

## IMPORTANT NOTICE

THIS MOTORCYCLE IS DESIGNED AND MANUFACTURED FOR COMPETITION USE ONLY AND IS SOLD "AS IS" WITH NO WARRANTY. IT DOES NOT CONFORM TO FEDERAL MOTOR VEHICLE SAFETY STANDARDS AND OPERATION ON PUBLIC STREETS, ROADS, OR HIGHWAYS IS ILLEGAL.

STATE LAWS PROHIBIT OPERATION OF THIS MOTORCYCLE EXCEPT IN AN ORGANIZED RACING OR COMPETITIVE EVENT UPON A CLOSED COURSE WHICH IS CONDUCTED UNDER THE AUSPICES OF A RECOGNIZED SANCTIONING BODY OR BY PERMIT ISSUED BY THE LOCAL GOVERNMENTAL AUTHORITY HAVING JURISDICTION.

FIRST DETERMINE THAT OPERATION IS LEGAL.

OPERATOR ONLY, NO PASSENGERS.

This motorcycle is designed and constructed as an operator-only model. The motorcycle load limit and seating configuration do not safely permit the carrying of a passenger.

### READ THIS MANUAL CAREFULLY.

Pay special attention to statements preceded by the following words:

#### **▲ DANGER**

**Indicates severe personal injury or death will result if instructions are not followed.**

#### **▲ WARNING**

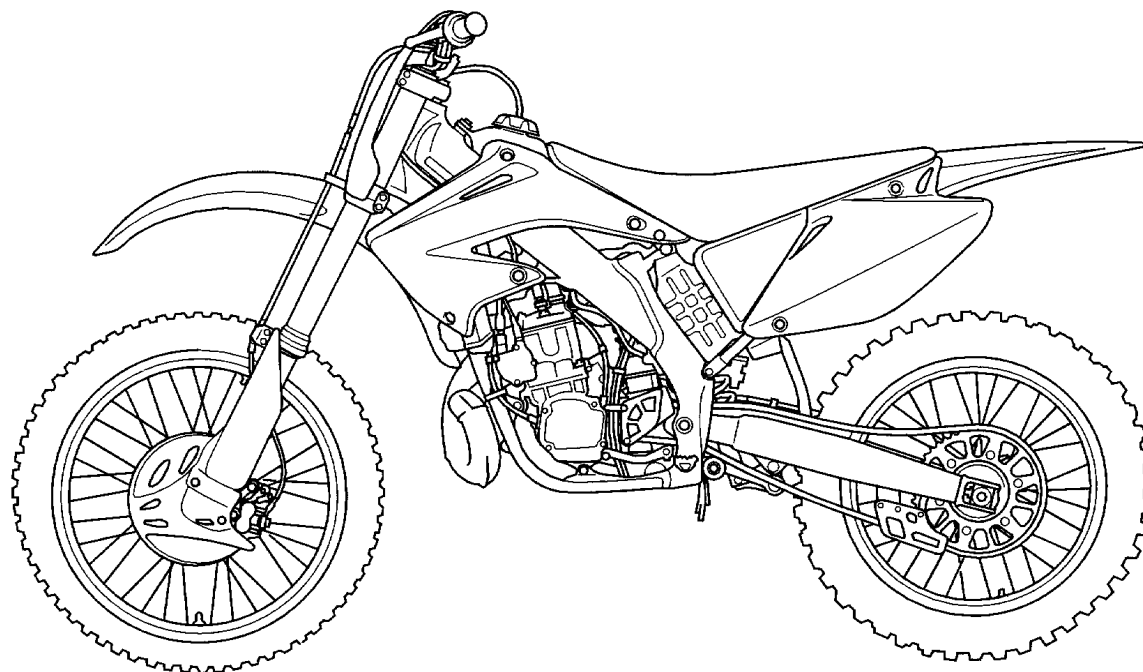
***Indicates a strong possibility of severe personal injury or death if instructions are not followed.***

#### **CAUTION:**

***Indicates a possibility of personal injury or equipment damage if instructions are not followed.***

NOTE: Gives helpful information.

This manual should be considered a permanent part of the motorcycle and should remain with the motorcycle when resold.



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## TO THE NEW OWNER

By selecting a Honda motocross CR250R as your new motorcycle, you have placed yourself in a distinguished family of motorcycle owners and riders.

### **▲WARNING**

- *The CR is a high performance racing motorcycle utilizing the latest motocross technology. This motorcycle is intended for competition use by experienced riders only.*

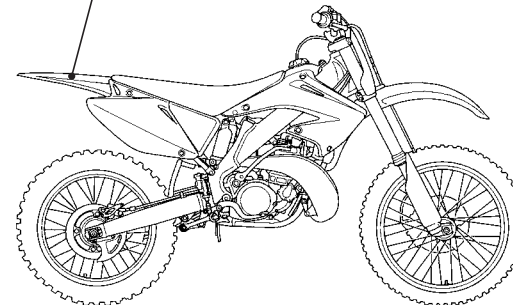
This new motocross model was designed to be as competitive as possible. But motocross is a physically demanding sport that requires more than just a fine motorcycle. To do well, you must be in excellent physical condition and be a skillful rider. For the best possible results, work diligently on your physical conditioning and practice frequently.

The purpose of this Owner's Manual is to help ensure that you obtain the greatest possible satisfaction from your new CR motocrosser – satisfaction with the performance of the motorcycle, and through success in competition.

The Service Manual for your CR is available from your authorized Honda dealer. It is the same manual your dealer uses. If you plan to do any service on your CR beyond the standard maintenance procedures included in this Owner's Manual, you will find the Service Manual an effective and worthwhile tool. If your dealer does not have the Service Manual for your particular year and model in stock, he can order it.

Read this WARNING LABEL before you ride.

**IMPORTANT INFORMATION**  
OPERATOR ONLY. NO PASSENGERS.  
THIS HONDA MOTORCYCLE IS SOLD AS IS WITHOUT WARRANTY, AND THE ENTIRE RISK AS TO QUALITY AND PERFORMANCE IS WITH THE BUYER.  
READ OWNER'S MANUAL.  
THIS VEHICLE IS DESIGNED AND MANUFACTURED FOR COMPETITION USE ONLY. IT DOES NOT CONFORM TO FEDERAL MOTOR VEHICLE SAFETY STANDARDS AND OPERATION ON PUBLIC STREETS, ROADS, OR HIGHWAYS IS ILLEGAL.  
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FIRST DETERMINE THAT OPERATION IS LEGAL.



### **PROTECTIVE APPAREL**

1. Most motorcycle accident fatalities are due to head injuries: **ALWAYS** wear an approved motorcycle helmet. You should also wear a face shield or goggles, boots, gloves, and protective clothing.
2. The exhaust system becomes very hot during operation, and it remains hot after operation. Never touch any part of the hot exhaust system. Wear clothing that fully covers your legs.
3. Do not wear loose clothing which could catch on the control levers, kickstarter, footpegs, drive chain, or wheels.

### **MODIFICATIONS**

#### **▲WARNING**

- *Modification of the motorcycle, or removal of original equipment may render the vehicle unsafe or illegal. Obey all federal, state, and local equipment regulations.*

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## 1. OPERATING INSTRUCTIONS

### FUEL

Your CR has a two-stroke engine that requires a gasoline-oil mixture.

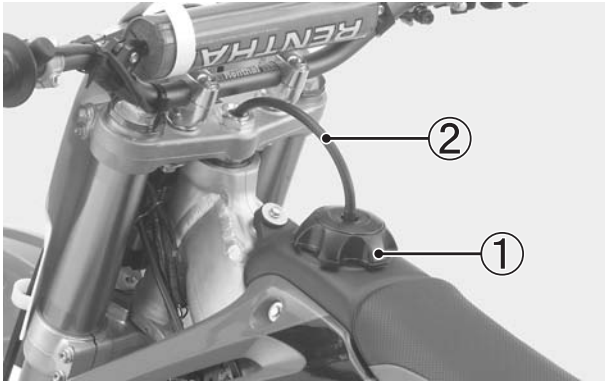
**Fuel tank capacity: 2.0 US gal (7.7 liter, 1.7 Imp gal)**

To open the fuel fill cap, pull the breather tube out of the steering stem nut. Then turn the fuel fill cap counterclockwise.

- Use automobile gasoline with a pump octane number of 92 or higher. If “knocking” or “pinging” occurs, try a different brand of gasoline or a higher octane grade.
- Premix gasoline and oil in a ratio of 32:1. Prepare the fuel mixture in a clean container, and shake until thoroughly mixed before filling the fuel tank.  
**USE PRO Honda HP2 2-STROKE OIL (32:1) OR AN EQUIVALENT.**

#### CAUTION:

- *Too much oil will cause excessive smoking and spark plug fouling. Too little oil will cause engine damage or premature wear.*



(1) FUEL FILL CAP

(2) BREATHER TUBE

- Vegetable oils separate from gasoline more easily than mineral oils, especially in cold weather. It is advisable to use mineral oil when ambient temperatures below 0°C (32°F) are expected.
- If the gasoline-oil mixture is left standing in a container for a long period of time, lubricity will deteriorate. Use the mixture within 24 hours or the time period recommended by the oil manufacturer.
- Once an oil container is opened, the oil must be used within one month, since oxidation may occur.

#### CAUTION:

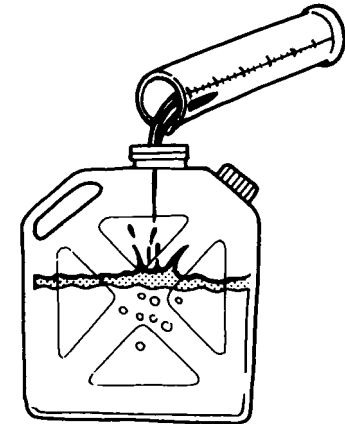
- *Do not mix vegetable and mineral based oils.*

#### ⚠ WARNING

- *Gasoline is extremely flammable and is explosive under certain conditions. Perform this operation in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where gasoline is drained or stored and where the fuel tank is refueled.*

### 32:1 FUEL OIL MIXING CHART

Fuel 32		Oil 1	
Gallons	Liters	Ounces	cm <sup>3</sup>
0.5	1.89	2.0	59
1.0	3.79	4.0	118
1.5	5.68	6.0	177
2.0	7.57	8.0	237
2.5	9.46	10.0	296
3.0	11.36	12.0	355
3.5	13.24	14.0	414
4.0	15.14	16.0	473
4.5	17.03	18.0	532
5.0	18.92	20.0	591
5.5	20.81	22.0	651
6.0	22.71	24.0	710



## BASIC OPERATION

### Starting The Engine

#### **▲ WARNING**

- **Never run the engine in an enclosed area. The exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and lead to death.**
- **Attempting to start the engine with the transmission in gear and clutch engaged may result in injury or damage.**

#### NOTE:

- This motorcycle can be kickstarted with the transmission in gear by disengaging the clutch before operating the kickstarter.

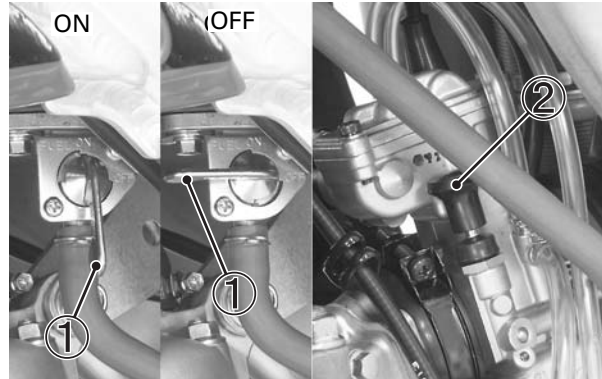
Check the transmission oil and coolant levels before starting the engine (page 19, 20).

#### Cold Engine Starting:

1. Turn the fuel valve ON.
2. Shift the transmission into neutral.
3. Pull the choke knob up.
4. With closed throttle, operate the kickstarter. Starting from the top of the kickstarter stroke, kick through to the bottom with a rapid, continuous motion.
5. After the engine starts, the choke knob should be pushed down as soon as possible to prevent spark plug fouling.
6. Allow the engine to warm up for at least 2 minutes before riding off, preferably until the side of the cylinder is very warm to the touch through your riding glove. Slowly increase rpm and don't blip the throttle. Warming the engine is important to prevent cold seizures.

#### Warm Engine Starting:

1. Turn the fuel valve ON.
2. Shift the transmission into neutral.
3. Push the choke knob down.
4. Open the throttle (1/8 — 1/4) and operate the kick starter.



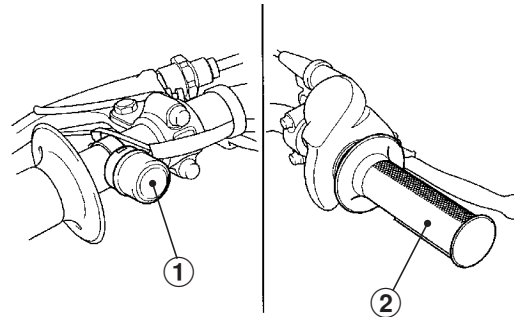
(1) FUEL VALVE (2) CHOKE KNOB

#### Stopping The Engine

1. Shift the transmission into neutral.
2. Turn the fuel valve OFF.
3. Lightly open the throttle 2 — 3 times, and then close it.
4. Depress and hold the engine stop button until the engine stops completely.

#### NOTE:

- Failure to close the fuel valve may cause the carburetor to overflow, fill the crankcase with fuel, and result in hard starting.



(1) ENGINE STOP BUTTON (2) THROTTLE GRIP

#### Break-In Procedure

Help assure your CR's future reliability and performance by paying extra attention to how you ride during the first operating day or 15 miles (25 km).

During this period, avoid full-throttle starts and rapid acceleration.

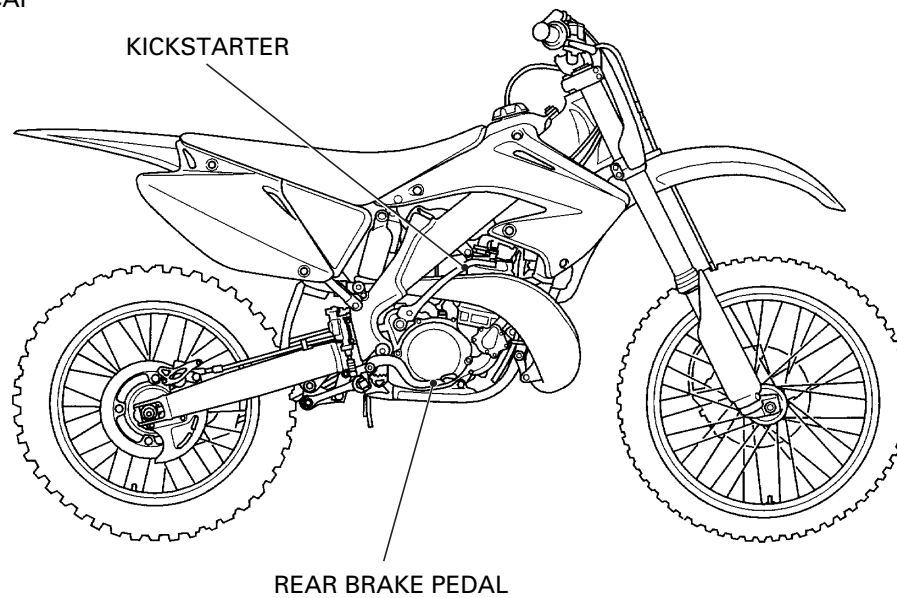
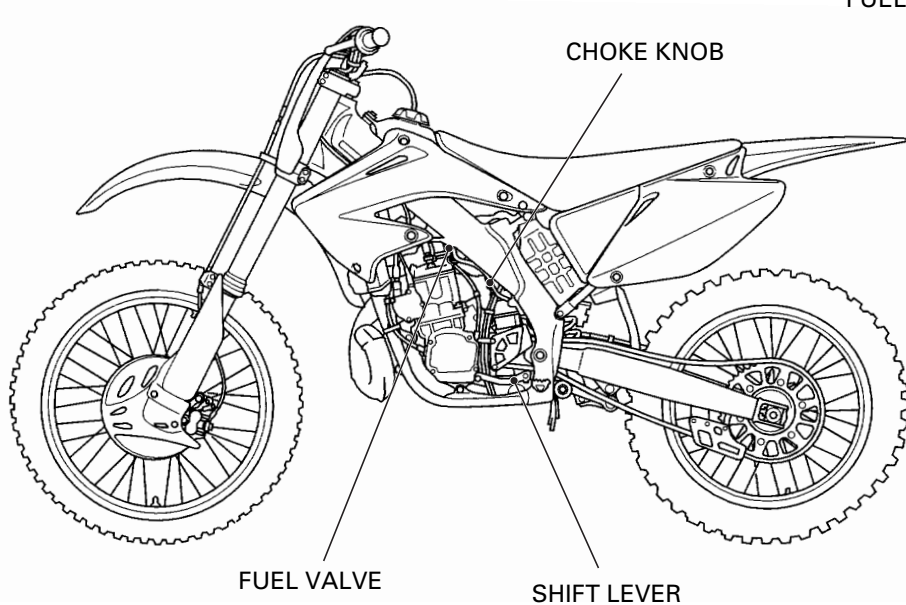
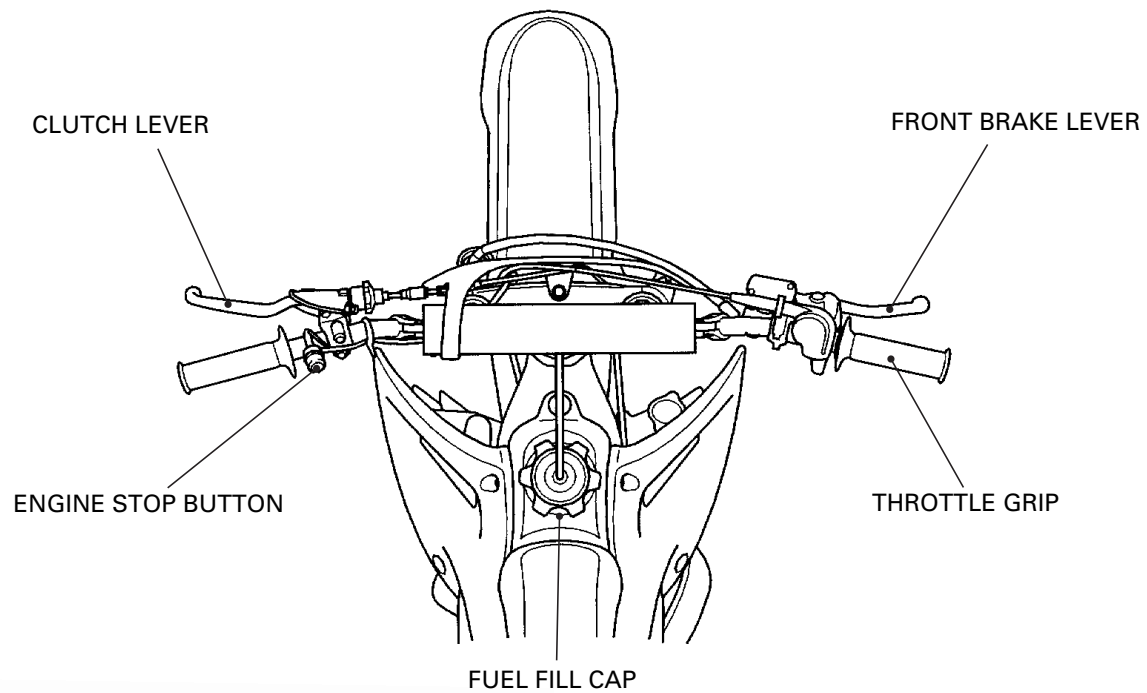
This same procedure should be followed each time when:

- Piston is replaced
- Rings are replaced
- Cylinder is replaced
- Crankshaft or crank bearings are replaced

# 1. OPERATING INSTRUCTIONS

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## CONTROLS

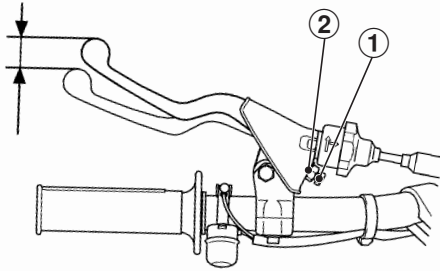


## Clutch Lever Position

### CAUTION:

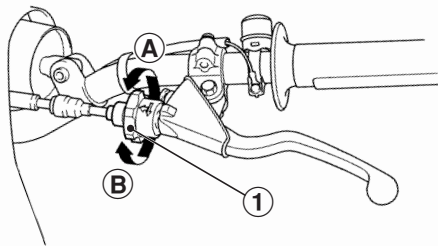
- **Make sure to adjust the clutch lever free play after the clutch lever position adjustment or clutch cable disconnected.**

1. The clutch lever position can be adjusted by loosening the lock nut and turning the adjuster. Turning the adjuster counterclockwise moves the clutch lever farther away from the grip; turning the adjuster clockwise moves the clutch lever closer to grip. Tighten the lock nut securely.



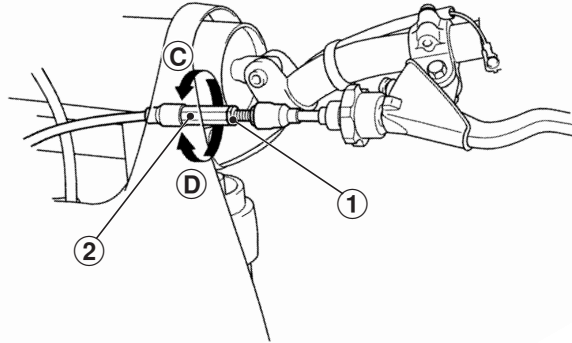
(1) ADJUSTER (2) LOCK NUT

2. Turn the clutch cable adjuster in direction A until it seats lightly and then turn it out 5 turns.



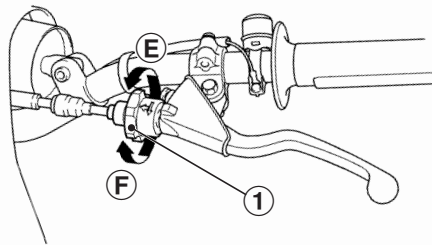
(1) CABLE END ADJUSTER  
(A) INCREASE  
(B) DECREASE

3. Loosen the lock nut and turn the integral cable adjuster to adjust the clutch lever free play  $3/8 - 3/4$  in (10–20 mm) at the tip of lever. Tighten the lock nut.



(1) LOCK NUT  
(2) INTEGRAL CABLE ADJUSTER  
(3) INCREASE  
(4) DECREASE

4. Adjust the clutch cable end adjuster for minor adjustment.

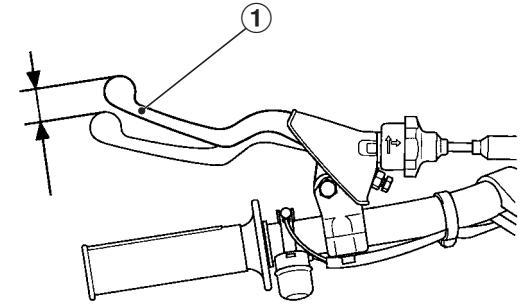


(1) CABLE END ADJUSTER  
(E) INCREASE  
(F) DECREASE

## CONTROL ADJUSTMENT

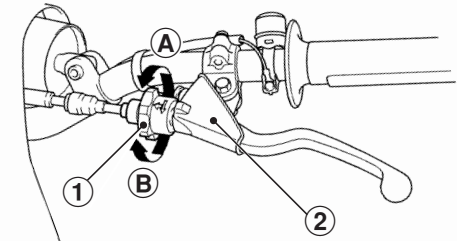
### Clutch Lever Free Play

1. The normal clutch lever free play is  $3/8 - 3/4$  in (10–20 mm) at the tip of the lever.



(1) CLUTCH LEVER

2. Minor adjustments can be made with the cable end adjuster. Turning the adjuster in direction A will increase free play and turning in the direction B will decrease free play. If the adjuster is threaded out near its limit or the correct free play cannot be reached, turn the adjuster all the way in and back out one turn and make the adjustment with the integral cable adjuster.



(1) CABLE END ADJUSTER  
(2) DUST COVER  
(A) INCREASE  
(B) DECREASE

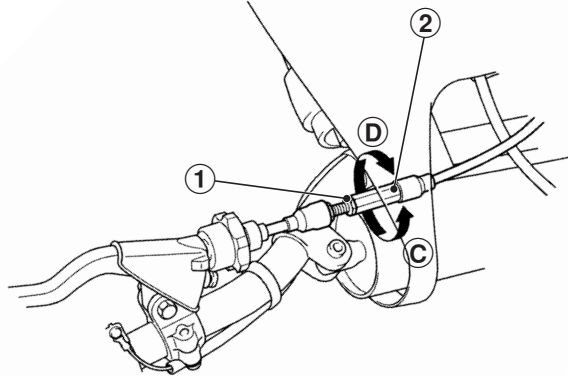


# 1. OPERATING INSTRUCTIONS

- Major adjustments can be made at the integral cable adjuster. Loosen the lock nut and turn the adjuster. Turning the adjuster in direction C will increase free play and turning it in direction D will decrease free play. Tighten the lock nut after adjusting.
- Test ride to be sure the clutch operates properly without slipping or dragging.

**NOTE:**

- If proper adjustment still cannot be obtained or the clutch does not operate correctly, see pages 23 — 24, refer to the Honda Service Manual, or see your authorized Honda dealer for clutch disassembly and wear inspection.



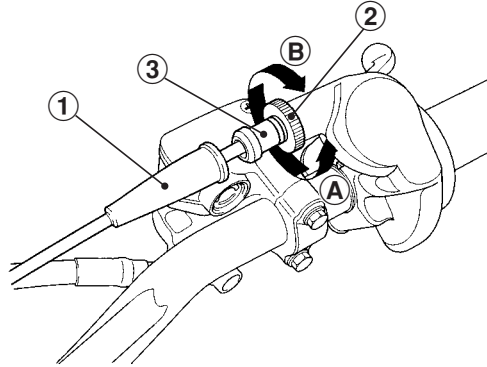
(1) LOCK NUT (2) INTEGRAL CABLE ADJUSTER  
(C) INCREASE (D) DECREASE

**Throttle Grip**

Standard throttle grip free play is approximately 1/8 — 3/16 in (3 — 5 mm) of grip rotation.

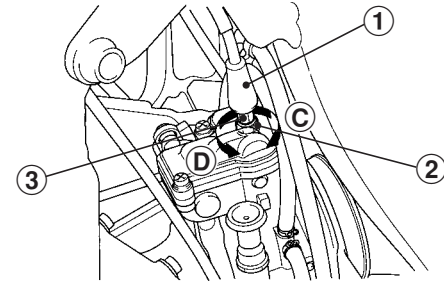
- Minor adjustment is made with the upper adjuster. Remove the dust cover and loosen the lock nut. Turning the adjuster in direction A will increase free play and turning it in direction B will decrease free play. Tighten the lock nut and reinstall the dust cover after adjustment.

If the adjuster is threaded out near its limit or the correct free play cannot be reached, turn the adjuster all the way in and back out one turn. Tighten the lock nut, install the dust cover and make the adjustment with the carburetor top adjuster.



(1) DUST COVER (2) LOCK NUT  
(3) UPPER ADJUSTER (A) DECREASE (B) INCREASE

- To make major adjustments, loosen the lock nut. Turn the adjuster in direction C to increase free play, and in direction D to decrease free play. Tighten the lock nut.
- Operate the throttle grip to ensure that it functions smoothly and returns completely.



(1) DUST COVER (2) LOCK NUT  
(3) ADJUSTER (C) INCREASE (D) DECREASE

### Front Brake Lever

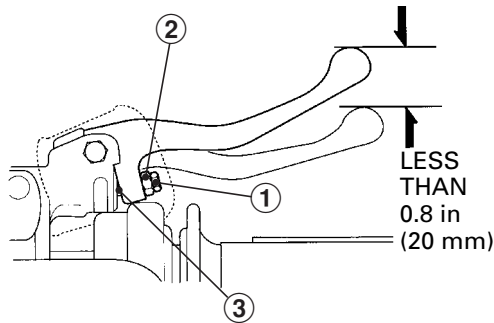
The front brake lever position can be adjusted by loosening the lock nut and turning the adjuster. Turning the adjuster clockwise moves the brake lever farther away from the grip; turning the adjuster counterclockwise moves the brake lever closer to the grip.

Tighten the lock nut securely.

If the brake lever free play exceeds 0.8 in (20 mm), there is probably air in the brake system and it must be bled. Refer to the Honda Service Manual or see your authorized Honda dealer for brake bleeding.

#### CAUTION:

- Apply grease to the contacting faces of the adjuster and piston.



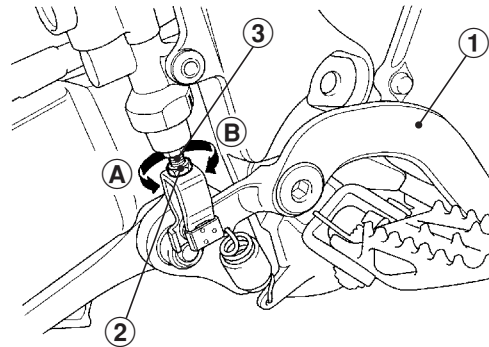
(1) ADJUSTER (2) LOCK NUT (3) PISTON

### Brake Pedal Height

The brake pedal height should be approximately level with the right footpeg.

To adjust the rear brake pedal height:

1. Loosen the lock nut and turn the adjusting bolt in direction A to raise the pedal, or in direction B to lower it.
2. Tighten the lock nut at the desired pedal height.

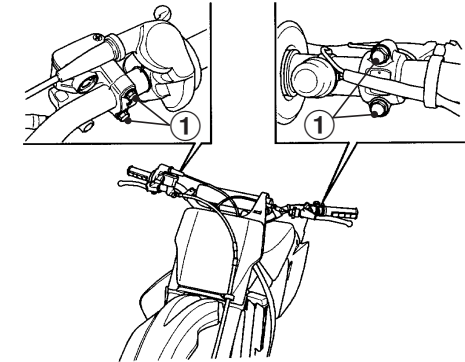


(1) REAR BRAKE PEDAL (2) LOCK NUT  
(3) ADJUSTING BOLT  
(A) RAISE THE PEDAL HEIGHT  
(B) LOWER THE PEDAL HEIGHT

### ADJUSTMENT FOR PERSONAL FIT

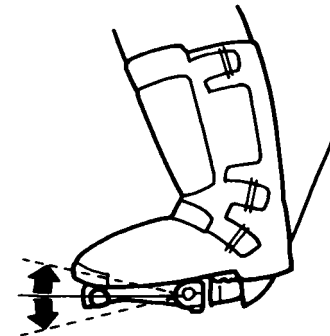
#### Control Positioning

- Position the control levers so that control use is comfortable when both seated and standing.
- Adjust control lever mounting bolt torque so that the levers will rotate on the handlebar in a fall, rather than bending or breaking. Apply Honda Thread Lock or an equivalent to the threads of these bolts prior to adjustment to help ensure the correct torque is retained. Tighten the top bolts first.



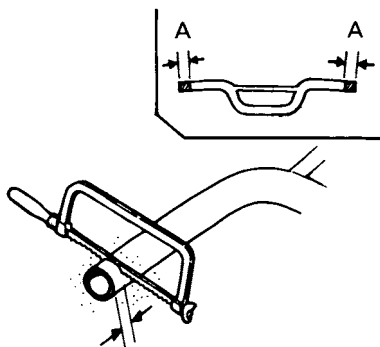
(1) CONTROL LEVER MOUNT BOLTS

- Position the shifter and brake pedal so that they are close to your boot for rapid access, but not so close that either is depressed when sitting or standing comfortably on the bike.



### Handlebar Position, Width & Shape

- Position the handlebar so that both gripping the bar and operating the controls are comfortable while both seated and standing, while riding straight ahead and turning. Tighten the forward bolts first.
- Using optional handlebar lower holders, the handlebar position may be moved 3 mm forward or backward. Refer to the Service Manual for installation instructions. Be sure to check the control cable and wiring harness routing after adjustment.
- Handlebar width can be trimmed with a hacksaw to better suit your particular shoulder width and riding preference. Think this through carefully and cut off just a small amount at a time from both sides equally. It is obviously much easier to make the handlebar narrower than it is to add material.



#### NOTE:

- Chamfer the edges to remove burrs and other irregularities or roughness after sawing the handlebar.
- An alternate handlebar shape, through varying rise or rearward sweep dimensions, will provide further adjustment to riding position and may better suit your particular body size or riding style. Each of the ergonomic dimensions of the machine were determined to suit the greatest possible number of riders based on an average size rider.

### Additional Individualized Adjustments

- Initial suspension adjustments should be performed after a minimum of two hours of easy break-in time. Complete information on suspension adjustment is given in the Suspension Adjustment section.
- Optional front and rear suspension springs (front: stiffer, rear: stiffer and softer) are available to tailor your CR specifically for your weight, riding style and course conditions. Follow the instructions given in the rear suspension sag setting section of Suspension Adjustment to determine if your combined rider and sprung machine weight (rider fully dressed for competition and machine coolant, oil and fuel levels ready for competition) requires an optional stiffer or softer rear spring. The use of the stiffer rear spring may need to be balanced by the use of the stiffer front spring.
- In order to further fine tune your CR for specific course terrain and conditions, there is a choice of both higher and lower final drive ratios with two optional aluminum driven sprockets. For muddy or sandy courses, there is a more durable steel driven sprocket with the standard number of teeth. Like the optional seats and springs, these sprockets are listed in the optional parts section of this manual.

## 2. SPECIFICATIONS

Item	English	Metric
<b>Dimension</b>		
Overall length	85.5 in	2,180 mm
Overall width	32.4 in	1,263 mm
Overall height	49.7 in	1,263 mm
Wheelbase	58.3 in	1,482 mm
Seat height	37.4 in	950 mm
Footpeg height	17.2 in	436 mm
Ground clearance	13.3 in	339 mm
Dry weight	213 lb	96.5 kg
<b>Frame</b>		
Type	Twin tube	
F. suspension	Telescopic fork, travel 11.1 in (281 mm) stroke 12.4 in (315 mm)	
R. suspension	Pro-link, travel 12.4 in (314 mm)	
F. tire size, pressure psi (kPa, kgf/cm <sup>2</sup> )	80/100 — 21 51M 15 (100, 1.0)	
R. tire size, pressure psi (kPa, kgf/cm <sup>2</sup> )	110/90 — 19 62M 15 (100, 1.0)	
F. brake, swept area	Single disc brake 51.8 in <sup>2</sup> (334.5 cm <sup>2</sup> )	
R. brake, swept area	Single disc brake 60.6 in <sup>2</sup> (391.1 cm <sup>2</sup> )	
Fuel capacity	2.0 US gal 1.7 Imp gal	7.7 liter
Caster angle	26°49'	
Trail length	4.2 in	107.3 mm
Fork oil capacity (fork tube per leg)	13.7 US oz	405 cm <sup>3</sup>

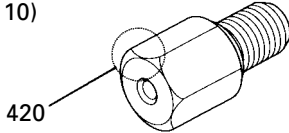
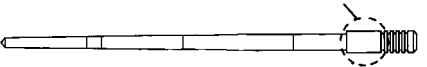
Item	English	Metric
<b>Engine</b>		
Type	Liquid cooled, 2-stroke	
Cylinder arrangement	Single 9° inclined from vertical	
Bore and stroke	2.61 × 2.83 in	66.4 × 72.0 mm
Displacement	15.2 cu-in	249.3 cm <sup>3</sup>
Compression ratio	8.6 : 1	
Transmission oil capacity draining	22 US oz 23 Imp oz	650 cm <sup>3</sup>
at disassembly	24 US oz 25 Imp oz	700 cm <sup>3</sup>
<b>Carburetor</b>		
Type	Piston valve	
Identification number	TMX11A	
Main jet (standard)	#420	
Jet needle (standard)	6CHY12-82	
Needle clip position (standard)	2nd groove	
Slow jet (standard)	#32.5	
Air screw opening	1 1/2 turns out	
Float level	0.47 in	7.5 mm
<b>Drive train</b>		
Clutch type	Wet, multi-plate type	
Transmission	5-speed, constant mesh	
Primary reduction	3.000	
Gear ratio I	1.800	
Gear ratio II	1.470	
Gear ratio III	1.210	
Gear ratio IV	1.000	
Gear ratio V	0.869	

Item	English	Metric
<b>Drive train</b>		
Final reduction	3.846	
Gear shift pattern	Left foot-operated return system 1-N-2-3-4-5	
<b>Electrical</b>		
Ignition	CDI	
Starting system	Kickstarter	
Spark plug: Standard	NGK BR8EG	
	DENSO W24ESR-V	
Optional	NGK BR8EV	
	DENSO W24ESR-G	



### 3. OPTIONAL PARTS










#### OPTIONAL PARTS LIST

These parts and tools may be ordered from your authorized Honda dealer.

