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## MAINTENANCE

# SERVICE INFORMATION

## GENERAL

- Place the vehicle on a level ground before starting any work.

## SPECIFICATIONS

ITEM		SPECIFICATIONS	
Throttle lever free play	'04 - '05		3 - 8 mm (1/8 - 5/16 in)
	After '05		5 - 10 mm (7/32 - 3/8 in)
Spark plug ('04 - '05)	Standard		IFR8H11 (NGK), VK24PRZ11 (DENSO)
	For extended high speed riding		IFR9H11 (NGK), VK27PRZ11 (DENSO)
Spark plug (After '05)	Standard		IFR7L11 (NGK), VK22PRZ11 (DENSO)
	For extended high speed riding		IFR8H11 (NGK), VK24PRZ11 (DENSO)
Spark plug gap			1.0 - 1.1 mm (0.039 - 0.043 in)
Valve clearance	IN		0.16 ± 0.03 mm (0.006 ± 0.001 in)
	EX		0.28 ± 0.03 mm (0.011 ± 0.001 in)
Decompressor clearance	'04 - '05		Right side exhaust valve clearance + 0.15 ± 0.02 mm (0.006 ± 0.001 in)
	After '05		Right side exhaust valve clearance + 0.25 ± 0.02 mm (0.010 ± 0.001 in)
Recommended engine oil			Pro Honda GN4, HP4 (without molybdenum additives) 4-stroke oil or HP4M (with molybdenum additives) 4-stroke oil, or equivalent motor oil API service classification: SG or Higher JASO T 903 standard: MA or MB Viscosity: SAE 10W-40, 5W-30
Engine oil capacity	'04 - '05	After draining	0.78 liter (0.82 US qt, 0.67 Imp qt)
		After draining/filter change	0.82 liter (0.87 US qt, 0.72 Imp qt)
		After disassembly	1.20 liter (1.27 US qt, 1.06 Imp qt)
	After '05	After draining	0.65 liter (0.69 US qt, 0.57 Imp qt)
		After draining/filter change	0.69 liter (0.73 US qt, 0.61 Imp qt)
		After disassembly	0.85 liter (0.90 US qt, 0.75 Imp qt)
Recommended transmission oil			Pro Honda GN4 or HP4 (without molybdenum additives) 4-stroke oil or equivalent motor oil API service classification: SG or Higher JASO T 903 standard: MA Viscosity: SAE 10W-40, 5W-30
Transmission oil capacity	'04 - '05	After draining	0.55 liter (0.58 US qt, 0.48 Imp qt)
		After disassembly	0.65 liter (0.69 US qt, 0.57 Imp qt)
	After '05	After draining	0.68 liter (0.72 US qt, 0.60 Imp qt)
		After disassembly	0.80 liter (0.85 US qt, 0.70 Imp qt)
Engine idle speed	'04 - '05		1,600 ± 100 rpm
	After '05		1,700 ± 100 rpm
Drive chain slack			25 - 35 mm (1 - 1-7/16 in)
Recommended brake fluid			DOT 4 brake fluid
Parking brake lever free play			25 - 30 mm (1 - 1-1/4 in)
Clutch lever free play			10 - 20 mm (3/8 - 3/4 in)
Cold tire pressure ('04 - '05)	Front	Standard	275 kPa (0.275 kgf/cm <sup>2</sup> , 4.0 psi)
		Minimum	23.5 kPa (0.235 kgf/cm <sup>2</sup> , 3.4 psi)
		Maximum	31.5 kPa (0.315 kgf/cm <sup>2</sup> , 4.6 psi)
	Rear	Standard	32.5 kPa (0.325 kgf/cm <sup>2</sup> , 4.7 psi)
		Minimum	28.5 kPa (0.285 kgf/cm <sup>2</sup> , 4.1 psi)
		Maximum	36.5 kPa (0.365 kgf/cm <sup>2</sup> , 5.3 psi)

ITEM		SPECIFICATIONS	
Cold tire pressure (After '05)	Front	Standard	27.5 kPa (0.275 kgf/cm <sup>2</sup> , 4.0 psi)
		Minimum	25.0 kPa (0.250 kgf/cm <sup>2</sup> , 3.6 psi)
		Maximum	30.0 kPa (0.300 kgf/cm <sup>2</sup> , 4.4 psi)
	Rear	Standard	32.5 kPa (0.325 kgf/cm <sup>2</sup> , 4.7 psi)
		Minimum	30.0 kPa (0.300 kgf/cm <sup>2</sup> , 4.3 psi)
		Maximum	35.0 kPa (0.350 kgf/cm <sup>2</sup> , 5.1 psi)
Tire size	Front	AT22 x 7R10 ★ ★	
	Rear	AT20 x 10R9 ★ ★	
Tire brand	Front	DUNLOP KT371	
	Rear	DUNLOP KT335H	
Minimum tire tread depth (Front/Rear)		4.0 mm (0.16 in)	
Toe	'04 - '05	Toe-in: 11.4 ± 15 mm (0.45 ± 0.6 in)	
	After '05	Toe-in: 14 ± 15 mm (0.6 ± 0.6 in)	

**TORQUE VALUES**

Spark plug	23 N·m (2.3 kgf·m, 17 lbf·ft)	
Decompressor arm adjusting screw lock nut	9.8 N·m (1.0 kgf·m, 7 lbf·ft)	Apply engine oil to the threads and seating surface.
Crankshaft hole cap	15 N·m (1.5 kgf·m, 11 lbf·ft)	Apply grease to the threads and seating surface.
Engine oil drain bolt ('04 - '05)	22 N·m (2.2 kgf·m, 16 lbf·ft)	Apply engine oil to the threads and seating surface.
Engine oil drain bolt (After '05)	25 N·m (2.5 kgf·m, 18 lbf·ft)	Apply engine oil to the threads and seating surface.
Transmission oil drain bolt	22 N·m (2.2 kgf·m, 16 lbf·ft)	Apply engine oil to the threads and seating surface.
Axle bearing holder pinch bolt	21 N·m (2.1 kgf·m, 15 lbf·ft)	
Front master cylinder reservoir cap screw	2 N·m (0.2 kgf·m, 1.4 lbf·ft)	
Rear brake reservoir mounting bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)	
Parking brake arm lock nut	18 N·m (1.8 kgf·m, 13 lbf·ft)	
Rear master cylinder push rod lock nut	18 N·m (1.8 kgf·m, 13 lbf·ft)	
Tie-rod lock nut	54 N·m (5.5 kgf·m, 40 lbf·ft)	

# MAINTENANCE

## MAINTENANCE SCHEDULE ('04 - '05)

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

ITEMS	FREQUENCY	WHICHEVER COMES FIRST	REGULAR MAINTENANCE INTERVAL			REFER TO PAGE
			INITIAL MAINTENANCE			
			mi	600	1,200	
	km	1,000	2,000			
		HOURS	20	100	200	
EMISSION RELATED ITEMS	* FUEL LINE				I	4-6
	* THROTTLE OPERATION				I	4-6
	AIR CLEANER	NOTE 1		C	C	4-7
	SPARK PLUG				I	4-9
	* VALVE CLEARANCE/DECOMPRESSOR SYSTEM				I	4-10
	ENGINE OIL		R	R	R	4-14
	ENGINE OIL FILTER		R	R	R	4-14
	* TRANSMISSION OIL			R	R	4-17
	* ENGINE IDLE SPEED		I	I	I	4-20
	RADIATOR COOLANT	NOTE 3		I	I	4-20
* COOLING SYSTEM	NOTE 2		I	I	4-21	
NON-EMISSION RELATED ITEMS	DRIVE CHAIN	NOTE 1, 2	I, L	(I, L EVERY 300 mi (500 km) or 50 operating hours)		4-21
	DRIVE CHAIN SLIDER			I	I	4-25
	* BRAKE FLUID	NOTE 3		I	I	4-25
	* BRAKE PADS WEAR	NOTE 1, 2			I	4-26
	* BRAKE LIGHT SWITCH		I	I	I	4-27
	BRAKE SYSTEM		I	I	I	4-27
	SKID PLATE, ENGINE GUARD			I	I	4-29
	* CLUTCH SYSTEM		I	I	I	4-29
	* SUSPENSION			I	I	4-30
	* SPARK ARRESTER			C	C	4-31
	* NUTS, BOLTS, FASTENERS		I		I	4-31
	** WHEELS/TIRES		I	I	I	4-32
	** STEERING HEAD BEARINGS				I	4-32
** STEERING SHAFT HOLDER BEARING				I	4-32	
** STEERING SYSTEM				I	4-33	

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

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

### NOTES:

1. Service more frequently when riding in dusty areas, sand or snow.
2. Service more frequently after riding in very wet or muddy conditions.
3. Replace every 2 years. Replacement requires mechanical skill.

# MAINTENANCE SCHEDULE (After '05)

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

ITEMS	FREQUENCY	WHICHEVER COMES FIRST	→	INITIAL MAINTENANCE			REGULAR MAINTENANCE INTERVAL		REFER TO PAGE
				mi	100	600	1,200		
				km	150	1,000	2,000		
				HOURS	20	100	200		
* FUEL LINE							I	4-6	
* THROTTLE OPERATION							I	4-6	
AIR CLEANER		NOTE 1				C	C	4-7	
SPARK PLUG							I	4-9	
* VALVE CLEARANCE/DECOMPRESSOR SYSTEM					I	I	I	4-10	
ENGINE OIL				INITIAL = 100 mi (150 km), 20 operating hours or 1 month : R REGULAR = EVERY 600 mi (1000 km), 100 operating hours or 12 month : R				4-14	
ENGINE OIL FILTER				R	R	R	R	4-14	
* TRANSMISSION OIL						R	R	4-17	
* ENGINE IDLE SPEED				I	I	I	I	4-20	
RADIATOR COOLANT		NOTE 3				I	I	4-20	
* COOLING SYSTEM		NOTE 2				I	I	4-21	
DRIVE CHAIN		NOTE 1, 2		I, L	(I, L EVERY 300 mi (500 km) or 50 operating hours)			4-21	
DRIVE CHAIN SLIDER						I	I	4-25	
* BRAKE FLUID		NOTE 3				I	I	4-25	
* BRAKE PADS WEAR		NOTE 1, 2				I	I	4-26	
* BRAKE LIGHT SWITCH						I	I	4-27	
BRAKE SYSTEM						I	I	4-27	
SKID PLATE, ENGINE GUARD						I	I	4-29	
* CLUTCH SYSTEM						I	I	4-29	
* SUSPENSION						I	I	4-30	
* SPARK ARRESTER						C	C	4-31	
* NUTS, BOLTS, FASTENERS						I	I	4-31	
** WHEELS/TIRES						I	I	4-32	
** STEERING HEAD BEARINGS						I	I	4-32	
** STEERING SHAFT HOLDER BEARING						I	I	4-32	
** STEERING SYSTEM						I	I	4-33	

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

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

**NOTES:**

1. Service more frequently when riding in dusty areas, sand or snow.
2. Service more frequently after riding in very wet or muddy conditions.
3. Replace every 2 years. Replacement requires mechanical skill.

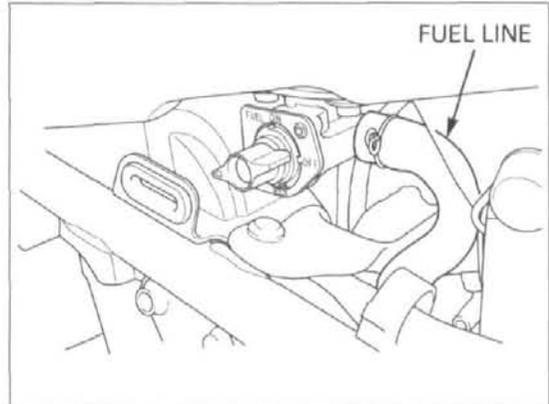
## MAINTENANCE

### FUEL LINE

Remove the rear fender ('04 – '05: page 3-7, After '05: page 3-7).

Check the fuel line for deterioration, damage or leakage.

Replace the fuel line if necessary.



### THROTTLE OPERATION

Check for any deterioration or damage to the throttle cable. Check the throttle lever for smooth operation.

Check that the throttle opens and automatically closes in all steering positions.

If the throttle lever does not return properly, lubricate the throttle cable and overhaul and lubricate the throttle housing.

