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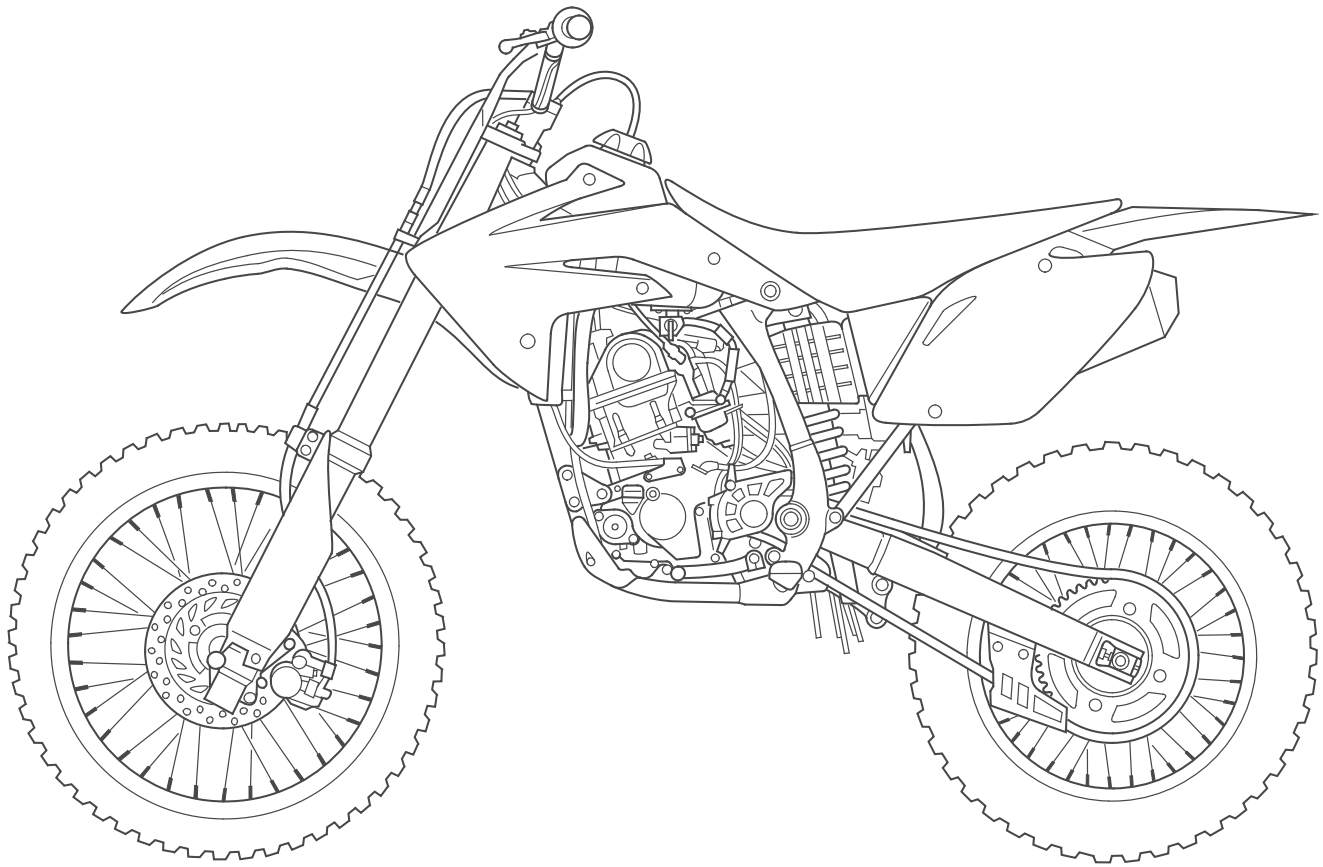
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**QUICK REFERENCE**

**2016**
**Honda CRF150R/RB**
**OWNER'S MANUAL & COMPETITION HANDBOOK**



# Introduction

Congratulations on choosing your Honda CRF motocross motorcycle.

When you own a Honda, you're part of a worldwide family of satisfied customers — people who appreciate Honda's reputation for building quality into every product.

Your CRF is a high performance racing motorcycle that utilizes the latest motocross technology and is intended for competition use in sanctioned, closed-course events by experienced riders only.

Be aware that 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 results, work diligently on your physical conditioning and practice frequently.

Before riding, take time to get acquainted with your CRF and how it works. To protect your investment, we urge you to take responsibility for keeping your CRF well maintained. Scheduled service is a must, of course. But it's just as important to observe the break-in guidelines, and perform all the pre-ride and other periodic checks detailed in this manual.

You should also read the owner's manual before you ride. It's full of facts, instructions, safety information, and helpful tips. To make it easy to use, the manual contains a table of contents, a detailed list of topics at the beginning of each section, and an index at the back of the book.

As you read this manual, you will find information that is preceded by a **NOTICE** symbol. This information is intended to help you avoid damage to your Honda, other property, or the environment.

Unless you are mechanically qualified and have the proper tools, you should see your dealer for the service and adjustment procedures discussed in this manual.

The official Honda Service Manual for your CRF is available (page 148). It is the same manual your dealer uses. If you plan to do any service on your CRF beyond the standard maintenance procedures in this manual, you will find the Service Manual a valuable reference.

If you have any questions, or if you ever need a special service or repairs, remember that your Honda dealer knows your CRF best and is dedicated to your complete satisfaction.

Please report any change of address or ownership to your dealer so we will be able to contact you concerning important product information

You may also want to visit our website at
USA: www.powersports.honda.com
Canada: www.honda.ca

Happy riding!

California Proposition 65 Warning
**WARNING:** This product contains or emits chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

# A Few Words About Safety

Your safety, and the safety of others, is very important. And operating this motorcycle safely is an important responsibility.

To help you make informed decisions about safety, this manual contains a section devoted to *Motorcycle Safety*, as well as a number of Safety Messages throughout the manual.

Safety Messages are preceded by a safety alert symbol ⚠ and one of three signal words: **DANGER**, **WARNING**, or **CAUTION**.

These signal words mean:

**⚠ DANGER** **You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.**

**⚠ WARNING** **You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.**

**⚠ CAUTION** **You CAN be HURT if you don't follow instructions.**

Of course, it is not practical or possible to warn you about all hazards associated with operating or maintaining a motorcycle. You must use your own good judgment.

# Motorcycle Safety

This section presents some of the most important information and recommendations to help you ride your CRF safely. Please take a few moments to read these pages. This section also includes information about the location of safety labels on your CRF.


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- Important Safety Precautions ..... 2
- Important Message to Parents ..... 2

Accessories & Modifications ..... 3

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# Important Safety Information

## Important Safety Precautions

Your CRF can provide many years of pleasure, if you take responsibility for your own safety and understand the challenges you can meet in competitive racing.

As an experienced rider, you know there is much you can do to protect yourself when you ride. The following are a few precautions we consider to be most important.

***Never Carry a Passenger.***
Your CRF is designed for one operator only. Carrying a passenger can cause an crash in which you and others can be hurt.

***Wear Protective Gear.***
Whether you're practicing to improve your skills, or riding in competition, always wear an approved helmet, eye protection, and proper protective gear.

***Take Time to Get to Know Your CRF.***
Because every motorcycle is unique, take time to become thoroughly familiar with how this one operates and responds to your commands before placing your machine, and yourself, in competition.

***Learn and Respect Your Limits.***
Never ride beyond your personal abilities or faster than conditions warrant. Remember that alcohol, drugs, illness and fatigue can reduce your ability to perform well and ride safely.

***Don't Drink and Ride.***
Alcohol and riding don't mix. Even one drink can reduce your ability to respond to changing conditions, and your reaction time gets worse with every additional drink. So don't drink and ride, and don't let your friends drink and ride either.

***Keep your Honda in Safe Condition.***
Maintaining your CRF properly is critical to your safety. A loose bolt, for example, can cause a breakdown in which you can be seriously injured.

## Important Message to Parents

Your child's safely is very important to Honda. That's why we urge you to read this message before you let any young person ride this motorcycle. Competitive riding can be fun. But bad judgement can result in injury, and we don't want that to happen. As a parent, you can help prevent accidents by making good decisions about when and how your youngster rides this motorcycle.

- Remember, this CRF is designed only for competition use by experienced junior riders. It is an operator-only model, and the maximum load capacity is 150 lb (68 kg). Rider weight must not exceed this limit.
- The junior rider must be tall enough to hold the motorcycle up while straddling it with both feet on the ground. He or she must also be strong enough to pick up the motorcycle if it is on its side.
- The parent and junior rider must be fully familiar with the motorcycle, the motorcycle controls and control functions. Both must also fully understand everything in this manual before riding begins.
- For your child's safely, be sure to make pre-practice and pre-race inspections, and impress on the junior rider the importance of checking all the items thoroughly before riding.

## Accessories & Modifications

Installing non-Honda accessories, removing original equipment, or modifying your CRF in any way that would change its design or operation, could seriously impair your CRF's handling, stability, and braking, making it unsafe to ride.

**⚠ WARNING**

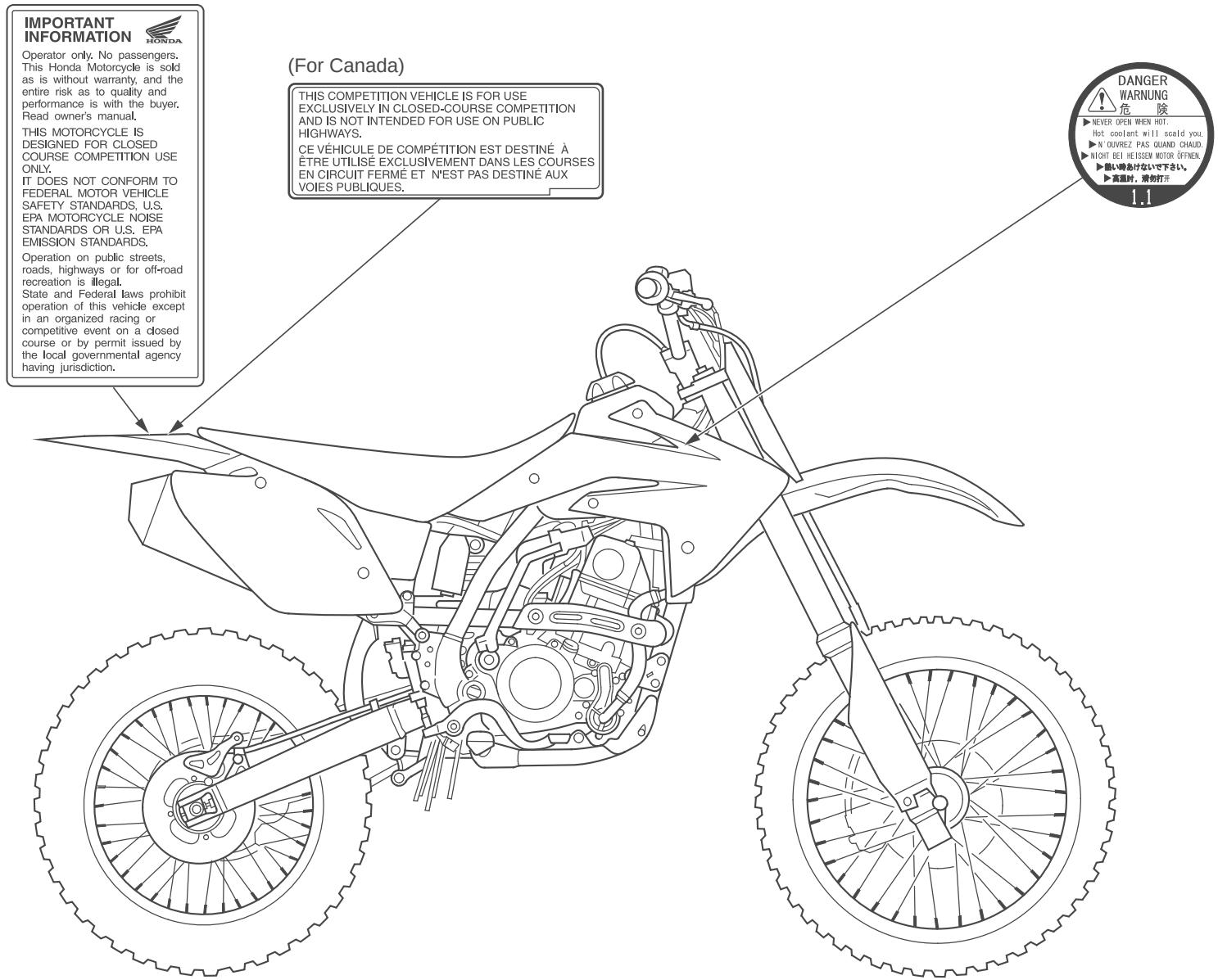
Improper accessories or modifications can cause a crash in which you can be seriously hurt or killed.

Follow all instructions in this owner's manual regarding modifications and accessories.

# Safety Labels

Read this label carefully and don’t remove it.

If the label comes off or becomes hard to read, contact your dealer for replacement.

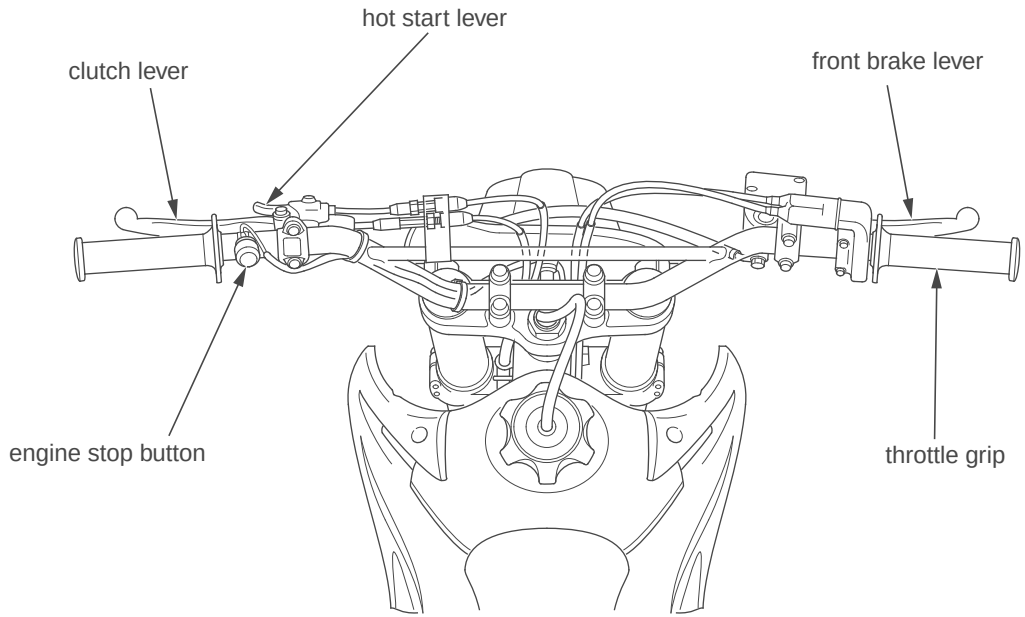


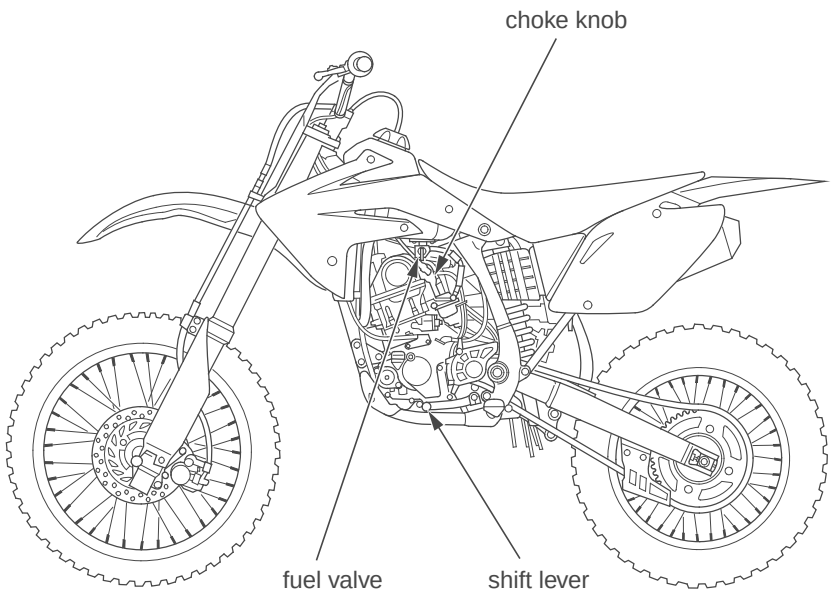
# Operating Controls

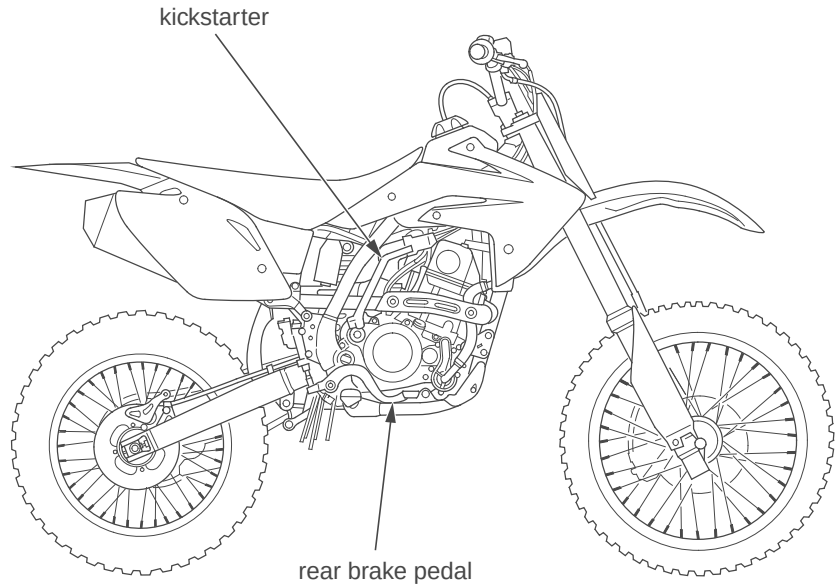
Read this section carefully before you ride. It presents the location of the basic controls on your CRF.

Operation Component Locations ..... 6

# Operation Component Locations



Before each ride, you need to make sure you and your Honda are both ready to ride. To help get you prepared, this section discusses how to evaluate your riding readiness, and what items you should check on your CRF.

For information about suspension, carburetor, and other adjustments, see page 93.

Are You Ready to Ride? ..... 8
Is Your Motorcycle Ready to Ride? ..... 9
Pre-ride Inspection ..... 9

# Are You Ready to Ride?

Before riding your CRF for the first time, we strongly recommend that you read this owner's manual, make sure you understand the safety messages, and know how to operate the controls.

Before each ride, it's also important to make sure you and your CRF are both ready to ride.

For information about suspension, carburetor, and other adjustments, see page 93.

Whether you're preparing for competition or for practice, always make sure you are.

- In good physical and mental condition
- Free of alcohol and drugs
- Wearing an approved helmet, eye protection, and other appropriate riding gear

Although complete protection is not possible, wearing the proper gear can reduce the chance or severity of injury when you ride.

**⚠ WARNING**

Not wearing a helmet increases the chance of serious injury or death in a crash.

Be sure you always wear a helmet, eye protection and other protective apparel when you ride.

Competitive riding can be tough on a motorcycle, so it's important to inspect your CRF and correct any problems you find before each ride. Check the following items (page numbers are at the right):

**⚠ WARNING**

Improperly maintaining this motorcycle or failing to correct a problem before riding can cause a crash in which you can be seriously hurt or killed.

Always perform a pre-ride inspection before every ride and correct any problems.

## Pre-ride Inspection

Check the following before each ride:


- Engine oil level ..... 37
- Transmission oil level ..... 40
- Fuel line for condition ..... 34
- Coolant for proper level ..... 41
- Cooling system and hoses for condition ..... 42
- Spark plug for proper heat range, carbon fouling and spark plug wire terminal for looseness ..... 52
- Air cleaner for condition and contamination ..... 43
- Clutch lever adjustment and freeplay ..... 49
- Hot start lever freeplay ..... 51
- Breather drain for cleaning ..... 45
- Steering head bearing and related parts for condition..... 88
- Carburetor throttle operation ..... 46
- Tires for damage or improper inflation pressure ..... 80
- Spokes for looseness..... 79
- Rim locks for looseness ..... 79
- Front and rear suspension for proper operation ..... 70,71
- Front and rear brakes, check operation..... 75
- Drive chain for correct slack and adequate lubrication ..... 82
- Drive chain sliders and drive chain rollers for damage or wear ..... 82,83
- Exhaust pipe/Muffler inspection..... 85
- Every possible part for looseness (such as cylinder head nuts, engine mounting bolts/nuts, axle nuts, handlebar holder bolts, fork bridge pinch bolts, drive chain adjuster, drive chain guide, wire harness connectors, kickstarter mounting bolt)..... 89,137–139

This section gives basic information on how to start and stop your engine as well as break-in guidelines.

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## Safe Riding Precautions

Before riding your CRF for the first time, please review the *Important Safety Precautions* begininng on page 2 and the previous section, titled *Before Riding*.

For your safety, avoid starting or operating the engine in an enclosed area such as a garage. Your CRF's exhaust contains poisonous carbon monoxide gas which can collect rapidly in an enclosed area and cause illness or death.

Always follow the proper starting procedure described below.

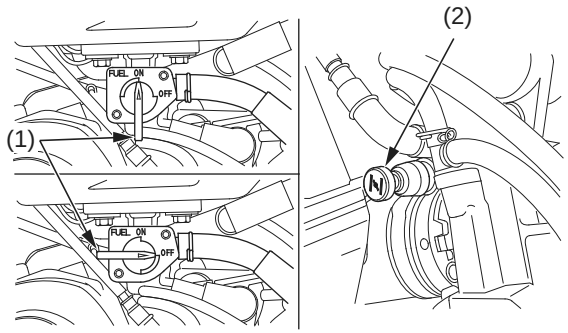
Your CRF can be kickstarted with the transmission in gear by pulling in the clutch lever before operating the kickstarter.

## Preparation

Make sure that the transmission is in neutral.

## Starting Procedure

Always follow the proper starting procedure described as follows.




(1) fuel valve (2) choke knob

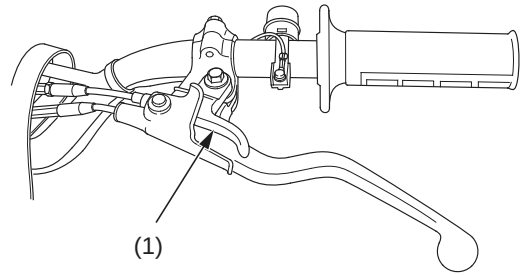
Check the engine oil, transmission oil and coolant levels before starting the engine (pages 37, 40, 41). Snapping the throttle or fast idling for more than 5 minutes at normal air temperature may cause exhaust pipe discoloration.

Cold Engine Starting

1. Turn the fuel valve (1) ON.
2. Shift the transmission into neutral.
3. If the temperature is 95°F (35°C) or below, pull the choke knob (2) fully out.
4. If the temperature is below 32°F (0°C), open the throttle two or three times. (The engine requires a richer mixture for starting in cold weather. When the throttle is so opened, the accelerator pump will feed extra fuel to the cylinder, thereby facilitating starting in cold weather.)
5. With the throttle closed, operate the kickstarter starting from the top of the kickstarter stroke, and kick through to the bottom of the stroke with a rapid, continuous motion.
   (Do not open the throttle, As the carburetor is equipped with an accelerator pump, excessive fuel will be charged into the engine, and the spark plug will be fouled if the throttle is opened and closed repeatedly. Excessive fuel in the engine makes kickstarting difficult.)
6. About a minute after the engine starts, push the choke knob all the way to fully OFF.
   If idling is unstable, open the throttle slightly.

Warm Engine Starting

1. Turn the fuel valve ON.
2. Shift the transmission into neutral.
3. Pull the hot start lever (1) and kick-start the engine. (Do not open the throttle.)
4. As soon as the engine starts, release the hot start lever.




(1) hot start lever

Starting the engine after a stall during riding or after a fall

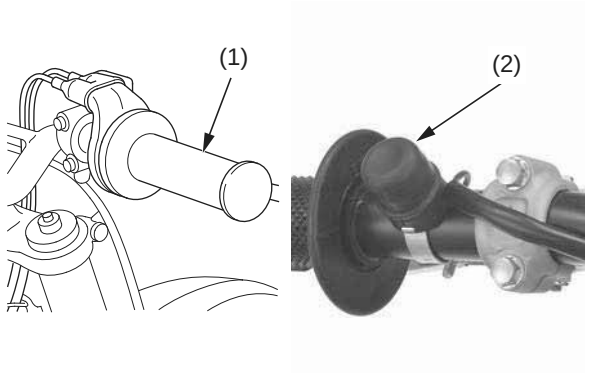
1. Shift the transmission into neutral.
2. Pull the hot start lever and kick-start the engine (Do not open the throttle).
3. As soon as the engine starts, release the hot start lever.

## Flooded Engine

If the engine fails to start after repeated attempts, it may be flooded with excess fuel. To clear a flooded engine:

1. Shift the transmission into neutral.
2. With the throttle fully opened, repeat kickstarter operation approximately ten times very slowly to discharge excessive fuel from the engine.
3. Pull the hot start lever and kick-start the engine. (Do not open the throttle.)
4. As soon as the engine starts, release the hot start lever.

## How to Stop the Engine




(1) throttle (2) engine stop button

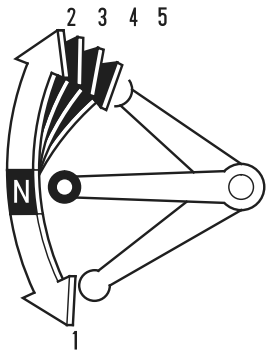
Normal Engine Stop

1. Shift the transmission into neutral.
2. Turn the fuel valve OFF.
3. Lightly open the throttle (1) two or three times, and then close it.
4. Push and hold the engine stop button (2) until the engine stops completely.

Failure to close the fuel valve may cause the carburetor to overflow, result in hard starting.

Emergency Engine Stop

To stop the engine in an emergency, push and hold the engine stop button.




1. After the engine has been warmed up, the motorcycle is ready for riding.
2. While the engine is idling, pull in the clutch lever and depress the shift lever to shift into 1st (low) gear.
3. Slowly release the clutch lever and at the same time gradually increase engine speed by opening the throttle. Coordination of the throttle and clutch lever will assure a smooth positive start.

**NOTICE**

*When moving off from a standing start, be careful not to use too much throttle. The motorcycle may "wheelie" over backwards.*

4. When the motorcycle attains a moderate speed, close the throttle, pull in the clutch lever and shift to 2nd gear by raising the shift lever.
5. This sequence is repeated to progressively shift to 3rd, 4th, 5th (top) gear. Raise the shift lever to shift to a higher gear and depress it to downshift. Each stroke of the shift lever engages the next gear in sequence. The shift lever automatically returns to the horizontal position when released.

**NOTICE**

*Improper shifting may damage the engine, transmission, and drive train.*

**NOTICE**

*Downshifting can help slow your motorcycle, especially on downhills. However, downshifting when engine rpm is too high can cause engine damage.*

**NOTICE**

*To prevent transmission damage, do not coast or tow the motorcycle for long distances with the engine off.*

# Break-in Guidelines

Help assure your CRF'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
- piston rings are replaced
- cylinder is replaced
- crankshaft or crank bearings are replaced

Keeping your CRF well maintained is absolutely essential to your safety. It's also a good way to protect your investment, get maximum performance, avoid breakdowns, and have more fun.

To help keep your CRF in good shape, this section includes a Maintenance Schedule for required servicing and step-by-step instructions for specific maintenance tasks. You'll also find important safety precautions, information on oils, and tips for keeping your Honda looking good.

An ICM (Ignition Control Module) 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 (page 148).

An optional tool kit may be available. Check with your dealer's parts department.

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# The Importance of Maintenance

Keeping your CRF well-maintained is absolutely essential to your safety. It's also a good way to get maximum performance during each moto. Careful pre-ride inspections and good maintenance are especially important because your CRF is designed to be ridden in off-road competition.

Remember, proper maintenance is your responsibility. Be sure to inspect your CRF before each ride and follow the Maintenance Schedule in this section.

**⚠ WARNING**

Improperly maintaining this motorcycle or failing to correct a problem before you ride can cause a crash in which you can be seriously hurt or killed.

Always follow the inspection and maintenance recommendations and schedules in this owner's manual.

This section includes instructions on how to perform some important maintenance tasks. Some of the most important safety precautions follow. However, we cannot warn you of every conceivable hazard that can arise in performing maintenance. Only you can decide whether or not you should perform a given task.

**⚠ WARNING**

Failure to properly follow maintenance instructions and precautions can cause you to be seriously hurt or killed.

Always follow the procedures and precautions in this owner's manual.

## Important Safety Precautions

- Make sure the engine is off before you begin any maintenance or repairs.
  This will help eliminate several potential hazards:

  **Carbon monoxide poisoning from engine exhaust.** Be sure there is adequate ventilation whenever you operate the engine.

  **Burns from hot motorcycle parts.** Let the engine and exhaust system cool before touching.

  **Injury from moving parts.** Do not run the engine unless instructed to do so.

- Read the instructions before you begin, and make sure you have the tools and skills required.

- To help prevent the motorcycle from falling over, park it on a firm, level surface, using an optional workstand or a maintenance stand to provide support.

- To reduce the possibility of a fire or explosion, be careful when working around gasoline. Use only a non-flammable (high flash point) solvent such as kerosene —not gasoline— to clean parts. Keep cigarettes, sparks, and flames away from all fuel-related parts.

# Maintenance Schedule

To maintain the safety and reliability of your CRF, regular inspection and service is required as shown in the Maintenance Schedule that follows.

The Maintenance Schedule lists items that can be performed with basic mechanical skills and hand tools. Procedures for these items are provided in this manual.

The Maintenance Schedule also includes items that involve more extensive procedures and may require special training, tools, and equipment. Therefore, we recommend that you have your dealer perform these tasks unless you have advanced mechanical skills and the required tools. Procedures for items in this schedule are provided in a service manual available for purchase from your dealer (page 148).

Service intervals in the maintenance schedule are expressed in terms of races and riding hours. To avoid overlooking required service, we urge you to develop a convenient way to record the number of races and/or hours you ride.

If you do not feel capable of performing a given task or need assistance, remember that your Honda dealer knows your CRF best and is fully equipped to maintain and repair it. If you decide to do your own maintenance, use only Honda Genuine Parts or their equivalents for repair or replacement to ensure the best quality and reliability.

Perform the pre-ride inspection (page 9) at each scheduled maintenance period.

*Summary of Maintenance Schedule Notes and Procedures:*

Notes:

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. Inspect after the first break-in ride.
5. Replace the transmission oil, if the clutch discs and plates are replaced.

Maintenance Procedures:

I : inspect and clean, adjust, lubricate, or replace, if necessary
C : clean
A : adjust
L : lubricate
R : replace

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

| ITEMS \ FREQUENCY | NOTE | Each race or about 2.5 hours | Every 3 races or about 7.5 hours | Every 6 races or about 15.0 hours | Every 9 races or about 22.5 hours | Ref. Page |
|---|---|---|---|---|---|---|
| THROTTLE OPERATION | | I | | | | 46 |
| HOT STARTER | | I | | | | 51 |
| AIR FILTER | (NOTE 1) | C | | | | 43 |
| CRANKCASE BREATHER | | I | | | | 45 |
| SPARK PLUG | | I | | | | 52 |
| VALVE CLEARANCE/DECOMPRESSOR SYSTEM | (NOTE 4) | | | I | | 53 |
| ENGINE OIL | (NOTE 3) | | | R | | 36 |
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| ENGINE IDLE SPEED | | I | | | | 48 |
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| PISTON PIN | | | | R | | 64 |
| TRANSMISSION OIL | (NOTE 5) | I | | R | | 39 |
| RADIATOR COOLANT | (NOTE 2) | I | | | | 41 |
| COOLING SYSTEM | | I | | | | 42 |
| DRIVE CHAIN | | I, L | R | | | 82 |
| DRIVE CHAIN SLIDER | | I | | | | 82 |
| DRIVE CHAIN ROLLER | | I | | | | 83 |
| DRIVE SPROCKET | | I | | | | 84 |
| DRIVEN SPROCKET | | I | | | | 84 |
| BRAKE FLUID | (NOTE 2) | I | | | | 76 |
| BRAKE PADS WEAR | | I | | | | 78 |
| BRAKE SYSTEM | | I | | | | 75 |
| CLUTCH SYSTEM | (NOTE 5) | I | | | | 49 |
| CONTROL CABLES | | I, L | | | | 88 |
| EXHAUST PIPE/MUFFLER | | I | | | | 85 |
| SUSPENSION | | I | | | | 70, 71 |
| SWINGARM/SHOCK LINKAGE | | | L | | | 25, 71 |
| FORK OIL | (NOTE 3) | | R | | | 72 |
| NUTS, BOLTS, FASTENERS | | I | | | | 89, 137 – 139 |
| WHEELS/TIRES | | I | | | | 79, 80 – 81 |
| STEERING HEAD BEARINGS | | | | | I | 88 |

This maintenance schedule is based upon average riding condition. Machines subjected to severe use require 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. Inspect after the first break-in ride.
5. Replace the transmission oil, if the clutch discs and plates are replaced.

# General Competition Maintenance

Perform maintenance on firm, level ground using an optional workstand, or equivalent support.

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.

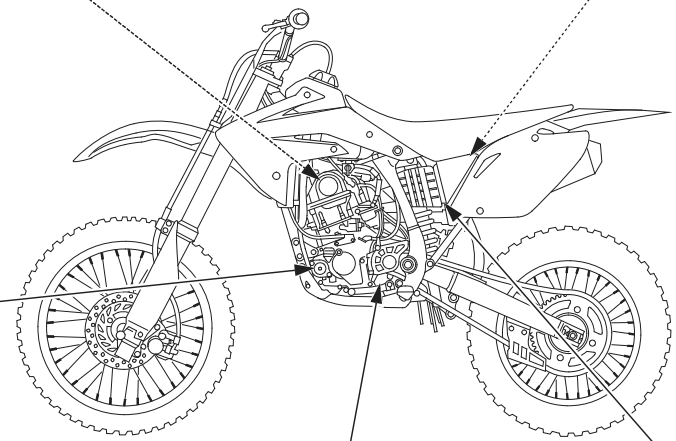
Use Honda Genuine Parts or their equivalent when servicing your CRF.

Clean parts in non-flammable (high flash point) cleaning solvent (such as kerosene) when disassembling. Lubricate any sliding surface, O-rings, and seals before reassembling. Grease parts by coating or filling where specified.

After any engine disassembly, always install new gaskets, O-rings, cotter pins, piston pin clips, snap rings, etc. when reassembling. After reassembly, check all parts for proper installation and operation.

**All Pre-ride Inspection Items**
Refer to *Pre-ride Inspection* page 9.

**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. (page 21).



**Engine Oil and Filter**
Drain and replace engine oil often to ensure the greatest service life of the piston, cylinder and crankshaft.
Also replace the engine oil filter often to ensure the greatest service life. Frequent changes will also assure consistent performance of power and response. (page 37).

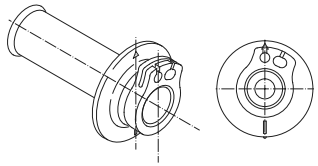
**Transmission Oil**
Drain and replace transmission oil often to ensure the greatest service life of the transmission and clutch. Frequent changes will also assure consistent performance of both shifting and clutch action (page 40).

**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. Pro Honda White Lithium Grease, or an equivalent, is handy for this because any dirt that penetrates this sealing area will show up clearly (page 43).
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.

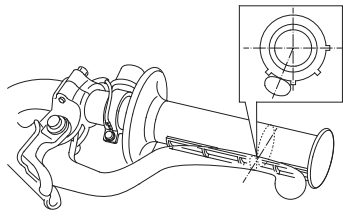
**Air Cleaner Housing Sealing**
Remove and reseal the air cleaner housing boot where it connects to the air cleaner housing with Pro Honda Handgrip Cement or an equivalent if there is any doubt to its sealing integrity. Inspect the air cleaner and air intake tract regularly for signs of deterioration or dirt penetration.