CARBURETOR		Remarks
Main jet (Standard: #420)	#360 — #480 (in increments of 10)	
Slow jet (Standard: #32.5)	#27.5 — #45 (in increments of 2.5)	
Jet Needles Standard needle: 6CHY12-82 Straight diameter: $\phi$ 2.730 mm		
Straight diameter (2.820 mm) Jetneedle number		
		
	Jet needle number (standard series)	Jet needle number (1/2 clip position leaner than standard series. Leaner only at 1/8 to 3/4 throttle)
General flow characteristics Richer ↑ (at 1/16 to 1/8 throttle) ↓ Leaner	6CHY12-79 $\phi$ 2.790 mm	6CHY13-79 $\phi$ 2.790 mm
	6CHY12-80 $\phi$ 2.800 mm	6CHY13-80 $\phi$ 2.800 mm
	6CHY12-81 $\phi$ 2.810 mm	6CHY13-81 $\phi$ 2.810 mm
	(standard needle) 6CHY12-82 $\phi$ 2.820 mm	6CHY13-82 $\phi$ 2.820 mm
	6CHY12-83 $\phi$ 2.830 mm	6CHY13-83 $\phi$ 2.830 mm
	6CHY12-84 $\phi$ 2.840 mm	6CHY13-84 $\phi$ 2.840 mm
	6CHY12-85 $\phi$ 2.850 mm	6CHY14-85 $\phi$ 2.850 mm

FRAME	Remarks
Driven sprocket Standard	< >: Drive chain links 50 Teeth, Aluminum. <114>
Optional	49 Teeth, Aluminum <114> 47 Teeth, Aluminum <112>
Handlebar lower holder Standard	no offset
Optional	3 mm offset
Front wheel Standard	21 inch Fork height: 0.3 in (7.0 mm) (align the index groove with the top of the upper clamp)
Optional	20 inch <ul style="list-style-type: none"> <li>• wheel assembly (except brake disk)</li> <li>• tire tube</li> <li>• tire flap</li> <li>• rim lock (bead stopper)</li> <li>• front tire (90/100-20)</li> </ul> Fork height: 0 in (0 mm) (align the top of the fork tube with the top of the upper clamp)

TOOLS	Remarks
Pin spanner A 	To adjust spring preload. (two spanners required)
Workstand 	For maintenance

FRAME	Remarks
Shock spring Standard	285.6 lbf/in (5.1 kgf/mm) No mark (factory products)  or White paint (aftermarket parts) 
Optional Softer	274.4 lbf/in (4.9 kgf/mm)  Black paint
Stiffer	296.8 lbf/in (5.3 kgf/mm)  Blue paint 308.0 lbf/in (5.5 kgf/mm)  Red paint
Fork spring Standard	24.64 lbf/in (0.44 kgf/mm) No mark (factory products)  or 3 scribe marks (aftermarket parts) 
Optional Softer	23.52 lbf/in (0.42 kgf/mm)  1 scribe mark
Stiffer	25.76 lbf/in (0.46 kgf/mm)  2 scribe marks

The standard fork spring and shock spring mounted on the motorcycle when it leaves the factory are not marked. Before replacing the springs, be sure to mark them so they can be distinguished from other optional springs.

**PRE-RIDE INSPECTION CHECK LIST**

**Pre-ride Inspection**

**▲ WARNING**

- *If the Pre-ride and Pre-race inspection are not performed, severe personal injury or vehicle damage may result.*
- Transmission oil level ..... 20
- Coolant for proper level ..... 21
- Cooling system and hoses for condition ..... 21
- Spark plug for proper heat range, carbon fouling and high tension cord terminal for looseness ..... 22
- Air cleaner for condition and contamination ..... 23
- Clutch operation and free play ..... 5
- Steering head bearings and related parts for condition ..... 35
- Carburetor throttle operation ..... 6, 35
- Tires for damage or improper inflation pressure ..... 36
- Spokes for looseness ..... 36
- Rim locks for looseness ..... 36
- Front and rear suspension for proper operation ..... 37, 38
- Front and rear brakes, check operation ..... 6, 39
- Drive chain for correct slack and adequate lubrication ..... 41
- Drive chain guide, sliders and guide rollers for damage or wear ..... 43
- Expansion chamber springs for damage or lack of tension ..... 44
- Every possible part for looseness (such as cylinder head nuts, engine mounting bolts, axle nuts, handlebar holder bolts, fork triple clamp bolts, drive chain adjuster, drive chain guide, wire harness connectors, kickstarter mounting bolt, etc.) ..... 45

**MAINTENANCE SCHEDULE**

Perform the Pre-ride Inspection at each scheduled maintenance period.  
 I: Inspect and Clean, Adjust, Lubricate or Replace if necessary. C: Clean. R: Replace. L: Lubricate.

ITEM	FREQUENCY	NOTE	Each race	Every 3	Every 9	Ref. page
			or about 2.5 hours	races or about 7.5 hours	races or about 22.5 hours	
THROTTLE OPERATION			I			6, 35
AIR CLEANER		(NOTE 1)	C			23
SPARK PLUG			I	R		22
RADIATOR COOLANT		(NOTE 2)	I			21
COOLING SYSTEM			I			21
CYLINDER HEAD DECARBONIZING				C		30
EXHAUST VALVE AND LINKAGE DECARBONIZING				C		27
PISTON AND PISTON RINGS				R		30
PISTON PIN AND CONNECTING ROD SMALL END BEARING					R	30, 31
REED VALVE ONLY				R		31
TRANSMISSION OIL				R		20
DRIVE CHAIN			I, L	R		41 — 42
DRIVE CHAIN SLIDERS			I			43
DRIVE CHAIN ROLLERS			I			43
DRIVE SPROCKET			I			41 — 42
DRIVEN SPROCKET			I			41 — 42, 43
BRAKE FLUID		(NOTE 2)	I			39
BRAKE PAD WEAR			I			40
BRAKE SYSTEM			I			6, 39
CLUTCH SYSTEM			I			5, 24 — 25
CONTROL CABLES			I, L			44
EXPANSION CHAMBER/SILENCER			I			44
SUSPENSION			I			37, 38
SWINGARM/SHOCK LINKAGE				L		16, 38
FORK OIL	FORK TUBE/SLIDER	(NOTE 3)		R		56, 60
	DAMPER				R	64 — 66
NUTS, BOLTS, FASTENERS			I			35, 45
WHEELS/TIRES			I			36
STEERING HEAD BEARINGS					I	35

This maintenance schedule is based upon average riding condition. Machine subjected to severe use requires more frequent servicing.

- NOTE: 1. Clean after every moto for dusty riding conditions.  
 2. Replace every 2 years. Replacement requires mechanical skill.  
 3. Replace after the first break-in ride.

## 4. SERVICE AND MAINTENANCE

### GENERAL SERVICE INFORMATION

- Perform maintenance on firm, level ground using the optional workstand or equivalent support.
- Always install new gaskets, O-rings, cotter pins, piston pin clips, snap rings, etc. when reassembling.
- When tightening bolts, nuts or screws, start with the larger diameter or inner fasteners, and tighten them to the specified torque using a crisscross pattern.
- Use genuine Honda parts or their equivalent when servicing your CR.
- Clean parts in non-flammable cleaning solvent when disassembling. Lubricate any sliding surface, O-rings, and seals before reassembling.

#### ▲WARNING

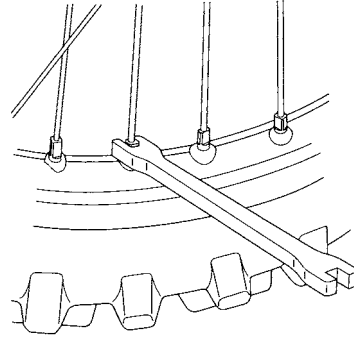
- **Gasoline or low flash point solvents are highly flammable or explosive and must never be used for cleaning parts or the air filter element. Fire or explosion could result.**
- After reassembling, check all parts for proper installation and operation.
- Grease parts by coating or filling where specified.

#### NOTE:

- Specifications are listed on page 9.

### BETWEEN MOTO/BETWEEN PRACTICE AND MOTO MAINTENANCE

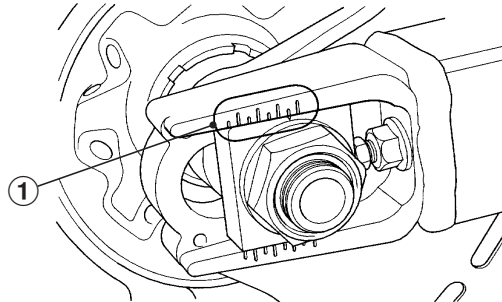
- Dirt = wear and weight. Clean accumulated dirt from under fenders and off of wheels, suspension, grips, controls and footpegs. A stiff, nylon parts cleaning brush works well.
- Check tire air pressure.
- Check spoke tension and rim lock nut securely.



- Check sprocket bolt and nut securely.
- Clean chain with a stiff, nylon parts cleaning brush; lubricate and adjust as necessary.

#### ▲WARNING

- **Do not perform maintenance while engine is running. Injury to your fingers or hands may result.**
- After adjustment, check that the chain adjuster index marks are in the same position on each side to be sure the rear wheel is in proper alignment. This is especially important for best performance from the rear disc brake and to extend pad wear.

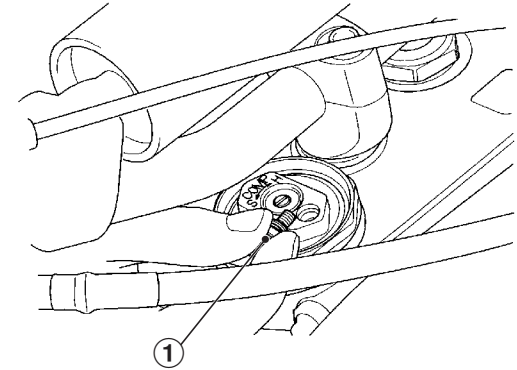


(1) CHAIN ADJUSTER INDEX MARK

- Be sure the fuel and oil is mixed well by agitating it thoroughly before pouring pre-mix into the fuel tank.



- Release the built-up pressure in the fork tubes (in excess of normal atmospheric pressure: 0 psi) caused by normal fork action while riding. The front wheel should be suspended above ground for this operation.



(1) PRESSURE RELEASE SCREW

## AFTER RACE MAINTENANCE

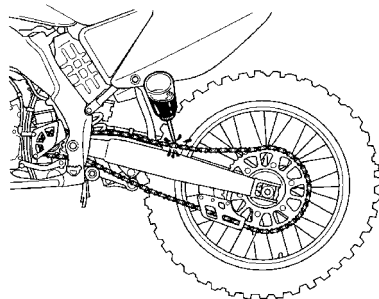
It is important to the long term performance of your CR to properly maintain your racebike at all times. If you envision the maintenance cycle ending as the machine is fully prepared for practice at the next event and beginning again after that practice, there is clearly work to do in between. After the race is a good place to begin your routine maintenance.

### After Race Lubrication

Apply a light coating of rust-inhibiting oil to the drive chain, drive sprocket and any steel portions of the chassis or engine where the paint has worn away and the exposed metal can begin to rust. Apply this rust-inhibiting oil more heavily if the event was particularly wet or muddy.

#### ▲ WARNING

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



### Routine Cleaning

If the machine is only slightly dirty, it is best to clean it by hand with the aid of a stiff bristled nylon brush and some clean rags. There is no reason to introduce unnecessary moisture.

#### ▲ WARNING

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

Allow enough time to completely clean and dry your CR to reduce the possibility of corrosion or rust.

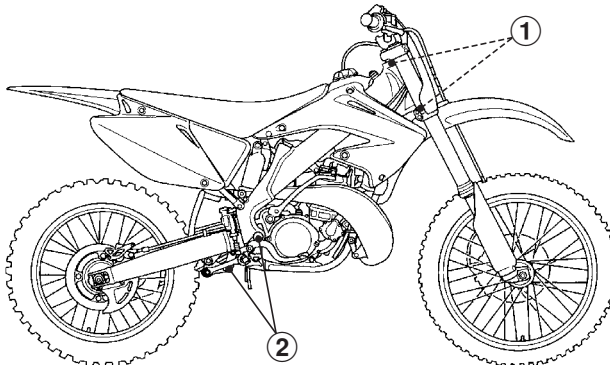
Accumulated dirt should be loosened with a shower of water; then brushed away with suitable brushes, soap and water; then the machine rinsed with clean water and wiped completely dry.

A variety of reasonably priced cleaning brushes are available from variety, drug, food and hardware stores that are extremely useful in removing dirt from the many tight contours of your machine.

### Pressurized Spray Washers

#### CAUTION:

- *There are some areas on your CR that you should never directly aim the nozzle of a high pressure spray washer. It is tempting to let the pressure of the water remove all the dirt that has accumulated, but control yourself. The force of the water under this extreme pressure can penetrate the dust seals of the suspension pivot points and steering head bearings—driving dirt inside and needed lubrication out. Avoid spraying water under the seat and fuel tank and into the airbox as well.*



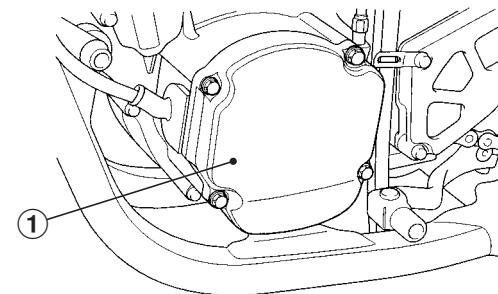
- (1) STEERING HEAD BEARINGS  
(2) SUSPENSION PIVOT POINTS

### Condensation Control

Changes in temperature combined with humidity allow moisture to form in some confined areas on your CR. The most affected area is the alternator/ignition cavity in the left side of the crankcases.

Each time you wash your CR you should remove the alternator cover, wipe out any visible moisture, and allow the cavity to air dry for at least a couple of hours before installing the cover. Replace the gasket with a new one if it is not in good condition before installing the cover.

Some condensation can form within the transmission cavity as well. This is natural and just one more reason you should change the transmission oil often.



- (1) ALTERNATOR COVER

### After Cleaning Lubrication

Although you can basically follow the suggestions given in the Maintenance section under General Maintenance (pages 14—16), there are some things you should do just after washing your CR to help prevent rust and corrosion.

Once your CR is clean and dry, you should protect any bare steel from rusting by applying a light coating of a rust-inhibitor. Lubricate the drive chain and drive sprocket after removing and thoroughly cleaning in solvent. Be sure the chain is wiped clean and is dry before applying the chain lube.

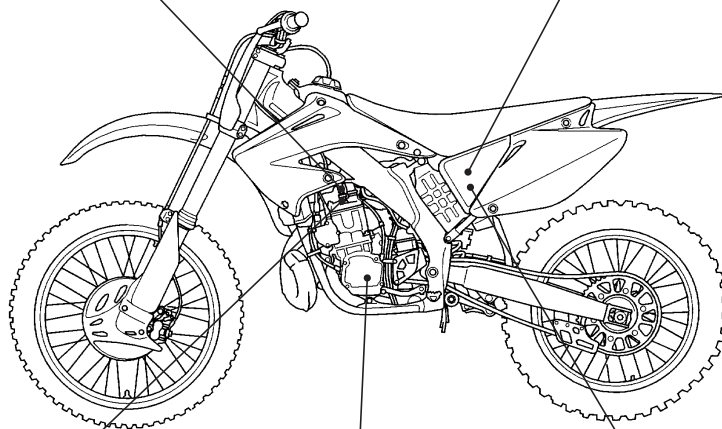
Follow the suggestions given in the pages of this manual for lubricating items such as the brake and clutch lever pivot points and footpeg pivot pins.



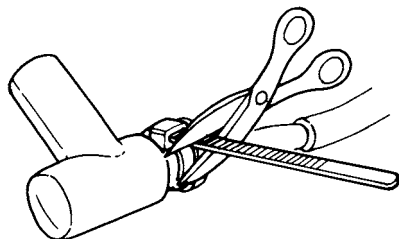
## 4. SERVICE AND MAINTENANCE

### GENERAL MAINTENANCE

- **Spark Plug:** Some non-resistor plugs may cause ignition problems. Refer to the recommendations elsewhere in this manual for specific types so you will be sure to use the proper reach and heat range. Replace periodically as specified in the Maintenance Schedule. (pages 11, 22)



- **Spark Plug Cap:** Install a small plastic tie-wrap around the spark plug cap to reduce any possibility of it loosening or of water penetration.



- **Transmission Oil:** Drain and replace transmission oil often to ensure the greatest service life of the transmission and clutch. Frequent changes will also assure consistent performance of both shifting and clutch action. (page 20)

- **Air Cleaner:** Clean and oil your air cleaner regularly because the volume of air able to pass through it has a great effect on performance. Both engine performance and long term durability may be affected by an air cleaner that has deteriorated and allows dirt to pass. Inspect the air cleaner closely each time it's serviced for evidence of small tears or seam separation. Keep a spare air cleaner oiled and ready to install, sealed in a plastic bag. Riding in dusty conditions may require servicing the air cleaner or replacing it with a pre-serviced air cleaner between motos. Be careful not to over oil the air cleaner. While it is important to oil the air cleaner thoroughly, over oiling will cause an overall rich running condition, probably more noticeable off idle and in low rpm performance. Follow the servicing instructions in the Maintenance section. Use Pro Honda Foam Filter Oil or an equivalent. Be sure to grease the air cleaner flange where it contacts the air cleaner housing. Honda White Lithium Grease, or an equivalent, is handy for this because any dirt that penetrates this sealing area will show up clearly. (page 23)

Use the Honda genuine air cleaner or an equivalent air cleaner specified for your model.

Using the wrong Honda air cleaner or a non-Honda air cleaner which is not of equivalent quality may cause premature engine wear or performance problems.

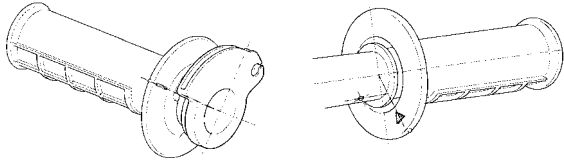
- **Air Box Sealing:** Inspect the air cleaner and air intake tract regularly for signs of deterioration or dirt penetration. When removing or resealing the air cleaner housing boot you need to replace the air cleaner housing boot gasket with a new one. Refer to the official Honda Service Manual (page 84) for removal, installation and reseal of the air cleaner housing boot.

- **Handgrips:** Always use Honda Hand Grip Cement (U.S.A. only) or Honda Bond A when replacing handgrips.

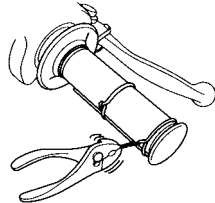
Throttle grip: Align the index mark on the throttle grip with the edge of the throttle cable guide.

Left handlebar grip: Align the "Δ" mark on the left handlebar grip with the punch mark on the handlebar.

Refer to the Service Manual for installation instructions.



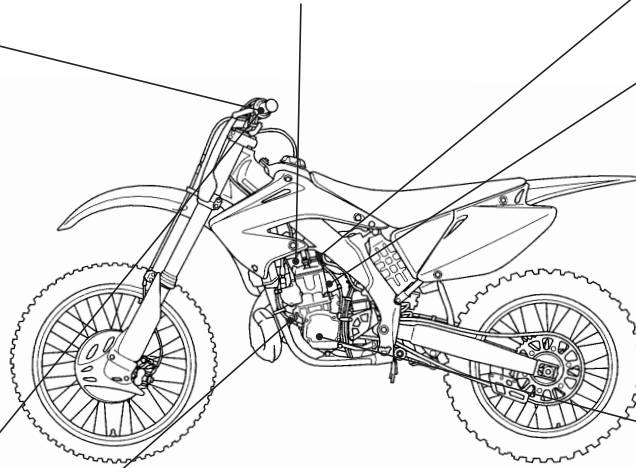
For added security, you may choose to safety wire the hand grips to the handlebar and throttle to prevent the possibility of them loosening. Position the twisted wire ends away from your palms and be sure to bend the wire ends well into the grip rubber so they will not snag your glove.



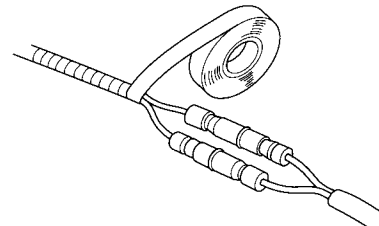
- **Throttle Control:** Remove the throttle control every few rides, clean the inside of the drum and the handlebar thoroughly, and apply a light coating of silicone lubricant. Inspect the cable carefully for kinks or other damage that may restrict throttle control in anyway. Move the handlebar from lock to lock to be sure there is no cable interference. Check to be sure the top of the carburetor is screwed on tight. Make certain the throttle operation is perfect after servicing and inspecting.

- **Gaskets:** Always use new gaskets when reassembling components.

- **Cylinder Removal:** Put a little grease on the cylinder mounting dowels to prevent corrosion from dissimilar metals. The tolerances are quite tight, so it's important to keep these dowels absolutely clean.



- **Electrical Connectors:** Clean electrical connectors and wrap them with electrical tape to reduce the possibility of unwanted disconnections, water shorts or corrosion. Additional corrosion protection is offered by using Honda Dielectric Grease on all electrical connections.

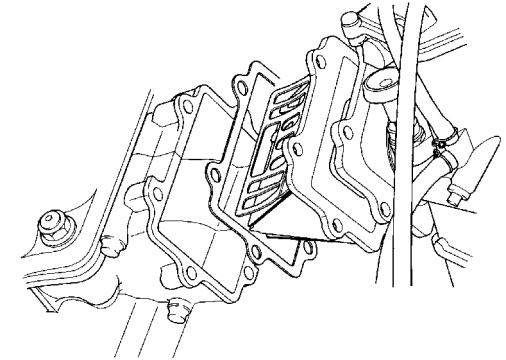


- **Engine Mounting Bolts:** Make sure the engine mounting bolts are tightened to the proper torque specification. For added peace of mind, remove the nuts, clean the threads, and apply Honda Thread Lock or an equivalent prior to torquing the nuts.

- **Fuel Filter:** Periodically drain the fuel from the tank, remove and clean the fuel valve/filter. Replace the fuel valve O-ring if there are any signs of damage or deterioration. (page 36)

- **Fuel Contamination:** Periodically drain the float bowl and inspect the carburetor for contamination from dirt. (page 48)

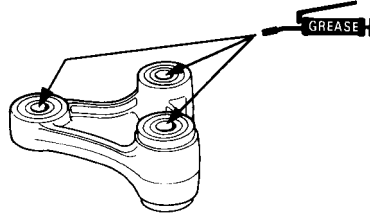
- **Inlet Tract Sealing:** Air leaks around the carburetor insulator and reed valve assembly should be cured by disassembling, cleaning and resealing with new gaskets and some sealing agent. Be careful not to overtighten the mounting bolts—this is the most common cause for leaks here.



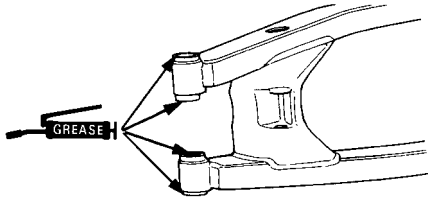
- **Ignition:** Remove the alternator cover and keep it off for a few hours after each washing to let condensation evaporate. Pull the flywheel rotor every few rides and clean it and its crankshaft mounting surface, the alternator stator, the ignition pulse generator pickup and the entire ignition cavity thoroughly. The presence of dirt between the ignition pulse generator and the flywheel makes the ignition control module compensate to maintain the ignition curve. Cleaning dirt from the ignition side main seal helps to prevent premature seal wear. Close inspection of this seal can reveal a leakage problem before engine damage occurs.

## 4. SERVICE AND MAINTENANCE

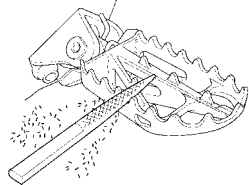
- **Suspension Linkage Lubrication:** Disassemble, clean, inspect and lubricate all pivot bearings after each 7.5 hours of running time in order to maintain proper suspension performance and minimize component wear. Use Honda Moly 60 Paste (U.S.A. only) or molybdenum disulfide paste (containing more than 40% molybdenum disulfide additive).



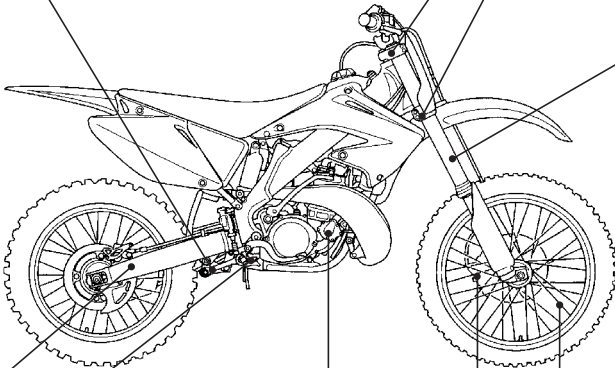
- **Swingarm Pivot Lubrication:** Clean, inspect and lubricate when servicing suspension linkage pivots. Be sure all of the suspension pivot seals are in good condition. Use Honda Moly 60 Paste (U.S.A. only) or molybdenum disulfide paste (containing more than 40% molybdenum disulfide additive).



- **Swingarm:** Do not attempt to weld or otherwise repair a damaged swingarm. Welding will weaken the swingarm.
- **Footpegs:** Worn footpeg teeth can be repaired by filing the grooves between the teeth with a triangular-shaped file. Be aware that filing them too sharp will reduce boot sole lifespan. Sharpen only the points of the teeth. Filing the grooves deeper will weaken the footpegs. Be sure the pegs are free to pivot freely and that the pivot pin retaining cotter pins are in good condition.

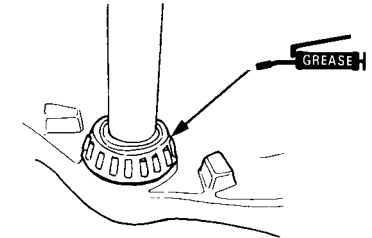


- **Brake Fluid Replacement:** Replace the hydraulic fluid in the brake system every two years.



- **Water Pump Inspection Hole:** After every race, check the inspection hole, located just below the water pump cover on the right crankcase cover. Clean away any clogged dirt or sand, if necessary. Look for coolant or oil leakage. Leaking coolant indicates a worn or damaged water seal. Leaking oil indicates a bad transmission oil seal. If replacement is necessary, both seals should be replaced.
- **Brake Caliper Inspection:** Be sure both front and rear calipers are able to move freely on the caliper bracket pins. Check pad thickness periodically and replace when minimum thickness is reached.

- **Steering Head Bearings:** Periodically clean, inspect and regrease the steering head bearings—especially if wet, muddy or extremely dusty courses are encountered often.



- **Fork Oil/Performance:** Disassemble, clean and inspect the fork and replace the oil regularly. Contamination due to the tiny metal particles produced from the normal action of the fork, as well as normal oil breakdown, will deteriorate the performance of the suspension. Refer to the Honda Service Manual. Use only Pro Honda HP Fork Oil 5W or equivalent which contains special additives to assure maximum performance of your CR's front suspension.

- **Frame:** Because your CR is a high-performance machine, the frame should not be overlooked as part of your overall competition maintenance program. Periodically inspect the frame closely for possible cracking or other damage. It makes good racing sense.

- **Spokes:** Check spoke tension frequently between the first few rides. As the spokes, nipples and rim contact points seat-in, the spokes may need to be retightened. Once past this initial seating-in period, the spokes should hold their tension. Still, be sure your race maintenance program includes checking spoke tension and overall wheel condition on a regular basis. (page 36)

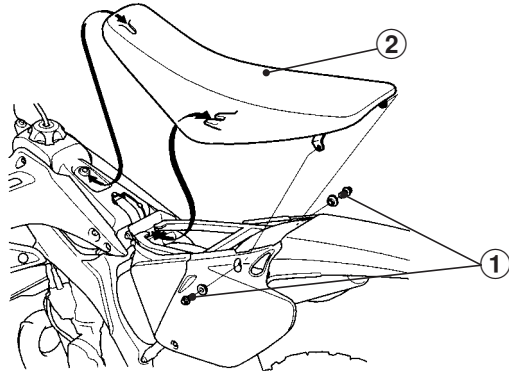
- **Nuts, Bolts, Etc.:** Application of a thread locking agent to essential fasteners offers added assurance and security. Remove the nuts, clean the threads of both the nuts and bolts, apply Honda Thread Lock or an equivalent and tighten to the specified torque.

## MAINTENANCE PREPARATIONS

### SEAT

#### Seat Removal

1. Remove the seat bolts and collars.
2. Slide the seat back.



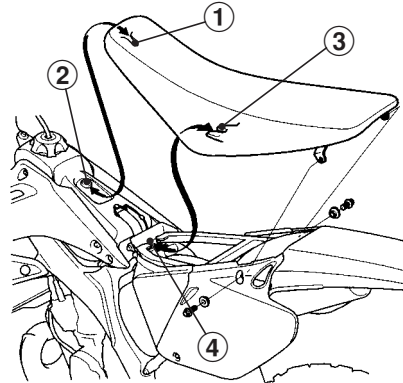
(1) SEAT BOLTS

(2) SEAT

#### Seat Installation

1. Slide the seat front prong onto the seat bracket and the seat rear prong onto the tabs by pushing down and forward on the seat in each of these areas.
2. Install the collars and tighten the seat bolts.

**TORQUE: 20 lbf-ft (27 N·m, 2.7 kgf·m)**



(1) SEAT FRONT PRONG (2) SEAT BRACKET  
(3) SEAT REAR PRONG (4) TABS

### FUEL TANK

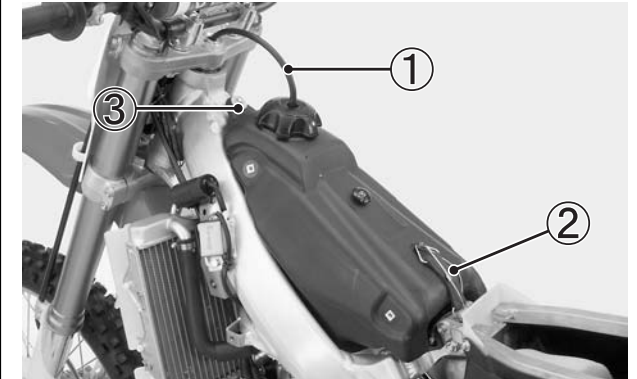
#### Fuel Tank Removal

1. Turn the fuel valve OFF.
2. Remove the seat (this page).
3. Remove the shroud A bolts and collars.
4. Remove the shroud B bolts, collars and shrouds.



(1) SHROUD A BOLTS/COLLARS  
(2) SHROUD B BOLTS/COLLARS (3) SHROUD

5. Pull the breather tube out of the steering stem nut.
6. Unhook and remove the fuel tank band.
7. Remove the fuel tank bolt.



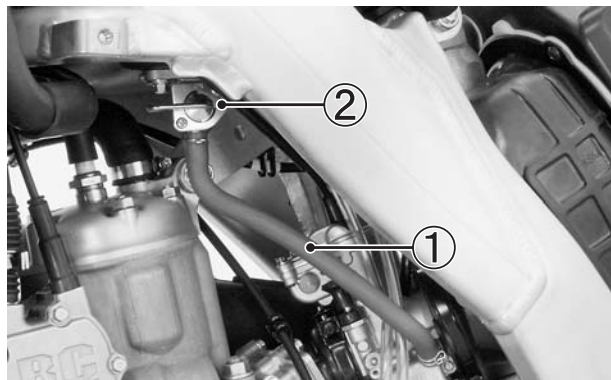
(1) BREATHER TUBE  
(2) FUEL TANK BAND  
(3) FUEL TANK BOLT

## 4. SERVICE AND MAINTENANCE

8. Disconnect the fuel line from the fuel valve.  
The fuel line leading to the carburetor must be disconnected, not the fuel line leading to the fuel tank.
9. Remove the fuel tank.

### ▲ WARNING

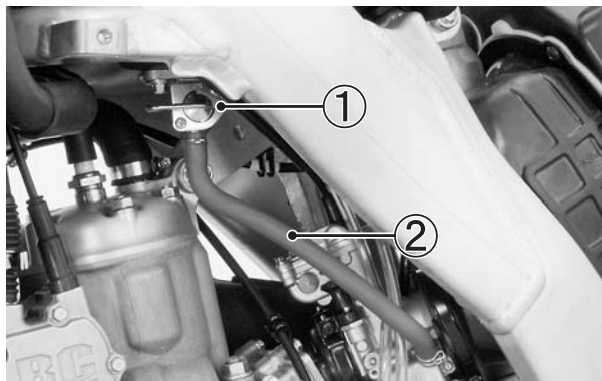
- **Gasoline is extremely flammable and is explosive under certain conditions. Perform this operation in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where gasoline is drained or stored and where the fuel tank is refueled.**



(1) FUEL LINE (2) FUEL VALVE

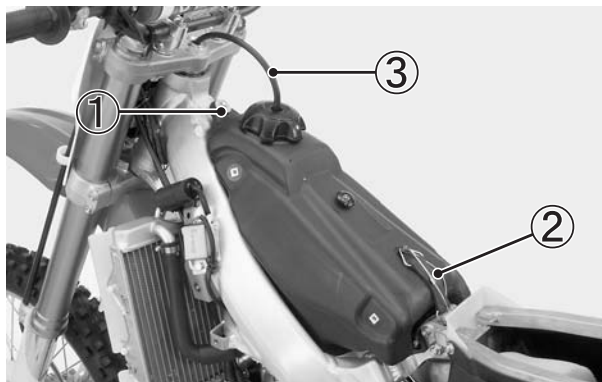
### Fuel Tank Installation

1. Install the fuel tank on the frame.
2. Connect the fuel line.



(1) FUEL VALVE (2) FUEL LINE

3. Install the fuel tank bolt.
4. Hook the fuel tank band.
5. Put the breather tube in the steering stem nut.



(1) FUEL TANK BOLT  
(2) FUEL TANK BAND  
(3) BREATHER TUBE

6. Install the shrouds, collars and shroud B bolts.
7. Install the collars and shroud A bolts.



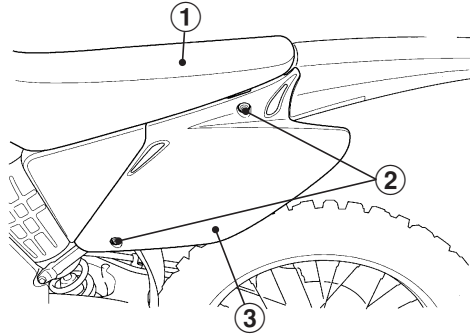
(1) SHROUD  
(2) SHROUD B BOLTS/COLLARS  
(3) SHROUD A BOLTS/COLLARS

8. Install the seat (page 17).

## SUBFRAME

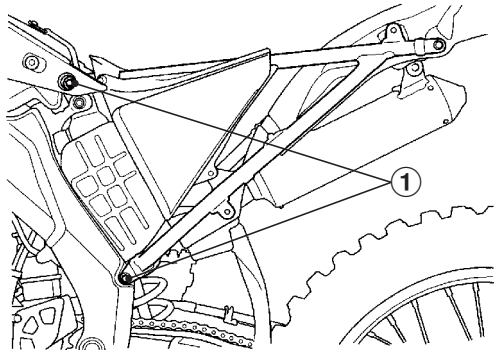
### Subframe Removal

1. Remove the seat (page 17).
2. Remove the side cover by removing the bolts, collars.



- (1) SEAT  
(2) BOLTS  
(3) SIDE COVER

3. Loosen the screw on the air filter connecting tube clamp.
4. Remove the three rear subframe mounting bolts.

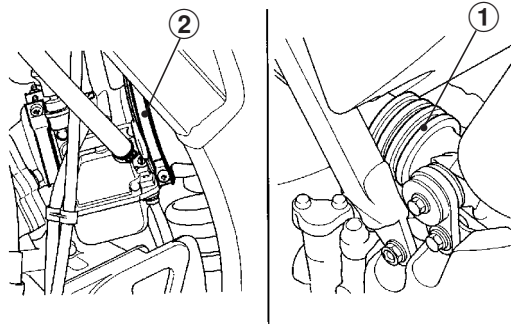


- (1) SUBFRAME MOUNTING BOLTS

5. Remove the rear subframe by pulling it straight backward.

### Subframe Installation

1. Loosely attach the upper and lower ends of the subframe to the mainframe while connecting the expansion chamber to the muffler with the sealing rubber and air filter connecting tube to the carburetor.
2. Tighten the screw on the connecting tube clamp.



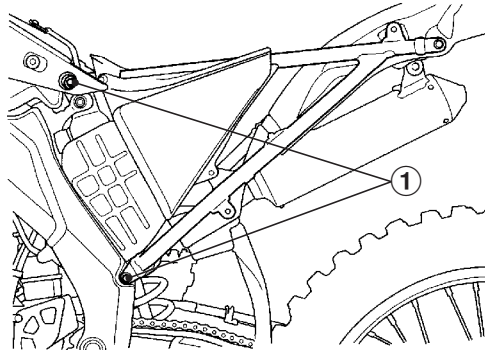
- (1) SEALING RUBBER  
(2) CONNECTING TUBE CLAMP

3. Align the subframe with the rear wheel and tighten the three subframe mounting bolts.

#### TORQUE:

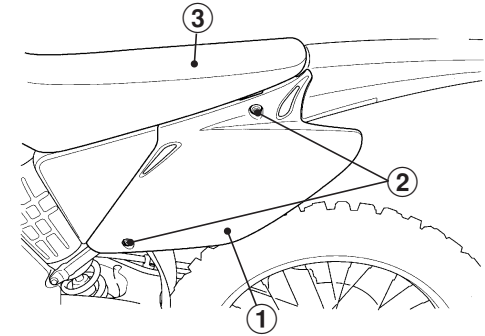
Upper: 22 lbf·ft (30 N·m, 3.1 kgf·m)

Lower: 22 lbf·ft (30 N·m, 3.1 kgf·m)



- (1) SUB FRAME MOUNTING BOLTS

4. Install the side covers, side cover bolts and collars.
5. Install the seat (page 17).



- (1) SIDE COVER  
(2) SIDE COVER BOLTS/COLLARS  
(3) SEAT

## 4. SERVICE AND MAINTENANCE

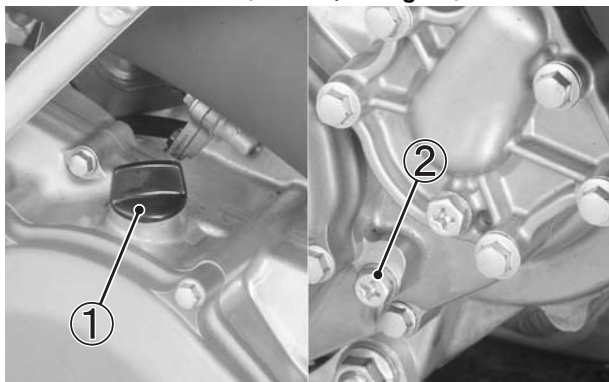
### MAINTENANCE PROCEDURES

#### TRANSMISSION OIL

##### Inspecting and Adding Transmission Oil

1. Run the engine for three minutes, then shut it off.
2. Wait three minutes after shutting off the engine to allow the oil to properly distribute itself in the clutch and transmission.
3. Support the CR in an upright position on a level surface.
4. Remove the oil filler cap and check bolt from the right crankcase cover. A small amount of oil should flow out of the check bolt hole. Allow any excess oil to flow out of the check bolt hole.
5. If no oil flows out of the check bolt hole, add oil slowly through the oil filler hole until oil starts to flow out of the check bolt hole. Install the oil check bolt and filler cap.
6. Repeat steps 1-4.
7. After inspecting the oil level or adding oil, tighten the oil check bolt and filler cap securely.

