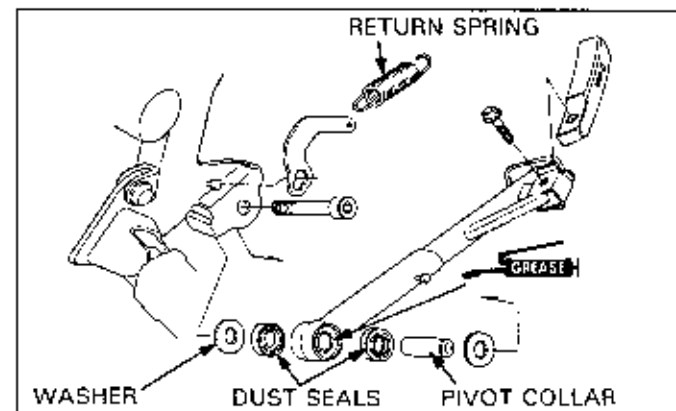
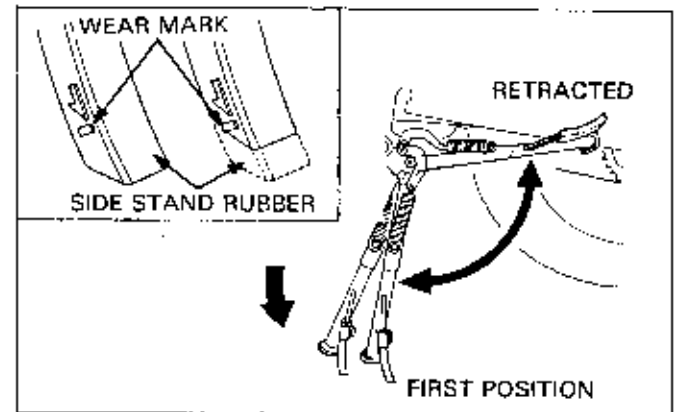
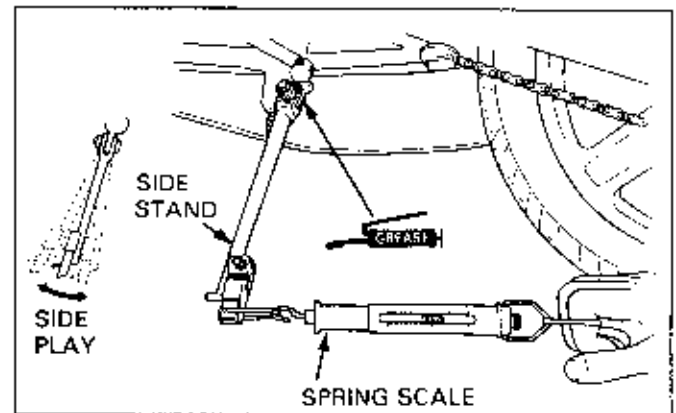
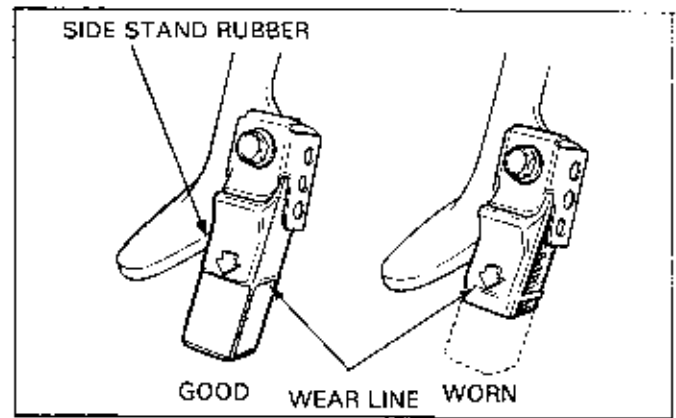
- inside of the pivot and pivot collar
- pivot dust seals

Lubricate the pivot area with clean grease and reassemble the side stand.

CAUTION

- Install the dust seal with its mark side facing in.
- Make sure that the dust seal spring is seated on the outside of the seal lips after installing the pivot collar.

Recheck the side stand movement.



MAINTENANCE

Inspection For Side Stand With Ignition Cut-off Switch

Check the spring for damage or loss of tension.