# General Competition Maintenance

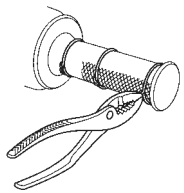
**Handgrips**
Always use Pro Honda Handgrip Cement or equivalent when replacing handgrips.
Refer to the Service Manual for installation instructions.
**Throttle Grip:**
Align the "Δ" mark on the throttle grip with the hole of the throttle cable guide.



**Left Handlebar Grip:**
Align the top of the waffle pattern on the grip with the clutch lever as shown in the illustration.



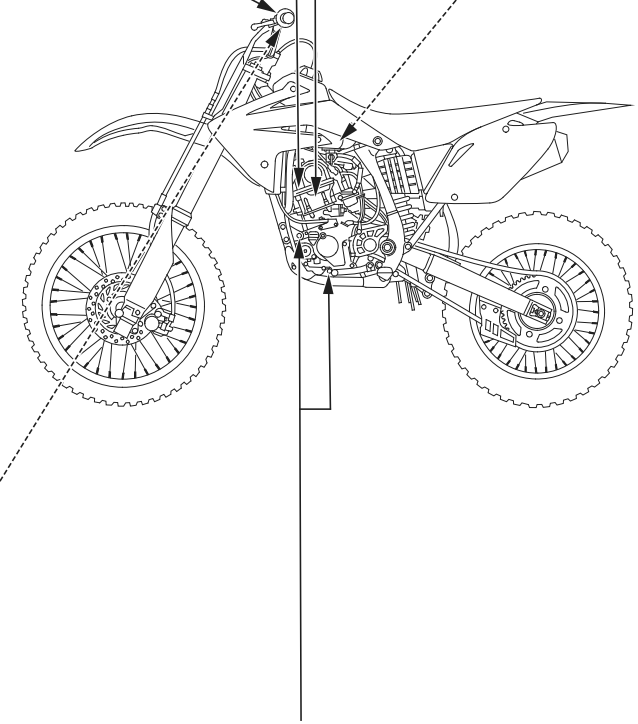
For added security, you may choose to bind the handgrips to the handlebar and throttle pipe with safety wires to prevent the possibility of them loosening. Position the twisted wire ends away from your palms and be sure to bend the wire ends well into the handgrip rubber so they will not snag your glove.



**Throttle Control**
Remove the throttle control every few rides, clean the inside of the throttle pipe and the handlebar thoroughly, and apply a light coating of oil. Inspect the cable carefully for kinks or other damage that may restrict throttle control in any way. Move the handlebar from lock to lock to be sure there is no cable interference. Make certain the throttle operation is perfect after servicing and inspecting.

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

**Cylinder**
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 (page 66).

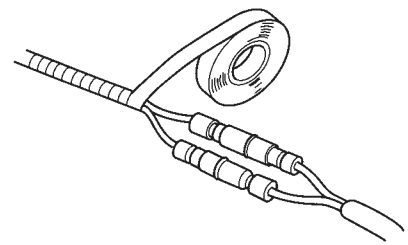


**Engine Mounting Bolts and Nuts**
Make sure the engine mounting bolts and nuts are tightened to the proper torque specification. For added peace of mind, remove the nuts, clean the threads, and apply Pro Honda Hondalock or an equivalent prior to torquing the nuts.

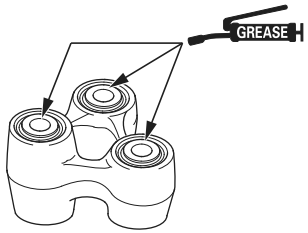
**Fuel Filter**
Periodically drain the fuel from the fuel tank, remove and clean the fuel valve/filter. Replace the fuel valve O-ring if there are any signs of damage or deterioration (page 35).

**Fuel Contamination**
Refer to *Fuel System* in your Owner's Manual, page 34.
Check the fuel lines for deterioration, damage, or leakage. Replace the fuel lines, if necessary.
Periodically drain the fuel from the fuel tank, remove and clean the fuel valve/filter. Replace the fuel valve O-ring if there are any signs of damage or deterioration (page 35).
Loosen the drain screw and examine the fuel that flows out of the float bowl. If you notice anything in the fuel, such as water or dirt, remove the float bowl and inspect its contents (page 114).
For maximum efficiency, drain and replace fuel that has remained in your fuel tank for more than a month.

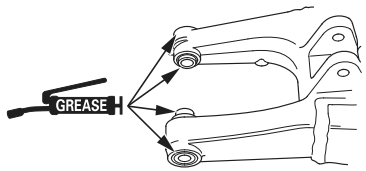
**Electrical Connectors**
Clean electrical connectors and wrap them with electrical tape to reduce the possibility of unwanted disconnections, water shorts or corrosion. Additional corrosion protection is offered by using Pro Honda Dielectric Grease on all electrical connections.



**Suspension Linkage Lubrication**
Disassemble, clean, inspect and lubricate all suspension linkage pivot bearings with grease after each 7.5 hours of running time in order to maintain proper suspension performance and minimize component wear.

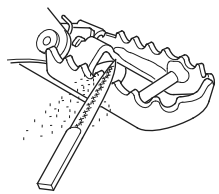



**Swingarm Pivot Lubrication**
Clean, inspect and lubricate the swingarm and suspension linkage pivots with grease. Be sure all of the dust seals are in good condition.

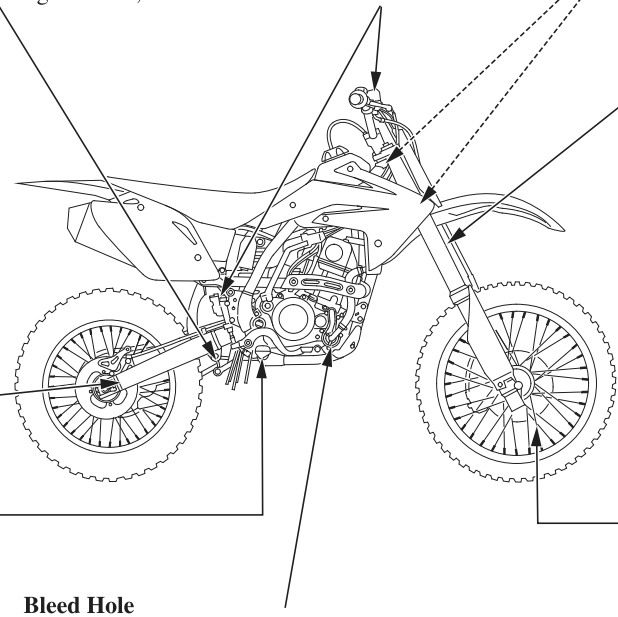



**Swingarm**
Do not attempt to weld or otherwise repair a damaged swingarm. Welding will weaken the swingarm.

**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.

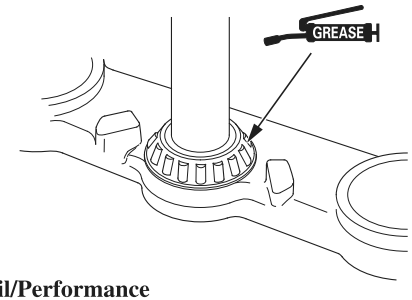


**Brake Fluid Replacement**
Refer to *Brake Pad Wear* in your Owner's Manual, page 78.
Brake Caliper Inspection: Be sure both the front and rear calipers are able to move freely on the caliper bracket pins. Check pad thickness periodically and replace the pads when minimum thickness is reached. If the brakes fade when they are hot, inspect the pads for glazing or damage, and replace if necessary.
Brake Fluid Replacement: Refer to the Honda Service Manual (page 148) for brake fluid replacement instructions. Replace the hydraulic fluid in the brake system every 2 years. Replace the fluid more frequently if you subject your brakes to severe use. Heavy braking heats the brake fluid and it may deteriorate sooner than expected. Any type of riding, that requires frequent use of the brakes, such as in tight woods, can shorten the service life of brake fluid.



**Bleed Hole**
After every race, check the bleed hole below the water pump cover for leakage. Clean away any clogged dirt or sand, if necessary. Check for signs of seal leakage. A small amount of "coolant weeping" from the bleed hole is normal. If water leaks through the bleed hole, the mechanical seal is damaged. If oil leaks through the bleed hole, the oil seal is damaged. See an official Honda Service Manual or consult your dealer for replacing the mechanical seal or oil seal. Both seals should be replaced at the same time.

**Steering Head Bearings**
Periodically clean, inspect and regrease the steering head bearings — especially if you frequently ride on wet, muddy, or dusty courses. Use urea based multi-purpose grease designed for high temperature, high pressure performance (example: EXCELITE EP2 manufactured by KYODO YUSHI, Japan or Shell stamina EP2 or equivalent).




**Fork Oil/Performance**
Disassemble, clean and inspect the front fork and replace 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 (page 148). Use only HP Fork Oil, SS-19 or equivalent which contains special additives to assure maximum performance of your CRF's front suspension.

**Frame**
Because your CRF 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, spoke nuts 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 79).

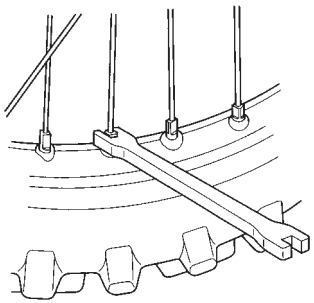
**Nuts, Bolts, Etc.**
Application of a thread locking agent to essential fasteners offers added assurance and security. Remove the nuts, clean the threads of both the nuts and bolts, apply Pro Honda Hondalock or an equivalent and tighten to the specified torque.

# Before & After Competition Maintenance

## Between Motos & Practice Maintenance

After practice or between motos you have a chance to make additional checks and adjustments.

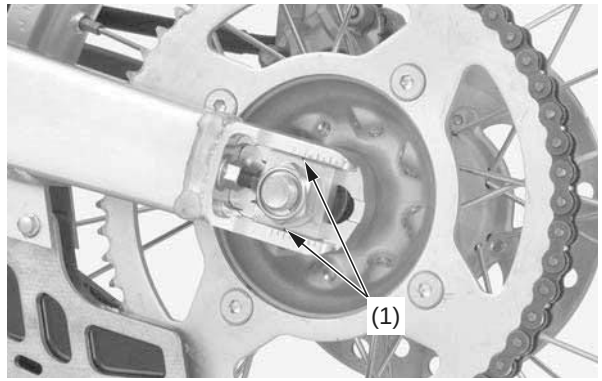
- Clean accumulated dirt from under the fenders and off the wheels, suspension components, handgrips, controls, and footpegs. A stiff, nylon parts cleaning brush works well.
- Check tire air pressure.
- Check spoke tension, and make sure the rim locks are secure.



- Check to make sure the sprocket bolts and nuts are secure.
- Clean the sides of the drive chain with a stiff, nylon parts-cleaning brush. Lubricate and adjust the chain as necessary.

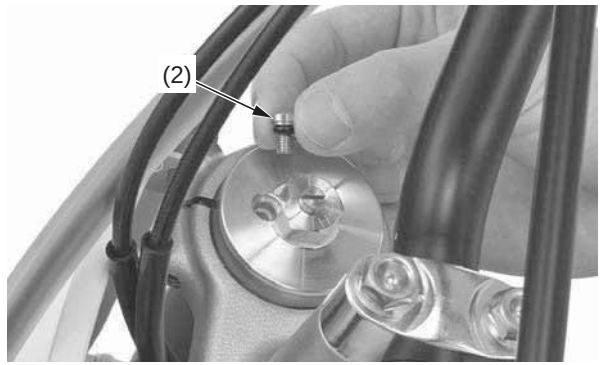
  Do not perform maintenance while engine is running. Injury to your fingers or hands may result.

- After adjustment, check that the chain adjuster index marks (1) are in the same position on each side. This will ensure that the rear wheel is in proper alignment and allow maximum performance from the rear disc brake. Maintaining proper wheel alignment will also extend brake pad wear.




(1) chain adjuster index marks

- Suspend the front wheel above the ground and use the fork air pressure release screws (2) to release the built-up pressure (in excess of normal atmospheric pressure: 0 psi (0 kPa, 0 kgf/cm$^2$)) in the fork tubes. This pressure is caused by normal fork action while riding. (If you are riding at altitude, remember that fork pressure of 0 at sea level will increase as elevation increases.)




(2) fork air pressure release screw

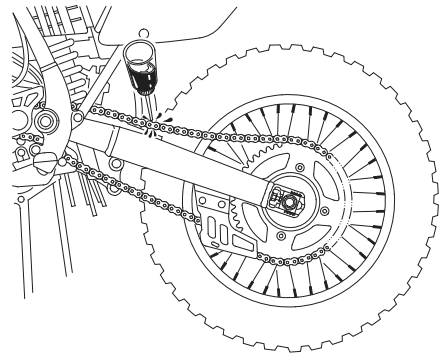
## After Competition Maintenance

It is important to the long term performance of your CRF to practice a consistent maintenance program. Right after the event is a good time to begin your next maintenance cycle.

<u>After Race Lubrication</u>
Apply a light coating of rust-inhibiting oil to the drive sprocket and any steel portions of the chassis or engine where the paint has worn away. This will prevent rusting of the exposed metal.
Apply rust-inhibiting oil more heavily if the event was particularly wet or muddy. Take care to avoid spraying any oil near the brake pads or brake disc.

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

Remove the drive chain, clean and lubricate it (pages 83, 84). Be sure the chain is wiped clean and is dry before lubricating the chain.



Routine Cleaning

If your CRF 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.

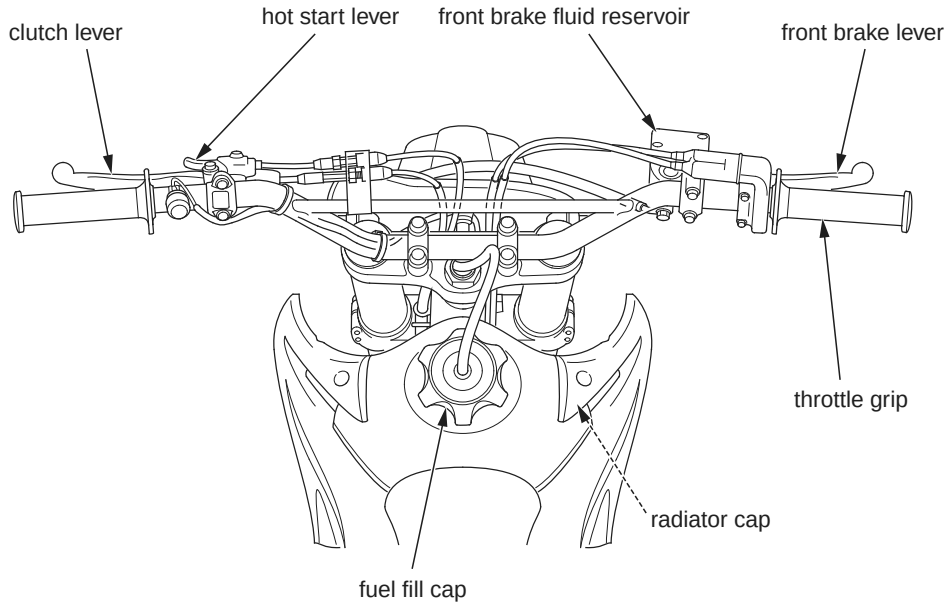
Take care to prevent catching your fingers between the chain and sprocket.

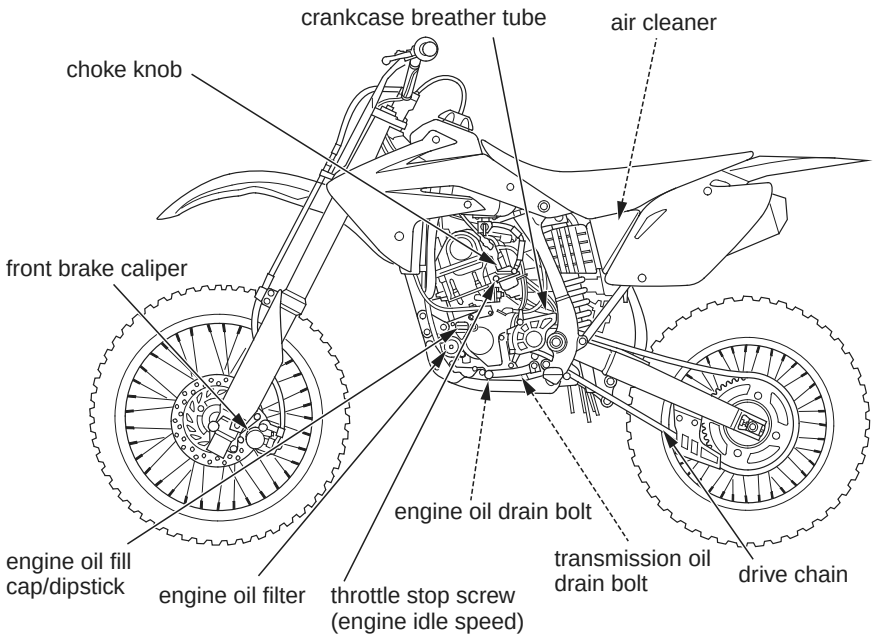
A variety of reasonably priced cleaning brushes are available from variety, drug, food, and hardware stores. Some of these brushes are extremely useful in removing dirt from the many tight contours of the metal pieces of your CRF. Avoid using stiff, abrasive brushes on the plastic or rubber parts.

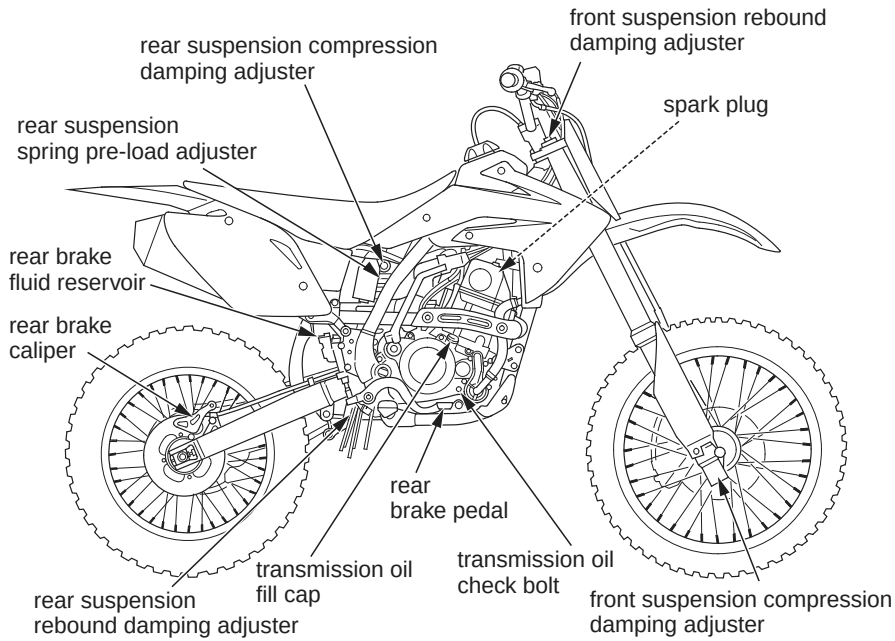
If your CRF was exposed to sea air or salt water, rinse it as soon as possible after the event, dry it, and apply a spray lubricant to all metal parts.

If you decide to wash your CRF or use cleaners, refer to *Appearance Care* (page 90).

# Maintenance Component Locations



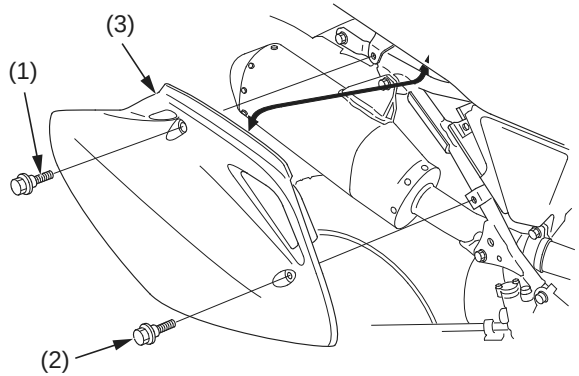



Refer to *Safety Precautions* on page 19.

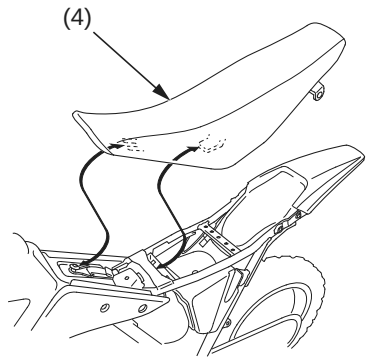
Removal

1. Remove the seat mounting bolts (1), side cover bolts (2) and side covers (3).




(1) seat mounting bolt
(2) side cover bolt
(3) side cover

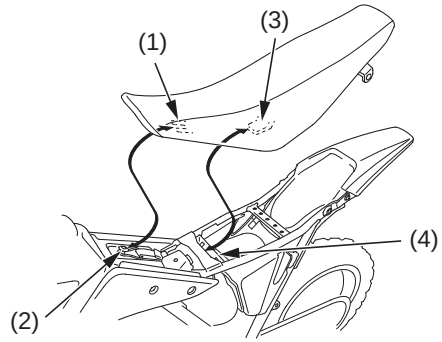
2. Remove the seat (4) by sliding it backward.




(4) seat

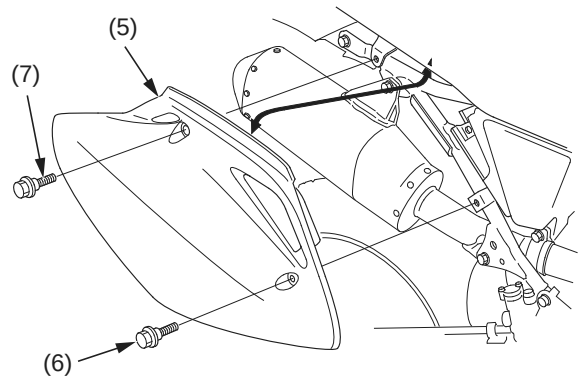
Installation

1. Install the seat while aligning the front prong (1) with the seat bracket (2) and rear prong (3) with the tab (4) of the frame.




(1) front prong
(2) seat bracket
(3) rear prong
(4) tab

2. Install the side covers (5) and tighten the side cover bolts (6).
3. Install and tighten the seat mounting bolts (7) to the specified torque:
   19 lbf·ft (26 N·m, 2.7 kgf·m)



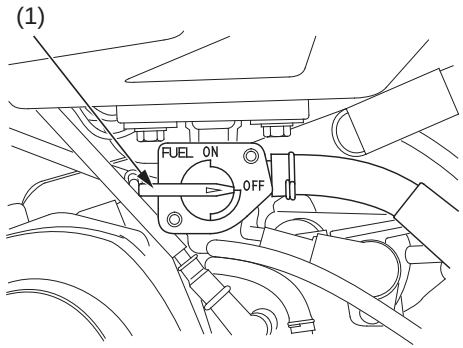

(5) side cover
(6) side cover bolt
(7) seat mounting bolt

# Fuel Tank

Refer to *Safety Precautions* on page 19.

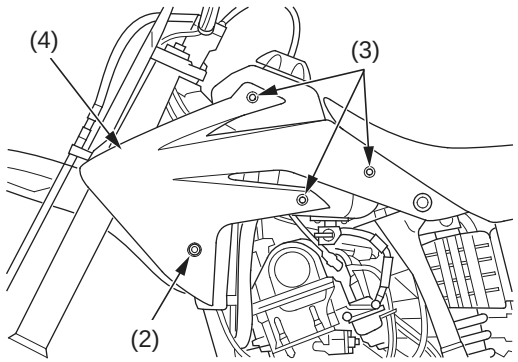
Removal

1. Turn the fuel valve (1) OFF.



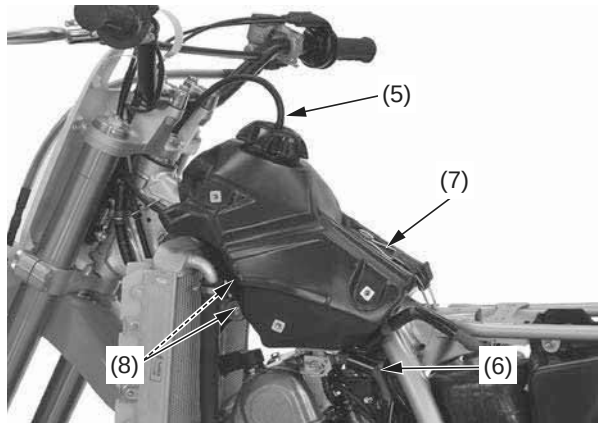

(1) fuel valve

2. Remove the shroud A bolts/collars (2).
3. Remove the shroud B bolts (3) and shrouds (4).




(2) shroud A bolt/collar
(3) shroud B bolts
(4) shroud

4. Remove the seat (page 29).
5. Pull the breather tube (5) out of steering stem nut.
6. Disconnect the fuel line (6).
7. Unhook the fuel tank band (7).
8. Remove the fuel tank bolts/washers (8).
9. Remove the fuel tank.




(5) breather tube
(6) fuel line
(7) fuel tank band
(8) fuel tank bolts/washers

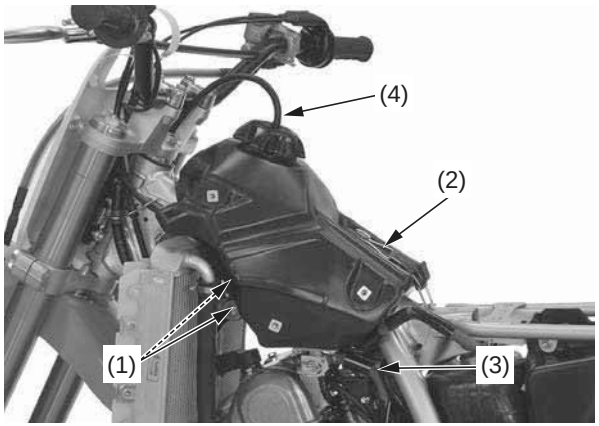
**⚠ WARNING**

Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.

- Stop the engine and keep heat, sparks and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

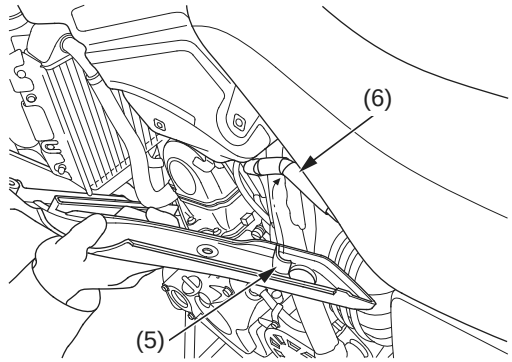
Installation

1. Install the fuel tank on the frame.
2. Install the fuel tank bolts/washers (1), then tighten them.
3. Hook the fuel tank band (2).
4. Connect the fuel line (3).
5. Put the breather tube (4) in the steering stem nut.



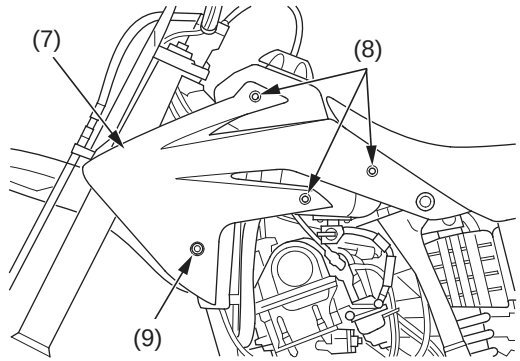

(1) fuel tank bolts/washers
(2) fuel tank band
(3) fuel line
(4) breather tube

6. Install the seat (page 29).
7. Install the left shroud tab (5) under the crankcase breather tube (6).




(5) left shroud tab (6) crankcase breather tube

8. Install the shrouds (7) and shroud B bolts (8).
9. Install and tighten the shroud A bolts/collars (9).
10. Tighten the shroud B bolts.



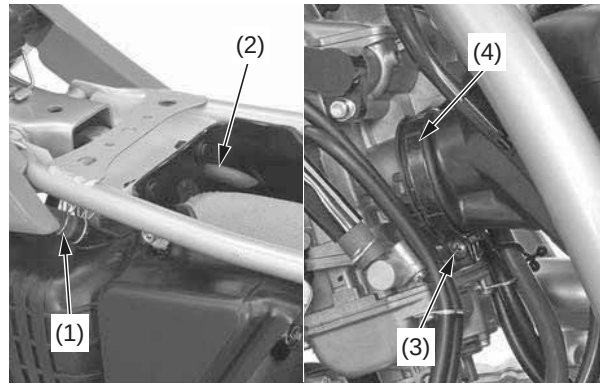

(7) shroud
(8) shroud B bolts
(9) shroud A bolt/collar

# Subframe

Refer to *Safety Precautions* on page 19.

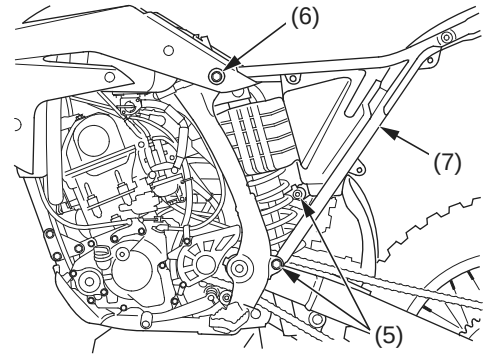
Removal

1. Remove the muffler (page 85).
2. Remove the seat (page 29).
3. Disconnect the crankcase breather tube (1).
4. Pull out the transmission breather tube (2) from the air cleaner housing.
5. Loosen the screw (3) on the air cleaner connecting tube clamp (4).




(1) crankcase breather tube
(2) transmission breather tube
(3) screw
(4) air cleaner connecting tube clamp

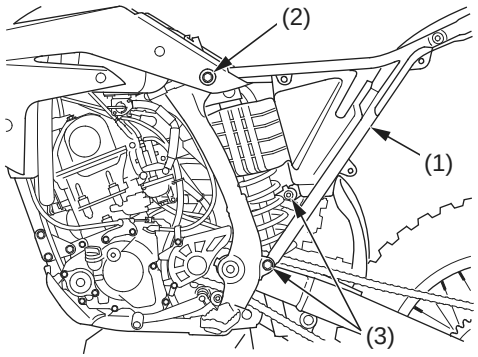
6. Remove the subframe lower mounting bolts (5) and upper mounting bolt (6). Then remove the subframe (7) by pulling it straight backward.




(5) subframe lower mounting bolts
(6) subframe upper mounting bolt
(7) subframe

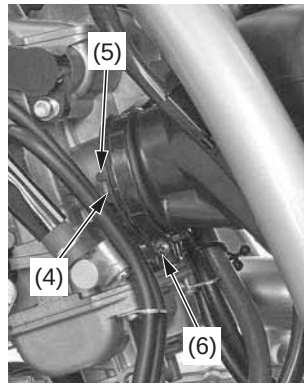
Installation

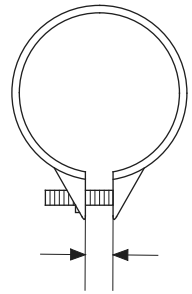
1. Loosely attach the upper and lower ends of the subframe (1) to the mainframe while connecting the air cleaner connecting tube to the carburetor.
   Be careful not to bend the subframe.
   Install the subframe upper mounting bolt (2) and lower mounting bolts (3).
   Tighten the upper mounting bolt and lower mounting bolts to the specified torque:
   22 lbf·ft (30 N·m, 3.1 kgf·m)




(1) subframe
(2) subframe upper mounting bolt
(3) subframe lower mounting bolts

2. Make sure the carburetor tab (4) aligns with the air cleaner connecting tube groove (5).
3. Tighten the connecting tube clamp screw (6) so the gap between the tabs of the clamp is 0.1 ± 0.04 in (3 ± 1mm).

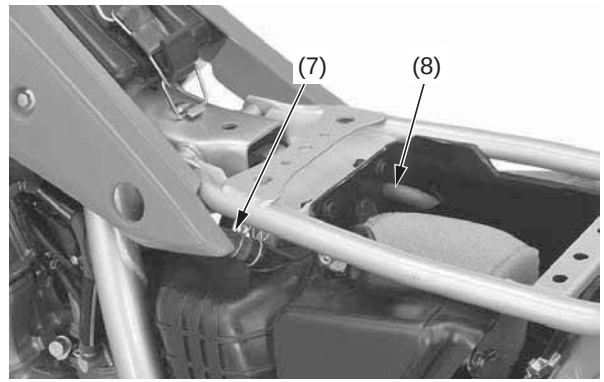


0.1 ± 0.04 in (3 ± 1 mm)

(4) carburetor tab
(5) air cleaner connecting tube groove
(6) connecting tube clamp screw

4. Connect the crankcase breather tube (7).
5. Route the transmission breather tube (8) into the air cleaner housing.




(7) crankcase breather tube
(8) transmission breather tube

6. Install the seat (page 29).
7. Install the muffler (page 86).

# Fuel System

Refer to *Safety Precautions* on page 19.

## Fuel Recommendation

| | |
|---|---|
| Type | Unleaded |
| Pump Octane Number | 91 (or higher) |

Use only unleaded fuel in your Honda. If you ride your Honda in a country where leaded fuel might be available, take precautions to use only unleaded fuel.

Your engine is designed to use any unleaded gasoline that has a pump octane number of 91 or higher. Gasoline pumps at service stations normally display the pump octane number. For information on the use of oxygenated fuels, see page 140.

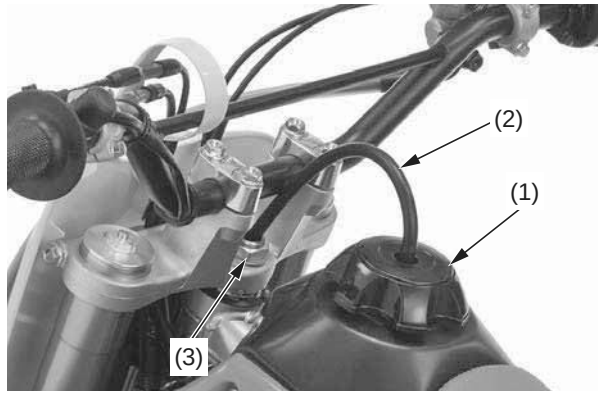
Use of lower octane gasoline can cause persistent “pinging” or “spark knock” (a louder rapping noise) which, if severe, can lead to engine damage. (Light pinging experienced while operating under a heavy load, such as climbing a hill, is no cause for concern.)

If pinging or spark knock occurs at a steady engine speed under normal load, change brands of gasoline. If pinging or spark knock persists, consult your dealer.

Never use stale or contaminated gasoline. Avoid getting dirt, dust or water in the fuel tank.

## Refueling Procedure

Fuel Tank Capacity: 1.14 US gal (4.3 ℓ)




(1) fuel fill cap
(2) breather tube
(3) steering stem nut

1. To open the fuel fill cap (1), pull the breather tube (2) out of the steering stem nut (3). Turn the fuel fill cap counterclockwise and remove it.
2. Add fuel until the level reaches the bottom of the filler neck. Avoid overfilling the tank. There should be no fuel in the filler neck.
3. Close the fuel fill cap and insert the breather tube in the steering stem nut.

**⚠ WARNING**

Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.

- Stop the engine and keep heat, sparks and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

## Fuel Line




(1) fuel line

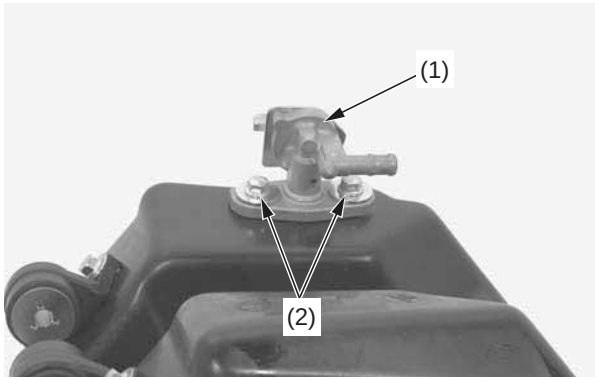
1. Check for leaks.
2. Check the fuel line (1) for cracks, deterioration, damage or leakage. Replace the fuel line, if necessary.

