

# 2. FRAME/BODY PANELS/EXHAUST SYSTEM

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## SERVICE INFORMATION

### GENERAL

#### ▲ WARNING

*Gasoline is extremely flammable and is explosive under certain conditions. KEEP OUT OF REACH OF CHILDREN. Serious burns may result if the exhaust system is not allowed to cool before components are removed or serviced.*

Work in a well ventilated area. Smoking or allowing flames or sparks in the working area or where gasoline is stored can cause a fire or explosion.

- This section covers removal and installation of the frame body panels and exhaust system.
- Always replace the exhaust pipe gaskets when removing the exhaust pipe from the engine. When installing the exhaust system, loosely install all of the exhaust pipe fasteners. Always tighten the exhaust pipe joint nuts at the engine first, then tighten the exhaust clamps, then the mounting fasteners. If you tighten the mounting fasteners first, the exhaust pipe may not seat properly.
- Always inspect the exhaust system for leaks after installation.

### TORQUE VALUES

Muffler mounting bolt	32 N·m (3.3 kgf·m, 24 lbf·ft)
Muffler clamp bolt	20 N·m (2.0 kgf·m, 14 lbf·ft)
Exhaust pipe protector mounting bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)
Exhaust pipe joint nut	10 N·m (1.0 kgf·m, 7 lbf·ft)
Spark arrester (U type)	2.2 N·m (0.2 kgf·m, 1.4 lbf·ft)

## TROUBLESHOOTING

### Excessive exhaust noise

- Broken exhaust system
- Exhaust gas leak

### Poor performance

- Deformed exhaust system
- Exhaust gas leak
- Clogged muffler

## FRAME/BODY PANELS/EXHAUST SYSTEM

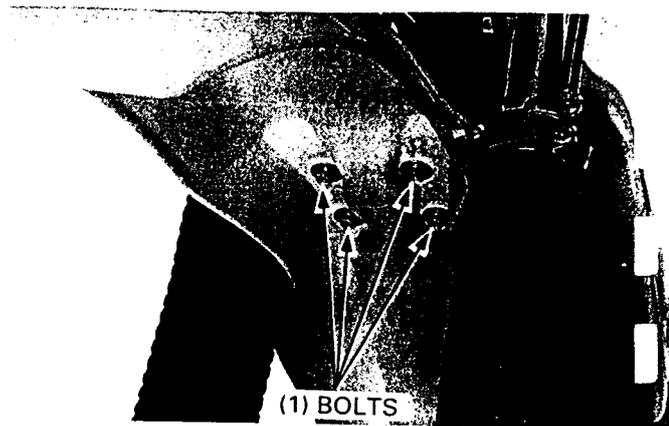
### FRONT FENDER

#### REMOVAL

Remove the bolts, washers and collars.  
Remove the front fender.

#### INSTALLATION

Installation is in the reverse order of removal.



### SIDE COVER

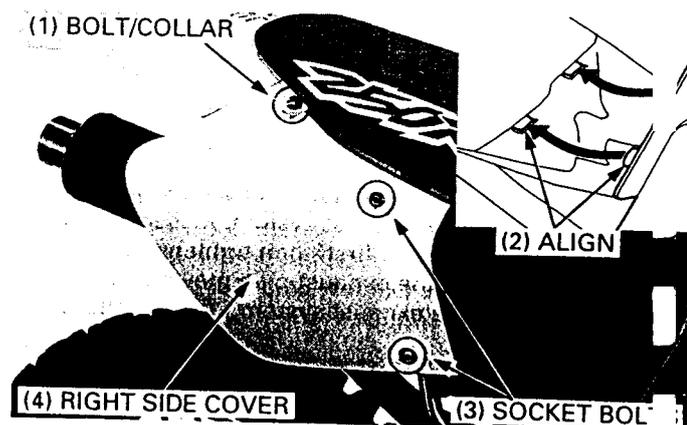
#### REMOVAL

Remove the bolt/collar and socket bolts.  
Remove the side cover.

#### INSTALLATION

Install the side cover aligning its tabs with the grooves on the rear fender.

Install and tighten the bolts and socket bolts.



### SEAT

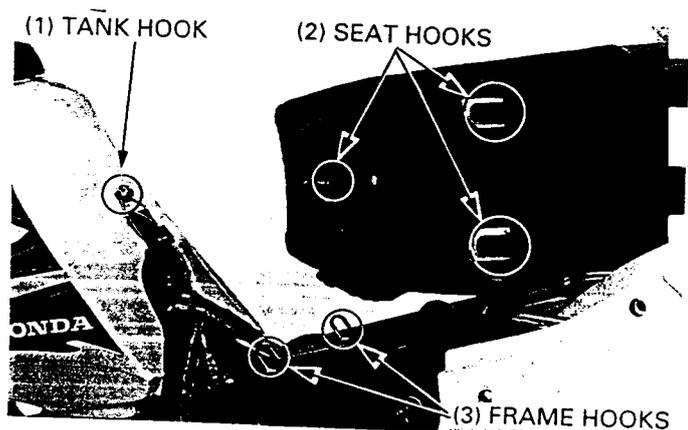
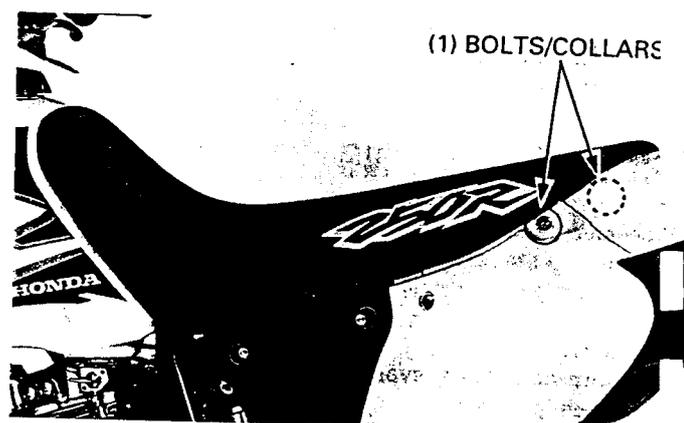
#### REMOVAL/INSTALLATION

Remove the bolts/collars.  
Remove the seat.

Installation is in the reverse order of removal.

#### NOTE

- At installation, align the front hook of the seat with the fuel tank boss and both side hooks with the frame hooks.



## REAR FENDER/MUD GUARD

### REMOVAL/INSTALLATION

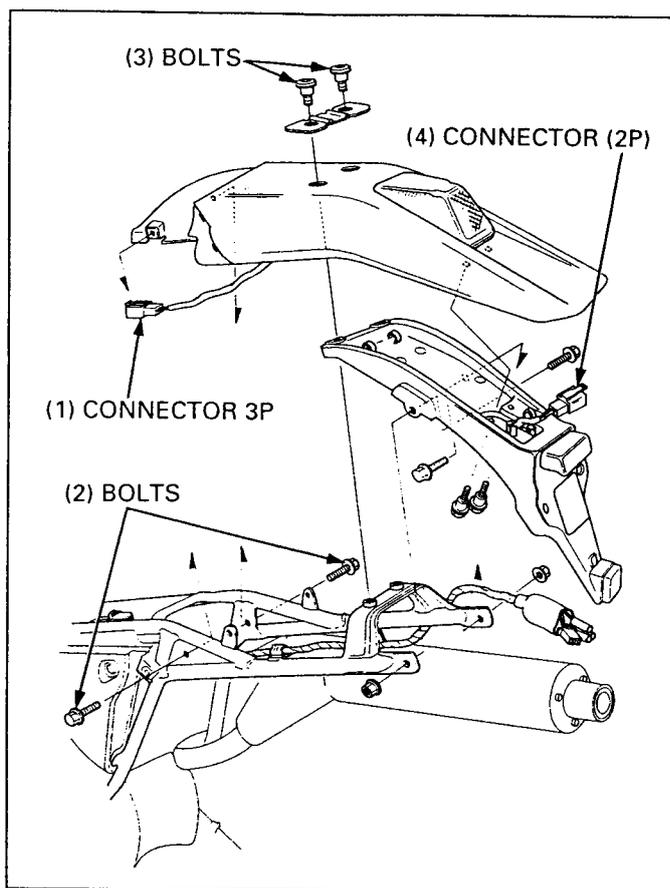
#### REAR FENDER:

Remove the seat and side covers (page 2-2).  
Disconnect the taillight 3P (BI) connector.  
Remove the bolts and rear fender.

#### MUD GUARD:

Disconnect the 2P (RED) connector.  
Remove the bolts, nut and mud guard.

Installation is in the reverse order of removal.



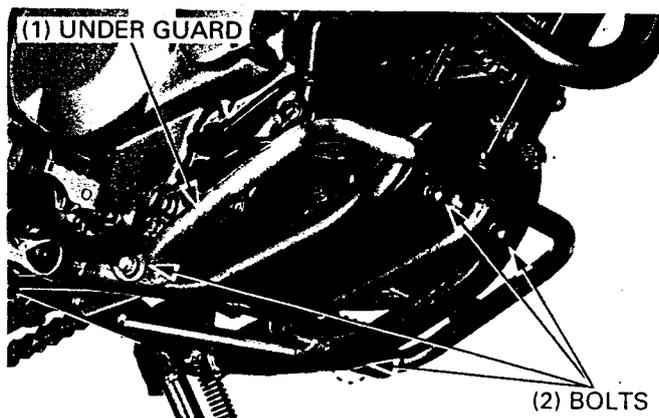
## UNDER GUARD

### REMOVAL

Remove the bolts and under guard.

### INSTALLATION

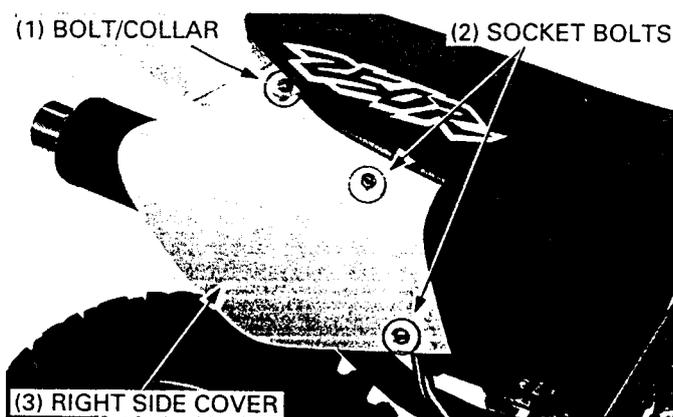
Installation is in the reverse order of removal.



## EXHAUST PIPE/MUFFLER

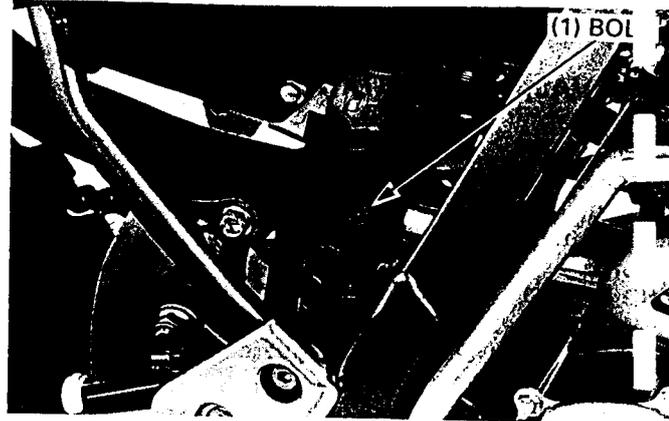
### REMOVAL

Remove the right side cover (page 2-2).

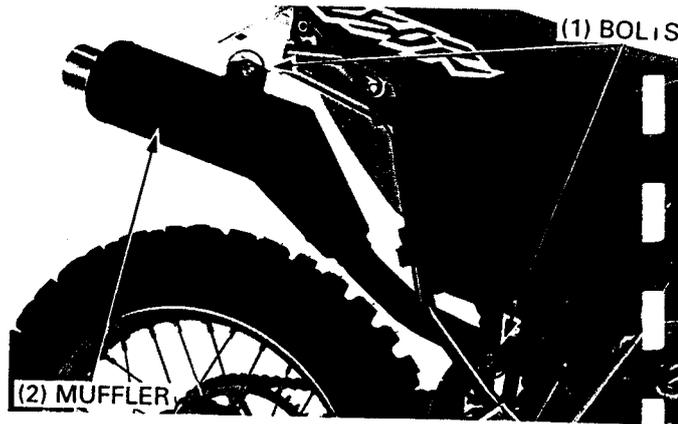


## FRAME/BODY PANELS/EXHAUST SYSTEM

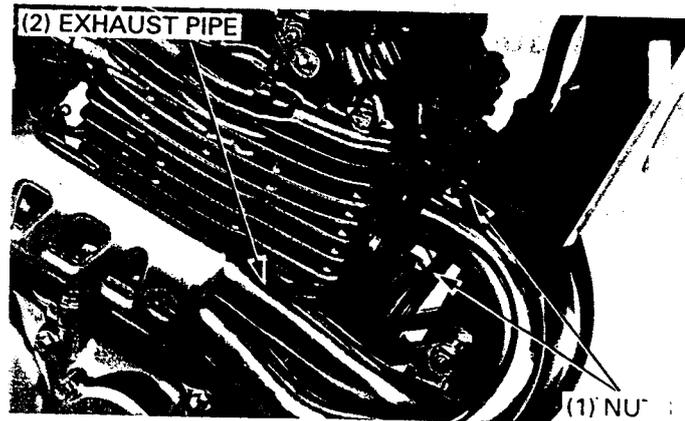
Loosen the muffler clamp bolt.