Check the side stand assembly for freedom of movement.

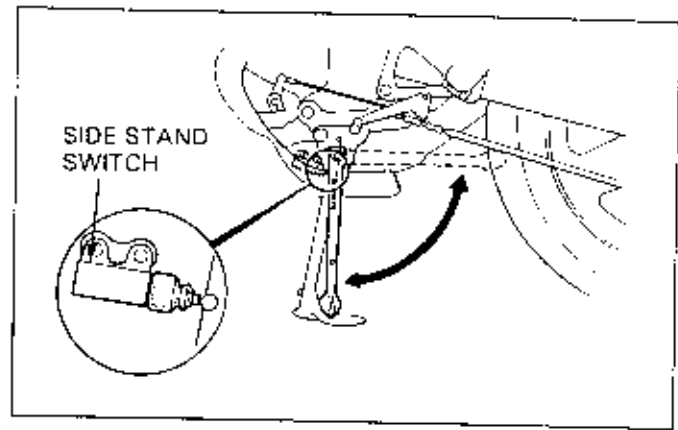
Lubricate the pivot bolt and the side stand pivot area if necessary.

Tighten the pivot bolt and nut. Refer to the Model Specific manual for specified torque.

Check the side stand ignition cut-off switch:

- Sit astride the motorcycle and raise the side stand.
- Start the engine with the transmission in neutral, then shift the transmission into gear, with the clutch lever squeezed.
- Move the side stand full down.
- The engine should stop as the side stand is lowered.

If there is a problem with the system, check the side stand switch.



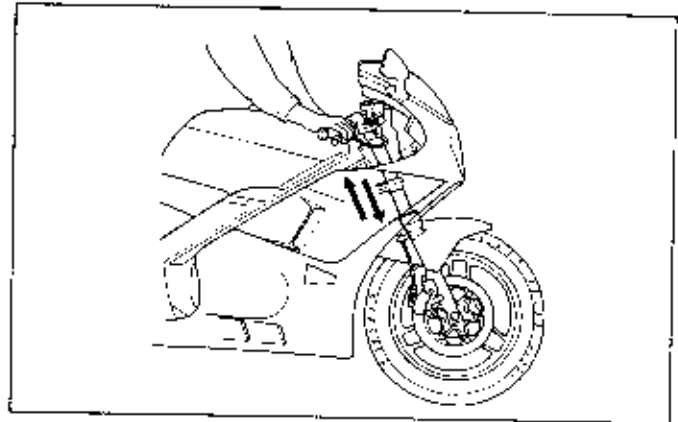
SUSPENSION

Compress the front and rear suspension a few times.

On models with exposed suspension springs, check for cracks and damage.

⚠ WARNING

- Loose, worn, or damaged suspension parts impair vehicle stability and control. Repair or replace any damaged components before riding. Riding a vehicle with faulty suspension increases your risk of an accident and possible injury.

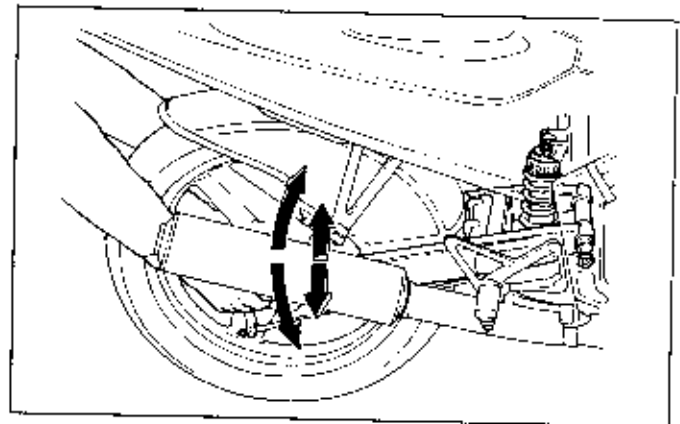


Check for squeaks in the suspension movement that could indicate a lack of lubrication. Try to push the swingarm from side to side to check for worn, damaged or loose suspension pivot components.

If any play is detected, check for looseness of the swingarm pivot bolt.

Check also for wear or damage to the pivot bearings (or bushings).