## Fuel Filter

The fuel filter is mounted on the bottom left side of the fuel tank. Dirt accumulated in the filter will restrict the flow of the fuel to the carburetor. Therefore, the fuel filter should be serviced frequently.

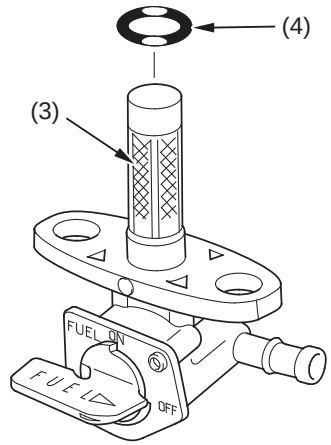
To service the fuel filter:

1. Drain the fuel from the fuel tank into an approved gasoline container.
2. Remove the fuel tank (page 30)
3. Remove the fuel valve (1) from the fuel tank by removing the bolts/collars (2).




(1) fuel valve (2) bolts/collars

4. Wash the fuel filter (3) in high flash-point cleaning solvent.
5. Make sure the O-ring (4) is in good condition and install it onto the fuel valve.
6. Install the fuel valve in the fuel tank by tightening the bolts/collars to the specified torque:
   7 lbf·ft (10 N·m, 1.0 kgf·m)
7. Install the fuel tank (page 31) and refill the fuel.
   Turn the fuel valve ON; check for leaks.




(3) fuel filter (4) O-ring

# Engine Oil

Refer to *Safety Precautions* on page 19.

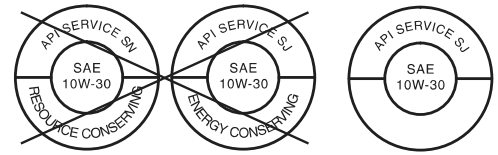
Using the proper oil, and regularly checking, adding, and changing oil will help extend the service life of the engine. Even the best oil wears out. Changing oil helps get rid of dirt and deposits. Operating the engine with old or dirty oil can damage your engine. Running the engine with insufficient oil can cause serious damage to the engine.

## Oil Recommendation

| | |
|---|---|
| API classification | SG or higher except oils labeled as energy conserving and resource conserving on the circular API service label |
| viscosity (weight) | SAE 10W-30 |
| JASO T 903 standard | MA |
| suggested oil* | Pro Honda GN4 4-stroke oil (USA & Canada), or Honda 4-stroke oil, or an equivalent motorcycle oil. |

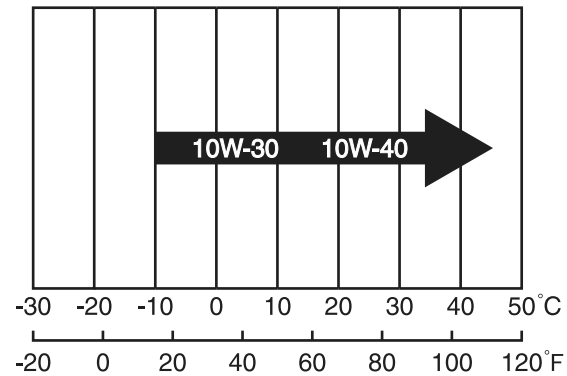
* Suggested 4-stroke engine oils are equal performance to SJ oils that are not labeled as energy conserving and resource conserving on the circular API service label.

- Your CRF does not need oil additives. Use the recommended oil.
- Do not use API SH or higher 4-stroke engine oils displaying the circular API “energy conserving” and “resource conserving” service label on the container. They may affect lubrication.



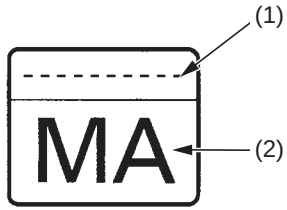

NOT RECOMMENDED OK

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



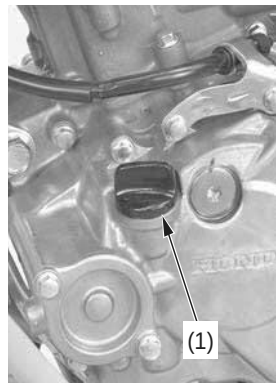
JASO T 903 standard

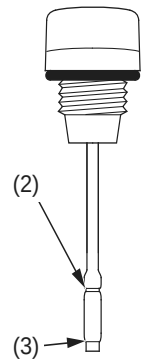
The JASO T 903 standard is an index for engine oils for 4-stroke motorcycle engines.
There are two classes: MA and MB.
Oil conforming to the standard is labeled on the oil container. For example, the following label shows the MA classification.




(1) oil code
(2) oil classification

## Checking & Adding Oil




(1) engine oil fill cap/dipstick
(2) upper level mark
(3) lower level mark

1. Run the engine at idle for 3 minutes, then shut it off.
2. Wait 3 minutes after shutting off the engine to allow the oil to properly distribute itself in the engine.
3. Support the CRF in an upright position on a level surface.
4. Remove the engine oil fill cap/dipstick (1), wipe it clean, and insert the engine oil fill cap/dipstick without screwing it in. Remove the engine oil fill cap/dipstick.
5. Check that the oil level is between the upper (2) and lower (3) level marks on the engine oil fill cap/dipstick.
   - If the oil is at or near the upper level mark, you do not have to add oil.
   - If the oil is below or near the lower level mark, add the recommended oil until it reaches the upper level mark. (Do not overfill.)
     Reinstall the engine oil fill cap/dipstick. Repeat steps 1–5.
6. Reinsert the engine oil fill cap/dipstick.
7. Check for oil leaks.

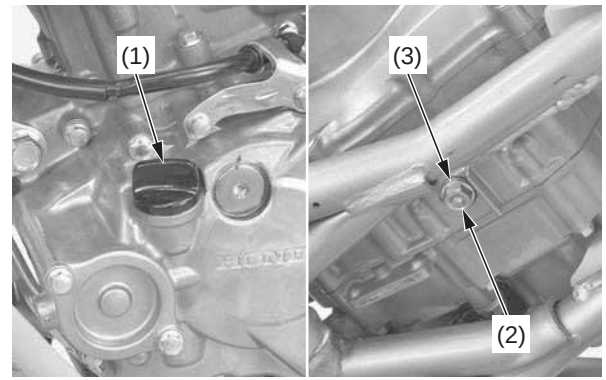
## Changing Engine Oil & Filter

1. Run the engine at idle for 3 minutes, then shut it off.
2. Support the CRF in an upright position on a level surface.
3. Remove the engine oil fill cap/dipstick (1) from the left crankcase cover.
4. Place an oil drain pan under the engine to catch the oil. Then remove the engine oil drain bolt (2) and sealing washer (3).
5. After the oil has drained, apply engine oil to the drain bolt threads and tighten it with a new sealing washer to the specified torque:
   16 lbf·ft (22 N·m, 2.2 kgf·m)

Pour the drained oil into a suitable container and dispose of it in an approved manner (page 130).

**NOTICE**

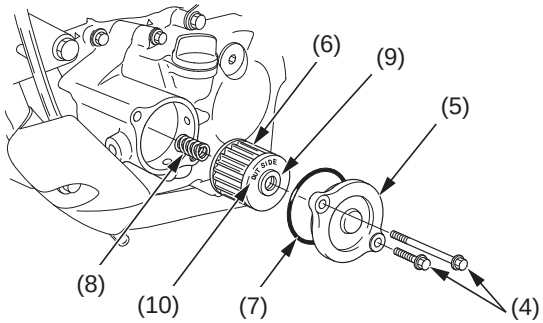
*Improper disposal of drained fluids is harmful to the environment.*




(1) engine oil fill cap/dipstick
(2) engine oil drain bolt
(3) sealing washer

(cont'd)

6. It is recommended to replace the oil and filter every 6 races or about every 15.0 hours. However, if you replace only the oil before the recommended interval, see page 21.
7. Remove the oil filter cover bolts (4) and oil filter cover (5).
8. Remove the oil filter (6) and O-ring (7) from the oil filter cover.




(4) oil filter cover bolts
(5) oil filter cover
(6) oil filter
(7) oil filter cover O-ring
(8) spring
(9) rubber seal
(10) "OUT-SIDE" mark

**NOTICE**

*Using the wrong oil filter may result in leaks or engine damage.*

9. Apply grease to the filter side of the spring end, then install the spring (8) into a new oil filter.
10. Position the spring against the engine crankcase and install a new oil filter with the rubber seal (9) facing out, away from the engine. You should see the "OUT-SIDE" mark (10) on the filter body, near the seal. Use a new Honda Genuine oil filter or a filter of equal quality specified for your model.

**NOTICE**

*If the oil filter is not installed properly, it will cause serious engine damage.*

11. Apply engine oil to the new O-ring and install it to the oil filter cover.
12. Install the oil filter cover being careful not to damage the O-ring, then tighten the oil filter cover bolts to the specified torque:
    7 lbf·ft (10 N·m, 1.0 kgf·m)
13. Fill the crankcase with the recommended oil.
    Capacity: 0.62 US qt (0.59 ℓ)
    after draining and oil filter change
    0.59 US qt (0.56 ℓ)
    after draining
14. Install the engine oil fill cap/dipstick.
15. Check the engine oil level by following the steps in *Checking & Adding Oil* (page 37).

Pour the drained oil into a suitable container and dispose of it in an approved manner (page 130).

**NOTICE**

*Improper disposal of drained fluids is harmful to the environment.*

Refer to *Safety Precautions* on page 19.

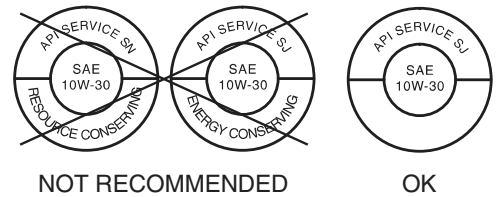
Using the proper oil, and regularly checking, adding, and changing oil will help extend the service life of the transmission and clutch. Even the best oil wears out. Changing oil helps get rid of dirt and deposits. Operating the engine with old or dirty oil can damage your engine. Running the engine with insufficient oil can cause serious damage to the engine and transmission.

## Oil Recommendation

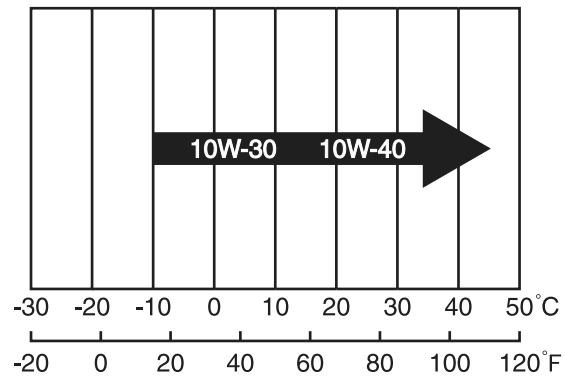
| | |
|---|---|
| API classification (4-stroke engine oil only) | SG or higher except oils labeled as energy conserving and resource conserving on the circular API service label |
| Viscosity (weight) | SAE 10W-30 |
| JASO T903 standard | MA |
| others | without friction modifiers as molybdenum additives |
| suggested oil* | Pro Honda GN4 4-stroke oil (USA & Canada), or Honda 4-stroke oil, or an equivalent motorcycle oil. |

* Suggested 4-stroke engine oils are equal performance to SJ oils that are not labeled as energy conserving and resource conserving on the circular API service label.

- Your CRF does not need oil additives. Use the recommended oil.
- Do not use oils with graphite or molybdenum additives. They may adversely affect clutch operation.
- Do not use API SH or higher 4-stroke engine oils displaying the circular API “energy conserving” and “resource conserving” service label on the container. They may affect lubrication and clutch performance.

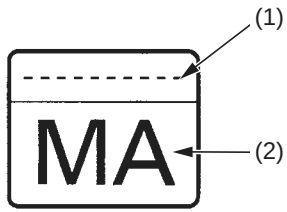



Other viscosities shown in the following chart may be used when the average temperature in your riding area is within the indicated range.



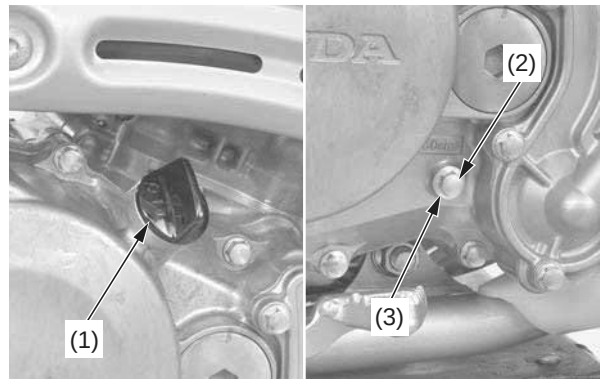
# Transmission Oil

JASO T 903 standard
The JASO T 903 standard is an index for engine oils for 4-stroke motorcycle engines.
There are two classes: MA and MB.
Oil conforming to the standard is labeled on the oil container. For example, the following label shows the MA classification.




(1) oil code
(2) oil classification

## Checking & Adding Oil

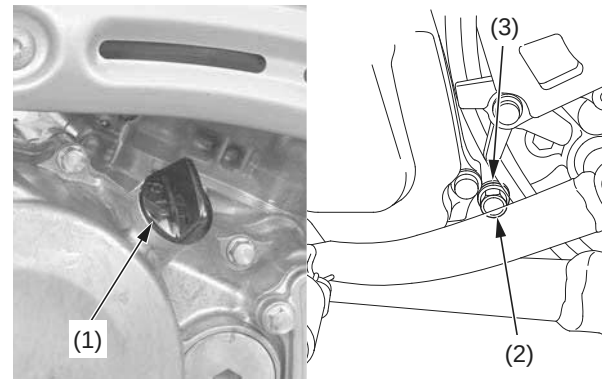



(1) transmission oil fill cap
(2) oil check bolt
(3) sealing washer

1. Run the engine at idle for 3 minutes, then shut it off.
2. Wait 3 minutes after shutting off the engine to allow the oil to properly distribute itself in the clutch and transmission.
3. Support the CRF in an upright position on a level surface.
4. Remove the transmission oil fill cap (1), oil check bolt (2) and sealing washer (3) from the right crankcase cover. A small amount of oil should flow out of the oil check bolt hole. Allow any excess oil to flow out of the oil check bolt hole.
   If no oil flows out of the oil check bolt hole, add oil slowly through the transmission oil fill hole until oil starts to flow out of the oil check bolt hole.
   Install the oil check bolt with a new sealing washer and transmission oil fill cap. Repeat step 1–4.
5. After inspecting the oil level or adding oil, tighten the oil check bolt to the specified torque:
   Oil Check Bolt: 7 lbf·ft (10 N·m, 1.0 kgf·m)
6. Install the transmission oil fill cap securely.

## Replacing Transmission Oil

1. Run the engine at idle for 3 minutes, then shut it off.
2. Support the CRF in an upright position on a level surface.
3. Remove the transmission oil fill cap (1) from the right crankcase cover.
4. Place an oil drain pan under the engine to catch the oil. Then remove the transmission oil drain bolt (2) and sealing washer (3).
5. After the oil has drained, apply engine oil to the drain bolt threads and tighten it with a new sealing washer to the specified torque:
   16 lbf·ft (22 N·m, 2.2 kgf·m)
6. Fill the crankcase with recommended oil.
   Capacity: 0.60 US qt (0.57 ℓ) after draining
7. Check the transmission oil level by following the steps in *Checking & Adding Oil* (this page).




(1) transmission oil fill cap
(2) transmission oil drain bolt
(3) sealing washer

Pour the drained oil into a suitable container and dispose of it in an approved manner (page 130).

**NOTICE**

*Improper disposal of drained fluids is harmful to the environment.*

Your CRF's liquid cooling system dissipates engine heat through the coolant jacket that surrounds the cylinder and cylinder head.

Maintaining the coolant will allow the cooling system to work properly and prevent freezing, overheating, and corrosion.

## Coolant Recommendation

Use Pro Honda HP coolant or an equivalent high quality ethylene glycol antifreeze containing corrosion protection inhibitors specifically recommended for use in aluminum engines. Check the antifreeze container label.

Use only distilled water as a part of the coolant solution. Water that is high in mineral content or salt may be harmful to the aluminum engine.

**NOTICE**

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

The factory provides a 50/50 solution of antifreeze and water in this motorcycle. This coolant solution is recommended for most operating temperatures and provides good corrosion protection.

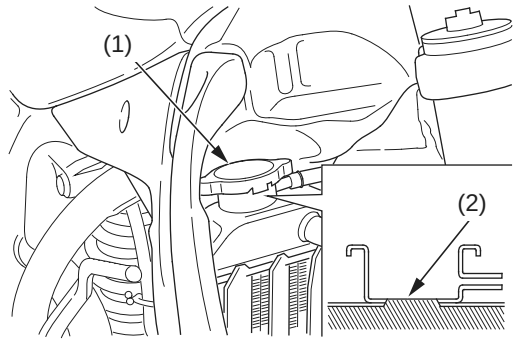
Decreasing the concentration of antifreeze to less than 40% will not provide proper corrosion protection.

Increasing the concentration of antifreeze is not recommended because it decreases cooling system performance. Higher concentrations of antifreeze (up to 60%) should only be used to provide additional protection against freezing.
Check the cooling system frequently during freezing weather.

## Checking & Adding Coolant

Refer to *Safety Precautions* on page 19.

1. With the engine cold, remove the radiator cap (1) and check coolant level. The coolant level is correct when it is at the bottom of the radiator filler neck (2).




(1) radiator cap
(2) radiator filler neck

**⚠ WARNING**

Removing the radiator cap while the engine is hot can cause the coolant to spray out, seriously scalding you.

Always let the engine and radiator cool down before removing the radiator cap.

2. Add coolant up to the filler neck if the level is low.
   Inspect the coolant level before each outing. A coolant loss of 0.7 – 2.0 US oz (20 – 60 $cm^3$) through the over flow tube is normal. If coolant loss is more than this, inspect the cooling system.
   Capacity:
   0.80 US qt (0.76 ℓ) after disassembly
3. Install the radiator cap securely.

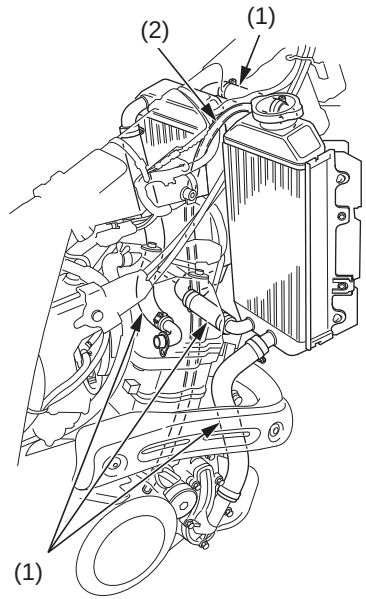
**NOTICE**

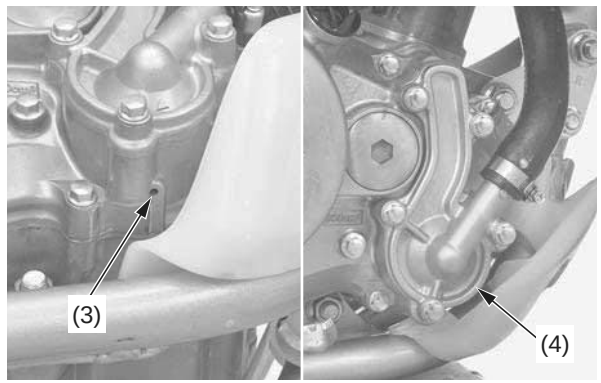
*If the radiator cap is not installed properly, it will cause excessive coolant loss and may result in overheating and engine damage.*

# Coolant

## Cooling System Inspection

1. Check the cooling system for leaks (see the Honda Service Manual for troubleshooting of leaks).
2. Check the water hoses (1) for cracks, deterioration, and hose clamps bands for looseness.
3. Check the radiator mount for looseness.
4. Make sure the overflow hose (2) is connected and not clogged.
5. Check the radiator fins for clogging.
6. Check the bleed hole (3) below the water pump cover (4) for leakage. Check for signs of seal leakage. A small amount of "weeping" from the bleed hole is normal. See the Honda Service Manual or consult your dealer for replacing the water seal or the oil seal. Both seals should be replaced at the same time.




(1) water hoses
(2) overflow hose
(3) bleed hole
(4) water pump cover

## Coolant Replacement

Refer to *Safety Precautions* on page 19.

Coolant should be replaced by your dealer, unless you have the proper tools and service data and are mechanically qualified. Refer to the Honda Service Manual (page 148).

**⚠ WARNING**

Removing the radiator cap while the engine is hot can cause the coolant to spray out, seriously scalding you.

Always let the engine and radiator cool down before removing the radiator cap.

To properly dispose of drained coolant, refer to *You & the Environment,* page 130.

**NOTICE**

*Improper disposal of drained fluids is harmful to the environment.*

Refer to *Safety Precautions* on page 19.

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

Proper air cleaner maintenance is very important for off-road vehicles. A dirty, water-soaked, worn-out, or defective air cleaner will allow dirt, dust, mud, and other impurities to pass into the engine.

Service the air cleaner more frequently if you ride in unusually wet or dusty areas. Your dealer can help you determine the correct service interval for your riding conditions.

Your CRF's air cleaner has very specific performance requirements. Use a new Honda Genuine air cleaner specified for your model or an air cleaner of equal quality.

**NOTICE**

*Using the wrong air cleaner may result in premature engine wear.*

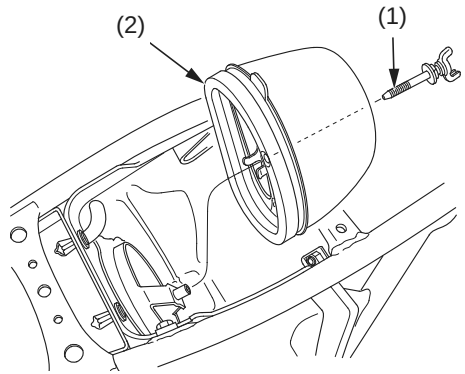
Proper air cleaner maintenance can prevent premature engine wear or damage, expensive repairs, low engine power, poor gas mileage, and spark plug fouling.

**NOTICE**

*Improper or lack of proper air cleaner maintenance can cause poor performance and premature engine wear.*

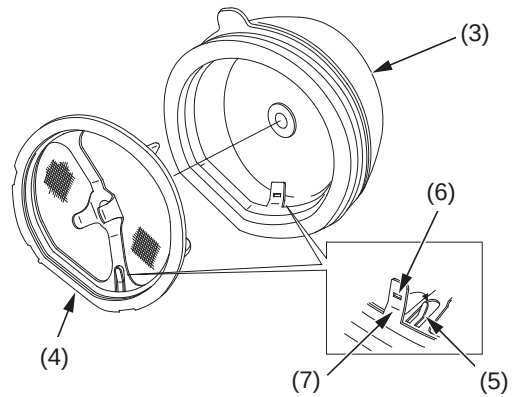
## Cleaning

1. Remove the seat (page 29).
2. Remove the air cleaner retaining bolt (1) and air cleaner assembly (2).



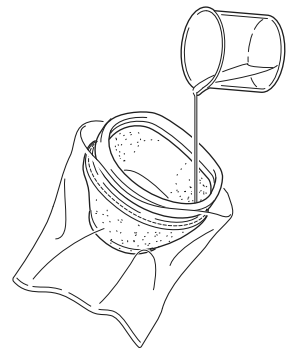

(1) air cleaner retaining bolt
(2) air cleaner assembly

3. Remove the air cleaner element (3) from the air cleaner holder (4).




(3) air cleaner element
(4) air cleaner holder
(5) holder tab
(6) hole
(7) air cleaner tab

4. Wash the air cleaner element in clean non-flammable cleaning solvent. Then wash in hot, soapy water, rinse well, and allow to dry thoroughly.
   The air cleaner element is made in two pieces: inner and outer, which cannot be separated.
5. Clean the inside of the air cleaner housing.
6. Allow the air cleaner to dry thoroughly. After drying, apply 1.7 US oz (50 $cm^3$) of clean Pro Honda Foam Filter Oil or an equivalent air cleaner oil from the inside of the element. Place the element into a plastic bag and spread the oil evenly by hand.



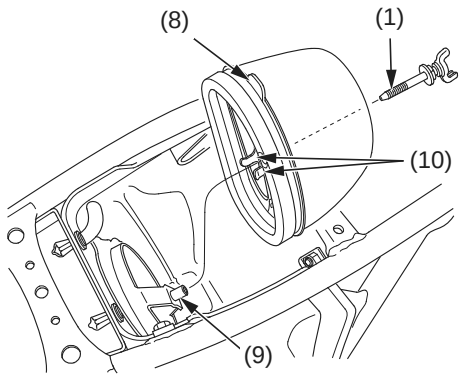
7. Apply 0.09 – 0.11 oz (2.6 – 3.0 g) of Pro Honda White Lithium Grease or equivalent to the air cleaner housing contact area of the air cleaner element.
8. Assemble the air cleaner element and holder. Install the holder tab (5) in the hole (6) of the air cleaner tab (7).

(cont'd)

9. Install the air cleaner assembly into the air cleaner housing.

- Install the air cleaner assembly with the air cleaner element tab (8) facing up.
- Position the air cleaner element stay boss (9) between the air cleaner holder tabs (10).

10. Install and tighten the air cleaner retaining bolt (1).




(1) air cleaner retaining bolt
(8) air cleaner element tab
(9) air cleaner element stay boss
(10) air cleaner holder tabs

**NOTICE**

*Improper installation of the air cleaner assembly may allow dirt and dust to enter the engine and cause rapid wear of the piston rings and cylinder.*

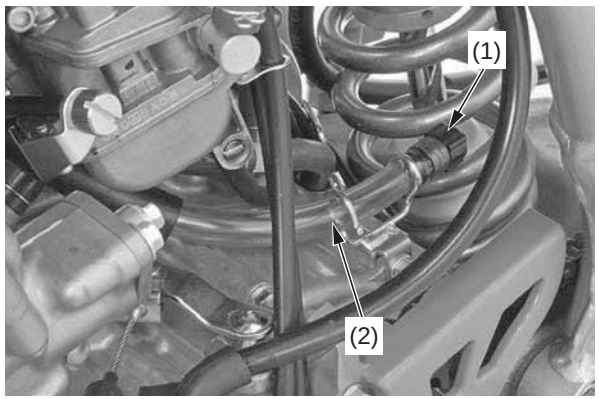
11. Install the seat (page 29).

Refer to *Safety Precautions* on page 19.

Service more frequently if your CRF is ridden in the rain or often at full throttle.
Service the breather if you can see deposits in the transparent section of the drain tube.

## Draining

1. Remove the crankcase breather tube plug (1) from the tube (2) and drain deposits into a suitable container.
2. Reinstall the crankcase breather tube plug.

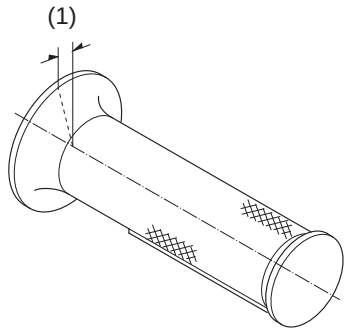



(1) crankcase breather tube plug
(2) tube

# Throttle

Refer to *Safety Precautions* on page 19.

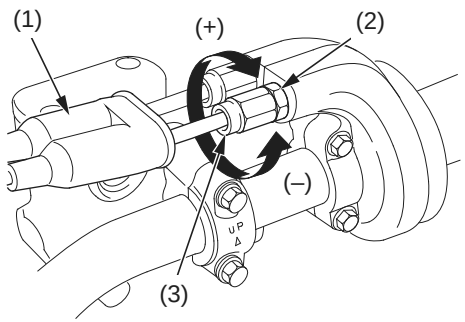
## Throttle Freeplay




(1) freeplay

Inspection
Check freeplay (1).
Freeplay: 1/8 – 3/16 in (3 – 5 mm)
If necessary, adjust to the specified range.

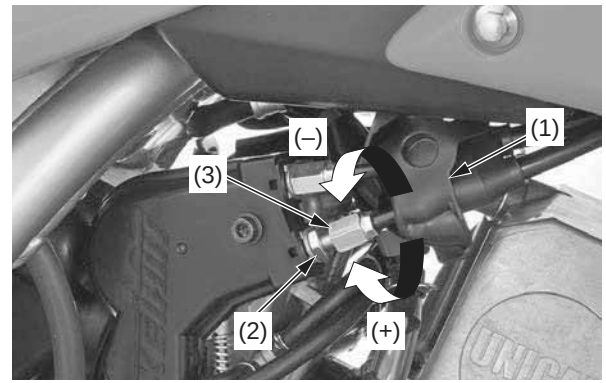
Upper Adjustment
Minor adjustments are generally made with the upper adjuster.




(1) dust cover
(2) lock nut
(3) adjuster
(+) increase freeplay
(–) decrease freeplay

1. Pull the dust cover (1) back.
2. Loosen the lock nut (2).
3. Turn the adjuster (3).
   Turning the adjuster in direction (–) will decrease freeplay and turning it in direction (+) will increase freeplay.
4. Tighten the lock nut to the specified torque.
   3.0 lbf·ft (4.0 N·m, 0.4 kgf·m)
   Return the dust cover to its normal position.
5. After adjustment, check for smooth rotation of the throttle grip from fully closed to fully open in all steering positions.
   If the adjuster is threaded out near its limit or the correct freeplay cannot be reached, turn the adjuster all the way in and back out one turn.
   Tighten the lock nut to the specified torque:
   3.0 lbf·ft (4.0 N·m, 0.4 kgf·m)
   Install the dust cover and make the adjustment with the lower adjuster.

Lower Adjustment
The lower adjuster is used for major freeplay adjustment, such as after replacing the throttle cables or removing the carburetor. It is also used if you cannot get the proper adjustment with the upper adjuster.



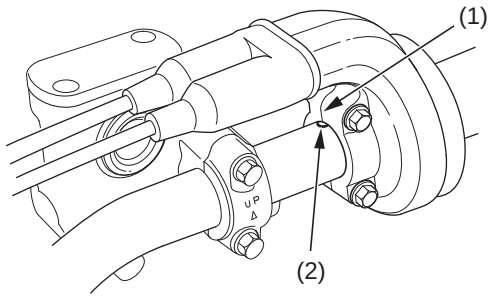

(1) dust cover
(2) lock nut
(3) adjuster
(+) increase freeplay
(–) decrease freeplay

1. Pull the dust cover (1) back.
2. Loosen the lock nut (2).
3. Turn the adjuster (3) in direction (–) to decrease freeplay, and in direction (+) to increase freeplay.
4. Tighten the lock nut to the specified torque.
   3.0 lbf·ft (4.0 N·m, 0.4 kgf·m)
5. Operate the throttle grip to ensure that it functions smoothly and returns completely.
6. Install the dust cover.

If you can't get the freeplay within the specified range, contact your dealer.

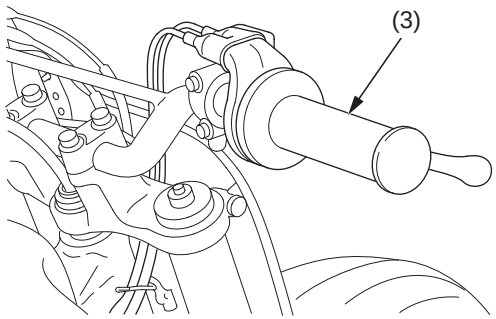
## Throttle Inspection

1. Check that the throttle assembly is positioned properly (the end of the throttle housing (1) is aligned with the punch mark (2) on the handlebar) and the securing bolts are tight.




(1) throttle housing (2) punch mark

2. Check for smooth rotation of the throttle (3) from fully open to fully closed in all steering positions. If there is a problem, see your dealer.




(3) throttle

3. Inspect the condition of the throttle cables from the throttle grip down to the carburetor. If the cable is kinked or chafed, have it replaced.
4. Check the cables for tension or stress in all steering positions.
5. Lubricate the cables with a commercially available cable lubricant to prevent premature rust and corrosion.

# Engine Idle Speed

Refer to *Safety Precautions* on page 19.

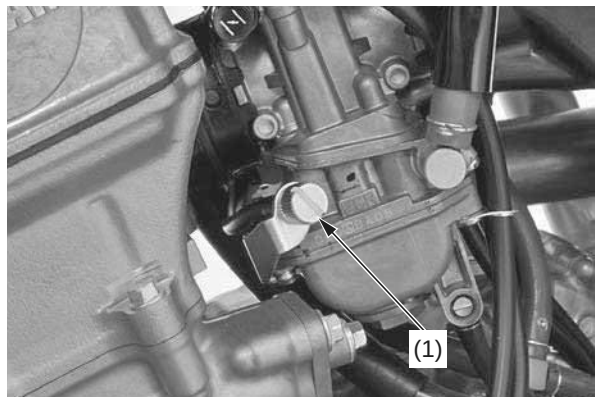
Remember, idle speed adjustment is not a "cure-all" for other problems in your engine's fuel-delivery system. Adjusting the idle will not compensate for a fault elsewhere.

The engine must be at normal operating temperature for accurate idle speed adjustment.

The best way to assure proper carburetion is to see your dealer for regularly scheduled servicing, including carburetor adjustment.

## Idle Speed Adjustment

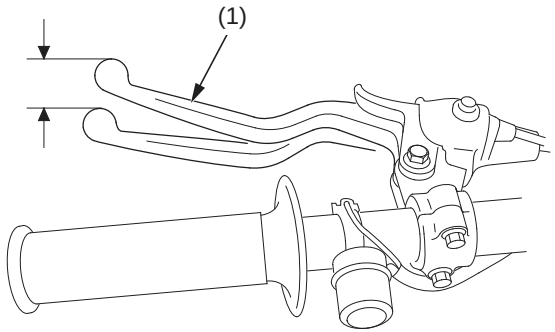
1. If the engine is cold, start it and warm it up 3 minutes and then shut it off.
2. Connect a tachometer to the engine.
3. Shift the transmission into neutral and start the engine.
4. Keep the motorcycle in an upright position.
5. Adjust idle speed with the throttle stop screw (1).
   Idle speed:
   2,100 ± 100 rpm




(1) throttle stop screw

Refer to *Safety Precautions* on page 19.

## Clutch Lever Freeplay



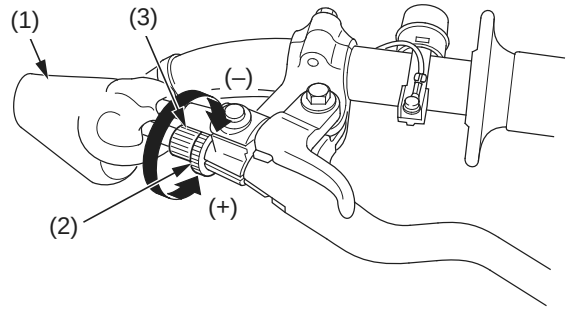

(1) clutch lever

Inspection
Check freeplay.
Freeplay: 3/8 – 13/16 in (10 – 20 mm)

If necessary, adjust to the specified range. Improper freeplay adjustment can cause premature clutch wear.

Make sure to adjust the clutch lever freeplay after the clutch cable is disconnected.

Cable End Adjustment
Minor adjustments are generally made with the cable end adjuster.

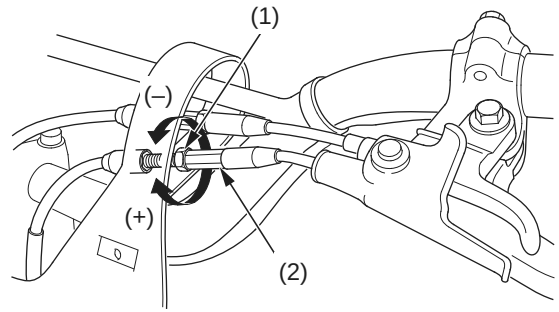



(1) dust cover
(2) lock nut
(3) cable end adjuster
(+) increase freeplay
(–) decrease freeplay

1. Pull the dust cover (1) back.
2. Loosen the lock nut (2) and turn the cable end adjuster (3). Turning the adjuster in direction (–) will decrease freeplay and turning in the direction (+) will increase freeplay.
3. After adjustment, tighten the lock nut and install the dust cover.
4. Check the freeplay again.