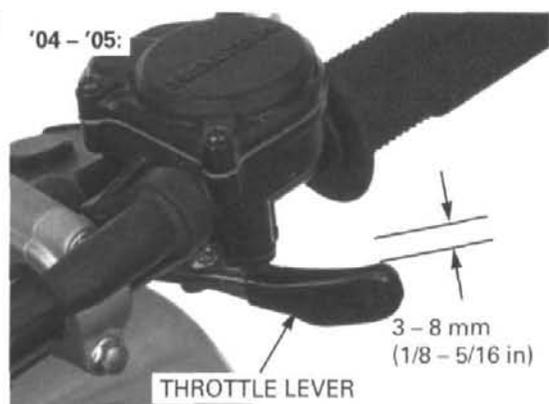
If the throttle lever still does not return properly, replace the throttle cable.

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 lever free play and the throttle cable connection.

'04 – '05: Measure the throttle lever free play at the tip of the throttle lever.

**THROTTLE LEVER FREE PLAY:**  
**3 – 8 mm (1/8 – 5/16 in)**

Throttle lever free play can be adjusted at either end of the throttle cable.



After '05: Measure the throttle lever free play at the tip of the throttle lever.

**THROTTLE LEVER FREE PLAY:**  
**5 – 10 mm (7/32 – 3/8 in)**

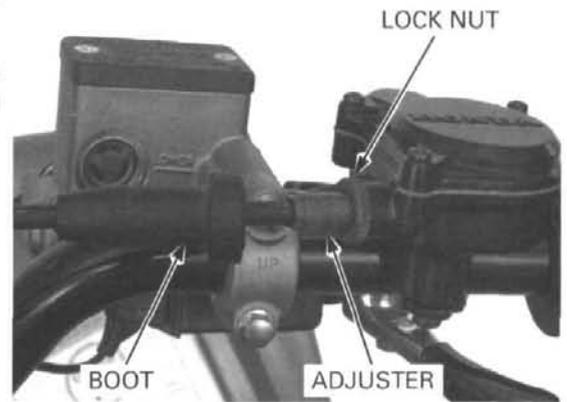
Throttle lever free play can be adjusted at either end of the throttle cable.

After throttle lever free play adjustment, make sure the engine started normally.



Minor adjustments are made with the upper adjuster.

Slide the rubber boot off the adjuster. Loosen the lock nut, turn the adjuster as required and tighten the lock nut.  
Install the rubber boot securely.

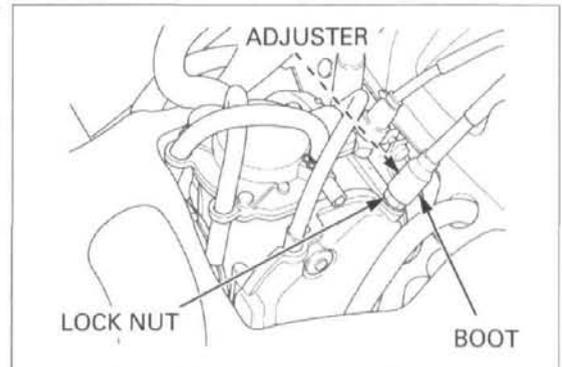


Major adjustments are made with the lower adjuster.

Remove the fuel tank (page 3-9).

Slide the rubber boot off the adjuster. Loosen the lock nut, turn the adjuster as required and tighten the lock nut.  
Install the rubber boot securely.

Recheck the throttle operation and install the fuel tank (page 3-9).



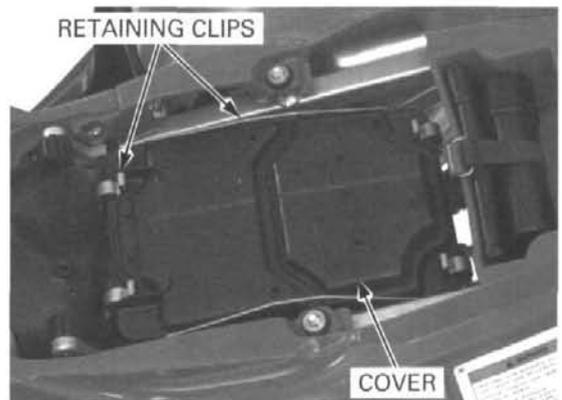
## AIR CLEANER

**NOTE:**

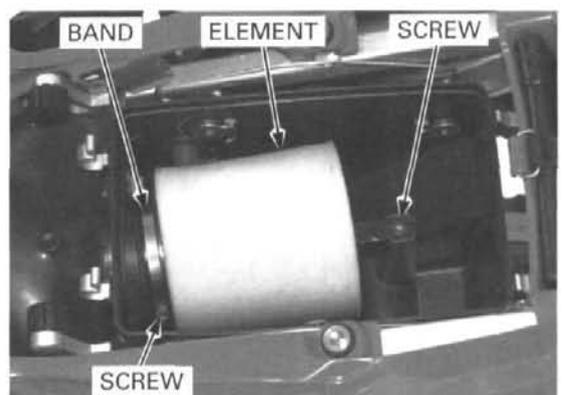
- If the vehicle is used in dusty areas, sand or snow, more frequent inspections are required.

Remove the seat (page 3-3).

Release the retaining clips from the air cleaner housing cover and remove the cover.

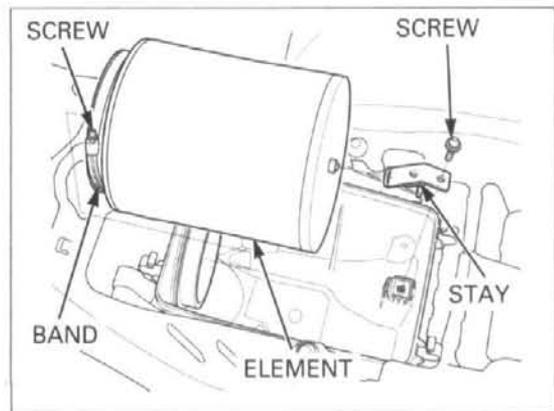


'04 - '05: Loosen the air cleaner element band screw, and remove the mounting screw and air cleaner element assembly.

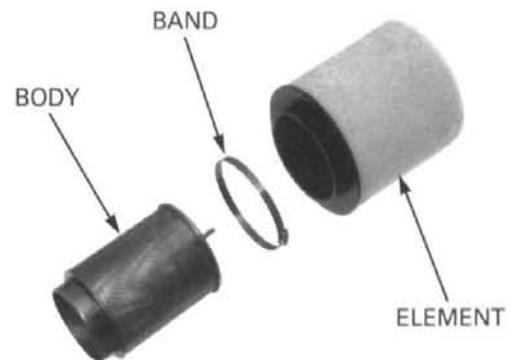


## MAINTENANCE

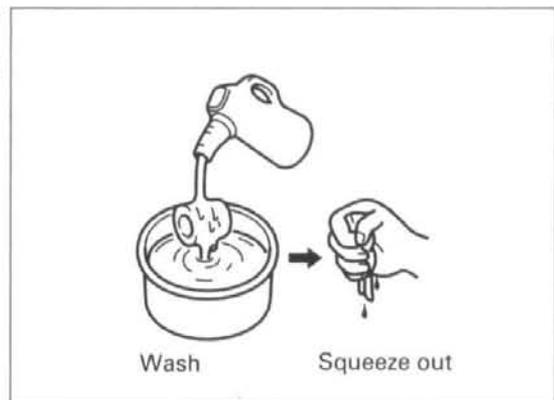
*After '05:* Loosen the air cleaner element band screw, and remove the mounting screw and pull up the stay. Remove air cleaner element assembly.



Remove the element band and air cleaner element from the element body.



Wash the element in non-flammable or high flash point solvent. Squeeze out the solvent thoroughly, and allow the element to dry.



Apply approximately 20 g (0.7 oz) of Pro Honda Form Filter Oil or equivalent oil from the inside of the element. Place the element into a plastic bag and spread the oil evenly by hand.



'04 - '05: Install the air cleaner element and band onto the element body properly.

Install the element assembly over the connecting hose flange and boss of the air cleaner housing properly.

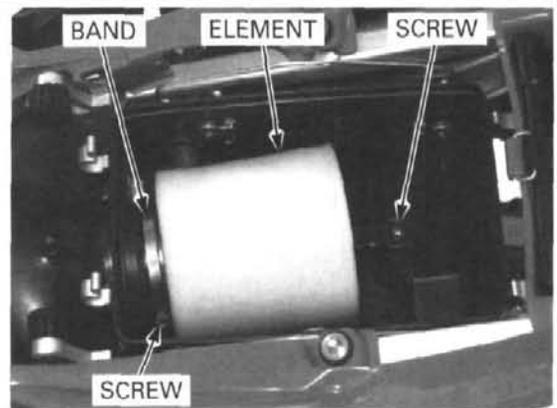
Install and tighten the mounting screw.  
Tighten the band screw.

**NOTE:**

- Failure to properly tighten the band screw will allow the air cleaner element to fall off and engine damage could result.

Install the air cleaner element housing cover and secure it with the retaining clips.

Install the seat (page 3-3).



After '05: Install the air cleaner element and band onto the element body properly.

Install the element assembly over the connecting hose flange and boss of the air cleaner housing properly.

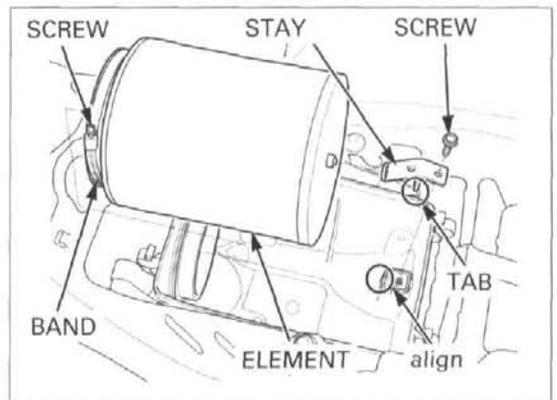
Install the stay by aligning its tab with the groove of air cleaner housing and tighten the mounting screw.  
Tighten the band screw.

**NOTE:**

- Failure to properly tighten the band screw will allow the air cleaner element to fall off and engine damage could result.

Install the air cleaner element housing cover and secure it with the retaining clips.

Install the seat (page 3-3).

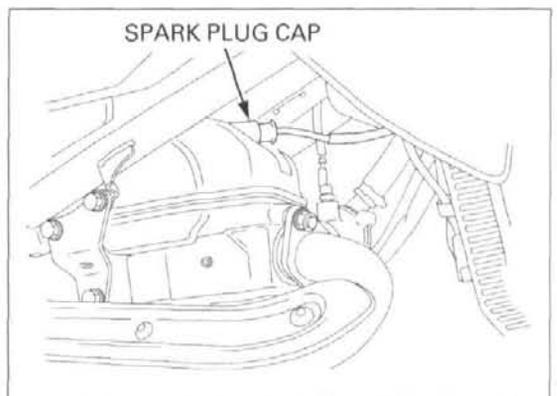


## SPARK PLUG

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

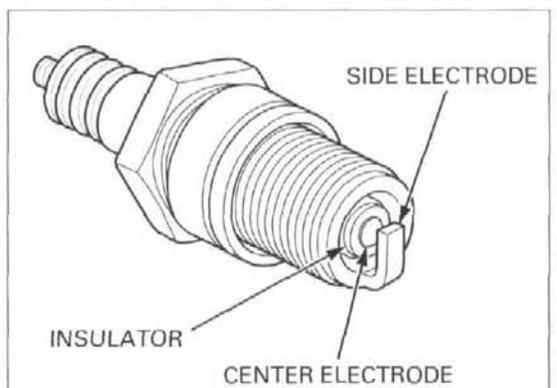
*Be sure that no debris is allowed to enter the combustion chamber.*

Remove the spark plug.



*This vehicle's spark plug is equipped with an iridium type center electrode. Do not clean the electrodes.*

Check the insulator for cracks or damage, and the electrodes for wear, fouling or discoloration. Replace the plug if necessary.



## MAINTENANCE

Replace the plug if the center electrode is rounded as shown.