If looseness is detected in the up-down motion at the end of the arm on Pro-link suspensions, check for wear or damage to the shock absorber mount pivot point.



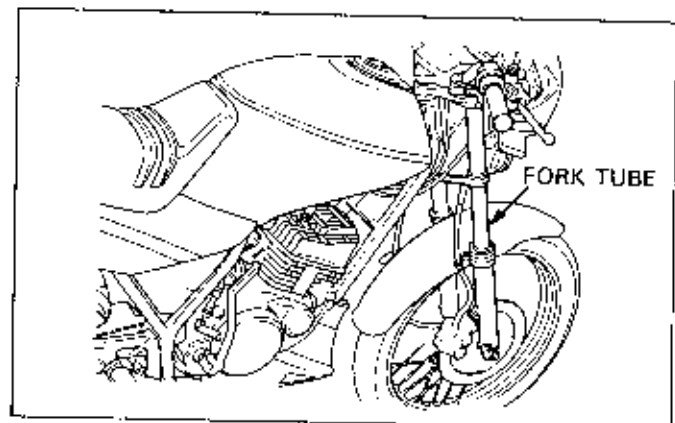
Check for leakage from the oil seals on the fork, scratch marks on the working surface of the fork tubes, and wear and peeling of the chrome plating.

On models equipped with rubber boots on the fork legs, turn back the boots to allow inspection.

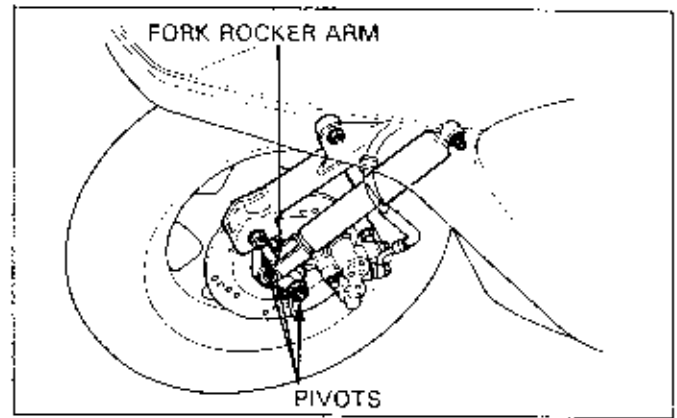
If the fork is in poor condition, disassemble and replace parts as necessary.

NOTE

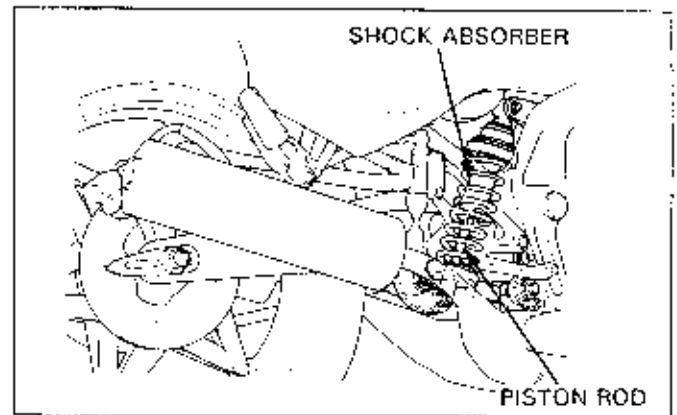
- Replace any fork tube that is heavily scored.



On models with bottom link type front suspension, check for cracks and damage to the fork rocker arms (bottom links). Check for play in the fork rocker arm bearing section, and inspect all fasteners for looseness.



Check for oil leakage around the shock absorber piston rod. Inspect the rod for scoring, wear and peeling of the chrome plating on the working surface.

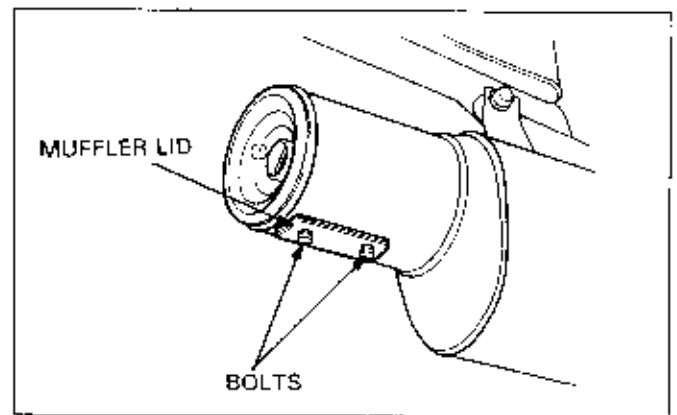


Check for looseness, cracks and damage to the attachment points of the shock absorber assembly. Re-tighten nuts/bolts if necessary.