If the adjuster is threaded out near its limit or the correct freeplay cannot be reached, turn the adjuster all the way in direction (+) and make the adjustment with the integral cable adjuster.

Integral Cable Adjustment
The integral cable adjuster is used if the cable end adjuster is threaded out near its limit — or the correct freeplay cannot be obtained.



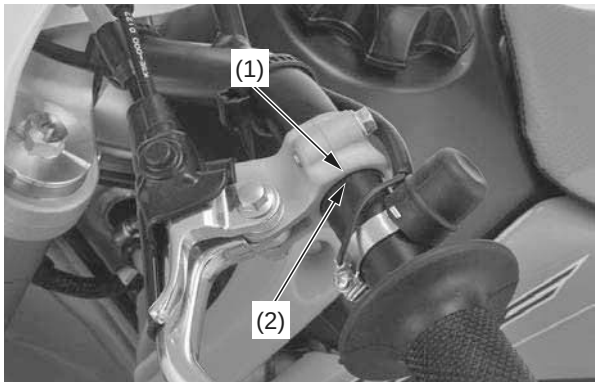

(1) lock nut
(2) integral cable adjuster
(+) increase freeplay
(–) decrease freeplay

1. Turn the cable end adjuster in direction (+) until it seats lightly and then turn it out one turn.
2. Loosen the lock nut (1).
3. Turn the integral cable adjuster (2) to obtain the specified freeplay.
4. Tighten the lock nut. Check the freeplay.
5. Start the engine, pull the clutch lever in, and shift into gear. Make sure the engine does not stall and the motorcycle does not creep. Gradually release the clutch lever and open the throttle. Your CRF should move smoothly and accelerate gradually.

If you can't get proper adjustment, or the clutch does not work properly, the cable may be kinked or worn, or the clutch discs may be worn. See your dealer or refer to the Honda Service Manual (page 148).

## Other Inspections & Lubrication

- Check that the clutch lever assembly is positioned properly (the end of the holder (1) is aligned with the punch mark (2) on the handlebar) and the securing bolts are tight.




(1) end of the holder (2) punch mark

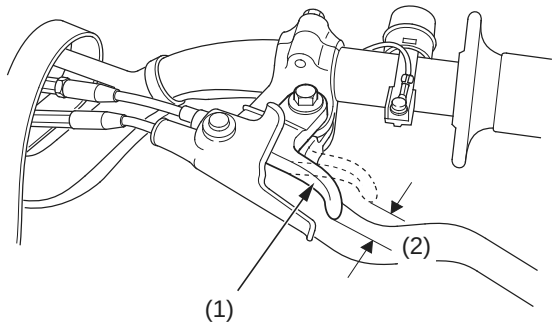
- Check the clutch cable for kinks or signs of wear. If necessary, have it replaced.
- Lubricate the clutch cable with a commercially available cable lubricant to prevent premature wear and corrosion.

## Clutch Operation

1. Check for smooth clutch lever operation. If necessary, lubricate the clutch lever pivot or clutch cable.
2. Check the clutch cable for deterioration, kinks, or damage.

Refer to *Safety Precautions* on page 19.

## Hot Start Lever Freeplay

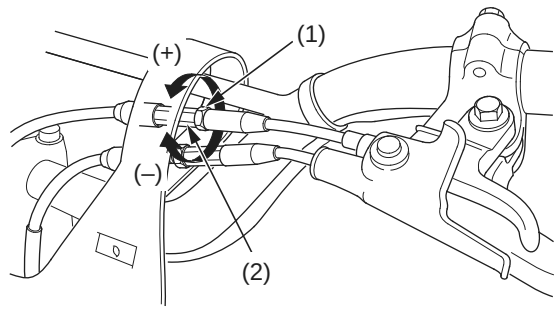



(1) hot start lever
(2) hot start lever freeplay

Inspection
Check freeplay:
Freeplay: 1/16 – 1/8 in (2 – 3 mm)
If necessary, adjust to the specified range.

Adjustment
Adjustments can be made with the cable adjuster.

Loosen the lock nut (1) and turn the adjuster (2). Turning the adjuster clockwise (+) will increase freeplay and turning it counterclockwise (–) will decrease freeplay. After adjustment, tighten the lock nut.




(1) lock nut
(2) adjuster
(+) increase freeplay
(–) decrease freeplay

# Spark Plug

Refer to *Safety Precautions* on page 19.

## Spark Plug Recommendation

The recommended standard spark plug is satisfactory for most racing conditions.

| | |
|---|---|
| Standard | CR8EH-9 (NGK) |
| | U24FER9 (DENSO) |
| Optional | CR9EH-9 (NGK) |
| | U27FER9 (DENSO) |

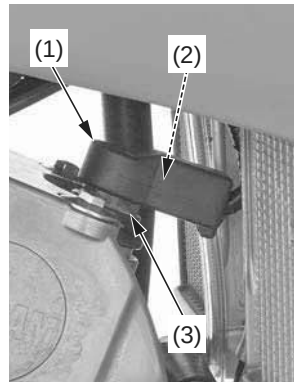
Use only the recommended type of spark plugs in the recommended heat range.

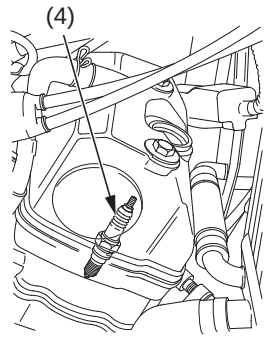
**NOTICE**

*Using a spark plug with an improper heat range or incorrect reach can cause engine damage. Using a non-resistor spark plug may cause ignition problems.*

## Spark Plug Inspection & Replacement

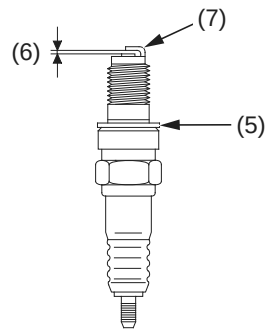
1. Pull the dust cover (1) back.
2. Disconnect the direct ignition coil connector (2).
3. Disconnect the direct ignition coil (3).
4. Clean any dirt from around the spark plug base.
5. Remove the spark plug (4).




(1) dust cover
(2) direct ignition coil connector
(3) direct ignition coil
(4) spark plug

6. Check the electrodes for wear or deposits, the sealing gasket (5) for damage, and the insulator for cracks. Replace if you detect them.
7. Check the spark plug gap (6) using a feeler gauge, and adjust by carefully bending the side electrode (7).
   The recommended spark plug gap is:
   0.031 – 0.035 in (0.8 – 0.9 mm)




(5) sealing gasket
(6) spark plug gap
(7) side electrode

8. 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.

If you're using a new plug, ride for at least 10 minutes before taking a plug reading; a brand-new plug will not show 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 122).
Check the carburetor, fuel system and ignition timing.

9. With the sealing gasket attached, thread the spark plug in by hand to prevent crossthreading.
10. Tighten the spark plug:
    - If the old plug is good:
      1/8 turn after it seats.
    - If installing a new plug, tighten it twice to prevent loosening:
      a) First, tighten the plug:
         NGK: 1/2 turn after it seats.
         DENSO: 1 turn after it seats.
      b) Then loosen the plug.
      c) Next, tighten the plug again:
         1/8 turn after it seats.

**NOTICE**

*An improperly tightened spark plug can damage the engine. If a plug is too loose, a piston may be damaged. If a plug is too tight, the threads may be damaged.*

11. Connect the direct ignition coil. Take care to avoid pinching any cables or wires.
12. Connect the direct ignition coil connector.
13. Install the dust cover.

Refer to *Safety Precautions* on page 19.

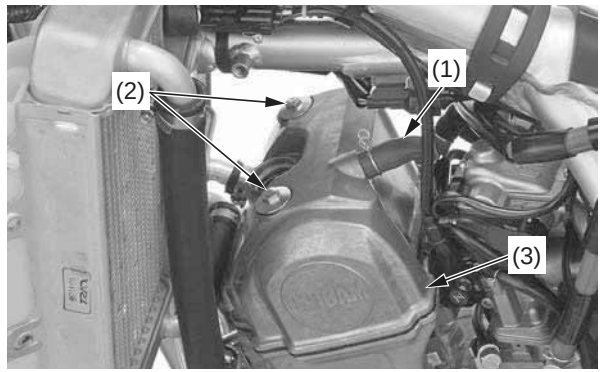
Excessive valve clearance will cause noise and eventual engine damage. Little or no clearance will prevent the valve from closing and cause valve damage and power loss. Check the valve clearance when the engine is cold at the intervals specified in the Maintenance Schedule (page 21).

The checking or adjusting of the valve clearance should be performed while the engine is cold. The valve clearance will change as engine temperature rises.

## Cylinder Head Cover Removal

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

1. Remove the seat and fuel tank (page 29, 30).
2. Remove the spark plug (page 52).
3. Disconnect the breather tube (1).
4. Remove the cylinder head cover bolts (2) and cylinder head cover (3).

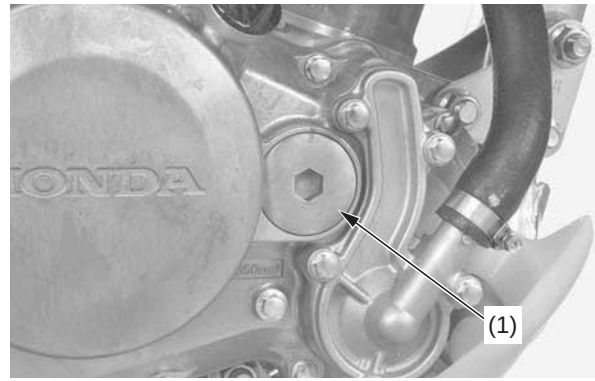



(1) breather tube
(2) cylinder head cover bolts
(3) cylinder head cover

5. Remove the spark plug hole packing.

## Positioning At Top Dead Center On The Compression Stroke

1. Remove the crankshaft hole cap (1).

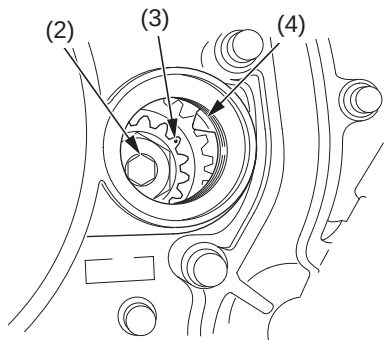



(1) crankshaft hole cap

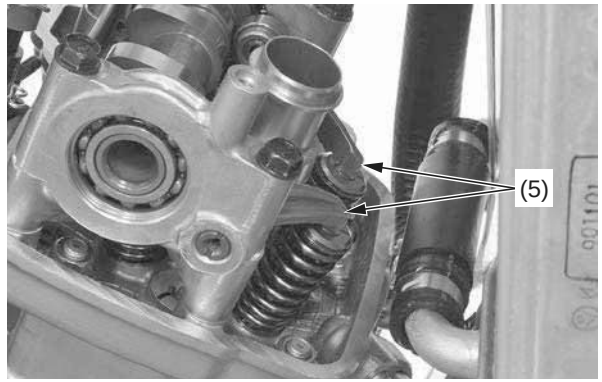
2. Remove the spark plug (page 52).

(cont'd)

3. Rotate the crankshaft by turning the primary drive gear bolt (2) (crankshaft) clockwise until the punch mark (3) on the primary drive gear aligns with the index mark (4) on the right crankcase cover. In this position, the piston may either be on the compression or exhaust stroke.
   If the crankshaft passed the punch mark, rotate the primary drive gear bolt clockwise again and align the punch mark with the index mark. The inspection must be made when the piston is at the top of the compression stroke when both the intake and exhaust valves are closed. This condition can be determined by moving the exhaust rocker arms (5). If they are free, it is an indication that the valves are closed and that the piston is on the compression stroke. If they are tight and the valves are open, rotate the primary drive gear bolt 360° and realign the punch mark with the index mark.



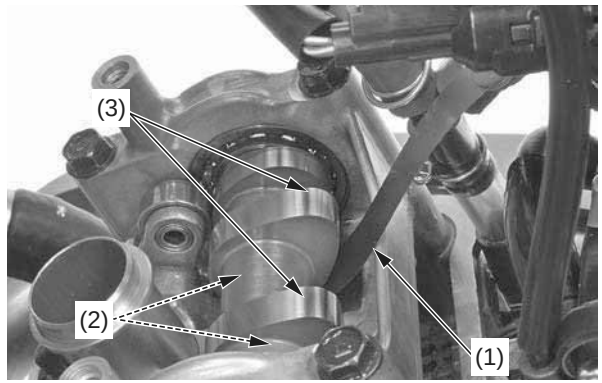

(2) primary drive gear bolt
(3) punch mark
(4) index mark




(5) exhaust rocker arms

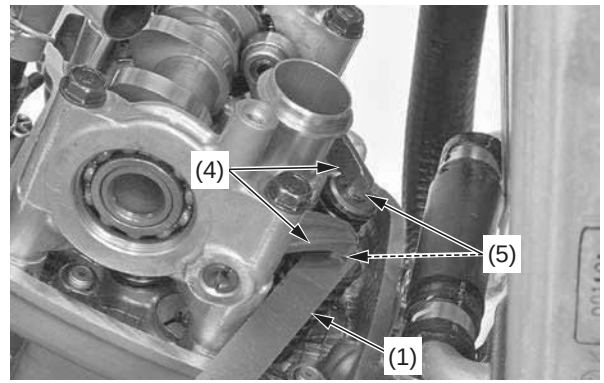
## Valve Clearance Inspection

1. Measure the intake valve clearance by inserting a feeler gauge (1) between the valve lifters (2) and intake cam lobes (3).




(1) feeler gauge
(2) valve lifters
(3) intake cam lobes

2. Measure the exhaust valve clearance by inserting a feeler gauge (1) between the exhaust rocker arms (4) and exhaust valve shims (5).



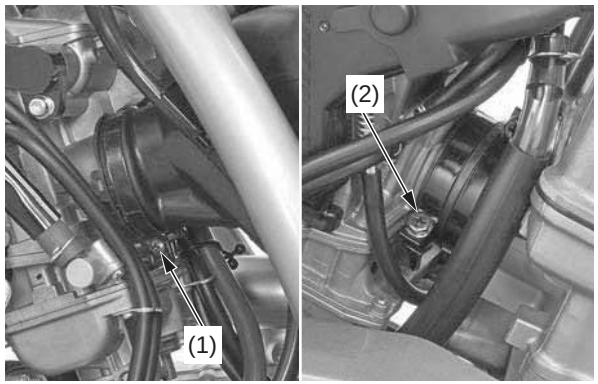

(1) feeler gauge
(4) exhaust rocker arms
(5) exhaust valve shims

Valve Clearance:
IN: 0.006 ± 0.001 in (0.16 ± 0.03 mm)
EX: 0.010 ± 0.001 in (0.26 ± 0.03 mm)

If intake valve clearance and exhaust valve clearance need adjustment, see *Camshaft Holder Assembly Removal* (page 55) and select the correct shim for each valve.

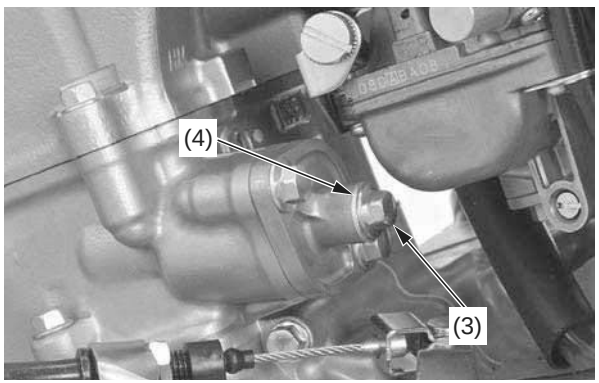
## Camshaft Holder Assembly Removal

1. Record the intake valve clearance and exhaust valve clearance.
   Make sure the piston is at TDC (Top Dead Center) on the compression stroke (page 53).
2. Loosen the connecting tube clamp screw (1) and insulator band screw (2) and rotate the carburetor to access for the cam chain tensioner lifter.




(1) connecting tube clamp screw
(2) insulator band screw

3. Remove the cam chain tensioner lifter cover bolt (3) and sealing washer (4).

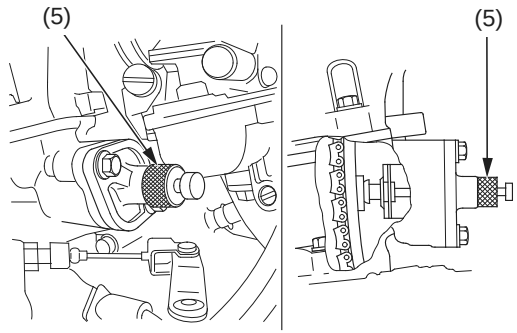



(3) cam chain tensioner lifter cover bolt
(4) sealing washer

Use the tensioner stopper tool.

- Tensioner stopper 070MG-0010100
  07AMG-001A100
  (USA only)

4. Turn the tensioner shaft clockwise with the tensioner stopper (5) until it stops, in order to retract the tensioner fully.
   Then insert the tensioner stopper fully to hold the stopper in the fully retracted position.

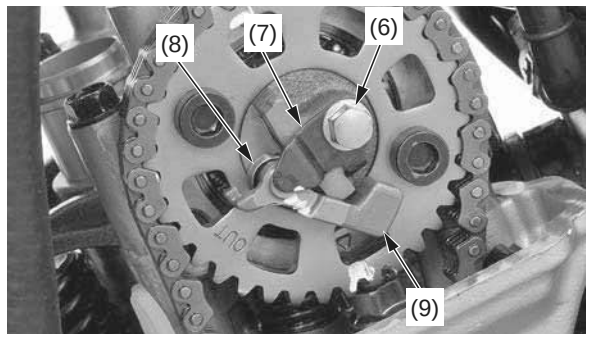



(5) tensioner stopper

5. Remove the bolt (6), stopper plate (7), return spring (8) and decompressor weight (9).

**NOTICE**

*Do not let the bolt, stopper plate, return spring and decompressor weight fall into the crankcase.*

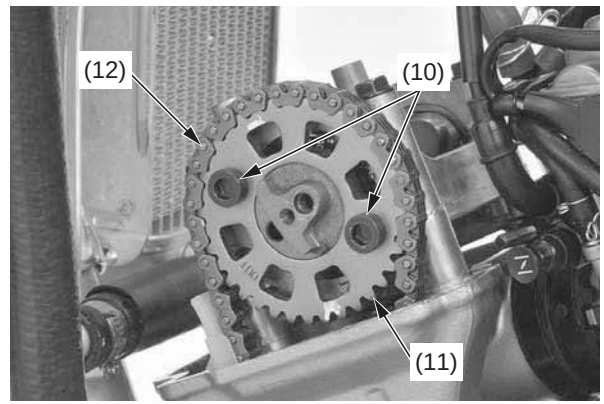



(6) bolt
(7) stopper plate
(8) return spring
(9) decompressor weight

6. Remove the cam sprocket bolts (10) and cam sprocket (11), then attach a piece of wire to the cam chain (12) to prevent it from falling into the crankcase.

**NOTICE**

*Do not let the bolts, sprocket and cam chain fall into the crankcase.*




(10) cam sprocket bolts
(11) cam sprocket
(12) cam chain

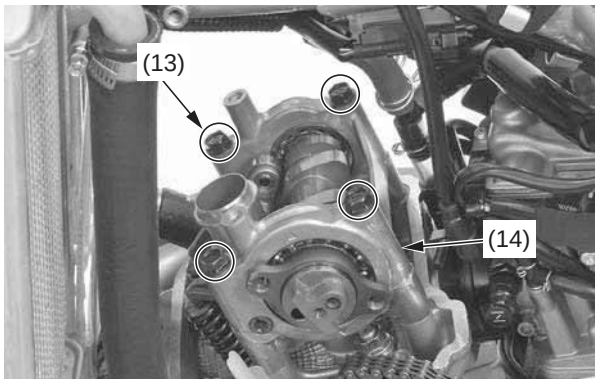
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7. Make sure the piston is at TDC (Top Dead Center) on the compression stroke. Loosen the camshaft holder assembly bolts (13) in a crisscross pattern in two or three steps. Remove the camshaft holder assembly bolts and camshaft holder assembly (14).

- As you remove the camshaft holder assembly, valve lifters and shims may be sticking in the camshaft holder assembly.
- Keep the intake valve lifters and the shims separate so you can easily identify the originally installed location such as intake or exhaust, right or left.

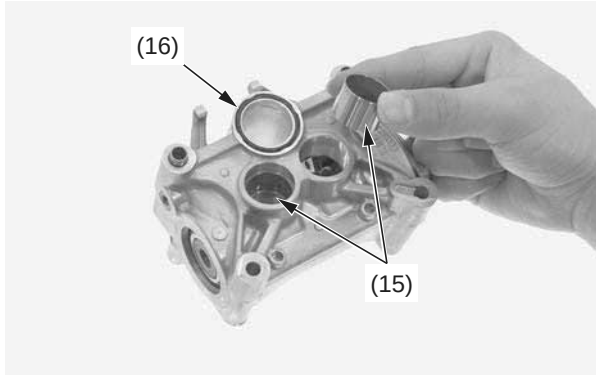
**NOTICE**

*Do not let the valve lifters and shims fall into the crankcase.*




(13) camshaft holder assembly bolts
(14) camshaft holder assembly

8. Remove the valve lifters (15).
9. Remove the O-ring (16).



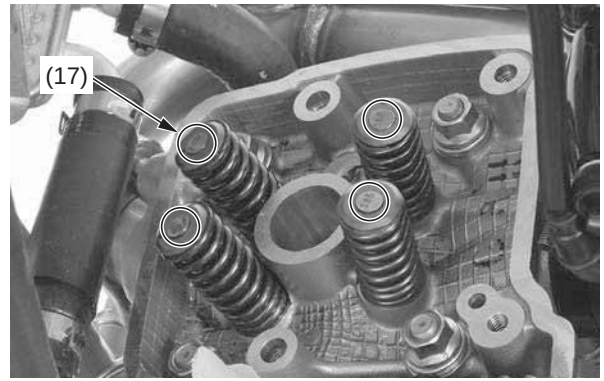

(15) valve lifters (16) O-ring

10. Remove the shims (17).

Keep the shims separate so you can easily identify the originally installed location, such as intake or exhaust, right or left.

**NOTICE**

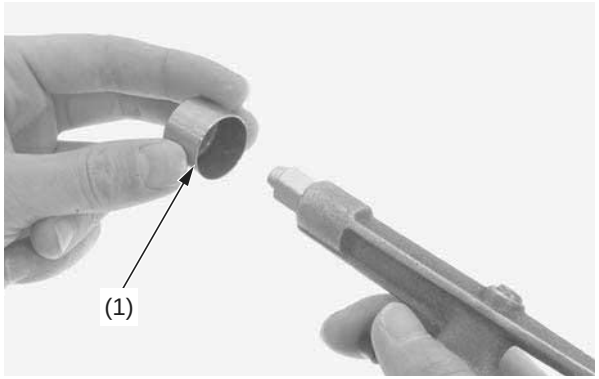
*Do not let the shims fall into the crankcase.*




(17) shims

## Shim Selection

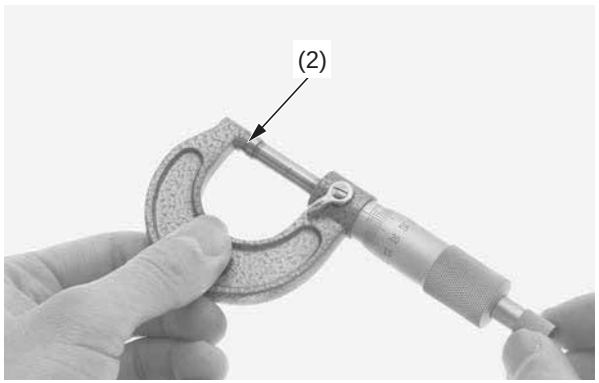
1. Clean the valve shim contact area in the valve lifter (1) with compressed air.




(1) valve lifter

2. Measure the shim thickness with a micrometer and record it.

Sixty-nine different thickness shims (2) are available from the thinnest (1.200 mm thickness) shim to the thickest (2.900 mm thickness) in intervals of 0.025 mm.




(2) shim

3. Calculate the new shim thickness using the equation below.

A = (B – C) + D

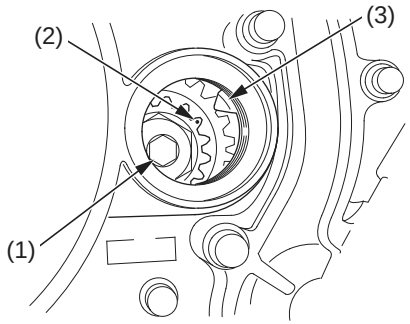
A: New shim thickness
B: Recorded valve clearance
C: Specified valve clearance
D: Old shim thickness

- Make sure of the correct shim thickness by measuring the shim with a micrometer.
- Reface the intake valve seat if carbon deposits result in a calculated dimension of over 2.450 mm.
  Reface the exhaust valve seat if carbon deposits result in a calculated dimension of over 2.900 mm.



## Camshaft Holder Assembly Installation

1. While holding the cam chain, rotate the primary drive gear bolt (1) (crankshaft) clockwise and align the punch mark (2) with the index mark (3).

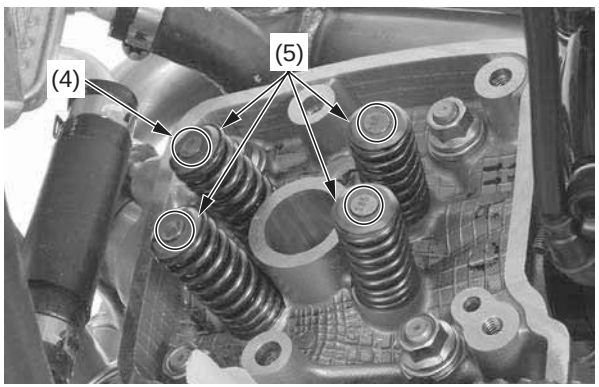



(1) primary drive gear bolt
(2) punch mark
(3) index mark

2. Install the newly selected shims (4) on the valve spring retainers (5).

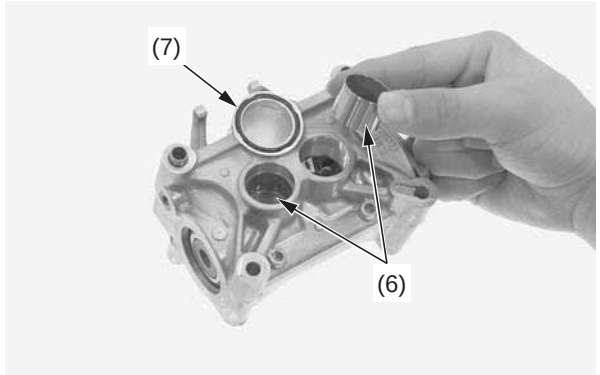
**NOTICE**

*Do not let the shims fall into the crankcase.*




(4) shims (5) valve spring retainers

3. Apply molybdenum disulfide oil (a mixture of 1/2 engine oil and 1/2 molybdenum disulfide grease containing more than 3% molybdenum disulfide additive) to the outer surface of each valve lifter (6).
4. Install the valve lifters in their original location into the camshaft holder assembly.
5. Apply oil to new O-ring (7) and install it.

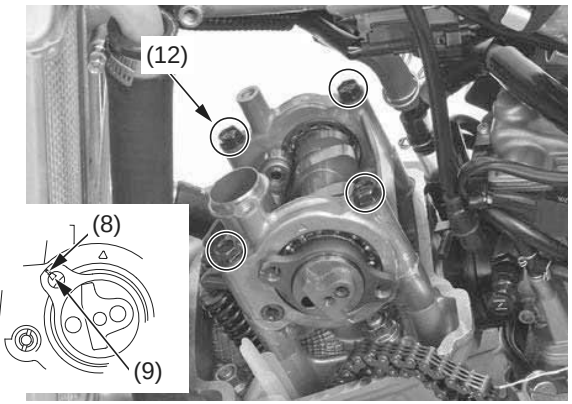



(6) valve lifters (7) O-ring

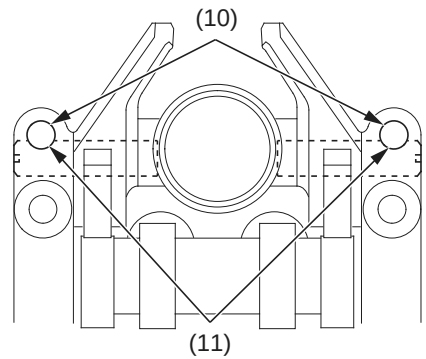
6. Apply molybdenum disulfide oil (a mixture of 1/2 engine oil and 1/2 molybdenum disulfide grease containing more than 3% molybdenum disulfide additive) to the surface of the cam lobes.
   Install the camshaft holder assembly onto the cylinder head aligning the index line (8) on the camshaft flange with the index mark (9) on the camshaft holder as illustrated above. Apply oil to the camshaft holder assembly bolt threads and seating surface.
   Align the camshaft holder assembly bolt holes (10) with the rocker arm shaft cut-outs (11).
   Tighten the camshaft holder assembly bolts (12) in a crisscross pattern in two or three steps to the specified torque:
   10 lbf·ft (13 N·m, 1.3 kgf·m)

**NOTICE**

*Do not let the bolts and valve lifters fall into the crankcase.*




(8) index line
(9) index mark
(12) camshaft holder assembly bolts



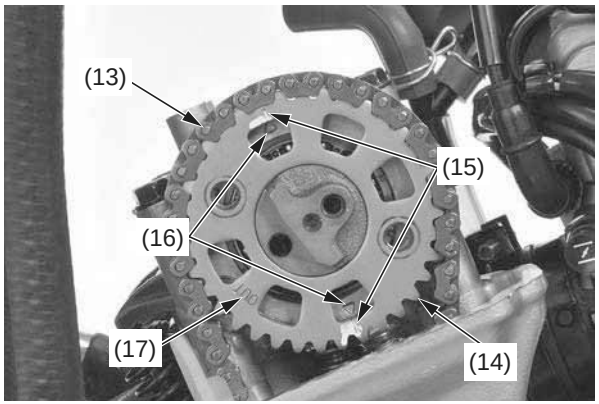

(10) camshaft holder assembly bolts holes
(11) rocker arm shaft cut-outs

7. Install the cam chain (13) on the cam sprocket (14) while aligning the timing marks (15) on the cam sprocket with the "Δ" marks (16) on the camshaft holder, then install the cam sprocket on the camshaft.

Install the cam sprocket with its "OUT" mark (17) facing out.

**NOTICE**

*Do not let the sprocket and cam chain fall into the crankcase.*

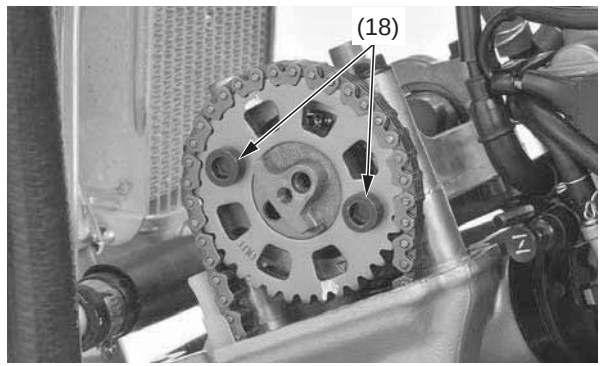



(13) cam chain
(14) cam sprocket
(15) timing marks
(16) "Δ" marks
(17) "OUT" mark

8. Clean and apply locking agent to the cam sprocket bolt threads.
9. Tighten the cam sprocket bolts (18) alternately to the specified torque:
   15 lbf·ft (20 N·m, 2.0 kgf·m)

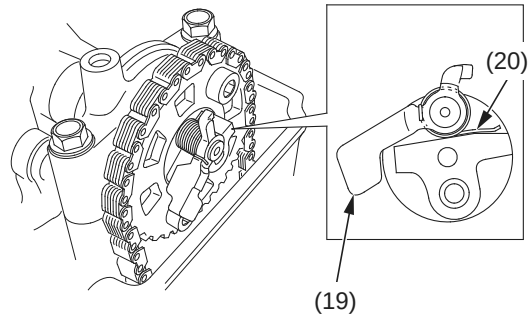
**NOTICE**

*Do not let the bolts fall into the crankcase.*



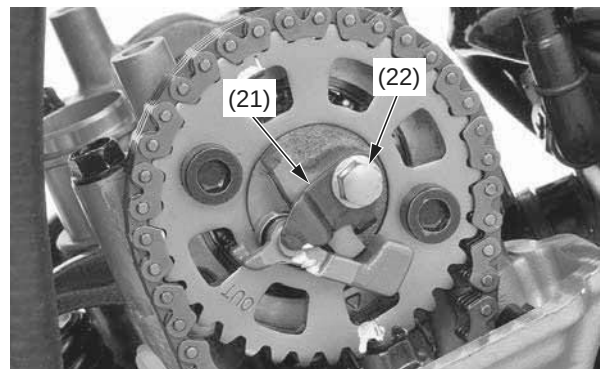

(18) cam sprocket bolts

10. Install the decompressor weight (19) and return spring (20) as illustrated below.




(19) decompressor weight
(20) return spring

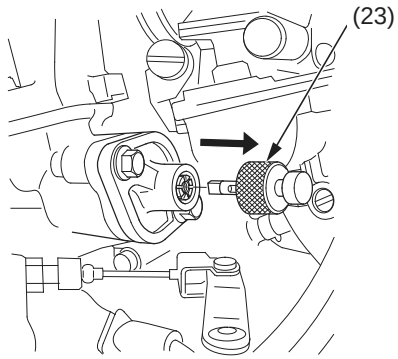
11. Clean and apply locking agent to the bolt threads (coating width: 0.26 ± 0.04 in (6.5 ± 1 mm) from tip).
12. Install the stopper plate (21) and tighten the bolt (22) to the specified torque:
    7 lbf·ft (10 N·m, 1.0 kgf·m)




(21) stopper plate
(22) bolt

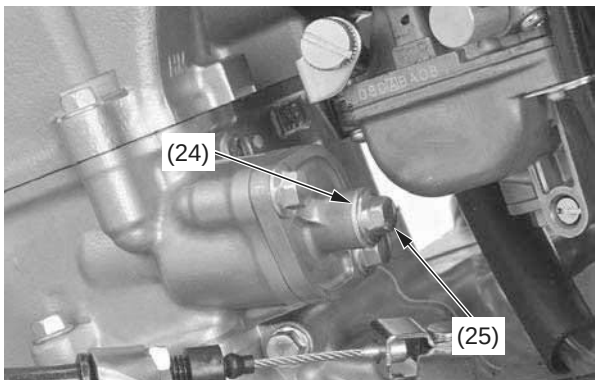
(cont'd)

13. Remove the tensioner stopper (23) from the cam chain tensioner lifter.



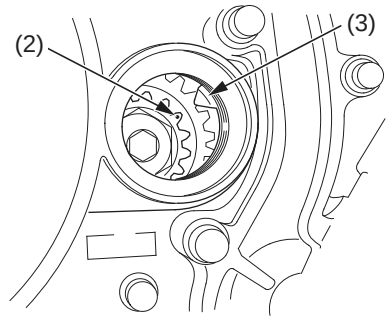

(23) tensioner stopper

14. Install a new sealing washer (24) and tighten the cam chain tensioner lifter cover bolt (25).



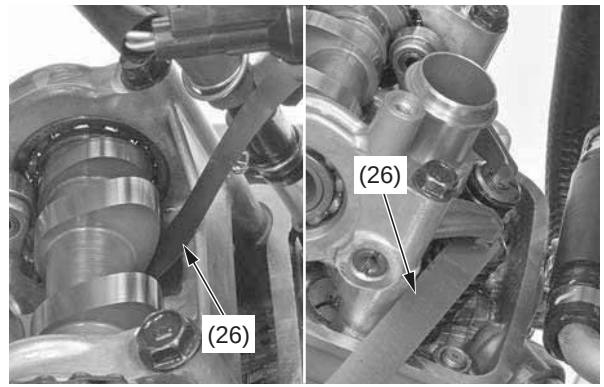

(24) sealing washer
(25) cam chain tensioner lifter cover bolt

15. Rotate the primary drive gear bolt (crankshaft) clockwise two turns and align the punch mark (2) with the index mark (3).