'04 - '05:

*Always use the specified spark plug on this vehicle.*

### SPECIFIED SPARK PLUG:

#### Standard:

**IFR8H11 (NGK), VK24PRZ11 (DENSO)**

#### For extended high speed riding

**IFR9H11 (NGK), VK27PRZ11 (DENSO)**

After '05:

*Always use the specified spark plug on this vehicle.*

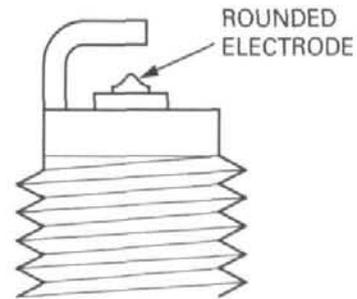
### SPECIFIED SPARK PLUG:

#### Standard:

**IFR7L11 (NGK), VK22PRZ11 (DENSO)**

#### For extended high speed riding

**IFR8H11 (NGK), VK24PRZ11 (DENSO)**



*To prevent damaging the iridium coating of the center electrode, use a wire-type feeler gauge to check the spark plug gap. Do not adjust the spark plug gap. If the gap is out of specification, replace the plug with a new one.*

Measure the spark plug gap between the center and side electrodes with a wire-type feeler gauge.

Make sure the 1.20 mm (0.047 in) wire-type feeler gauge cannot be inserted into the gap.

If the gauge can be inserted into the gap, replace the plug with a new one.

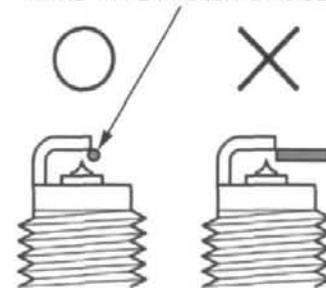
Screw the spark plug into the cylinder head by hand to prevent cross-threading.

Tighten the spark plug.

**TORQUE: 23 N·m (2.3 kgf·m, 17 lbf·ft)**

Install the spark plug cap.

### WIRE TYPE FEELER GAUGE



## VALVE CLEARANCE/DECOMPRESSOR SYSTEM

### NOTE:

- Inspect and adjust the valve clearance and decompressor clearance while the engine is cold (below 35°/95°F).

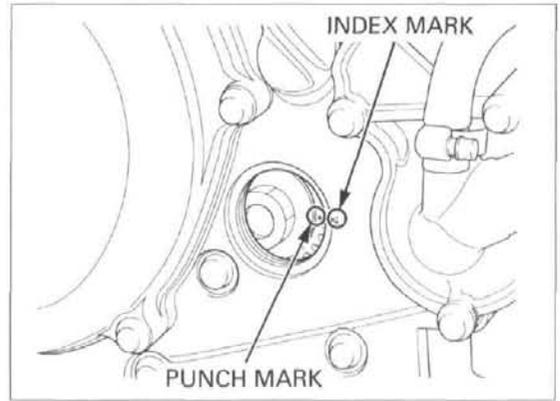
### VALVE CLEARANCE INSPECTION

Remove the cylinder head cover (page 11-8).

Remove the crankshaft hole cap.



Rotate the crankshaft clockwise and align the punch mark on the primary drive gear with the index mark on the right crankcase cover. Make sure the piston is at TDC (Top Dead Center) on the compression stroke.



*Record the clearance of each valve for reference in shim selection if adjustment is required.*

Measure the clearance of each intake valve by inserting a feeler gauge between the valve lifter and cam lobe.

**INTAKE VALVE CLEARANCE:**  
 $0.16 \pm 0.03 \text{ mm } (0.006 \pm 0.001 \text{ in})$



*Record the clearance of each valve for reference in shim selection if adjustment is required.*

Measure the clearance of each exhaust valve by inserting a feeler gauge between the rocker arm and shim.

**EXHAUST VALVE CLEARANCE:**  
 $0.28 \pm 0.03 \text{ mm } (0.011 \pm 0.001 \text{ in})$



**VALVE CLEARANCE ADJUSTMENT**

Remove the camshaft holder assembly and valve lifters (page 11-8).

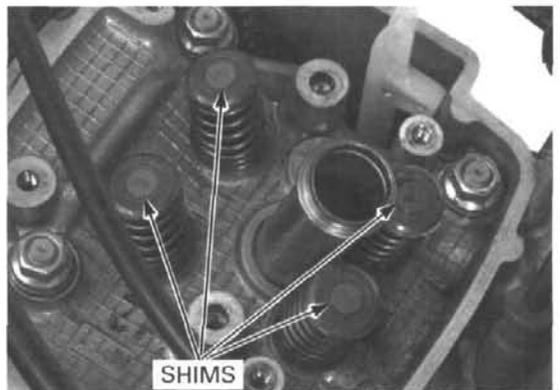
**NOTE:**

- The shims may stick to the inside of the valve lifter. Do not allow the shims to fall into the crankcase.

*The shims can be easily removed with tweezers or a magnet.*

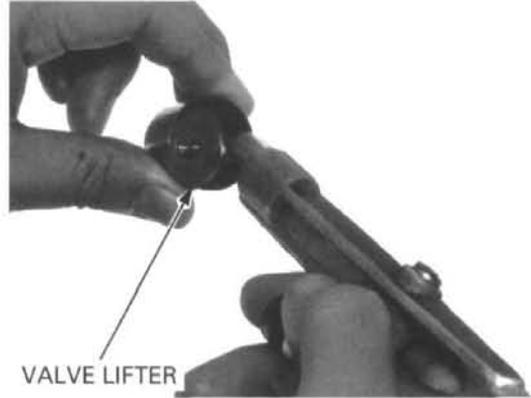
Remove the shims.

Mark all valve lifters and shims to ensure correct reassembly in their original locations.



## MAINTENANCE

Clean the valve shim contact area in the valve lifter with compressed air.



Measure the shim thickness and record it.



Seventy-three different shim sizes are available from 1.200 mm to 3.000 mm in intervals of 0.025 mm.

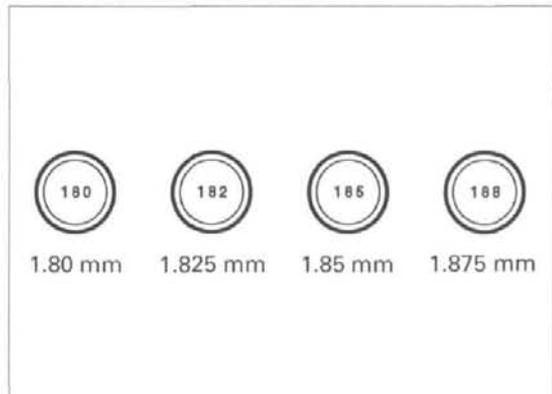
Calculate the new shim thickness using the equation below.

$$A = (B - C) + D$$

A: New shim thickness  
B: recorded valve clearance  
C: Specified valve clearance  
D: Old shim thickness

**NOTE:**

- Make sure of the correct shim thickness by measuring the shim using a micrometer.
- Reface the valve seat if carbon deposits result in a calculated dimension of over 3.000 mm

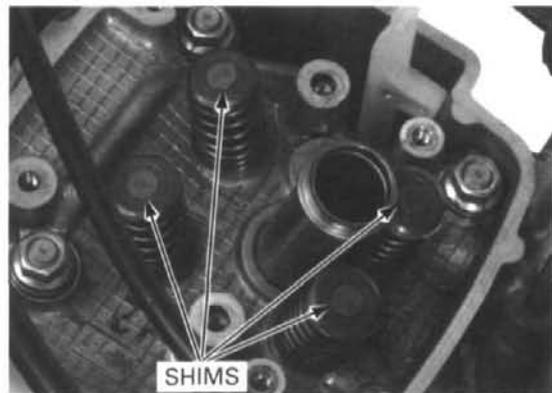


Install the shims in their original locations.

Install the newly selected shims on the valve retainers.

Install the camshaft holder assembly (page 11-29).

Inspect the decompressor clearance and adjust it if necessary (page 4-13).



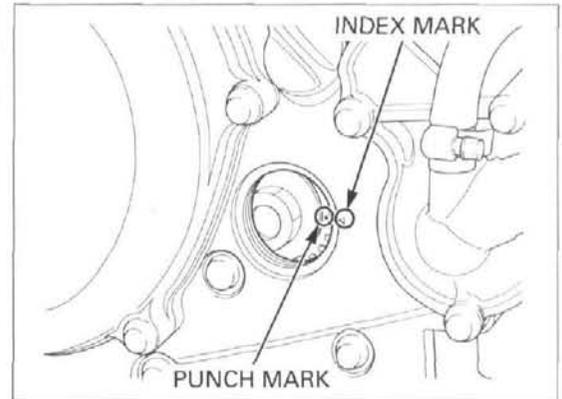
## DECOMPRESSOR CLEARANCE INSPECTION/ADJUSTMENT

**NOTE:**

- Always inspect and adjust the decompressor clearance after inspecting and adjusting the valve clearance (page 4-10).

Rotate the crankshaft clockwise and align the punch mark on the primary drive gear with the index mark on the right crankcase cover.

Make sure the piston is at TDC (Top Dead Center) on the compression stroke.



Measure the decompressor clearance by inserting a feeler gauge between the decompressor arm adjusting screw and right side rocker arm.

'04 - '05: **DECOMPRESSOR CLEARANCE:**  
**Right side exhaust valve clearance + 0.15 ± 0.02 mm (0.006 ± 0.001 in)**

After '05: **DECOMPRESSOR CLEARANCE:**  
**Right side exhaust valve clearance + 0.25 ± 0.02 mm (0.010 ± 0.001 in)**

For example, if the measured right side exhaust valve clearance is 0.28 mm (0.011 in), decompressor clearance is;

$$0.28 \text{ mm (0.011 in)} + 0.15 \text{ mm (0.006 in)} = 0.43 \pm 0.02 \text{ mm (0.017} \pm 0.001 \text{ in)}$$

If the decompressor clearance is out of specification, adjust as follows:

Measure the right exhaust valve clearance by inserting a feeler gauge between the right side rocker arm and shim.

**EXHAUST VALVE CLEARANCE:**  
**0.28 ± 0.03 mm (0.011 ± 0.001 in)**

Remove the feeler gauge inserted between the right side rocker arm and shim.



## MAINTENANCE

'04 - '05: Insert a feeler gauge equivalent to; right exhaust valve clearance + 0.15 mm (0.006 in), between the adjusting screw and rocker arm.

After '05: Insert a feeler gauge equivalent to; right exhaust valve clearance + 0.25 mm (0.010 in), between the adjusting screw and rocker arm.

Loosen the lock nut and turn the adjusting screw until there is a slight drag on the feeler gauge.

Hold the adjusting screw and tighten the lock nut.

**TORQUE: 9.8 N·m (1.0 kgf·m, 7 lbf·ft)**

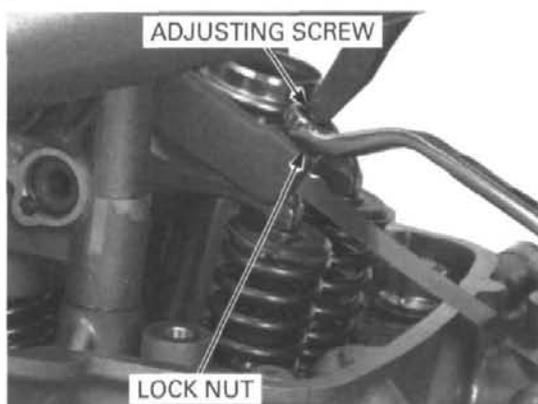
Recheck the decompressor clearance.

Coat a new O-ring with oil and install it onto the crankshaft hole cap.

Apply grease to the crankshaft hole cap threads. Install the crankshaft hole cap and tighten it.

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

Install the cylinder head cover (page 11-31).



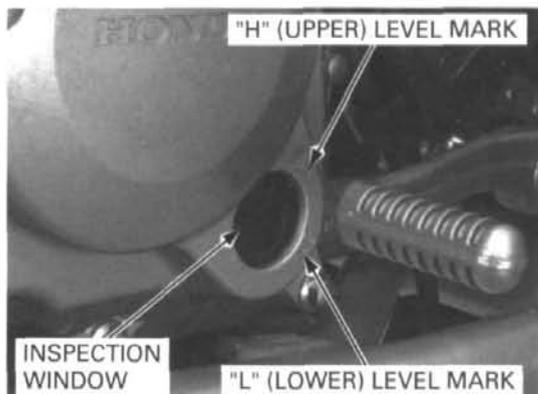
## ENGINE OIL/FILTER

### OIL LEVEL CHECK

Start the engine and let it idle for a few minutes. Stop the engine and place the vehicle on a level surface.

Wait three minutes after stopping the engine.