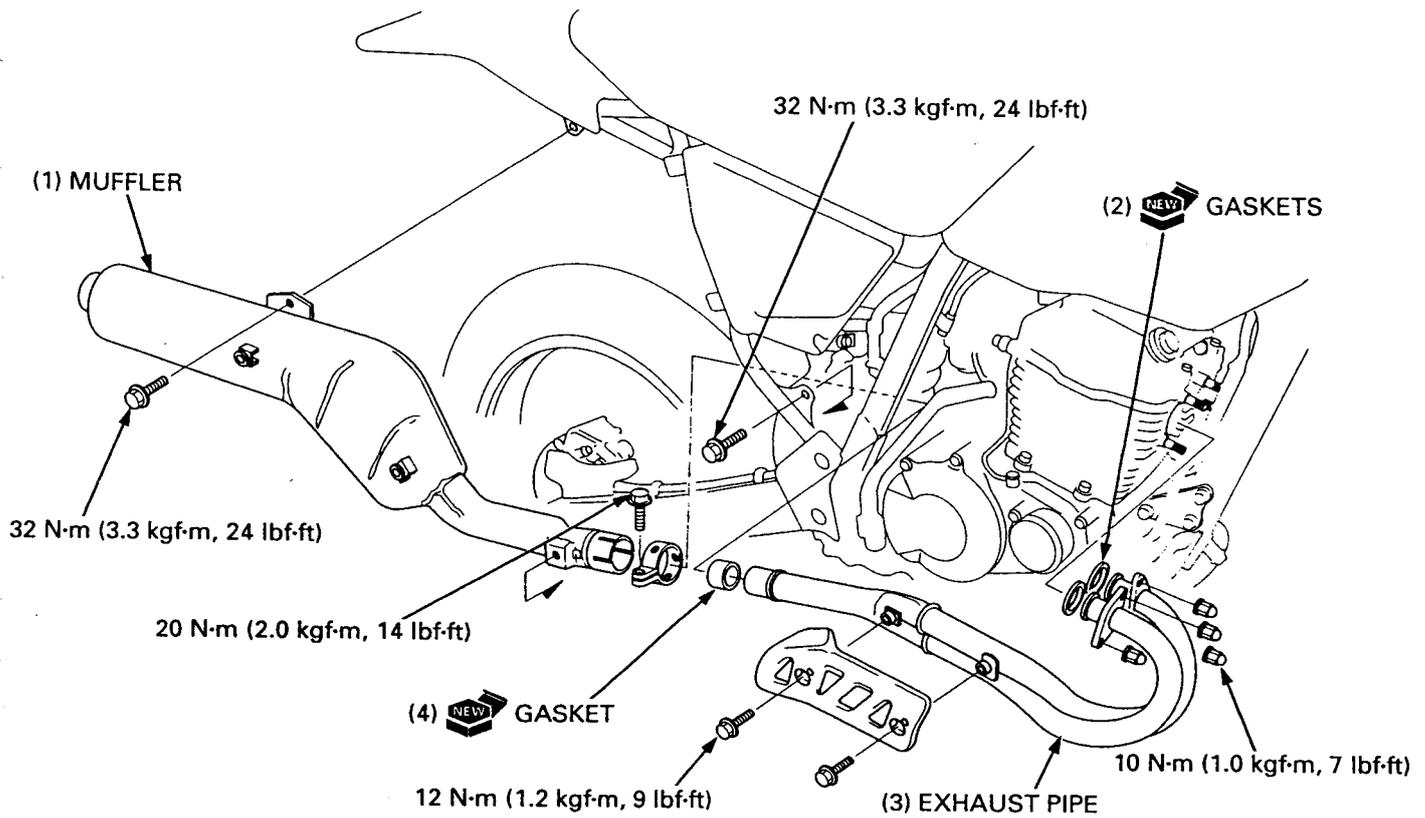
Remove the muffler mounting bolts and muffler.



Remove the exhaust pipe joint nuts and exhaust pipe.



INSTALLATION



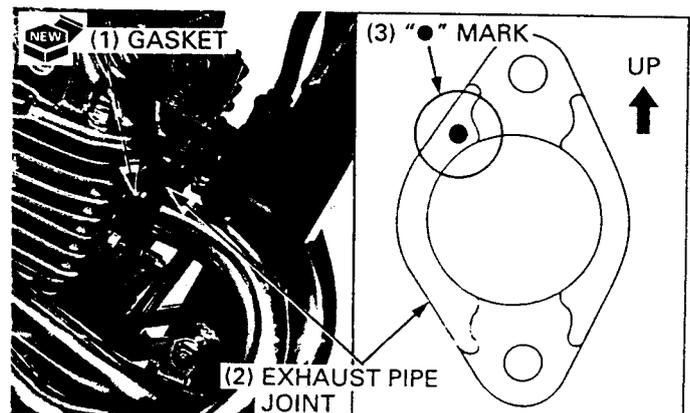
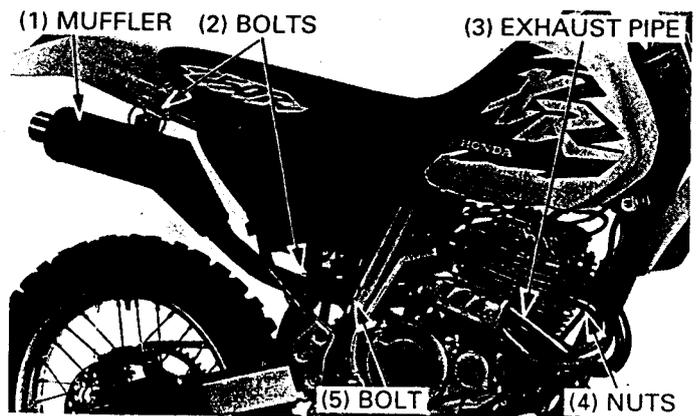
Installation is in the reverse order of removal.

TORQUE:

- Exhaust pipe joint nut: 10 N·m (1.0 kgf·m, 7 lbf·ft)
- Muffler clamp bolt: 20 N·m (2.0 kgf·m, 14 lbf·ft)
- Muffler mounting bolt: 32 N·m (3.3 kgf·m, 24 lbf·ft)

NOTE

- Always replace the gaskets with new ones.
- Install the exhaust pipe joint with the "●" mark facing up.
- Loosely install all of the exhaust pipe fasteners. Always tighten the exhaust pipe joint nuts first, then tighten the mounting fasteners. If you tighten the mounting fasteners first, the exhaust pipe may not seat properly.



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MEMO

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# 3. MAINTENANCE

3

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## SERVICE INFORMATION

### SPECIFICATION

ITEM		SPECIFICATIONS		SERVICE LIMIT
Throttle grip free play		2 – 6 mm (1/12 – 1/4 in)		—
Spark plug		NGK	NIPPONDENSO	—
	Standard	CR9EH-9	U27FER9	—
	For cold climate (below 5°C/41°F)	CR8EH-9	U24FER9	—
Spark plug gap		0.8 – 0.9 (0.031 – 0.035)		—
Valve clearance	IN	0.10 ± 0.02 (0.004 ± 0.001)		—
	EX	0.12 ± 0.02 (0.005 ± 0.001)		—
Engine oil capacity	at draining	1.3 liter (1.37 US qt, 1.14 Imp qt)		—
	at disassembly	1.7 liter (1.79 US qt, 1.50 Imp qt)		—
	at oil filter change	1.4 liter (1.47 US qt, 1.23 Imp qt)		—
Recommended engine oil		API service Classification: SF or SG Viscosity: SAE 10W – 40 or 20W – 50		—
Decompressor lever free play		5 – 8 mm (3/16 – 5/16 in)		—
Carburetor idle speed		1,300 ± 100 min <sup>-1</sup> (rpm)		—
Drive chain slack		30 – 40 mm (1-1/4 – 1-5/8 in)		—
Drive chain length	(ED, DK types)	—		1,659 mm (65.3 in)
	(U type)	—		1,611 mm (63.4 in)
Replacement drive chain		D.I.D. 520VC5 or RK 520MOZ9		—

## MAINTENANCE

ITEM		SPECIFICATIONS	SERVICE I
Drive chain guide slider thickness		—	To the indicate
Drive chain slider thickness		—	4.0 mm (0. i
Recommended brake fluid		DOT 4	—
Rear brake pedal height		75 mm (3.0 in)	—
Clutch lever free play		10 – 20 mm (3/8 – 3/4 in)	—
Tire size	Front	(ED, DK types)	80/100 – 21 51M
		(U type)	3.00 – 21 51P
	Rear	(ED, DK types)	100/100 – 18 59M
		(U type)	4.00 – 18 64 P
Tire brand	Bridgestone (ED, DK types)	Front	M23
		Rear	M22
	IRC (U type)	Front	TR8
		Rear	TR8
Cold tire pressure	(ED, DK types)		100 kPa (1.0 kgf/cm <sup>2</sup> , 15 psi)
	(U type)	Front	150 kPa (1.50 kgf/cm <sup>2</sup> , 22 psi)
		Rear	125 kPa (1.25 kgf/cm <sup>2</sup> , 18 psi)
Tire cleat depth		—	3 mm (0.8 in)
Cylinder compression	Valve clearance at standard (decompressor effected)		637 – 735 kPa (6.5 – 7.5 kgf/cm <sup>2</sup> , 92 – 107 psi) at 600 min <sup>-1</sup> (rpm)
	Valve clearance at 1 mm (0.04 in) (decompressor not effected)		1,177 – 1,275 kPa (12.0 – 13.0 kgf/cm <sup>2</sup> , 171 – 185 psi)

## TORQUE VALUES

Fuel valve mounting bolt	9 N·m (0.9 kgf·m, 6.5 lbf·ft)
Spark plug	12 N·m (1.2 kgf·m, 9 lbf·ft)
Valve adjust lock nut (IN)	24 N·m (2.4 kgf·m, 17 lbf·ft)
(EX)	26 N·m (2.6 kgf·m, 19 lbf·ft)
Crankshaft hole cap	8 N·m (0.8 kgf·m, 5.8 lbf·ft) Apply grease to the threads and flange surface.
Valve hole cap	15 N·m (1.5 kgf·m, 11 lbf·ft) Apply clean engine oil to the O-ring.
Timing hole cap	10 N·m (1.0 kgf·m, 7 lbf·ft) Apply grease to the threads and flange surface.
Crankcase oil drain bolt	25 N·m (2.5 kgf·m, 18 lbf·ft)
Down tube oil drain bolt	39 N·m (4.0 kgf·m, 29 lbf·ft)
Oil filter cover bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)
Rear axle nut	93 N·m (9.5 kgf·m, 69 lbf·ft) U-nut.
Front brake lever adjust lock nut	6 N·m (0.6 kgf·m, 4.3 lbf·ft)
Side stand pivot bolt	10 N·m (1.0 kgf·m, 7 lbf·ft)
nut	39 N·m (4.0 kgf·m, 29 lbf·ft) U-nut.
Spoke nipple	3.8 N·m (0.38 kgf·m, 2.7 lbf·ft)
Rim lock	15 N·m (1.5 kgf·m, 11 lbf·ft)

## TOOLS

<b>Special</b>	
Compression gauge attachment	07908 – KK60000
Nipple wrench	07701 – 0020300

# MAINTENANCE SCHEDULE

Perform the PRE-RIDE INSPECTION in the Owner's Manual at each scheduled maintenance period.

I: Inspect and clean, Adjust, Lubricate, or Replace if necessary.

R: Replace, C: Clean, L: Lubricate, A: Adjust

The following items require some mechanical knowledge. Certain items (particularly those marked \* and \*\*) may require more technical information and tools. Consult an authorized Honda dealer.