SPARK ARRESTER (USA only)

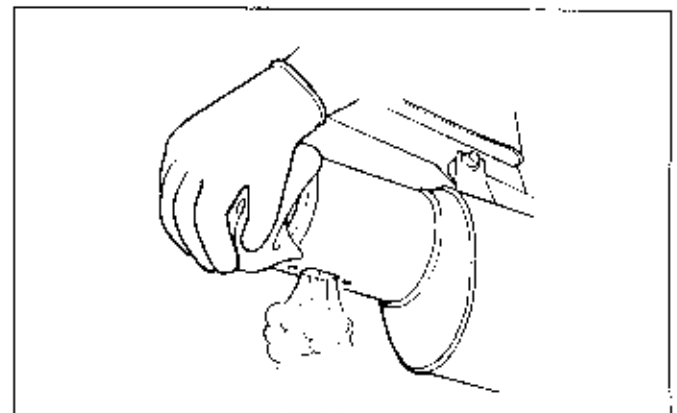
⚠ WARNING

- Wait until the pipe has cooled before removing or installing the muffler lid. Touching the hot exhaust may result in severe burns.
- Perform this operation in a well-ventilated area free from combustible materials. Carbon particles may blow out of the clean out hole when performing this service. Wear safety glasses to prevent possible eye injuries.



Remove the muffler lid. Block the end of the muffler with a shop towel.

Start engine and rev it up to blow accumulated carbon deposits out of the muffler.



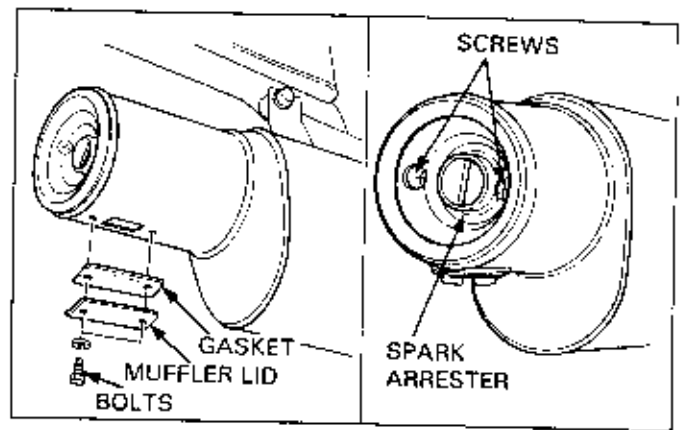
MAINTENANCE

Be sure that the muffler lid bolts and gasket are in good condition. Replace the bolts and gasket if necessary.

Install the muffler lid and gasket and tighten the bolts securely.

NOTE

- Do not remove the two screws that hold the exhaust baffle in the end of the spark arrester/muffler.
- The two mounting screws must be installed in the spark arrester body at all times for the spark arrester to be effective.



NUTS, BOLTS, FASTENERS

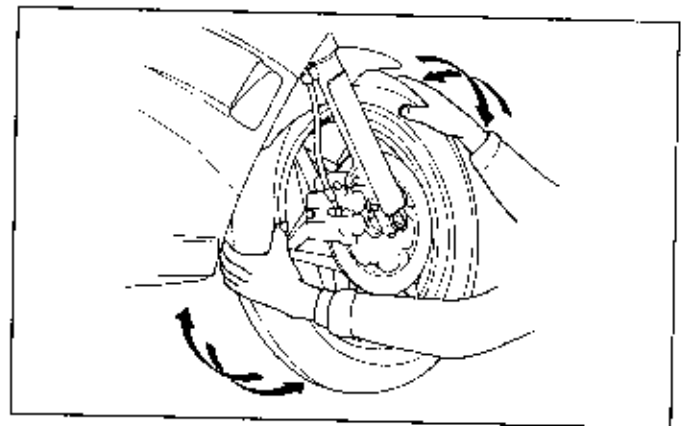
Check that all chassis nuts, bolts and screws are tightened to their correct torque values at the intervals shown in the Maintenance Schedule.