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



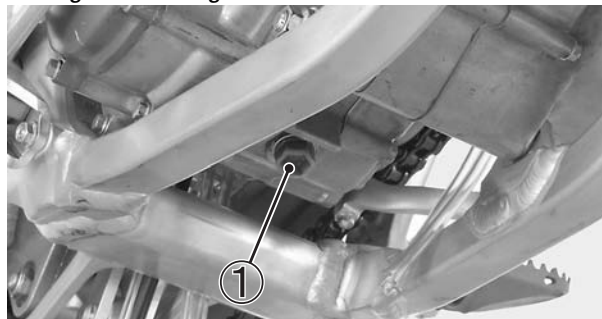
(1) OIL FILLER CAP (2) OIL CHECK BOLT

##### Replacing Transmission Oil

1. Run the engine for three minutes, then shut it off.
2. Support the CR in an upright position on a level surface.
3. Remove the oil filler cap from the right crankcase cover.
4. Place an oil drain pan under the engine to catch the oil. Then remove the drain bolt.
5. After the oil has drained completely, install the drain bolt with a new sealing washer.

**TORQUE: 22 lbf-ft (29 N·m, 3.0 kgf·m)**

6. Add the recommended oil.  
**Capacity: 22 US oz (650 cm<sup>3</sup>, 23 Imp oz) at oil change**
7. Check the oil level by following the steps in Inspecting and Adding Transmission Oil.



(1) OIL DRAIN BOLT

##### Recommended transmission oil

Use Pro Honda HP Trans Oil, Pro Honda GN4 or HP4 (without molybdenum additives) 4-stroke oil, or an equivalent.\*

##### 4-stroke oil performance

API classification	SG or higher except oils labeled as energy conserving on the circular API service label
viscosity (weight)	SAE 10W-40
JASO T 903	MA
others	without friction modifiers as molybdenum additives

\* Suggested oils are equal in performance to SJ oils that are not labeled as energy conserving on the circular API service label.

- Your CR does not need oil additives. Use recommended oil.
- Do not use oils with graphite or molybdenum additives. They may adversely affect clutch operation.
- Do not use API SH or higher oils displaying a circular API "energy conserving" label on the container. They may affect lubrication and clutch performance.



NOT RECOMMENDED

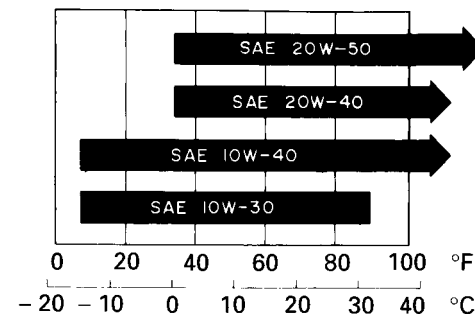


OK

### CAUTION:

- **Oil is a major factor affecting the performance and service life of the transmission and clutch. Nondetergent, vegetable, or castor based racing oils are not recommended.**

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

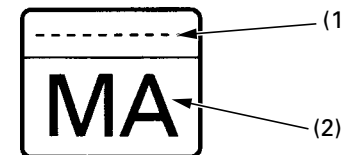


##### JASO T 903 standard

The JASO T 903 standard is an index to choose engine oils for 4-stroke motorcycle engines.

There are two classes: MA and MB.

Oil conforming to the standard has the following classification on the oil container.



**PRODUCT MEETING JASO T 903  
COMPANY GUARANTEEING THIS MA PERFORMANCE:**

- (1) code number of the sales company of the oil
- (2) oil classification

## COOLANT

### Coolant Recommendation

Use Pro Honda HP coolant or an equivalent high quality ethylene glycol based anti-freeze containing corrosion protection inhibitors specifically recommended for use in aluminum engines (See anti-freeze container label).

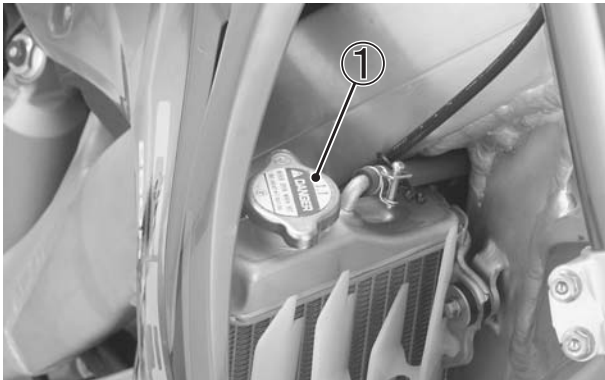
### CAUTION:

- **Hard water or salt water is harmful to aluminum. The factory provides a 50/50 mix of anti-freeze and water in your CR. This mixture is recommended for most operating temperatures and provides good corrosion protection. A higher concentration of anti-freeze decreases the cooling system performance and is recommended only when additional protection against freezing is needed. Using less than 40% anti-freeze will not provide proper cooling or corrosion protection.**
- **Using coolant with silicate inhibitors may cause premature wear of water pump seals or blockage of radiator passages. Using tap water may cause engine damage.**

### Coolant Level

#### ▲WARNING

- **Never remove the radiator cap when the engine is hot. The coolant is under pressure and severe scalding could result.**
1. With the engine cold, remove the radiator cap and check coolant level. The coolant level is correct when it is at the bottom of the radiator filler neck.



(1) RADIATOR CAP

2. Add coolant up to the filler neck if the level is low.

### NOTE:

- Inspect the coolant level before each outing. A coolant loss of 0.7 — 2.0 U.S. oz (20 — 60 cc, 0.7 — 2.1 Imp, oz) through the over flow tube is normal. If coolant loss is more than this, inspect the cooling system.

**Capacity: 1.22 US qt (1.15 liter, 1.01 Imp qt) at disassembly**

**1.14 US qt (1.08 liter, 0.95 Imp qt) at coolant change**

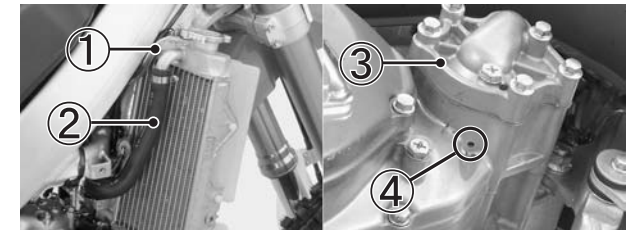
3. Install the radiator cap securely.

### CAUTION:

- **If the radiator cap is not installed properly, it will cause excessive coolant loss and may result in overheating and engine damage.**

### Cooling system inspection

1. Check the cooling system for leaks (see the Honda Service Manual for troubleshooting of leaks).
2. Check water hoses for cracks, deterioration, and clamp bands for looseness.
3. Check the radiator mount for looseness.
4. Make sure the overflow tube is connected and not clogged.
5. Check the radiator fins for clogging.
6. Check the water leakage check hole below the water pump for leakage. Make sure the hole remains open. If water leaks through the check hole, the water pump seal is damaged. If oil leaks through the check hole, the transmission oil seal is damaged. See the Honda Service Manual or consult your authorized Honda dealer for replacing the water pump seal or the transmission oil seal. Both seals should be replaced at the same time.



(1) OVERFLOW TUBE  
(2) RADIATOR HOSE

(3) WATER PUMP  
(4) WATER LEAKAGE  
CHECK HOLE



## 4. SERVICE AND MAINTENANCE

### SPARK PLUG

#### Standard:

(NGK) BR8EG, (DENSO) W24ESR-V

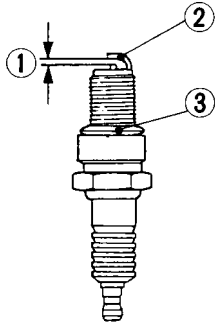
#### Optional:

(NGK) BR8EV, (DENSO) W24ESR-G

If replacing with any other brand of spark plug, be certain to select the correct reach and heat range. Before removing the spark plug, clean the spark plug area thoroughly to prevent dirt from entering the cylinder.

#### CAUTION:

- **The use of a spark plug of the incorrect reach or heat range can cause engine damage. The use of a non-resistor spark plug may cause ignition problems.**
1. Measure spark plug gap with a feeler gauge, and adjust by carefully bending the side electrode. The recommended spark plug gap is: 0.020 — 0.024 in (0.5 — 0.6 mm).
  2. Check the electrode for wear or deposits, the gasket for damage, and the insulator for cracks.



(1) PLUG GAP  
(3) SEALING GASKET

(2) SIDE ELECTRODE

3. To obtain accurate spark plug readings, accelerate up to speed on a straightaway. Push the engine stop button and disengage the clutch by pulling the lever in. Coast to a stop, then remove and inspect the spark plug. The porcelain insulator around the center electrode should appear tan or medium gray.

#### NOTE:

- If you're using a new plug, ride for at least ten minutes before taking a plug reading; a brand-new plug will not color initially.

If the electrodes appear burnt, or the insulator is white or light gray (lean) or the electrodes and insulator are black or fouled (rich), there is a problem elsewhere (page 47). Check the fuel/oil mixture, carburetor and fuel system, and ignition timing.

4. Install the spark plug by hand until finger tight, then tighten with a spark plug wrench until the sealing gasket is compressed (1/2 turn to compress a new spark plug gasket, 1/8—1/4 turn to compress a spark plug with a used gasket).



(1) SPARK PLUG

### IGNITION

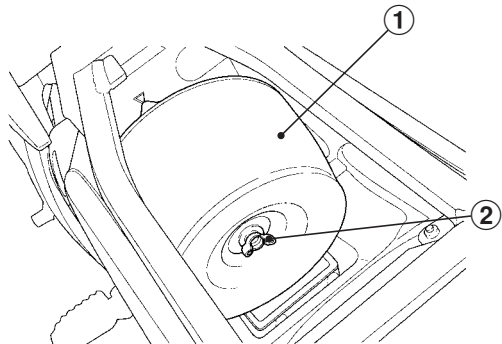
A CDI (Capacitive Discharge Ignition) system is used on this motorcycle; consequently, routine ignition timing adjustment is unnecessary. If you want to check the ignition timing, refer to the Honda Service Manual.

## AIR CLEANER

The air cleaner uses polyurethane inner and outer pieces which cannot be separated. A dirty air cleaner will reduce engine power.

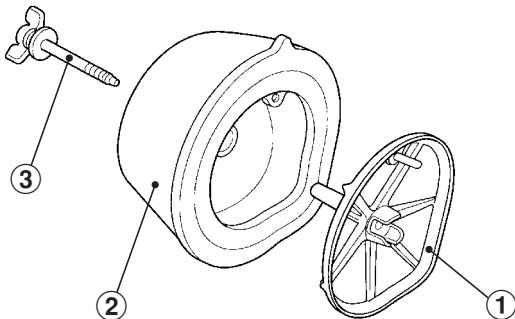
To clean the air cleaner:

1. Remove the seat (page 17).
2. Loosen the air cleaner retaining bolt.
3. Remove the air cleaner assembly.



- (1) AIR CLEANER  
(2) AIR CLEANER RETAINING BOLT

4. Remove the air cleaner from the air cleaner holder.



- (1) AIR CLEANER HOLDER (2) AIR CLEANER  
(3) AIR CLEANER RETAINING BOLT

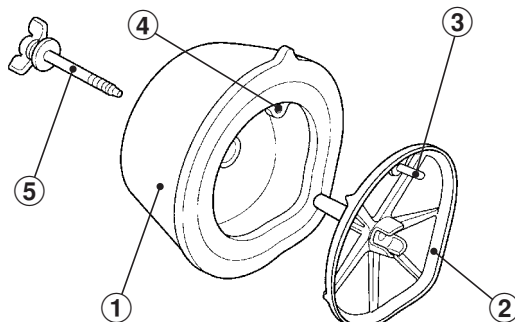
5. Wash the air cleaner in clean non-flammable cleaning solvent. Then wash in hot, soapy water, rinse well, and allow to dry thoroughly.
6. Clean the inside of the air cleaner housing.

### ⚠ WARNING

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

#### NOTE:

- The air cleaner is made in two pieces: inner and outer which can't be separated.
7. Allow the air cleaner to dry thoroughly. After drying, soak the air cleaner in clean Pro Honda Foam Filter Oil or an equivalent air cleaner oil. Apply air cleaner oil to the entire surface, inner and outer, and rub it with both hands to saturate the air cleaner with oil. Squeeze out excess oil.
  8. Apply a thin coat of white lithium grease to the sealing surface.
  9. Assemble the air cleaner and holder. Insert the pin through the hole, and the air cleaner retaining bolt through the assembly.

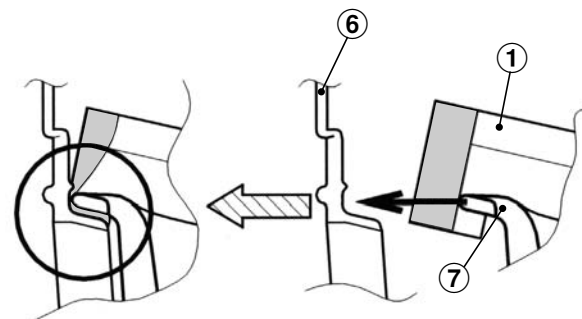
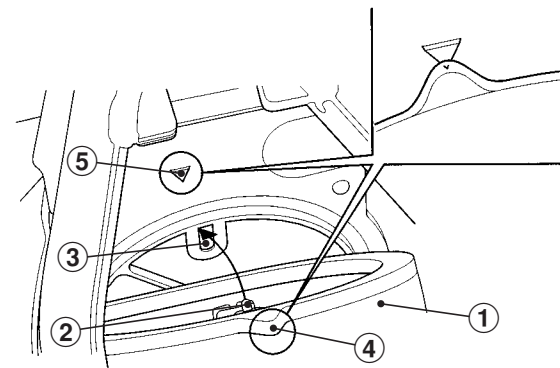


- (1) AIR CLEANER (2) AIR CLEANER HOLDER  
(3) PIN (4) HOLE  
(5) AIR CLEANER RETAINING BOLT

10. Insert the pin in the air cleaner housing hole and install the assembly into the air cleaner housing while aligning the tab on the air cleaner and the reference mark on the air cleaner housing. Tighten the retaining bolt securely. Carefully position the sealing flange of the element to prevent dirt intrusion.
11. Reinstall the seat, making sure it is securely attached.

### CAUTION:

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



- (1) AIR CLEANER (2) PIN  
(3) AIR CLEANER HOUSING HOLE (4) TAB  
(5) REFERENCE MARK (6) AIR CLEANER HOUSING  
(7) AIR CLEANER HOLDER

## 4. SERVICE AND MAINTENANCE

### CLUTCH

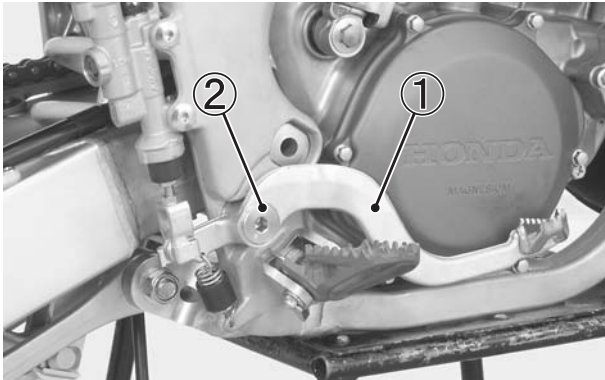
#### Operation

1. Check for smooth clutch lever operation. Lubricate the clutch lever pivot or clutch cable if operation is not smooth.
2. Check the clutch cable for deterioration, kinks or damage.

#### Clutch Disc/Plate Removal

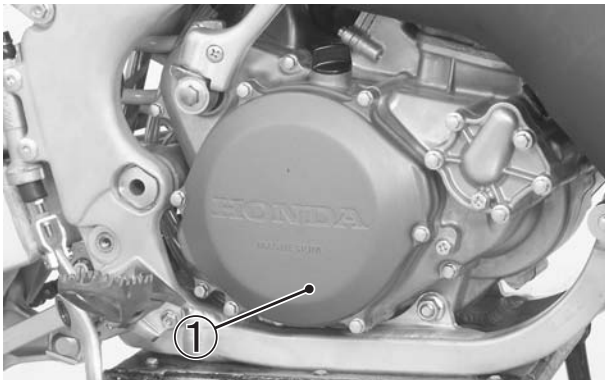
Drain the transmission oil. (page 20).

Remove the rear brake pedal by removing its pivot bolt.



(1) REAR BRAKE PEDAL (2) PIVOT BOLT

Remove the six clutch cover bolts and cover.



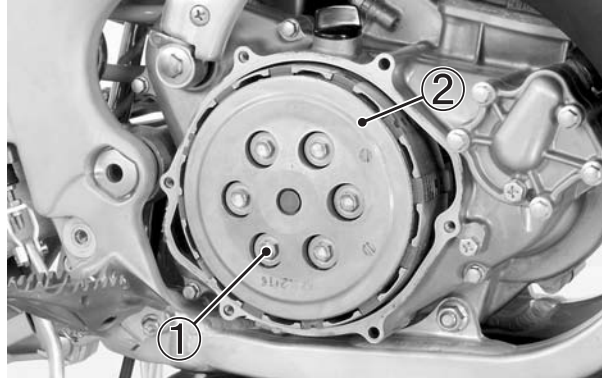
(1) CLUTCH COVER

Remove the six clutch spring bolts and clutch springs.

#### NOTE:

- Loosen the bolts in a crisscross pattern in 2 or 3 progressive steps.

Remove the clutch pressure plate.



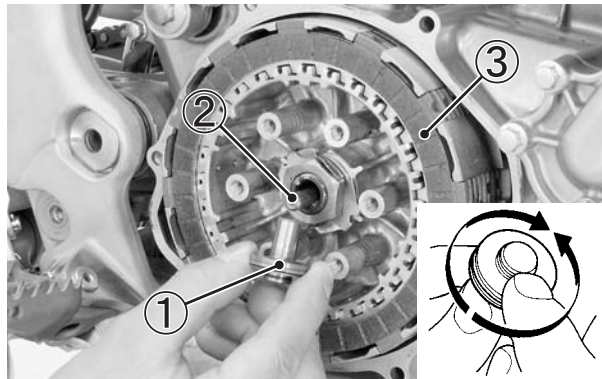
(1) CLUTCH SPRING BOLTS  
(2) CLUTCH PRESSURE PLATE

Remove the clutch lifter and clutch lifter rod.

Remove the eight clutch discs and seven clutch plates.

#### NOTE:

- Turn the lifter bearing plate of the clutch lifter with your finger. The bearing plate should turn smoothly and quietly. Discard the clutch lifter if the bearing plate does not turn smoothly.



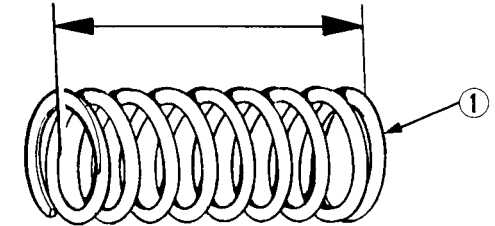
(1) CLUTCH LIFTER  
(2) CLUTCH LIFTER ROD (3) CLUTCH PLATES AND DISCS

#### Clutch Spring

Measure each clutch spring's free length.

**SERVICE LIMIT: 1.76 in (44.7 mm)**

Replace the clutch springs as a set if any one of them is beyond the service limit or if the clutch plates have been burnt/heat discolored.



(1) CLUTCH SPRING

#### Clutch Disc

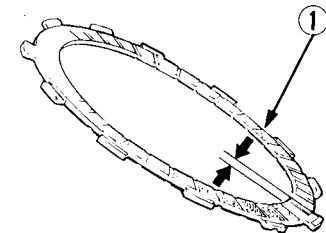
Replace the clutch discs if they show signs of scoring or discoloration.

Measure the thickness of each clutch disc.

**SERVICE LIMIT: 0.112 in (2.85 mm)**

#### NOTE:

- Replace the clutch discs and clutch plates as an assembly.

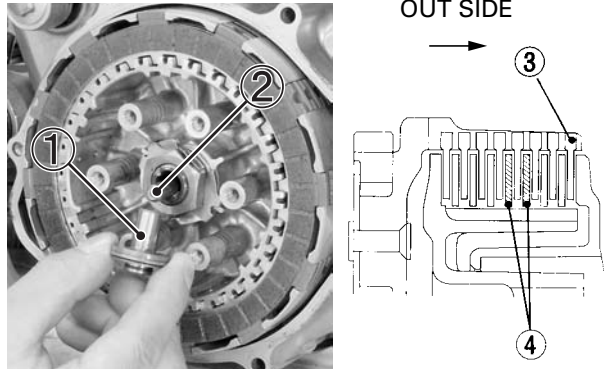


(1) CLUTCH DISC

### Clutch Disc/Plate Installation

Apply grease to the clutch lifter rod.  
Insert the clutch lifter rod into the mainshaft.  
Install the clutch lifter onto the rod.  
Coat the clutch plates with transmission oil.  
Install the eight clutch discs and seven clutch plates (five aluminum plates and two steel plates) alternately, starting with a clutch disc.

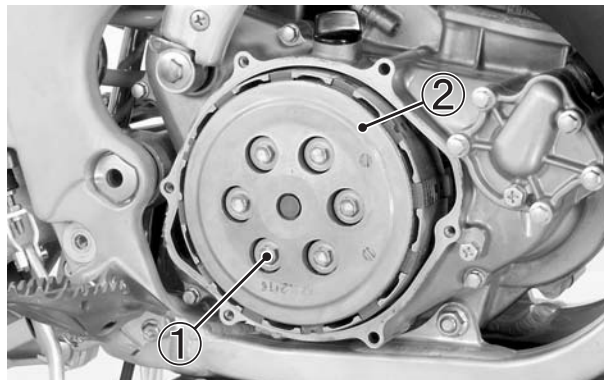
- Install the two steel clutch plates as shown.



- (1) CLUTCH LIFTER (3) CLUTCH DISCS  
(2) CLUTCH LIFTER ROD (4) STEEL CLUTCH PLATES

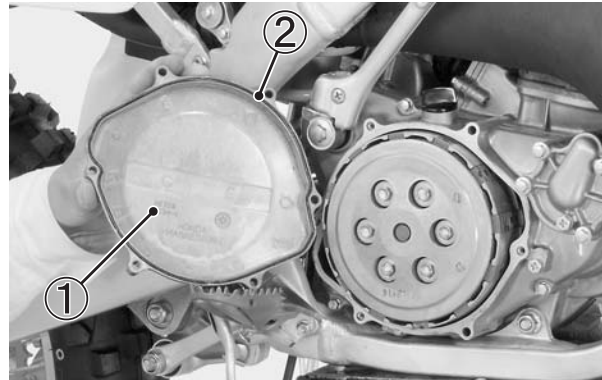
Install the clutch pressure plate.  
Install the six clutch springs and bolts.  
Tighten the bolts in a crisscross pattern in 2 or 3 steps.

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



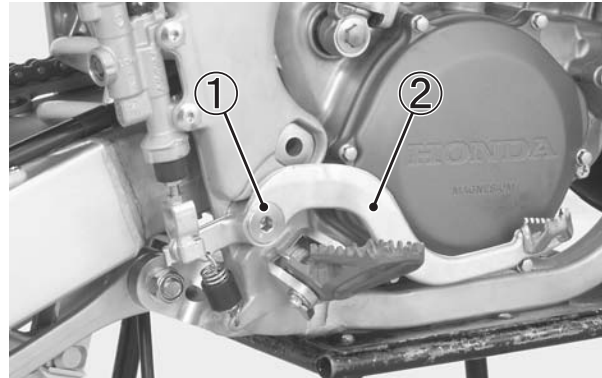
- (1) CLUTCH SPRING BOLTS  
(2) CLUTCH PRESSURE PLATE

Install a new O-ring in the groove in the clutch cover.  
Install the cover by tightening the six cover bolts.



- (1) CLUTCH COVER  
(2) O-RING

Lubricate the rear brake pedal pivot and pivot bolt and install the pivot bolt.



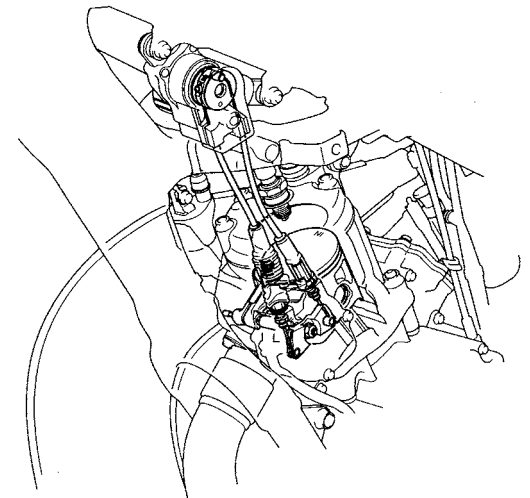
- (1) PIVOT BOLT  
(2) BRAKE PEDAL

### RC VALVE

The exhaust valves open and close according to engine speed to ensure sufficient torque throughout the entire engine rpm range. The valves should be fully closed at low rpm and fully open at high rpm.

### CAUTION:

- *The exhaust valve system is a precision assembly. Before beginning inspection/decarbonizing, please study the following text and illustrations carefully. Before attempting complete disassembly, we recommend you consult the service manual or your authorized Honda dealer. Mismatching of parts on reassembly can measurably affect full engine performance.*



## 4. SERVICE AND MAINTENANCE

### Operating Inspection

#### NOTE:

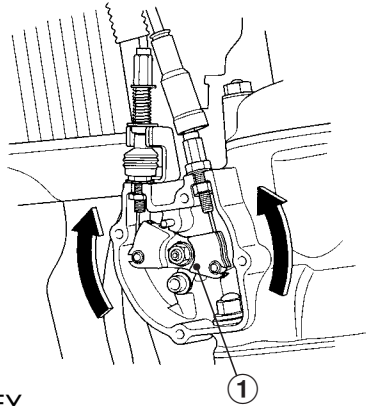
- Before inspection, clean the engine thoroughly to keep dirt from entering the engine.

Warm up the engine to operating temperature. Stop the engine, and remove the RC valve cover.

Connect the tachometer.

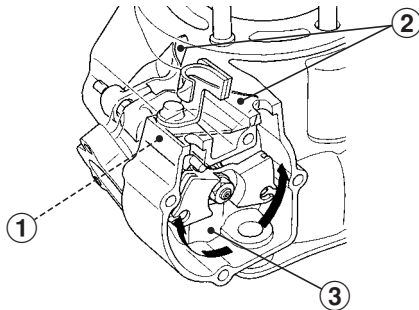
Start the engine and check that the RC valve pulley is in the full close position.

Increase the engine speed until about 8,000 min<sup>-1</sup> (rpm) and check that the RC valve pulley turns to the full open position.



(1) PULLEY

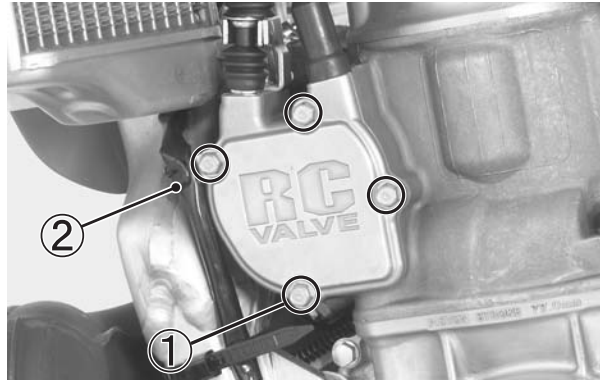
Disconnect the cables from the RC valve pulley. Check that the exhaust valve turns smoothly. If the exhaust valve does not turn smoothly, remove the exhaust valve and decarbonize the flap valve and valve shaft assembly (page 27).



(1) VALVE SHAFT ASSEMBLY  
(2) FLAP VALVES (3) PULLEY

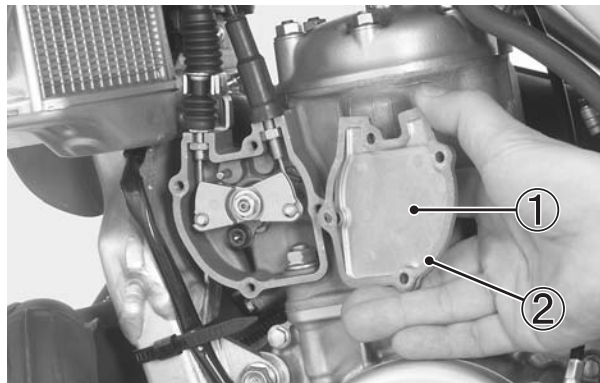
### Exhaust valve Removal

Remove the RC valve cover bolts and wire clamp.



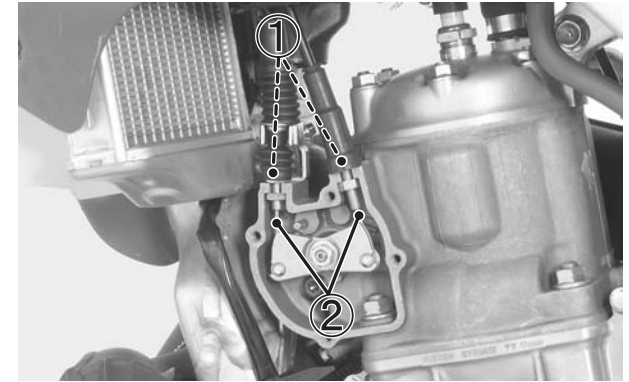
(1) BOLTS (2) WIRE CLAMP

Remove the RC valve cover and gasket.



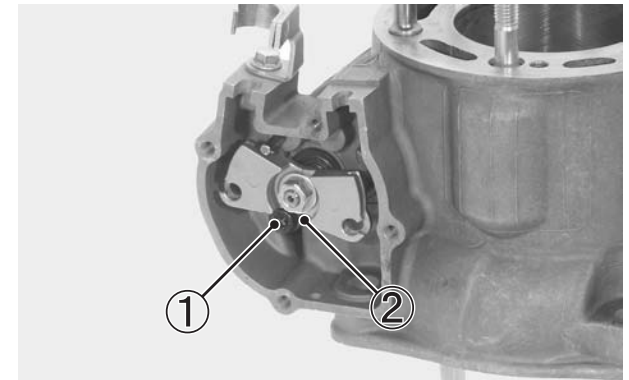
(1) RC VALVE COVER (2) GASKET

Loosen the lock nuts and disconnect the RC valve control cables from the RC valve pulley. Remove the cylinder (page 29).



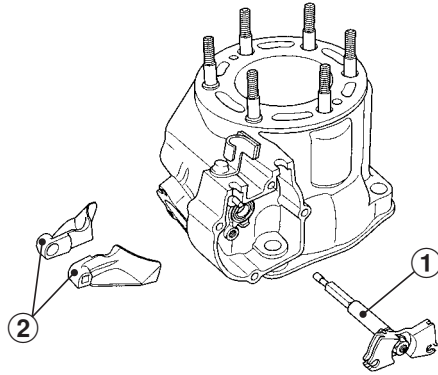
(1) LOCK NUTS (2) CONTROL CABLES

Remove the socket bolt and stopper plate.



(1) SOCKET BOLT (2) STOPPER PLATE

Remove the valve shaft assembly and flap valves from the cylinder.



(1) VALVE SHAFT ASSEMBLY  
(2) FLAP VALVES

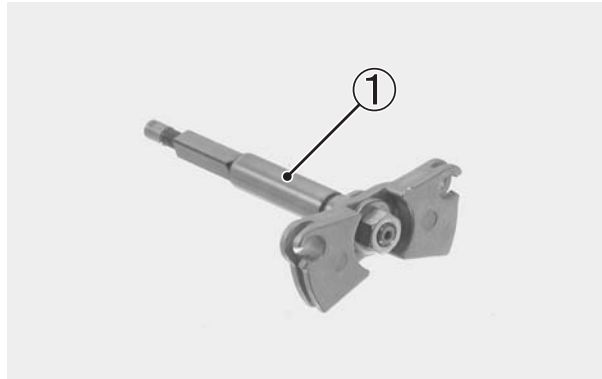
### Exhaust Valve Decarbonizing

Remove the carbon deposits from the valve shaft assembly and flap valves.

NOTE:

- Decarbonize the valve shaft assembly and flap valves each race.

Inspect the flap valve, valve shaft assembly for wear or damage.



(1) VALVE SHAFT ASSEMBLY



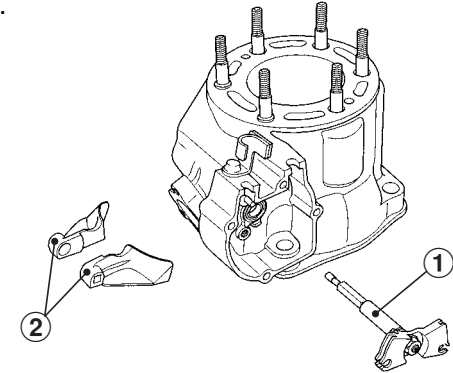
(2) FLAP VALVES

### Exhaust valve Installation

Install the flap valve into the slot on the cylinder as shown.

Position the flap valves fully open.

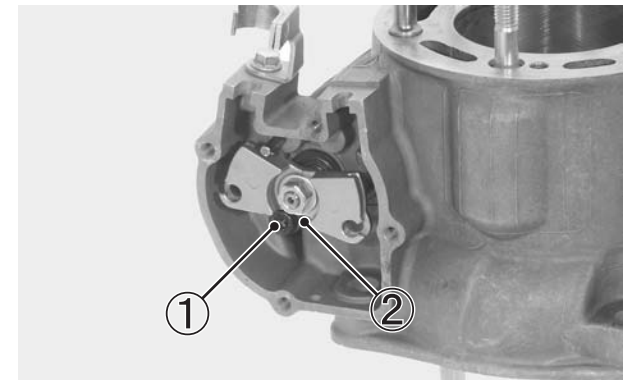
Install the valve shaft assembly with its position as shown.



(1) VALVE SHAFT ASSEMBLY (2) FLAP VALVES

Install the stopper plate and tighten the socket bolt.

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



(1) SOCKET BOLT (2) STOPPER PLATE

Install the cylinder (page 32).

## 4. SERVICE AND MAINTENANCE

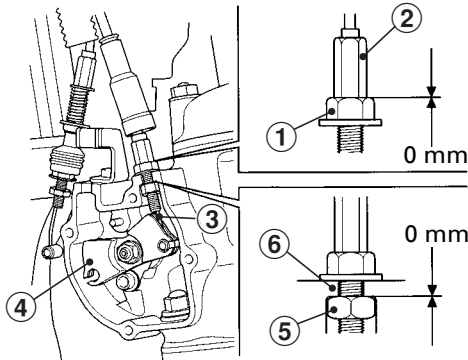
Connect the control cables to the RC valve pulley cut-outs on the cylinder.

### REAR RC VALVE CABLE

Turn the outer lock nut until it seats against the adjuster. Connect the rear RC valve cable to the RC valve pulley.

Turn the RC valve pulley counterclockwise fully. Turn the adjuster clockwise until the inner lock nut seats against the cylinder.

Tighten the outer lock nut securely.



- (1) OUTER LOCK NUT (2) ADJUSTER  
 (3) REAR RC VALVE CABLE  
 (4) RC VALVE PULLEY (5) INNER LOCK NUT  
 (6) CYLINDER

### FRONT RC VALVE CABLE

Turn the RC valve pulley clockwise fully until the RC valve pulley stops against the pin.

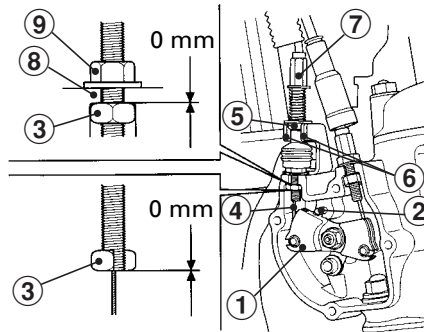
Loosen the inner lock nut until it reaches the end of the cable threads.

Connect the front RC valve cable (spring/seat) to the RC valve pulley.

Install the seat to the cable guide while compressing the spring.

Tighten the adjuster until the inner lock nut seats to the cylinder.

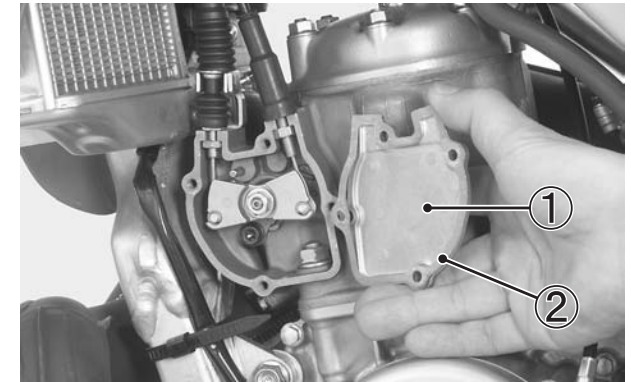
Tighten the outer lock nut securely.



- (1) RC VALVE PULLEY (2) PIN  
 (3) INNER LOCK NUT  
 (4) FRONT RC VALVE CABLE  
 (5) SEAT (6) CABLE GUIDE  
 (7) ADJUSTER (8) CYLINDER  
 (9) OUTER LOCK NUT

Check the RC valve operation (page 26).

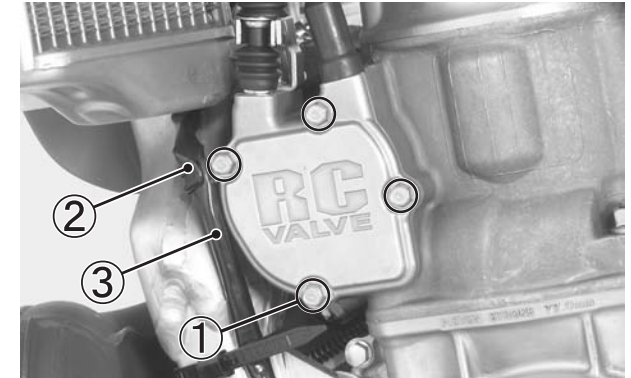
Install the new gasket and RC valve cover and tighten the bolts securely.