ITEM	FREQUENCY	NOTE	BREAK-IN MAINTENANCE	REGULAR SERVICE INTERVAL	Refer to page
			First week of operation-about 200 mi (350 km)	Every 30 operating days-about 1,000 mi (1,600 km)	
* FUEL LINE				I	3-5
** FUEL STRAINER SCREEN				C	3-5
* THROTTLE OPERATION				I	3-5
AIR CLEANER		NOTE 1		C	3-6
SPARK PLUG				I	3-7
* VALVE CLEARANCE			I	I	3-8
ENGINE OIL			R	R	3-9
ENGINE OIL FILTER			R	R	3-11
* ENGINE OIL STRAINER SCREEN IN DOWN TUBE				C	4-2
* DECOMPRESSOR SYSTEM			I	I	3-12
* ENGINE IDLE SPEED			I	I	3-13
DRIVE CHAIN		NOTE 1	I, L	NOTE 3	3-13
DRIVE CHAIN SLIDER			I	I	3-15
BRAKE FLUID		NOTE 2		I	3-15
BRAKE PAD WEAR				I	3-16
BRAKE SYSTEM			I	I	3-16
BRAKE LIGHT SWITCH				I	3-17
* HEADLIGHT AIM				I	3-17
CLUTCH SYSTEM			I	I	3-17
SIDE STAND				I	3-18
* SUSPENSION				I	3-19
* SPARK ARRESTER				NOTE 4	3-19
* NUTS, BOLTS, FASTENERS			I	I	3-20
** WHEELS/TIRES			I	I	3-20
** STEERING HEAD BEARINGS			I	I	3-21

\* Should be serviced by an authorized Honda dealer, unless the owner has the proper tools and service data and is mechanically qualified.

\*\* In the interest of safety, we recommend these items be serviced only by an authorized Honda dealer.

- Notes:
1. Service more frequently when riding in unusually wet or dusty area.
  2. Replace every 2 years, or at indicated odometer interval, whichever comes first. Replacement requires mechanical skill.
  3. Every 10 operating days-about 300 mi (500 km) : I, L
  4. 1,000 mi (1,600 km) or every 100 operating hours: C

## MAINTENANCE

# COMPETITION MAINTENANCE SCHEDULE

Check all items before each race.

Refer to the REGULAR MAINTENANCE SCHEDULE (page 3-3) for regular (non-competition use) service intervals.

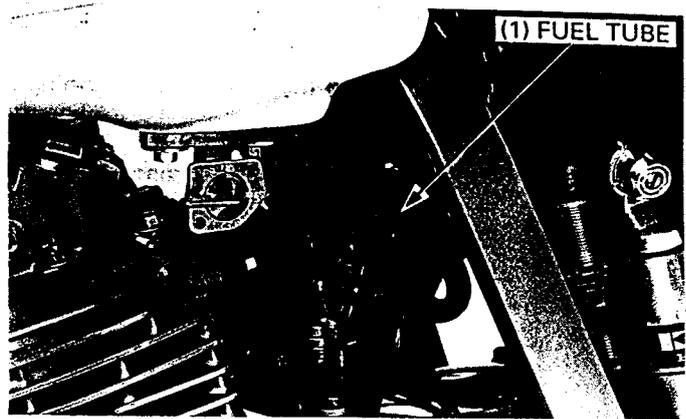
ITEM	INSPECT FOR	ACTION AS REQUIRED	REFER TO PAGE
ENGINE OIL	Oil level, leakage	Supply or change	3-9
FUEL TANK	Damage, leakage	Replace	3-5
BRAKE SYSTEM	Brake lever free play, brake pedal height, braking efficiency and wear beyond service limit	Adjust or replace	3-1
BRAKE FLUID	Fluid level, leakage	Supply or change	3-1
WHEELS/TIRES	Tire pressure, wear or damage, Spoke tightness and Rim lock tightness	Adjust, tighten or replace	3-20
DRIVE CHAIN	Slack, lubricate, retainer clip security Length: 1,691 mm (66.6 in) /107 pins max	Adjust, tighten or replace	3-13
SPROCKETS	Wear and secure installation	Tighten or replace	3-13
SEAT	Security	Tighten	2-2
CLUTCH DISCS	Proper operation, wear (Note 1)	Replace	3-17
AIR CLEANER ELEMENT	Contamination or tears	Clean or replace	3-6
ENGINE STOP SWITCH	Proper operation	Correct or replace	16-8
NUTS, BOLTS, FASTENERS	Tightness	Tighten	3-20
FUEL LINE	Deterioration, damage or leakage	Replace	3-5
VALVE CLEARANCE	Correct clearance	Adjust	3-8
CAM CHAIN	Excessive noise	Replace	11-3
ENGINE IDLE SPEED	Correct idle speed	Adjust	3-13
DECOMPRESSOR SYSTEM	Proper operation, lever free play	Adjust	3-12
SPARK PLUG	Tightness, proper heat range, spark plug wire looseness and damage	Tighten or replace	3-7
STEERING HEAD	Free rotation of handlebars and steering stem nut tightness	Adjust or tighten	3-21
FRONT SUSPENSION	Smooth operation, no oil leaks, good boot condition and proper oil volume	Adjust or Replace	3-19
REAR SUSPENSION	Smooth operation, oil leaks and spring length	Adjust or replace	3-19
SWINGARM BEARINGS	Smooth operation	Lubricate or replace	3-19
REAR SUSPENSION LINKAGE BEARINGS	Smooth operation	Lubricate or replace	3-19
CONTROL CABLES	Smooth operation, inner cable damage, kinks and correct routing	Lubricate or replace	1-21
ENGINE MOUNTING BOLTS	Tightness	Tighten	6-5
SPARK ARRESTER	Clogged	Clean	3-19

Note 1. Competition use necessitates more frequent service.

## FUEL TANK

### FUEL LINE

Check the fuel lines for deterioration, damage or leakage.  
Replace the fuel lines if necessary.



### FUEL STRAINER SCREEN

**⚠ WARNING**

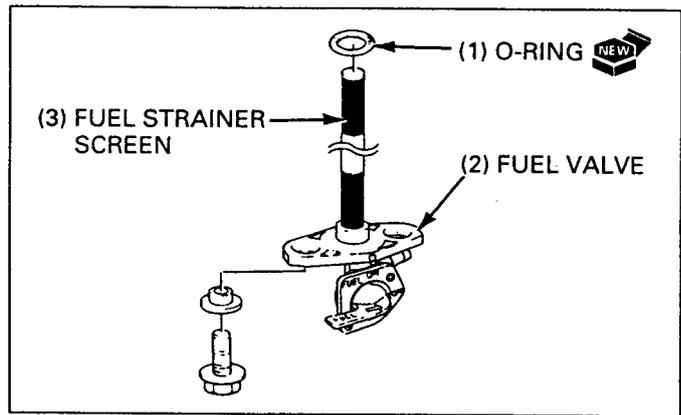
- Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the work area or where gasoline is stored.
- Wipe up spilled gasoline at once.

Turn the fuel valve OFF, disconnect the fuel line from the carburetor.  
Turn the fuel valve to RES and drain the fuel into an approved gasoline container.  
Remove the fuel tank (page 5-3).

Remove the two bolts attaching the fuel valve to the fuel tank, then remove the fuel valve with its strainer screen.  
Clean the fuel strainer screen.  
Install a new O-ring to the fuel valve.  
Tighten the bolts to the specified torque.

**TORQUE: 9 N·m (0.9 kgf·m, 6.5 lbf·ft)**

Install the fuel tank and connect the fuel line.  
After filling the fuel tank, check for fuel leaks.



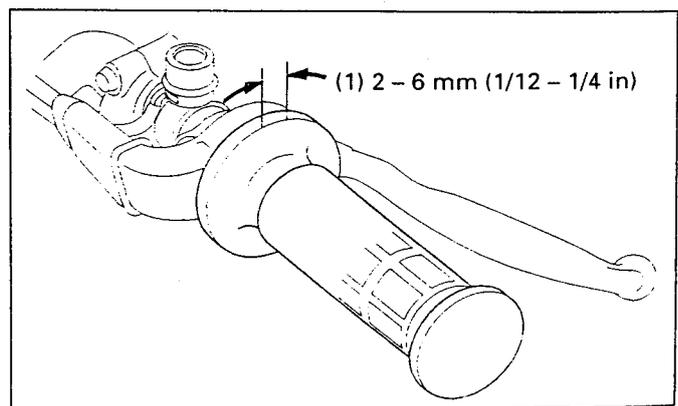
## THROTTLE OPERATION

Check that the throttle grip opens smoothly to full throttle and fully closes, automatically, in all steering positions.

Make sure there is no deterioration, damage, or kinking in the throttle cables, and that the throttle grip free play is 2 – 6 mm (1/12 – 1/4 in) at the throttle grip flange.

Throttle grip free play can be adjusted at either end of the throttle cable. Replace any damaged parts before beginning this adjustment.

Minor adjustments are made with the upper adjuster.  
Adjust the free play by sliding the rubber cover off, loosening the lock nut and turning the adjuster.  
Tighten the lock nut and put the rubber cover back.  
Recheck for proper throttle operation.



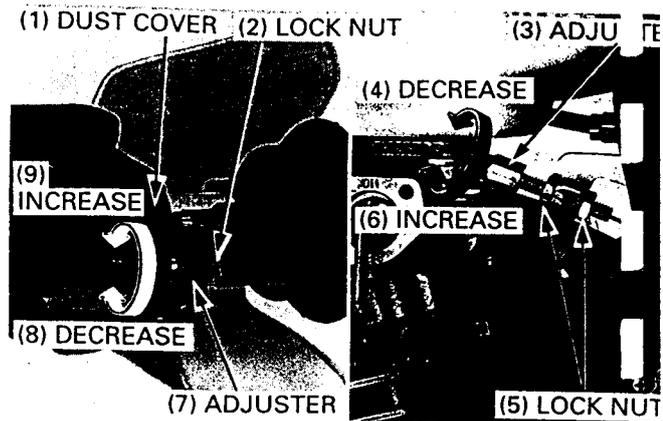
## MAINTENANCE

Major adjustments are made with the lower adjuster on the carburetor.

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

Tighten the lock nut.

Recheck throttle operation. Replace any damaged parts.



## AIR CLEANER

Open the air cleaner housing maintenance lid.

Release the air cleaner element clamp and remove the element with the holder.

Separate the element from the holder.

### ⚠ WARNING

- *Never use gasoline or low flash point solvents for cleaning the air cleaner. A fire or explosion could result.*

Wash the element in non-flammable or high flash point solvent.

Squeeze out the solvent thoroughly, and allow the element to dry.

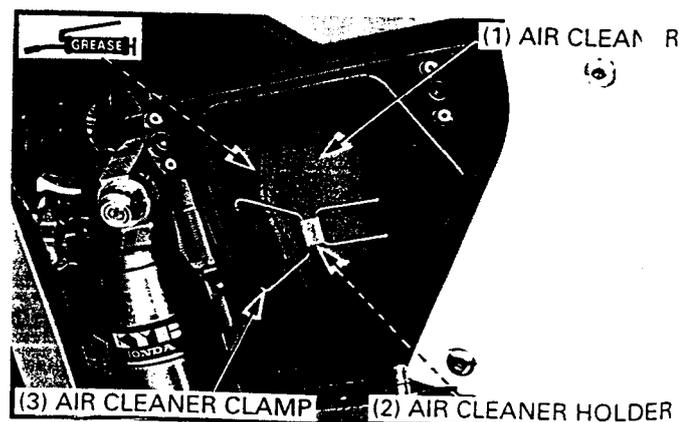
Apply approximately 32 – 37 cc (1.1 – 1.3 oz) of gear oil (SAE #80 – 90) from the inside of the element.



### CAUTION

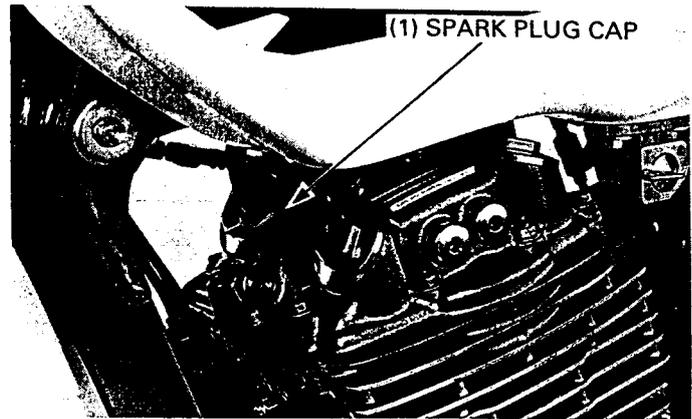
- *If the air cleaner assembly is not installed correctly, dirt and dust may enter the engine resulting in rapid wear of piston rings and cylinder.*

Install the air cleaner element to the element holder.  
Apply grease to the air cleaner element to air cleaner housing contact area.



## SPARK PLUG

Clean around the spark plug base with compressed air.  
Disconnect the spark plug cap and remove the spark plug.



### INSPECTION

Usually inspect the spark plug. Discard it if the insulator is cracked or chipped.