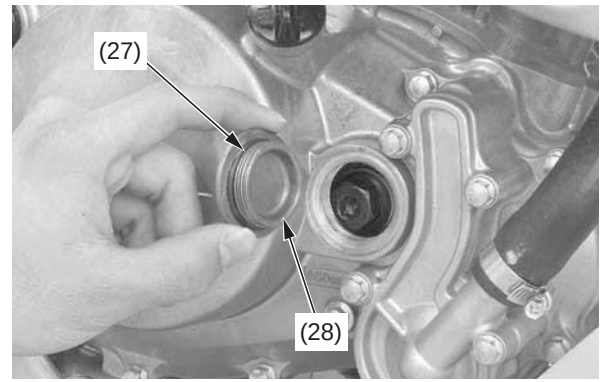

(2) punch mark
(3) index mark

16. Measure the intake valve clearance and exhaust valve clearance by inserting a feeler gauge (26).
Valve Clearance:
IN: 0.006 ± 0.001 in (0.16 ± 0.03 mm)
EX: 0.010 ± 0.001 in (0.26 ± 0.03 mm)



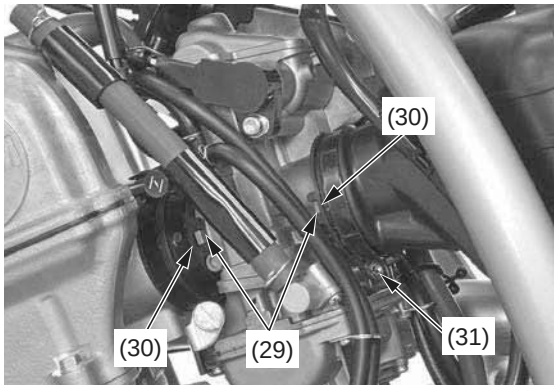

(26) feeler gauge

17. Coat a new O-ring (27) with oil and install it onto the crankshaft hole cap (28).
Apply grease to the crankshaft hole cap threads.
Install and tighten the crankshaft hole cap to the specified torque:
11 lbf·ft (15 N·m, 1.5 kgf·m)

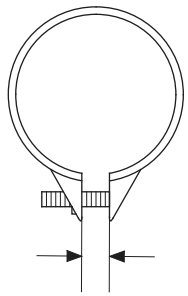



(27) O-ring
(28) crankshaft hole cap

18. Rotate the carburetor and align the tabs (29) on the carburetor with the grooves (30) on the insulator and connecting tube.
19. Tighten the connecting tube clamp screw (31) so the gap between the tabs of the clamp is 0.1 ± 0.04 in (3 ± 1 mm).

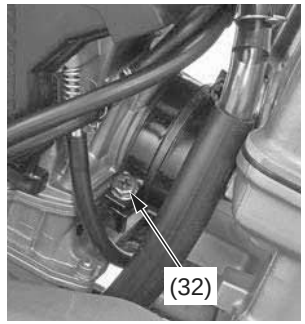


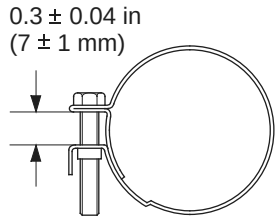

(29) tabs
(30) grooves
(31) connecting tube clamp screw



0.1 ± 0.04 in (3 ± 1 mm)

20. Tighten the insulator band screw (32) so the gap between the tabs of the clamp is 0.3 ± 0.04 in (7 ± 1 mm).

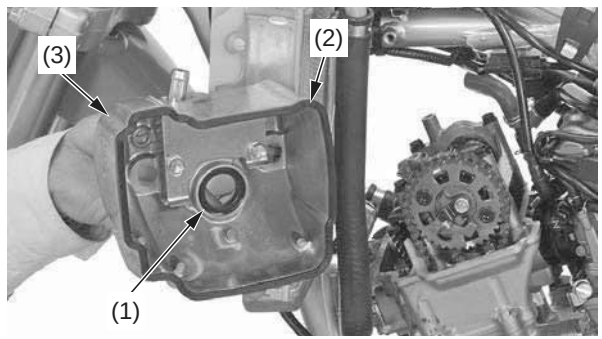



(32) insulator band screw

## Cylinder Head Cover Installation

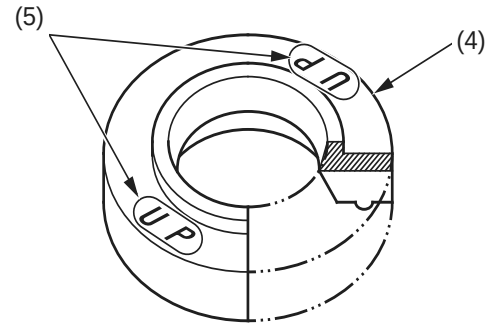
1. Check the spark plug hole packing (1) is in good condition, replace it if necessary.
   Apply oil to the spark plug hole packing.
   Install the spark plug hole packing to the cylinder head cover.
2. Inspect the cylinder head cover packing (2) for damage or deterioration, replace it if necessary.
   Install the cylinder head cover packing into the groove of the cylinder head cover (3).




(1) spark plug hole packing
(2) cylinder head cover packing
(3) cylinder head cover

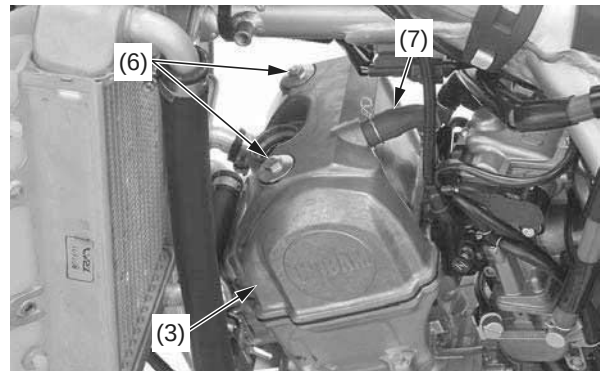
3. Check the rubber seal (4) is in good condition, replace them if necessary.

   Install the rubber seals onto the cylinder head cover with their “UP” marks (5) facing up.




(4) rubber seal
(5) “UP” marks

4. Install the cylinder head cover (3) and tighten the cylinder head cover bolts (6) to the specified torque:
   7 lbf·ft (10 N·m, 1.0 kgf·m)
5. Connect the breather tube (7).

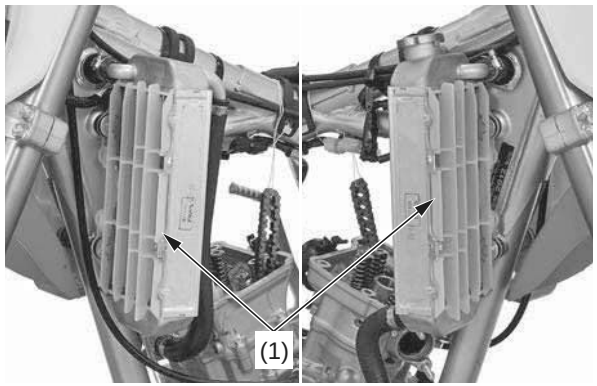



(3) cylinder head cover
(6) cylinder head cover bolts
(7) breather tube

6. Install the spark plug and direct ignition coil (page 52).
7. Install the fuel tank and the seat (pages 31, 29).

## Cylinder Head Removal

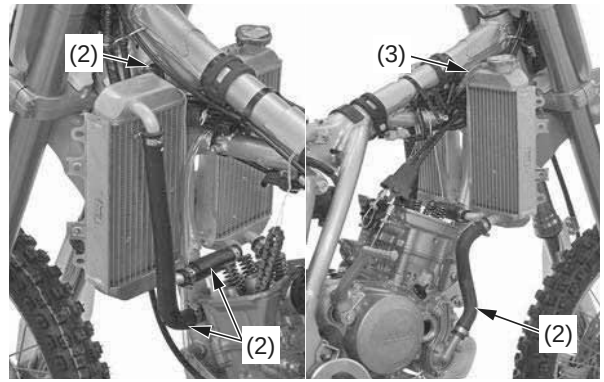
1. Clean the area above the engine before removal to prevent dirt falling into the engine.
2. Drain the radiator coolant after cooling the motorcycle (page 42).
3. Remove the seat and fuel tank (pages 29, 30).
4. Remove the carburetor (page 112).
5. Remove the exhaust pipe (page 87).
6. Remove the spark plug (page 52).
7. Remove the cylinder head cover (page 53).
8. Remove the camshaft holder assembly (page 55).
9. Remove the radiator grills (1)




(1) radiator grills

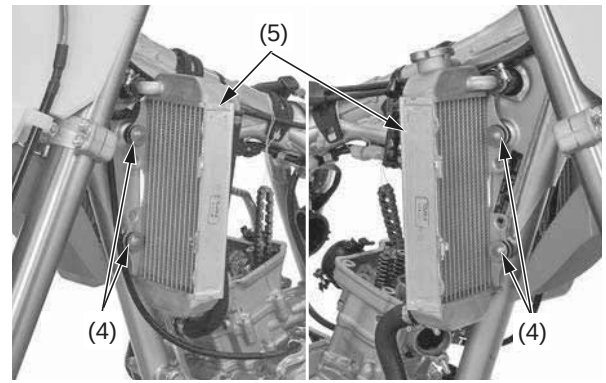
10. Loosen the water hose clamp screws and disconnect the water hoses (2).
11. Disconnect the radiator overflow hose (3).

- Note the direction of the hose clamp.
- Be careful not to damage the radiator core.



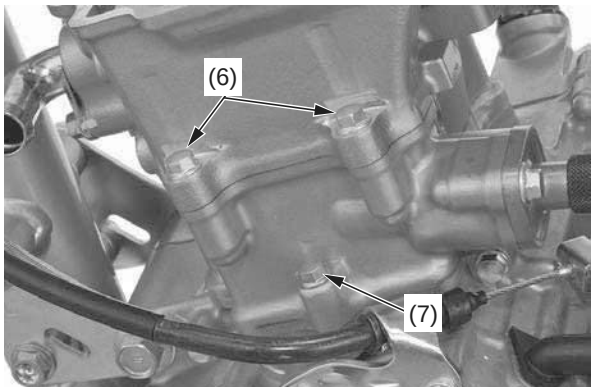

(2) water hoses
(3) radiator overflow hose

12. Remove the radiator mounting bolts/washers (4) and radiators (5).




(4) radiator mounting bolts/washers
(5) radiators

13. Remove the cylinder head bolts (6).
14. Loosen the cylinder bolt (7).



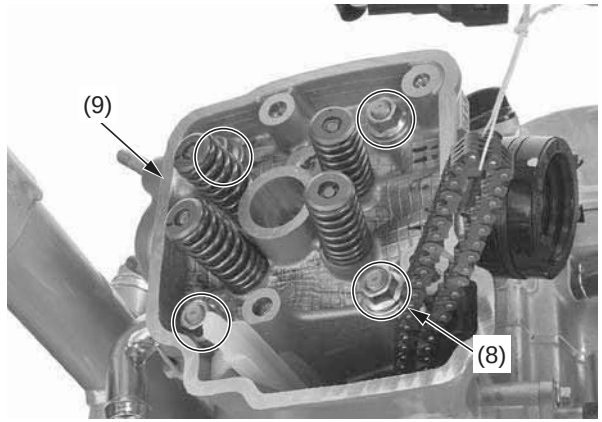

(6) cylinder head bolts
(7) cylinder bolt

15. Remove the cylinder head nuts/washers (8) and cylinder head (9).

Loosen the nuts in a crisscross pattern in two or three steps.

**NOTICE**

*Do not let the nuts, washers and cam chain fall into the crankcase.*

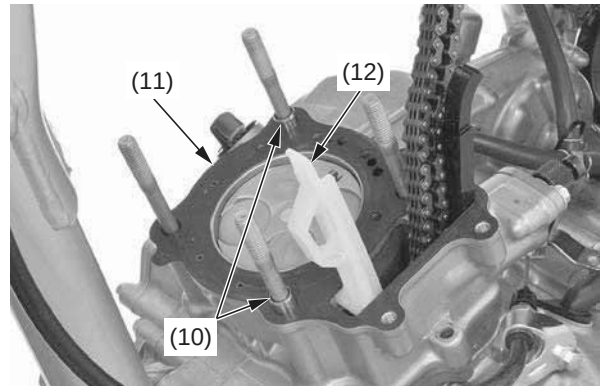



(8) cylinder head nuts/washers
(9) cylinder head

16. Remove the dowel pins (10), cylinder head gasket (11) and cam chain guide (12).

**NOTICE**

*Do not let the dowel pins and cam chain fall into the crankcase.*



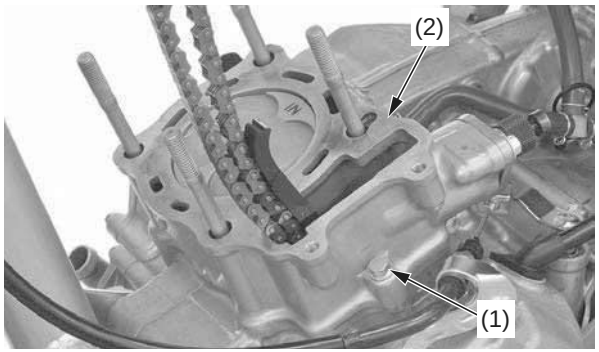

(10) dowel pins
(11) cylinder head gasket
(12) cam chain guide

## Cylinder Removal

1. Remove the cylinder bolt (1) and cylinder (2).

**NOTICE**

*Do not let the cam chain fall into the crankcase. Do not pry on or strike the cylinder.*

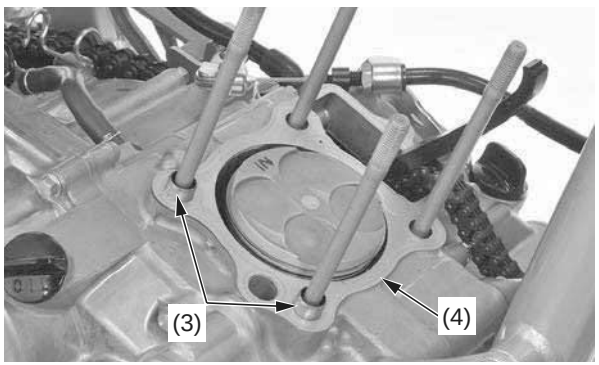



(1) cylinder bolt
(2) cylinder

2. Remove the dowel pins (3) and cylinder gasket (4).

**NOTICE**

*Do not let the dowel pins fall into the crankcase.*

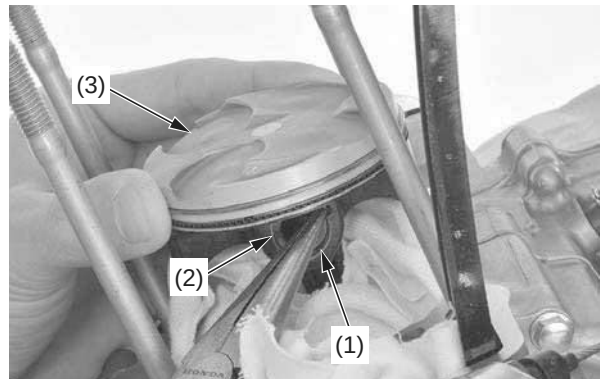



(3) dowel pins
(4) cylinder gasket

## Piston Removal

1. Place clean shop towels in the crankcase to keep the piston pin clips or other parts from falling into the crankcase.
2. Remove the piston pin clips (1) using a pair of needle-nose pliers.
3. Press the piston pin (2) out of the piston (3), and remove the piston.

Under racing conditions, the piston should be replaced after 15.0 hours of running. Replace the piston pin after 15.0 hours of running.



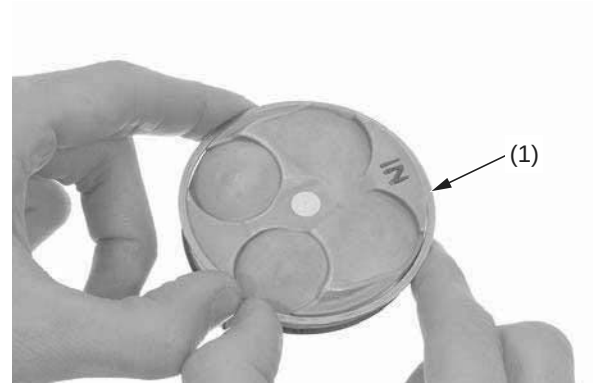

(1) piston pin clip
(2) piston pin
(3) piston

## Piston Ring Removal

Spread each piston ring (1) and remove by lifting it up at a point just opposite the gap.
Under racing conditions, the piston rings should be replaced after 15.0 hours of running.

**NOTICE**

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



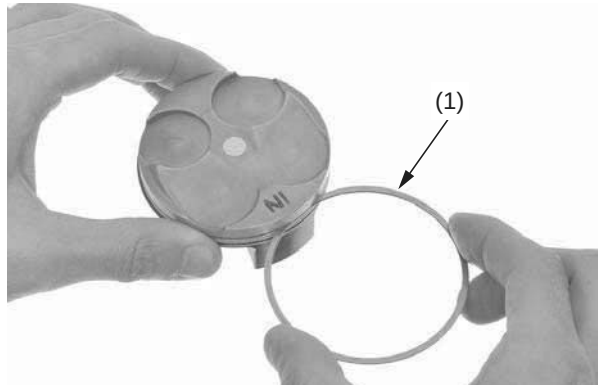

(1) piston ring

## Piston/Piston Pin/Piston Ring Inspection

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

## Piston Ring Installation

1. Remove the carbon deposits from the piston crown and piston ring grooves with the removed ring (1).




(1) removed ring

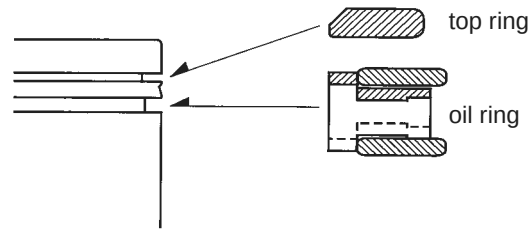
2. Apply engine oil to piston rings and install them.

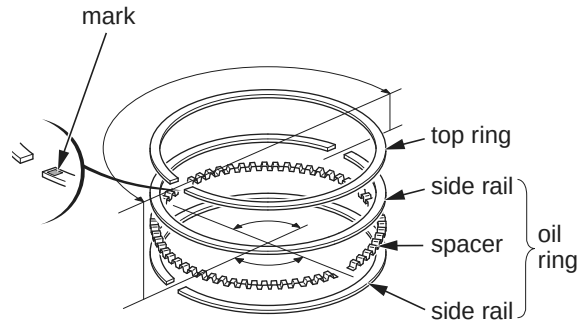
**NOTICE**

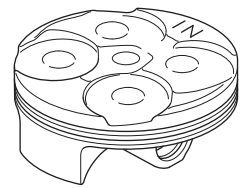
*Do not damage the piston ring by spreading the ends too far.*
*Do not damage the piston during piston ring installation.*

- To install the oil ring, install the spacer first, then install the side rails.
- Install the top ring on the piston with the marking side facing up.

3. After installing the rings they should rotate freely, without sticking.
   Space the ring end gaps 180 degrees apart between top ring and upper side rail.
   Space the ring end gaps 90 degrees apart between upper side rail, spacer and lower side rail.

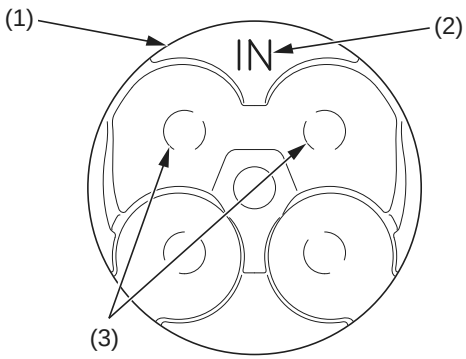


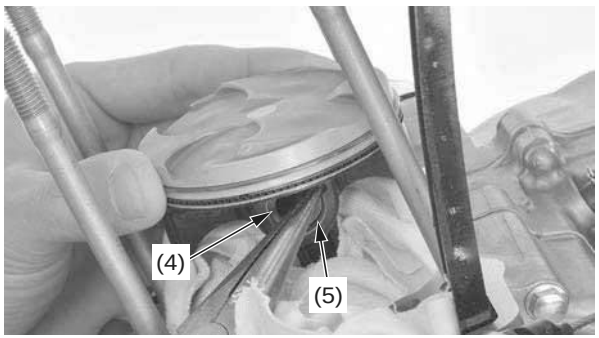



## Piston Installation

1. Place clean shop towels over the crankcase opening to keep the piston pin clips from falling into the crankcase.
2. Apply molybdenum disulfide oil (a mixture of 1/2 engine oil and 1/2 molybdenum disulfide grease containing more than 3% molybdenum disulfide additive) to the inner surface of the connecting rod small end.
3. Place the piston (1) with the "IN" mark (2) and/or the large valve recesses (3) facing the intake side of the engine.
4. Apply engine oil to the piston pin (4) and inner surface of the piston pin hole.
   Install the piston pin and new piston pin clips (5).

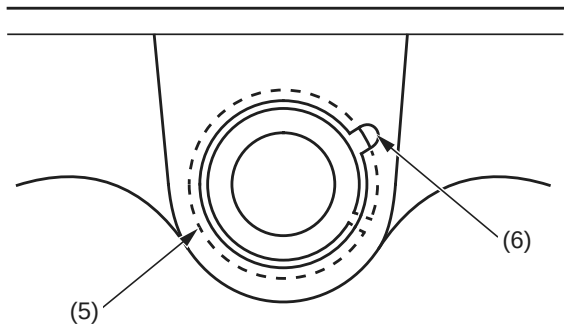



(1) piston
(2) "IN" mark
(3) large valve recesses
(4) piston pin
(5) piston pin clip

**NOTICE**

*Use new piston pin clips. Never reuse old piston pin clips.*
*Do not let the piston pin clips fall into the crankcase.*
*Do not align the piston pin clip end gap with the piston cut-out (6).*



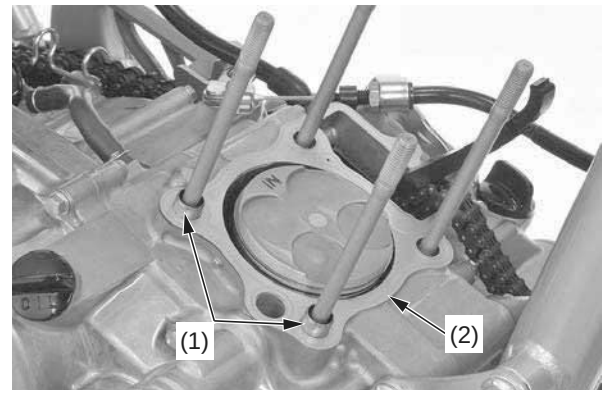

(5) piston pin clip
(6) piston cut-out

## Cylinder Installation

1. Clean off any gasket material from the gasket surface of the crankcase, being careful not to let any material fall into the crankcase. Be careful not to remove any metal from the gasket surface.
2. Remove the shop towel. Do not let any gasket debris fall into the crankcase, being careful not to let any material fall into the crankcase.
   Be careful not to remove any metal from the gasket surface.
3. Install the dowel pins (1) and a new cylinder gasket (2).

**NOTICE**

*Do not let the dowel pins fall into the crankcase.*



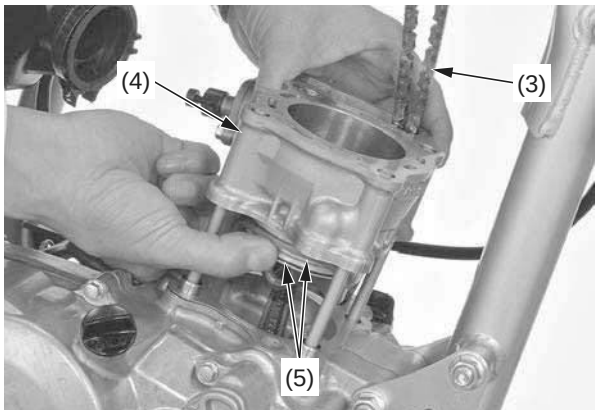

(1) dowel pins
(2) cylinder gasket

4. Clean any gasket material off the cylinder.

5. Apply clean engine oil to the cylinder wall, piston outer surface and piston rings.
   Route the cam chain (3) through the cylinder (4).
   Install the cylinder over the piston rings by hand while compressing the piston rings (5).

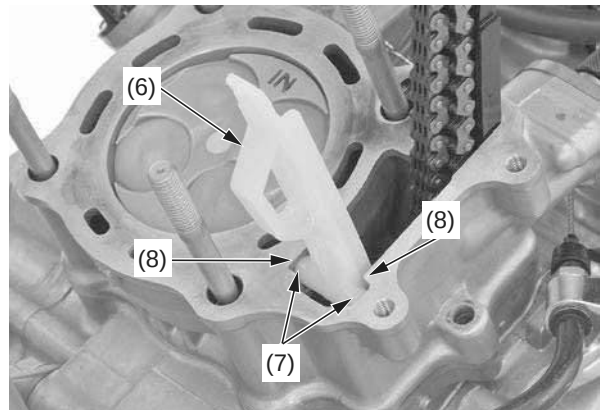
**NOTICE**

*Do not damage the piston rings and cylinder wall.*




(3) cam chain
(4) cylinder
(5) piston rings

6. Install the cam chain guide (6) and fit the cam chain guide tabs (7) in the cylinder cut-outs (8).
   Push the guide until it bottoms in the crankcase guide hole.



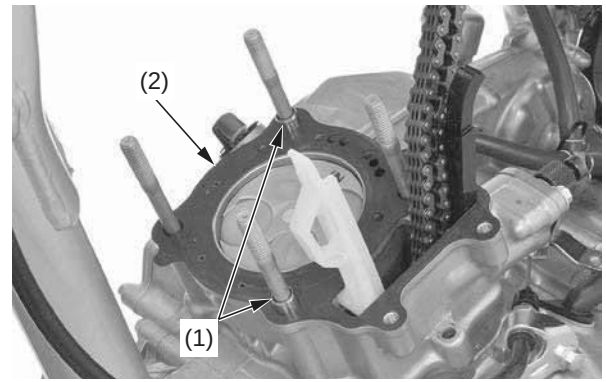

(6) cam chain guide
(7) cam chain guide tabs
(8) cylinder cut-outs

## Cylinder Head Installation

1. Install the dowel pins (1) and a new cylinder head gasket (2).

**NOTICE**

*Do not let the dowel pins fall into the crankcase.*




(1) dowel pins
(2) cylinder head gasket

(cont'd)

2. Route the cam chain through the cylinder head. Install the cylinder head (3).

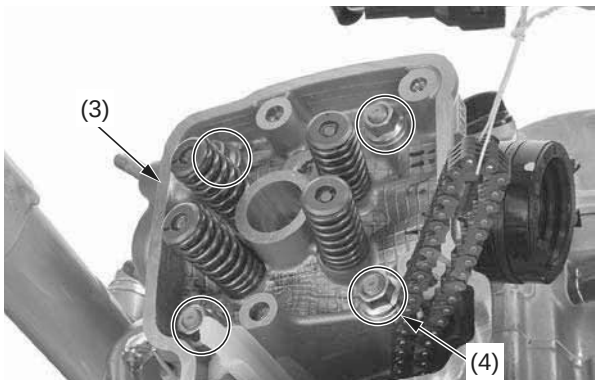
**NOTICE**

*Do not damage mating surfaces when installing the cylinder head.*

3. Apply engine oil to the cylinder head nut threads and seating surfaces.
   Install the washers and cylinder head nuts (4). Tighten the cylinder head nuts in a crisscross pattern in two or three steps to the specified torque:
   21 lbf·ft (29 N·m, 3.0 kgf·m)

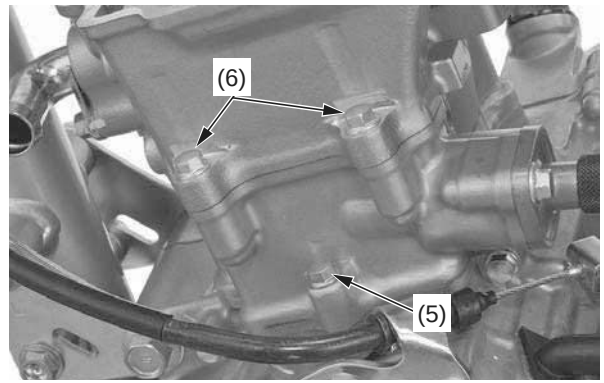
**NOTICE**

*Do not let the washers and nuts fall into the crankcase.*



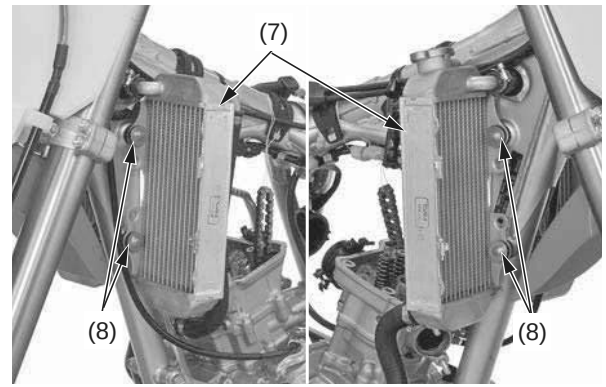

(3) cylinder head
(4) cylinder head nuts/washers

4. Install the cylinder bolt (5) and cylinder head bolts (6) and tighten them to the specified torque:
   7 lbf·ft (10 N·m, 1.0 kgf·m)



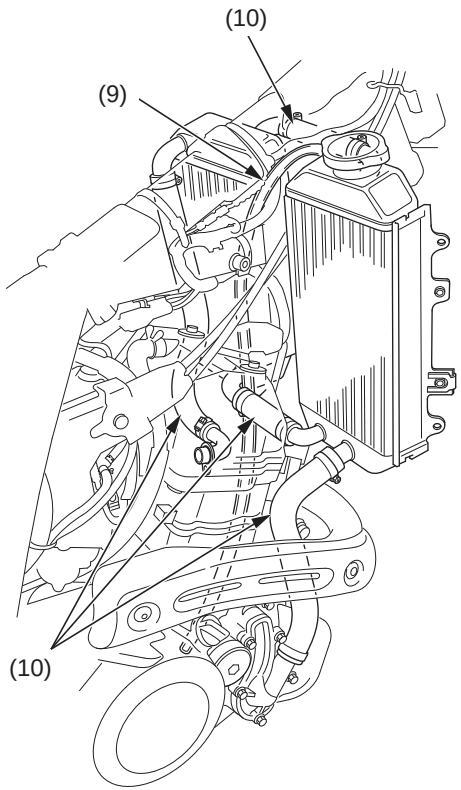

(5) cylinder bolt
(6) cylinder head bolts

5. Install the radiators (7) and tighten the radiator mounting bolts/washers (8).




(7) radiators
(8) radiator mounting bolts/washers

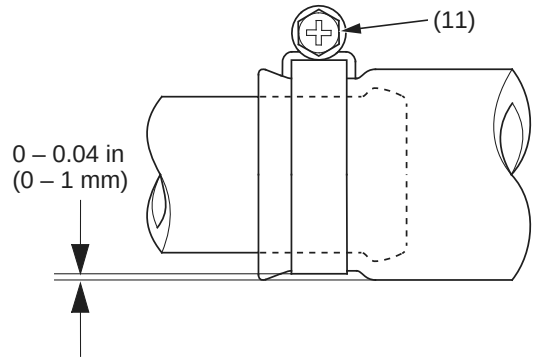
6. Connect the radiator overflow hose (9).
7. Connect the water hoses (10).




(9) radiator overflow hose
(10) water hoses

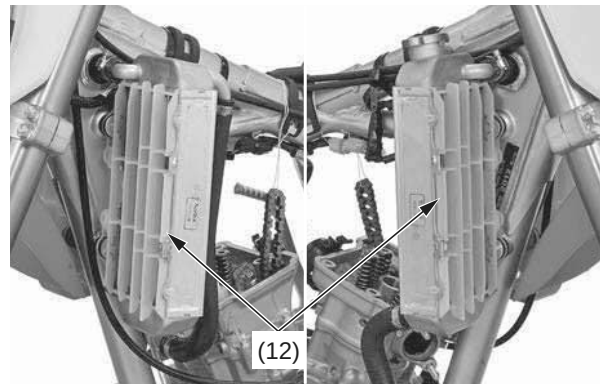
8. Tighten the hose clamp screws (11) as illustrated below.

- Route the hoses correctly.
- Be careful not to damage the radiator core.




(11) hose clamp screw

9. Install the radiator grills (12).




(12) radiator grills

10. Install the camshaft holder assembly (page 58).
11. Install the cylinder head cover (page 61).
12. Install the spark plug and direct ignition coil (page 52).
13. Install the exhaust pipe (page 87).
14. Install the carburetor (page 116).
15. Install the fuel tank (page 31) and seat (page 29).
16. Pour a fresh recommended coolant mixture (page 41).

Check for the following:
– compression leaks
– abnormal engine noise
– secondary air leaks
– coolant leaks

# Suspension

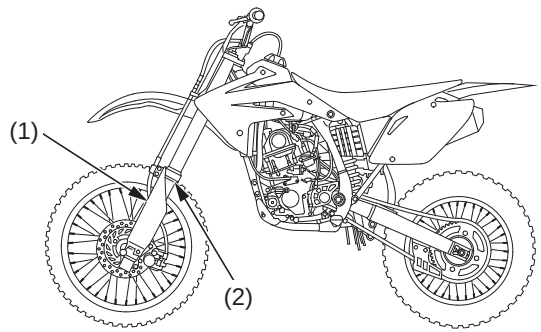
Refer to *Safety Precautions* on page 19.

Loose, worn, or damaged suspension components may adversely affect the handling and stability of your CRF. If any suspension components appear worn or damaged, see your dealer for further inspection. Your dealer is qualified to determine whether or not replacement parts or repairs are needed.

## Front Suspension Inspection

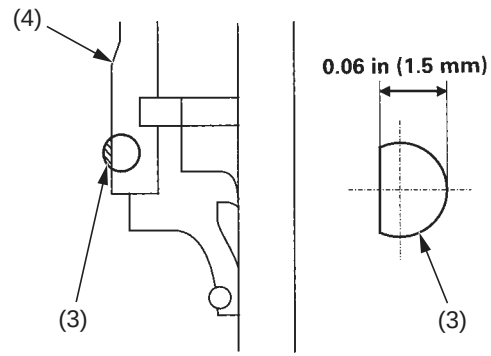
- When your CRF is new, break it in for approximately 1 hour to ensure that the suspension has worked in (page 16).
- After break-in, test run your CRF with the front suspension at the standard setting before attempting any adjustments.
- For optimum fork performance, we recommend that you disassemble and clean the fork after riding your CRF for 3 hours. See page 94 for fork disassembly.
- Replace the fork oil every 3 races or 7.5 hours of running. See pages 73, 74 for oil level adjustment after changing the fork oil.
- Use HP Fork Oil, SS-19 or an equivalent which contains special additives to assure maximum performance of your CRF'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 *Suspension Adjustment Guidelines* (page 107). Make all rebound and compression damping adjustments in 1/4 turn increments. (Adjusting 1/2 or more turns 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.

1. Make sure that the fork protectors (1) and dust seals (2) 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 CRF is ridden.

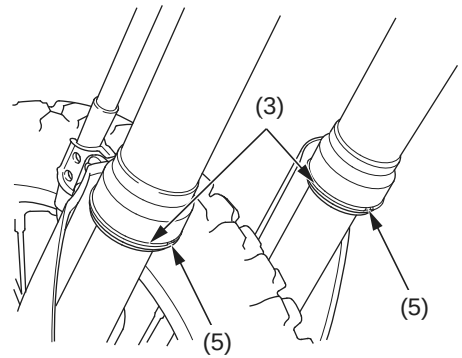



(1) fork protector (2) dust seal

3. Inspect the wear rings (3) for wear or damage. Replace the wear ring if it is 0.06 in (1.5 mm) or flat with the outer tube (4).
   Remove the fork leg when replacing the wear ring (page 94).
   Install the wear ring with its end gap (5) facing rearward.