- (1) RC VALVE COVER (2) GASKET

Tighten the RC valve cover bolts and wire clamp.

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



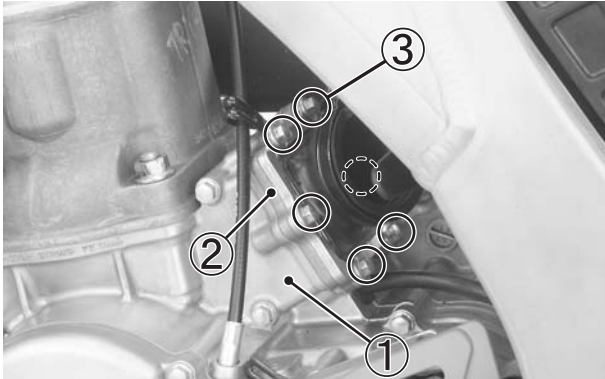
- (1) BOLTS (2) WIRE CLAMP  
 (3) ALTERNATOR WIRE

Install the alternator wire to the wire clamp.

## REED VALVE

### Reed Valve Removal

Remove the reed valve from the crankcase by removing the six carburetor insulator mounting bolts. Replace the gasket.



(1) CRANKCASE (2) REED VALVE  
(3) CARBURETOR INSULATOR MOUNTING BOLTS

### Reed Valve Inspection

Check the reed valves for damage or fatigue and replace them if necessary. Replace the reed valves with new ones if the seats are cracked or damaged.

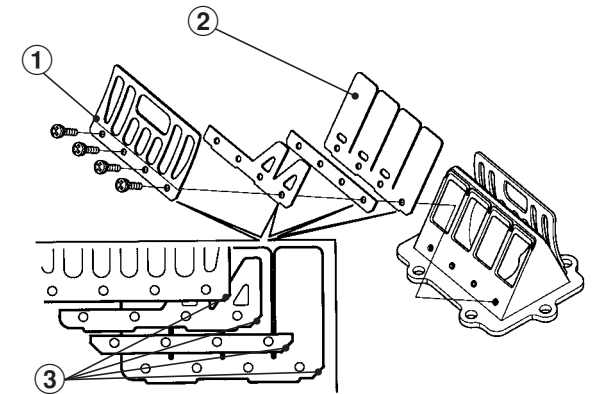


(1) REED VALVE ASSEMBLY

### DISASSEMBLY/ASSEMBLY

Remove the screws, stoppers and reed valves.

Align the cut-outs between the reed valves and stoppers, then install them onto the cage.

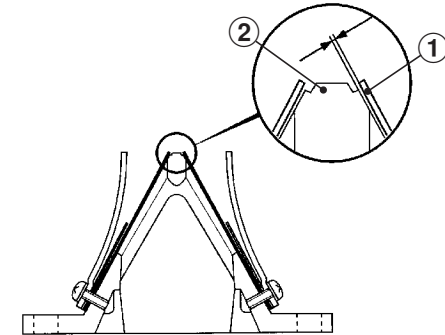


(1) REED VALVE STOPPER (2) REED VALVE  
(3) CUT-OUTS

Apply a locking agent to the reed valve mounting screw threads. Install and tighten the mounting screws.

**TORQUE: 0.7 lbf·ft (1 N·m, 0.1 kgf·m)**

Make sure that the clearance between the reed valve and cage is less than 0.008 in (0.2 mm).



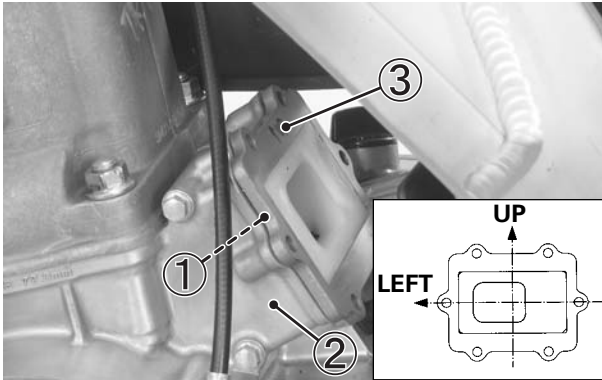
(1) REED VALVE (2) CAGE



## 4. SERVICE AND MAINTENANCE

### Reed Valve Installation

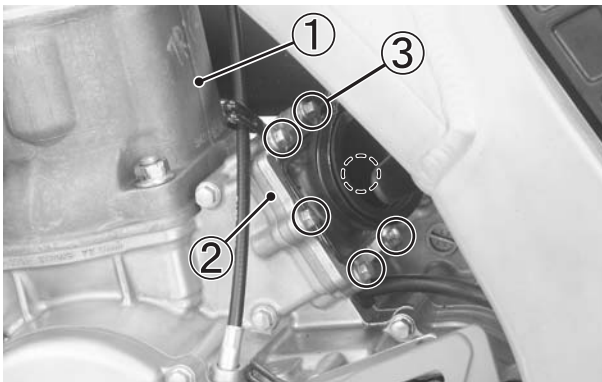
Install the gasket to the crankcase.  
Install the reed valve to the crankcase as shown.



- (1) GASKET  
(2) CRANKCASE  
(3) REED VALVE

Install the six carburetor insulator mounting bolts and tighten to the specified torque in a crisscross pattern.

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



- (1) CYLINDER  
(2) REED VALVE  
(3) CARBURETOR INSULATOR MOUNTING BOLTS

### CYLINDER HEAD/CYLINDER/PISTON

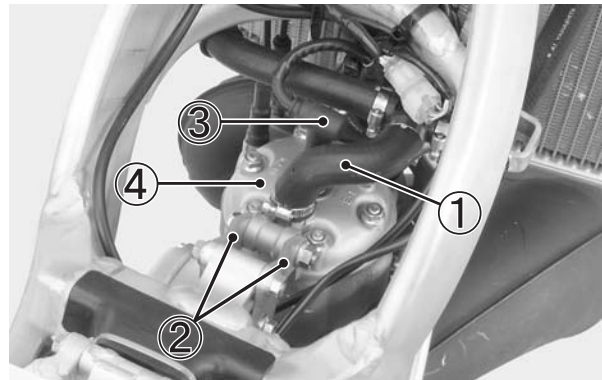
#### Cylinder Head Removal

Drain the radiator coolant (page 21).  
Turn the fuel valve OFF.  
Remove the seat and fuel tank.  
Loosen the radiator hose clamps and remove the radiator hoses from the cylinder head.  
Disconnect the spark plug cap and remove the spark plug.  
Remove the upper engine hanger plate bolts and hanger plate.  
Remove the six cylinder head nuts using the technique described in the Note below, and remove the cylinder head.

#### NOTE:

- To avoid warping the cylinder head, use a crisscross pattern to loosen each nut about 1/4 turn at a time, then remove the nuts.

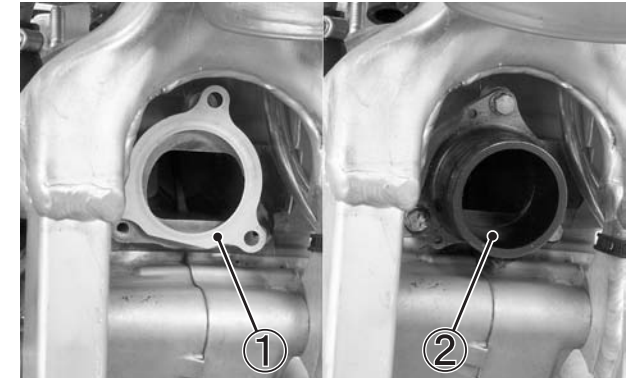
Remove the cylinder head gasket.



- (1) RADIATOR HOSE  
(2) HANGER PLATES  
(3) SPARK PLUG CAP  
(4) CYLINDER HEAD

#### Cylinder Removal

Remove the expansion chamber (page 44).  
Remove the water hose and left radiator from the frame.  
Disconnect the RC valve control cables (page 28).  
Remove the exhaust manifold and gasket.



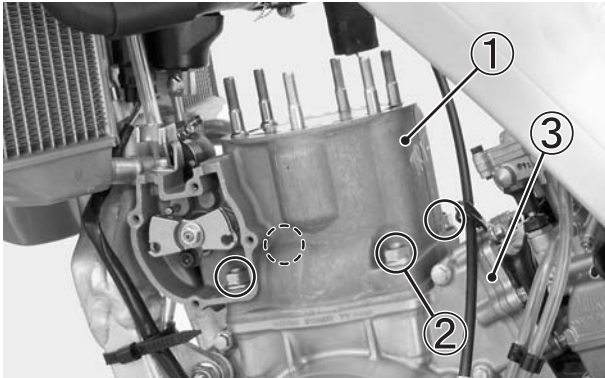
- (1) EXHAUST MANIFOLD  
(2) GASKET

Remove the cylinder by removing the four flange nuts. Remove the gasket and dowel pins. Inspect and clean the exhaust valves and linkage, as necessary (page 27).

**CAUTION:**

- *Do not pry on or strike the cylinder.*

Place a clean shop towel into the crankcase to keep debris out. Remove the reed valve from the cylinder by removing the six carburetor insulator mounting bolts. Replace the gasket.



(1) CYLINDER (2) CYLINDER FLANGE NUTS  
(3) REED VALVE

**Piston Removal**

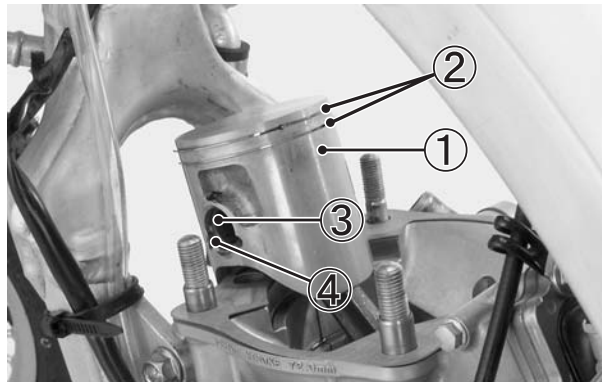
Remove the piston pin clips using a pair of needle-nose pliers. Press the piston pin out of the piston, and remove the piston.

**CAUTION:**

- *Do not damage the piston.*
- *Always support the piston when pressing out the pin.*
- *Do not let the clips fall into the crankcase.*

**NOTE:**

- Under racing conditions, the piston and rings should be replaced after 7.5 hours of running. Replace the piston pin and connecting rod small end bearing after 22.5 hours of running.



(1) PISTON (2) PISTON RINGS (3) PISTON PIN  
(4) PISTON PIN CLIP

Spread each piston ring and remove by lifting it up at a point just opposite the gap.

**CAUTION:**

- *Do not damage the piston rings by spreading the ends too far.*

**Piston Inspection**

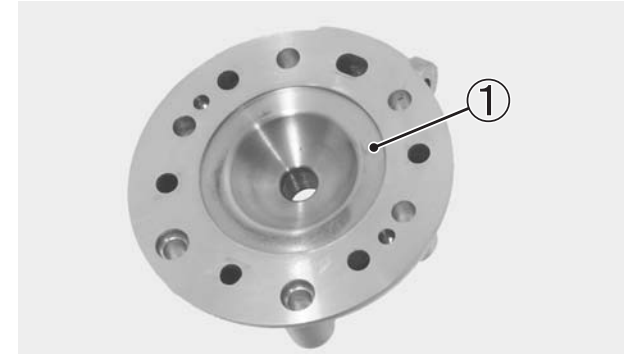
We recommend you consult the Service Manual or your authorized Honda dealer for correct service limit measurements.

**Piston/Cylinder Head Decarbonizing**

Remove the carbon deposits from the cylinder head and piston dome.

**CAUTION:**

- *Use care not to scratch the cylinder head and piston dome or the head gasket surface.*



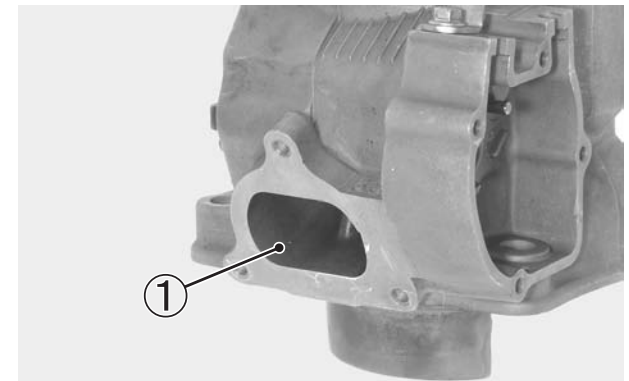
(1) CYLINDER HEAD

**Cylinder Decarbonizing**

Clean carbon deposits from the exhaust port and sub-chamber areas.

**CAUTION:**

- *Do not damage the cylinder bore.*



(1) EXHAUST PORT

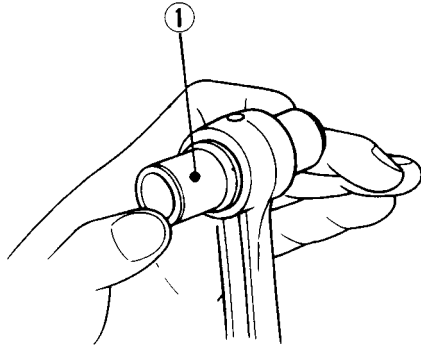
## 4. SERVICE AND MAINTENANCE

### Connecting Rod Inspection

Temporarily remove the shop towel.

Install the bearing and piston pin in the connecting rod small end and check for excessive play while holding the connecting rod.

If it feels loose, replace the piston pin and small end bearing.



(1) PISTON PIN

Place the shop towel back in the crankcase.

### Cylinder/Piston/Piston Pin/Piston Ring Inspection

We recommend you consult the Service Manual or your authorized Honda dealer for correct Service Limit measurements.

### Piston Installation

Clean the piston ring grooves.

Lubricate the piston rings and piston ring grooves with clean 2-stroke oil.

Install the piston rings on the piston.

NOTE:

- Install the piston rings with the "IT" marks facing up.  
Locate the piston ring end gaps on the pins in the ring grooves.

Lubricate the small end bearing and piston pin with clean 2-stroke oil.

Install the connecting rod small end bearing, piston and piston pin.

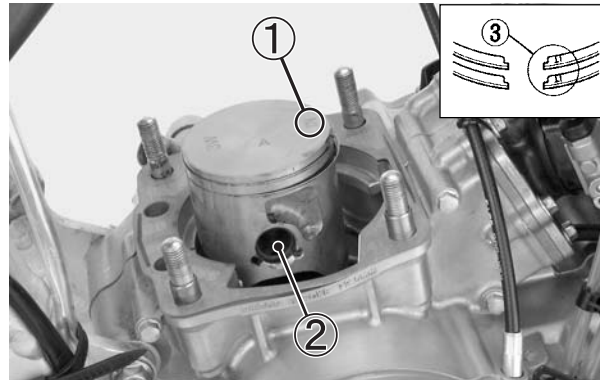
NOTE:

- Install the piston with the "IN" mark facing the intake side.

Install the piston pin clips.

**CAUTION:**

- *Use new pin clips. Never reuse oil clips.*
- *Do not let the clips fall into the crankcase.*



(1) "IN" MARK  
(3) RING MARKS

(2) PISTON PIN CLIP

### Cylinder Installation

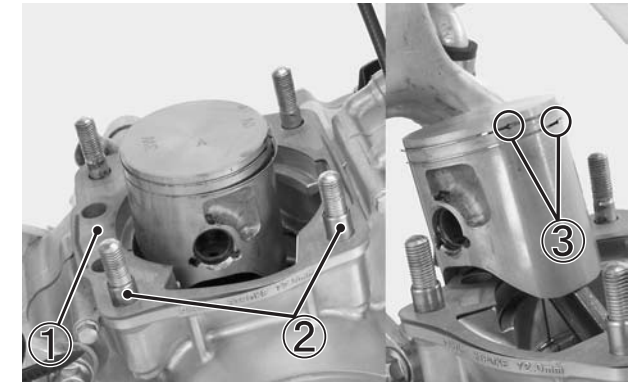
Clean off any gasket material from the gasket surface of the crankcase being careful not to let any material fall into the crankcase.

NOTE:

- Be careful not to remove any metal from the gasket surface of the crankcase.

Remove the shop towel. Do not let any gasket debris fall into the crankcase.

Place the cylinder base gasket and dowel pins on the crankcase.



(1) GASKET  
(2) DOWEL PINS

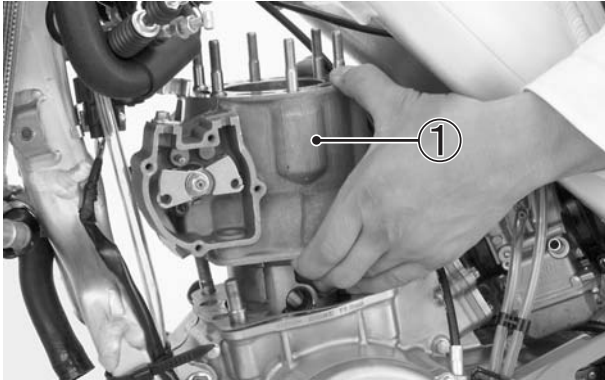
(3) PISTON RING PINS

Align each ring end gap with the piston ring pins in the ring grooves.

Lubricate the piston with 2-stroke oil.  
Slip the cylinder over the top of the piston while compressing the rings.

**CAUTION:**

- *Do not rotate the cylinder, since this may cause the piston rings to snag a cylinder port and break.*



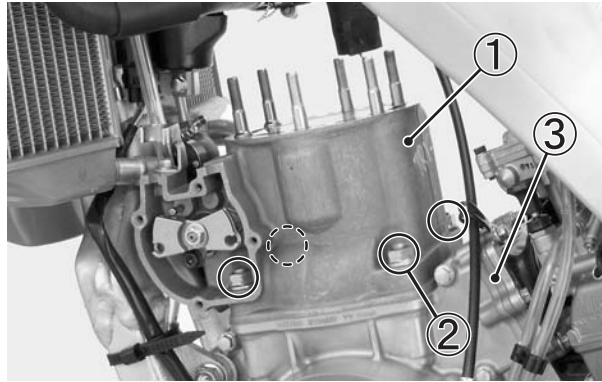
(1) CYLINDER

Install the four mounting nuts and tighten to the specified torque.

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

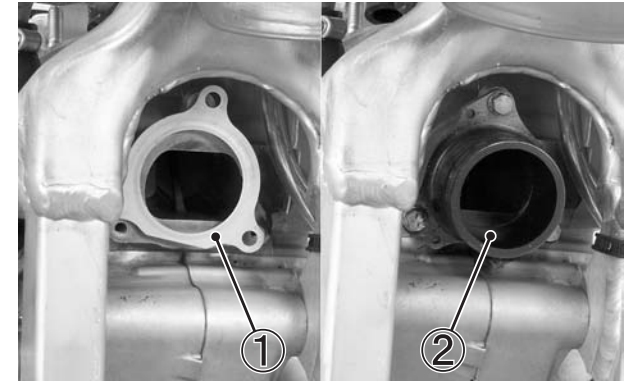
**NOTE:**

- Tighten the nuts in a crisscross pattern in 2 or 3 steps.



(1) CYLINDER (2) NUTS

Install the new gasket with pointed down.  
Install the exhaust manifold and tighten the bolts.



(1) GASKET (2) EXHAUST MANIFOLD

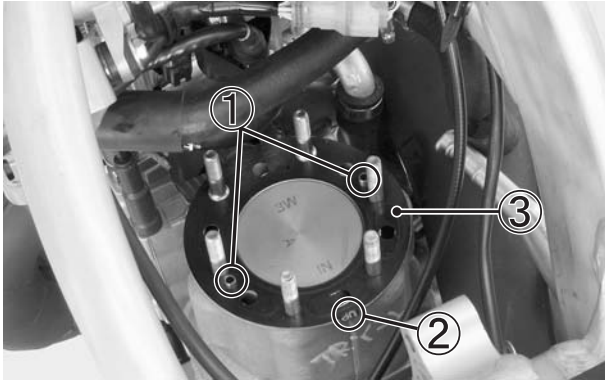
Connect the RC valve control cables (page 28).  
Install the left radiator and water hose.  
Install the expansion chamber (page 44).

## 4. SERVICE AND MAINTENANCE

### Cylinder Head Installation

Install the dowel pins.

Install the new cylinder head gasket with its "UP" mark facing up and locating tab facing rearward.



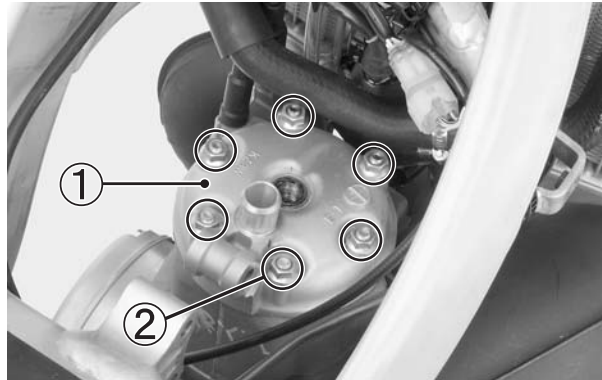
- (1) DOWEL PINS
- (2) "UP" MARK/TAB
- (3) CYLINDER HEAD GASKET

Install the cylinder head and nuts, tighten the nuts to the specified torque.

**TORQUE: 20 lbf-ft (27 N·m, 2.8 kgf·m)**

NOTE:

- Tighten the cylinder head nuts in a criss-cross pattern in 2 or 3 steps.



- (1) CYLINDER HEAD
- (2) CYLINDER HEAD NUTS

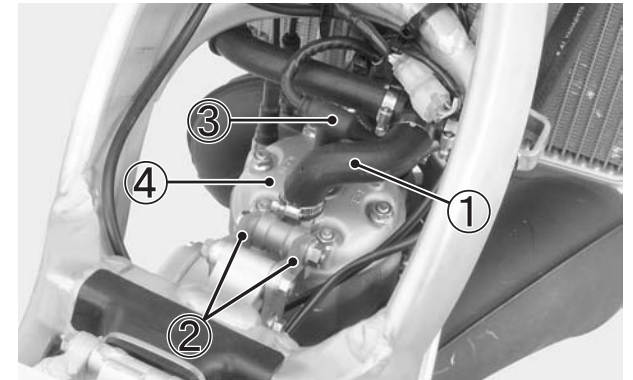
Install the spark plug and spark plug cap. Install the hanger plate and tighten the bolts.

**TORQUE:**

**Engine side: 40 lbf-ft (54 N·m, 5.5 kgf·m)**

**Frame side: 20 lbf-ft (26 N·m, 2.7 kgf·m)**

Connect the radiator hose to the cylinder head. Pour the recommended coolant mixture into the radiator up to the correct level (page 21).



- (1) RADIATOR HOSE
- (2) HANGER PLATES
- (3) SPARK PLUG
- (4) CYLINDER HEAD

Check for the following:

- compression leaks
- abnormal engine noise
- coolant leaks

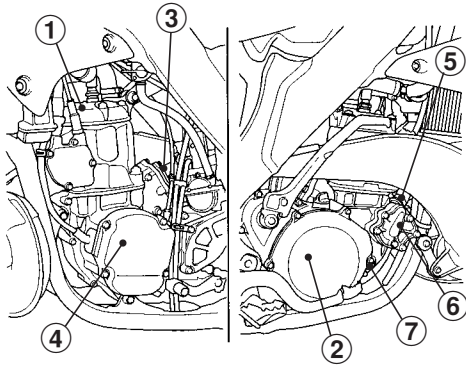
NOTE:

- After installing the radiator hose, check that it is not interfering with the ignition coil.

## NUTS, BOLTS, FASTENERS

Check and tighten nuts, bolts, and fasteners before every outing.

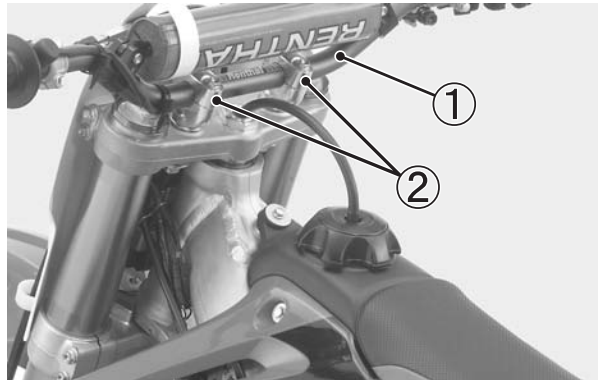
	Item	Torque			Remarks
		lbf-ft	N·m	kgf-m	
	<b>ENGINE</b>				
1	Cylinder head	20	27	2.8	
2	Right crankcase/clutch cover	9	12	1.2	
3	Carburetor insulator	9	12	1.2	
4	Alternator cover	1.4	2	0.2	
5	Radiator hose clamp	0.6	0.8	0.08	
6	Water pump cover	9	12	1.2	
7	Oil check bolt	7	10	1.0	



- (1) CYLINDER HEAD
- (2) RIGHT CRANKCASE COVER
- (3) CARBURETOR INSULATOR
- (4) ALTERNATOR COVER
- (5) RADIATOR HOSE CLAMP
- (6) WATER PUMP COVER
- (7) OIL CHECK BOLT

## HANDLEBAR AND STEERING HEAD BEARINGS

1. Check the handlebar for bends or cracks.
2. Check that the handlebar has not moved from its proper position (by inspecting the punch mark alignment). Check that the upper holders are torqued to **16 lbf-ft (22 N·m, 2.2 kgf-m)**. Tighten the front bolts first.
3. With the motorcycle on a box or workstand (front wheel elevated), turn the handlebar to the right and left to check for roughness in the steering head bearings. Now, stand in front of the motorcycle and grab the fork (at the axle), then push the fork in and out (toward the engine) to check for play in the steering head bearings. If any roughness or play is felt, refer to the Honda Service Manual for replacement or adjustment procedures.

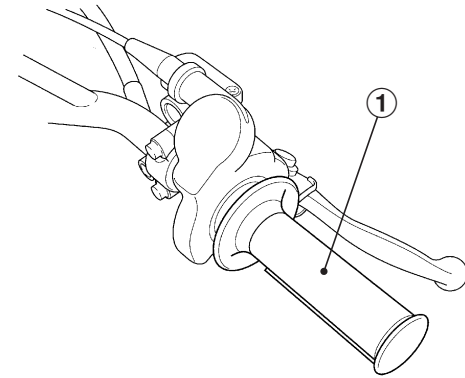


- (1) HANDLEBAR
- (2) HANDLEBAR UPPER HOLDERS

## THROTTLE GRIP

### Inspection

Check for smooth rotation of the throttle grip from the fully closed to the fully open position. Check at full left and full right steering positions. Inspect the condition of the throttle cable from the throttle grip down to the carburetor. If the cable is kinked, chafed or improperly routed, it should be replaced or rerouted. Check the cable for tension or stress at both full left and full right steering positions.



- (1) THROTTLE GRIP

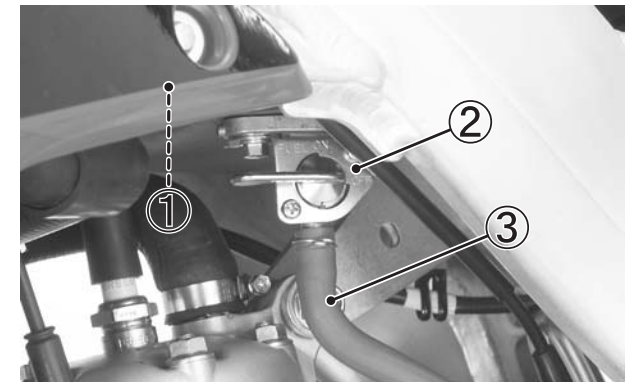
### ⚠ WARNING

- For safe operation and positive engine response, the throttle cable must be properly adjusted.

## FUEL LINE

### Fuel valve and hose

1. Check the fuel valve and fuel filter for contamination and leakage.
2. Check the fuel line for cracks, deterioration or leakage.
3. Check for interference between the frame and tank and adjust if necessary.



- (1) FUEL TANK
- (2) FUEL VALVE
- (3) FUEL LINE

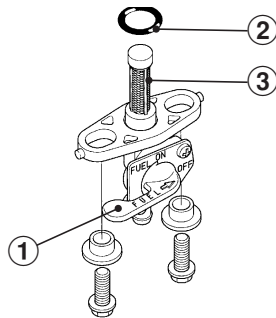
## 4. SERVICE AND MAINTENANCE

### Fuel filter

The fuel filter is incorporated in the fuel valve which is mounted on the bottom left side of the fuel tank. Accumulation of dirt in the filter will restrict the flow of the fuel to the carburetor. Therefore, the fuel filter should be serviced frequently.

#### To service

1. Drain the fuel from the fuel tank into an approved gasoline container. Disconnect the fuel line.
2. Remove the fuel valve by removing the bolts. Wash the fuel filter in high flash-point cleaning solvent.



(1) FUEL VALVE (2) O-RING (3) FUEL FILTER

3. Reassemble the fuel valve in the reverse order of removal. Make sure the O-ring is in place. Install the fuel valve in the fuel tank. Refill the fuel tank. Attach the fuel line and turn the fuel valve to ON; check for leaks.

#### ▲WARNING

- Gasoline is extremely flammable and is explosive under certain conditions. Perform this operation in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where gasoline is drained or stored and where the fuel tank is refueled.

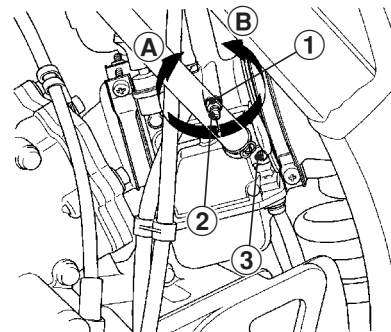
### CARBURETOR

#### NOTE:

- The standard carburetor settings are ideal for the following conditions: 32-to-1 premix ratio using Pro Honda HP2 2-stroke oil or its equivalent, sea level altitude, and 20°C (68°F) air temperature. If your conditions are different, you may need to adjust the carburetor settings, using the tuning information on page 50. Confirm your settings are correct before proceeding.

#### Minor adjustments

1. Adjust the carburetor settings using the tuning information on page 50.
2. When the engine is warm enough to run without the choke, push the choke knob down to its off position.
3. Loosen the lock nut and turn the throttle stop screw to obtain the smoothest idle:
  - To increase idle speed, turn the screw clockwise.
  - To decrease idle speed, turn the screw counter-clockwise.
4. Tighten the lock nut while holding the throttle stop screw.
5. Adjust the air screw to obtain the best off-idle performance.
  - If the engine blubbers (rich) exiting a corner, turn the air screw counter-clockwise to lean the mixture.
  - If the engine surges (lean) exiting a corner, turn the air screw clockwise to richen the mixture.



(1) LOCK NUT (2) THROTTLE STOP SCREW  
(3) AIR SCREW (A) INCREASE (B) DECREASE

#### NOTE:

- The minimum to maximum range of air screw adjustment is 1 to 3 turns out from the lightly seated position. If you exceed 3 turns out, the next smallest slow jet is needed. If you are under 1 turn out, the next larger slow jet is needed.

### FRONT AND REAR WHEELS AND TIRES

#### Tires

Proper air pressure will provide maximum stability, riding comfort and tire life.

Check tire pressure frequently and adjust if necessary.

#### NOTE:

- Tire pressure should be checked when the tires are "cold."

Cold tire pressures psi (kPa, kgf/cm <sup>2</sup> )	Front: 15 (100, 1.0) Rear: 15 (100, 1.0)
Tire size	Front: 80/100-21 51M Rear: 110/90-19 62M

#### Wheel Rims And Spokes

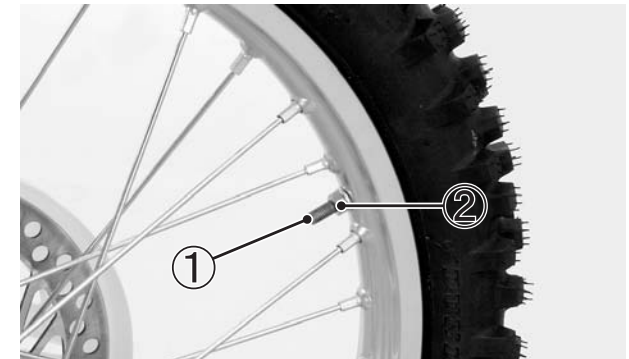
1. Inspect wheel rims and spokes for damage.
2. Tighten any loose spokes and rim locks.

#### TORQUE:

Spoke: 2.7 lbf-ft (3.7 N·m, 0.38 kgf·m)

Rim lock: 9 lbf-ft (12 N·m, 1.2 kgf·m)

3. Check wheel rim runout. If runout is noticeable, see the Honda Service Manual for inspection.



(1) RIM LOCK (2) LOCK NUT

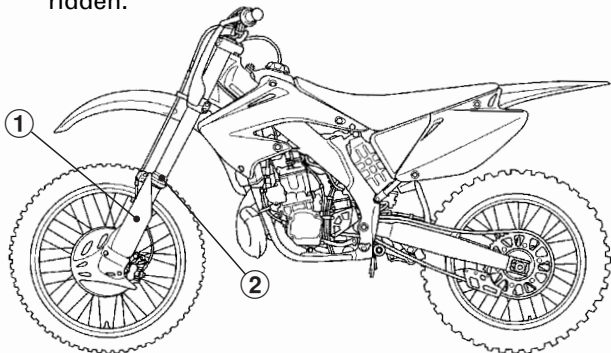
**Axles And Wheel Bearings** (See the Honda Service Manual for inspection):

1. Check the axle for runout.
2. Check the condition of the wheel bearings.

## FRONT SUSPENSION

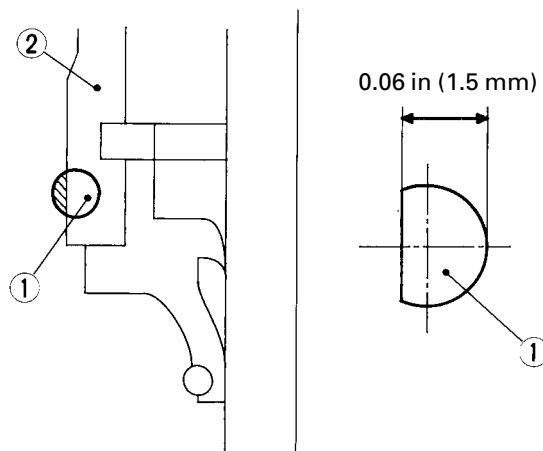
### Inspection

1. Make sure that the fork protectors and dust seals are clean and not packed with mud and dirt.
2. Check for signs of oil leakage. Damaged or leaking fork seals should be replaced before your CR is ridden.



(1) FORK PROTECTOR (2) DUST SEAL

3. Inspect the wear rings for wear or damage. Replace the wear ring if it is 0.06 in (1.5 mm) or flat with the outer tube.



(1) WEAR RING

(2) OUTER TUBE

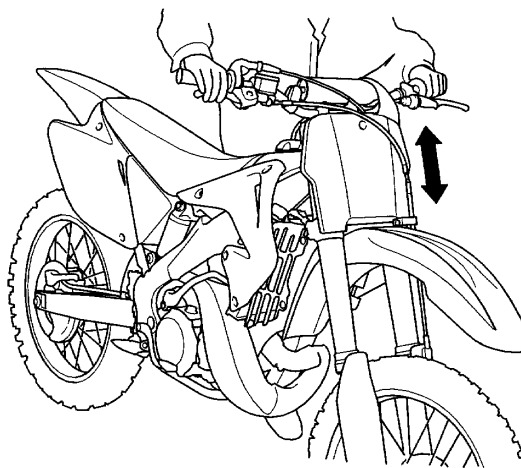
### NOTE:

- Install the wear ring with its end gap facing rearward.



(1) WEAR RINGS

4. Make a quick check of fork operation by locking the front brake and pushing down on the handlebar several times.



### ▲WARNING

- *If any suspension components appear worn or damaged, consult your authorized Honda dealer for further inspection. The suspension components are directly safety-related and your authorized Honda dealer is qualified to determine whether or not replacement parts or repairs are needed.*
- *Contact your Honda dealer for repair of any steering or front suspension wear or damage.*
- *Do not operate the motorcycle with loose, worn or damaged steering or front suspension components, as handling will be adversely affected.*

### NOTE:

- When your CR is new, break it in for approximately one hour to ensure that the suspension has worked in (page 3).
- After break-in, test run your CR with the front suspension at the standard setting before attempting any adjustments.
- For optimum fork performance, we recommend that you disassemble and clean the fork after riding your CR for three hours. See page 62 for fork disassembly.
- Replace the fork oil every three races or 7.5 hours of running. See Section 6 for oil capacity adjustment after changing the fork oil.
- Use Pro Honda HP Fork Oil 5W or an equivalent which contains special additives to assure maximum performance of your CR's front suspension.
- Periodically check and clean all front suspension parts to assure top performance. Check the dust seals for dust, dirt, and foreign materials. Check the oil for any contamination.
- Refer to Section 6 for Suspension Adjustment information. Make all rebound and compression damping adjustments in one-click increments. (Adjusting two or more clicks at a time may cause you to pass over the best adjustment.) Test ride after each adjustment.
- If you become confused about adjustment settings, return to the standard position and start over.
- If the fork is still too stiff/soft after adjusting compression damping, determine which portion of the travel is still too stiff/soft. This is an important step that will help you solve suspension problems.

See page 70 for front suspension adjustment.



## 4. SERVICE AND MAINTENANCE

### REAR SUSPENSION

The swingarm is controlled by one hydraulic shock absorber with an aluminum reservoir for oil and nitrogen gas pressure. The gas pressure in the reservoir is contained within a rubber bladder.

The shock absorber's spring preload and damping adjustments (compression and rebound) should be adjusted for the rider's weight and track conditions. (See Section 6.)