#### RECOMMENDED SPARK PLUG:

	NGK	NIPPONDENSO
Standard	CR9EH-9	U27FER9
For cold climate (below 5°C/41°F)	CR8EH-9	U24FER9

Measure the spark plug gap with a wire-type feeler gauge.  
Adjust the gap by bending the side electrode carefully.

#### SPARK PLUG GAP: 0.8 – 0.9 mm (0.031 – 0.035 in)

Check the following and replace the spark plug if necessary.

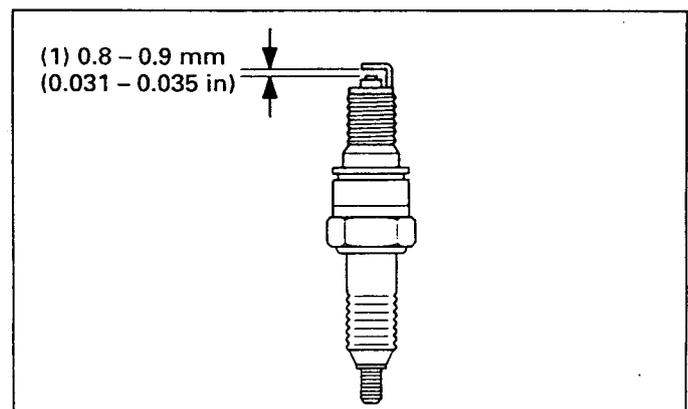
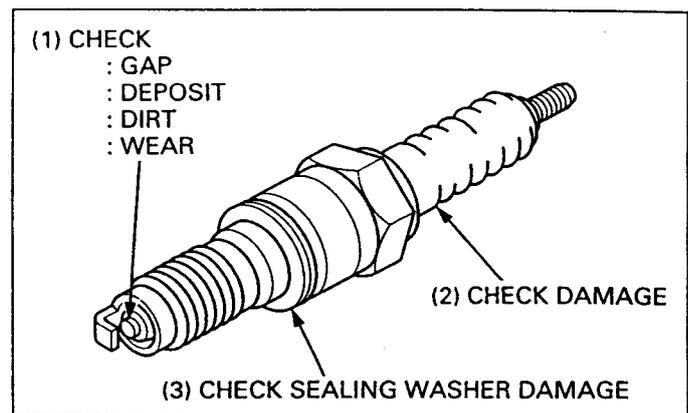
- Insulator for damage
- Electrodes for wear
  - Electrodes burning condition, coloration;
    - dark to light brown indicates good condition.
    - excessive lightness indicates malfunctioning ignition system or lean mixture.
    - wet or black sooty deposit indicates over-rich mixture.

#### REUSING A SPARK PLUG

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

Reinstall the spark plug in the cylinder head and hand tighten, then torque to specification.

**TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)**



## MAINTENANCE

### REPLACING A SPARK PLUG

Set the plug gap to specification with a wire-type feeler gauge.

#### CAUTION

- Do not overtighten the spark plug.

Install and hand tighten the new spark plug, then tighten it about 1/8 – 1/4 of a turn after the sealing washer contacts the seat of the plug hole.

### VALVE CLEARANCE

#### NOTE

- Inspect and adjust valve clearance while the engine is cold (below 35°C/95°F).
- Make sure the decompressor valve lifters have some free play during this maintenance.

Remove the crankshaft hole cap and timing hole cap.  
Remove the valve hole caps.

Rotate the flywheel counterclockwise 2 – 3 turn to align the "T" mark with the index notch on the left crankcase cover.  
Make sure the piston is at TDC (Top Dead Center) on the compression stroke.

#### NOTE

- If the crankshaft passed the "T" mark (aligning mark), rotate the crankshaft counterclockwise twice again and align it with the "T" mark. This must be done to prevent the one-way decompressor system from functioning and to obtain the correct valve clearance.

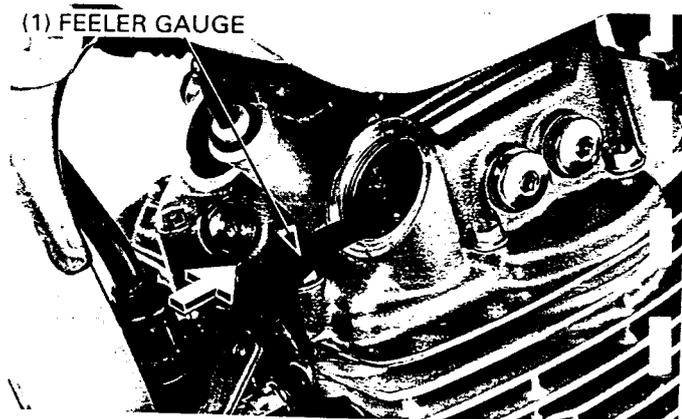
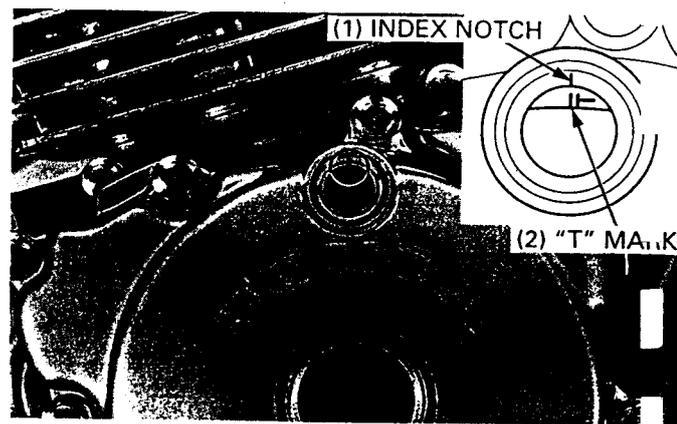
Check the clearance of all four valves by inserting a feeler gauge between the adjusting screw and the sub-rocker arm.

#### NOTE

- When checking the clearance, slide the feeler gauge from the inside out in the direction of the arrow.

#### VALVE CLEARANCE:

IN:  $0.10 \pm 0.02$  mm ( $0.004 \pm 0.001$  in)  
EX:  $0.12 \pm 0.02$  mm ( $0.005 \pm 0.001$  in)

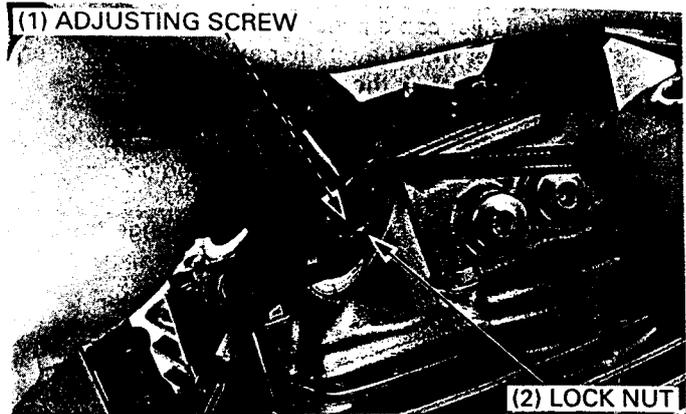


Adjust by loosening the lock nut and turning the adjusting screw until there is a slight drag on the feeler gauge. After tightening the valve adjuster lock nut, recheck the valve clearance.

Hold the adjusting screw and tighten the lock nut.

**TORQUE: IN: 24 N·m (2.4 kgf·m, 17 lbf·ft)**  
**EX: 26 N·m (2.6 kgf·m, 19 lbf·ft)**

Adjust the decompressor lever free play (page 3-12).



Check that O-rings are in good condition, replace it if necessary.

Apply oil to the O-rings.

Install the valve hole caps and tighten to the specified torque.

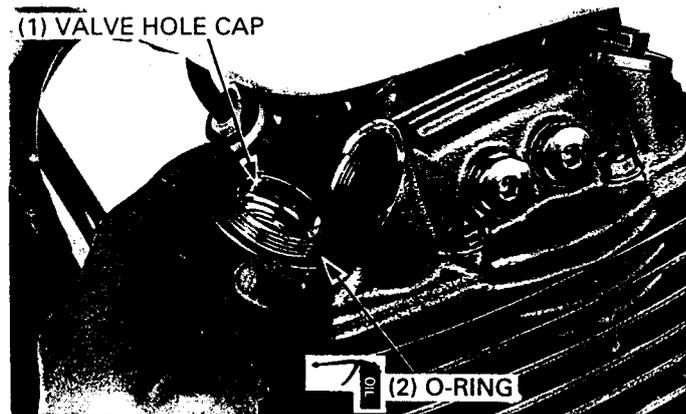
**TORQUE: 15 N·m (1.5 kgf·m, 11 lbf·ft)**

Install the crankshaft hole cap and tighten to the specified torque.

**TORQUE: 8 N·m (0.8 kgf·m, 5.8 lbf·ft)**

Install the timing hole cap and tighten to the specified torque.

**TORQUE: 10 N·m (1.0 kgf·m, 7 lbf·ft)**



## ENGINE OIL

### ▲ WARNING

- *If the engine must be running to do some work, make sure the area is well-ventilated. Never run the engine in an enclosed area. The exhaust contains poisonous carbon monoxide gas that may cause loss of consciousness and lead to death.*

## INSPECTION

### At oil filler cap/dipstick

Support the motorcycle upright on level ground.

Remove the oil filler cap/dipstick.

Check the oil level with the oil filler cap/dipstick by inserting it until the threads touch the filler neck.

Do not screw the cap in when making this check.

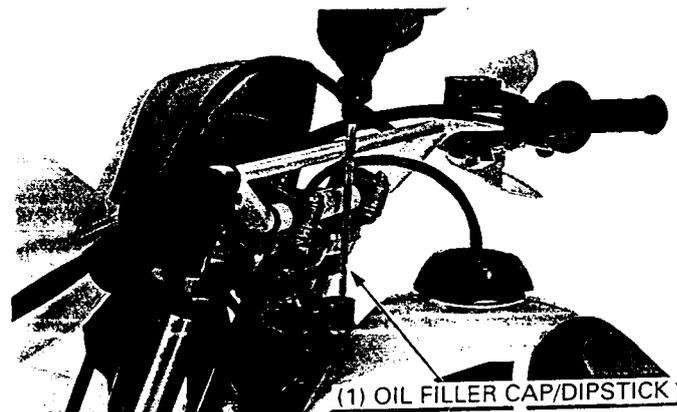
If the oil level is lower than the dipstick, check the oil level with the crankcase oil check bolt (page 3-10).

If the engine oil is to the dipstick or there is oil at the check bolt, check the following.

Support the motorcycle upright on level ground.

Start the engine and let it idle for 5 minutes.

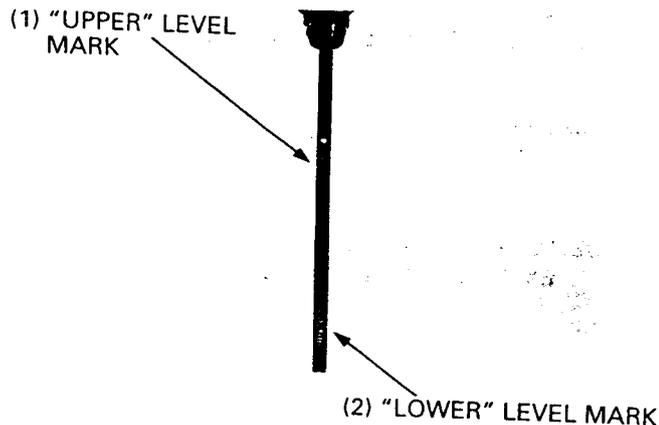
Stop the engine. Check the oil level quickly.



## MAINTENANCE

Remove the oil filler cap/dipstick.  
Check the oil level with the oil filler cap/dipstick by inserting it until the threads touch the filler neck.  
Do not screw the cap in when making this check.  
If the oil level is below the lower mark on the dipstick, fill to the upper level mark with the recommended oil.

Check the engine oil for contamination. Change the engine oil if it is contaminated.

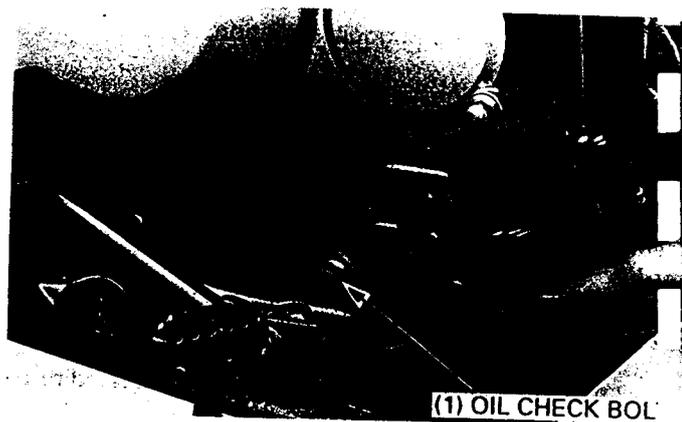


### At crankcase oil check bolt

Remove the crankcase oil check bolt and sealing washer.  
Reinstall the bolt and washer.  
If there is oil flow, start the engine and check the oil level with the oil filler cap/dipstick (page 3-9).