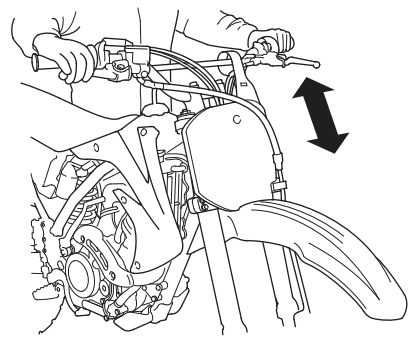



(3) wear ring (4) outer tube




(3) wear rings (5) end gaps

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



## Rear Suspension Inspection

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 pre-load and damping adjustments (compression and rebound) should be adjusted for the rider's weight and track conditions (pages 104, 106, 107).

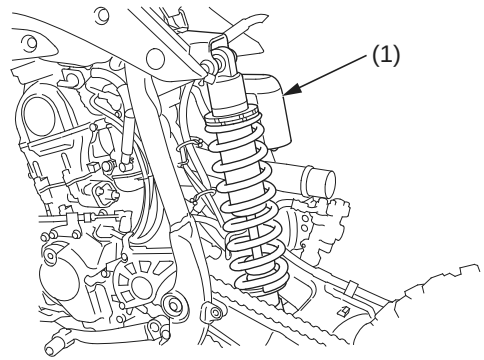
Do not attempt to disassemble, service, or dispose of the damper; see your dealer. The instructions found in this owner's manual are limited to adjustments of the shock assembly only.

- When your CRF is new, break it in for approximately 1 hour with the standard suspension settings before attempting to adjust the rear suspension.
- Refer to *Suspension Adjustment Guidelines* (page 107). Make all compression and rebound damping adjustments in 1/4 turn increments. (Adjusting 1/2 or more 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 both the compression and rebound damping adjusters in 1/4 turn increments until the suspension feels approximately "right". (Turning just one adjuster, rather than both, may cause a loss of balance between compression and rebound damping.) After adjusting both adjusters simultaneously, suspension may be fine-tuned by turning either the compression or rebound damping adjuster in 1/4 turn increments.
- If you have a problem finding an acceptable adjustment, return to the standard position and begin again.

1. Bounce the rear of the motorcycle up and down and check for smooth suspension action.




2. Remove the subframe (page 32).
3. Check for a broken or collapsed spring.
4. Check the rear shock absorber (1) for a bent shaft or oil leaks.




(1) rear shock absorber

5. 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 dealer.

## Recommended Fork Oil

| | |
|---|---|
| suggested oil | HP Fork Oil, SS-19 |

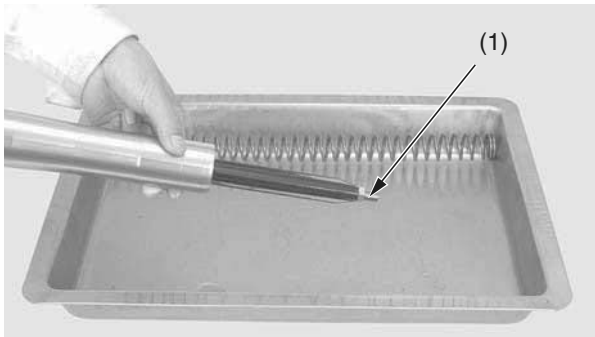
## Fork Oil Change

1. Remove the fork cap, and fork spring as described in Front Suspension Oil Level (page 94).
2. Pour out the fork oil by pumping the fork tube and piston rod (1) eight - ten times with the rod end down as shown.

Pour the drained oil into a suitable container and dispose of it in an approved manner (page 130).

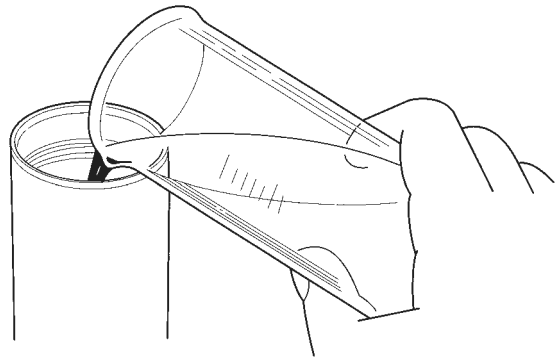
**NOTICE**

*Improper disposal of drained oil is harmful to the environment.*

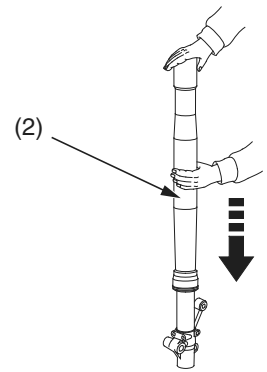



(1) piston rod

3. Pour half of the recommended fork oil into the fork slider and fork tube.

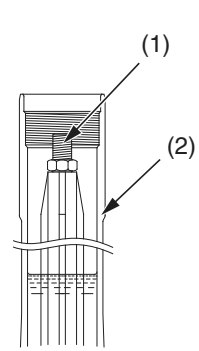


4. Raise the fork tube (2) and cover the top of the tube with your hand. Compress the fork tube fully, then release your hand. Use your other hand to secure the fork tube. Repeat this procedure three times.

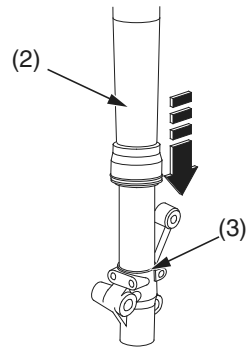



(2) fork tube

5. Pour the remaining fork oil into the piston rod until a little oil flows out of the top of the rod. Pump the piston rod slowly eight - ten times through a stroke of 10 in (25 cm). Gently slide the fork tube down onto the lower end of the slider pipe (3).
   Wait about 5 minutes.

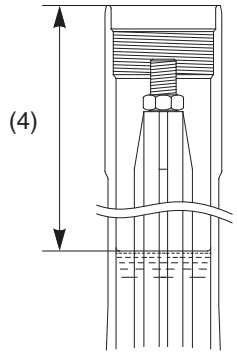



(1) piston rod
(2) fork tube



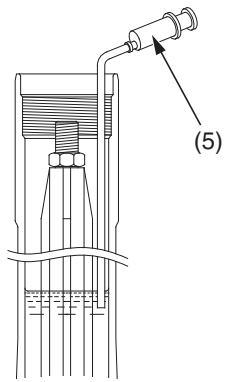

(3) lower end of the slider pipe

6. With the fork tube held upright, measure the oil level (4) from the top of the tube.




(4) oil level

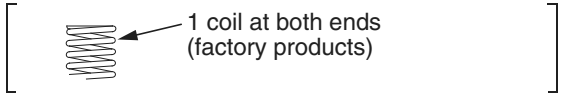
7. Adjust the oil level by adding or removing the oil with an after market syringe (5).




(5) syringe

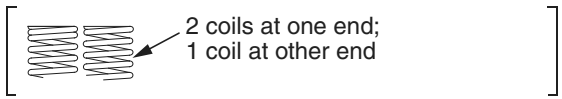
## Fork Oil Level (CRF150R)

*Standard 19.0 lbf/in (3.33 N/mm) Fork Spring*



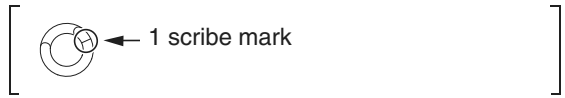

| | | |
|---|---|---|
| Standard oil level [capacity] | 4.88 in<br>124.0 mm<br>[12.04 US oz<br>(356.0 $cm^3$)] | |
| Maximum oil level [capacity] | 4.83 in<br>122.8 mm<br>[12.07 US oz<br>(357.0 $cm^3$)] | Slightly stiffer as it nears full compression. |
| Minimum oil level [capacity] | 7.43 in<br>188.7 mm<br>[10.27 US oz<br>(303.7 $cm^3$)] | Slightly softer as it nears full compression. |

*Optional Softer 17.9 lbf/in (3.14 N/mm) Fork Spring*




| | | |
|---|---|---|
| Standard oil level [capacity] | 5.02 in<br>127.5 mm<br>[11.95 US oz<br>(353.2 $cm^3$)] | |
| Maximum oil level [capacity] | 5.02 in<br>127.5 mm<br>[11.95 US oz<br>(353.2 $cm^3$)] | Slightly stiffer as it nears full compression. |
| Minimum oil level [capacity] | 7.61 in<br>193.4 mm<br>[10.14 US oz<br>(299.9 $cm^3$)] | Slightly softer as it nears full compression. |

*Optional Stiffer 20.2 lbf/in (3.53 N/mm) Fork Spring*

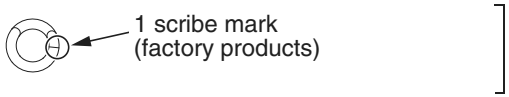



| | | |
|---|---|---|
| Standard oil level [capacity] | 5.04 in<br>128.1 mm<br>[11.93 US oz<br>(352.7 $cm^3$)] | |
| Maximum oil level [capacity] | 5.04 in<br>128.1 mm<br>[11.93 US oz<br>(352.7 $cm^3$)] | Slightly stiffer as it nears full compression. |
| Minimum oil level [capacity] | 7.64 in<br>194.1 mm<br>[10.13 US oz<br>(299.4 $cm^3$)] | Slightly softer as it nears full compression. |

(cont'd)

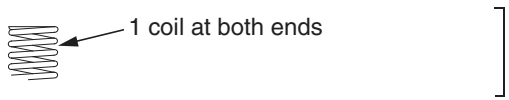
## Fork Oil Level (CRF150RB)

*Standard 20.2 lbf/in (3.53 N/mm) Fork Spring*



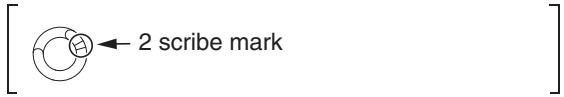

| | | |
|---|---|---|
| Standard oil level [capacity] | 5.55 in<br>141.0 mm<br>[11.57 US oz<br>(342.0 cm³)] | |
| Maximum oil level [capacity] | 5.16 in<br>131.0 mm<br>[11.84 US oz<br>(350.1 cm³)] | Slightly stiffer as it nears full compression. |
| Minimum oil level [capacity] | 7.63 in<br>193.7 mm<br>[10.13 US oz<br>(299.4 cm³)] | Slightly softer as it nears full compression. |

*Optional Softer 19.0 lbf/in (3.33 N/mm) Fork Spring*




| | | |
|---|---|---|
| Standard oil level [capacity] | 5.34 in<br>135.7 mm<br>[11.71 US oz<br>(346.3 cm³)] | |
| Maximum oil level [capacity] | 4.95 in<br>125.7 mm<br>[11.99 US oz<br>(354.4 cm³)] | Slightly stiffer as it nears full compression. |
| Minimum oil level [capacity] | 7.42 in<br>188.4 mm<br>[10.27 US oz<br>(303.7 cm³)] | Slightly softer as it nears full compression. |

*Optional Stiffer 21.3 lbf/in (3.73 N/mm) Fork Spring*




| | | |
|---|---|---|
| Standard oil level [capacity] | 5.43 in<br>137.9 mm<br>[11.65 US oz<br>(344.5 cm³)] | |
| Maximum oil level [capacity] | 5.04 in<br>127.9 mm<br>[11.92 US oz<br>(352.6 cm³)] | Slightly stiffer as it nears full compression. |
| Minimum oil level [capacity] | 7.50 in<br>190.6 mm<br>[10.21 US oz<br>(301.9 cm³)] | Slightly softer as it nears full compression. |

Be sure to check the oil level. Some oil will be left in the fork tube when the oil is drained and causes the oil level to be raised slightly.
Be sure the oil level is the same in both fork legs. If a syringe is not available, first set the oil level somewhat lower than normal, then add small amounts of oil until the correct level is obtained, measuring the level each time oil is added.

8. Install the fork spring and fork cap.

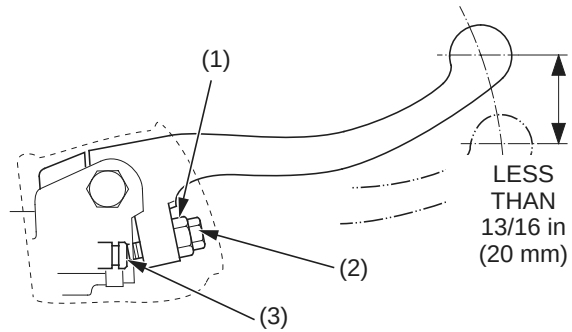
Refer to *Safety Precautions* on page 19.

Both the front and rear brakes are the hydraulic disc type. As the brake pads wear, the brake fluid level will drop. A leak in the system will also cause the level to drop.

Frequently inspect the system to ensure there are no fluid leaks. Periodically inspect the brake fluid level and the brake pads for wear.

If the front brake lever or rear brake pedal freeplay does not feel within the normal range while riding, check the brake pads. If they are not worn beyond the recommended limit (page 78), there is probably air in the brake system. Refer to the Honda Service Manual or see your dealer to have the air bled from the system.

## Front Brake Lever Adjustment



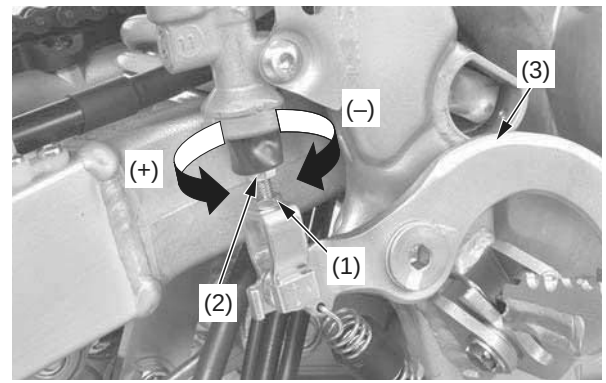

(1) lock nut
(2) adjuster
(3) piston

1. Loosen the lock nut (1).
2. To position the brake lever farther away from the handgrip, turn the adjuster (2) clockwise. To position the brake lever closer to the handgrip, turn the adjuster counterclockwise.
3. While holding the adjuster, tighten the lock nut to the specified torque:
   4.4 lbf·ft (5.9 N·m, 0.6 kgf·m)
4. Apply the brake, release it, then spin the wheel and check that it rotates freely. Repeat this procedure several times.
5. Check freeplay by pulling in slowly on the front brake lever until the brake starts to engage.
   Freeplay: LESS THAN 13/16 in (20 mm)
6. Apply silicone grease to the contacting faces of the adjuster and piston (3).

## Rear Brake Pedal Height

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

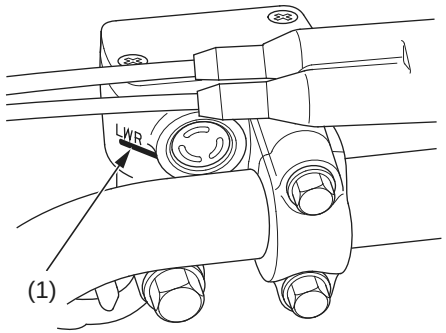
1. Loosen the lock nut (1) and turn the adjusting bolt (2) in direction (+) to raise the rear brake pedal (3) or in direction (–) to lower it.
2. Tighten the lock nut to the specified torque at the desired pedal height:
   4.4 lbf·ft (5.9 N·m, 0.6 kgf·m)




(1) lock nut
(2) adjusting bolt
(3) rear brake pedal
(+) raise the pedal height
(–) lower the pedal height

## Fluid Level Inspection

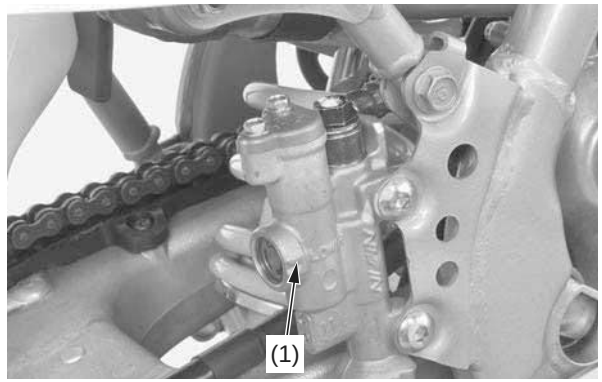
Front Brake Fluid Level Check




(1) LWR mark

With the motorcycle in an upright position, check the fluid level.
It should be above the LWR mark (1). If the level is at or below the LWR mark, check the brake pads for wear (page 78).
Worn brake pads should be replaced. If the pads are not worn, have your brake system inspected for leaks.
If the brake lever freeplay 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 dealer for brake bleeding.

Rear Brake Fluid Level Check




(1) LOWER mark

With the motorcycle in an upright position, check the fluid level.
It should be above the LOWER mark (1). If the level is at or below the LOWER mark, check the brake pads for wear (page 78).
Worn brake pads should be replaced. If the pads are not worn, have your brake system inspected for leaks.
If the brake pedal freeplay 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 dealer for brake bleeding.

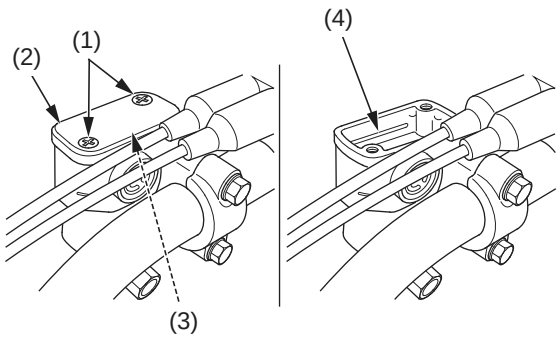
Other Checks:
Make sure there are no fluid leaks.
Check for deterioration or cracks in the hoses and fittings.

Adding Front Brake Fluid

**NOTICE**

*Spilled brake fluid will severely damage instrument lenses and painted surfaces. It is also harmful to some rubber parts. Be careful whenever you remove the reservoir cap; make sure the reservoir is horizontal first.*

- Always use fresh DOT 4 brake fluid from a sealed container when servicing the system. Do not mix different types of fluid, they may not be compatible.
- The recommended brake fluid is Pro Honda DOT 4 brake fluid or an equivalent.




(1) front brake reservoir cap screws
(2) reservoir cap
(3) diaphragm
(4) upper level mark

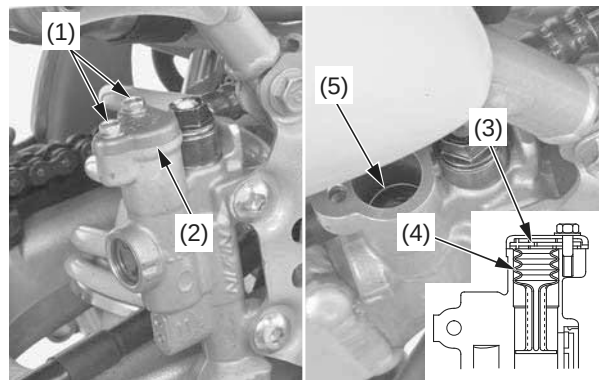
1. Remove the front brake reservoir cap screws (1), reservoir cap (2) and diaphragm (3).
2. Fill the reservoir with DOT 4 brake fluid to the upper level mark (4). Do not overfill.
3. Install the diaphragm and reservoir cap.
4. Tighten the front brake reservoir cap screws to the specified torque:
   1.1 lbf·ft (1.5 N·m, 0.2 kgf·m)

Adding Rear Brake Fluid

**NOTICE**

*Spilled brake fluid will severely damage instrument lenses and painted surfaces. It is also harmful to some rubber parts. Be careful whenever you remove the reservoir cap; make sure the reservoir is horizontal first.*

- Always use fresh DOT 4 brake fluid from a sealed container when servicing the system. Do not mix different types of fluid, they may not be compatible.
- The recommended brake fluid is Pro Honda DOT 4 brake fluid or an equivalent.




(1) rear brake reservoir cap bolts
(2) reservoir cap
(3) set plate
(4) diaphragm
(5) upper level mark

1. Remove the rear brake reservoir cap bolts (1), reservoir cap (2), set plate (3) and diaphragm (4).
2. Fill the reservoir with DOT 4 brake fluid to the upper level mark (5). Do not overfill.
3. Set the diaphragm as shown.
4. Install the set plate and reservoir cap.
5. Tighten the rear brake reservoir cap bolts to the specified torque:
   1.1 lbf·ft (1.5 N·m, 0.2 kgf·m)

Other Checks:

Make sure there are no fluid leaks.

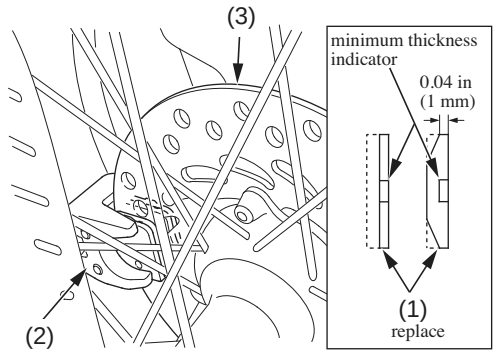
Check for deterioration or cracks in the hoses and fittings.

## Brake Pad Wear

Brake pad wear depends on the severity of usage and track conditions. (Generally, the pads will wear faster on wet and dirty tracks) Inspect the pads at each regular maintenance interval (page 21).

Front Brake Pads

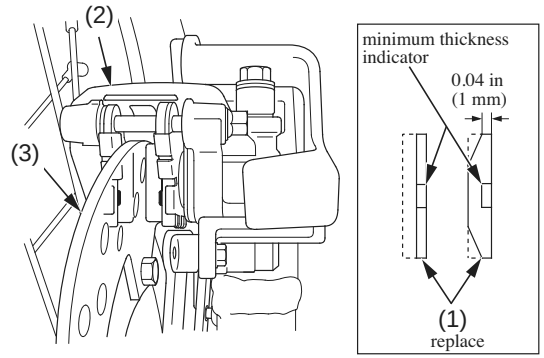
Inspect the brake pads (1) through the front wheel to determine the pad wear. If either pad is worn anywhere to a thickness of 0.04 in (1 mm), both pads must be replaced.




(1) brake pads
(2) front brake caliper
(3) brake disc

Rear Brake Pads

Inspect the brake pads (1) 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.




(1) brake pads
(2) rear brake caliper
(3) brake disc

## Other Inspections

Check that the brake lever and pedal assemblies are positioned properly and the securing bolts are tight.

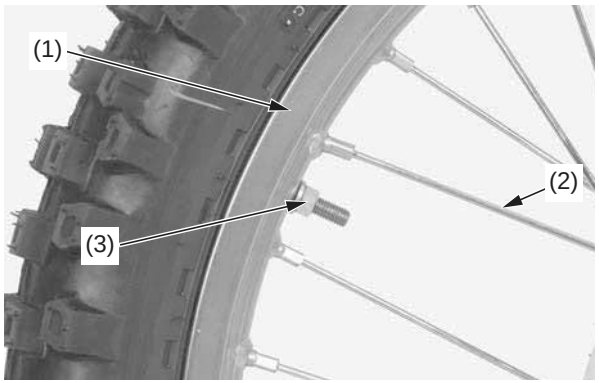
Make sure there are no fluid leaks. Check for deterioration or cracks in the hoses and fittings.

Refer to *Safety Precautions* on page 19.

Keeping the wheels true (round) and maintaining correct spoke tension is critical to safe motorcycle operation. During the first few rides, spokes will loosen more rapidly due to the initial seating of the parts. Excessively loose spokes may result in instability at high speeds and the possible loss of control. It's also important that the rim locks are secure to prevent tire slippage.

It is not necessary to remove the wheels to perform the recommended service in the Maintenance Schedule (page 21). However, information for wheel removal is provided for emergency situations.

## Wheel Rims & Spokes




(1) wheel rim
(2) spoke
(3) rim lock

1. Inspect the wheel rims (1) and spokes (2) for damage.
2. Tighten, any loose spokes and rim locks (3) to the specified torque:
   Spokes: 2.7 lbf·ft (3.7 N·m, 0.4 kgf·m)
   Rim Locks: 9 lbf·ft (12.4 N·m, 1.3 kgf·m)
3. Check wheel rim runout. If runout is noticeable, see the Honda Service Manual for inspection instructions.

## Axles & Wheel Bearings

See the Honda Service Manual for inspection information:

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

# Tires & Tubes

Refer to *Safety Precautions* on page 19.

To safely operate your CRF, the tires must be the proper type (off-road) and size, in good condition with adequate tread, and correctly inflated.

**⚠ WARNING**

Using tires that are excessively worn or improperly inflated can cause a crash in which you can be seriously hurt or killed.

Follow all instructions in this owner's manual regarding tire inflation and maintenance.

The following pages give detailed information on how and when to check your air pressure, how to inspect your tires for wear and damage, and our recommendations on tire repair and replacement.

## Air Pressure

Properly inflated tires provide the best combination of handling, tread life, and riding comfort. Generally, underinflated tires wear unevenly, adversely affect handling, and are more likely to fail from being overheated.
Underinflated tires can also cause wheel damage on hard terrain. Overinflated tires make your CRF ride harshly, are more prone to damage from surface hazards, and wear unevenly.

Make sure the valve stem caps are secure. If necessary, install new caps.

Always check air pressure when your tires are "cold." If you check air pressure when your tires are "warm" — even if your CRF has only been ridden for a few miles — the readings will be higher. If you let air out of warm tires to match the recommended cold pressures, the tires will be underinflated.
The correct "cold" tire pressures are:

| | |
|---|---|
| Front | 15 psi (100 kPa, 1.0 kgf/cm$^2$) |
| Rear | 15 psi (100 kPa, 1.0 kgf/cm$^2$) |

If you decide to adjust tire pressures for a particular riding condition, make changes a little at a time.

## Inspection

Take time to inspect your tires and wheels before you ride.

- Inspect carefully for bumps or bulges in the side of the tire or the tread. Replace any tire that has a bump or bulge.
- Look closely for cuts, slits, or cracks in the tires. Replace a tire if you can see fabric or cord.
- Check for rocks or other objects embedded in the tire or tread. Remove any objects.
- Check the position of both valve stems. A tilted valve stem indicates the tube is slipping inside the tire or the tire is slipping on the rim.

## Tube Replacement

If a tube is punctured or damaged, you should replace it as soon as possible. A repaired tube may not have the same reliability as a new one, and it may fail while you are riding.

Use a replacement tube equivalent to the original.

## Tire Replacement

The tires that came on your CRF were designed to provide a good combination of handling, braking, durability, and comfort across a broad range of riding conditions.

**⚠ WARNING**

Installing improper tires on your motorcycle can affect handling and stability. This can cause a crash in which you can be seriously hurt or killed.

Always use the size and type of tires recommended in this owner's manual.

CRF150R

| | | | |
|---|---|---|---|
| Front | AC | 70/100 – 17 40M | |
| | | DUNLOP | MX71F |
| | CM | 70/100 – 17 40M | |
| | | BRIDGESTONE | M23 |
| Rear | AC | 90/100 – 14 49M | |
| | | DUNLOP | MX71 |
| | CM | 90/100 – 14 49M | |
| | | BRIDGESTONE | M22 |
| Tire type | | bias – ply, tube | |

CRF150RB

| | | | |
|---|---|---|---|
| Front | AC | 70/100 – 19 42M | |
| | | DUNLOP | MX71F |
| | CM | 70/100 – 19 42M | |
| | | BRIDGESTONE | M61 |
| Rear | AC | 90/100 – 16 52M | |
| | | DUNLOP | MX71 |
| | CM | 90/100 – 16 52M | |
| | | BRIDGESTONE | M58 |
| Tire type | | bias – ply, tube | |

- Use a replacement tire equivalent to the original.
- Replace the tube any time you replace a tire. The old tube will probably be stretched and, if installed in a new tire, could fail.

# Drive Chain

Refer to *Safety Precautions* on page 19.

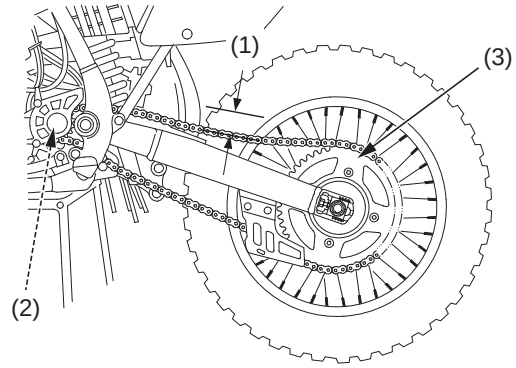
The service life of the chain depends on proper lubrication and adjustment. Poor maintenance can cause premature wear or damage to the drive chain or sprockets.

When the motorcycle is ridden on unusually dusty or muddy tracks, more frequent maintenance will be necessary.

Before servicing your drive chain, turn the engine OFF, raise the rear wheel off the ground by placing the optional workstand or equivalent support under the engine and check that your transmission is in neutral.

## Inspection

1. Turn the engine off, raise the rear wheel off the ground by placing an optional workstand or equivalent support under the engine and shift the transmission into neutral.
2. Check the drive chain slack (1) in the upper drive chain run midway between the drive (2) and driven sprockets (3). Drive chain slack should allow the following vertical movement by hand:
   1 3/8 – 1 3/4 in (35 – 45 mm)




(1) drive chain slack
(2) drive sprocket
(3) driven sprocket

3. Check drive chain slack at several points along the chain. The slack should remain constant. If it isn't, some links may be kinked and binding. Lubricating the chain will often eliminate binding and kinking.

**NOTICE**

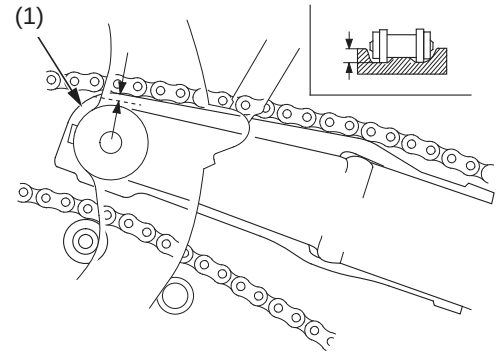
*Excessive chain slack may allow the drive chain to damage the engine cases.*

4. Inspect the drive chain for:
   - damaged rollers
   - loose pins
   - dry or rusted links
   - kinked or binding links
   - excessive wear

Replace the drive chain (page 84) if it has damaged rollers, loose pins, or kinks that cannot be free. Lubricate the drive chain (page 83) if it appears dry or shows signs of rust. Lubricate any kinked or binding links and work them free.
Adjust chain slack if needed (page 83).

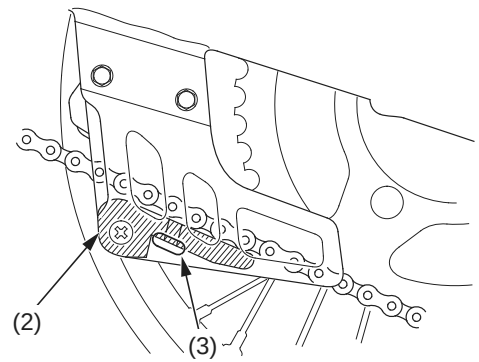
## Drive Chain Sliders

1. Check the chain slider (1) for wear.
   If the wear is 0.2 in (5 mm) or more, replace it.




(1) chain slider

2. Check the chain guide slider (2) for wear.
   Replace the chain guide slider if the chain is visible through the wear inspection window (3).

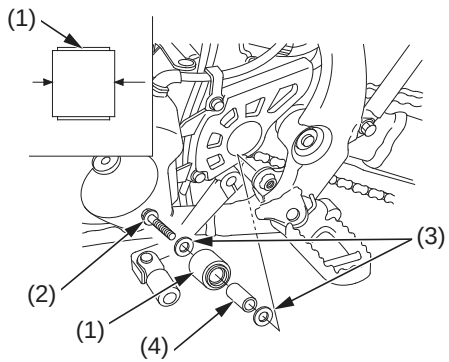



(2) chain guide slider
(3) wear inspection window

## Drive Chain Rollers

1. Check the drive chain roller (1) for wear or damage.
2. Measure the outer diameter of the drive chain roller and replace it if below the service limit.
   Service Limit: 0.7 in (18 mm)

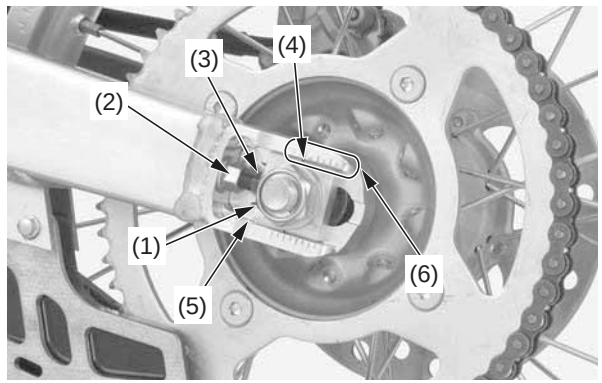
Replace the roller if necessary as follows.
Remove the bolt (2), washers (3), collar (4) and drive chain roller.
Install a new drive chain roller, collar, washers and tighten the bolt.




(1) drive chain roller
(2) bolt
(3) washers
(4) collar

## Adjustment

1. Loosen the rear axle nut (1).
2. Loosen both chain adjuster lock nuts (2) and turn the adjusting bolts (3) counterclockwise to decrease slack or clockwise to increase slack. Align the index marks (4) of the axle plates (5) with the same reference marks (6) on both sides of the swingarm.



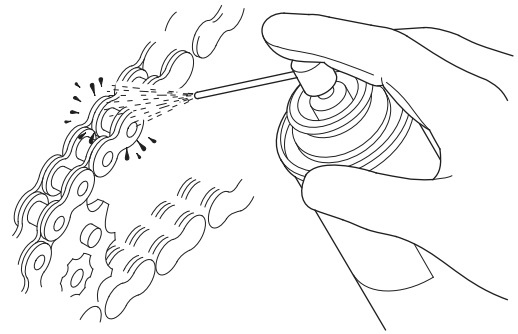

(1) rear axle nut
(2) chain adjuster lock nut
(3) adjusting bolt
(4) index mark
(5) axle plate
(6) reference mark

3. Tighten the rear axle nut to the specified torque:
   65 lbf·ft (88 N·m, 9.0 kgf·m)
4. Recheck chain slack and adjust as necessary.
5. Turn the adjusting bolts counterclockwise until it touches the axle plates lightly. Then tighten the chain adjuster lock nut to the specified torque while holding the adjusting bolt with a wrench:
   20 lbf·ft (27 N·m, 2.8 kgf·m)

## Lubrication

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

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

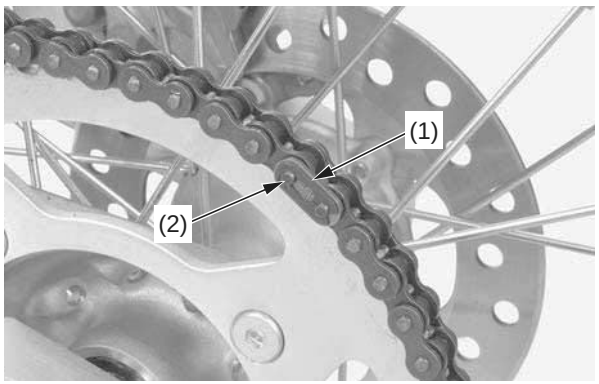


# Drive Chain

## Removal, Cleaning & Replacement

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

1. Remove the master link retaining clip (1) with pliers. Do not bend or twist the clip.
   Remove the master link (2). Remove the drive chain.



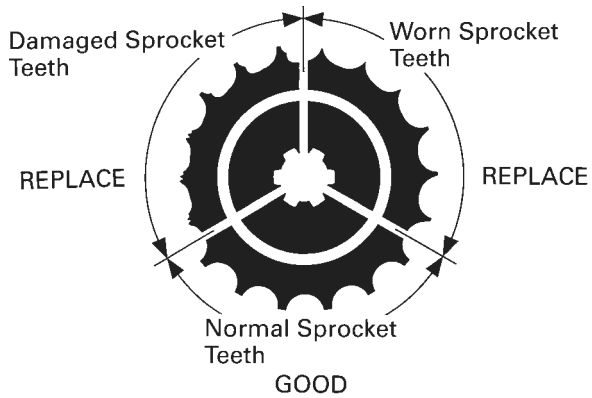

(1) master link retaining clip (2) master link

2. Clean the drive chain in high flash-point solvent and allow it to dry.
3. Inspect the drive chain for possible wear or damage. Replace the drive chain if it has damaged rollers, loose fitting links, or otherwise appears unserviceable.