#### **▲ WARNING**

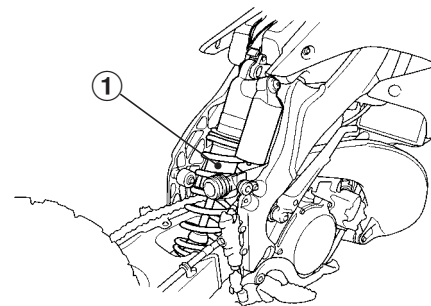
- ***The rear shock absorber assembly includes a damper unit that contains high pressure nitrogen gas. The instructions found in this owner's manual are limited to adjustment of the shock assembly only. Do not attempt to disassemble, disconnect or service the damper unit; an explosion, causing serious injury may result.***
- ***Puncture or exposure to flame may also result in an explosion, causing serious injury.***
- ***Service or disposal should only be done by your authorized Honda dealer or a qualified mechanic, equipped with the proper tools, safety equipment and the official Honda Service Manual.***

#### NOTE:

- When your CR is new, break it in for approximately one hour with the standard suspension settings before attempting to adjust the rear suspension.
- Make all compression and rebound damping adjustments in specified increments or turns described in page 53. (Adjusting two or more increments or turns at a time may cause you to pass over the best adjustment.) Test ride after each adjustment.
- If the rear suspension is too stiff/soft, adjust it by turning all the compression and rebound adjusters according to the procedures described in page 70. After adjusting the adjusters simultaneously, suspension may be fine-tuned by turning one of the compression or rebound damping adjusters in one-click or in 1/12 turn increments.
- If you have a problem finding an acceptable adjustment, return to the standard position and begin again.

#### Inspection

1. Check for a broken or collapsed spring.
2. Bounce the rear of the motorcycle up and down and check for smooth suspension action.
3. Check the shock for a bent shaft or oil leaks.



(1) REAR SHOCK ABSORBER

4. Push the rear wheel sideways to check for worn or loose swingarm bearings. There should be no movement. If there is, have the bearings replaced by your authorized Honda dealer.

## BRAKES

This model has hydraulic disc front and rear brakes. As the brake pads wear, the brake fluid level will drop. Therefore, the brake fluid level and pad wear must be inspected periodically.

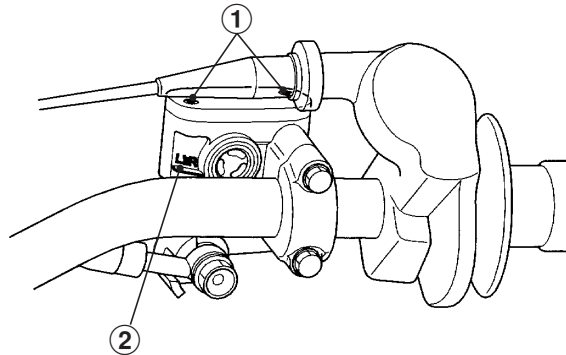
### Front Brake Fluid

Whenever the fluid level is near the lower mark on the reservoir, fill it with DOT 4 BRAKE FLUID from a sealed container. Remove the screws, reservoir cap and diaphragm, add fluid as necessary; do not overfill. Reinstall the diaphragm and reservoir cap. Tighten the screws securely.

If the brake lever free play exceeds 0.8 in (20 mm), there is probably air in the brake system and it must be bled. Refer to the Honda Service Manual or see your authorized Honda motorcycle dealer for brake bleeding.

### CAUTION:

- **When adding brake fluid be sure the reservoir is horizontal before the cap is removed or brake fluid may spill out.**



(1) SCREWS

(2) LOWER LEVEL MARK

### Rear Brake Fluid

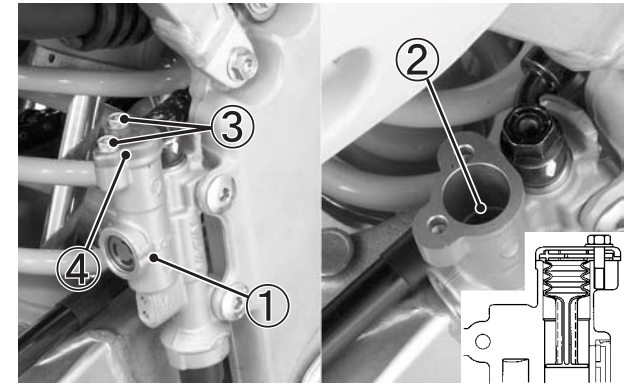
Whenever the fluid level is near the lower mark on the reservoir, fill it with DOT 4 BRAKE FLUID from a sealed container. Remove the bolts, reservoir cap and diaphragm. Add the brake fluid to the upper level mark if necessary; do not overfill. Reinstall the diaphragm, reservoir cap and tighten the bolts.

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

If the brake pedal free play exceeds 1.2 in (30 mm), there is probably air in the brake system and it must be bled. Refer to the Honda Service Manual or see your authorized Honda motorcycle dealer for brake bleeding.

### CAUTION:

- **When adding brake fluid be sure the reservoir is horizontal before the cap is removed or brake fluid may spill out.**



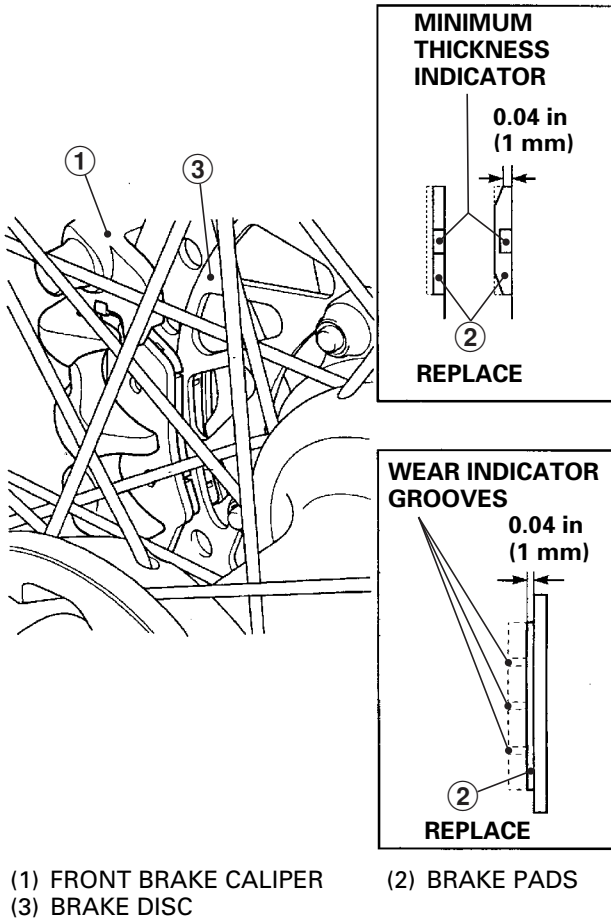
(1) LOWER LEVEL MARK (2) UPPER LEVEL MARK  
(3) BOLTS (4) RESERVOIR CAP

For adjustment of brake lever free play and pedal height, see page 6.

## 4. SERVICE AND MAINTENANCE

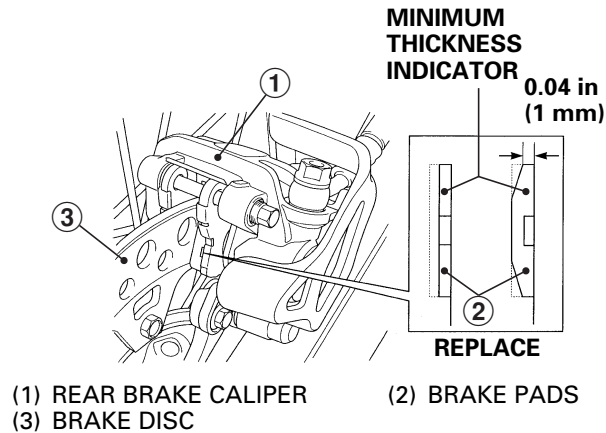
### Front Brake Pads

Inspect the pads visually through the front wheel to determine the pad wear. If either pad is worn anywhere to a thickness of 0.04 in (1 mm), both pads must be replaced.



### Rear Brake Pads

Inspect the pads visually from the rear side of the caliper to determine the pad wear. If either pad is worn anywhere to a thickness of 0.04 in (1 mm), both pads must be replaced.



### Other Checks

Make sure there are no fluid leaks. Check for deterioration or cracks in the hoses and fittings.

## DRIVE CHAIN

Regular cleaning, lubrication, and proper adjustment will help to extend the service life of the drive chain.

### ⚠ WARNING

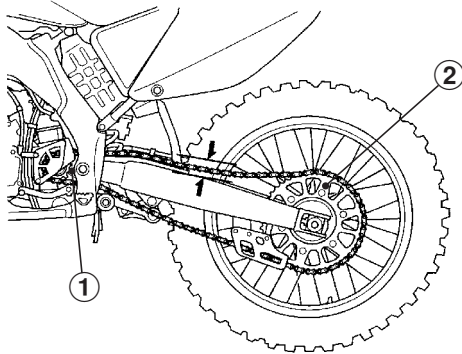
- **Take care to prevent catching your fingers between the chain and sprocket.**

### Inspection

1. Turn the engine off, raise the rear wheel off the ground by placing the optional workstand or equivalent support under the engine and shift the transmission into neutral.
2. Check slack in the drive chain midway between the sprockets, above the swingarm. Drive chain slack should allow 1 — 1-3/8 in (25 — 35 mm) of vertical movement.

### NOTE:

- Excessive chain slack may allow the drive chain to damage the engine cases.

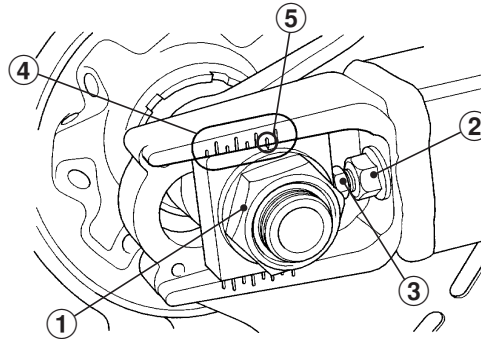


- (1) DRIVE SPROCKET      (2) DRIVEN SPROCKET  
(3) DRIVE CHAIN SLACK

If the chain is found to be slack in one segment of its length and taut in another, this indicates that some of the links are either worn, kinked or binding. Kinking and binding can frequently be eliminated by thorough cleaning and lubrication. If the drive chain requires adjustment, the procedure is as follows:

### Adjustment

1. Loosen the rear axle nut.
2. Loosen the lock nuts and turn the adjusting bolt counterclockwise to decrease slack or clockwise to increase slack.  
Align the index mark of the axle plates with the same reference marks on both sides of the swingarm.



- (1) REAR AXLE NUT      (2) LOCK NUT  
(3) ADJUSTING BOLT      (4) INDEX MARK  
(5) REFERENCE MARKS

3. Tighten and torque the rear axle nut.

**TORQUE: 93 lbf-ft (127 N·m, 13 kgf·m)**

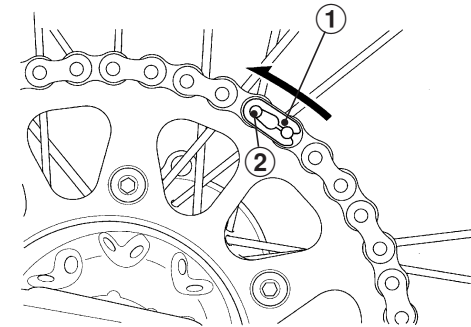
4. Recheck chain slack and adjust if necessary.
5. Loosen the adjusting bolt counterclockwise lightly until it touches the axle plate. Then, tighten and torque the lock nut by holding the adjusting bolt with a wrench.

**TORQUE: 20 lbf-ft (27 N·m, 2.8 kgf·m)**

### Removal, Cleaning and Inspection

For maximum service life, the drive chain should be cleaned, lubricated, and adjusted before each outing.

1. Carefully remove the master link retaining clip with pliers.  
Remove the master link and drive chain.
2. Clean the drive chain in high flash-point solvent and allow it to dry. Inspect the drive chain for possible wear or damage. Replace any chain that has damaged rollers, loose or tight fitting links, or otherwise appears unserviceable.



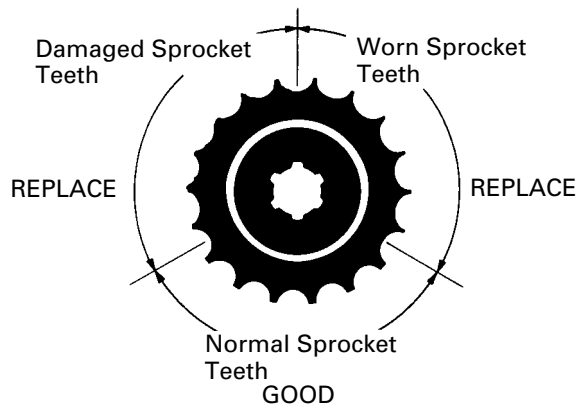
- (1) RETAINING CLIP      (2) MASTER LINK

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

### NOTE:

- Never install a new drive chain on badly worn sprockets, or use new sprockets with a badly worn drive chain. Both chain and sprockets must be in good condition, or the new replacement chain or sprocket(s) will wear rapidly.
- Excessively worn sprocket teeth have a hooked, worn appearance. Replace any sprocket which is damaged or excessively worn.

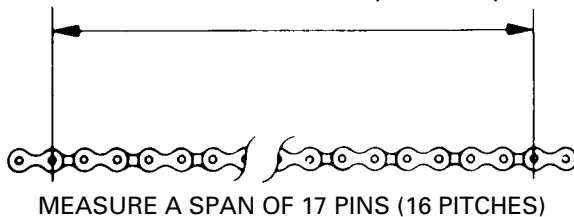
## 4. SERVICE AND MAINTENANCE



4. Measure a section of the drive chain to determine whether the chain is worn beyond its service limit. Put the transmission in gear, and then turn the rear wheel forward until the lower section of the chain is pulled taut. With the chain held taut and any kinked joints straightened, measure the distance between a span of 17 pins, from pin center to pin center. If the measurement exceeds the service limit, replace the chain. After the chain is measured, shift the transmission into neutral again before proceeding with inspection and service.

**Replacement chain:**  
**D.I.D 520DMA2**

**SERVICE LIMIT: 10.20 in (259.0 mm)**

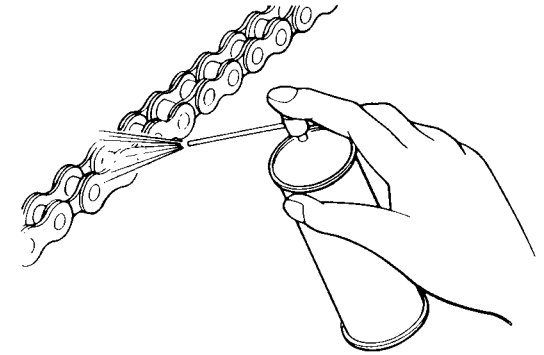


5. Lubricate the drive chain.
6. Pass the chain over the sprockets and join the ends of the chain with the master link. For ease of assembly, hold the chain ends against adjacent rear sprocket teeth while inserting the master link. Install the master link retaining clip so that the closed end of the clip will face the direction of forward wheel rotation. The master link is the most critical part affecting the security of the drive chain. Master links are reusable if they remain in excellent condition, but it is recommended that a new master link retaining clip be installed whenever the drive chain is reassembled.
7. Recheck chain slack and adjust if necessary.

### Lubrication

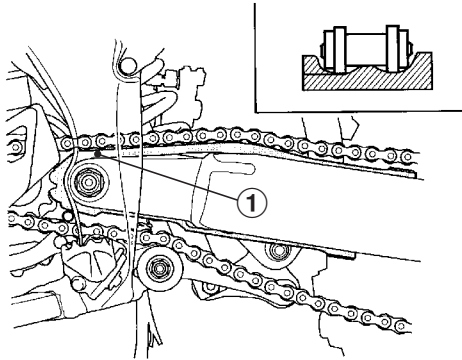
Commercially prepared drive chain lubricants may be purchased at most motorcycle shops and should be used in preference to motor oil. Pro Honda Chain Lube or an equivalent, or SAE 80 or 90 gear oil is recommended.

Saturate each chain joint so that the lubricant penetrates the space between adjacent surfaces of the link plates and rollers.



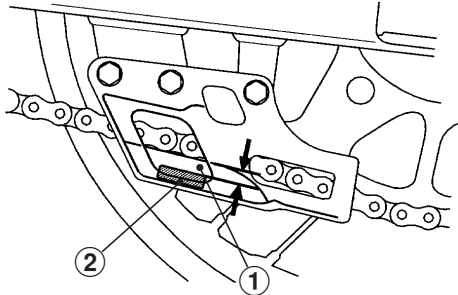
### DRIVE CHAIN SLIDERS

1. Check the chain slider for wear.  
If the wear is 3/16 in (5 mm) or more, replace it.



(1) CHAIN SLIDER

2. Check the chain guide slider for wear.  
Replace the guide slider if the chain is visible through the wear inspection window.



(1) CHAIN GUIDE SLIDER  
(2) INSPECTION WINDOW

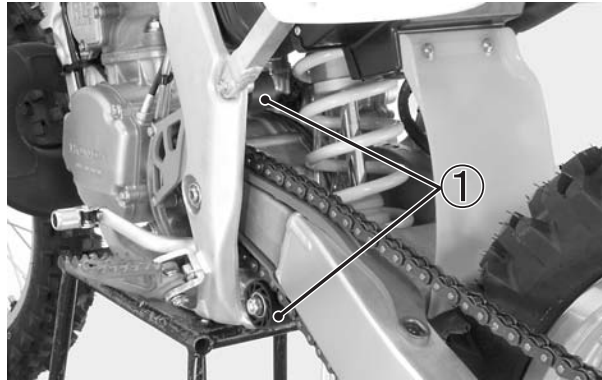
### DRIVE CHAIN ROLLERS

Check the drive chain rollers for wear. Replace them if they are smaller than the service limits.

#### SERVICE LIMITS:

**UPPER ROLLER: 1 in (25 mm)**

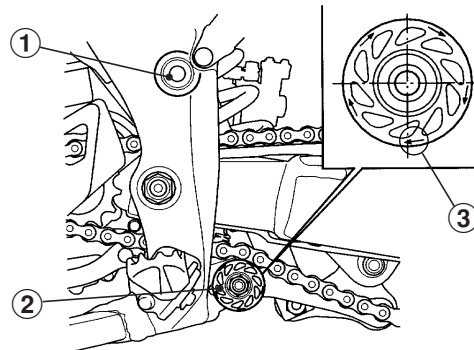
**LOWER ROLLER: 1.5 in (39 mm)**



(1) DRIVE CHAIN ROLLERS

#### NOTE:

- When replacing the drive chain rollers, carefully install the upper roller and the lower rollers to avoid the wrong installation.
- If the lower drive chain roller was removed, install it with its "→" mark side facing out.



(1) UPPER ROLLER  
(2) LOWER ROLLER

(3) "→" MARK

### DRIVEN SPROCKET

Check the driven sprocket torque values after each race.

**TORQUE: 24 lbf-ft (32 N·m, 3.3 kgf·m)**

## 4. SERVICE AND MAINTENANCE

### EXPANSION CHAMBER

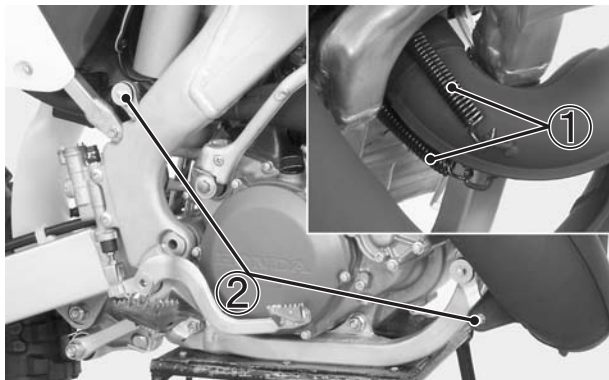
#### Inspection

1. Check the expansion chamber springs, and replace them if they are damaged or stretched.
2. Check the flange bolts for tightness.
3. Check the expansion chamber for cracks or deformation.

A damaged chamber may decrease engine performance.

#### Removal

1. Remove the seat and right side cover (page 17).
2. Remove the expansion chamber by removing the expansion chamber springs (2 pcs.) and mounting bolts.
3. Remove carbon deposits from the head pipe of the expansion chamber.



(1) SPRINGS

(2) BOLTS

#### Installation Note

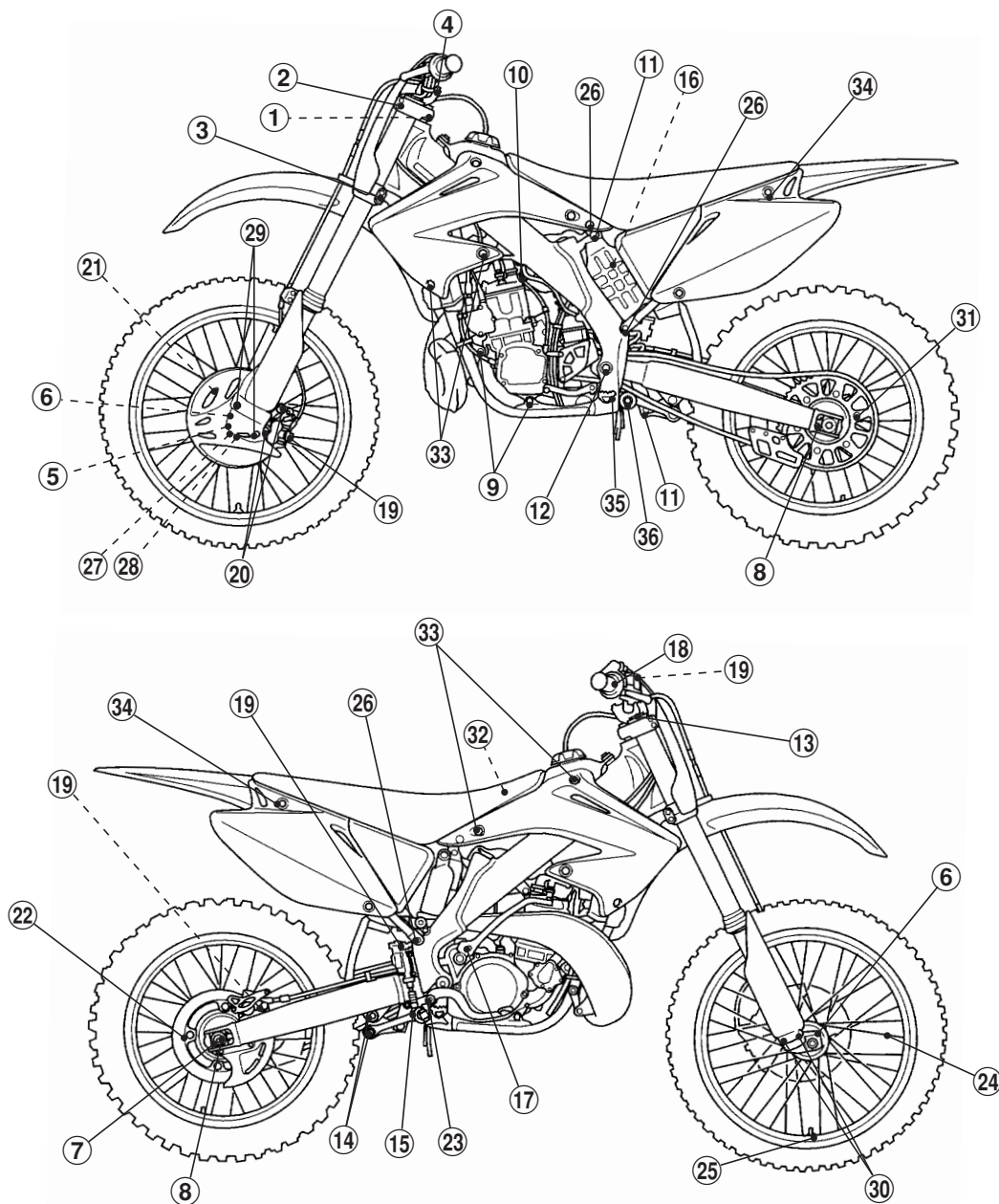
- Install the expansion chamber in the reverse order of removal.

### CONTROL CABLES

#### Lubrication

Periodically, disconnect the throttle and clutch cables at their upper ends. Thoroughly lubricate the cable pivot points and the inside of clutch cable end adjuster with a commercially available cable lubricant. Be certain that the throttle cable has no kinks or other damage so the throttle slide will return properly.

## TORQUE TABLE



Item	Torque			Remarks
	lbf·ft	N·m	kgf·m	
<b>FRAME</b>				
1	80	108	11.0	
2	16	22	2.2	
3	14	20	2.0	
4				
5	16	22	2.2	
6	65	88	9.0	
7	14	20	2.0	
8	93	127	13.0	NOTE 4
9	20	27	2.8	NOTE 5
10	40	54	5.5	
10				
	20	26	2.7	
	40	54	5.5	
11	33	44	4.5	NOTE 4
	33	44	4.5	NOTE 4
12	65	88	9.0	NOTE 4
13	40	54	5.5	
	22	29	3.0	
14				
	38	52	5.3	NOTE 2.4
	38	52	5.3	NOTE 2.4
15				
	38	52	5.3	NOTE 2.4
16	65	88	9.0	
17	28	38	3.9	
18				
	7	9.9	1.0	
19	25	34	3.5	
20	22	30	3.1	NOTE 1
21	12	16	1.6	NOTE 4
22	12	16	1.6	NOTE 4
23	20	26	2.7	
24	2.7	3.7	0.38	
25	9	12	1.2	
26	22	30	3.1	
	22	30	3.1	
27	51	69	7.0	
28	16	22	2.2	
29	9	13	1.3	
30	5.1	7	0.7	NOTE 1
31	24	32	3.3	NOTE 4
32	2.9	4	0.4	
33	4	6	0.6	
34	20	27	2.8	
35				
	41	55	5.6	
	23	30	3.0	
36	9	12	1.2	NOTE 4

- NOTES: 1. Apply Honda Thread Lock or an equivalent to the threads.  
 2. Apply oil to the threads and flange surface.  
 3. Stake.  
 4. U-nut.  
 5. UBS nut.  
 6. SH bolt.  
 7. Alock bolt.



## 5. CARBURETOR ADJUSTMENT

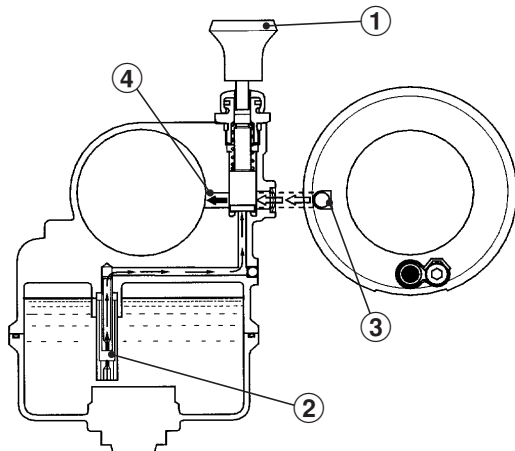
### CARBURETOR

The carburetor used on your CR will seldom experience trouble with the standard settings under average load, climatic and barometric conditions. However, to fine tune the engine's power output, the carburetor may require adjustments for specific racing conditions. To change the carburetor settings, observe the following instructions.

#### Construction:

##### • Starting Circuit

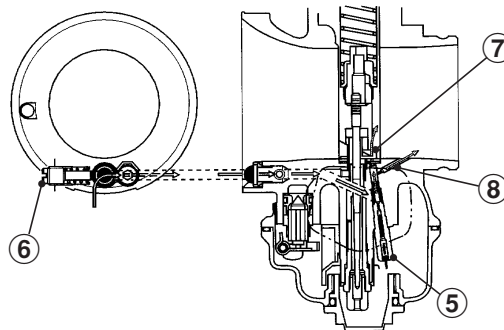
A very rich mixture must be delivered to the cylinder when the engine is being started. When the choke knob is pulled up, fuel is metered by the starter jet and is mixed with air from the air passage to provide a rich mixture for starting. The mixture discharges through the orifice into the cylinder.



(1) CHOKE KNOB (2) STARTER JET  
(3) AIR PASSAGE (4) ORIFICE

##### • Slow Circuit

Fuel is metered by the slow jet and is mixed with air that has been metered by the air screw. The mixture enters the venturi through the bypass and pilot outlet.



(5) SLOW JET  
(7) BYPASS

(6) AIR SCREW  
(8) PILOT OUTLET

##### • Main Circuit

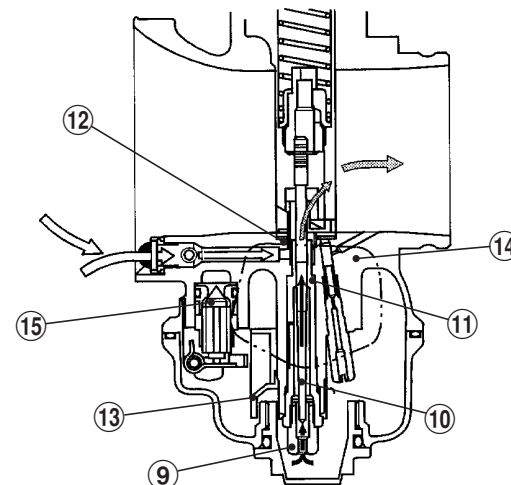
Fuel is metered by the main jet, jet needle and needle jet. It is then mixed with air coming from the air jet and enters the venturi past the needle jet.

##### • Baffle Plate

The baffle plate prevents foaming of fuel or abnormal fuel level around the main jet.

##### • Float Bowl

The float and float valve operate to maintain a constant level of fuel in the float bowl.

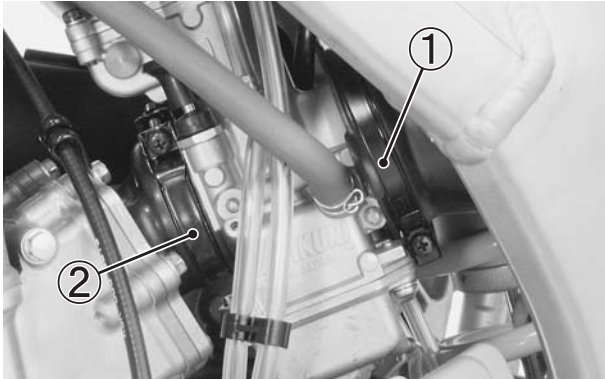


(9) MAIN JET  
(11) NEEDLE JET  
(13) BAFFLE PLATE  
(15) FLOAT VALVE

(10) JET NEEDLE  
(12) AIR JET  
(14) FLOAT

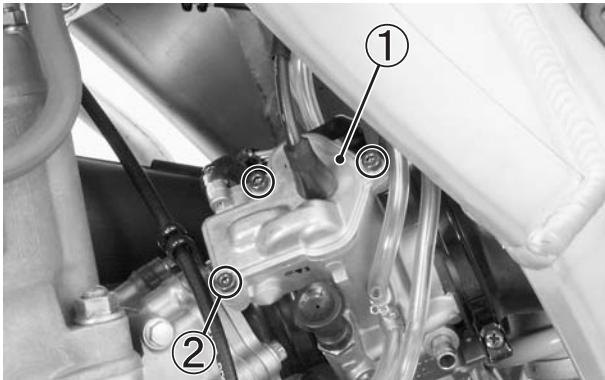
### Disassembly/Assembly

1. Turn the fuel valve OFF.
2. Loosen the connecting tube band.
3. Loosen the intake tube band.
4. Remove the fuel line from the fitting on the carburetor.



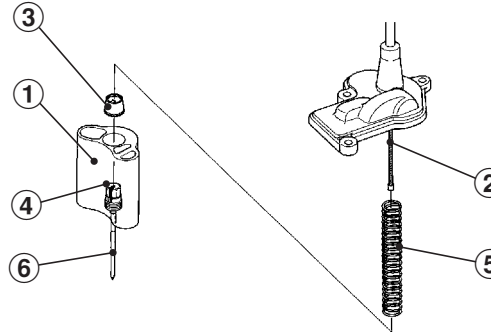
(1) CONNECTING TUBE BAND  
(2) INTAKE TUBE BAND

5. Lean the carburetor to the left.
6. Disconnect the throttle sensor connector.
7. Remove the screws and carburetor top, then pull out the throttle valve.



(1) CARBURETOR TOP (2) SCREWS

8. Remove the throttle cable and collar from the cable holder.
9. Remove the collar and throttle valve spring from the throttle cable.
10. Remove the throttle cable holder and jet needle from the throttle valve.



(1) THROTTLE VALVE (2) THROTTLE CABLE  
(3) COLLAR (4) CABLE HOLDER  
(5) THROTTLE VALVE SPRING  
(6) JET NEEDLE

11. Remove the carburetor.

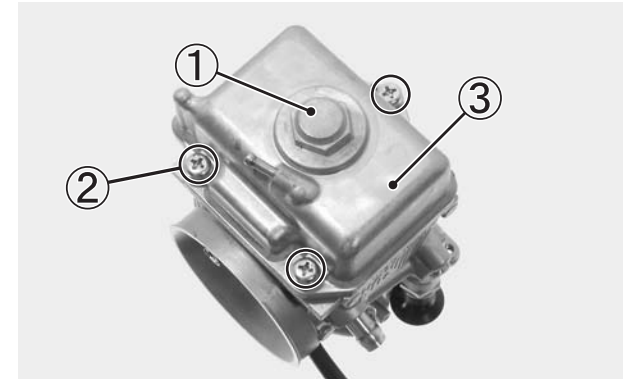
#### NOTE:

- Be careful not to damage around the throttle sensor.
- Do not assemble or move the carburetor with holding the throttle sensor lead.

12. Remove the float bowl plug, float bowl screws and float bowl.

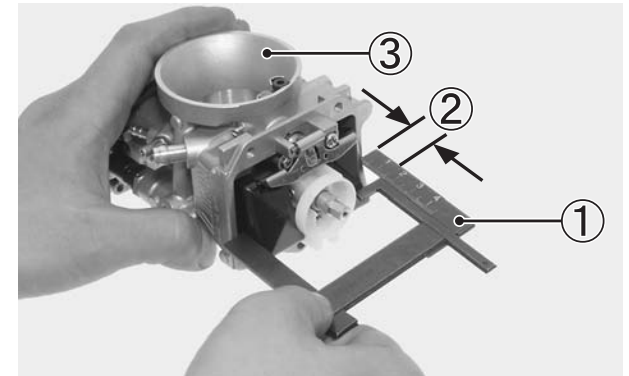
#### ⚠ WARNING

- **Gasoline is extremely flammable and is explosive under certain conditions. Perform this operation in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where gasoline is drained or stored and where the fuel tank is refueled.**



(1) FLOAT BOWL PLUG  
(2) FLOAT BOWL SCREWS (3) FLOAT BOWL

13. Measure the float level with the float tab just contacting the float valve and the carburetor intake facing up. The float level should be 0.29 in (7.5 mm). Adjust the float level by bending the float tab carefully.



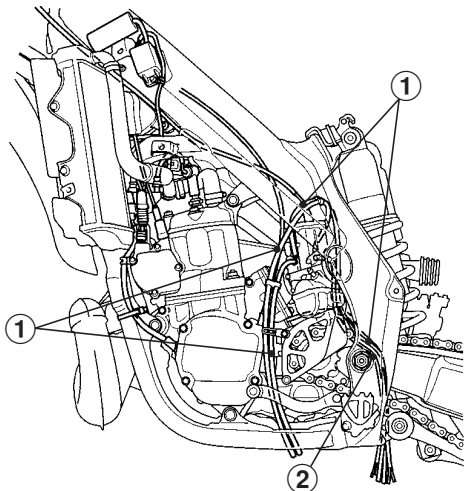
(1) FLOAT LEVEL GAUGE (2) FLOAT LEVEL  
(3) CARBURETOR INTAKE

## 5. CARBURETOR ADJUSTMENT

To assemble, reverse the disassembly procedures.  
To install the carburetor, reverse the removal procedures.

### NOTE:

- After installing the carburetor, check the air vent tubes and overflow hose for kinking or pinching and correct routing as necessary.



(1) AIR VENT TUBES

(2) OVERFLOW HOSE

### Pre-adjustment Checks

Before adjusting carburetor settings, check the following:

- air cleaner condition (page 23)
- air leaks
- ignition timing
- float level
- clogged carburetor jets
- spark plug fouling or improper heat range
- freshness of fuel and fuel/oil ratio

If the above check out, adjust the carburetor for your specific racing conditions. Engine response and appearance of the firing end of a spark plug are highly indicative of the engine condition.

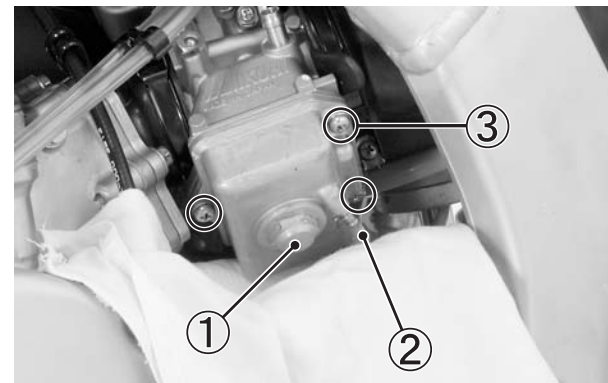
Refer to the list on page 9 for the optional carburetor parts.

### Adjustment Procedure

- Warm up the engine.
- Make two or three laps of a course with the standard or corrected jetting (see page 50) and spark plug. Note engine acceleration and other engine conditions in relation to throttle opening. Verify carburetion by removing the spark plug and reading its firing end (page 22, 51). It may take more than two or three laps to get a good spark plug reading with a new spark plug.
- Change carburetor settings or select suitable carburetor jets, taking into consideration the engine conditions and factors for temperature and altitude (page 50).
- If you've determined that the main and slow jets must be changed, you must remove the float bowl.