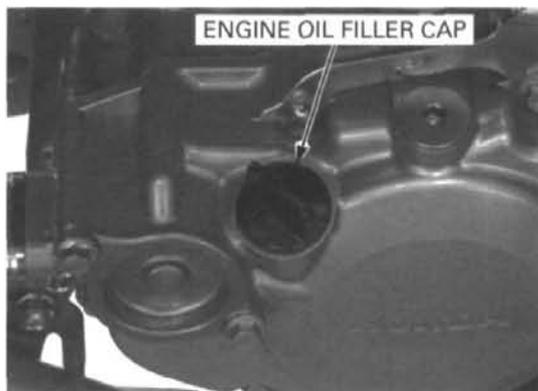
Check the oil level through the inspection window. The oil level should be between the "H" (upper) and "L" (lower) level marks.



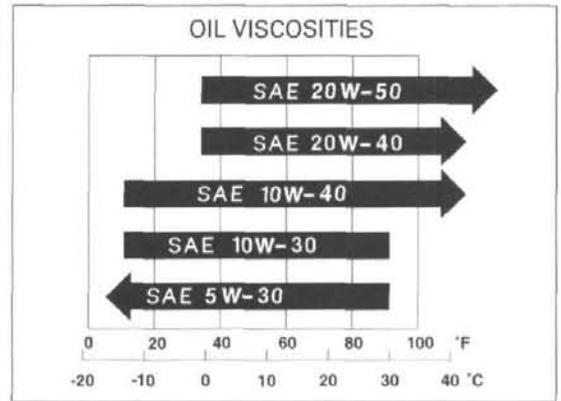
If the oil level is near or below the "L" (lower) level mark, remove the engine oil filler cap, and add the recommended engine oil up to the "H" (upper) level mark.

### RECOMMENDED ENGINE OIL:

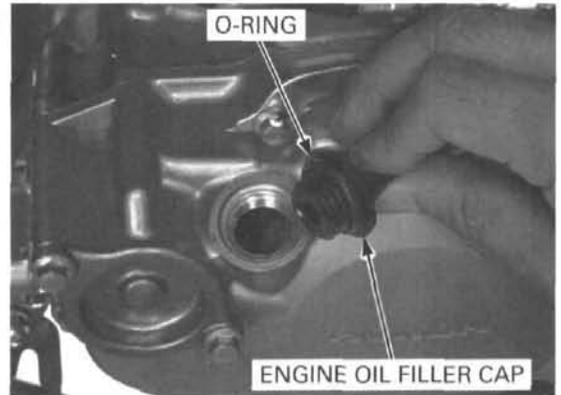
Pro Honda GN4, HP4 (without molybdenum additives) or HP4M (with molybdenum additives) 4-stroke oil, or equivalent motor oil  
API service classification: SG or higher  
JASO T 903 standard: MA or MB  
Viscosity: SAE 10W-40, 5W-30



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



Make sure that the O-ring on the engine oil filler cap is in good condition and replace it with a new one if necessary. Reinstall the engine oil filler cap.



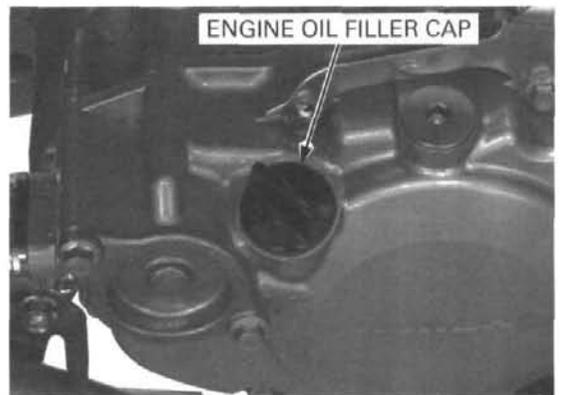
**OIL AND FILTER CHANGE**

**NOTE:**

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

Warm up the engine.

Stop the engine and remove the engine oil filler cap.



Remove the engine oil drain bolt and sealing washer, and drain the engine oil.

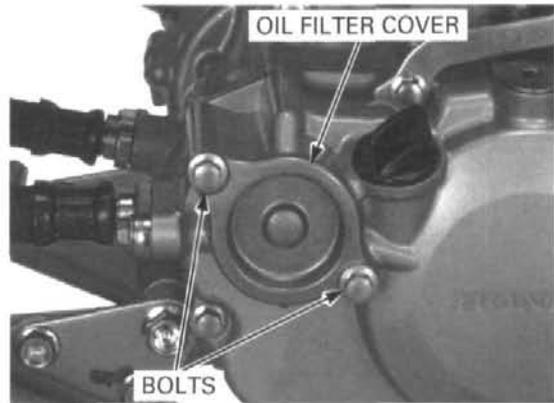
*TRX450ER only:* With the engine stop switch in the OFF position, press the start button several times to crank the engine and distribute the oil.

*TRX450R only:* Operate the kickstarter pedal several times to assure the complete oil draining.



## MAINTENANCE

Remove the two bolts and oil filter cover.



Remove the oil filter and spring.



Apply engine oil to the drain bolt threads.

Install the engine oil drain bolt with a new sealing washer and tighten it.

'04 - '05: **TORQUE: 22 N·m (2.2 kgf·m, 16 lbf·ft)**

After '05: **TORQUE: 25 N·m (2.5 kgf·m, 18 lbf·ft)**



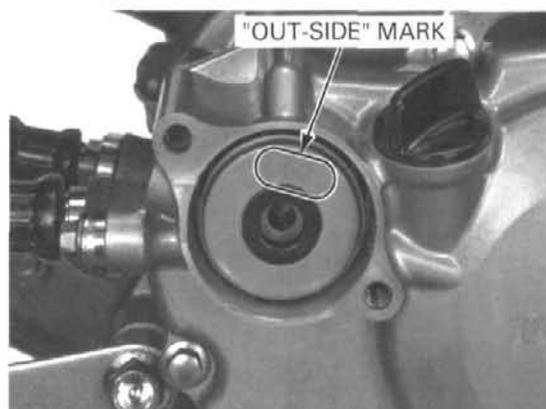
Apply grease to the filter side of the spring end.  
Install the spring into a new oil filter.



Install the oil filter with the "OUT-SIDE" mark facing out.

**NOTICE**

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



Coat a new O-ring with oil and install it into the oil filter cover groove.

Install the oil filter cover and tighten the two bolts securely.



Fill the crankcase with the recommended engine oil (page 4-14).

'04 - '05: **ENGINE OIL CAPACITY:**  
0.82 liter (0.87 US qt, 0.72 Imp qt) after draining/  
filter change

After '05: **ENGINE OIL CAPACITY:**  
0.69 liter (0.73 US qt, 0.61 Imp qt) after draining/  
filter change

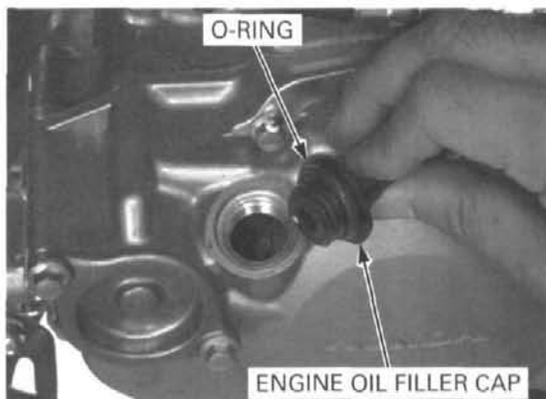
Make sure that the O-ring on the engine oil filler cap is in good condition and replace it with a new one if necessary.

Reinstall the engine oil filler cap.

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

Make sure there are no oil leaks.

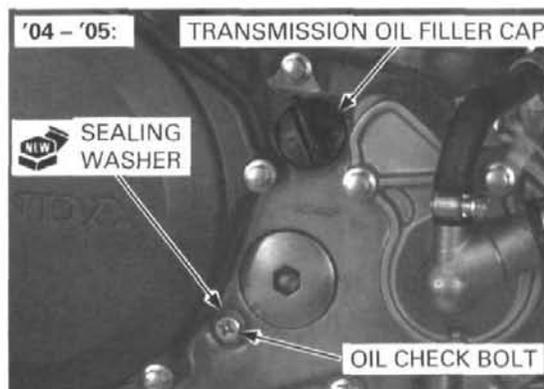
Stop the engine and check the oil level (page 4-14).



## TRANSMISSION OIL

### OIL LEVEL CHECK

1. Start the engine and let it idle for 2 to 3 minutes.
2. Stop the engine and wait three minutes.
3. Place the vehicle on a level surface.
4. Remove the transmission oil filler cap and check bolt. A small amount of oil should flow out of the check bolt hole.
5. If no oil flows out of the check bolt hole, add the recommended transmission oil slowly through the oil filler hole until oil starts to flow out of the check bolt hole. Install the transmission oil filler cap and check bolt.



## MAINTENANCE

### RECOMMENDED TRANSMISSION OIL:

Pro Honda GN4 or HP4 (without molybdenum additives) 4-stroke oil or equivalent motor oil  
API service classification: SG or higher  
JASO T 903 standard: MA  
Viscosity: SAE 10W-40, 5W-30

6. Repeat steps 1 through 4.
7. Install the oil check bolt with a new sealing washer and tighten it securely.
  
8. Make sure that the O-ring on the transmission oil filler cap is in good condition and replace it with a new one if necessary.

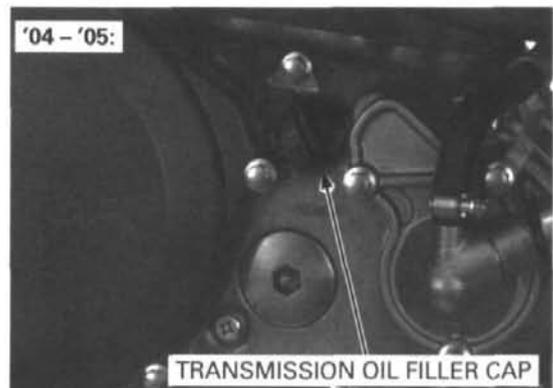
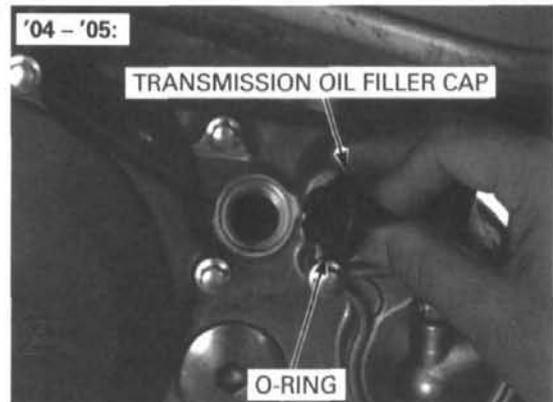
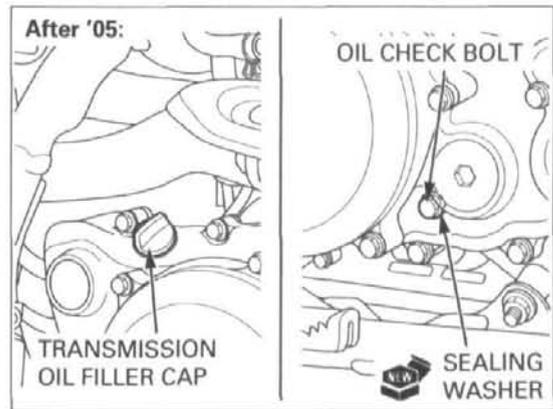
Install the transmission oil filler cap.

### OIL CHANGE

#### NOTE:

- Change the transmission oil with the engine warm and the vehicle on a level surface to assure complete and rapid draining.

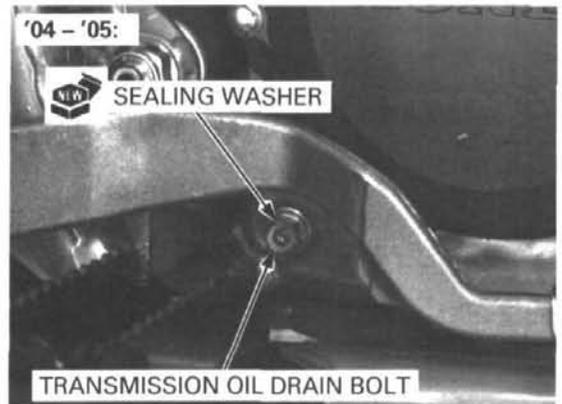
Start the engine and let it idle for 2 to 3 minutes. Stop the engine and place the vehicle on a level surface.