   Replacement chain:

| | Size/link |
|---|---|
| CRF150R | DID420DS3/120 |
| CRF150RB | DID420DS3/126 |

4. Inspect the sprocket teeth for wear or damage. We recommend replacing the sprocket whenever a new chain is installed.
   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.

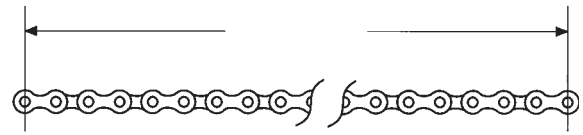



**NOTICE**

*Use of a new chain with worn sprockets will cause rapid chain wear.*

5. 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 21 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.

Service limit: 10.20 in (259.0 mm)



MEASURE A SPAN OF 21 PINS (20 PITCHES)

6. Lubricate the drive chain (page 83).
7. 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.
8. Recheck chain slack and adjust as necessary.

## More About Drive Chain

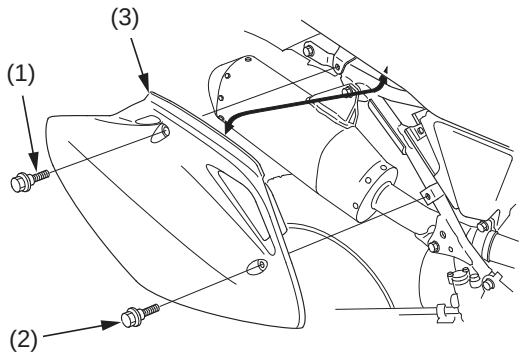
- The master link is the most critical element of drive chain security. Master links are reusable, as long as they remain in excellent condition. We recommend installing a new master link retaining clip when the drive chain is reassembled.
- You may find it easier to install a new chain by connecting it to the old chain with a master link and pulling the old chain to position the new chain on the sprockets.

## Exhaust Pipe/Muffler Inspection

Check the mounting bolts and joint nuts for tightness.
Check the exhaust pipe and muffler for cracks or deformation.
A damaged exhaust pipe and muffler may reduce engine performance.

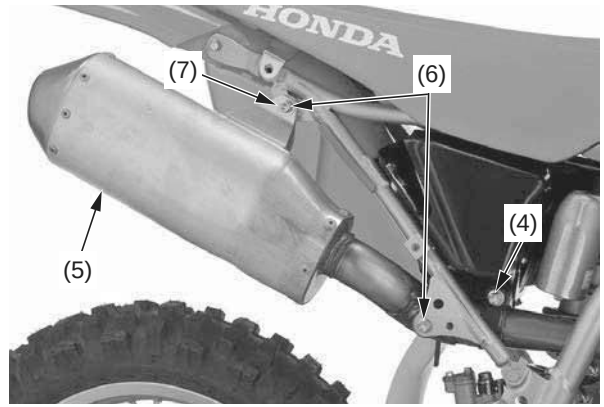
## Muffler Removal

1. Remove the seat mounting bolt (1), side cover bolt (2) and right side cover (3).




(1) seat mounting bolt
(2) side cover bolt
(3) right side cover

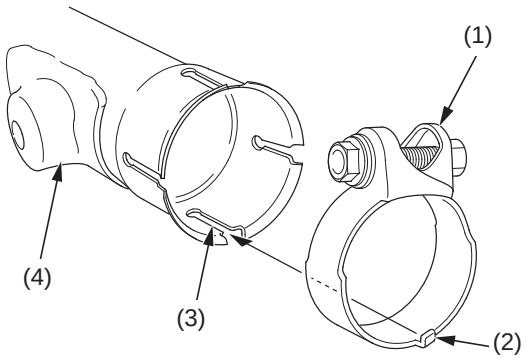
2. Loosen the muffler clamp bolt (4).
3. Remove the muffler (5) by removing the muffler mounting bolts (6) and washer (7).




(4) muffler clamp bolt
(5) muffler
(6) muffler mounting bolts
(7) washer

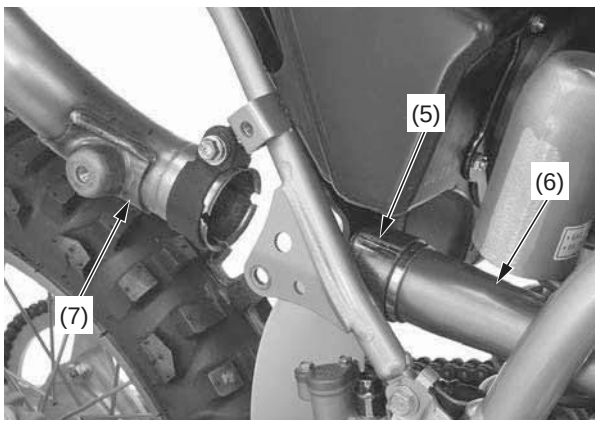
## Muffler Installation

1. Remove the old gasket.
2. Install the muffler clamp (1) by aligning the tab (2) of the muffler clamp with the cut-out (3) of the muffler (4).



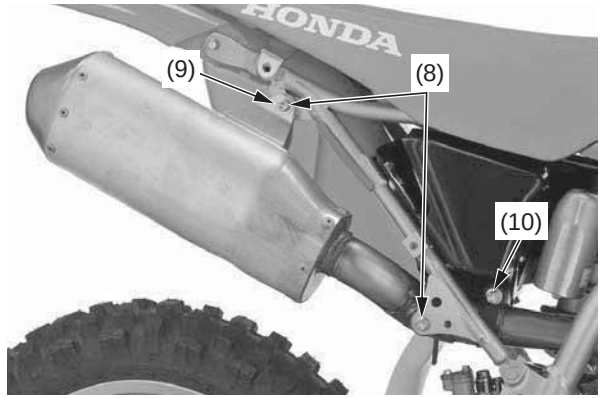

(1) muffler clamp
(2) tab
(3) cut-out
(4) muffler

3. Install a new gasket (5) to the exhaust pipe (6).
4. Install the muffler (7) to the exhaust pipe.



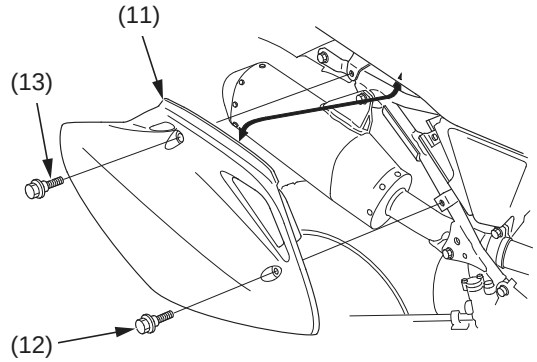

(5) gasket (new)
(6) exhaust pipe
(7) muffler

5. Install the muffler mounting bolts (8) and washer (9).
6. Tighten the muffler clamp bolt (10) to the specified torque:
   15 lbf·ft (21 N·m, 2.1 kgf·m)
7. Tighten the muffler mounting bolts (8) to the specified torque:
   24 lbf·ft (32 N·m, 3.3 kgf·m)




(8) muffler mounting bolts
(9) washer
(10) muffler clamp bolt

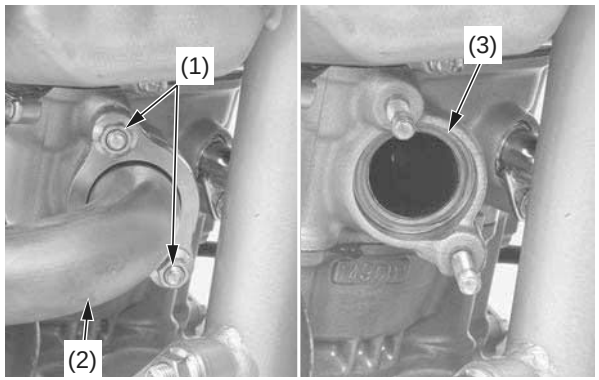
8. Install the right side cover (11) and side cover bolt (12).
9. Install the seat mounting bolt (13) and tighten to the specified torque:
   19 lbf·ft (26 N·m, 2.7 kgf·m)




(11) right side cover
(12) side cover bolt
(13) seat mounting bolt

## Exhaust Pipe Removal

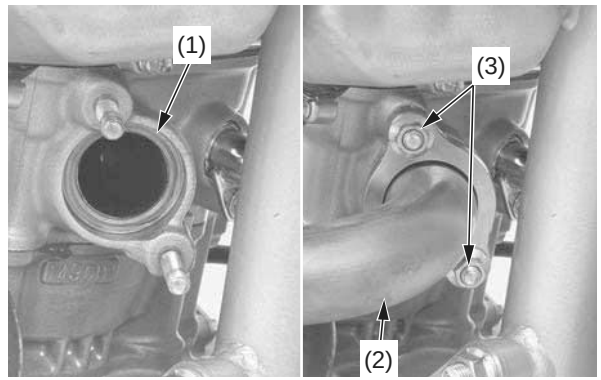
1. Remove the muffler (page 85).
2. Remove the exhaust pipe joint nuts (1), exhaust pipe (2) and old gasket (3).




(1) exhaust pipe joint nuts
(2) exhaust pipe
(3) gasket (old)

## Exhaust Pipe Installation

1. Install a new exhaust pipe gasket (1) as shown.
2. Install the exhaust pipe (2) and exhaust pipe joint nuts (3).




(1) exhaust pipe gasket (new)
(2) exhaust pipe
(3) exhaust pipe joint nuts

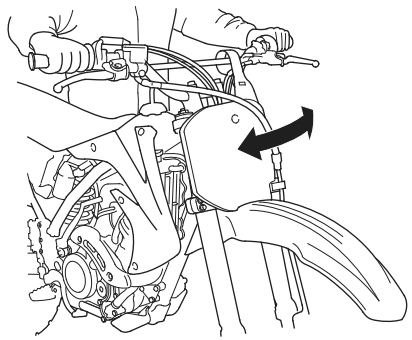
3. Install the muffler (page 86) but do not tighten the bolts yet.
4. Tighten the exhaust pipe joint nuts to the specified torque:
   8 lbf·ft (11 N·m, 1.1 kgf·m)
5. Tighten the muffler clamp bolt and muffler mounting bolts (page 86).
6. Installation can be done in the reverse order of removal.

# Additional Maintenance Procedures

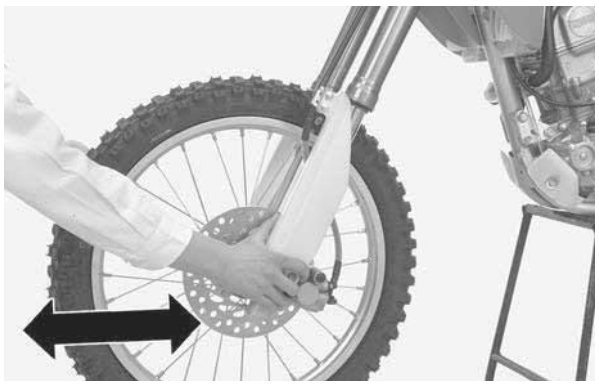
Refer to *Safety Precautions* on page 19.

## Steering Head Bearings Inspection

1. With your CRF on a box or optional workstand (front wheel elevated), turn the handlebar to the right and left to check for roughness in the steering head bearings.

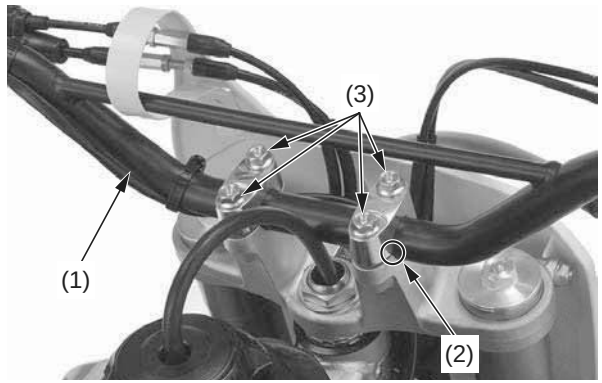


2. Stand in front of your CRF, grab the fork (at the axle), look at the steering head, and push the fork in and out (toward the engine) to check for play in the steering head bearings.
   If any roughness or play is felt, but you do not see any movement in the steering head, the fork bushings may be worn. Refer to the Honda Service Manual for replacement or adjustment procedures, or see your dealer.



## Handlebar Inspection

1. Check the handlebar (1) for bends or cracks.
2. Check that the handlebar has not moved from its proper position (by inspecting the punch mark (2)).
3. Check the torque of the handlebar upper holder bolts (3):
   16 lbf·ft (22 N·m, 2.2 kgf·m)
   Tighten the front bolts first.




(1) handlebar
(2) punch mark
(3) handlebar upper holder bolts

## Control Cables

Periodically, disconnect the throttle, clutch and hot start cables at their upper ends. Thoroughly lubricate the cable pivot points with a commercially-available cable lubricant. If the clutch lever, hot start lever and throttle operation is not smooth, replace the cable.
Be sure the throttle returns freely from fully open to fully closed automatically, in all steering positions.

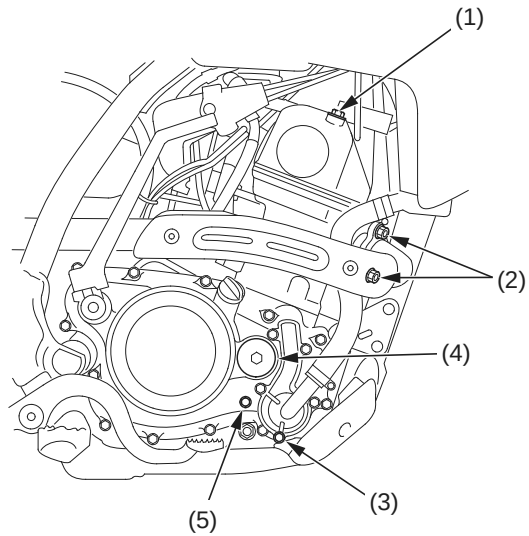
## Nuts, Bolts, Fasteners

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

**ENGINE**

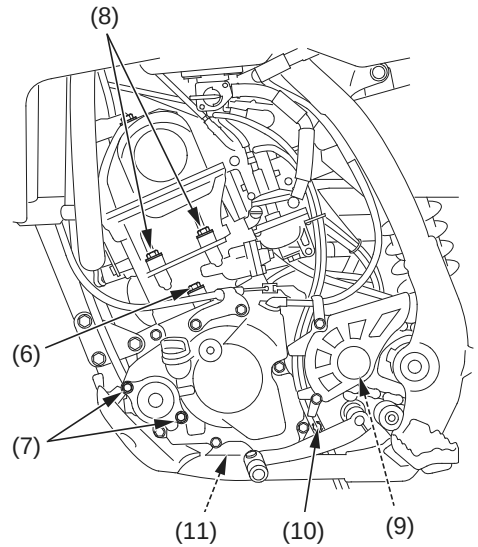
| | Item | Torque | | |
|---|---|---|---|---|
| | | lbf•ft | N•m | kgf•m |
| 1 | Cylinder head cover bolts | 7 | 10 | 1.0 |
| 2 | Exhaust pipe joint nuts | 8 | 11 | 1.1 |
| 3 | Coolant drain bolt | 7 | 10 | 1.0 |
| 4 | Crankshaft hole cap | 11 | 15 | 1.5 |
| 5 | Transmission oil check bolt | 7 | 10 | 1.0 |
| 6 | Cylinder bolt | 7 | 10 | 1.0 |
| 7 | Oil filter cover bolts | 7 | 10 | 1.0 |
| 8 | Cylinder head bolts | 7 | 10 | 1.0 |
| 9 | Drive sprocket bolt | 10 | 13 | 1.3 |
| 10 | Transmission oil drain bolt | 16 | 22 | 2.2 |
| 11 | Engine oil drain bolt | 16 | 22 | 2.2 |

**RIGHT SIDE**




(1) cylinder head cover bolts
(2) exhaust pipe joint nuts
(3) coolant drain bolt
(4) crankshaft hole cap
(5) transmission oil check bolt

**LEFT SIDE**




(6) cylinder bolt
(7) oil filter cover bolts
(8) cylinder head bolts
(9) drive sprocket bolt
(10) transmission oil drain bolt
(11) engine oil drain bolt

# Appearance Care

Refer to *Safety Precautions* on page 19.

Frequent cleaning and polishing will keep your Honda looking newer longer. Frequent cleaning also identifies you as an owner who values his motorcycle. A clean CRF is also easier to inspect and service.

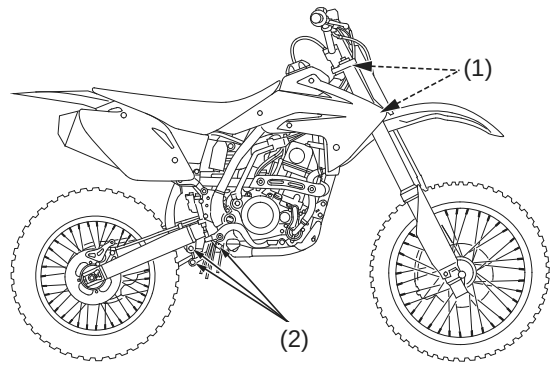
While you're cleaning, be sure to look for damage, wear, and gasoline or oil leaks.

## General Recommendations

- To clean your CRF you may use:
  - water
  - a mild, neutral detergent and water
  - a mild spray and wipe cleaner/polisher
  - a mild spray and rinse cleaner/degreaser and water
- Avoid products that contain harsh detergents or chemical solvents that could damage the metal, paint, and plastic on your CRF or discolor the seat and decals.
- If your CRF is still warm from recent operation, give the engine and exhaust system time to cool off.
- We recommend the use of a garden hose to wash your CRF. High pressure washers, (like those at coin-operated car washes) can damage certain parts of your CRF. The force of water under extreme pressure can penetrate the dust seals of the suspension pivot points and steering head bearings-driving dirt inside and needed lubrication out.

If you use a high pressure washer, avoid spraying the following areas:

wheel hubs
muffler outlet
under seat
engine stop button
brake master cylinders
under fuel tank
drive chain
carburetor
steering head bearings
suspension pivot points




(1) steering head bearings
(2) suspension pivot points

**NOTICE**

*High pressure water (or air) can damage certain parts of your CRF.*

You may use Pro Honda Hondabrite, a multi-surface cleaner/degreaser, to remove both dirt and petroleum-based grime from paint, alloy, plastic, and rubber surfaces. Wet any heavy deposits with water first. Then spray on the Hondabrite and rinse with a garden hose at full pressure. Stubborn deposits may require a quick wipe with a sponge.

## Washing Your Motorcycle with a Mild Detergent

1. Rinse your CRF thoroughly with cool water to remove loose dirt.
2. Fill a bucket with cool water. Mix in a mild, neutral detergent, such as dish washing liquid or a product made especially for washing motorcycles or automobiles.
3. Wash your CRF with a sponge or a soft towel. As you wash, check for heavy grime. If necessary, use a mild cleaner/degreaser to remove the grime.

**NOTICE**

*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) should only be used for removing stains on the non-coated aluminum frame only.*

4. After washing, rinse your CRF thoroughly with plenty of clean water to remove any residue.
5. Dry your CRF with a chamois or a soft towel.
6. Lubricate the drive chain to prevent rusting.
7. Start the engine and let it idle for several minutes. The engine heat will help dry moist areas.
8. As a precaution, ride at a slow speed and apply the brakes several times. This will help dry the brakes and restore normal braking performance.

## Condensation Control

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

## After Cleaning Lubrication

There are some things you should do just after washing your CRF to help prevent rust and corrosion.

Once your CRF 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.

## Exhaust Pipe And Muffler Maintenance

The exhaust pipe and muffler are stainless steel but may become stained by mud or dust.

To remove mud or dust, use a wet sponge and a liquid kitchen abrasive, then rinse well with clean water. Dry with a chamois or a soft towel.
If necessary, remove heat stains by using a commercially available fine texture compound. Then rinse by the same manner as removing mud or dust.

This section tells you how to fine tune your CRF for maximum competition performance.

Initial suspension adjustments should be performed after a minimum of 2 hours of easy break-in time.

Optional front and rear suspension springs are available in both stiffer and softer than standard rates, in order to tailor your CRF specifically for your weight, riding style and course conditions.

Follow the instructions given in the rear suspension sag setting section of *Rear Suspension Adjustments* 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 need for either optional rear spring may need to be balanced by installing the optional fork springs of a similar rate.


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# Front Suspension Adjustments

Refer to *Safety Precautions* on page 19.

The front suspension can be adjusted for the rider's weight and riding conditions by using one or more of the following methods:

- **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.
- **Compression damping** — Turning the compression damping screw adjusts how quickly the fork compresses.
- **Rebound damping** — Turning the rebound damping screw adjusts how quickly the fork extends.
- **Fork springs** — Optional springs are available in softer and stiffer types than the standard rate (page 144).

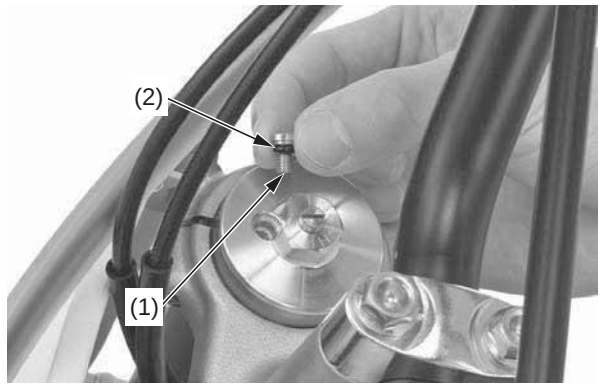
## Front Suspension Air Pressure

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 CRF 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.

The standard air pressure is 0 psi (0 kPa, 0 kgf/cm$^2$). You may relieve accumulated air pressure in the fork legs by using the fork air pressure release screws. The front wheel should be off the ground before you release the pressure.

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

1. Place an optional workstand under the engine, so that the front wheel is off the ground. Do not adjust air pressure with the front wheel on the ground as this will give false pressure readings.
2. Remove the fork air pressure release screw (1).
3. Check that the O-ring (2) is in good condition.
4. Install and tighten the fork air pressure release screw to the specified torque:
   1.0 lbf·ft (1.3 N·m, 0.1 kgf·m)




(1) fork air pressure release screw (2) O-ring

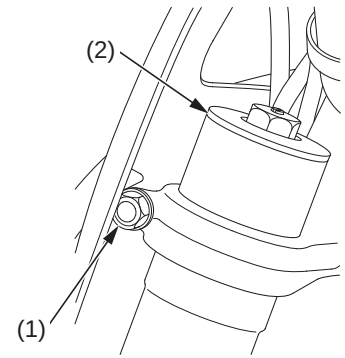
## Front Suspension Oil Level

- If your CRF is brand-new, put enough part-throttle break-in time (about 1 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 3 hours of riding. See the Service Manual or your dealer for this service.

1. Place your CRF on an optional workstand or equivalent support with the front wheel off the ground.
2. Loosen the fork bridge upper pinch bolts (1) (before loosening the fork caps to avoid damaging the fork caps).
3. Loosen the fork caps (2), but do not remove them yet.

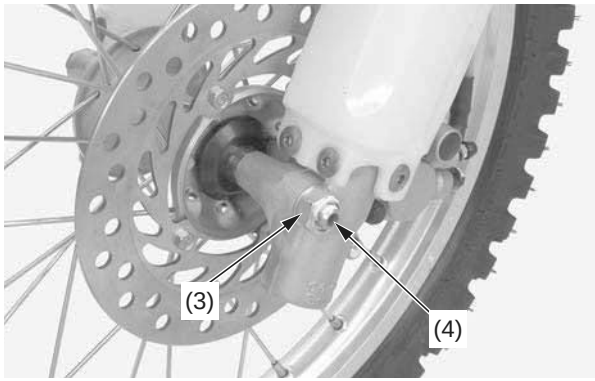
**NOTICE**

*Using an adjustable wrench to loosen the fork caps may damage them.*



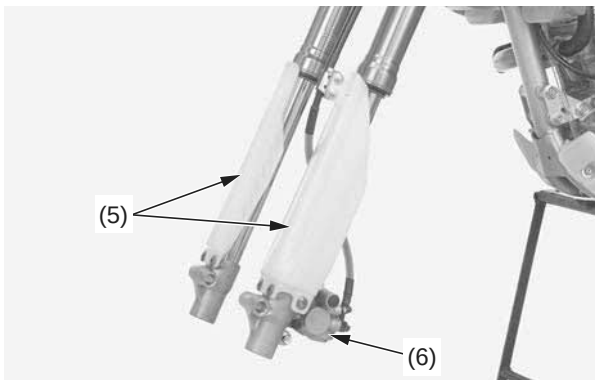

(1) fork bridge upper pinch bolt (2) fork cap

4. Remove the front axle nut (3).
5. Pull the front axle shaft (4) out of the wheel hub and remove the front wheel.



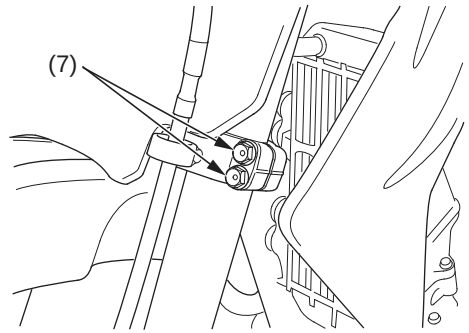

(3) front axle nut (4) front axle shaft

6. Remove the fork protectors (5) and brake caliper (6).
   - 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.




(5) fork protectors (6) brake caliper

7. Loosen the fork bridge lower pinch bolts (7), then pull the fork legs down and out.

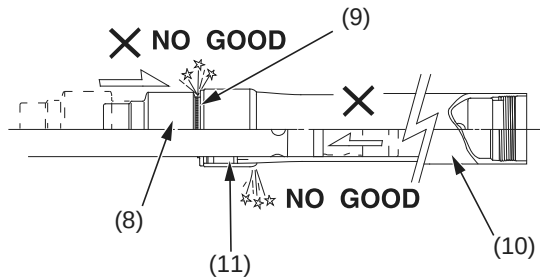



(7) fork bridge lower pinch bolts

8. Clean the fork assembly, especially the sliding surface of the slider pipe (8) and dust seal (9).

**NOTICE**

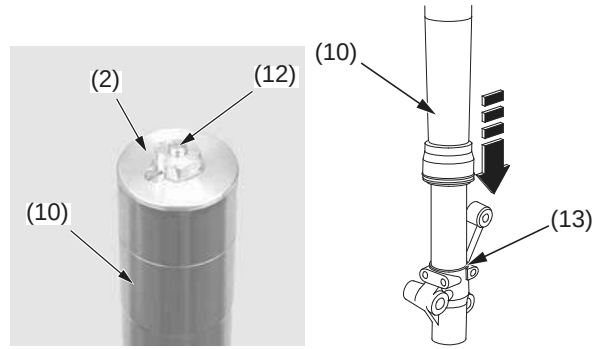
*The fork tube (10) can drop on the slider and damage the fork dust seal and guide bushing (11) when the fork cap is removed. To avoid damage hold both the fork tube and slider pipe when removing the fork cap.*




(8) slider pipe (10) fork tube
(9) dust seal (11) guide bushing

9. Record the rebound damping adjuster position and turn the adjuster screw (12) counterclockwise until it stops.

10. Hold the fork tube (10), then remove the fork cap (2), from the fork tube. Gently slide the fork tube down onto the lower end of the slider pipe (13).

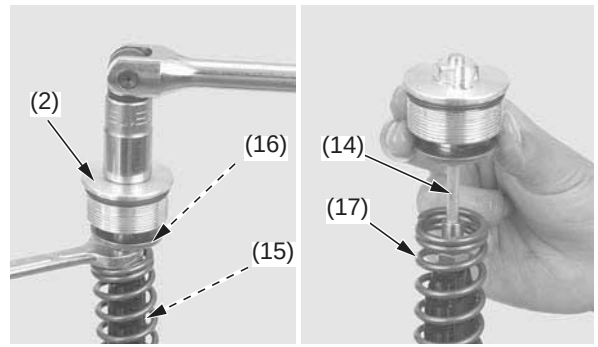



(2) fork cap (12) adjuster screw
(10) fork tube (13) slider pipe, lower end

**NOTICE**

*When removing the fork cap, be careful not to damage the damping force adjuster needle rod (14) and the needle on the rod end.*

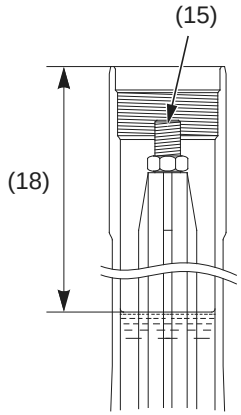
11. Remove the fork cap (2) from the piston rod (15) by holding the lock nut (16).
12. Remove the fork spring (17).




(2) fork cap (16) lock nut
(14) adjuster needle rod (17) fork spring
(15) piston rod

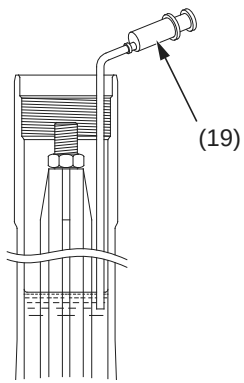
(cont'd)

13. Pour the recommended fork oil into the piston rod (15) until a little oil flows out of the top of the piston rod. Leave the piston rod for about one minute.
14. With the fork held upright, measure the oil level (18) from the top of the fork tube to the fork oil.




(15) piston rod (18) oil level

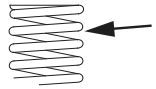
15. Adjust the oil level by adding or removing oil with an aftermarket syringe (19).




(19) syringe

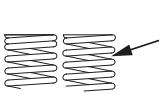
Fork Oil Level (CRF150R)

*Standard 19.0 lbf/in (3.33 N/mm) Fork Spring*



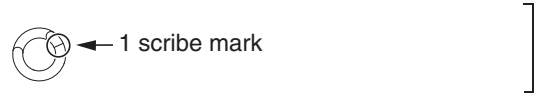

| | | |
|---|---|---|
| Standard oil level [capacity] | 4.88 in<br>124.0 mm<br>[12.04 US oz<br>(356.0 cm³)] | |
| Maximum oil level [capacity] | 4.83 in<br>122.8 mm<br>[12.07 US oz<br>(357.0 cm³)] | Slightly stiffer as it nears full compression. |
| Minimum oil level [capacity] | 7.43 in<br>188.7 mm<br>[10.27 US oz<br>(303.7 cm³)] | Slightly softer as it nears full compression. |

*Optional Softer 17.9 lbf/in (3.14 N/mm) Fork Spring*




| | | |
|---|---|---|
| Standard oil level [capacity] | 5.02 in<br>127.5 mm<br>[11.95 US oz<br>(353.2 cm³)] | |
| Maximum oil level [capacity] | 5.02 in<br>127.5 mm<br>[11.95 US oz<br>(353.2 cm³)] | Slightly stiffer as it nears full compression. |
| Minimum oil level [capacity] | 7.61 in<br>193.4 mm<br>[10.14 US oz<br>(299.9 cm³)] | Slightly softer as it nears full compression. |

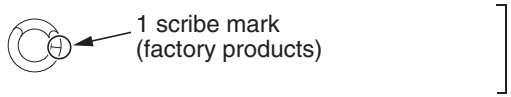
*Optional Stiffer 20.2 lbf/in (3.53 N/mm) Fork Spring*




| | | |
|---|---|---|
| Standard oil level [capacity] | 5.04 in<br>128.1 mm<br>[11.93 US oz<br>(352.7 cm³)] | |
| Maximum oil level [capacity] | 5.04 in<br>128.1 mm<br>[11.93 US oz<br>(352.7 cm³)] | Slightly stiffer as it nears full compression. |
| Minimum oil level [capacity] | 7.64 in<br>194.1 mm<br>[10.13 US oz<br>(299.4 cm³)] | Slightly softer as it nears full compression. |

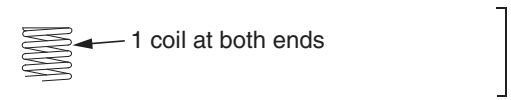
Fork Oil Level (CRF150RB)

*Standard 20.2 lbf/in (3.53 N/mm) Fork Spring*



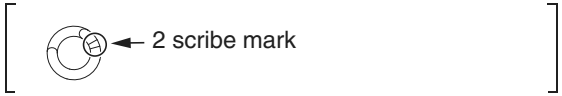

| | | |
|---|---|---|
| Standard oil level [capacity] | 5.55 in<br>141.0 mm<br>[11.57 US oz<br>(342.0 cm³)] | |
| Maximum oil level [capacity] | 5.16 in<br>131.0 mm<br>[11.84 US oz<br>(350.1 cm³)] | Slightly stiffer as it nears full compression. |
| Minimum oil level [capacity] | 7.63 in<br>193.7 mm<br>[10.13 US oz<br>(299.4 cm³)] | Slightly softer as it nears full compression. |

*Optional Softer 19.0 lbf/in (3.33 N/mm) Fork Spring*




| | | |
|---|---|---|
| Standard oil level [capacity] | 5.34 in<br>135.7 mm<br>[11.71 US oz<br>(346.3 cm³)] | |
| Maximum oil level [capacity] | 4.95 in<br>125.7 mm<br>[11.99 US oz<br>(354.4 cm³)] | Slightly stiffer as it nears full compression. |
| Minimum oil level [capacity] | 7.42 in<br>188.4 mm<br>[10.27 US oz<br>(303.7 cm³)] | Slightly softer as it nears full compression. |

*Optional Stiffer 21.3 lbf/in (3.73 N/mm) Fork Spring*



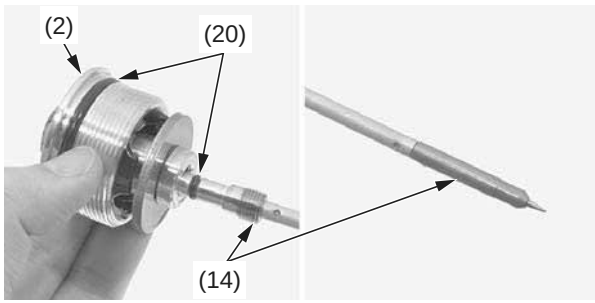

| | | |
|---|---|---|
| Standard oil level [capacity] | 5.43 in<br>137.9 mm<br>[11.65 US oz<br>(344.5 cm³)] | |
| Maximum oil level [capacity] | 5.04 in<br>127.9 mm<br>[11.92 US oz<br>(352.6 cm³)] | Slightly stiffer as it nears full compression. |
| Minimum oil level [capacity] | 7.50 in<br>190.6 mm<br>[10.21 US oz<br>(301.9 cm³)] | Slightly softer as it nears full compression. |

- Be sure the oil level is the same in both fork legs.
- Always use the after market syringe while adjusting the oil level.
  If it isn't used, air may get into the fork.
- If a syringe is not available, first set the oil level somewhat lower than the normal level, then add small amounts of oil until the correct level is obtained, measuring the level each time oil is added.

16. Inspect both ends of the fork spring. If you find any roughness or burred edge on the end of either spring, smooth the roughness with a file and some emery cloth.

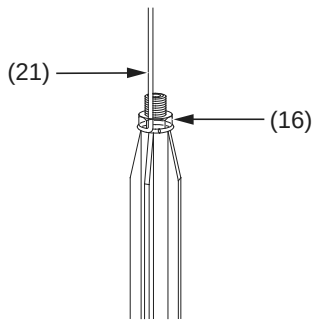
(cont'd)

17. Clean the spring and spring seat thoroughly with a high flash point solvent to remove all metal particles and dirt.
18. Dry the spring and spring seat with air pressure rather than a shop towel. Using a shop towel allows lint to stick to the springs. Lint or any particles that stick in the damping passages can cause inconsistent damping.
19. Turn the adjuster needle rod (14) counterclockwise and remove it from the fork cap (2).
    Check the adjuster needle rod for bent or damage.
    Check that the O-rings (20) on the fork cap and needle rod are in good condition. Apply the recommended fork oil to the O-rings.