Check all cotter pins, slip pins, hose clamps and cable stays.

WHEELS/TIRES

Making sure the fork is not allowed to move, raise the front wheel and check for play. Turn the wheel and check that it rotates smoothly with no unusual noises.

If faults are found, inspect the wheel bearings.

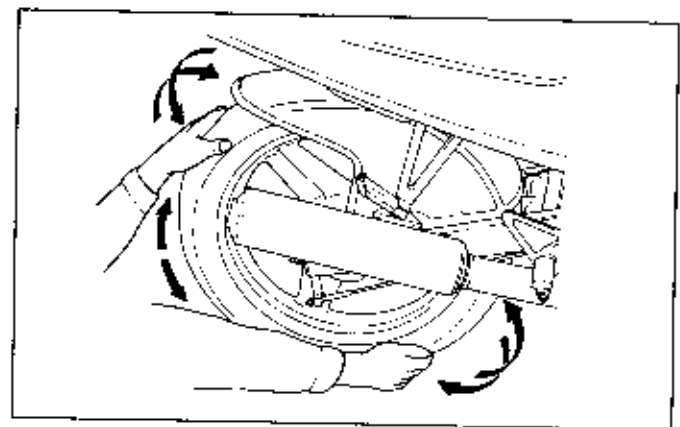


Raise the rear wheel, and check for play in either the wheel or the swingarm pivot. Turn the wheel and check that it rotates smoothly with no unusual noises.

If abnormal conditions are suspected, check the rear wheel bearings.

NOTE

- As the swingarm pivot is included in this check, be sure to confirm the location of the play; i.e. from the wheel bearings or the swingarm pivot.



Check for looseness of bolts/nuts in connection with the following.

- Axles
- Axle nuts
- Rim/hub bolts

On models that have cotter pins, check that the pins are attached correctly.

Check for cracks, deformation, damage and corrosion etc. of the following parts.

- Rim
- Wheel
- Spokes

Raise the wheel, turn slowly and check for lateral and vertical oscillation.

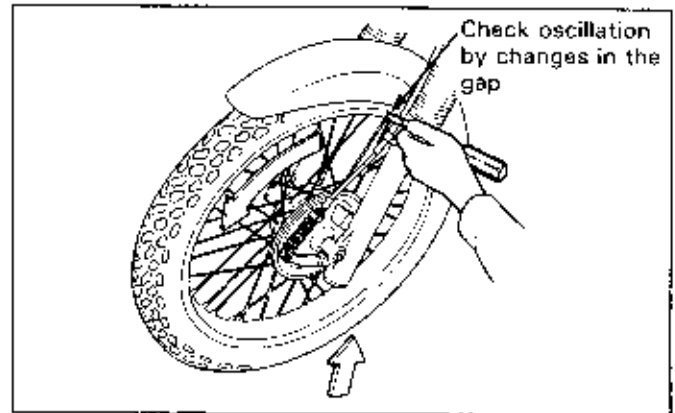
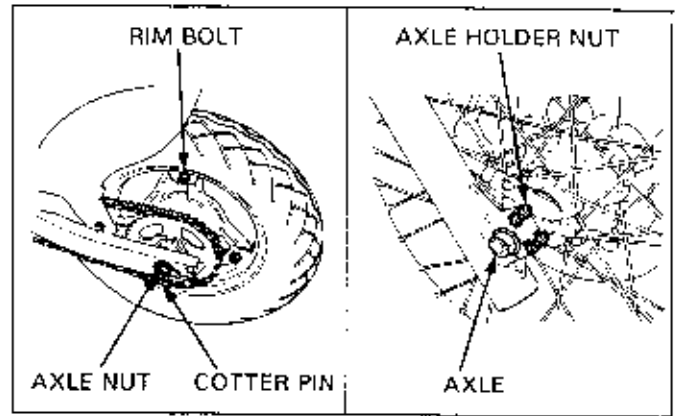
Usable limit (front and rear wheels)

Lateral direction-Up to 2.0 mm (0.08 in)

Vertical direction-Up to 2.0 mm (0.08 in)

Oscillation of Comstar or cast wheels cannot be corrected. Therefore, check for bearing play or a bent axle shaft. If necessary, replace the wheel assembly.