If there is no oil flow, fill to the upper level mark with the recommended oil.

Start the engine and recheck the oil level.



## OIL CHANGE

### CAUTION

- *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 and water as soon as possible after handling used oil.*

### NOTE

- Change the engine oil with the engine warm and the vehicle on level ground to assure complete draining.

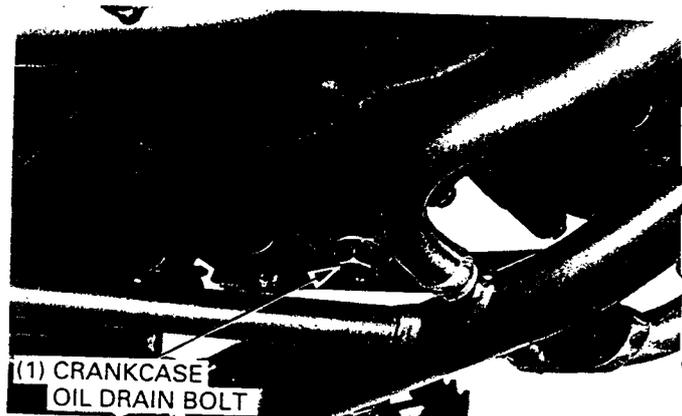
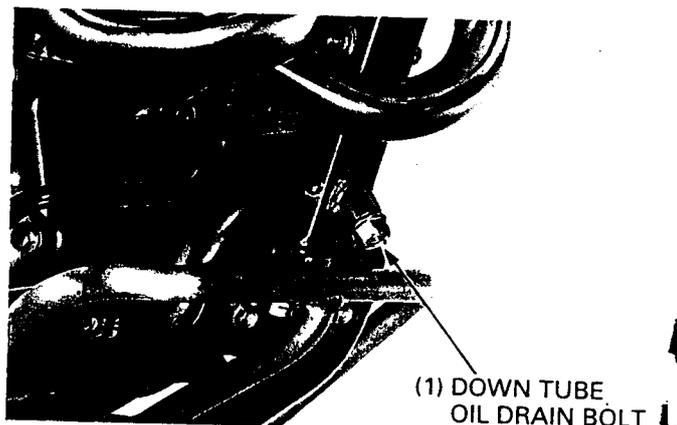
Start the engine and let it idle for a few minutes.  
Stop the engine and remove the oil filler cap/dipstick (page 3-9).

Remove the down tube oil drain bolt and sealing washer.  
Drain the engine oil.

### NOTE

- When draining the oil, avoid spilling oil on the front tire.

Remove the crankcase oil drain bolt and sealing washer.  
Drain the engine oil.



Check the sealing washers for damage.  
Replace if necessary.

Install the down tube oil drain bolt/sealing washer and crankcase oil drain bolt/sealing washer.  
Tighten to the specified torque.

**TORQUE:**

Crankcase oil drain bolt: 25 N·m (2.5 kgf·m, 18 lbf·ft)  
Down tube oil drain bolt: 39 N·m (4.0 kgf·m, 29 lbf·ft)

Clean the oil strainer screen (page 4-2).

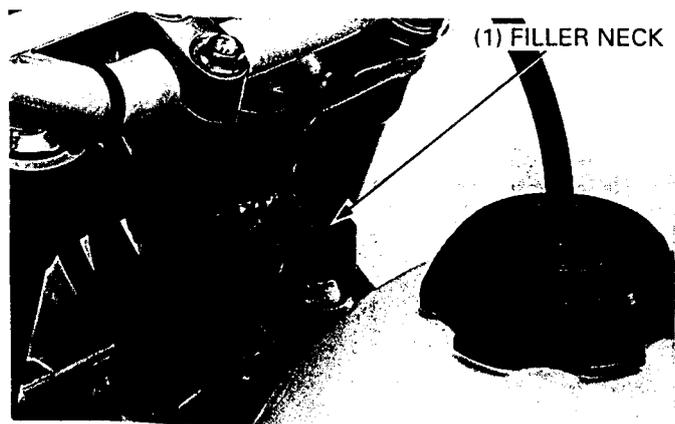
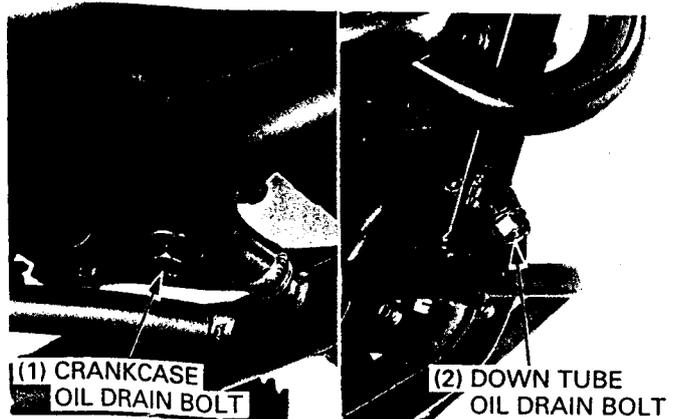
Fill to the filler neck with the correct quantity of the recommended engine oil.

**RECOMMENDED ENGINE OIL:**

API service classification: SF or SG  
Viscosity: 10W - 40 or 20W - 50

**OIL CAPACITY:**

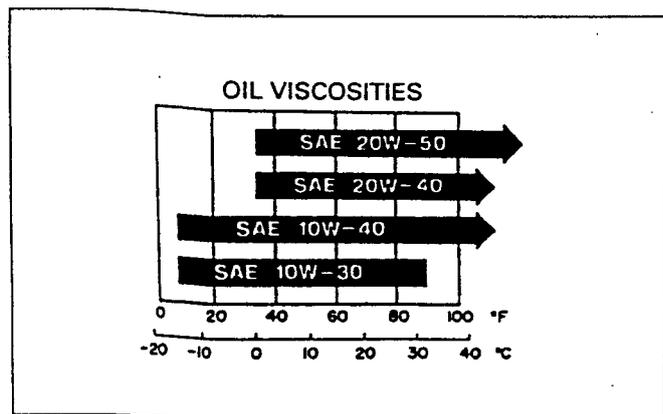
1.3 liter (1.37 US qt, 1.14 Imp qt) at draining  
1.4 liter (1.47 US qt, 1.23 Imp qt) at oil filter change  
1.7 liter (1.79 US qt, 1.50 Imp qt) at disassembly



**NOTE**

- Other viscosities shown in the chart may be used when the average temperature in your riding area is within the indicated range.

Start the engine and check that there are no oil leaks.  
Stop the engine and check the oil level (page 3-9).



**ENGINE OIL FILTER**

Drain the engine oil (page 3-10).  
Remove the oil filter cover bolts.  
Remove the oil filter cover, oil filter, spring.  
Remove the O-ring from the oil filter cover.



## MAINTENANCE

Apply engine oil to a new O-ring and install it to the oil filter cover.

Install the following:

- Spring
- New oil filter with its "OUT SIDE" mark facing out

### CAUTION

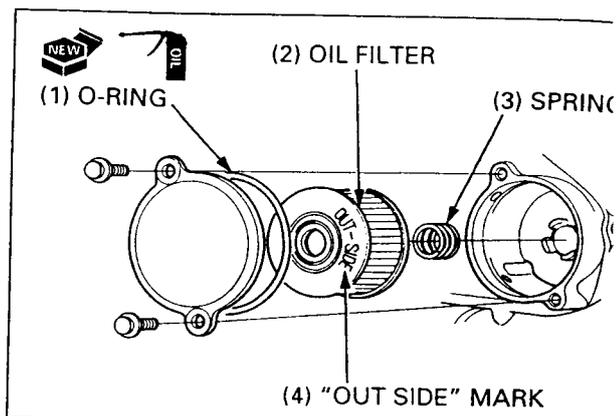
- *Installing the oil filter backwards will result in severe engine damage.*

Install the oil filter cover and tighten the bolts to the specified torque.

**TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)**

Fill to the filler neck with the correct quantity of the recommended engine oil.

Start the engine and check that there are no oil leaks.  
Stop the engine and check the oil level (page 3-9).



## DECOMPRESSOR SYSTEM

### NOTE

- Always adjust the decompressor linkage after adjusting the valve clearance (page 3-8).

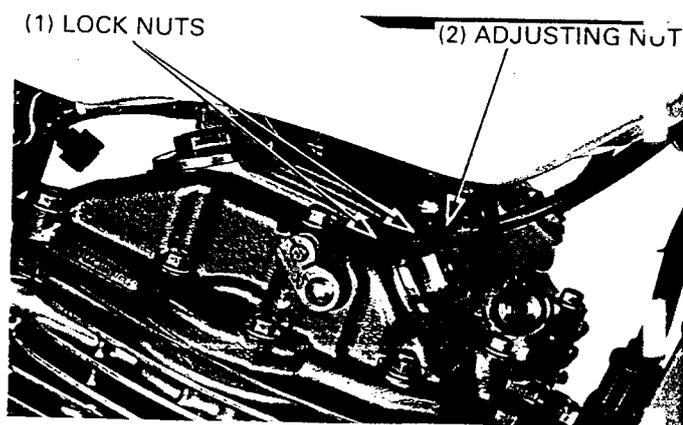
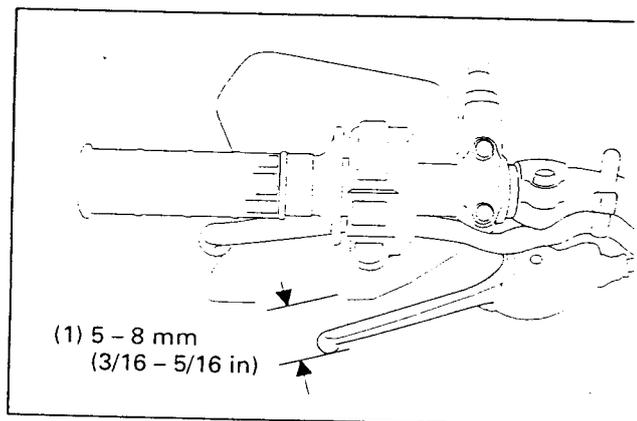
Remove the crankshaft hole cap and timing hole cap.

Rotate the flywheel counterclockwise to align the "T" mark with the index notch. Make sure that the piston is at TDC (Top Dead Center) on the compression stroke.

Measure the free play at the tip of the decompressor lever.

**FREE PLAY: 5 – 8 mm (3/16 – 5/16 in)**

To adjust, loosen the lock nuts.  
Adjust by turning the decompressor adjusting nut at the engine.  
After adjusting, tighten the lock nuts.  
Recheck the free play at the lever.



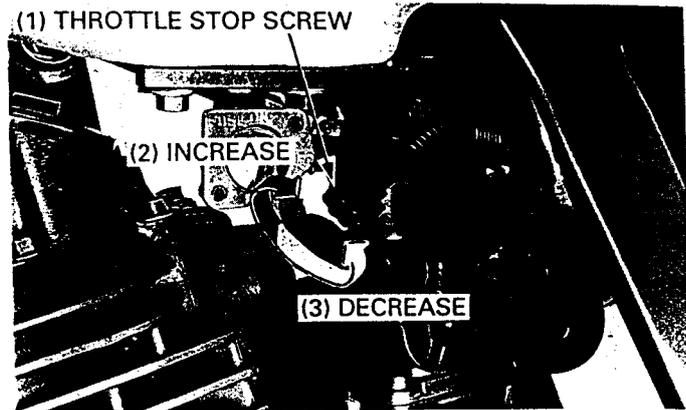
## ENGINE IDLE SPEED

### NOTE

- Inspect and adjust the idle speed after all other engine adjustments are within specifications.
- The engine must be warm for an accurate idle inspection and adjustment. Ten minutes of stop and go riding is sufficient.

Warm up the engine, shift the transmission into NEUTRAL, and hold the motorcycle upright. Connect a tachometer. Turn the throttle stop screw to obtain the specified idle speed.

**IDLE SPEED: 1,300 ± 100 rpm**



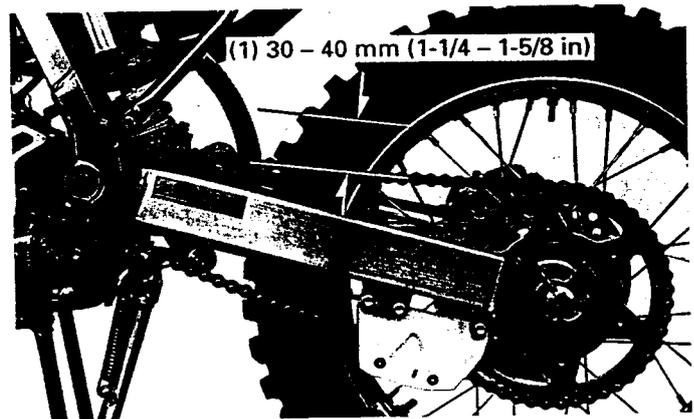
## DRIVE CHAIN/SPROCKET

### ⚠ WARNING

- *Take care to prevent catching your fingers between the chain and sprocket.*

Turn the engine off. Raise the rear wheel off the ground by placing a work stand or box under the engine. Shift the transmission into neutral. Measure the slack in the higher drive chain run midway between the sprockets.