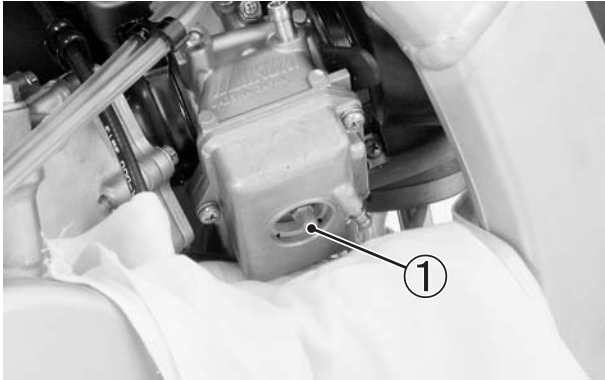
### ▲ WARNING

- Removing the float bowl plug will allow the fuel in the float bowl to drain. Do not remove if engine is hot.**
  - Gasoline is extremely flammable and is explosive under certain conditions. Perform this operation in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where gasoline is drained or stored and where the fuel tank is refueled.**
- Turn the fuel valve OFF, and disconnect the fuel line from the fuel valve.
  - Remove the drive sprocket cover.
  - Loosen the connecting and intake tube bands. Rotate the carburetor. Remove the float bowl plug.



(1) FLOAT BOWL PLUG (2) OVERFLOW HOSE  
(3) FLOAT BOWL SCREW

- Remove the screw from the float bowl, then remove the float bowl. Change the jets as required.



(1) MAIN JET

- Reinstall the float bowl and its plug.

**CAUTION:**

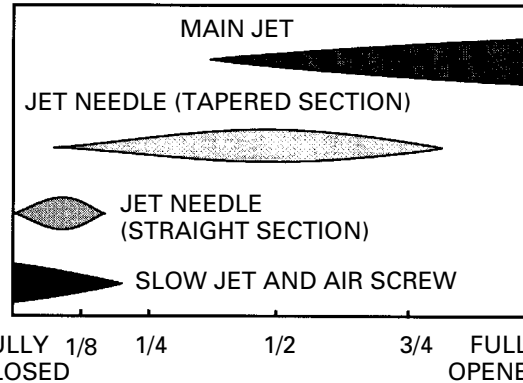
- Make sure to install the float bowl correctly, with the overflow hose fitting facing the rear of the motorcycle.**
- Remove the carburetor top, throttle valve and cable holder (page 47), and then change the jet needle clip position as required. Reinstall the jet needle, throttle valve, cable holder and carburetor top.
  - Turn the carburetor upright and tighten its clamp screws.
  - Install the drive sprocket cover.
  - Adjust the air screw opening as required. Reconnect the fuel line at the carburetor.
  - Repeat steps 2 through 11 until the engine gives maximum power with the correct spark plug reading. It is always better to jet a little rich than a little lean. It is advisable to record the settings, course conditions, lap times, and climatic and barometric conditions for future reference.

**NOTE:**

- Be careful not to damage around the throttle sensor.
- Do not assemble or move the carburetor with holding the throttle sensor lead.

**Circuit Adjustments**

The carburetor has several major circuits, each providing the fuel/air mixture over a given portion of throttle valve opening. These major circuits overlap as shown below.



• Main Jet

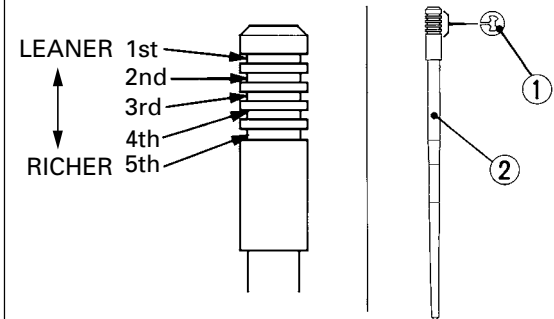
The main jet affects fuel/air ratio at full throttle (4/4). The size should be reduced at higher altitudes.

**NOTE:**

- Honda carburetor jet sizes are numbered in increments of 10. When changing the main jet size, increase or decrease it gradually until the desired jetting is obtained. Because your CR's jet size numbers do not correspond with other carburetor manufacturer's jet size numbers, use genuine 2003 Honda CR250R jets.

• Jet Needle

The jet needle controls fuel/air mixture over 1/16 to 1/8 throttle. The straight section affects throttle response at smaller throttle openings. By changing the position of the clip in its groove, you can improve acceleration at medium low and medium speed.



(1) CLIP (2) STRAIGHT SECTION

• Slow Jet and Air Screw

Refer to Carburetor Minor Adjustments (Page 36).

## 5. CARBURETOR ADJUSTMENT

### Carburetor Major Adjustments

#### NOTE:

- For the following recommendations to be accurate, you must use the standard settings as a baseline. Also, don't change any of the settings until you've determined what changes are necessary.

#### Standard settings:

Air screw opening	— 1 1/2 turns out
Slow jet	— #30
Jet needle	— 6BHY38-73
Needle clip position	— 2nd groove
Main jet	— #420
Float level	— 0.59 in (15.0 mm)
Identification number	— TMX11C

All jetting is based on

- Standard Jetting
- 32:1 Fuel/Oil Ratio
- Unmodified Engine (Including Porting, Exhaust and Timing)

TEMPERATURE ALTITUDE	FAHR.	-21°~0°	-1°~20°	19°~40°	39°~60°	59°~80°	79°~100°	99°~120°
10,000 ft to 7,500 ft	AS: SJ: NC: JN: MJ:	1 1/2 32.5 2nd 6CHY12-82 420	1 3/4 30 2nd 6CHY12-82 420	2 30 2nd 6CHY12-83 410	2 1/4 30 1st 6CHY13-82 400	2 1/2 30 1st 6CHY13-83 390	2 1/4 27.5 1st 6CHY13-82 380	2 1/2 27.5 1st 6CHY12-83 370
7,499 ft to 5,000 ft	AS: SJ: NC: JN: MJ:	1 1/4 32.5 2nd 6CHY12-82 430	1 1/2 32.5 2nd 6CHY12-82 420	1 1/2 30 2nd 6CHY12-82 420	1 3/4 30 2nd 6CHY12-83 410	2 30 1st 6CHY13-82 400	2 1/4 30 1st 6CHY13-83 390	2 27.5 1st 6CHY12-82 380
4,999 ft to 2,500 ft	AS: SJ: NC: JN: MJ:	1 1/2 35 2nd 6CHY13-82 440	1 1/4 32.5 2nd 6CHY12-82 430	1 1/2 32.5 2nd 6CHY12-82 420	1 1/2 30 2nd 6CHY12-82 420	1 3/4 30 2nd 6CHY12-83 410	2 30 1st 6CHY13-82 400	2 1/4 30 1st 6CHY13-83 390
2,499 ft to 1,000 ft	AS: SJ: NC: JN: MJ:	1 1/4 35 3rd 6CHY12-82 450	1 1/2 35 2nd 6CHY13-82 440	1 1/4 32.5 2nd 6CHY12-82 430	1 1/2 32.5 2nd 6CHY12-82 420	1 1/2 30 2nd 6CHY12-82 420	1 3/4 30 2nd 6CHY12-83 410	2 30 1st 6CHY13-82 400
999 ft to Sea Level	AS: SJ: NC: JN: MJ:	1 35 3rd 6CHY12-81 460	1 1/4 35 3rd 6CHY12-82 450	1 1/2 35 2nd 6CHY13-82 440	1 1/4 32.5 2nd 6CHY12-82 430	STANDARD JETTING 1 1/2 32.5 2nd 6CHY12-82 420	1 3/4 30 2nd 6BHY38-73 420	2 30 2nd 6BHY38-74 410

#### Legend

AS: Screw Opening from fully seated  
 SJ: Slow jet  
 NC: Needle Clip position  
 JN: Jet Needle  
 MJ: Main Jet

#### General changes due to temperature and altitude

Condition	Mixture will be	Adjust to	Component affected
Cold temperature	Lean	Richen	Main jet (jet needle stage)
Warm temperature	Rich	Lean	Main jet (jet needle stage)
Dry air	Lean	Richen	Main jet (jet needle stage)
High humidity	Rich	Lean	Main jet (jet needle stage)
High altitude	Rich	Lean	Main jet (jet needle stage)

---

## TUNING FOR SPECIAL CONDITIONS

Once you've adjusted the carburetor for temperature and altitude, it shouldn't need major readjustment unless race conditions change drastically. However, there are some unique atmospheric conditions or race day situations that may require additional adjustments. They are as follows.

### NOTE:

- To prevent engine damage, always adjust the main jet before adjusting the jet needle. Always choose the next richer jet if there is any doubt so there is a margin for safety.

- Main Jet
- Go richer on the main jet, by one number, when: the track has a very long straightaway or uphill section, a high percentage of sand, or the track is muddy.
  - Go leaner on the main jet, by one number, when: it is very humid or raining, or it is hotter than 113 degrees F.

### NOTE:

- After using the chart, and making any adjustments for special conditions, it shouldn't be necessary to go more than one jet size richer or leaner to fine tune your CR. If larger jetting changes are necessary, check for worn crankshaft seals, air leaks, blocked or restricted exhaust or fuel systems, or a dirty air cleaner.

## SPARK PLUG COLORING INDICATIONS

Normal	Dark brown to light tan color with dry electrode	——
Overheating	Light gray or white color	Mixture is Lean*
Wet	Wet and sooty	Mixture is Rich**

Remember that in addition to improper jetting:

- \* A lean condition can be caused by air leaks in the inlet tract, in the center crankcase joint and leaking ignition side crank seal.
- \*\* A rich condition may be caused by a leaking primary drive side seal — that draws transmission oil into the fuel/air mixture. Excessive smoking will occur. The same simple throttle opening identification system used in the Break-In section of this manual can also be used to accurately identify where carburation problems occur, should they arise. (See page 3)

## 6. SUSPENSION ADJUSTMENT

### RACE SAG

#### Standard Race sag: 3.9 in (100 mm)

There are a series of adjustments that should be performed on a factory-new CR; once after the pre-ride inspection, then again after initial break-in. First and foremost among these is the rear suspension Race Sag adjustment.

#### First, A Common Mistake

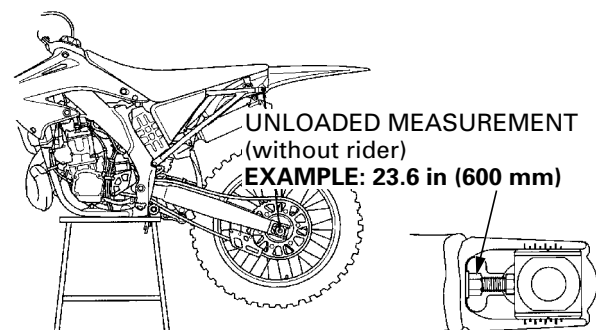
Due to the great absorption quality of the shock bump rubber, it is difficult for all but a few riders to notice when their CR's suspension is bottoming out. Many riders think the damping or perhaps the leverage ratio is too harsh. In reality, they're running too little preload or a spring that's too soft and using only the last third of the stroke.

Setting your CR's shock spring preload/Race Sag dimension according to the guidelines here will ensure correct adjustment and spring selection.

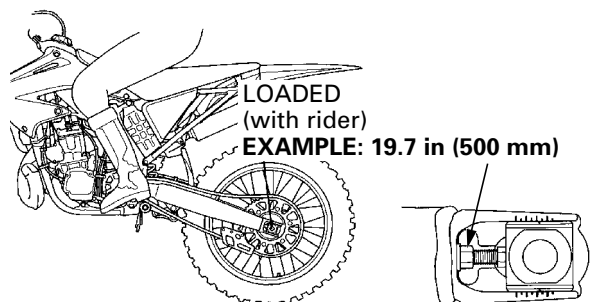
#### Shock Spring Preload And Race Sag Adjustment

The adjustment procedure that follows establishes the correct starting point for any suspension tuning. It guides you to both proper spring preload adjustment and spring selection for your specific needs. Damping adjustments are described elsewhere in this manual. The first step toward determining proper suspension adjustment is to set the rear spring preload so that the proper ride height, or Race Sag dimension, is achieved. For this adjustment procedure, the bike should be brought to normal racing weight—correct fuel, transmission oil and coolant levels.

First measure the Unloaded dimension when your CR is supported by a workstand without the left side cover and the rear wheel is off the ground. Measure the distance from the center of the rear fender mounting bolt to the center of the chain adjuster lock nut as illustrated here.



Next measure the Loaded dimension with the rider aboard, wearing all normal riding gear. Ask a buddy to steady the bike perfectly upright so you can put both feet on the pegs. You'll need another helper to measure. Bounce your weight on the seat a couple of times to help the suspension overcome any stiction and settle to a good reference point.



**EXAMPLE:**  
UNLOADED = 23.6 in (600 mm)  
- LOADED = 19.7 in (500 mm)  
**RACE SAG = 3.9 in (100 mm)**

The Race Sag dimension is the difference between the Unloaded and the Loaded measurements.

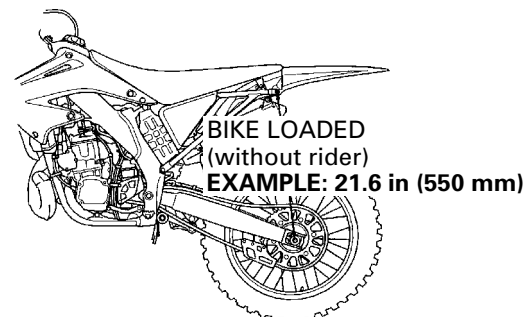
#### Standard Race Sag: 3.9 in (100 mm)

Adjust spring preload as necessary to obtain the correct handling results.

A Race Sag setting of 3.5 in (90 mm) improves turning ability for tight tracks at the cost of slightly reduced straight line stability. Setting this dimension 4.3 in (110 mm) improves stability on faster tracks with less turns, but reduces turning performance slightly.

#### Determining If You Have The Correct Spring

Next you must compare the rear suspension sag under the weight of the sprung portion of the bike alone (without rider's weight) to the Unloaded dimension.



**EXAMPLE:**  
UNLOADED = 23.6 in (600 mm)  
- BIKE LOADED = 21.6 in (550 mm)  
**SAG = 2.0 in (50 mm)**  
**(WITHOUT RIDER)**

After setting the spring preload to obtain the proper Race Sag, the suspension should sag 0.39 to 0.98 in (10 to 25 mm) from the weight of the sprung portion of the bike alone.

If after setting the spring preload (Race Sag) the bike sags more than 0.98 in (25 mm) in the rear under just its own weight, the spring is too stiff for your weight. In this case, the spring is not compressed enough, when the proper Race Sag can be attained, to allow the suspension to extend far enough on its own.

A spring that's too soft for your weight requires so much preload to achieve the proper Race Sag that it makes the rear end top-out when the rider dismounts.

If the spring rate is too soft, you have to put a lot of preload on the spring to keep the desired ride height, or Race Sag. As a result, the weight transfer is incorrect and the rear end tops-out under even light braking and on downhills.

Many people think that these soft or stiff spring indications mean the opposite. But when you take into account the effect of spring preload adjustments and the necessity of the correct Race Sag dimension, it is easier to understand.

A spring that's too firm does not allow the rear tire to hook up under acceleration and passes more of the bumps on to the rider.

Both lighter and heavier than standard springs are available for the shock and fork from your authorized Honda dealer. The need for a stiffer or softer than standard shock spring may require the installation of optional rate fork springs as well in order to maintain proper front/rear suspension balance. These and other components are listed in the Optional Parts section of this manual.

Keep in mind that a properly adjusted suspension system may bottom very slightly at least once per lap at full racing speed. This knowledge, combined with these adjustment guidelines and those on damping adjustment provided elsewhere in this manual, will give you a suspension system that's adjusted as well as any factory rider's motocrosser.

## REAR SUSPENSION

### Shock Adjustment

The rear shock should be adjusted for the rider's weight and track conditions.

#### NOTE:

- If your CR is new, put enough part-throttle break-in time (about one hour) on it to ensure that the suspension has worked in.
1. Place a workstand under the engine to raise the rear wheel off the ground.
  2. Loosen the connecting tube clamp screw and remove the rear subframe's three mounting bolts, then remove the subframe. See page 19.
  3. Check that the spring preload is adjusted to the standard length. Adjust as necessary by loosening the lock nut and turning the adjusting nut. Pin spanners should be used for turning the lock nut and adjusting nut. See page 9 for optional pin spanners.

#### Spring preload length (Standard spring)

**Standard: 10.19 in (259 mm)**

**Min.: 9.92 in (252 mm)**

#### Spring preload length (Optional spring)

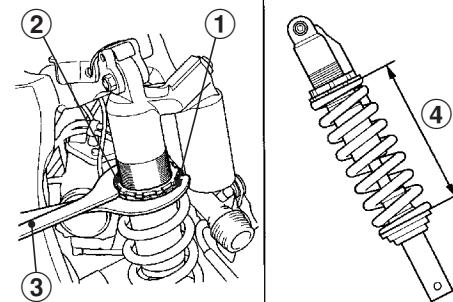
**Min. (Softer, 4.9 kgf/mm): 9.84 in (250 mm)**

**Min. (Stiffer, 5.3 kgf/mm): 9.88 in (251 mm)**

**Min. (Stiffer, 5.5 kgf/mm): 9.80 in (249 mm)**

#### NOTE:

- Each complete turn of the adjusting nut changes the spring length by 1/16 in (1.5 mm).



(1) ADJUSTING NUT  
(2) LOCK NUT

(3) PIN SPANNER  
(4) SPRING LENGTH



## 6. SUSPENSION ADJUSTMENT

### Rebound Damping

The rebound damping adjuster has 17 positions or more. Turning the adjuster screw one full turn clockwise advances the adjuster four positions. To adjust the rebound damping to the standard setting, proceed as follows:

Turn the adjuster clockwise until it will no longer turn (lightly seats). This is the full hard position.

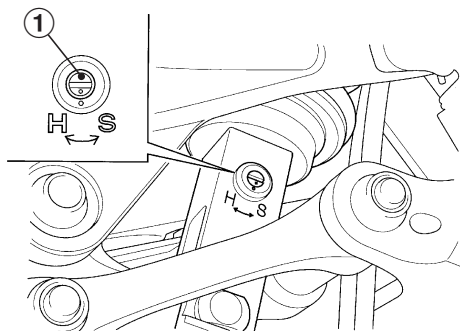
The adjuster is set in the standard position when the adjuster is turned counterclockwise 4-7 clicks with the punch marks on the adjuster and the shock absorber aligned.

#### NOTE:

- Rebound damping can be increased by turning the adjuster clockwise.

#### CAUTION:

- **Be sure that the rebound adjuster is firmly located in a detent, and not between positions.**



(1) REBOUND DAMPING ADJUSTER

### Compression Damping

The compression damping may be adjusted in two stages with separate adjusters.

The high speed damping adjuster is effective when damping adjustment is desired for high speed operation. The low speed damping adjuster should be used when damping adjustment is desired at relatively low speeds.

The high speed damping can be adjusted by turning the hexagonal portion of the compression adjuster.

To adjust the high speed compression damping to the standard, proceed as follows:

Turn the adjuster clockwise until it will no longer turn (lightly seats). This is the full hard position.

The adjuster is set in the standard position when the adjuster is turned counterclockwise  $1 \frac{11}{12}$  –  $2 \frac{5}{12}$  turns and the punch marks on the adjuster and the shock absorber are aligned.

The low speed damping can be adjusted by turning the center screw of the compression adjuster.

The low speed compression adjuster has 13 positions or more.

Turning the adjuster one full turn clockwise advances the adjuster four position.

To adjust the compression damping to the standard, proceed as follows:

Turn the adjuster clockwise until it will no longer turn (lightly seats). This is the full hard position.

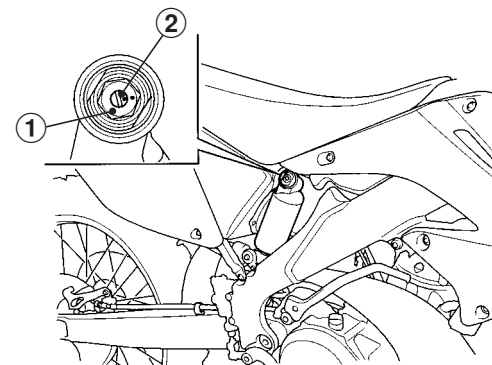
The adjuster is set in the standard position when the adjuster is turned counterclockwise 8 clicks.

#### NOTE:

- Both the high and low speed compression damping can be increased by turning the appropriate adjuster clockwise.
- Adjust the high speed compression adjuster each  $\frac{1}{12}$  turns.

#### CAUTION:

- **Be sure the low speed compression adjuster is firmly located in a detent, and not between positions.**



(1) HIGH SPEED DAMPING ADJUSTER  
(2) LOW SPEED DAMPING ADJUSTER

## FRONT SUSPENSION

The fork should always be adjusted for the rider's weight and track conditions by using one or more of the following methods.

Basically, there are four adjustments you can make to the front suspension:

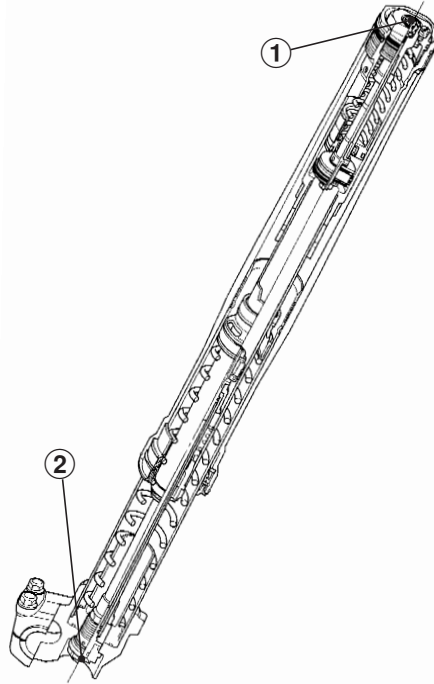
- Fork springs—Optional spring is available in softer and stiffer type than the standard rate. (page 10)
- Rebound damping—Turning the rebound damping screw adjusts how quickly the fork extends.
- Compression damping—Turning the compression damping screw adjusts how quickly the fork compresses.
- Oil volume—The effects of higher or lower fork oil level are only felt during the final 3.9 in (100 mm) of fork travel.

### NOTE:

- Air is an unstable gas which builds up pressure as it is worked (such as in a fork). Air pressure acts as a progressive spring and affects the entire range of fork travel. This means the fork action on your CR will get stiffer during a race. For this reason, release built-up air pressure in the fork legs between motos. Be sure the fork is fully extended with the front tire off the ground when you release the pressure.

### NOTE:

- The inverted fork on your CR features sealed damper cartridges with dual (separate air and oil) chambers to prevent aeration. The design also isolates the oil in each fork tube/slider, which may contain air bubbles and/or metal particles, from the sealed cartridge to provide more consistent damping.



(1) COMPRESSION DAMPING ADJUSTER  
(2) REBOUND DAMPING ADJUSTER

## Fork Springs

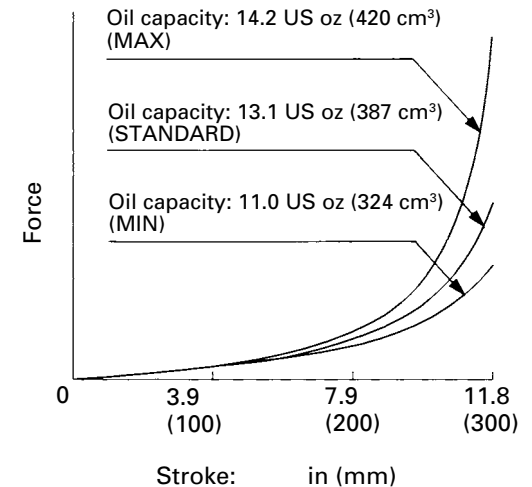
The fork springs in CR's are about right for riders weighing between 150 and 160 lbs (less riding gear). So if you're a heavier rider, you have to go up on the oil level or get a stiffer spring. Do not use less oil than the minimum specified for each spring or there will be a loss of rebound damping control near full extension. If the fork is too hard on big bumps, turn the damping adjuster counterclockwise 1-turn and lower the oil level in increments of 0.2 oz (5 cc) in both fork legs until the desired performance is obtained. Do not, however, lower the oil level below the minimum oil level.

### Minimum oil capacity:

<b>Standard spring:</b>	<b>11.0 US oz (324 cm<sup>3</sup>)</b>
<b>Softer spring:</b>	<b>11.1 US oz (329 cm<sup>3</sup>)</b>
<b>Stiffer spring:</b>	<b>10.8 US oz (319 cm<sup>3</sup>)</b>

### NOTE:

- When adjusting oil levels, bear in mind that the air in the fork will increase in pressure while riding; therefore, the higher the oil level, the higher the eventual pressure of any air in the fork.



## 6. SUSPENSION ADJUSTMENT

### Rebound Damping Adjustment

The rebound damping adjuster has 16 positions or more. Turning the adjuster screw one full turn clockwise advances the adjuster four positions. To adjust the rebound damping to the standard setting, proceed as follows:

Turn the adjuster clockwise until it will no longer turn (lightly seats). This is the full hard position.

The adjuster is set in the standard position when the adjuster is turned counterclockwise 15 clicks.

Make sure that both fork legs are adjusted to the same position.

### Compression Damping Adjustment

This adjustment affects how quickly the fork compresses. The fork compression damping adjuster screw has 16 positions or more. Turning the adjuster screw one full turn changes the adjuster four positions. To adjust the adjuster to the standard position, proceed as follows:

Turn the adjuster clockwise until it will no longer turn (lightly seats). This is the full hard position. The adjuster is set in the standard position when the adjuster is turned counterclockwise 13 clicks.

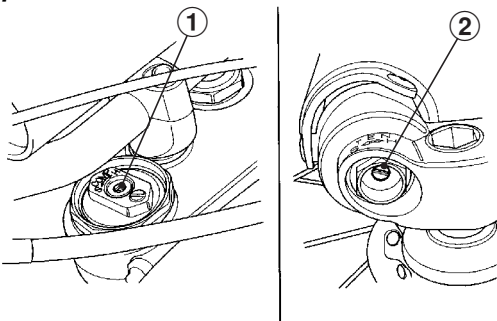
Make sure that both fork legs are adjusted to the same position.

#### NOTE:

- Both compression and rebound damping can be increased by turning the adjusters clockwise.

#### CAUTION:

- **Always start with full hard when adjusting damping.**
- **Do not turn the adjuster screws more than the given positions or the adjusters may be damaged.**
- **Be sure that the rebound and compression adjusters are firmly located in a detent, and not between positions.**



(1) COMPRESSION DAMPING ADJUSTER SCREW

(2) REBOUND DAMPING ADJUSTER SCREW

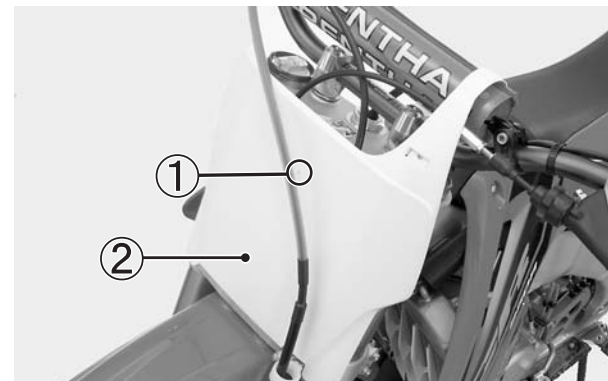
### Fork Oil Change

#### NOTE:

- If your CR is brand-new, put enough part-throttle break-in time (about one hour) on it to ensure that the suspension has worked in.
- For optimum performance, and extended fork life, the fork should be completely disassembled and cleaned after the first three hours of riding. See the Service Manual or your authorized Honda dealer for this service.

Place your CR on the optional workstand or equivalent support with the front wheel off the ground.

Remove the number plate bolt and number plate.



(1) NUMBER PLATE BOLT  
(2) NUMBER PLATE

Remove the handlebar holder nuts, washers, rubber mounts and handlebar.

**CAUTION:**

- *Keep the master cylinder upright to prevent air from entering system.*



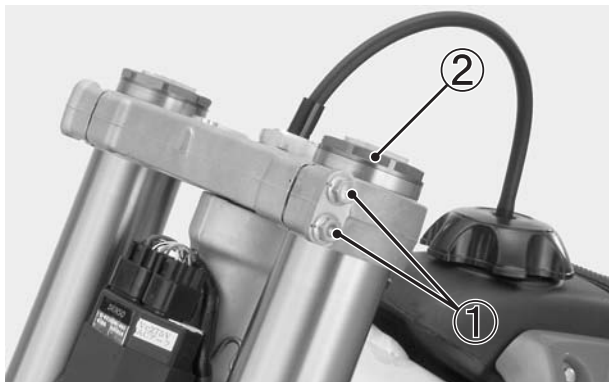
- (1) HANDLEBAR HOLDER NUTS/WASHER
- (2) RUBBER MOUNTS
- (3) HANDLEBAR

Loosen the upper pinch bolts.

Loosen the fork dampers, but do not remove them yet.

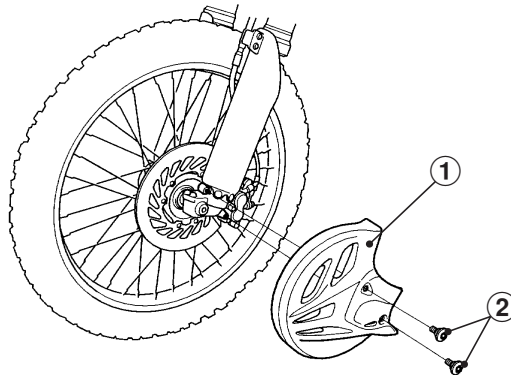
**CAUTION:**

- *Do not use an adjustable wrench to loosen the fork dampers: it may damage them.*
- *loosen the upper pinch bolts before loosening the fork dampers to avoid damaging the fork caps.*



- (1) UPPER PINCH BOLTS
- (2) FORK DAMPER

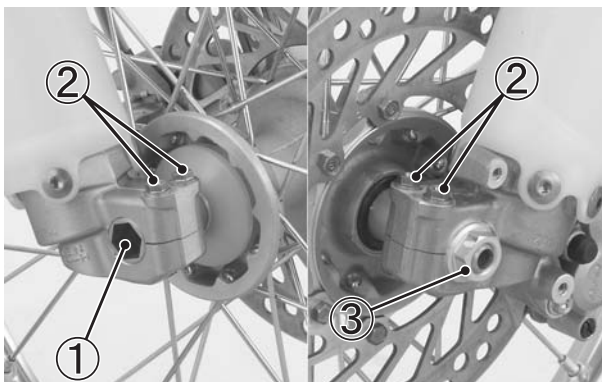
Remove the disc cover by removing the two bolts.



- (1) DISC COVER
- (2) BOLTS

Remove the axle nut and loosen the axle pinch bolts on both forks.

Pull the front axle out of the wheel hub and remove the front wheel.

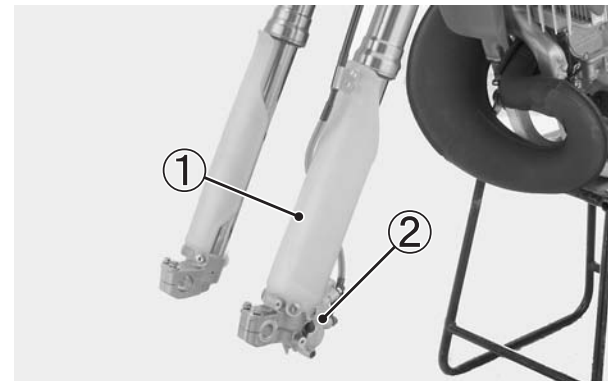


- (1) FRONT AXLE
- (2) AXLE PINCH BOLTS
- (3) AXLE NUT

Remove the fork protector and brake caliper.

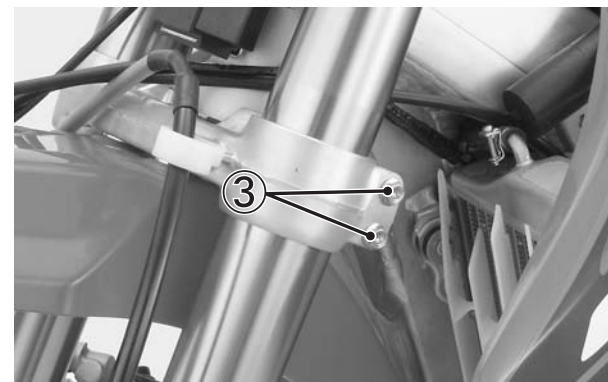
**CAUTION:**

- *Do not support the brake caliper by the brake hose.*
- *Do not operate the brake lever after the front wheel is removed. To do so will cause difficulty in fitting the brake disc between the brake pads.*



- (1) FORK PROTECTOR
- (2) BRAKE CALIPER

Loosen the fork leg lower pinch bolts, then pull the fork legs down and out.



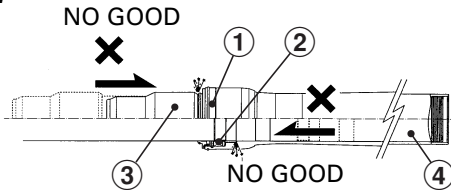
- (3) LOWER PINCH BOLTS

## 6. SUSPENSION ADJUSTMENT

Clean the fork assembly, especially the sliding surface of the slider pipe and dust seal.

### CAUTION:

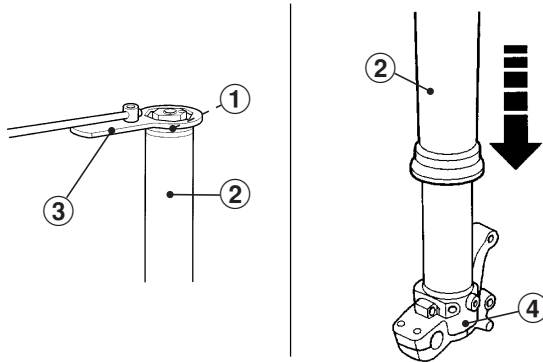
- The outer tube can drop on the slider and damage the fork dust seal and guide bushing when the fork damper is removed. To avoid damage hold both the outer tube and slider when removing the fork cap.



- (1) DUST SEAL (2) GUIDE BUSHING  
(3) SLIDER PIPE (4) OUTER TUBE

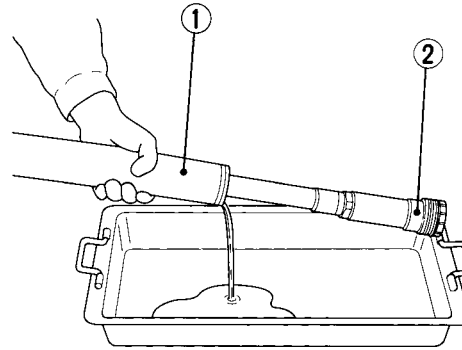
Record the rebound damping adjuster position and turn the adjuster screw counterclockwise until it stops.

Hold the outer tube, then remove the fork damper from the outer tube using a special tool. Gently slide the outer tube down onto the lower end of the slider pipe.



- (1) FORK DAMPER (2) OUTER TUBE  
(3) LOCK NUT WRENCH (4) SLIDER, LOWER END

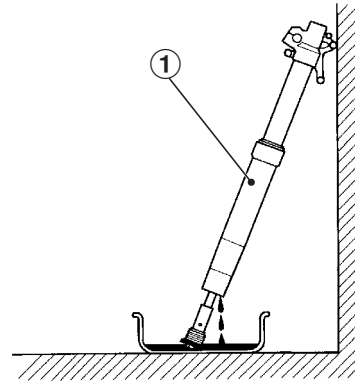
Pour the fork oil from the outer tube.  
Pour the fork oil from the oil hole of the fork damper.



- (1) OUTER TUBE (2) OIL HOLE

Drain the fork oil by turning the outer tube upside down.

(About 12 cc of fork oil will be left in the outer tube when it is left inverted for about 20 minutes at 20°C/68°F.)

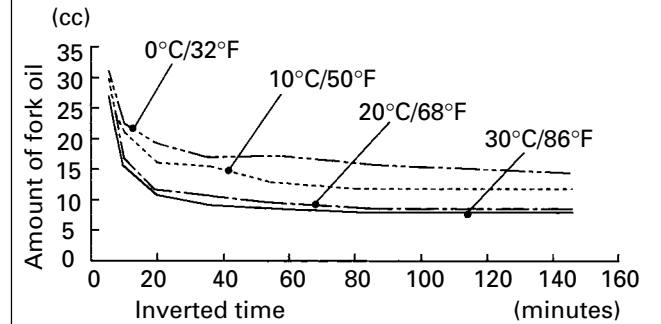


- (1) OUTER TUBE

Amount of fork oil left in the fork (within damper and spring)

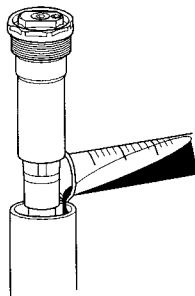
unit: cc

minute °C/°F	5	10	20	35	55	85	145
30/86	27	15.3	10.6	9.4	8.3	7.9	7.9
20/68	29.4	16.5	11.8	10.6	9.4	8.2	8.2
10/50	28.2	21.2	16.5	15.3	12.9	11.8	11.8
0/32	30.6	22.4	18.8	16.5	16.5	15.3	14.1



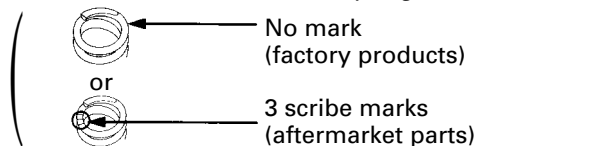
Pour the recommended fork oil into the outer tube.

**RECOMMENDED OIL: Pro Honda HP Fork Oil 5 W or equivalent**



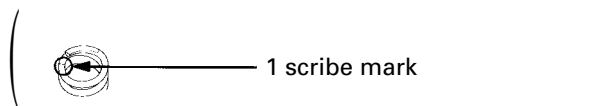
**Fork Oil Capacity:**

**Standard (0.44 kgf/mm) Fork Spring**



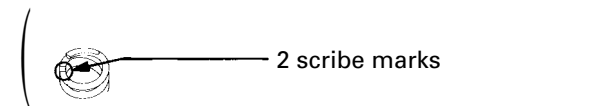
Standard oil capacity	13.1 US oz (387 cm <sup>3</sup> )	
Maximum oil capacity	14.2 US oz (420 cm <sup>3</sup> )	Slightly stiffer as it nears full compression.
Minimum oil capacity	11.0 US oz (324 cm <sup>3</sup> )	Slightly softer as it nears full compression.