If there is deformation of the rim on spoked wheels, replace the rim.



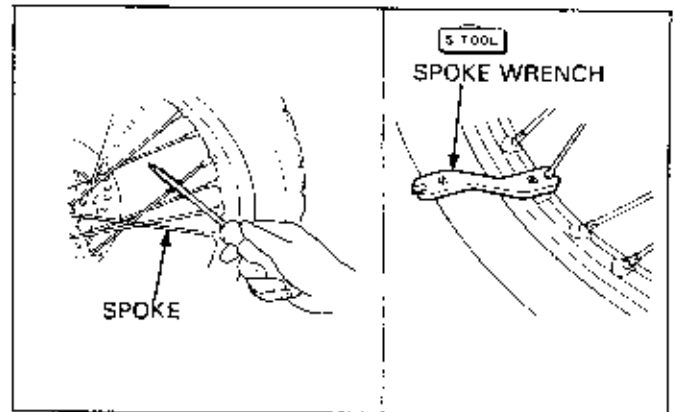
Inspect the spokes for looseness by tapping them with a screwdriver.

If a spoke does not sound clearly, or if it sounds different from the other spokes, tighten it.

Tap on the spokes and be sure that the clear metallic sound of the same tone can be heard on all spokes.

NOTE

- The spoke nipples are made of soft material. Be sure to tighten the spokes with the proper size spoke wrench. After tightening, check the rim for runout.



Check the pressure of each tire with a pressure gauge.

Check tire pressures when the tires are cold to assure accurate, comparative measurements. Checking tires after they are warm will give inaccurate readings.

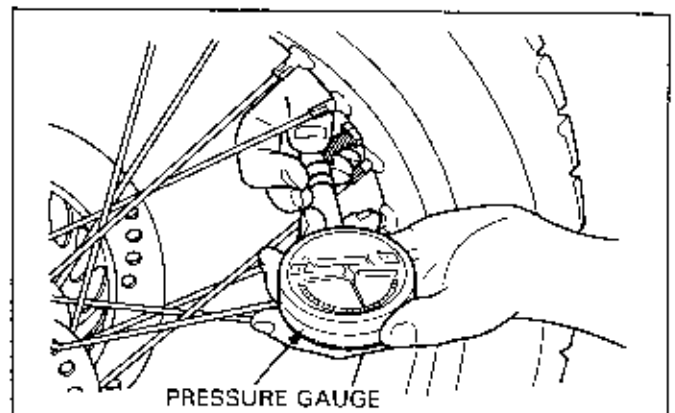
WARNING

- Riding with incorrect tire pressure can affect and impair steering response and may result in a sudden tire deflation.

CAUTION

- Operation without optimum tire pressure will cause uneven tire wear.

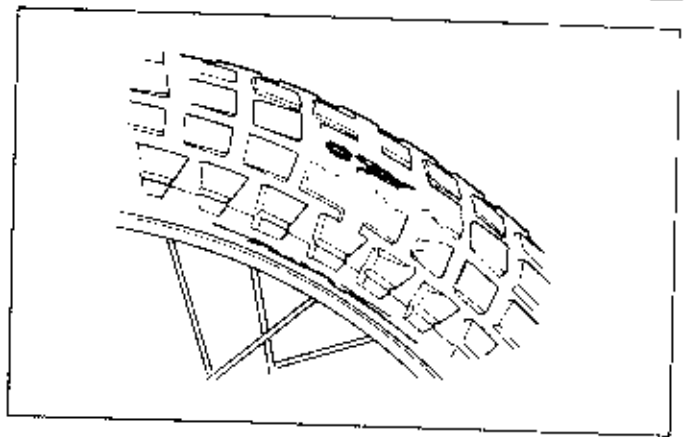
Tire pressure specifications differ with each model. Refer to the Model Specific manual for the correct pressures.



MAINTENANCE

Check for cracks and damage to the tire tread and walls and replace the tire if necessary.