**STANDARD SLACK: 30 – 40 mm (1-1/4 – 1-5/8 in)**



Adjust as follows:

Loosen the rear axle nut, then turn both adjusters equally until the chain slack is correct.

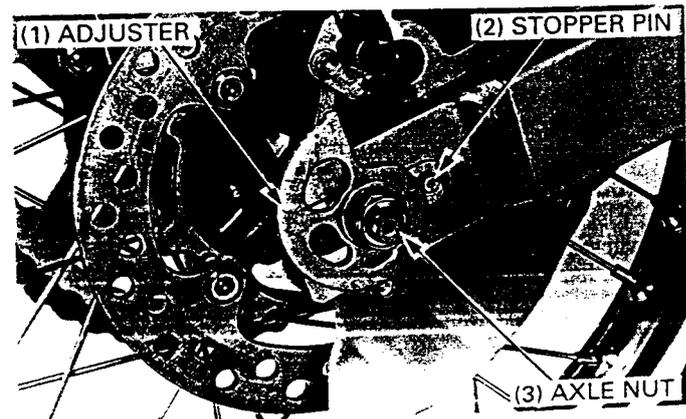
### CAUTION

- *Be sure the same adjuster index marks align with the stopper pins on both sides of the swingarm.*

Tighten the axle nut.

**TORQUE: 93 N·m (9.5 kgf·m, 69 lbf·ft)**

Recheck chain slack and free wheel rotation.

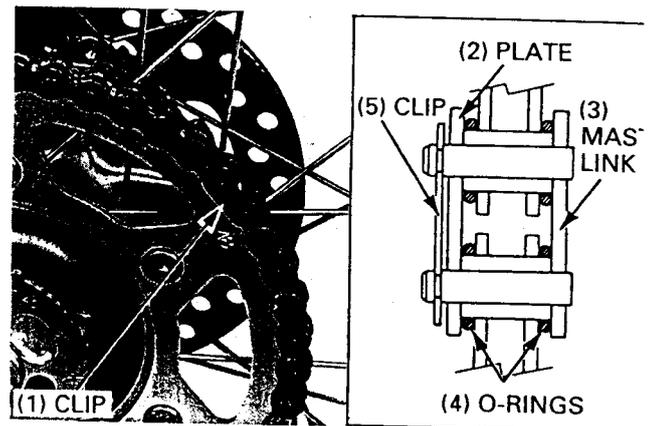


## MAINTENANCE

When the drive chain becomes extremely dirty, it should be removed and cleaned prior to lubrication. Remove the drive sprocket cover. Remove the chain retainer clip carefully. Remove the master link and drive chain.

### CAUTION

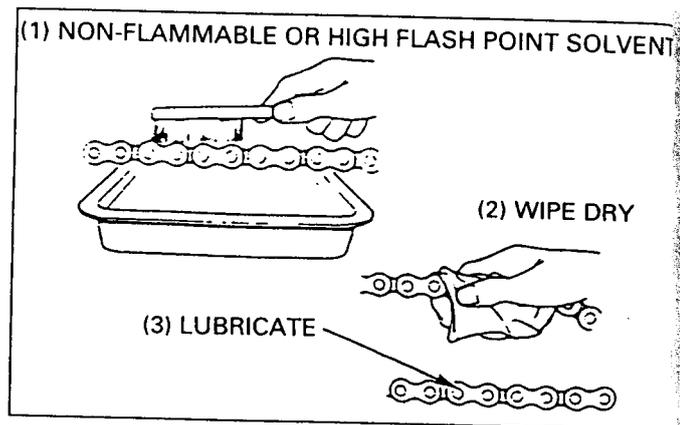
- *Be careful not to lose the O-rings when the clip and master link are removed.*



Clean the drive chain with a non-flammable or high flash point solvent or kerosene that will not damage the O-rings; wipe dry.

### CAUTION

- *Do not use a steam cleaner or high pressure washer because these will damage the O-rings.*

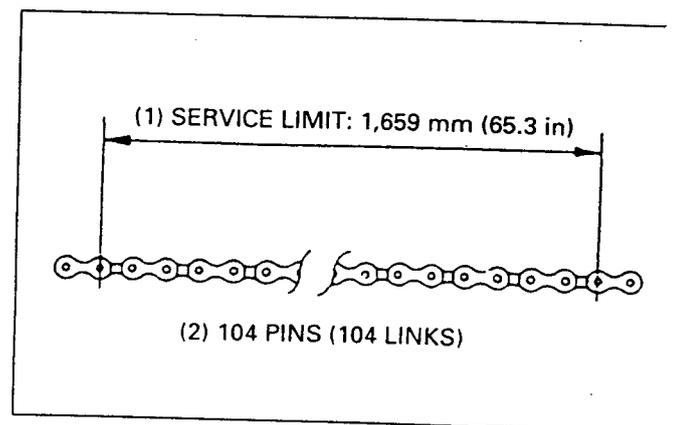


Inspect the drive chain and O-rings for possible wear or damage. Replace the chain if it is worn excessively or damaged.

Measure the drive chain length with the chain held so that all links are straight.

**SERVICE LIMIT: 1,659 mm (65.3 in) at 104 pins**  
**REPLACEMENT DRIVE CHAIN: D.I.D. 520VC5 or RK 520MOZ9**

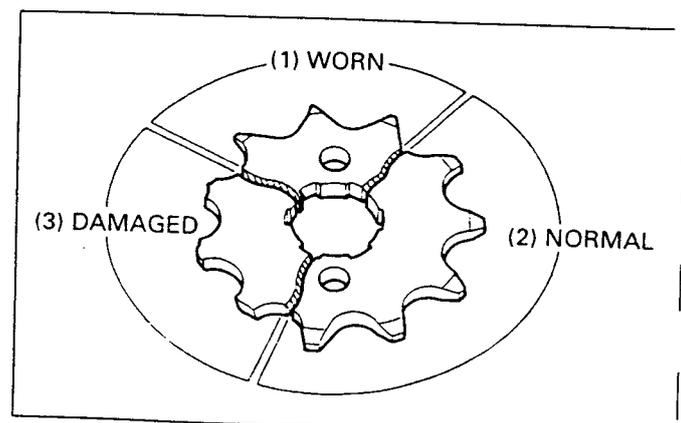
Lubricate the drive chain with SAE #80 - #90 gear oil.



Inspect the sprocket teeth for excessive wear or damage. Replace if necessary.

### NOTE

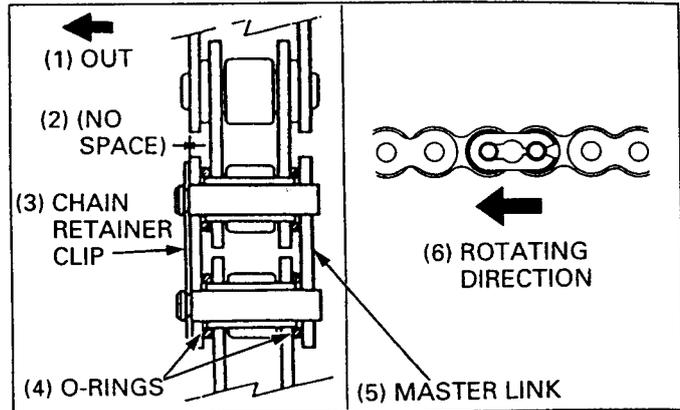
- *Never install a new drive chain on worn sprockets or a worn chain on new sprockets. Both chain and sprockets must be in good condition, or the new replacement parts will wear rapidly.*



Install a new drive chain.  
 Install the master link with O-rings and a chain retaining clip.  
 Adjust the drive chain (page 3-13).

**CAUTION**

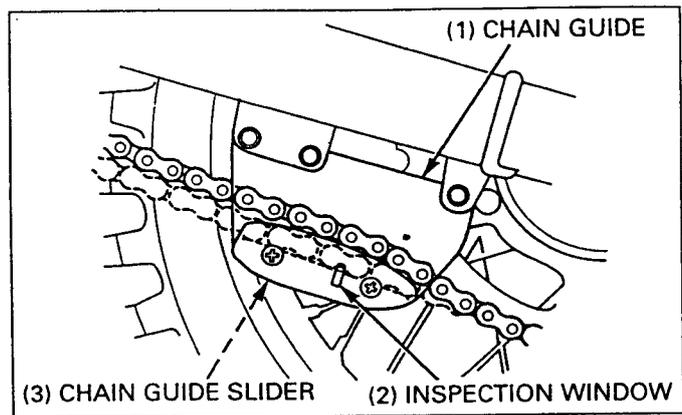
- Do not assemble the drive chain without the four master link O-rings.
- Be sure that there is no space between the master link and the chain retaining clip.



**DRIVE CHAIN SLIDER**

**CHAIN GUIDE SLIDER**

Inspect the chain guide slider for wear and replace it if you can see the chain through the wear limit opening.



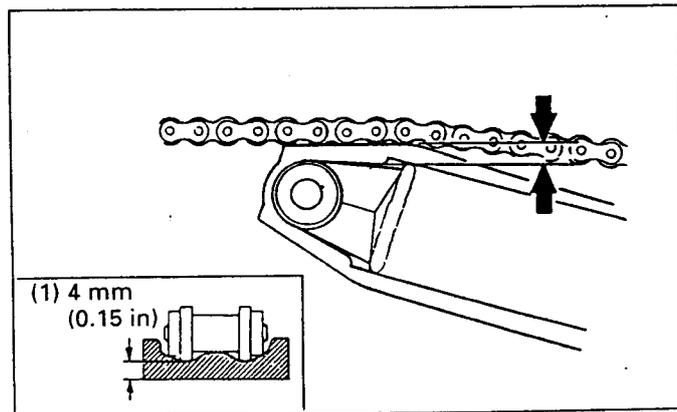
**CHAIN SLIDER**

Check the chain slider for wear.

**SERVICE LIMIT:**  
 Chain slider (from upper surface): 4.0 mm (0.15 in)

**CAUTION**

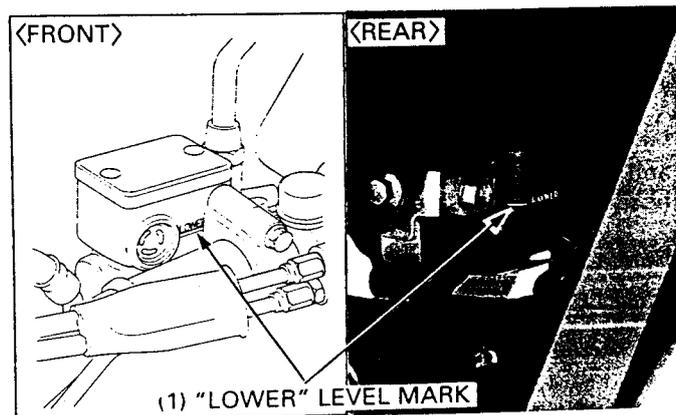
- If the chain slider becomes worn through to the swingarm, the chain will wear against the swingarm.



**BRAKE SYSTEM**

**BRAKE FLUID**

Check the brake fluid reservoir level for the front and rear brakes. If the level is near the lower level mark, check the brake pad wear and add brake fluid.



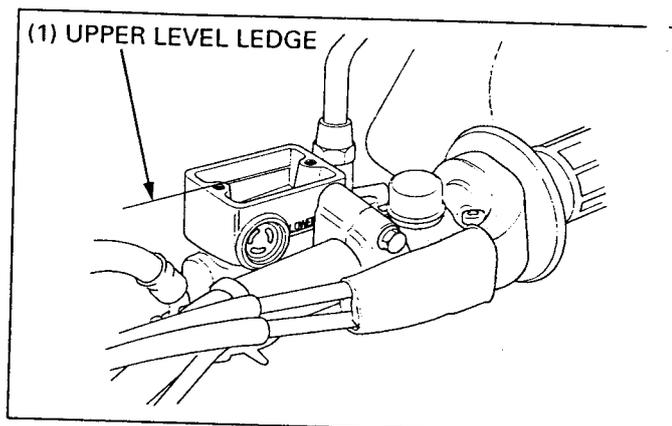
## MAINTENANCE

### Front brake:

Remove the reservoir cover and diaphragm.  
Fill the reservoir with DOT4 Brake Fluid to the casting ledge.