Remove the transmission oil filler cap.



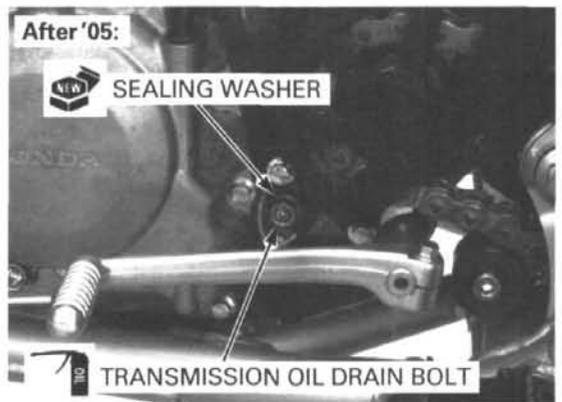
Remove the transmission oil drain bolt and sealing washer, and drain the transmission oil.



Apply engine oil to the drain bolt threads.

Install the transmission oil drain bolt with a new sealing washer and tighten it.

**TORQUE: 22 N·m (2.2 kgf·m, 16 lbf·ft)**

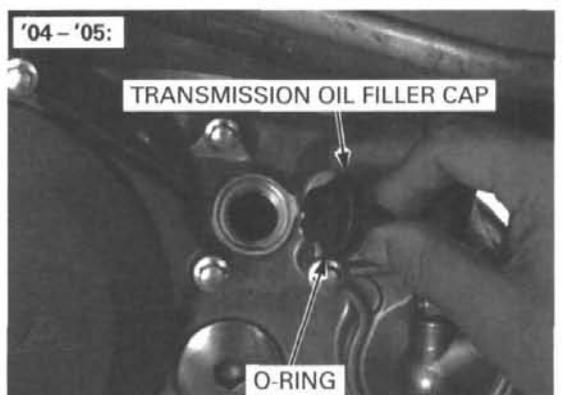


Fill the transmission case with the recommended transmission oil.

'04 - '05: **TRANSMISSION OIL CAPACITY:**  
**0.55 liter (0.58 US qt, 0.48 Imp qt) after draining**

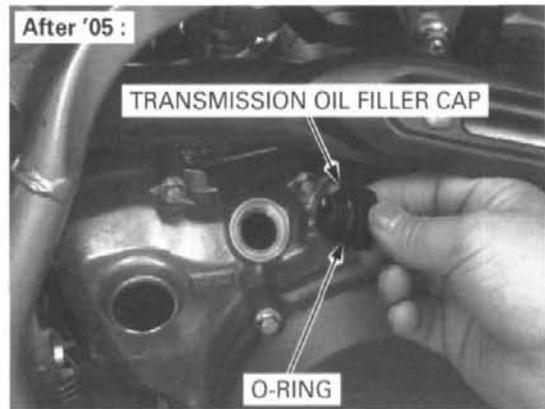
After '05: **TRANSMISSION OIL CAPACITY:**  
**0.68 liter (0.72 US qt, 0.60 Imp qt) after draining**

Make sure that the O-ring on the transmission oil filler cap is in good condition and replace it with a new one if necessary.



## MAINTENANCE

- Install the transmission oil filler cap.
- Check the transmission oil level (page 4-17).



## ENGINE IDLE SPEED

### NOTE:

- Inspect and adjust idle speed after all other engine maintenance items have been performed and are within specifications.
- The engine must be warm for accurate idle speed inspection and adjustment.

Warm up the engine, shift the transmission into neutral and place the vehicle on a level surface.

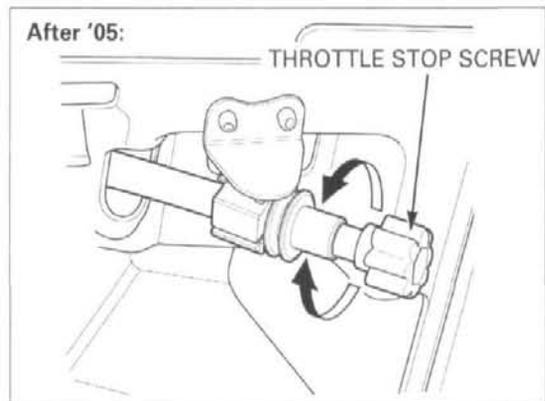
Connect a tachometer.

Check the idle speed and adjust by turning the throttle stop screw as required.

'04 - '05: **IDLE SPEED: 1,600 ± 100 rpm**

After '05: **IDLE SPEED: 1,700 ± 100 rpm**

Remove the tachometer.

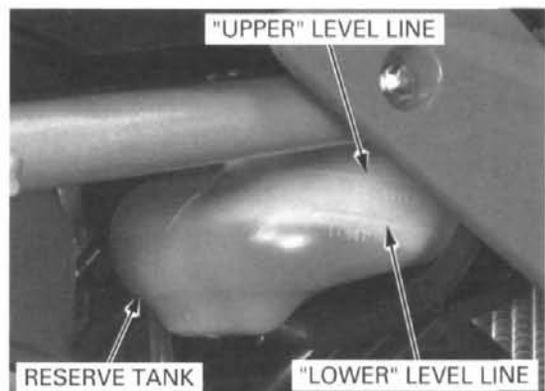


## RADIATOR COOLANT

Check the coolant level of the reserve tank with the engine running at normal operating temperature. The level should be between the "UPPER" and "LOWER" level lines with the vehicle upright on a level surface.

If the level is low, remove the top cover (page 3-5) and reserve tank cap, and fill the tank up to the "UPPER" level line with a 1:1 mixture of distilled water and antifreeze (coolant preparation: page 9-6).

If the reserve tank becomes completely empty, there is a possibility of air getting into the cooling system.



**RECOMMENDED ANTIFREEZE:**

Pro Honda HP coolant or an equivalent high quality ethylene glycol antifreeze containing silicate-free corrosion inhibitors

**NOTICE**

*Using coolant with silicate corrosion inhibitors may cause premature wear of water pump seals or blockage of radiator passages. Using tap water may cause engine damage.*

If the reserve tank becomes completely empty, there is a possibility of air getting into the cooling system.

Be sure to remove any air from the cooling system (page 9-7).

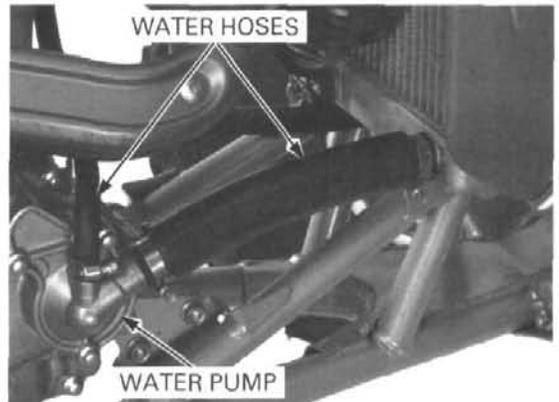


**COOLING SYSTEM**

Check for any coolant leakage from the water pump, water hoses (radiator and by-pass hoses) and hose joints.

Check the water hoses for cracks or deterioration and replace if necessary.

Check that all hose clamps are tight.



Remove both front fenders ('04 - '05: page 3-6, After '05: page 3-6).

Check the radiator air passage for clogs or damage. Straighten bent fins with a small, flat blade screwdriver and remove insects, mud or other obstructions with compressed air or low pressure water. Replace the radiator if the air flow is restricted over more than 20% of the radiating surface.

Install both front fenders ('04 - '05: page 3-6, After '05: page 3-6).



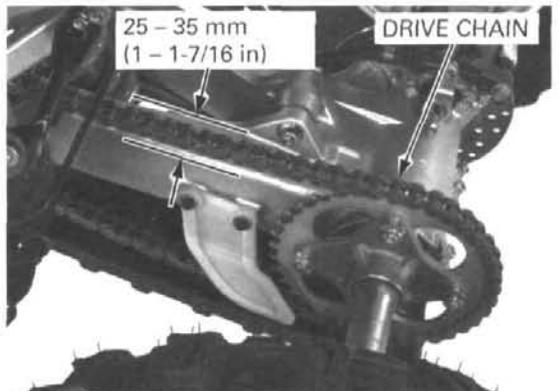
**DRIVE CHAIN**

**CHAIN SLACK INSPECTION**

Turn the ignition switch to "OFF" and shift the transmission into neutral.

Check the chain slack in the drive chain upper run midway between the sprockets.

**CHAIN SLACK: 25 - 35 mm (1 - 1-7/16 in)**



**ADJUSTMENT**

Loosen the axle bearing holder pinch bolts. Turn the bearing holder until the correct drive chain slack is obtained, using the hex wrench in the tool kit.

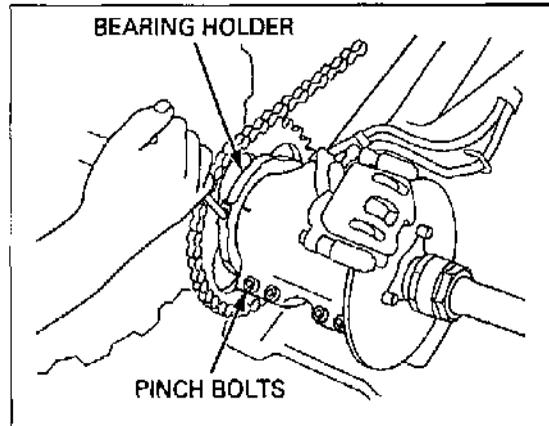
Tighten the axle bearing holder pinch bolts.

**TORQUE: 21 N·m (2.1 kgf·m, 15 lbf·ft)**

Recheck the drive chain slack and free wheel rotation.

If the chain slack is excessive when the bearing holder is turned fully rearward (the correct slack cannot be obtained), replace the drive chain with a new one.

To replace the drive chain, remove the drive sprocket cover (page 10-7) and swingarm (page 18-20).

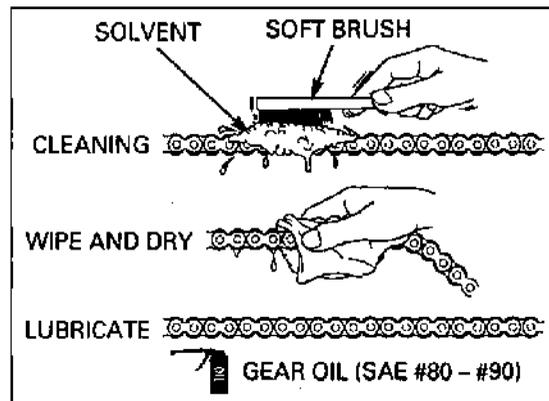


**CLEANING, LUBRICATION AND INSPECTION**

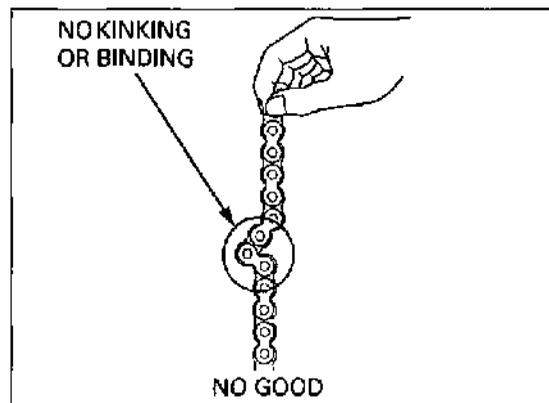
Clean the chain with a soft brush using a non-flammable or high flash point solvent and wipe it dry. Be sure the chain has dried completely before lubricating.

Lubricate the drive chain with #80 - #90 gear oil or equivalent chain lubricant designed for specifically for use on O-ring chains.

Some commercially available chain lubricants may contain solvents which could damage the O-rings. Wipe off the excess oil.



Inspect the drive chain for possible damage or wear. Replace any chain that has damaged rollers, loose fitting links, or otherwise appears unserviceable.