**Optional Softer (0.42 kgf/mm) Fork Spring**



Standard oil capacity	13.3 US oz (392 cm <sup>3</sup> )	
Maximum oil capacity	14.4 US oz (425 cm <sup>3</sup> )	Slightly stiffer as it nears full compression.
Minimum oil capacity	11.1 US oz (329 cm <sup>3</sup> )	Slightly softer as it nears full compression.

**Optional Stiffer (0.46 kgf/mm) Fork Spring**



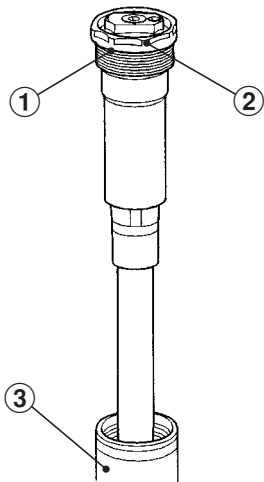
Standard oil capacity	12.9 US oz (382 cm <sup>3</sup> )	
Maximum oil capacity	14.0 US oz (415 cm <sup>3</sup> )	Slightly stiffer as it nears full compression.
Minimum oil capacity	10.8 US oz (319 cm <sup>3</sup> )	Slightly softer as it nears full compression.

**NOTE:**

- Be sure the oil capacity is the same in both fork legs.

## 6. SUSPENSION ADJUSTMENT

Check that the O-ring on the fork damper is in good condition. Apply the recommended fork oil to the O-ring.



- (1) O-RING
- (2) FORK DAMPER
- (3) OUTER TUBE

Temporarily thread the fork damper into the outer tube. Insert both fork legs into the fork clamps. Align the groove in the outer tube with the top surface of the upper fork clamp.

If installing the optional 20 inch wheel, align the top of the outer tube (not the top of the fork damper) with the top surface of the upper fork clamp.

Temporarily tighten the fork lower pinch bolts and then tighten the fork damper to the specified torque using a special tool.

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

**Torque wrench scale reading:  
36 lbf·ft (49 N·m, 5.0 kgf·m), using a 20 in (50 cm)  
long torque wrench.**

For ease of releasing air pressure after the forks are installed, loosen the lower pinch bolts and position the outer tubes so that the pressure release screws are in front of the rebound damping adjusters.

Tighten the fork lower pinch bolts.

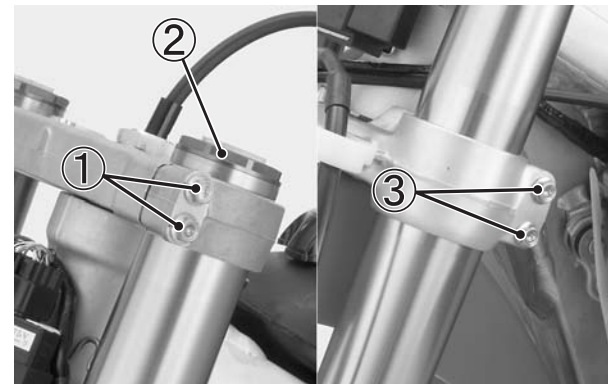
**TORQUE: 14 lbf·ft (20 N·m, 2.0 kgf·m)**

Tighten the fork upper pinch bolts.

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

### CAUTION:

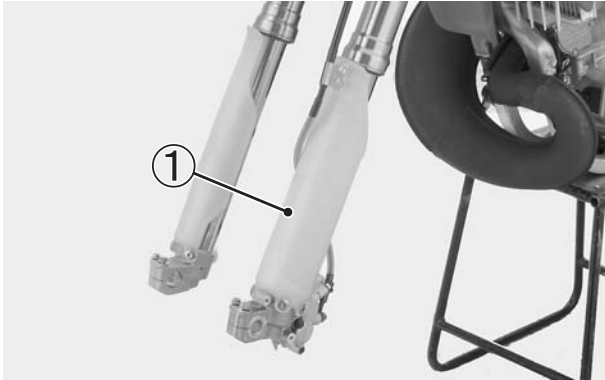
- *Over-tightening the pinch bolts can deform the outer tubes. Deformed outer tubes must be replaced.*



- (1) UPPER PINCH BOLTS
- (2) FORK DAMPER
- (3) LOWER PINCH BOLTS

Clean the threads of the fork protector bolts and axle holder thoroughly.  
Apply locking agent to the bolt threads.  
Install the fork protector and tighten the bolts.

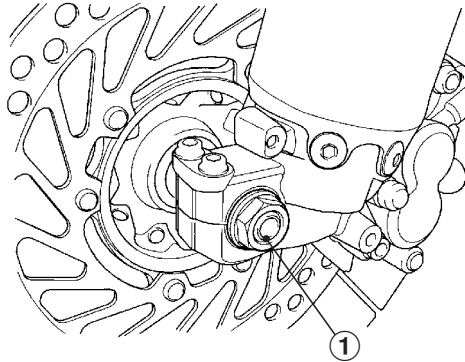
**TORQUE: 5.1 lbf-ft (7 N-m, 0.7 kgf-m)**



(1) FORK PROTECTOR

Clean the surfaces where the axle and axle clamps contact each other.  
Install the left and right side collars into the wheel hub.  
Insert the axle through the wheel hub from the right side. Make sure the axle is seated firmly onto the left fork leg clamp inner surface. Tighten the axle nut.

**TORQUE: 65 lbf-ft (88 N-m, 9.0 kgf-m)**



(1) AXLE NUT

Align the brake caliper and hose with the left fork leg, making sure that the brake hose is not twisted.

Clean the threads of the caliper mounting bolts and brake caliper thoroughly.  
Apply locking agent to the bolt threads.  
Install the brake caliper on the fork slider and tighten the caliper mounting bolts.

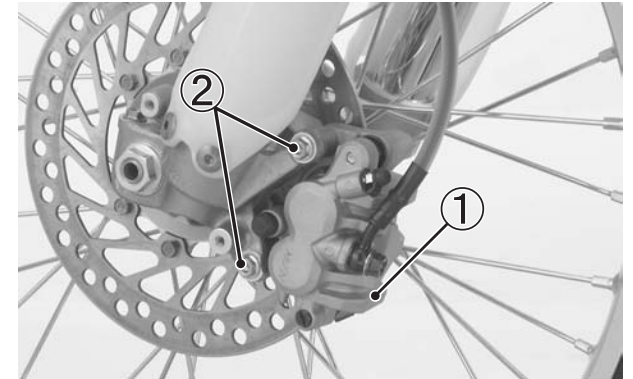
**TORQUE: 22 lbf-ft (30 N-m, 3.1 kgf-m)**

**▲WARNING**

- *An improperly routed brake hose may rupture and cause a loss of braking efficiency. Route the hose carefully.*

**CAUTION:**

- *Fit the brake caliper over the disc, taking care not to damage the brake pads.*



(1) CALIPER (2) CALIPER MOUNTING BOLTS



## 6. SUSPENSION ADJUSTMENT

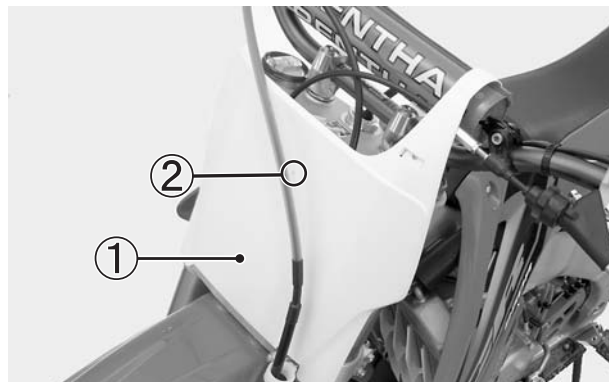
Install the handlebar, rubber mounts, washers and handlebar holder nuts.

**TORQUE: 33 lbf-ft (44 N·m, 4.5 kgf·m)**



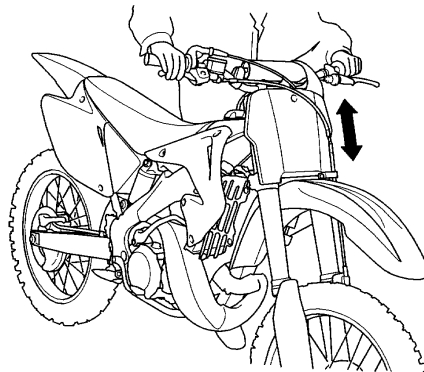
(1) HANDLEBAR (2) RUBBER MOUNTS  
(3) WASHERS/HANDLEBAR HOLDER NUTS

Install the number plate and number plate bolt.



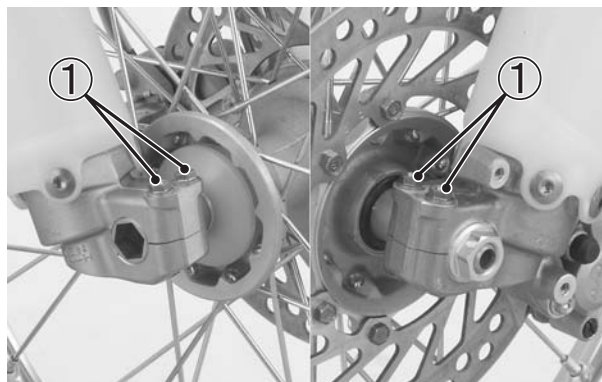
(1) NUMBER PLATE  
(2) NUMBER PLATE BOLT

With the front brake applied, pump the fork up and down several times to seat the axle and check front brake operation.



Tighten the left fork pinch bolts alternately first. While keeping the forks parallel, alternately tighten the right fork pinch bolts.

**TORQUE: 14 lbf-ft (20 N·m, 2.0 kgf·m)**



(1) AXLE PINCH BOLTS

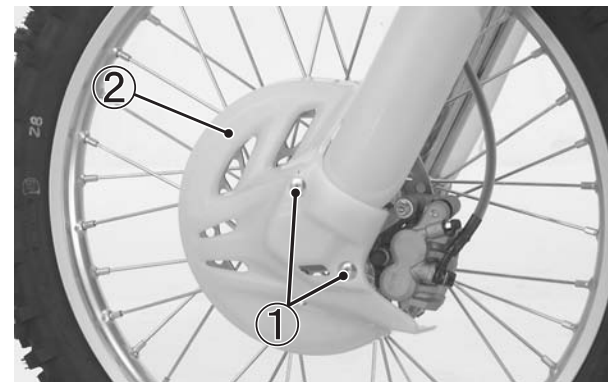
### CAUTION:

- *When torquing the axle pinch bolts, be sure the axle is seated firmly onto the left fork leg clamp inner surface.*

Clean the threads of the disc cover bolts and axle holder thoroughly.

Apply locking agent to the bolt threads. Install the disc cover and tighten the bolts.

**TORQUE: 9 lbf-ft (13 N·m, 1.3 kgf·m)**



(1) BOLTS (2) DISC COVER

Turn the rebound damping adjuster screws back to their original settings.

### Fork Disassembly

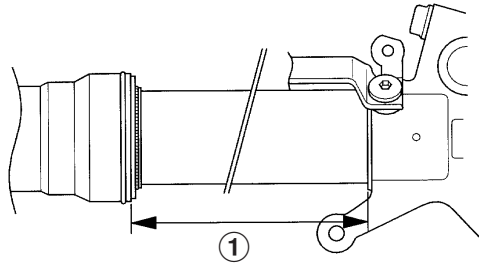
Remove the fork as described in Fork Oil Change (pages 55 — 56).

Clean the fork assembly, especially the sliding surface of the fork slider and bottom of the slider around the center bolt before disassembling the fork.

#### CAUTION:

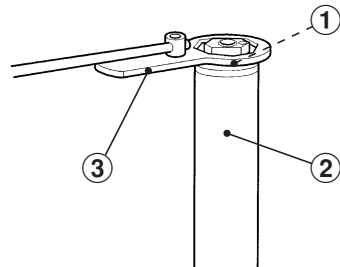
- *Be careful not to scratch the slider and not to damage the dust seal.*

Measure the length between the axle holder and outer tube and record it before disassembling the fork.



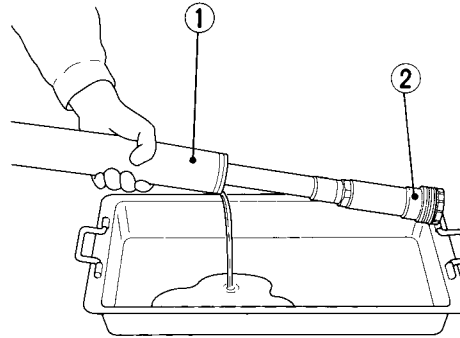
(1) LENGTH

Hold the outer tube, remove the fork damper from the outer tube using a special tool and slide the outer tube down to the dust seal on the axle holder.



(1) FORK DAMPER  
(2) OUTER TUBE  
(3) LOCK NUT WRENCH

Pour the fork oil from the outer tube.  
Pour the fork oil from the oil hole of the fork damper.



(1) OUTER TUBE (2) OIL HOLE

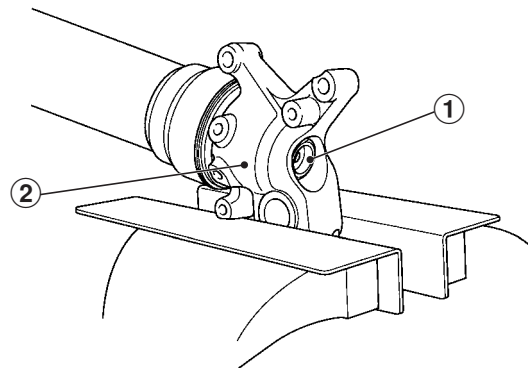
Temporarily install the fork damper to the outer tube.

Set the lower end (axle holder) of the slider in a vise with a piece of wood or soft jaws to avoid damage.

#### CAUTION:

- *Do not overtighten the axle holder.*

Loosen the center bolt.



(1) CENTER BOLT (2) AXLE HOLDER

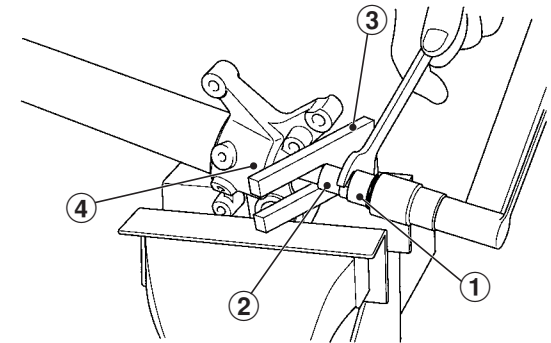
Push out the fork center bolt from the axle holder of the slider by pushing the fork damper.

Apply pressure to the fork damper and insert a special tool or mechanic's stopper tool (see below) between the axle holder and lock nut.

Hold the lock nut and remove the fork center bolt from the fork damper.

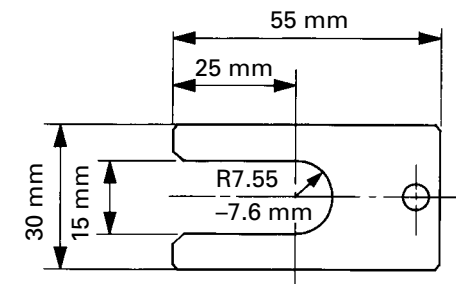
#### CAUTION:

- *Do not remove the lock nut from the fork damper piston rod. If lock nut is removed, piston rod falls in the fork damper and you can not reassemble the fork damper.*



(1) CENTER BOLT (2) LOCK NUT  
(3) STOPPER TOOL (4) AXLE HOLDER

Make the mechanic's stopper tool out of a thin piece of steel (1.0 mm thick) as shown if you do not have the special tool.



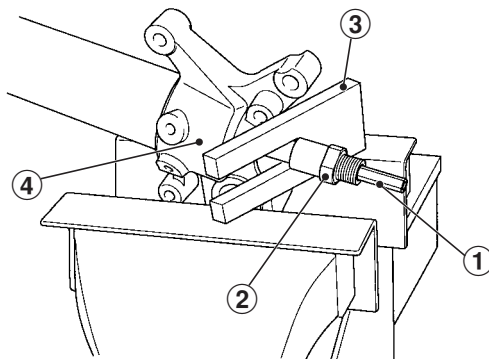
## 6. SUSPENSION ADJUSTMENT

Remove the push rod from the fork damper.

Remove the special tool or mechanic's stopper tool between the axle holder and lock nut while applying pressure to the fork cap.

### CAUTION:

- **Be careful not to damage the lock nut and fork center bolt hole.**

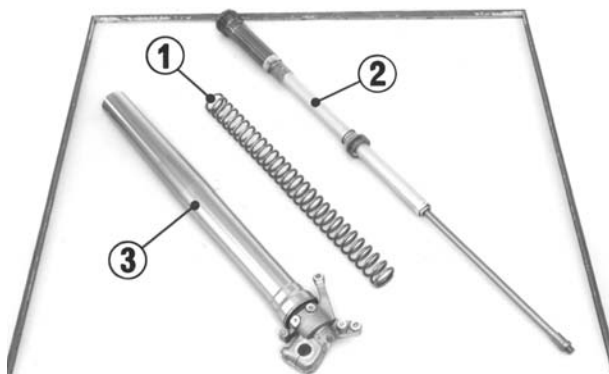


- (1) PUSH ROD  
(2) LOCK NUT  
(3) TOOL  
(4) AXLE HOLDER

Remove the fork damper from the outer tube and fork damper from the fork.

Remove the fork from the vise.

Remove the fork spring from the fork.



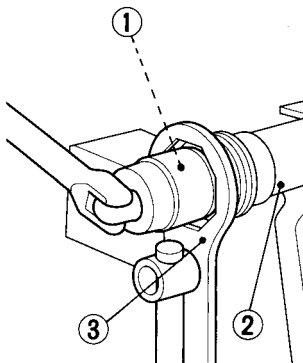
- (1) SPRING  
(2) FORK DAMPER ASSEMBLY  
(3) FORK ASSEMBLY

### Damper Oil Change

#### CAUTION:

- **Check the lock nut installation. If lock nut is removed, piston rod falls in the fork damper and you can not reassemble the fork damper.**

Set a special tool to the cut outs of the fork damper.



- (1) FORK CAP  
(2) FORK DAMPER  
(3) LOCK NUT WRENCH



Loosen the fork cap by turning the fork damper using the special tool.

Remove the fork cap from the fork damper.

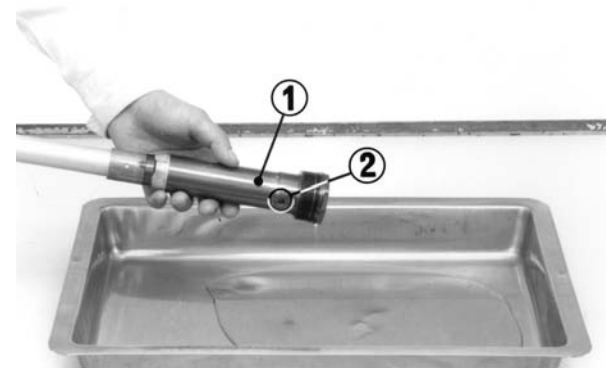
#### NOTE:

- Be careful not to damage the fork cap bushing.
- Do not disassemble the fork cap assembly. Replace the fork cap as an assembly if it is damaged.



- (1) FORK CAP ASSEMBLY (2) FORK DAMPER

Empty the fork oil from the fork damper by pumping the damper rod several times.



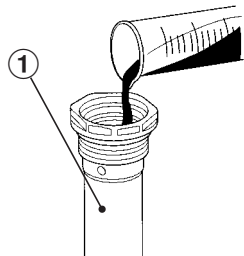
- (1) FORK DAMPER (2) OIL HOLE

Clean the fork cap and fork damper threads.

Extend the fork damper piston rod to maximum.  
Pour the recommended fork oil into the fork damper.

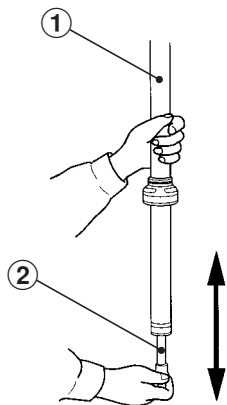
**RECOMMENDED OIL: Pro Honda HP Fork Oil 5 W or equivalent**

**Recommended Amount: 6.6 oz (195 cc)**



(1) FORK DAMPER

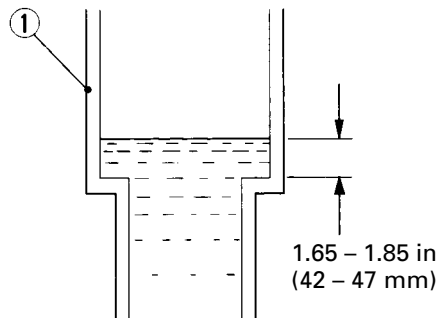
Pump the fork damper piston rod slowly several times to bleed the air from the fork damper.



(1) FORK DAMPER  
(2) PISTON ROD

Extend the fork damper piston rod to maximum.  
Adjust the oil level of the fork damper as shown.

**OIL LEVEL: 1.65 — 1.85 in (42 — 47 mm)**



(1) FORK DAMPER

Apply fork oil to the bushing and new O-ring on the fork cap assembly.  
Apply a locking agent to the fork cap threads.  
Extend the fork damper piston rod to maximum, holding it, install the fork cap assembly to the fork damper.

**NOTE:**

- Be careful not to damage the fork cap bushing.
- If it is difficult to install the fork cap assembly, fork damper oil level might be higher than standard oil level. Inspect the fork damper oil level again.

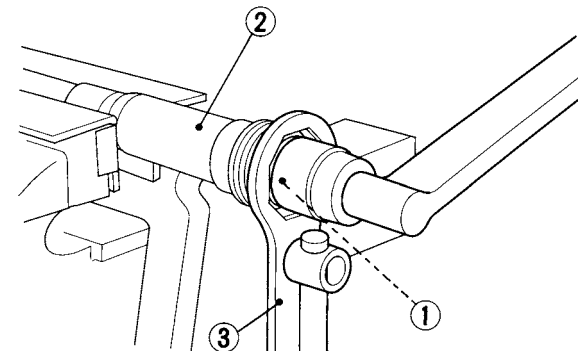


(1) FORK CAP  
(2) FORK DAMPER

Set a special tool to the cut outs of the fork damper.

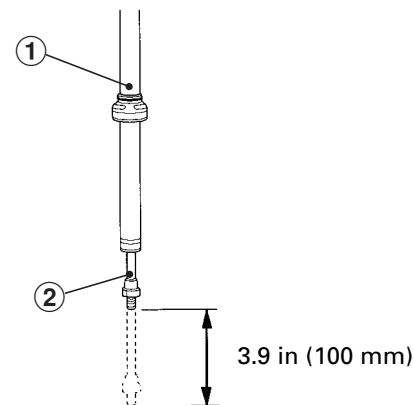
Tighten the fork cap while holding the cut out of the fork damper.

**TORQUE: 22 lbf·ft (29 N·m, 3.0kgf·m)**



(1) FORK CAP  
(2) FORK DAMPER  
(3) LOCK NUT WRENCH

Hold the fork damper in an upright position and pump the fork piston rod to 3.9 in (100 mm) slowly several times.



(1) FORK DAMPER  
(2) PISTON ROD

## 6. SUSPENSION ADJUSTMENT

Screw in the lock nut onto the fork damper piston rod fully.



(1) LOCK NUT (2) PISTON ROD

### NOTE:

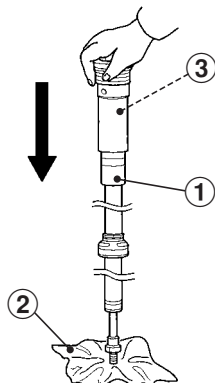
- Turn the rebound adjuster and compression adjuster counterclockwise to the softest position.
- Check the fork damper piston rod sliding surface for damage.
- Apply fork oil to the fork damper piston rod sliding surface.

Cover the fork piston rod end with soft jaws to prevent fork damage.

### CAUTION:

- **Be careful not to bend or damage the fork damper piston rod when the piston rod is stroked.**

Blow off the extra oil to the fork damper spring chamber by pumping the fork damper piston rod to full stroke.

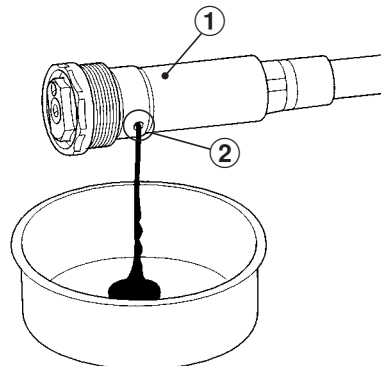


(1) FORK DAMPER (2) SOFT JAWS  
(3) SPRING CHAMBER

Drain the extra oil from the fork damper spring chamber oil hole.

### NOTE:

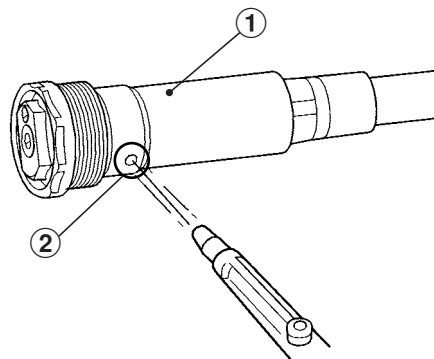
- By doing this procedure, about 17 cm<sup>3</sup> of fork fluid will be drained from the damper spring chamber through the oil hole and cause 178 cm<sup>3</sup> of fork fluid to be left in the chamber.



(1) SPRING CHAMBER  
(2) OIL HOLE

Blow out the oil from the fork damper spring chamber using the compressed air to the oil hole.

Wipe the oil completely off the fork damper.



(1) FORK DAMPER  
(2) OIL HOLE

If you can not use compressed air, remove the pressure release screw on the fork cap.

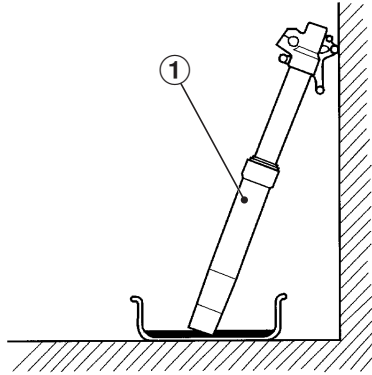
Turn the fork damper upside down for 10 minutes and drain the oil from the fork damper spring chamber.



(1) PRESSURE RELEASE SCREW  
(2) FORK CAP

### Fork Assembly

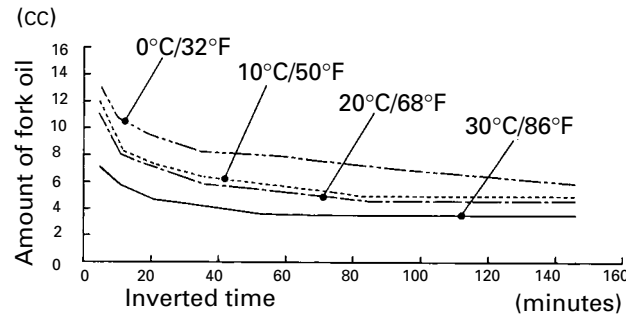
Drain the fork oil from the outer tube/slider by placing it upside down.  
 (About 7 cc of fork oil will be left in the outer tube/slider when it is left inverted for about 20 minutes at 20°C)



(1) OUTER TUBE/SLIDER

Amount of fork oil left in the fork  
 (without damper and spring) unit: cc

minute °C/°F	5	10	20	35	55	85	145
30/86	7.1	5.9	4.7	4.2	3.5	3.5	3.5
20/68	10.6	8.2	7.1	5.9	5.6	4.7	4.7
10/50	11.8	8.3	7.2	6.2	5.8	4.9	4.8
0/32	12.9	10.6	9.4	8.2	7.9	7.1	5.9



Tighten the lock nut fully and measure the thread length as shown.

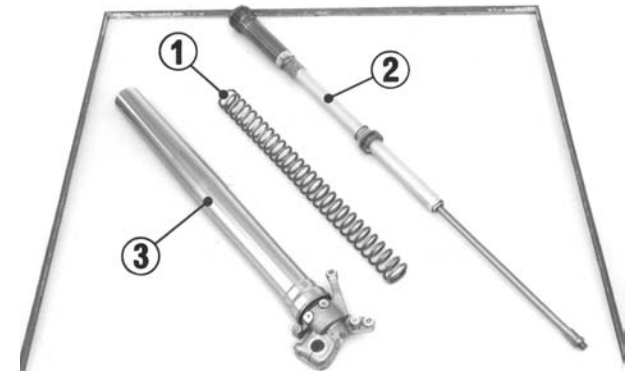
**STANDARD: 0.43 — 0.51 in (11 — 13 mm)**

Wipe the oil completely off the fork damper.



(1) LOCK NUT

Wipe the oil completely off the fork spring.  
 Install the fork spring.  
 Install the fork damper to the outer tube/slider.



(1) SPRING  
 (2) FORK DAMPER ASSEMBLY  
 (3) OUTER TUBE/SLIDER

## 6. SUSPENSION ADJUSTMENT

Set the lower end (axle holder) of the slider in a vise with a piece of wood or soft jaws to avoid damage.

### CAUTION:

- **Do not overtighten the axle holder.**

Temporarily install the fork damper to the fork. Push out the fork damper piston rod from the axle holder of the slider by pushing the fork damper. Apply pressure to the fork damper and insert the special tool or mechanic's stopper tool between the axle holder and lock nut. Measure the thread length again.

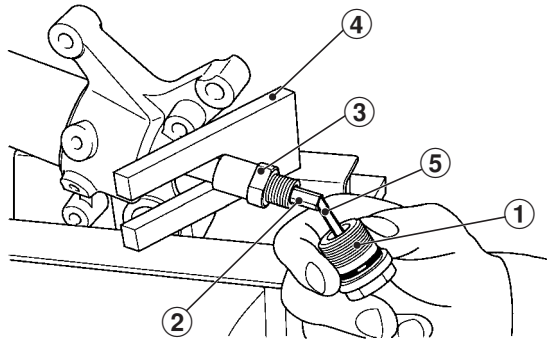
**STANDARD: 0.43 — 0.51 in (11 — 13 mm)**

Install the push rod into the piston rod until it stops.

### NOTE:

- Check the push rod installation by turning the push rod right and left.

Install the fork center bolt to the fork damper piston rod aligning the center bolt adjusting rod to the push rod. Tighten the center bolt fully by hand.

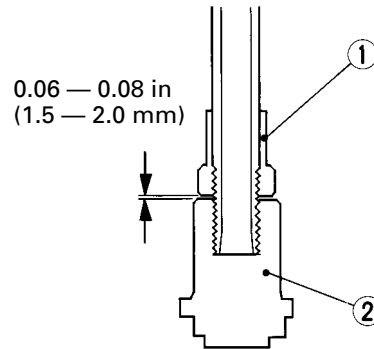


- (1) CENTER BOLT  
 (2) PUSH ROD  
 (3) LOCK NUT  
 (4) STOPPER TOOL  
 (5) ADJUSTING ROD

Measure the length of the lock nut and center bolt clearance.

**STANDARD: 0.06 — 0.08 in (1.5 — 2.0 mm)**

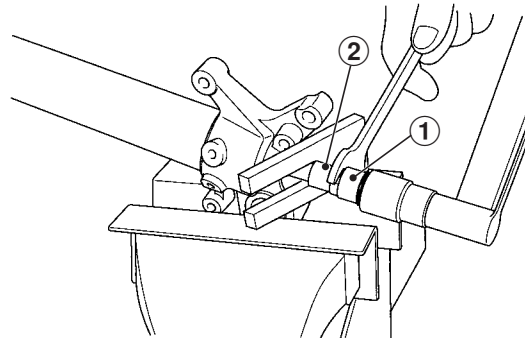
If the clearance is out of specification, check the lock nut and center bolt installation.



- (1) LOCK NUT  
 (2) CENTER BOLT

Tighten the lock nut to the center bolt closely by hand. Tighten the lock nut to the specified torque.

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

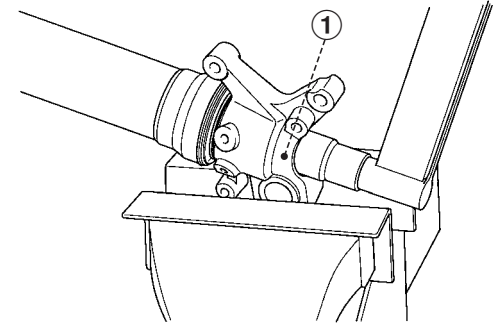


- (1) CENTER BOLT  
 (2) LOCK NUT

Remove the special tool or mechanic's stopper tool while applying pressure to the fork damper.

Install the center bolt to the axle holder and tighten it to the specified torque.

**TORQUE: 51 lbf-ft (69 N-m, 7.0 kgf-m)**



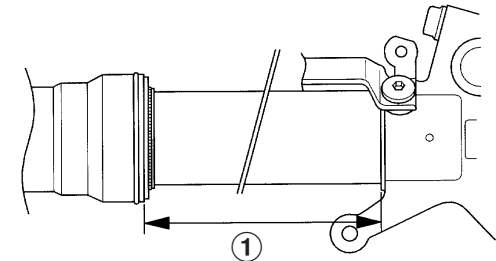
- (1) CENTER BOLT

Measure the length between the axle holder and outer tube.

**STANDARD: 315 ± 2 mm**

Compare the length at assembly and at disassembly. They should be the same length.

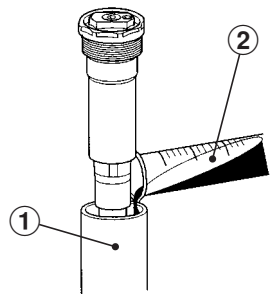
If the length at assembly is longer than at disassembly, check the center bolt and lock nut installation.



- (1) STANDARD LENGTH

Pour the recommended fork oil into the fork tube.

**RECOMMENDED OIL: Pro Honda HP Fork Oil 5 W or equivalent**

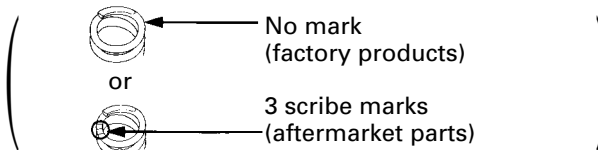


(1) FORK

(2) FORK OIL

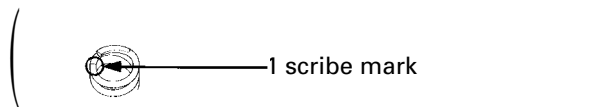
**Fork Oil Capacity:**

**Standard (0.44 kgf/mm) Fork Spring**



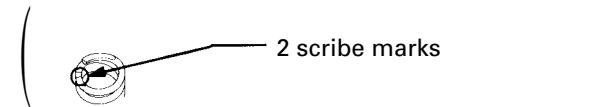
Standard oil capacity	13.1 US oz (387 cm <sup>3</sup> )	
Maximum oil capacity	14.2 US oz (420 cm <sup>3</sup> )	Slightly stiffer as it nears full compression.
Minimum oil capacity	11.0 US oz (324 cm <sup>3</sup> )	Slightly softer as it nears full compression.

**Optional Softer (0.42 kgf/mm) Fork Spring**



Standard oil capacity	13.3 US oz (392 cm <sup>3</sup> )	
Maximum oil capacity	14.4 US oz (425 cm <sup>3</sup> )	Slightly stiffer as it nears full compression.
Minimum oil capacity	11.1 US oz (329 cm <sup>3</sup> )	Slightly softer as it nears full compression.

**Optional Stiffer (0.46 kgf/mm) Fork Spring**



Standard oil capacity	12.9 US oz (382 cm <sup>3</sup> )	
Maximum oil capacity	14.0 US oz (415 cm <sup>3</sup> )	Slightly stiffer as it nears full compression.
Minimum oil capacity	10.8 US oz (319 cm <sup>3</sup> )	Slightly softer as it nears full compression.

**NOTE:**

- Be sure the oil capacity is the same in both fork legs.

Install the fork damper as described in Fork oil change (page 60 — 62).



## 6. SUSPENSION ADJUSTMENT

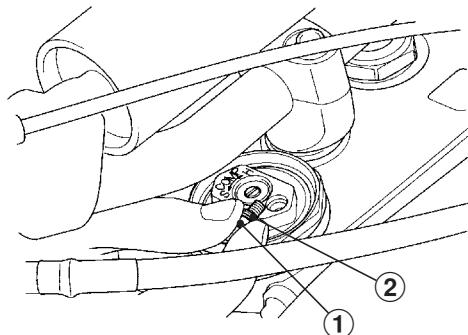
### Air Pressure Adjustment

The air pressure should be adjusted according to the altitude and outside temperature.

1. Place a workstand under the engine, so that the front wheel is off the ground.

#### NOTE:

- Do not adjust air pressure with the front wheel on the ground as this will give false pressure readings.
2. Remove the pressure release screw.
  3. Check that the O-ring is in good condition.
  4. Install the pressure release screw.



- (1) PRESSURE RELEASE SCREW  
(2) O-RING

### SUSPENSION ADJUSTMENTS RELATING TO SPECIFIC TRACK CONDITIONS

On soft ground, sand tracks and especially muddy tracks, you want more compression damping force front and rear. On harder ground you run less compression damping.

Sand tracks require a bit more rebound damping force as well. The bumps are usually bigger, but have more distance between them so the shock has more time to recover. And you don't want the rear end to kick up in the sand.

The spring force requirements probably won't change much between a hard track and a sand track. You may want a little bit stiffer front suspension for sand tracks to help keep the front end up and improve straight-line stability.

In a muddy race, you want a stiffer spring front and rear because your CR becomes much heavier with the accumulation of mud.

If you don't compensate for the additional weight of the mud that collects during the race, then your CR will be undersprung and handling will deteriorate. The suspension will be compressed too far most of the time and the bike won't hook up very well.