### Rear brake:

Remove the bolt and reservoir.  
Remove the reservoir cap and diaphragm.  
Fill the reservoir with DOT4 Brake Fluid to the upper level mark.



## CAUTION

- Do not remove the cover until the handlebar has been turned so that the reservoir is level.
- Avoid operating the brake lever with the cap removed. Brake fluid will squirt out if the lever is pulled.
- Do not mix different fluid types, as they are not compatible.
- Avoid spilling fluid on painted, plastic or rubber parts. Place a rag over these parts whenever the system is serviced.

Refer to section 15, for brake bleeding procedure.



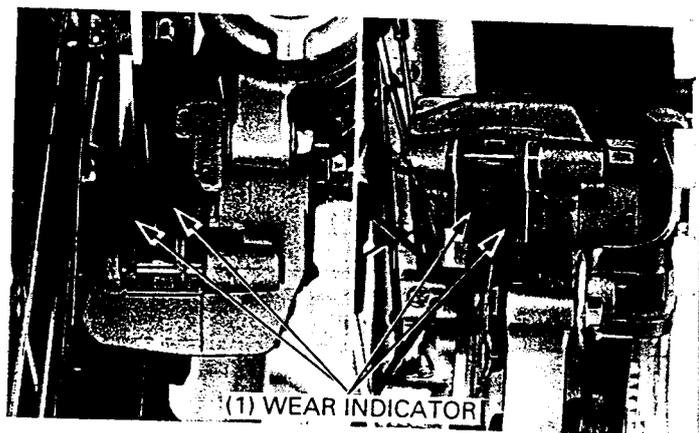
## BRAKE PAD WEAR

### Front brake:

Inspect the pads visually from under the caliper to determine the pad wear.  
Replace the brake pad if the wear line on the pads reaches the edge of the brake disc (page 15-5).

### Rear brake:

Inspect the pads visually from the rear of the caliper to determine the pad wear.  
Replace the brake pad if the wear line on the pads reaches the edge of the brake disc (page 15-5).



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 air from the system.

Inspect the brake hoses and fittings for deterioration, cracks and signs of leakage. Tighten any loose fittings. Replace hoses and fittings as required.

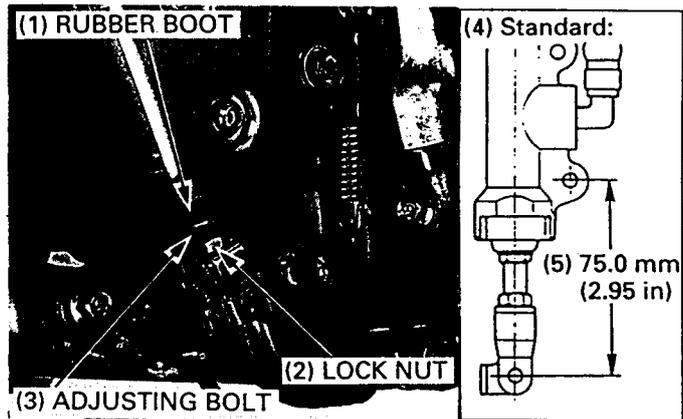
Refer to page 15-3 for brake bleeding procedures.

### RAKE PEDAL HEIGHT

Adjust the brake pedal to the desired height by loosening the lock nut and turning the pedal height adjusting bolt.

**STANDARD: 75.0 mm (2.95 in)**

Tighten the lock nut.

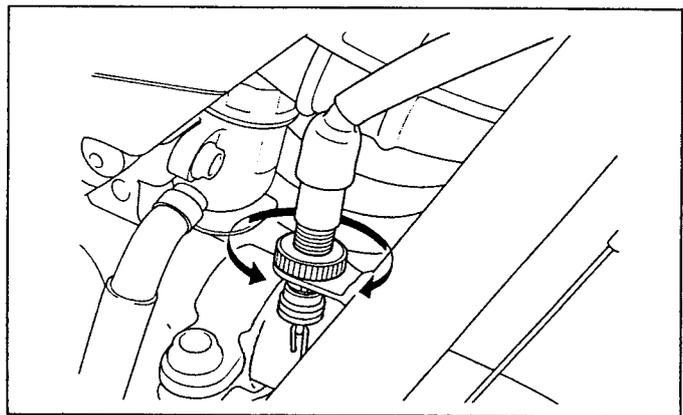


### BRAKE LIGHT SWITCH

**NOTE**

- The front brake light switch does not require adjustment.

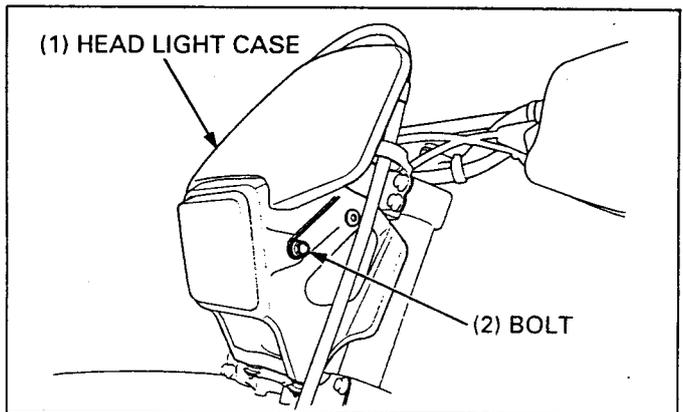
Adjust the brake light switch so that the brake light comes on just prior to the brake actually being engaged. If the light fails to come on, adjust the switch so that the light comes on at the proper time. Hold the switch body and turn the adjusting nut. Do not turn the switch body.



### HEADLIGHT AIM

Remove the headlight case.

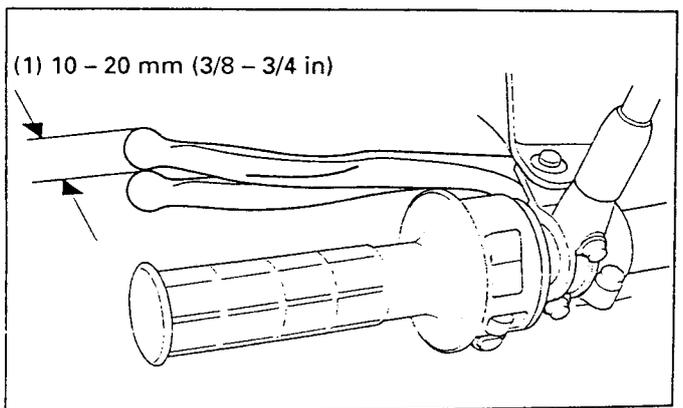
Adjust the vertical beam by moving the headlight upper or lower.



### CLUTCH SYSTEM

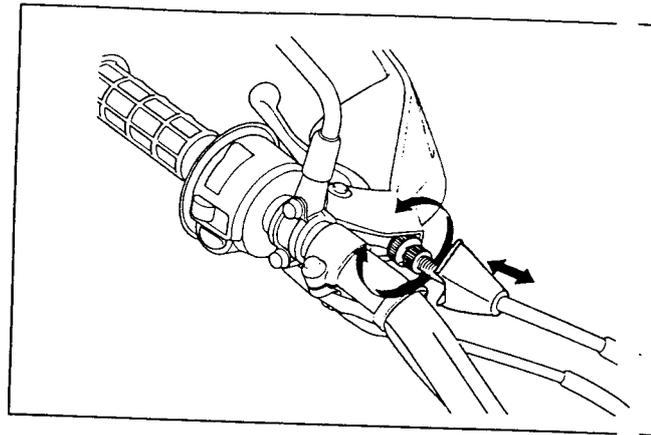
Measure the clutch lever free play at the lever end.

**FREE PLAY: 10 - 20 mm (3/8 - 3/4 in)**

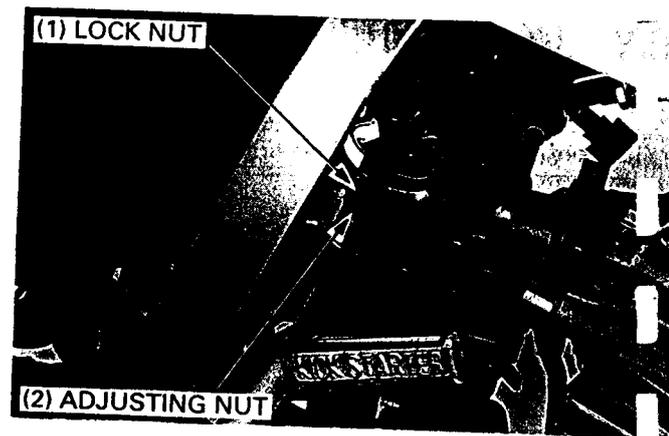


## MAINTENANCE

Minor adjustments are made with the upper adjuster.  
Pull the cover back.  
Loosen the lock nut and turn the adjuster.  
Tighten the lock nut and install the cover.



Adjust as follows:  
Major adjustments are made with the lower adjuster.  
If major adjustment is required, turn the upper adjuster all the way in and back out 1 turn.  
Loosen the lower lock nut and turn the adjusting nut.  
Tighten the lock nuts.  
Check the clutch operation.



## SIDE STAND

Check the side stand spring for damage and/or loss of tension.  
Check that the side stand assembly is not bent and that it moves freely.  
Lubricate the side stand pivot.

Check that the side stand pivot bolt and nut are tightened to their correct torque values.

Tighten the pivot bolt to the specified torque.

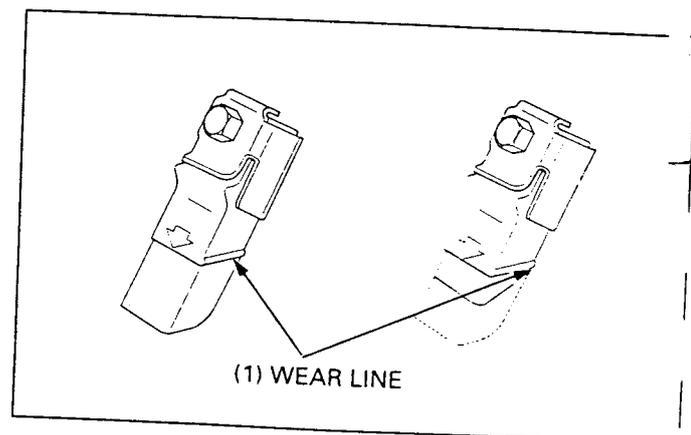
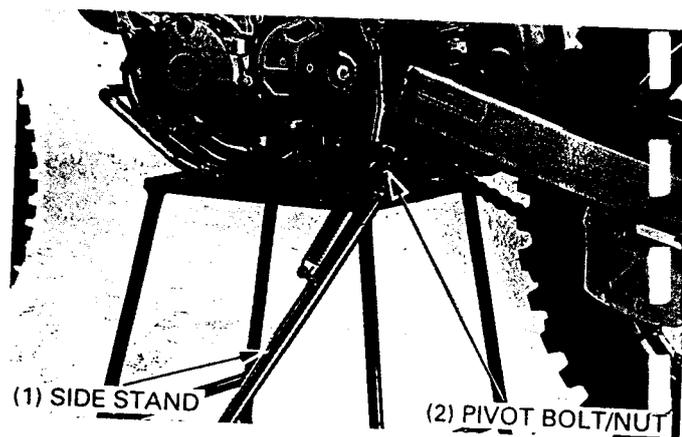
**TORQUE: 10 N-m (1.0 kgf-m, 7.2 lbf-ft)**

Then back it off 45 – 90° (1/8 to 1/4) turn.  
Tighten the pivot nut to the specified torque.

**TORQUE: 39 N-m (4.0 kgf-m, 29 lbf-ft)**

### U type:

Check the rubber pad for deterioration and wear. Replace if wear extends to the wear line.



## SUSPENSION

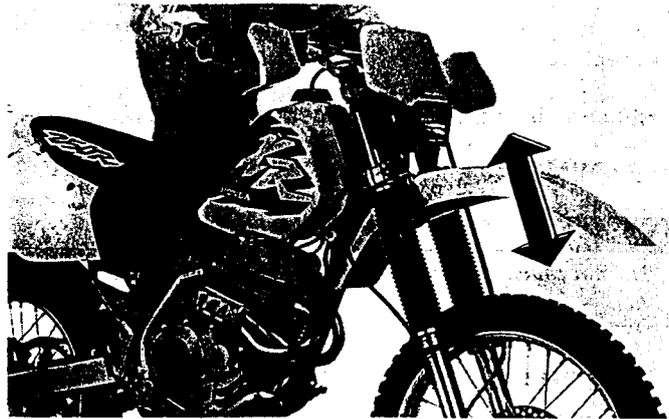
### ⚠ WARNING

*Do not ride a vehicle with faulty suspension. Loose, worn, or damaged suspension parts may affect stability and rider control.*

### FRONT SUSPENSION

Check the action of the front forks by compressing them several times.