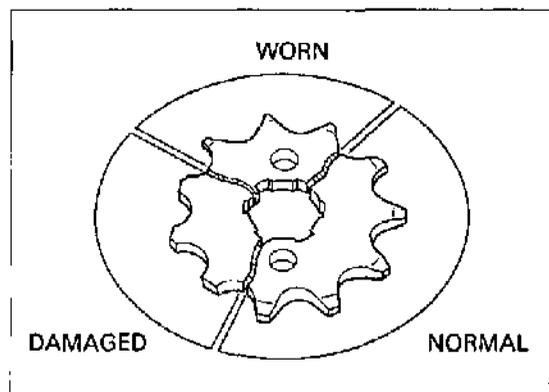


Inspect the drive and driven sprocket teeth for wear or damage, and replace if necessary.

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

Check the attaching bolts and nut on the drive and driven sprockets.

If any are loose, tighten them to the specified torque.



**REPLACEMENT**

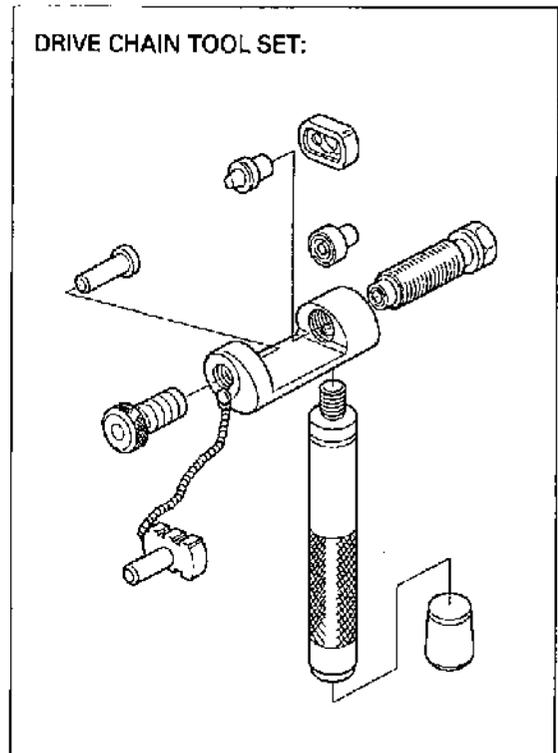
This motorcycle uses a drive chain with a staked master link.

Loosen the drive chain (page 4-22).

*When using the special tool, follow the manufacturer's instruction.*

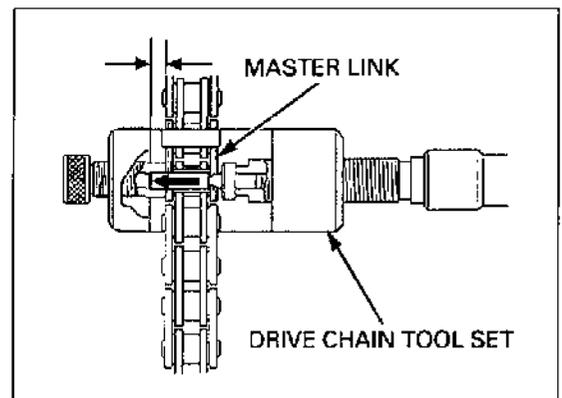
Assemble the special tool as shown.

**TOOL:**  
**Drive chain tool set**      **07HMH-MR10103 or**  
    **07HMH-MR1010C (U.S.A.**  
    **only)**



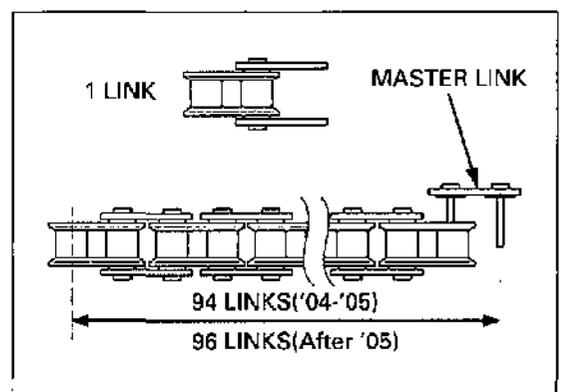
Locate the crimped pin ends of the master link from the outside of the chain and remove the link with the drive chain tool set.

Remove the drive chain.



*Include the master link when you count the drive chain links.*

Remove the excess drive chain links from the new drive chain with the drive chain tool set.



'04 - '05: **SPECIFIED LINKS: 94 links**

After '05: **SPECIFIED LINKS: 96 links**

**REPLACEMENT CHAIN: DID: DID 520V6**  
**RK: RK520SMOZ10S**

## MAINTENANCE

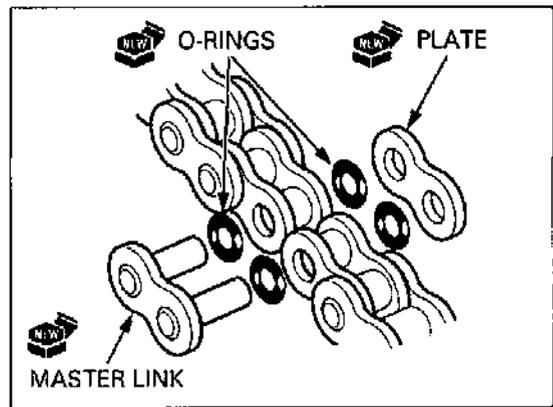
Install the new drive chain over the sprocket.

### NOTICE

*Never reuse the old drive chain, master link, master link plate and O-ring.*

*Insert the master link from the inside of the drive chain, and install the plate with the identification mark facing out.*

Install the new master link, O-rings and plate.



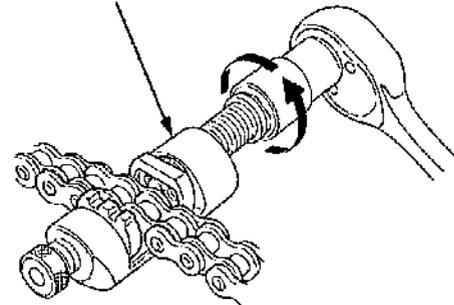
Assemble the part with the drive chain tool set.

### TOOL:

Drive chain tool set

07HMH-MR10103 or  
07HMH-MR1010C (U.S.A.  
only)

### DRIVE CHAIN TOOL SET



Make sure the master link pins are installed properly.

Measure the master link pin length projected from the plate.

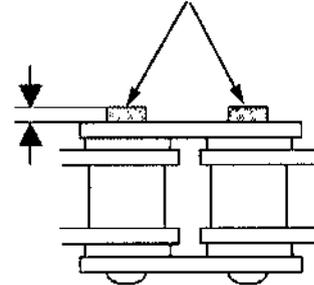
### STANDARD LENGTH:

DID: 1.15 – 1.55 mm (0.045 – 0.061 in)

RK: 1.2 – 1.4 mm (0.05 – 0.06 in)

Stake the master link pins with the drive chain tool set.

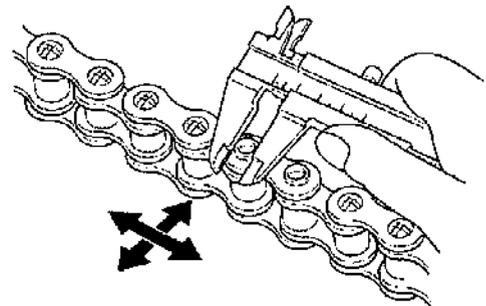
### MASTER LINK PINS



Make sure the pins are staked properly by measuring the diameter of the staked area.

### DIAMETER OF THE STAKED AREA:

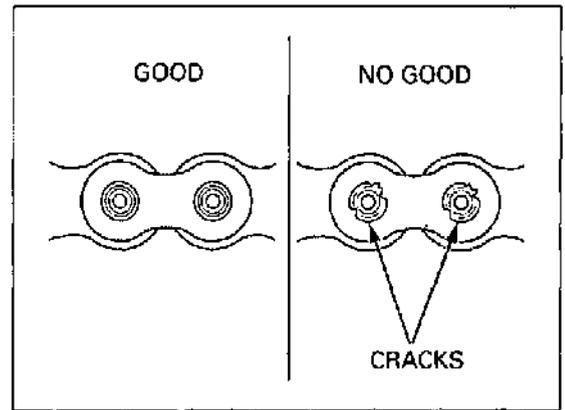
5.5 – 5.8 mm (0.22 – 0.23 in)



After staking, check the staked area of the master link for cracks.

*A drive chain with a clip-type master link must not be used.*

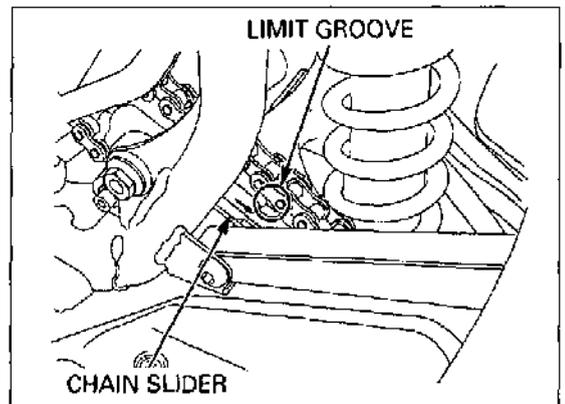
If there is any cracking, replace the master link, O-rings and plate.



## DRIVE CHAIN SLIDER

Check the drive chain slider for wear. Replace the chain slider if it is worn to the bottom of the wear limit groove.

Refer to section 14 for drive chain slider replacement.



## BRAKE FLUID

### NOTICE

- *Spilling fluid can damage painted, plastic or rubber parts. Place a rag over these parts whenever the system is serviced.*

### NOTE:

- Do not mix different types of fluid, as they may not be compatible with each other.
- Do not allow foreign material to enter the system when filling the reservoir.
- When the fluid level is low, check the brake pads for wear (page 4-26). A low fluid level may be due to wear of the brake pads. If the brake pads are worn and the caliper pistons are pushed out, this accounts for a low reservoir level. If the brake pads are not worn and the fluid level is low, check the entire system for leaks (page 4-27).

## MAINTENANCE

### FRONT BRAKE

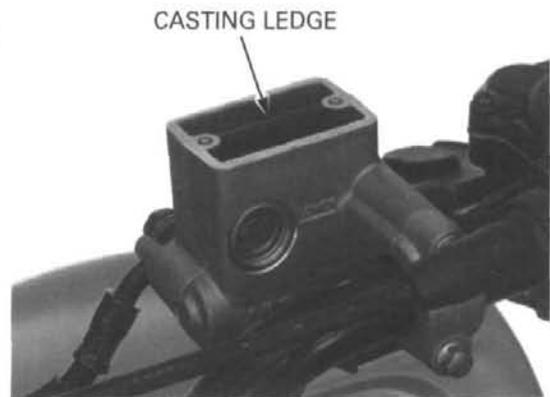
Turn the handlebar to the left side so the reservoir is level and check the fluid level through the sight glass.



If the level is near the "LOWER" level mark, remove the reservoir cap, set plate and diaphragm and fill the reservoir with DOT 4 brake fluid from a sealed container to the casting ledge.

Install the diaphragm, set plate and reservoir cap, and tighten the cap screws.

**TORQUE: 2 N·m (0.2 kgf·m, 1.4 lbf·ft)**



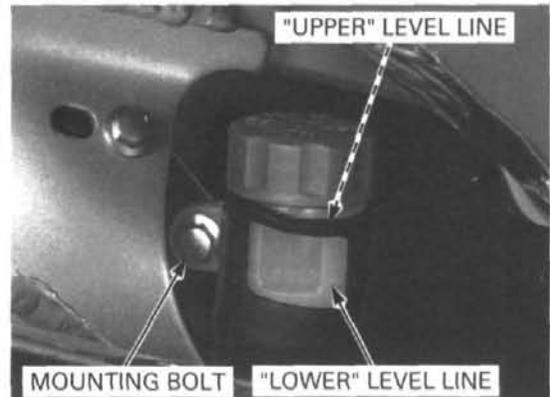
### REAR BRAKE

Place the vehicle on a level surface.

Check the fluid level in the rear brake reservoir. If the level is near the "LOWER" level line, remove the reservoir mounting bolt, reservoir cap, set plate and diaphragm and fill the reservoir with DOT 4 brake fluid from a sealed container to the "UPPER" level line.

Install the diaphragm, set plate, reservoir cap and mounting bolt, and tighten the bolt.