Check for nails, pieces of metal and stones etc. which may have become lodged within the tread or embedded in the tires.

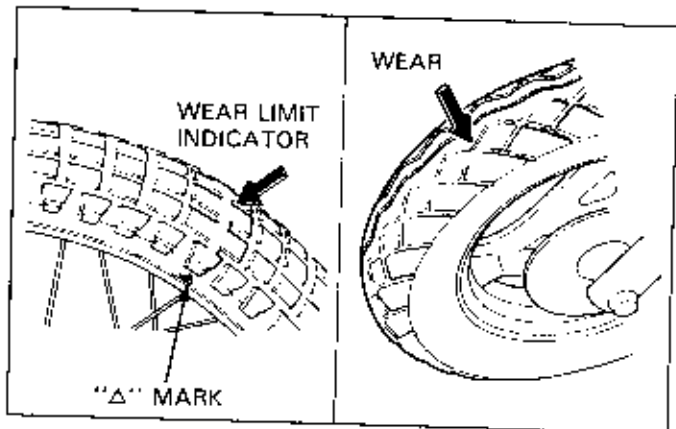


Tread depth can be observed directly or by use of the depth gauge.

- If the tread depth is below minimum tread depth the tire should be replaced.
- Replace the tire if the wear limit indicator can be observed. Check also for uneven wear of the tires.

NOTE

- Wear indicators "Δ" are distributed at several locations around the tire's side wall for ease of inspection.



STEERING HEAD BEARINGS

Securely support the vehicle from beneath the frame with the front wheel off the ground. Turn the handlebar from left to right and check that the movement is smooth. If the operation is not smooth or the handlebar snags or has a heavy feel in certain locations, check that there is no interference from cables or wire harnesses. If these are not the cause, check for wear or damage to the steering head bearings.

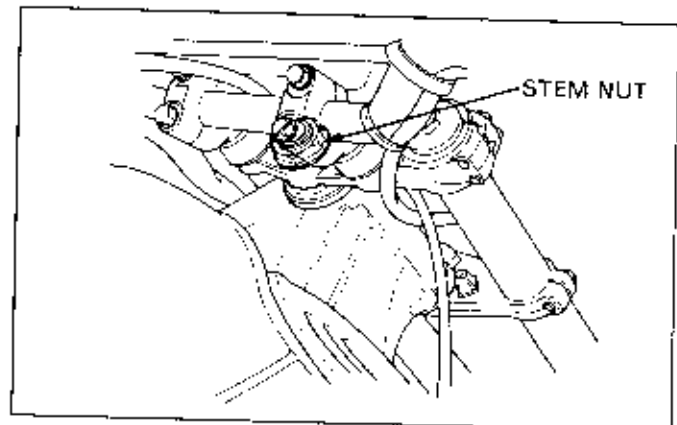
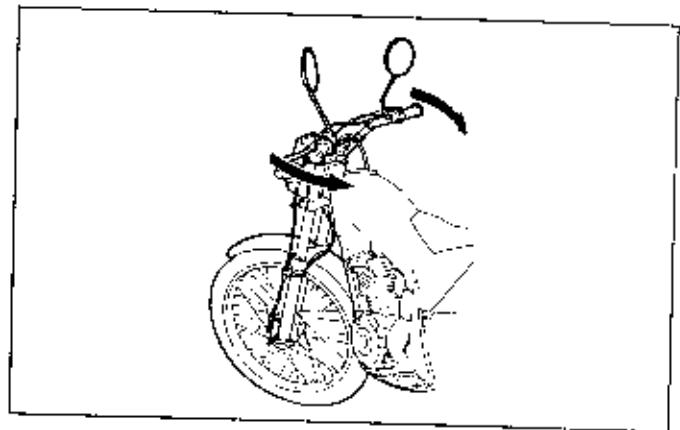
Check for misalignment of the front wheel with respect to the handlebar. If the wheel is out of alignment, loosen the wheel and fork assembly bolts/nuts, align and re-tighten. If the wheel cannot be aligned, check for bent suspension components or a bent frame.

If the handlebar shows unusual shake during normal running conditions, check the handlebar mounting fasteners and wheel etc.

Turn the handlebar fully from left to right, and vice-versa, to check that there is no difference between the two directions of movement. Check also that there is no interference between the handlebar and frame.