Check the entire fork assembly for signs of leaks or damage. Replace any components which are unrepairable. Torque all nuts and bolts.



### REAR SUSPENSION

Bounce the rear of the motorcycle up and down to check for proper operation.

Check the entire rear suspension being sure everything is securely mounted and not damaged or distorted.

Torque all nuts and bolts to their specified values (pages 1-14 - 16).

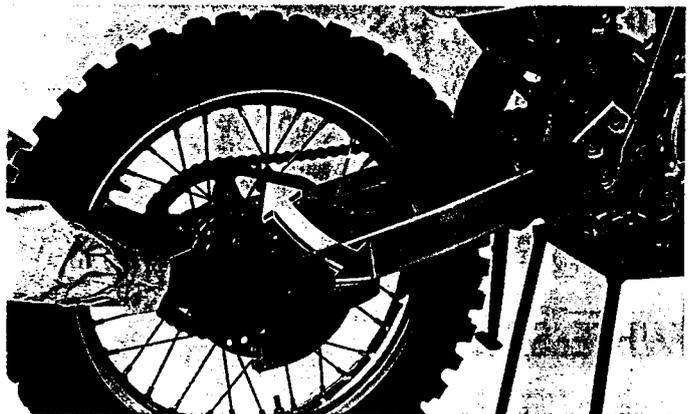


Place the motorcycle on a work stand or box to raise the rear wheel off the ground.

Move the rear wheel sideways with force to see if the swingarm bearings are worn.

Replace if excessively worn (page 14-28).

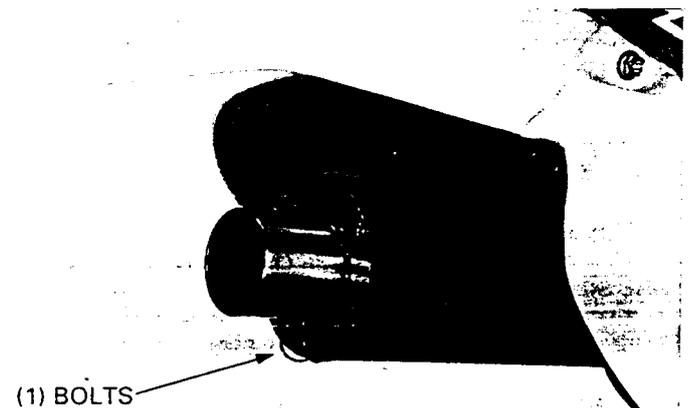
Check that the shock linkage, spherical bearing and needle bearings are damaged.



## SPARK ARRESTER

### INSPECTION

Remove the bolts and spark arrester.



## MAINTENANCE

Check that the screen mesh and gasket is in good condition, and replace if necessary.

Installation is in the reverse order of removal.

## CLEANING

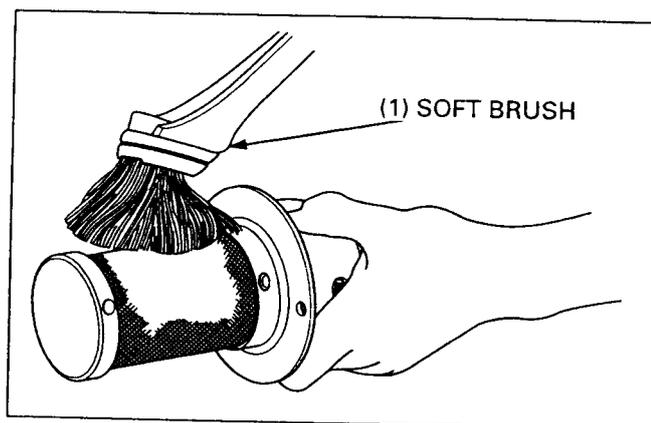
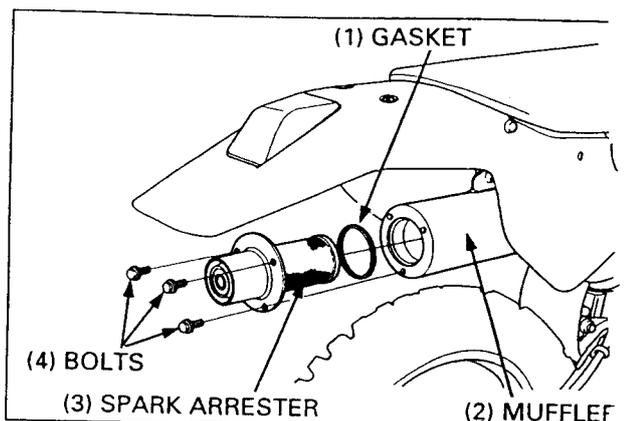
### ⚠ WARNING

- *Do not touch exhaust components while the exhaust system is hot.*

Remove the spark arrester (page 3-19).

Use a soft brush to remove carbon deposits from the spark arrester screen. Be careful to avoid damaging the spark arrester screen. The spark arrester must be free of breaks and holes. Replace if necessary.

Install the spark arrester.



## NUTS, BOLTS, FASTENERS

Check that all chassis nuts and bolts are tightened to their correct torque values.

Check that all cotter pins and clips are in place and properly secured.

## WHEELS/TIRES

Check the tire pressure.

### NOTE

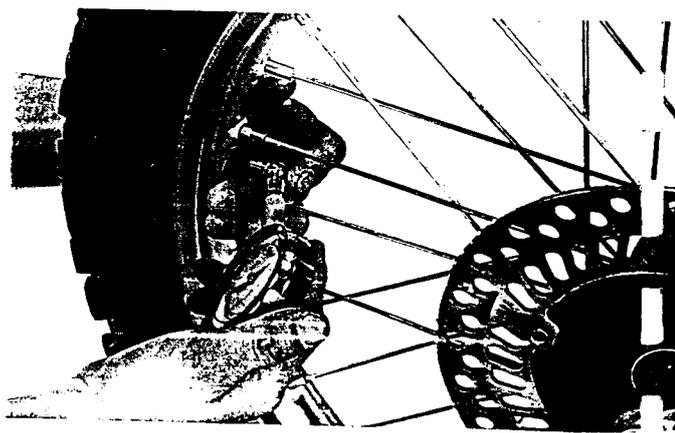
- The pressure should be checked when the tires are COLD.

### STANDARD PRESSURE:

(ED, DK types) Front: 100 kPa (1.0 kgf/cm<sup>2</sup>, 15 psi)  
Rear: 100 kPa (1.0 kgf/cm<sup>2</sup>, 15 psi)  
(U type) Front: 150 kPa (1.50 kgf/cm<sup>2</sup>, 22 psi)  
Rear: 125 kPa (1.25 kgf/cm<sup>2</sup>, 18 psi)

### TIRE SIZE:

(ED, DK types) Front: 80/100-21 51M  
Rear: 100/100-18 59M  
(U type) Front: 3.00 - 21 51P  
Rear: 4.00 - 18 64P



Check the tires for cuts, embedded nails or other sharp objects.  
Check the tire tread depth.

**SERVICE LIMIT: 3 mm (1/8 in)**

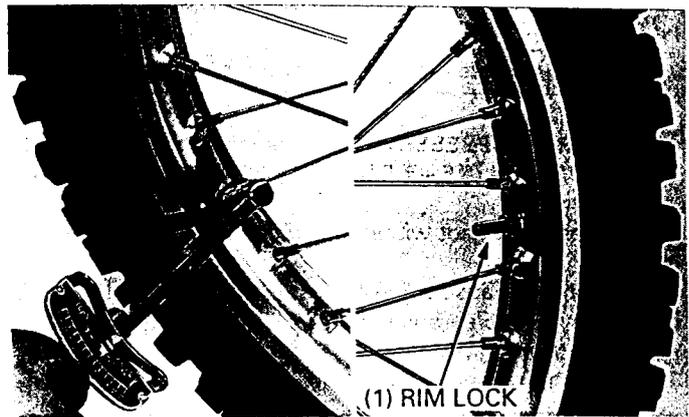
Tighten the spoke nipples and rim locks.

**TORQUE:**

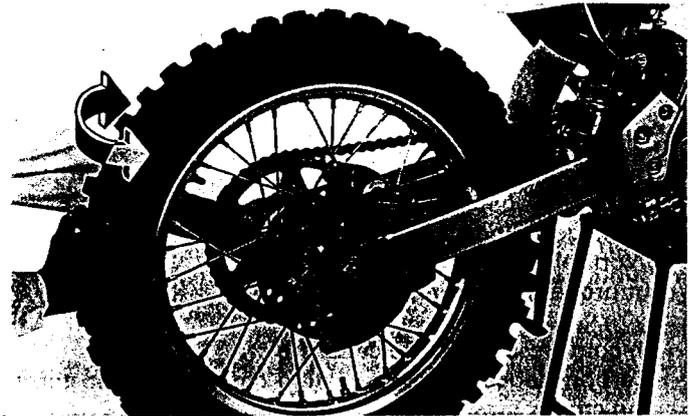
**Spoke nipple: 3.8 N·m (0.38 kgf·m, 2.7 lbf·ft)**  
**Rim lock: 15 N·m (1.5 kgf·m, 11 lbf·ft)**

**TOOL:**

**Nipple wrench 07701 - 0020300**



Push and pull the rear wheel side ways (in alignment with the axle) to check for play in the swingarm.  
Check the tires for wear or damage.  
Check the wheel rims for corrosion or damage (page 13-3, 14-4).

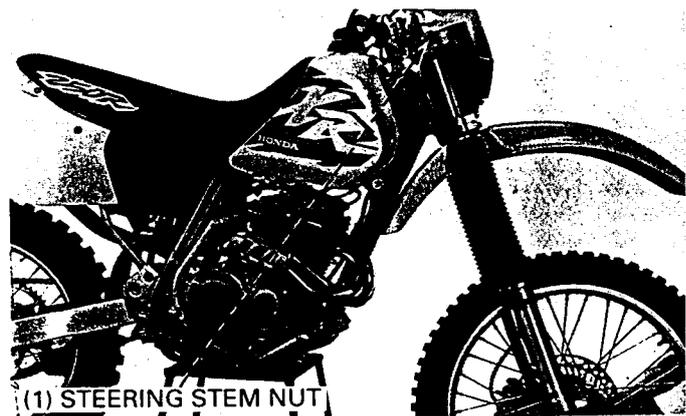


## STEERING HEAD BEARINGS

Raise the front wheel off the ground and check that the fork rotates freely.

Check that the control cables do not interfere with fork rotation.

If the fork moves unevenly, binds or has vertical movement, check and adjust the steering head bearings by turning the steering stem nut (page 13-25).



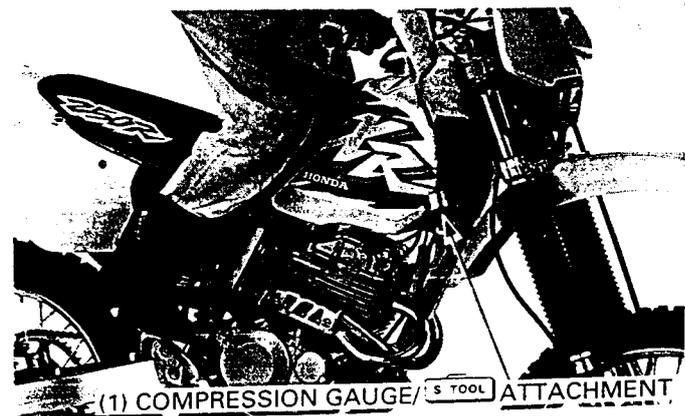
## CYLINDER COMPRESSION

Remove the spark plug.  
Connect the compression gauge.

**TOOL:**

**Compression gauge attachment 07908 - KK60000**

Open the choke lever and throttle grip all the way.  
Operate the kick starter 5 - 6 times and check the gauge reading.



## MAINTENANCE

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### NOTE

- Check that there are no leaks at the gauge connection.

**CYLINDER COMPRESSION (with decompressor effected):**  
637 – 735 kPa (6.5 – 7.5 kgf/cm<sup>2</sup>, 92 – 107 psi) at 600 rpm

If compression is not within specification, recheck the following:

Loosen the exhaust valve lock nut and adjust the exhaust valve to a valve clearance of approximately 1 mm (0.04 in).

Warm up the engine.

Stop the engine and recheck the compression.

**CYLINDER COMPRESSION (with decompressor not effected):**  
1,177 – 1,275 kPa (12.0 – 13.0 kgf/cm<sup>2</sup>, 171 – 185 psi)

If the compression reading is not standard, the decompressor system did not work properly.

Low compression can be caused by:

- Improper valve adjustment
- Valve leakage
- Leakage cylinder head gasket
- Worn piston ring or cylinder
- Improper decompressor adjustment

High compression can be caused by:

- Carbon deposits in combustion chamber, or on the piston crown

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**MEMO**

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# LUBRICATION