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

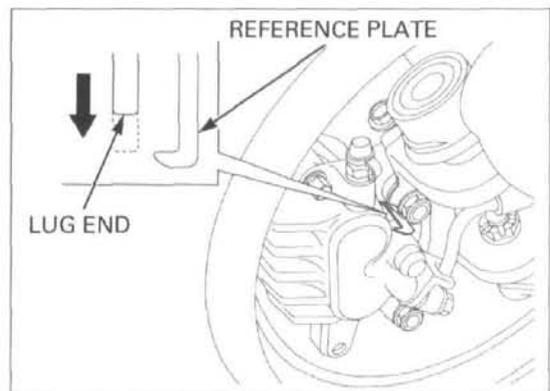


## BRAKE PADS WEAR

### FRONT BRAKE

Check the front brake pads for wear. Replace the brake pads if the wear limit indicator mark (lug end) on the caliper aligns with the reference plate on the caliper bracket when the front brake is applied.

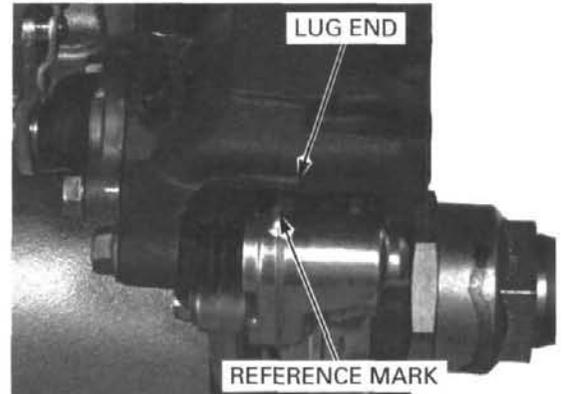
Refer to page 19-8 for front brake pad replacement.



## REAR BRAKE

Check the rear brake pads for wear. Replace the brake pads if the wear limit indicator mark (lug end) on the caliper aligns with the reference mark on the caliper bracket when the rear brake is applied.

Refer to page 19-9 for rear brake pad replacement.



## BRAKE LIGHT SWITCH

**NOTE:**

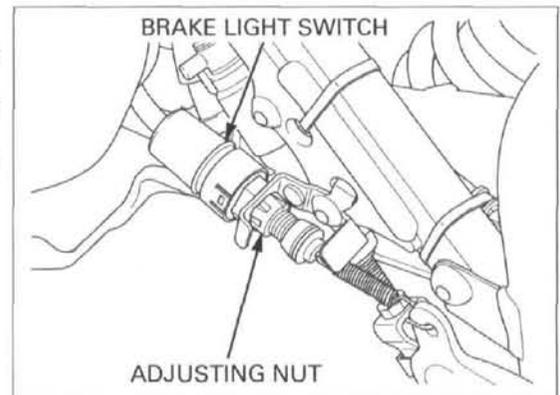
- The front brake light switch cannot be adjusted. If the front brake light switch actuation and brake engagement are off, either replace the switch unit or the malfunctioning parts of the system.

Remove the right mud guard (page 3-3).

Check 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 come on at the proper time.

Hold the switch body and turn the adjusting nut. Do not turn the switch body.



## BRAKE SYSTEM

### HYDRAULIC SYSTEM INSPECTION

Firmly apply the brake lever or pedal and check that no air has entered the system.

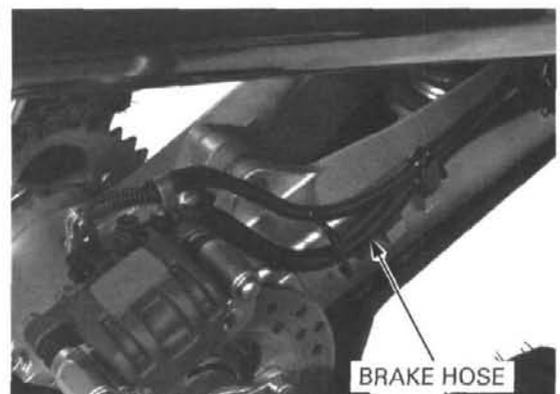
If the brake lever or pedal feels soft or spongy when operated, bleed the system.

Refer to page 19-6 for air bleeding procedures.

Inspect the brake hoses and fittings for deterioration, cracks, damage or signs of leakage.

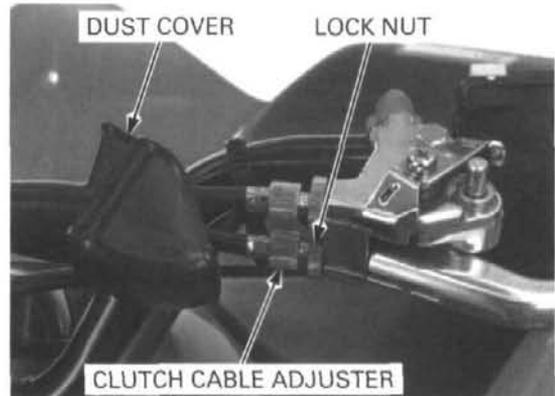
Tighten any loose fittings.

Replace hoses, pipes and fittings as required.



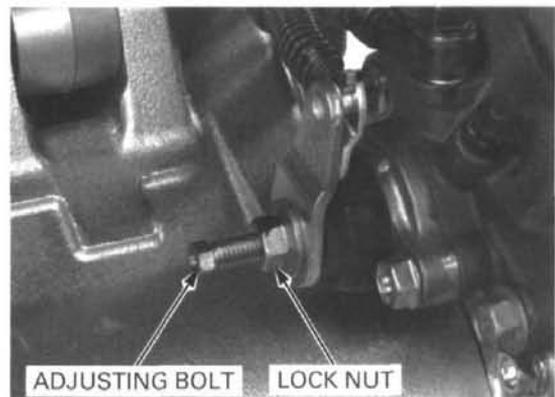
**PARKING BRAKE ADJUSTMENT**

Slide the dust cover off the lever bracket.  
To adjust the clutch lever free play to more than 30 mm (1-1/4 in), loosen the lock nut at the clutch lever and turn the adjuster all the way in.



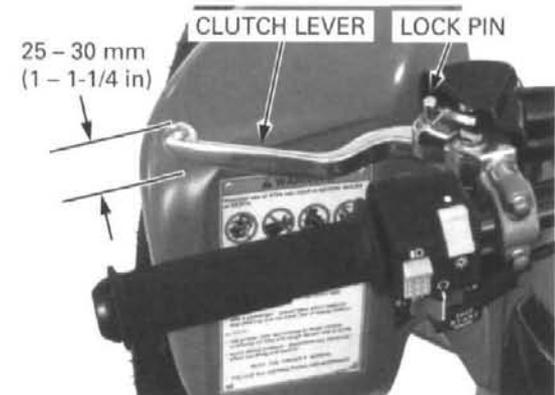
Loosen the lock nut at the parking brake arm and turn the adjusting bolt clockwise until bolt resistance is felt. Then turn the adjusting bolt 1/8 turn counterclockwise and tighten the lock nut while holding the adjusting bolt.

**TORQUE: 18 N·m (1.8 kgf·m, 13 lbf·ft)**



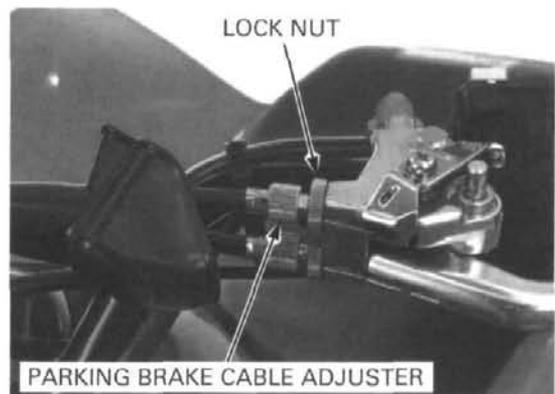
Squeeze the clutch lever while pushing the brake lock pin down until firm resistance is felt and measure the parking brake cable free play at the end of the clutch lever.

**FREE PLAY: 25 – 30 mm (1 – 1-1/4 in)**



To adjust the free play, loosen the lock nut and turn the adjuster at the parking brake arm on the clutch lever bracket.  
Tighten the lock nut securely while holding the adjuster.

Adjust the clutch lever free play (page 4-29).

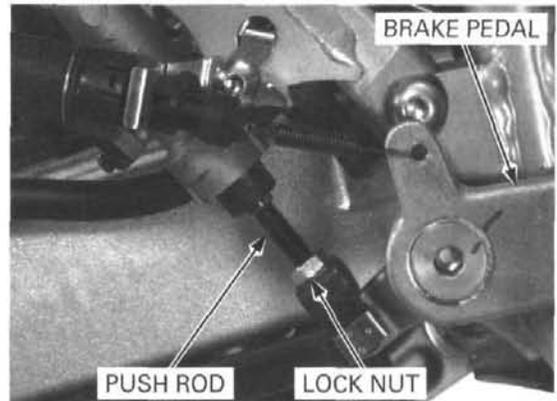


### BRAKE PEDAL HEIGHT ADJUSTMENT

Remove the right mud guard (page 3-3).

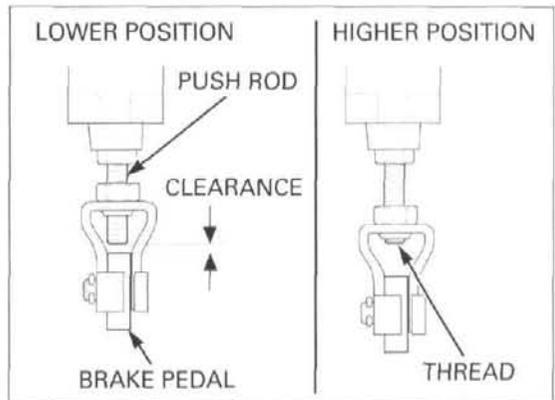
Loosen the lock nut and turn the rear master cylinder push rod to obtain the desired pedal height. Tighten the lock nut after adjustment.

**TORQUE: 18 N·m (1.8 kgf·m, 13 lbf·ft)**



If the brake pedal is adjusted to the lower position, make sure that the clearance between the lower end of the push rod and the brake pedal does not fall below 1 mm (0.04 in).

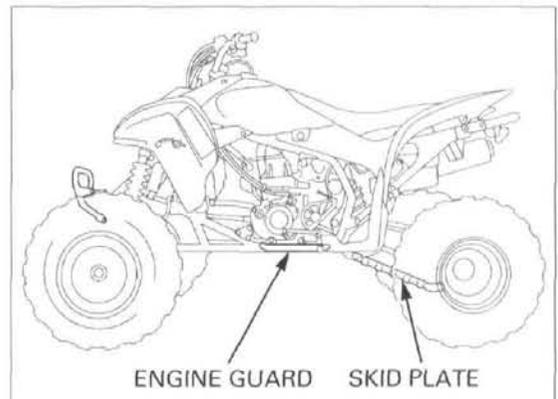
If the brake pedal is adjusted to the higher position, make sure that the lower end of the push rod thread is visible inside the joint.



### SKID PLATE, ENGINE GUARD

Check the skid plate and engine guard for cracks, damage or looseness.

Tighten any loose fasteners. Replace the skid plate and engine guard as required.

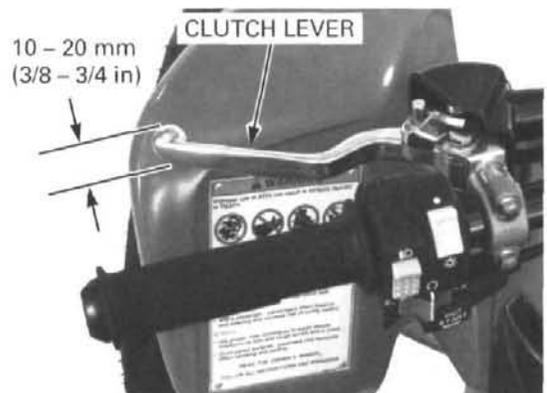


### CLUTCH SYSTEM

Inspect the clutch cable for kinks or damage, and lubricate the cable if necessary.

Measure the clutch lever free play at the lever end.