Also inspect for snagging of wires and harnesses on the fork stops on the lower fork bridge.

If the handlebar moves unevenly, binds or has vertical movement, adjust the steering head bearings by turning the steering bearing adjustment nut. Refer to the Model Specific manual for proper procedure.



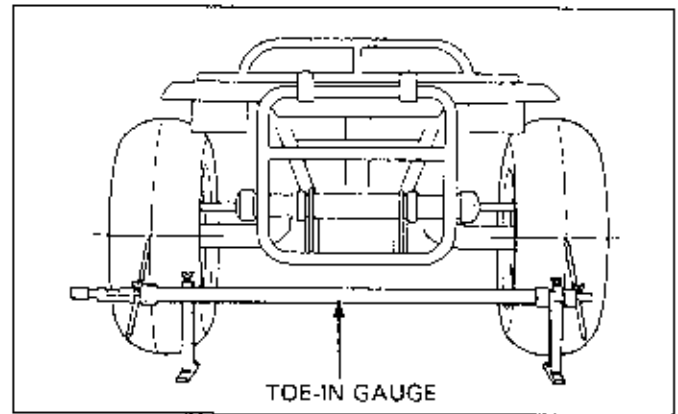
WHEEL ALIGNMENT (FOUR TRAX)

On FOUR TRAX models, inspect and adjust the front wheel alignment (toe-in, camber and caster) as necessary.

TOE-IN

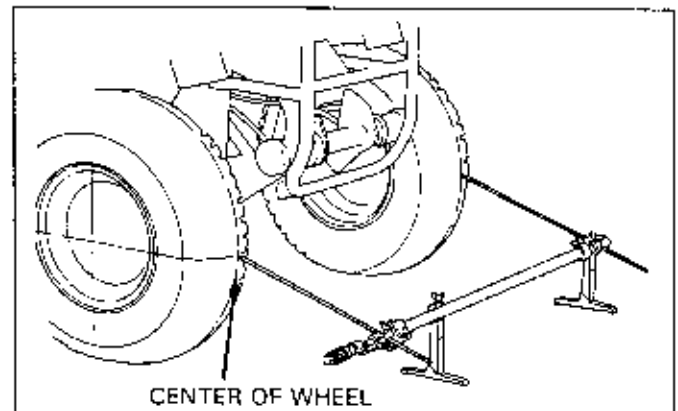
Place the vehicle on level ground with the front wheels facing straight ahead.

Mark the centers of the tires with chalk to indicate the axle center height.



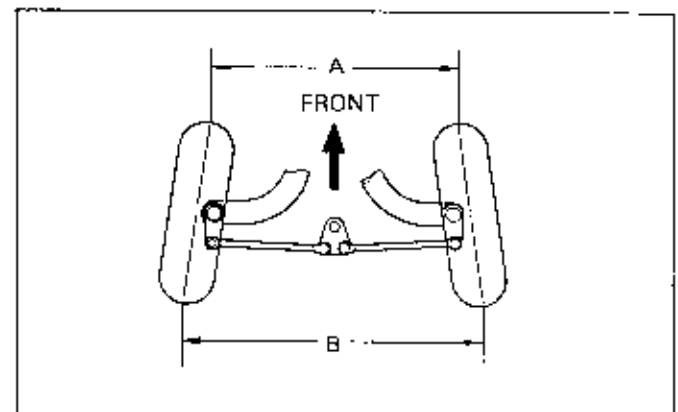
Align the toe-in gauge with the marks on the tires as shown. Check the readings on the gauges scales.

Slowly move the vehicle back until the wheels have turned 180° so the marks on the tires are aligned with the gauge height on the rear side.



Measure the toe-in on the rear part of the tires at the same points.

When the toe-in is out of specification, adjust it by changing the length of the tie-rods equally while measuring the toe-in.



CAMBER/CASTER

Remove the wheel cap, cotter pin and front axle nut.

Install an attachment onto the front axle.
Put the camber and caster gauge onto the attachment.
Measure the camber.

Set the turn gauge under the front wheels.
Measure the caster.

Camber and caster are not adjustable. If they are out of specification, check the suspension and frame for damage and replace any parts necessary, then recheck alignment.