If it is a fast, hard track with no large jumps, you can probably run the same spring as normal, but run softer damping both ways—compression and rebound. If you run softer rebound damping, the wheel will follow the rough ground and small bumps much better, and you will hook up better. With a lot of rebound damping, the wheel returns very slowly and doesn't contact the ground quickly enough after each bump. The result is a loss of traction and slower lap times.

## SUSPENSION ADJUSTMENT GUIDELINES

Follow the procedures described below to accurately adjust your CR, using the methods described on pages 52 — 69. Remember to make all adjustments in one-click increments. Test ride after each adjustment.

### Fork Adjustment

#### Adjustments for Type of Track

Hard-surfaced track	Begin with the standard setting. If the suspension is too stiff/soft, adjust according to the chart below.
Sand track	Adjust to a stiffer position. Example: — Turn the compression damping adjuster to a stiffer position. — Install the optional stiff spring. (Adjust compression damping to a softer position and rebound damping to harder position at this time.)
Mud track	Adjust to a stiffer position because mud build-up increases your CR's weight. Example: — Turn the compression damping adjuster to a stiffer setting. — Install the optional stiff spring.

#### Adjustments for Too Soft/Stiff Damping

	Sympton	Action
Soft suspension	Initial travel too soft: <ul style="list-style-type: none"> <li>• Steering is too quick.</li> <li>• Front end darts while cornering or riding in a straight line.</li> </ul>	<ul style="list-style-type: none"> <li>— Test stiffer compression damping adjustments in one-click increments.</li> <li>— Test stiffer rebound damping adjustments in one-click increments.</li> </ul>
	Middle travel too soft: <ul style="list-style-type: none"> <li>• Front end dives when cornering.</li> </ul>	If suspension isn't stiff in initial travel: <ul style="list-style-type: none"> <li>— Test stiffer compression damping adjustments in one-click increments.</li> </ul> If initial travel becomes stiff because of the above adjustment: <ul style="list-style-type: none"> <li>— Reduce the rebound damping in one-click increments.</li> <li>— Test softer compression damping adjustments in one-click increments.</li> </ul> If that doesn't solve the problem, install the optional stiff spring.
	Final travel too soft: <ul style="list-style-type: none"> <li>• Bottoms on landings.</li> <li>• Bottoms on large bumps, especially downhill bumps.</li> </ul>	If initial and middle travel are not stiff: <ul style="list-style-type: none"> <li>— Test stiffer compression damping adjustments in one-click increments.</li> </ul> If initial and middle travel are stiff: <ul style="list-style-type: none"> <li>— Install the optional stiff spring.</li> </ul> If initial travel is stiff after installing the optional stiff spring: <ul style="list-style-type: none"> <li>— Test softer compression damping adjustments in one-click increments.</li> </ul> If initial travel is still soft after installing the optional stiff spring: <ul style="list-style-type: none"> <li>— Test stiffer compression damping adjustments in one-click increments.</li> </ul> If final travel is still soft after installing the optional stiff spring: <ul style="list-style-type: none"> <li>— Increase the fork oil capacity in increments of 0.2 oz (5 cc).</li> </ul>
	Entire travel too soft: <ul style="list-style-type: none"> <li>• Front end shakes.</li> <li>• Fork bottoms over any type of terrain.</li> </ul>	<ul style="list-style-type: none"> <li>— Install the optional stiff spring.</li> <li>— Test stiffer compression damping adjustments in one-click increments.</li> <li>— Increase rebound damping in one-click increments.</li> </ul>

## 6. SUSPENSION ADJUSTMENT

	Symptom	Action
Stiff suspension	<p>Initial travel too stiff:</p> <ul style="list-style-type: none"> <li>• Stiff on small bumps while riding at full throttle in a straight line.</li> <li>• Stiff on small cornering bumps.</li> <li>• Front end wanders while riding at full throttle in a straight line.</li> </ul>	<ul style="list-style-type: none"> <li>— Test softer compression damping adjustments in one-click increments.</li> <li>— Reduce the rebound damping adjustments in one-click increments.</li> <li>— Check for dirt in the dust seals. Check the fork oil for any contamination.</li> </ul> <p>NOTE:</p> <ul style="list-style-type: none"> <li>• If the front end dives while cornering, reduce the rebound damping in one-click increments. If that doesn't solve the problem, install the optional stiff spring.</li> <li>• If the stiff spring makes the suspension too stiff over the full range of travel: test softer compression damping adjustments in one-click increments until the desired compression damping for initial travel is obtained.</li> </ul>
	<p>Middle travel too stiff:</p> <ul style="list-style-type: none"> <li>• Stiff on bumps when cornering.</li> <li>• Front end wanders when cornering.</li> <li>• Stiff suspension on bumps, especially downhill bumps.</li> <li>• While braking, front end dives during initial travel, then feels stiff.</li> </ul>	<p>If initial travel isn't stiff:</p> <ul style="list-style-type: none"> <li>— Test stiffer compression damping adjustments in one-click increments. (This should produce smooth fork action from initial to middle travel.)</li> </ul> <p>If initial and middle travel are stiff:</p> <ul style="list-style-type: none"> <li>— Test softer compression damping adjustments in one-click increments.</li> <li>— Reduce the rebound damping in one-click increments.</li> </ul>
	<p>Final travel too stiff:</p> <ul style="list-style-type: none"> <li>• Doesn't bottom on landings, but feels stiff.</li> <li>• Stiff on large bumps, especially downhill bumps.</li> <li>• Stiff on large bumps when cornering.</li> </ul>	<p>If initial and middle travel aren't stiff:</p> <ul style="list-style-type: none"> <li>— Test stiffer compression damping adjustments in one-click increments. (This should produce smooth fork action from initial to middle travel.)</li> </ul> <p>If final travel is still stiff after the above adjustment, or...</p> <p>If initial and middle travel become stiff:</p> <ul style="list-style-type: none"> <li>— Install the optional soft spring.</li> <li>— Test softer compression damping adjustments in one-click increments.</li> </ul> <p>If the entire travel feels stiff after the above adjustment:</p> <ul style="list-style-type: none"> <li>— Test softer compression damping adjustments in one-click increments until the desired initial travel compression damping is obtained.</li> <li>— Lower the oil capacity by 0.2 oz (5 cc).</li> </ul>
	<p>Entire travel too stiff:</p> <ul style="list-style-type: none"> <li>• Stiff suspension on any type of terrain.</li> </ul>	<ul style="list-style-type: none"> <li>— Test softer compression damping adjustments in one-click increments.</li> <li>— Reduce the rebound damping in one-click increments.</li> <li>— Lower the oil capacity by 0.2 oz (5 cc).</li> </ul>

## Rear Suspension Adjustment Adjustments for Type of Track

Hard-Surfaced track	Begin with the standard settings. If the suspension is too stiff/soft, adjust according to the chart below.
Sand track	Lower the rear end (to improve front wheel stability) by increasing Race Sag (reduce spring preload). Example: — Turn both compression damping adjusters and, especially, rebound damping adjuster to a stiffer setting. — Increase standard Race Sag (+0.2 to 0.4 in/5 to 10 mm).
Mud track	Adjust to a stiffer position because mud build-up increases your CR's weight. Example: — Adjust the compression and rebound damping adjusters to stiffer settings. — Install the optional stiff spring. — Reduce standard Race Sag (–0.2 to 0.4 in/5 to 10 mm).

## Symptoms and Adjustment

- Always begin with the standard settings.
- Turn the low speed compression and rebound adjusters in one-click increments, and the high speed compression adjuster in 1/6 turn increments at a time. Adjusting two or more clicks or turns at a time may cause you to pass over the best adjustment. Test ride after each adjustment.
- If, after setting, the suspension feels unusual, find the corresponding symptom in the table and test stiffer or softer compression and/or rebound damping adjustments until the correct settings are obtained as described.

	Symptom	Action
Stiff suspension	Suspension feels stiff on small bumps	1. Test softer low speed compression adjustment. 2. If it still feels stiff, further test softer low and high speed compression adjustments simultaneously.
	Suspension feels stiff on large bumps	1. Test softer high speed compression adjustment. 2. If it still feels stiff, further test softer low and high speed compression adjustments simultaneously.
	Entire travel too stiff	1. Test softer high and low speed compression adjustments and rebound adjustment simultaneously. 2. If it still feels stiff, replace the spring with a softer spring (optional) and begin with the standard settings to softer settings.
Soft suspension	Entire travel too soft	1. Test stiffer high and low speed compression adjustments simultaneously. 2. If it still feels soft, replace the spring with a stiffer spring (optional) and begin with the standard settings to stiffer setting.
	Rear end sways	1. Test stiffer high and low speed compression adjustments and rebound adjustment to stiffer settings simultaneously.
Suspension bottoms	Suspension bottoms at landing after jumping	1. Test stiffer high speed compression adjustment. 2. If it still bottoms, test stiffer high and low speed side compression adjustments and replace the spring with a stiffer spring (optional) if necessary.
	Suspension bottoms after landing	1. Test stiffer low speed compression adjustments. 2. If it still bottoms, test stiffer high and low speed compression adjustments and replace the spring with a stiffer spring (optional) if necessary.
	Suspension bottoms after end of continuous bumps	1. Test softer rebound damping adjustment. 2. If it still bottoms, test stiffer high and low speed compression adjustments and softer rebound damping adjustment and replace the spring with a stiffer spring (optional) if necessary.

## 7. CHASSIS ADJUSTMENTS FOR TRACK CONDITIONS

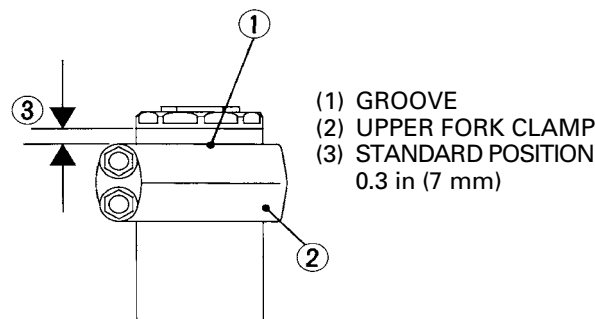
### Rear End

If you have a problem with rear wheel traction, you can run a little bit more preload on the spring. Instead of running 3.9 in (100 mm) of sag, you can run 3.5 in (90 mm) so the rear of the bike will sit a little higher. This will give you more traction because of the angle of the swingarm and the location of the Center of Gravity. By contrast, you may have a problem with the steering head shaking when there is lots of front braking to do. Or, maybe the bike wants to turn too quick on you. Then you want to lower the rear of the bike. Reducing the rear spring preload will increase fork rake and trail so stability in a straight line is improved.

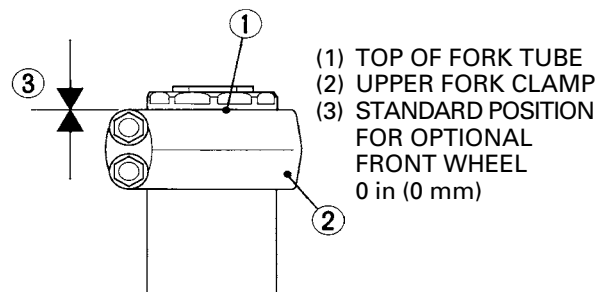
### Fork Height/Angle

The position of the outer tubes in the clamps is not adjustable. Align the groove in the outer tube with the top surface of the upper fork clamp. If you install the optional 20 inch wheel, align the top of the fork tube with the top of the upper fork clamp.

(STANDARD POSITION)



(STANDARD POSITION FOR OPTIONAL FRONT WHEEL)



### NOTE:

- Never position the top surface of the triple clamp more than 0.1 in (2 mm) below the top of the outer tube.
- Do not include the fork bolt thickness, or the chamfered edge of the tube in the height measurement.

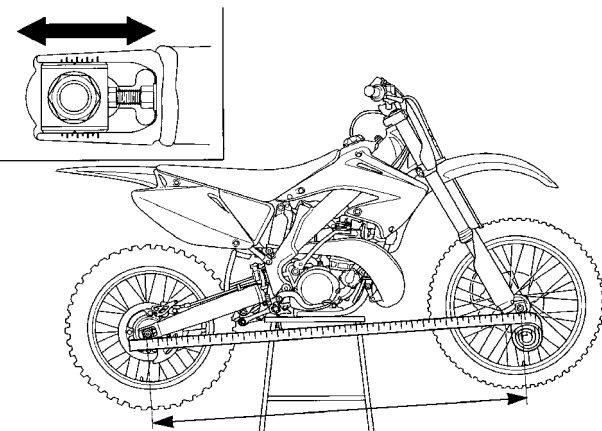
### Wheelbase

You may run the chain adjustment on the swingarm most of the way to the front or out toward the rear of the adjustment range and add or remove links as necessary. With the axle up toward the front, you will get a little bit better traction. If there are a lot of fast sections, then it may be better to run a little longer wheelbase. On a track with a lot of fast rollers, the long wheelbase works good. If it is a tight track, like a supercross track, usually a shorter wheelbase is better. Especially if the traction is poor. The shorter wheelbase also transfers more weight to the rear to help the bike hook up better and wheelie easier.

You can use these wheelbase adjustments for more or less trail as mentioned earlier.

You must realize that these chassis adjustments offer subtle changes in overall handling, yet a noticeable improvement will be realized in the areas specified.

If you change your wheelbase, be sure to recheck race sag and adjust, if necessary.



## 8. GEARING SELECTION

### Explanation Of Effects On Power Delivery & Traction

Rather than counting on frequently unreliable, after-market engine modifications for improved performance, you should first try to “adjust” the power delivery of the standard engine to suit the terrain and course conditions. The easiest way to do this is to change gearing, which allows you to utilize a different portion of the engine’s power range.

The portion of the power range you use can be adjusted most efficiently by changing the final drive ratio with optional sized rear sprockets. This way the power delivery can be more closely matched to the available traction, which changes from day to day, and to the type of terrain the course offers. Similarly, the number of shifts needed per lap, or for specific and critical sections, can be “adjusted” in order to reduce lap times with a simple sprocket change.

These optional driven (rear wheel) sprockets are offered in increments of two teeth less, or more, than the standard sprocket. This small difference is enough to allow you to “tune” the engine for the available traction without creating drastic changes in the top speed potential of the machine.

— Higher gearing (less rear sprocket teeth) will produce less power to the ground and allow the rear wheel to hook-up when the track is slippery (wet, sandy, loose dirt on clay base, etc.).

— Lower gearing (more rear sprocket teeth) will produce more power to the ground and allow you to utilize maximum traction conditions.

## 8. GEARING SELECTION

### CAUTION:

- **Unless you have the required mechanical know-how, tools, and an authorized Honda Service Manual, sprocket changing should be done by your authorized Honda dealer.**

Some outdoor tracks may be watered heavily prior to the first race, then lightly or not at all during the day. This results in a track that is slippery during the first few races, changes from good to great then back to good traction for part of the day, then may end the day with a slick, rock-hard consistency. Ideally, your gearing should be adjusted to suit all these conditions.

- Wet and slippery or sandy conditions: use less teeth than the standard sprocket to keep the engine rpm down, and avoid unwanted wheelspin. The engine may bog in certain corners so you'll need to slip the clutch to compensate; downshifting may be too drastic a change in speed.
- Average conditions: use the standard sprocket.
- Hard (but not slippery) track conditions: use more teeth than the standard sprocket to keep the engine rpm high where the engine produces the most power. This may require an extra upshift on certain sections or perhaps you can just rev it out a bit longer.

Another example of the benefits of proper gearing for soil conditions is experienced when riding on a sand track. Of course, you want to keep the front end light so the front wheel virtually floats from the peak of one whoop to another. Generally speaking, with higher than stock overall gearing it is easier to maintain that perfect attitude of maximum rear wheel traction and a light front end because you remain in the powerband longer in each gear.

If you've ever run too low overall gearing in the sand, you've noticed that you are tapped-out very quickly and the front end feels very heavy. You don't want to be steering the bike with the front wheel much in soft sand. The taller gearing allows you to steer more efficiently with throttle control and body English.

Sometimes alternate gearing can help even if track conditions are consistent throughout the day. If there are sections of the track on which you must consistently over-rev the engine (rather than losing time by upshifting), perhaps "taller" gearing (a smaller driven sprocket) will help.

Whenever you change gearing, have someone check your lap times (before and after) to get an honest appraisal of the changes. Use a stopwatch for consistency. "Seat-of-the-pants" feelings can't be trusted since eliminating wheelspin can make you feel like you're going slower, but in reality you've decreased your lap time by increasing your speed a little bit in each section of the track.

But everything is a compromise, so sometimes you'll have to sacrifice performance on one section of the track to gain a better overall time. You should shoot for the lowest lap times and not worry about some sections where the gearing feels wrong. Of course these recommendations must be tempered against your ability, the actual layout of the track (long, short, hilly, etc.), and your riding style. But generally, these recommendations will suit most conditions and most riders.

Whether or not it's worth the effort and time it takes to swap to gearing that might help you pick off a position or two at the finish of your next moto is up to you.

## 9. TIRE SELECTION

Choosing the correct tire tread pattern and rubber compound can make the difference between finishing first or somewhere in the pack. The tires your CR comes equipped with are a perfect "happy medium" for the variety of soil conditions the majority of riders are likely to encounter.

Motocross tire design has developed into an extremely intense area of study. The descriptions given here offer CR riders a very basic knowledge of the factors involved in tire design so the proper tires can be utilized and the best possible competition result achieved. More tire information is available in the Maintenance section, page 10. The most complete information should be obtained from the various tire manufacturer representatives and dealers.

- Hard, Slick Terrain requires tires with many relatively short knobs that are close together in order to obtain the largest possible contact patch on the surface. The rubber compound needs to be softer for hard ground in order to hook up, but not so soft that the knobs easily roll over and keep you from holding your line. These tires tend to wear more quickly than some because of the combination of soft rubber and hard terrain.
- Very Tacky Soil or Muddy Courses require a more open tread pattern to avoid clogging. The rubber compound for these conditions can be harder to prevent the relatively long knobs from bending back under acceleration or wearing quickly.
- Loose and Sandy Soil conditions are best handled with a tire that is similar in construction to those needed for tacky soil and mud, but with a few more knobs.

Don't stray from the factory recommended sizes since this may affect handling and even acceleration.

## 10. MAINTENANCE, TUNING & RACING LOGBOOK

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Any serious racing effort relies heavily on knowledge gained and compiled from previous racing events. Information such as what gearing was used, weather/altitude & jetting, which tire worked best and what suspension settings you used during the day may all be valuable factors next time you race at that particular track or one that is similar.

The best way to organize the many bits of information that led to your best competition effort at a given circuit under specific conditions, is to record your component settings, adjustments and comments in a Maintenance, Tuning & Racing Logbook.

A logbook can remind you when necessary maintenance was performed, when it will be necessary again, and when and specifically what adjustments were made for particular tracks. Also and most important, whether or not those specific adjustments or component selections were successful. A logbook can remind you to change suspension, gearing, tires and jetting to the settings that worked well in the past at any given race track. It can even remind you where on the course your competition was nearly able to pass you on the final lap, so you'll be forewarned.

### **Timekeeping**

This Manual lists maintenance intervals for every-so-many races or every-so-many hours of running. Because all races are not the same, the most effective way to schedule maintenance is by the hours you have run your CR.

An official "guestimate" is close enough for our timekeeping purposes. You may choose to record your time the same way aircraft operators do (but without the benefit of an electrical hourmeter). All running time is broken down into hours and tenths of an hour (each six minutes represents one tenth of an hour).

### **Maintenance Records**

Regular Maintenance items you'll want to record in your logbook should include:

- Dates and Results of Cylinder, Piston and Ring Examinations
- Patterns for Frequency of Need for Decarbonization With a Particular Oil
- When you Last Performed Shock Linkage and Swingarm Pivot Bearing Maintenance
- Transmission, Fork and Shock Oil Changes
- Chain, Sprocket, Chain Guide and Slider Replacements
- Coolant Changes and Related Component Replacements
- Spark Plug, Brake Pad and Control Cable Replacements.

In addition, you should record any irregularities noted in component wear so you'll remember to keep a close eye on these areas in the future.

### **Tuning Records**

Some of the Tuning Information you'll want to keep track of in your logbook should include which combination of settings or components worked best at a particular location and may again under similar conditions. Items such as:

- Basic Track Conditions, Altitude of the event, and Temperature for practice and each moto
- Suspension Settings and Chassis Adjustments that were tested and selected
- Alternate Gearing choices and which was most suitable
- Tire Selection and Air Pressure
- Carburetion Changes

### **Racing Records**

Information worth recording for this section of your logbook may include:

- Your Placing in Each Moto and Overall Finishing Position.
- Thoughts on what you could do to Improve Your Performance next time.
- Notes on any Patterns noted In Choice of Starting Gate Positions or In Riding Portions of the Course as the day progresses that may prove helpful in future events.
- Any Places on the course where you Chose the Wrong Line and were passed too easily.
- Notes on Strategy used by your competition or by riders in another event that are worth remembering.

This is an example of how to keep track of the running time on the engine and suspension components, your racing results, what adjustments and maintenance items were performed and what components are replaced on that particular day.

Consider using different color ink pens or pencils to record specific, important information on specific subjects. For instance, running time could be recorded in black, racing results in blue, jetting changes could be in red, and suspension/chassis settings and gearing selections in green. This will help you identify these items at a glance.

### **Resale Value**

Although your racing log can be critically important in the development of your racing endeavors, accurate maintenance records may also be the deciding sales point to the next owner, especially if the market is full of many other used race motorcycles.

**MAINTENANCE, TUNING & RACING LOGBOOK**

20\_\_ CR\_\_

<b>Date</b>	<b>Running Time</b>	<b>Location/ Event</b>	<b>Comments (Jetting, Suspension Settings, Gearing, Chassis Adjustments, Maintenance Performed, etc.)</b>



## 11. SPARE PARTS & EQUIPMENT

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There are a number of spare parts you should take to the track to help ensure that you get in a full day of riding. In addition to the usual nuts, bolts, washers, screws, cotter pins, safety wire, plastic tie-wraps, hose clamps, silicone sealer, contact cleaner and greases consider the following:

### BASIC SPARE PARTS

Spark Plugs  
Air Cleaner (Clean & Oiled, Sealed in a Plastic Bag)  
Optional Carburetor Jets  
Chain & Masterlinks  
Chain Guide Slider  
Chain Guide  
Chain Rollers  
Inner Tubes (F & R)  
Fenders  
Front & Side Number Plates  
Handlebar  
Grips  
Levers (Brake & Clutch)  
Clutch Lever Handlebar Mount  
Clutch Cable  
Throttle  
Throttle Cable  
Shift Pedal  
Brake Pedal  
Spokes (F & R, each side)  
Sprockets—Both Larger and Smaller Than Std.—For Gearing Changes & Collision Damage Replacement  
Assorted Nuts, Bolts, Washers & Screws

### SPARES (PREFERRED)

Front Brake Master Cylinder  
Wheels & Tires (F & R, Mounted)  
Clutch Plates & Transmission Oil  
Top End—Complete  
Radiator Hoses  
Radiator Shrouds (L & R)  
Footpegs  
Front & Rear Brake Hoses  
Seat  
Ignition Components

### GENERAL TOOLS

Sockets (3/8-inch drive)  
Screwdrivers—Blade & Phillips No. 1, 2, 3  
Wrench—Large, Adjustable  
Wrenches—Open end and Box  
Wrenches—Hex (Allen)  
Wrench—Spoke  
Torque Wrench (metric scale, click-stop-style)  
Pliers—Standard, Needle-Nose, Channel-Lock-Type  
Hammer—Plastic Head  
Syringe With Adjustable Stop  
Tire Pressure Gauge  
Tire Irons  
Tire Pump or Air Tank

### BASIC TOOLS

Drop Light  
Feeler Gauge Set  
Pliers—Safety Wire  
Flywheel Puller  
Pressure/Vacuum Testing Equipment (U.S.A. only)  
Vernier Caliper (metric)

#### Authorized Honda Special Tools:

- Flywheel Puller 07733 — 0010000
- Stopper Tool (Piston base) 07958 — 2500001
- Lock Nut Wrench 07WMA — KZ30100

### BASIC SUPPLIES

Pro Honda HP Trans Oil or Pro Honda GN4 or HP4 (without molybdenum additives) 4-stroke Oil (Transmission Oil)  
Pro Honda HP Fork Oil 5W  
Honda Brake Fluid  
Pro Honda Chain Lube  
Pro Honda Foam Filter Oil  
Honda Contact Cleaner  
Honda Dielectric Compound  
Honda Hand Grip Cement  
Honda Hondalock  
Honda Moly 60 Paste (U.S.A. only) or molybdenum disulfide paste (containing more than 40% molybdenum disulfide additive)  
White Lithium Grease  
Wheel Bearing Grease  
Silicone Sealer  
Safety Wire  
Mechanic's Wire  
Duct Tape  
Antifreeze

## 12. TROUBLESHOOTING

### NOTE:

- The items that are serviceable using this Manual are followed by the page number reference in parenthesis. The items that require use of the Honda Service Manual are followed by an asterisk.

### POOR PERFORMANCE AT LOW AND IDLE SPEEDS

#### CHECK

- |                                                  |                            |                                                                                                                                                                                                |
|--------------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Check ignition timing*                        | INCORRECT                  | → (1) Improper ignition timing*<br>(Faulty ignition control module)<br>(2) Faulty alternator*                                                                                                  |
| ↓                                                | CORRECT                    |                                                                                                                                                                                                |
| 2. Check carburetor air screw adjustment (P-36)  | INCORRECT                  | → (1) Fuel-air mixture too lean (Turn the air screw in) (P-36)<br>(2) Fuel-air mixture too rich (Turn the air screw out) (P-36)                                                                |
| ↓                                                | CORRECT                    |                                                                                                                                                                                                |
| 3. Check if the air cleaner is over-oiled (P-23) | INCORRECT                  | → (1) Over-oiled air cleaner                                                                                                                                                                   |
| ↓                                                | CORRECT                    |                                                                                                                                                                                                |
| 4. Check if the intake pipe is leaking           | LEAKING                    | → (1) Deteriorated intake pipe reed valve gasket<br>(2) Loose carburetor                                                                                                                       |
| ↓                                                | NOT LEAKING                |                                                                                                                                                                                                |
| 5. Try spark test                                | WEAK OR INTERMITTENT SPARK | → (1) Faulty, carbon or wet fouled spark plug (P-22)<br>(2) Faulty ignition control module*<br>(3) Faulty alternator*<br>(4) Faulty ignition coil*<br>(5) Broken or shorted high tension cord* |
| ↓                                                | GOOD SPARK                 |                                                                                                                                                                                                |
| 6. Check the RC valve (P-25)                     | INCORRECT                  | → (1) Control cables faulty<br>(2) Faulty exhaust valves<br>(3) Carbon build-up in exhaust valves<br>(4) Damaged exhaust valves                                                                |
| ↓                                                | CORRECT                    |                                                                                                                                                                                                |

### POOR PERFORMANCE AT HIGH SPEED

#### CHECK

- |                                                                     |                        |                                                                                                                                                                                |
|---------------------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Check ignition timing*                                           | INCORRECT              | → (1) Faulty alternator*<br>(2) Faulty ignition control module*<br>(3) Faulty ignition pulse generator*                                                                        |
| ↓                                                                   | CORRECT                |                                                                                                                                                                                |
| 2. Disconnect fuel line at carburetor and check for clogging (P-35) | FUEL FLOW RESTRICTED   | → (1) Lack of fuel in tank<br>(2) Clogged fuel line (P-35)<br>(3) Clogged fuel fill cap breather tube (P-2)<br>(4) Clogged fuel valve (P-36)<br>(5) Clogged fuel filter (P-37) |
| ↓                                                                   | UNRESTRICTED FUEL FLOW |                                                                                                                                                                                |
| 3. Remove air cleaner (P-23)                                        | DIRTY                  | → (1) Not cleaned frequently enough (P-23)                                                                                                                                     |
| ↓                                                                   | AIR FILTER NOT DIRTY   |                                                                                                                                                                                |
| 4. Check carburetor jets for clogging                               | CLOGGED                | → (1) Contaminants in the fuel                                                                                                                                                 |
| ↓                                                                   | NOT CLOGGED            |                                                                                                                                                                                |
| 5. Install a larger carburetor main jet (P-46)                      | CONDITION WORSE        | → (1) Jet size wrong, reject in the opposite direction (P-50)                                                                                                                  |
| ↓                                                                   | CORRECT                |                                                                                                                                                                                |
| 6. Check the RC valve (P-25)                                        | INCORRECT              | → (1) Control cables faulty<br>(2) Damaged exhaust valves                                                                                                                      |
| ↓                                                                   | CORRECT                |                                                                                                                                                                                |

## 13. CLEANING

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Clean your CR regularly to protect the surface finishes and inspect damage, wear, and oil seepage. When washing your CR, always use water or water and a mild detergent (such as dishwashing liquid) to avoid discoloring the seat and decals.

### CAUTION:

- **Avoid spraying high pressure water (typical in coin-operated car washes) at the following areas:**

**Wheel Hubs**

**Engine Stop Button**

**Expansion Chamber Outlet**

**Under Fuel Tank**

**Drive Chain**

**Under Seat**

**Brake Master Cylinder**

**Front Fork Dust Seal**

1. After cleaning, rinse your CR thoroughly with plenty of clean water. Strong detergent residue can corrode alloy parts.
2. Dry your CR, start the engine, and let it run for several minutes.
3. Lubricate the drive chain immediately after washing and drying your CR.
4. Test the brakes before riding your CR. Several applications may be necessary to restore normal braking performance.
5. Remove the alternator cover, wipe out any visible moisture, and allow the cavity to air dry for at least a couple of hours (page 13).

### **⚠ WARNING**

- **Braking performance may be impaired immediately after washing your CR.**

### **Aluminum Frame Maintenance**

Aluminum corrodes when it comes in contact with dust, mud and road salt.

To remove stains, use Scotch Brite Hand Pad #7447 (maroon) or equivalent.

Wet the pad and polish the surface using strokes parallel to the length of the frame.

Clean the frame using a wet sponge and a mild detergent, then rinse well with clean water. Dry the frame with a soft clean cloth, using strokes parallel to the length of the frame.

### CAUTION:

- **Do not use steel wool to clean the frame as it could damage or discolor the frame surface.**
- **Muffler stain remover (Scotch Brite Hand Pad #7447-maroon) is for removing stains on the non-coated aluminum frame only.**

## 14. STORAGE

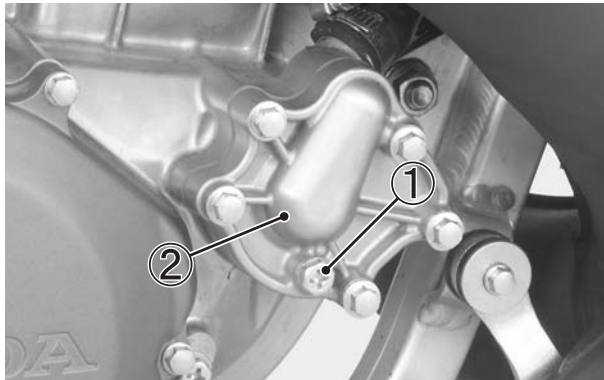
Extended storage, such as for winter, requires that you take certain steps to reduce the effects of deterioration from nonuse of your CR. In addition, necessary repairs should be made BEFORE storing your CR: otherwise, these repairs may be forgotten by the time your CR is removed from storage.

### TO PREPARE THE MOTORCYCLE FOR STORAGE

1. Completely clean all parts of your CR. If your CR has been exposed to sea air or salt water, wash it down with fresh water and wipe dry.
2. Drain the fuel tank and carburetor into an approved gasoline container.  
Turn the fuel valve OFF and remove the carburetor drain bolt. Drain gasoline into an approved container. Reinstall the drain bolt.
3. Remove the coolant drain bolt at the water pump to drain coolant.  
After the coolant has been completely drained, ensure that the drain bolt sealing washer is in good condition and reinstall the drain bolt.

#### **▲ WARNING**

- **Gasoline is extremely flammable and is explosive under certain conditions. Perform this operation in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where gasoline is drained or stored and where the fuel tank is refueled.**



(1) DRAIN BOLT

(2) WATER PUMP

4. Lubricate the drive chain.
5. Remove the spark plug and pour a tablespoon (15 — 20 cc) of clean engine oil into the cylinder. With the spark plug grounded or the Engine Stop Button pressed in, crank the engine several times to distribute the oil, then reinstall the spark plug.
6. Inflate the tires to their recommended pressures.
7. Place your CR on the optional Honda workstand or equivalent to raise both tires off the ground.
8. Stuff a rag into the silencer outlet. Then tie a plastic bag over the end of the silencer to prevent moisture from entering.
9. Cover the machine and store in a place which is free of humidity and dust.

### REMOVAL FROM STORAGE

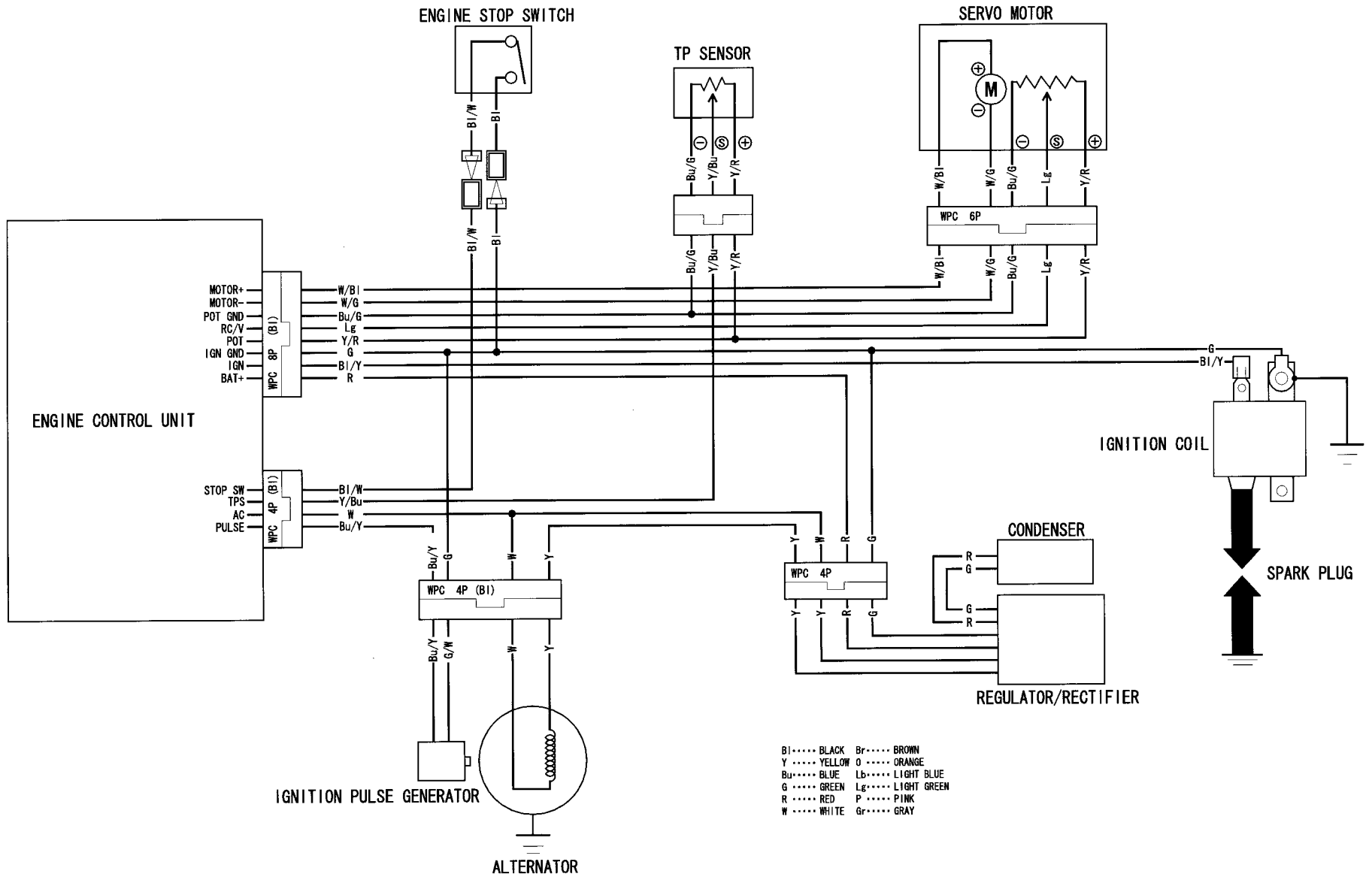
1. Uncover and clean your CR.  
Change the transmission oil if more than 4 months have passed since the start of storage.
2. Uncover the end of the silencer and remove the rag from the silencer outlet.
3. Fill the fuel tank with pre-mixed fuel (page 2).
4. Pour a fresh recommended coolant mixture (page 17) slowly into the radiator filler hole up to the filler neck.

#### **Capacity:**

**1.22 US qt (1.15 liter, 1.01 Imp qt.) at disassembly**  
**1.14 US qt (1.08 liter, 0.95 Imp qt.) at draining**

- Lean your CR slightly right and left several times to bleed trapped air in the cooling system. If the coolant level lowers, add coolant and repeat the above procedure.  
Install the radiator cap securely.
5. Perform all maintenance checks (page 11).
  6. Confirm proper operation of the RC valve (page 25).

# 15. WIRING DIAGRAM



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## 17. AUTHORIZED MANUALS

The Service Manual (Publication Item No. 61KZ372) used by your authorized Honda dealer is available from Helm, Inc.

Also available, but not necessary to service your model is the Honda Common Service Manual (Publication No. 61CM001), which explains theory of operation and basic service information for various systems common to all Honda motorcycles, motor scooters and ATVs.

These Honda manuals are written for the professional technician, but most mechanically-capable owners should find them helpful if they have the proper tools and skills. Special Honda tools are necessary for some procedures.

Publication Item No.	Description	Price Each*
61KZ372	2004 CR250R Service Manual	\$48.00
61CM001	Common Service Manual	\$48.00
31KSK600	2004 CR250R Owner's Manual	\$16.00

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