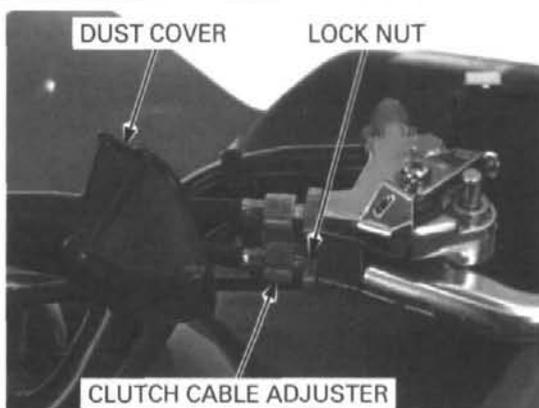
**FREE PLAY: 10 – 20 mm (3/8 – 3/4 in)**



## MAINTENANCE

Minor adjustments are made at the clutch lever. Slide the dust cover off the lever bracket, loosen the lock nut and turn the adjuster. Tighten the lock nut securely.

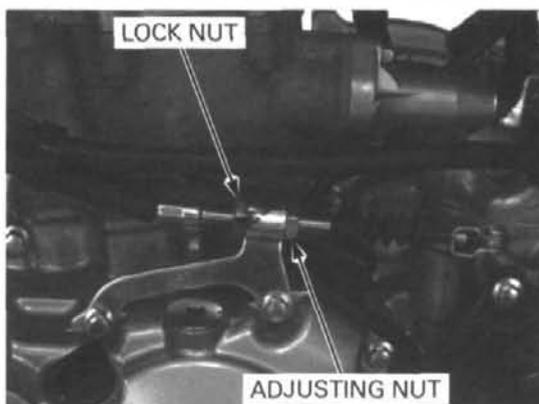
If the adjuster is threaded out near its limit and the correct free play cannot be obtained, turn the adjuster all the way in and back out one turn. Tighten the lock nut securely, install the dust cover and make a major adjustment described below.



Major adjustments are made with the lower adjusting nut at the engine. Loosen the lock nut and turn the adjusting nut. Tighten the lock nut securely while holding the adjusting nut.

Check the clutch operation.

If the correct free play cannot be obtained or the clutch slips during test ride, disassemble and inspect the clutch ('04 - '05: page 13-5, After '05: page 14-6).



## SUSPENSION

### FRONT SUSPENSION INSPECTION

*Loose, worn or damaged suspension parts impair vehicle stability and control.*

Check the action of the front shock absorbers by compressing them several times.

Check the entire shock absorber assembly for signs of leaks, damage or loose fasteners.

Replace damaged components which cannot be repaired.

Tighten all nuts and bolts.



### REAR SUSPENSION INSPECTION

Check the action of the rear shock absorber by compressing them several times.

Check the entire shock absorber assembly for signs of leaks, damage or loose fasteners.

Replace damaged components which cannot be repaired.

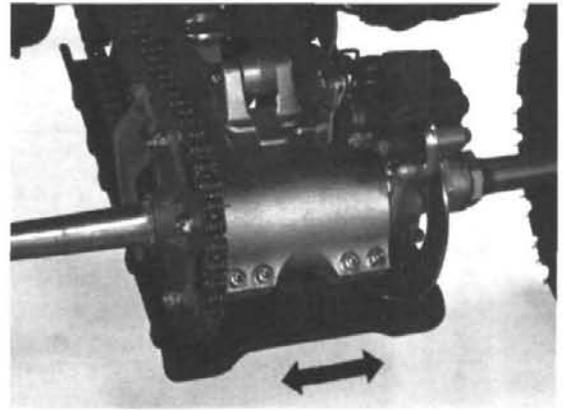
Tighten all nuts and bolts.



Raise the rear wheels off the ground and support the vehicle securely.

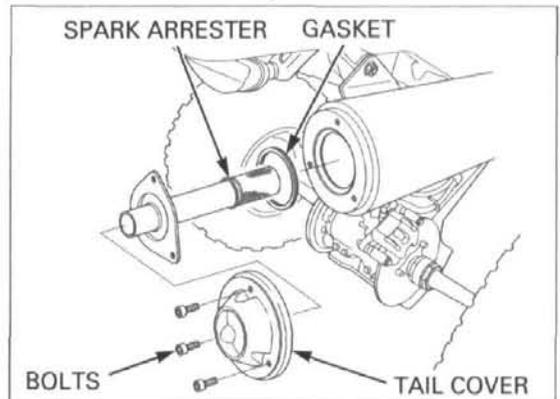
Check for worn swingarm bearings by grabbing the swingarm and attempting to move it to side to side.

Replace the bearings if any looseness is noted (page 18-7).



## SPARK ARRESTER

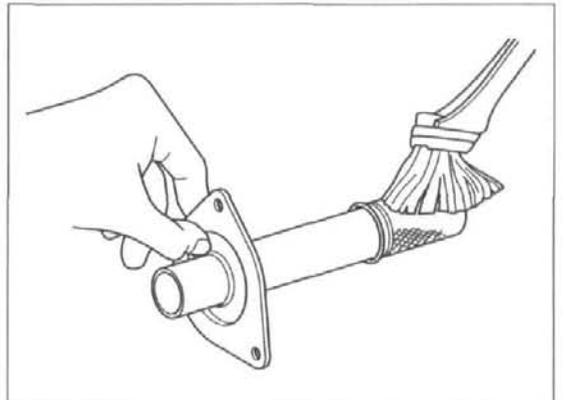
Remove the three bolts, muffler tail cover and the spark arrester with the gasket.



Use a brush to remove carbon deposits from the screen mesh, being careful not to damage the screen mesh.

The screen mesh must be free of breaks and holes. Replace the spark arrester if necessary.

Install a new gasket onto the spark arrester. Install the spark arrester and muffler tail cover, and tighten the bolts securely.



## NUTS, BOLTS, FASTENERS

Check that all chassis nuts and bolts are tightened to their correct torque values (page 1-16).

Check that all cotter pins, safety clips, hose clamps and cable stays are in place and properly secured.

## MAINTENANCE

### WHEELS/TIRES

*Tire pressure should be checked when the tires are cold.* Check the tire pressure with the tire pressure gauge.

'04 - '05: **RECOMMENDED TIRE PRESSURE:**

Front: Standard: 27.5 kPa (0.275 kg/cm<sup>2</sup>, 4.0 psi)  
Minimum: 23.5 kPa (0.235 kg/cm<sup>2</sup>, 3.4 psi)  
Maximum: 31.5 kPa (0.315 kg/cm<sup>2</sup>, 4.6 psi)  
Rear: Standard: 32.5 kPa (0.325 kg/cm<sup>2</sup>, 4.7 psi)  
Minimum: 28.5 kPa (0.285 kg/cm<sup>2</sup>, 4.1 psi)  
Maximum: 36.5 kPa (0.365 kg/cm<sup>2</sup>, 5.3 psi)

After '05: **RECOMMENDED TIRE PRESSURE:**

Front: Standard: 27.5 kPa (0.275 kg/cm<sup>2</sup>, 4.0 psi)  
Minimum: 25.0 kPa (0.250 kg/cm<sup>2</sup>, 3.6 psi)  
Maximum: 30.0 kPa (0.300 kg/cm<sup>2</sup>, 4.4 psi)  
Rear: Standard: 32.5 kPa (0.325 kg/cm<sup>2</sup>, 4.7 psi)  
Minimum: 30.0 kPa (0.300 kg/cm<sup>2</sup>, 4.3 psi)  
Maximum: 35.0 kPa (0.350 kg/cm<sup>2</sup>, 5.1 psi)

Check the tires for cuts, embedded nails, or other damage.

Measure the tread depth at the center of the tires. Replace the tires when the tread depth reaches the following limit.

**MINIMUM TREAD DEPTH (Front/rear):**  
4.0 mm (0.16 in)



### STEERING HEAD BEARING

Raise the front wheels off the ground and support the vehicle securely.

Check that the handlebar moves freely from side to side.

If the handlebar moves unevenly, binds, or has horizontal movement, inspect the steering shaft bearing (page 17-24).



### STEERING SHAFT HOLDER BEARING

Raise the front wheels off the ground and support the vehicle securely.

Check that the handlebar moves freely from side to side.

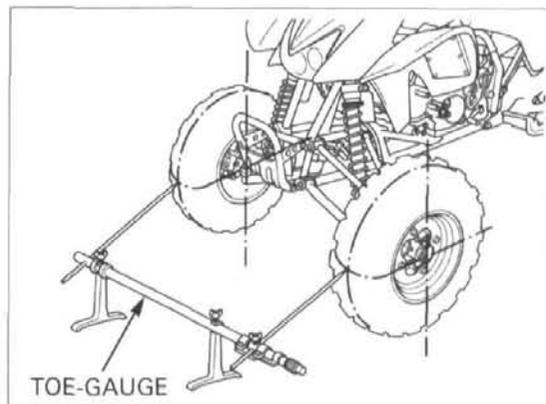
If the handlebar moves unevenly, binds, or has vertical movement, inspect the steering shaft holder bushing (page 17-24).



## STEERING SYSTEM

Place the vehicle on a level surface with the front wheels facing straight ahead. Mark the centers of the tires with chalk to indicate the axle center height.

Align the gauge with the marks on the tires as shown.



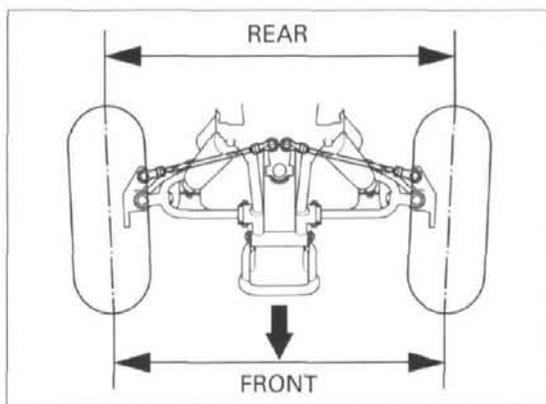
Slowly move the vehicle back until the wheels have turned 180° so the marks on the tires are aligned with the gauge height on the rear side. Measure the toe on the rear part of the tires at the same points with no load on the vehicle.

'04 - '05: **Toe-in: 11.4 ± 15 mm (0.45 ± 0.6 in)**

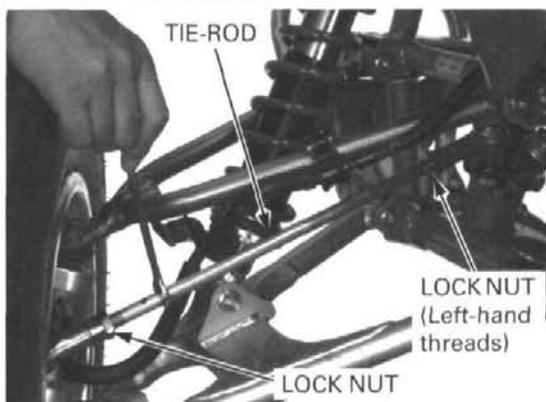
After '05: **Toe-in: 14 ± 15 mm (0.6 ± 0.6 in)**

**NOTE:**

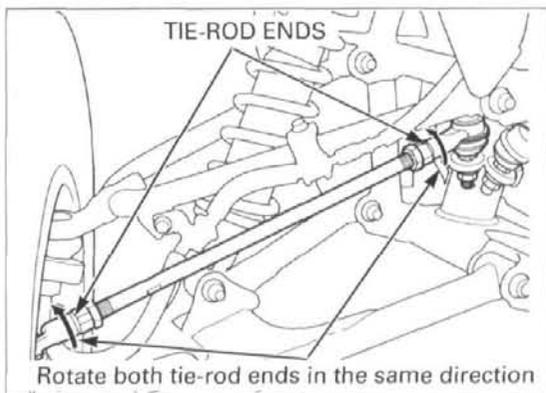
- Toe-in means the rear measurement is greater than the front measurement.



When the toe is out of specification, adjust it by changing the length of the tie-rods equally by loosening the lock nuts and turning the tie-rods while holding the ball joints.



After adjusting each tie-rod, rotate both tie-rod ends in the same direction, along the tie-rod axis, until they stop against the ball joint stud.



## MAINTENANCE

Using a 17 mm wrench, hold the tie-rod ends so that the relative angle of both tie-rods may turn into 27 degrees. Then, using a suitable torque wrench, tighten the tie-rod lock nuts, making sure not to force the tie-rod ends against the ball joint studs.

**TORQUE: 54 N·m (5.5 kgf·m, 40 lbf·ft)**

After tightening the lock nuts, rotate the tie-rods to make sure the ball joints have operate properly and have an equal range of movement.

Raise the wheel off the ground and check the hub, knuckle bearings or tie-rod ball joints for excessive play or abnormal noise.