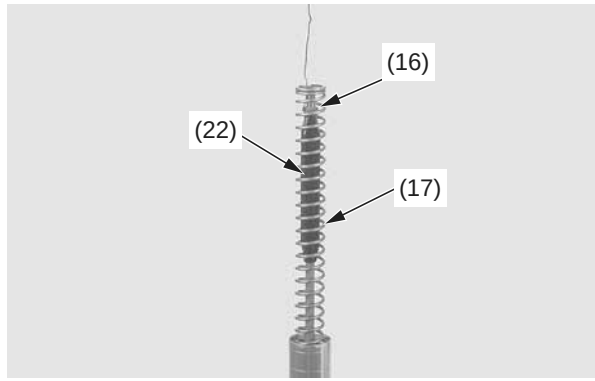

(2) fork cap
(20) O-rings
(14) adjuster needle rod

20. Loosen the lock nut (16) slightly.
21. Attach a two-foot length of mechanic's wire (21) to the threaded portion on the lock nut. Wrap the wire securely around the threads.



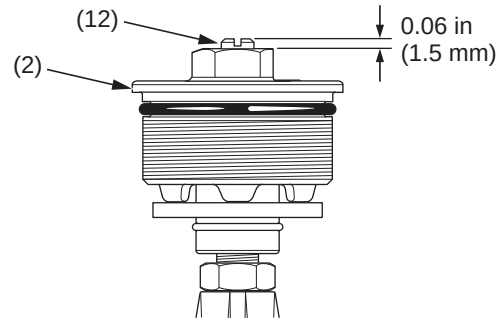

(16) lock nut
(21) mechanic's wire

22. Install the fork spring (17) as follows:
    – With the fork spring held upright on its marked end, feed the mechanic's wire up through the spring.
    – Angle the fork spring and slowly slide it down into the fork using a gentle rocking motion.
23. Reaching through the two adjacent coils near the oil lock valve, hold the spring guide (22) with your finger.
    Remove the mechanic's wire and hand tighten the lock nut (16) to the spring guide (22).




(16) lock nut
(22) spring guide
(17) fork spring

24. Set the adjuster screw (12) to 0.06 in (1.5mm) from the fork cap (2) top, then install the fork cap onto the piston rod.

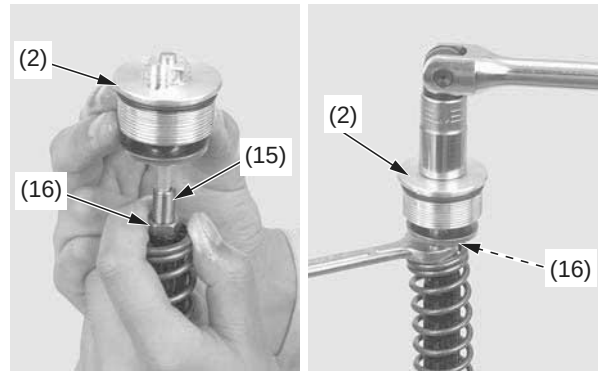



(2) fork cap
(12) adjuster screw

**NOTICE**

*When installing the fork cap, be careful not to damage the damping force adjuster needle rod and the needle or the rod end.*

25. Hand tighten the fork cap (2) on the piston rod (15) lightly until it stops, then tighten the lock nut (16) to the fork cap to the specified torque:
    15 lbf·ft (19.7 N·m, 2.0 kgf·m)



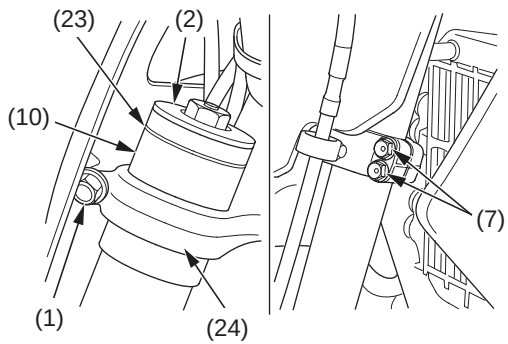

(2) fork cap
(16) lock nut
(15) piston rod

26. Temporarily thread the fork cap into the fork tube.
27. Insert both fork legs into the fork clamps

28. Align the groove (23) in the fork tube (10) with the top surface of the upper fork clamps (24).
29. Temporarily tighten the fork bridge lower pinch bolts (7) and then tighten the fork cap (2) to the specified torque:
    25 lbf·ft (34 N·m, 3.5 kgf·m)
30. For ease of releasing air pressure after the forks are installed, loosen the fork bridge lower pinch bolts and position the fork outer tubes so that the fork air pressure release screws are in front of the rebound damping adjusters.
31. Tighten the fork bridge lower pinch bolts to the specified torque:
    16 lbf·ft (22 N·m, 2.2 kgf·m)
32. Tighten the fork bridge upper pinch bolts (1) to the specified torque:
    16 lbf·ft (22 N·m, 2.2 kgf·m)

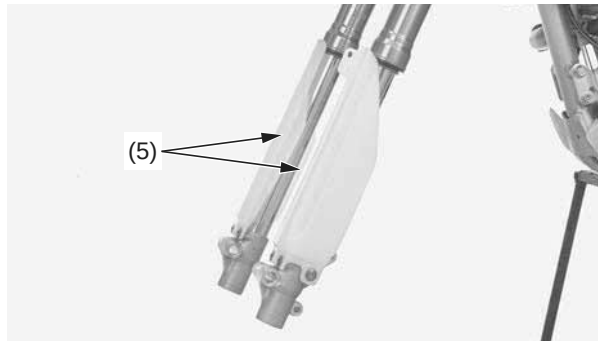
**NOTICE**

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




(1) fork bridge upper pinch bolt
(2) fork cap
(7) fork bridge lower pinch bolts
(10) fork tube
(23) groove
(24) upper fork clamp

33. Clean the threads of the fork protector bolts and axle holder thoroughly.
34. Apply locking agent to the bolt threads.
35. Install the fork protectors (5) and tighten the bolts to the specified torque:
    5.2 lbf·ft (7 N·m, 0.7 kgf·m)

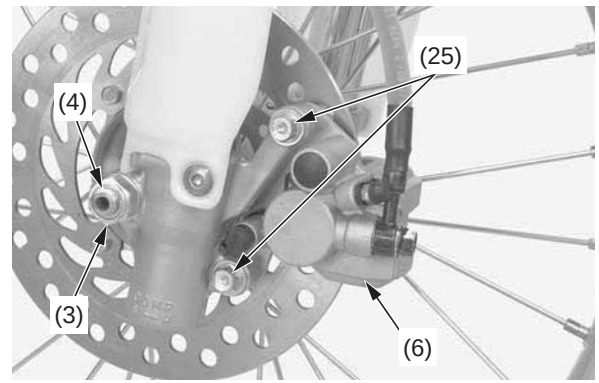



(5) fork protectors

36. Clean the surfaces where the front axle shaft and axle clamps contact each other.
37. Install the left and right side collars into the wheel hub.
38. Insert the front axle shaft (4) through the wheel hub from the right side. Make sure the axle shaft is seated firmly onto the left fork leg clamp inner surface.
39. Install the front axle nut (3).
40. Align the brake caliper (6) with the left fork leg, making sure that the brake hose is not twisted. An improperly routed brake hose may rupture and cause a loss of braking efficiency.
41. Clean the threads of the brake caliper mounting bolts (25) and brake caliper thoroughly.
42. Apply locking agent to the bolt threads.
43. Install the brake caliper on the fork slider and tighten the brake caliper mounting bolts to the specified torque:
    22 lbf·ft (30 N·m, 3.1 kgf·m)

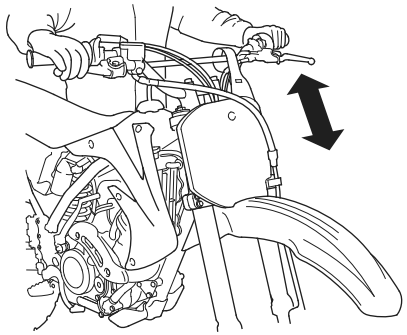
**NOTICE**

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

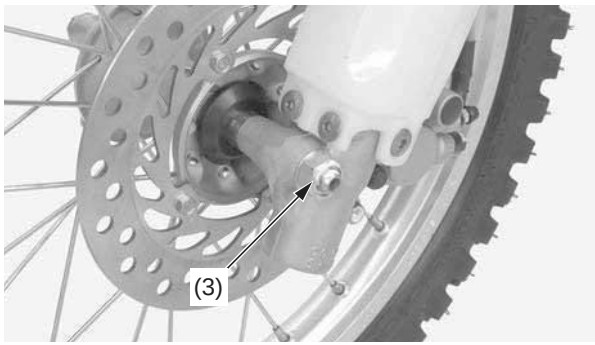



(3) front axle nut
(4) front axle shaft
(6) brake caliper
(25) brake caliper mounting bolts

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



45. Tighten the front axle nut (3) to the specified torque:
    51 lbf·ft (69 N·m, 7.0 kgf·m)




(3) front axle nut

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

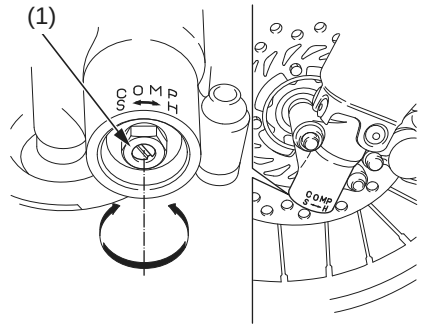
## Front Suspension Damping

Compression Damping
Compression damping affects how quickly the fork compresses.

The compression damping adjuster has 6 1/4 turns or less.

Always start with the full hard position when adjusting damping.

*To adjust to the standard position:*




(1) compression damping adjuster

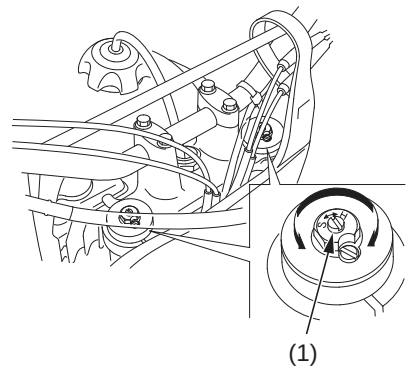
1. Turn the compression damping adjuster (1) clockwise until it will no longer turn (lightly seats). This is the full hard position.
2. Turn the adjuster counterclockwise 1 1/2 turn. This is the standard position.
3. Make sure that both fork legs are adjusted to the same position.

Rebound Damping
Rebound damping effects how quickly the fork rebounds.

The rebound damping adjuster has 3 turns or less.

Always start with the full hard position when adjusting damping.

*To adjust to the standard position:*




(1) rebound damping adjuster

1. Turn the rebound damping adjuster (1) clockwise until it will no longer turn (lightly seats). This is the full hard position.
2. Turn the adjuster counterclockwise 1 1/4 turn. This is the standard position.
3. Make sure both fork legs are adjusted to the same position.

## Fork Springs

If the fork is too hard on big bumps, turn the damping adjuster counterclockwise 1/4 turn and lower the oil level in increments of 0.2 in (5 mm) in both fork legs until the desired performance is obtained. Do not, however, lower the oil level below the minimum oil level.

Minimum oil level: (CRF150R)

| | |
|---|---|
| Standard Spring: | 7.43 in (188.7 mm) |
| Softer Spring: | 7.61 in (193.4 mm) |
| Stiffer Spring: | 7.64 in (194.1 mm) |

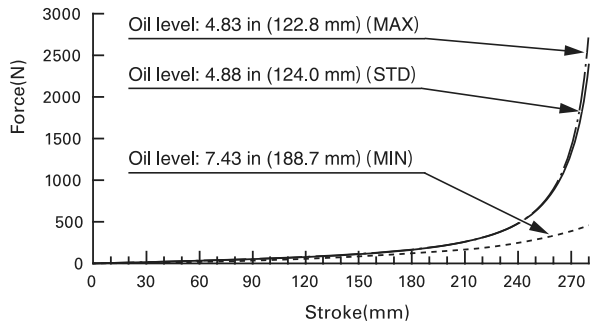
Minimum oil level: (CRF150RB)

| | |
|---|---|
| Standard Spring: | 7.63 in (193.7 mm) |
| Softer Spring: | 7.42 in (188.4 mm) |
| Stiffer Spring: | 7.50 in (190.6 mm) |

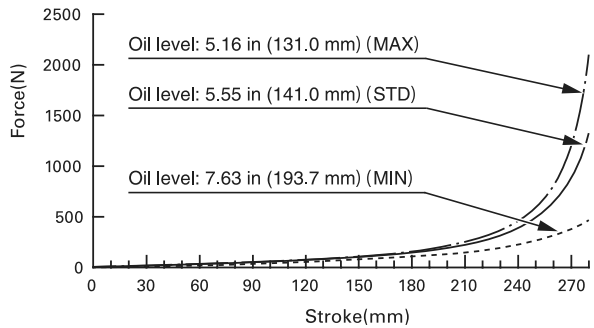
When adjusting oil levels, bear in mind that the air in the fork will increase in pressure while riding; therefore, the higher the oil level, the higher the eventual pressure of any air in the fork.

Fork Travel Characteristics

CRF150R




CRF150RB



# Rear Suspension Adjustments

Refer to *Safety Precautions* on page 19.

The rear suspension can be adjusted for the rider's weight and riding conditions by changing the spring pre-load and the rebound and compression damping.

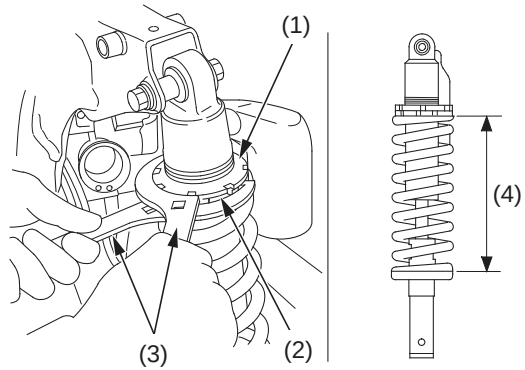
The rear shock absorber assembly includes a damper unit that contains high pressure nitrogen gas. Do not attempt to disassemble, service, or dispose of the damper; see your dealer.
The instructions found in this owner's manual are limited to adjustments of the shock assembly only. Puncture or exposure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

If your CRF is new, put enough part-throttle break-in time (about 1 hour) on it to ensure that the suspension has worked in.

## Rear Suspension Spring Pre-Load

An optional pin spanner is available for turning the lock nut and adjusting nut to adjust spring pre-load.

1. Place an optional workstand under the engine to raise the rear wheel off the ground.
2. Remove the subframe. See page 32.
3. Check that the spring pre-load is adjusted to the standard length. Adjust as necessary by loosening the lock nut (1) and turning the adjusting nut (2).
   Each complete turn of the adjuster nut changes the spring length by 0.06 in (1.5 mm).
4. After adjustment, hold the adjusting nut and tighten the lock nut to the specified torque:
   32 lbf·ft (44 N·m, 4.5 kgf·m)




(1) lock nut
(2) adjusting nut
(3) pin spanners
(4) spring length

To increase spring pre-load:
Loosen the lock nut with the optional pin spanners (3) and turn the adjusting nut to shorten the spring length (4). Do not shorten to less than:
8.7 in (222 mm) ..... CRF150R
8.9 in (226 mm) ..... CRF150RB

To decrease spring pre-load:
Loosen the lock nut with the optional pin spanners (3) and turn the adjusting nut to increase the spring length (4). Do not increase to more than:
9.27 in (235.5 mm) ..... CRF150R
9.25 in (235.0 mm) ..... CRF150RB

Each turn of the adjuster changes spring length and spring pre-load. One turn equals: spring length/spring pre-load:
0.06 in (1.5 mm)/16.5 lbf (7.5 kgf) ..... CRF150R
0.06 in (1.5 mm)/17.2 lbf (7.8 kgf) ..... CRF150RB

Pin spanners should be used for turning the lock nut and adjusting nut.

(CRF150R)
Spring preload length (Standard spring)
Standard: 9.23 in (234.5 mm)
Min. : 8.7 in (222 mm)

Spring preload length (Optional spring)
Min. (Softer, 268.4 lbf/in (47.0 N/mm)): 8.8 in (223 mm)
Min. (Stiffer, 291.2 lbf/in (51.0 N/mm)): 8.9 in (226 mm)

(CRF150RB)
Spring preload length (Standard spring)
Standard: 9.21 in (234.0 mm)
Min. : 8.9 in (226 mm)

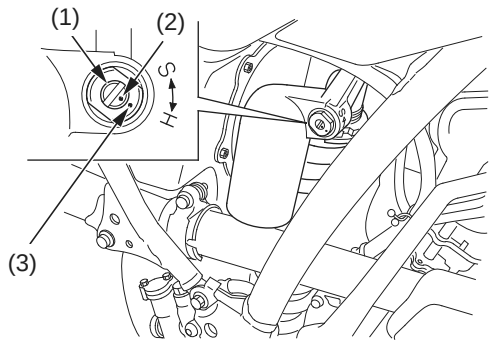
Spring preload length (Optional spring)
Min. (Softer, 279.8 lbf/in (49.0 N/mm)): 8.7 in (222 mm)
Min. (Stiffer, 302.6 lbf/in (53.0 N/mm)): 8.7 in (221 mm)

## Rear Suspension Damping

Compression Damping
Compression damping can be adjusted with the adjuster located on the rear shock absorber's reservoir.
The compression damping adjuster has 3 turns or less.

To increase damping, turn the adjuster screw clockwise.

To decrease damping, turn the screw counterclockwise.



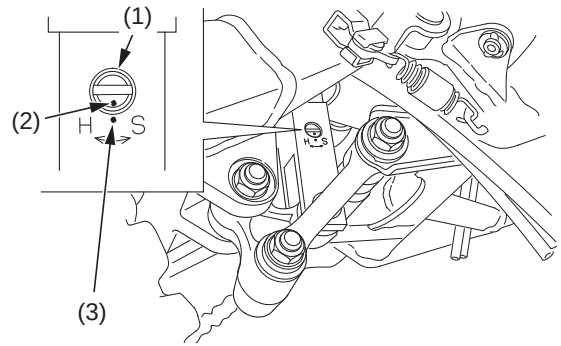

(1) compression damping adjuster (3) reference mark
(2) punch mark

To adjust to the standard position:
1. Turn the compression damping adjuster (1) clockwise until it will no longer turn (lightly seats). This is the full hard position.
2. Turn the adjuster counterclockwise 1 – 1 1/4 turns, and make sure that the punch mark (2) on the adjuster aligns with the reference mark (3) on the shock absorber.

Rebound Damping
The rebound damping adjuster (1) is located at the lower end of the shock absorber.
The rebound damping adjuster has 3 turns or less.

To increase damping, turn the adjuster screw clockwise.

To decrease damping, turn the adjuster screw counterclockwise.




(1) rebound damping adjuster (3) reference mark
(2) punch mark

To adjust to the standard position:
1. Turn the adjuster clockwise until it will no longer turn (lightly seats). This is the full hard position.
2. Turn the adjuster counterclockwise 3/8 – 5/8 turns, and make sure that the punch mark (2) on the adjuster aligns with the reference mark (3) on the shock absorber.

# Rear Suspension Adjustments

## Rear Suspension Race Sag

Setting the proper race sag (ride height) is very important for competition use.

Race sag refers to the amount of rear wheel travel used by your CRF at rest, ready to ride, with you on the seat. As a general rule of thumb, the race sag dimension should be about one-third of the maximum travel.

On your CRF, ride height is changed by adjusting the rear suspension spring pre-load.

Spring Pre-load & Race Sag Adjustment

The following adjustment procedure establishes the correct starting point for any suspension tuning — the proper rear spring pre-load adjustment for your specific needs.

Your CRF should be at normal racing weight, including fuel and transmission oil. You should be wearing all your normal protective apparel.

You will need two helpers.

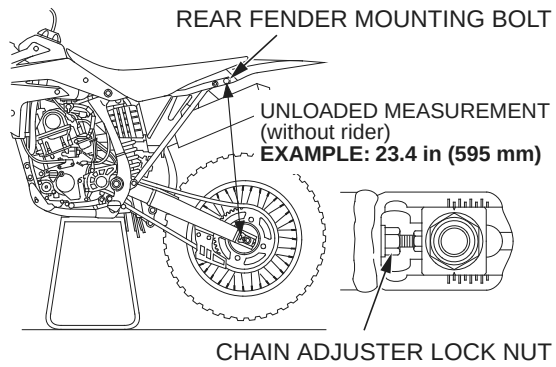
To calculate the proper adjustment, it is necessary to measure between two fixed points — from the center of the rear fender mounting bolt to the center of the chain adjuster lock nut as illustrated here — for three different situations:

*unloaded:* motorcycle on an optional workstand with rear suspension fully extended, no rider.

*loaded with rider:* motorcycle on ground, with rider.

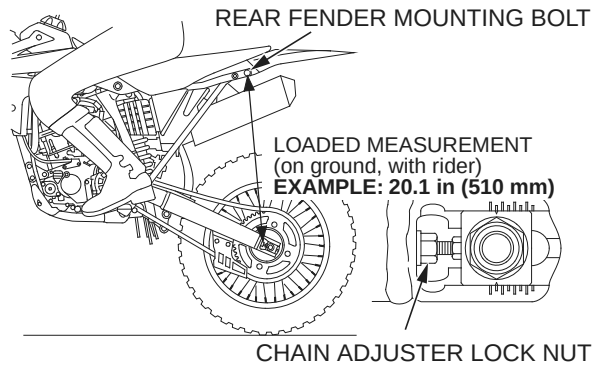
*loaded without rider:* motorcycle on ground, without rider

1. Support your CRF on an optional workstand with the rear wheel off the ground.
2. Measure the *unloaded* dimension.




3. Measure the *loaded with rider* dimension.
   Remove the workstand. With two helpers available, sit as far forward as possible on your CRF's seat, wearing your riding apparel. Ask one helper to steady your CRF perfectly upright so you can put both feet on the pegs. Bounce your weight on the seat a couple of times to help the suspension overcome any situation and settle to a good reference point.

   Ask the other helper to measure the *loaded with rider* dimension.

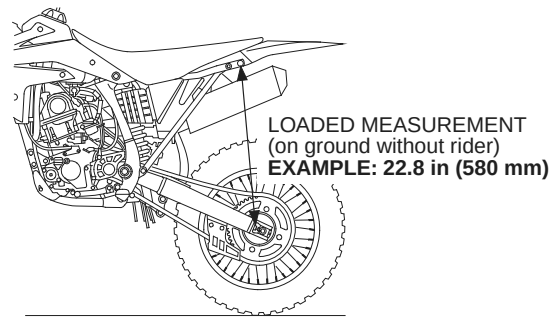



Example:

| | |
|---|---|
| Unloaded | = 23.4 in (595 mm) |
| – Loaded | = 20.1 in (510 mm) |
| Race Sag | = 3.3 in (85 mm) |

4. Calculate the *race sag* dimension.
   To do this, subtract the *loaded with rider* dimension (step 3) from the *unloaded* dimension (step 2).
   Standard Race Sag: 3.3 in (85 mm)

   Adjust spring pre-load as necessary to obtain the desired handling results.
   Decreasing the race sag dimension (example: 3.5 in, 90 mm) improves turning ability for tight terrain at the cost of slightly reduced straight line stability.
   Increasing the race sag dimension (example: 3.9 in, 100 mm) may improve stability on faster terrain with less turns, but will reduce turning performance slightly and may upset the balance between the front and rear suspension, producing a harsher ride. This will happen if the adjustment shifts the effective wheel travel toward the more progressive end of its range.
5. Measure the *loaded without rider* dimension.
   Do this with your CRF set at the standard race sag.




Example:

| | |
|---|---|
| Unloaded | = 23.4 in (595 mm) |
| – Loaded | = 22.8 in (580 mm) |
| Sag | = 0.6 in (15 mm) |
| (Without Rider) | |

6. Calculate the *free sag* dimension.
   To do this, subtract the *loaded without rider* dimension (step 5) from the *unloaded* dimension (step 2).
   Free sag indicates the distance your rear suspension should sag from the weight of the sprung portion of your CRF.
   With the spring pre-load set to obtain the proper race sag, the rear suspension should sag: 0.4 to 1.0 in (10 to 25 mm)
   If the rear of your CRF sags less than 0.4 in (10 mm) from its own weight, the spring is too stiff for your weight. It is not compressed enough, even though you have the proper race sag adjustment. As a result, the rear suspension will not extend as far as it should.

Spring Rates

If you are lighter or heavier than the average rider and cannot set the proper ride height without altering the correct spring pre-load, consider an aftermarket shock absorber spring.

A spring that is too soft for your weight forces you to add excessive spring pre-load to get the right race sag and, as a result, the rear end of the motorcycle is raised. This can cause the rear wheel to unload too much in the air and top out as travel rebounds. The rear end may top out from light braking, or kick sideways over lips and square-edged terrain. It may even top-out when you dismount your CRF.

Because of the great absorption quality of the shock bumper rubber, it may be difficult for you to notice when your CRF's suspension is bottoming. Some riders may think the damping or perhaps the leverage ratio is too harsh. In reality, the problem is most likely insufficient spring pre-load or a spring that is too soft. Either situation prevents utilizing the full travel.

Keep in mind that a properly adjusted suspension system may bottom slightly every few minutes at full speed. Adjusting the suspension to avoid this occasional bottoming may cost more in overall suspension performance than it is worth.

A spring that is too stiff for your weight will not allow the rear tire to hook up under acceleration and will pass more bumps on to you.

# Suspension Adjustments for Track Conditions

Soft Surface

On soft ground, sand, and especially mud, consider increasing compression damping front and rear.

Sand often requires a bit more rebound damping to minimize rear end kick. Although sand bumps are usually larger, there's more distance between them, giving the shock more time to recover.

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 event, stiffer aftermarket springs front and rear may help, especially if you are heavier than the average rider. Your CRF may be undersprung because of the added weight of the clinging mud. This additional weight may compress the suspension too much and affect traction.

Hard Surface

For 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 CRF, using the methods described on pages 94 – 103. Remember to make all adjustments in 1/4 turn increments. Test ride after each adjustment.

Front Suspension 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.<br>Example: – Turn the compression damping adjuster to a stiffer position.<br>– Install the optional stiff spring. (Adjust compression damping to a softer position and rebound damping to a stiffer position at this time.) |
| Mud track | Adjust to a stiffer position because mud build-up increases your CRF's weight.<br>Example: – Turn the compression damping adjuster to a stiffer setting.<br>– Install the optional stiff spring. |

Adjustments for Too Soft/Stiff Damping

| | Symptom | Action |
|---|---|---|
| Soft suspension | Initial travel too soft:<br>• Steering is too quick.<br>• Front end darts while cornering or riding in a straight line. | – Test stiffer compression damping adjustments in 1/4 turn increments.<br>– Test stiffer rebound damping in 1/4 turn increments. |
| | Middle travel too soft:<br>• Front end dives when cornering. | If suspension isn't stiff in initial travel:<br>– Test stiffer compression damping adjustments in 1/4 turn increments.<br>If initial travel becomes stiff because of the above adjustment:<br>– Reduce the rebound damping in 1/4 turn increments.<br>– Test softer compression damping adjustments in 1/4 turn increments.<br>If that doesn't solve the problem, install the optional stiff spring. |
| | Final travel too soft:<br>• Bottoms on landings.<br>• Bottoms on large bumps, especially downhill bumps. | If initial and middle travel aren't stiff:<br>– Test stiffer compression damping adjustments in 1/4 turn increments.<br>If initial and middle travel are stiff:<br>– Install the optional stiff spring.<br>If initial travel is stiff after installing the optional stiff spring:<br>– Test soft compression damping adjustments in 1/4 turn increments.<br>If initial travel is still soft after installing the optional stiff spring:<br>– Test stiffer compression damping adjustments in 1/4 turn increments.<br>If final travel is still soft after installing the optional stiff spring:<br>– Increase the fork oil level in increments of 0.2 US oz (5 $cm^3$). |
| | Entire travel too soft:<br>• Front end shakes.<br>• Fork bottoms over any type of terrain. | – Install the optional stiff spring.<br>– Test stiffer compression damping adjustments in 1/4 turn increments.<br>– Increase rebound damping in 1/4 turn increments. |

# Suspension Adjustment Guidelines

| | Symptom | Action |
|---|---|---|
| Stiff suspension | Initial travel too stiff:<br>• Stiff on small bumps while riding at full throttle in a straight line.<br>• Stiff on small cornering bumps.<br>• Front end wanders while riding at full throttle in a straight line. | – Test softer compression damping adjustments in 1/4 turn increments.<br>– Reduce the rebound damping adjustments in 1/4 turn increments.<br>– Check for dirt in the dust seals. Check the fork oil for any contamination.<br>If the front end dives while cornering after the above adjustment:<br>Reduce the rebound damping in 1/4 turn increments. If that doesn't solve the problem, install the optional stiff spring.<br>If the stiff spring makes the suspension too stiff over the full range of travel: test softer compression damping adjustments in 1/4 turn increments until the desired compression damping for initial travel is obtained. |
| | Middle travel too stiff:<br>• Stiff on bumps when cornering.<br>• Front end wanders when cornering.<br>• Stiff suspension on bumps, especially downhill bumps.<br>• While braking, front end dives during initial travel, then feels stiff. | If initial travel isn't stiff:<br>– Test stiffer compression damping adjustments in 1/4 turn increments. (This should produce smooth fork action from initial to middle travel.)<br>If initial and middle travel is stiff:<br>– Test softer compression damping adjustments in 1/4 turn increments.<br>– Reduce the rebound damping in 1/4 turn increments. |
| | Final travel too stiff:<br>• Doesn't bottom on landings, but feels stiff.<br>• Stiff on large bumps, especially downhill bumps.<br>• Stiff on large bumps when cornering. | If initial and middle travel aren't stiff:<br>– Test stiffer compression damping adjustments in 1/4 turn increments. (This should produce smooth fork action from initial to middle travel.)<br>If final travel is still stiff after the above adjustment, or<br>If initial and middle travel becomes stiff:<br>– Install the optional soft spring.<br>– Test softer compression damping adjustments in 1/4 turn increments.<br>If the entire travel feels stiff after the above adjustment:<br>– Test softer compression damping adjustments in 1/4 turn increments until the desired initial travel compression damping is obtained.<br>– Lower the oil level by 0.2 US oz (5 $cm^3$). |
| | Entire travel too stiff:<br>• Stiff suspension on any type of terrain. | – Test softer compression damping adjustments in 1/4 turn increments.<br>– Reduce the rebound damping in 1/4 turn increments.<br>– Lower the oil capacity by 0.2 US oz (5 $cm^3$). |

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 pre-load).<br>Example: – Turn the compression damping adjuster and, especially, rebound damping adjuster to a stiffer setting.<br>– 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 CRF's weight.<br>Example: – Adjust the compression and rebound damping adjusters to stiffer settings.<br>– Install the optional stiff spring.<br>– Reduce standard Race Sag (–0.2 to 0.4 in/5 to 10 mm). |

Adjustments for Too Soft/Stiff Suspension

| | Symptom | Action |
|---|---|---|
| Stiff suspension | Entire travel too stiff | – Test softer compression and rebound damping adjustments in 1/4 turn increments.<br>– Install the optional soft spring. |
| Soft suspension | Suspension bottoms or rear end shakes: | – Test stiffer compression and rebound damping adjustments in 1/4 turn increments.<br>– Install the optional stiff spring. |

Adjustments for Too Soft/Stiff Suspension

| Symptom | Action |
|---|---|
| Rear end kicks up on deep bumps on sand track. | – Test stiffer compression and rebound damping adjustments in 1/4 turn increments until the rear end does not kick up and/or the suspension becomes stiff.<br>– Then test softer compression damping adjustments in 1/4 turn increments. |
| Suspension bottoms and rear end kicks up on large bumps on a hard-surface track. | – Test stiffer compression and rebound damping adjustments in 1/4 turn increments. |
| Rear end gets poor traction accelerating away from a corner. | – Test softer rebound damping adjustments in 1/4 turn increments. (Test no more than 3 turns.)<br>– If 1/2 or 3/4 turns don't produce satisfactory results, test softer compression damping adjustments in 1/4 turn increments.<br>– After the above adjustment, check if the suspension bottoms after jumping. If it does, test stiffer compression damping adjustments in 1/4 turn increments. |
| Rear end kicks sideways and suspension feels stiff on continuous bumps. | – Test softer rebound damping adjustments in 1/4 turn increments.<br>– After the above adjustment, check if the suspension bottoms after jumping. If it does, test stiffer compression damping adjustments in 1/4 turn increments. |

# Carburetor Adjustments & Tuning Tips

The carburetor used on your CRF should perform suitably with the standard recommended settings under average load, climatic, and barometric conditions. However, to fine tune the engine's power output, the carburetor may require adjustments for specific competition needs.

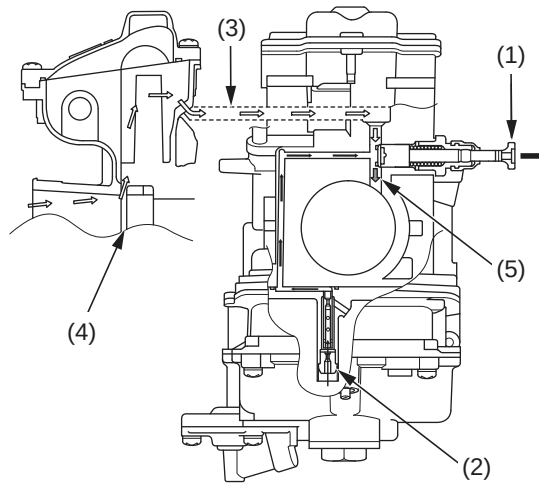
Optional main jets, slow jets, leak jets and accelerator pump diaphragms are available for your CRF. See your dealer.

Any engine or air cleaner housing modifications or the use of an aftermarket exhaust system may require jetting changes.

## Carburetor Components

Cold Start Circuit

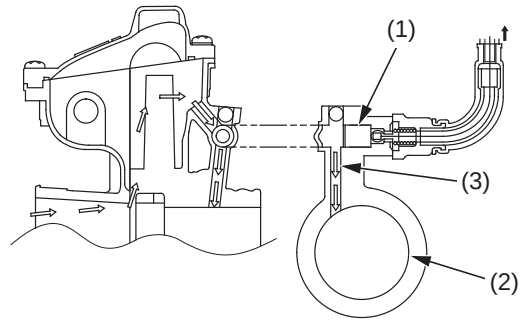
A very rich mixture must be delivered to the cylinder when a cold engine is being started. When the choke knob (1) is pulled out, fuel is metered by the starter jet (2) and is mixed with air from the air passage (3) (located above the throttle valve (4)) to provide a rich mixture for starting. The mixture discharges through the orifice (5) into the cylinder.




(1) choke knob
(2) starter jet
(3) air passage
(4) throttle valve
(5) orifice

Hot Start Circuit

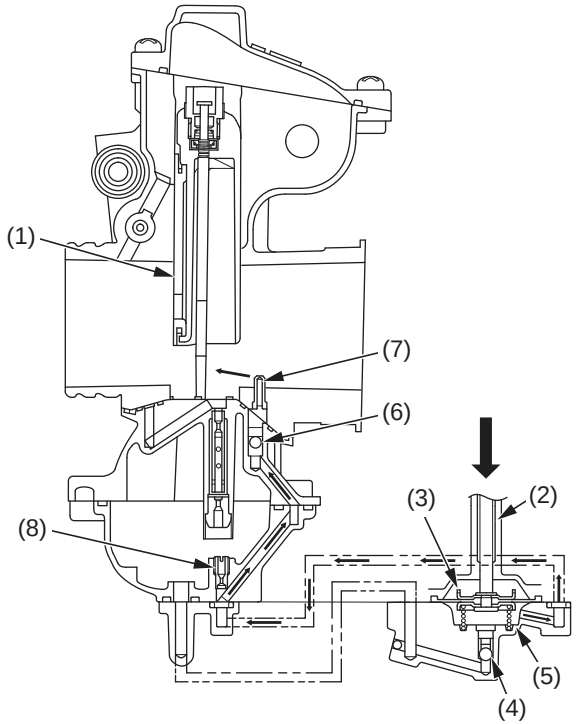
A lean mixture must be delivered to the cylinder when a hot engine is being started. When the hot start lever is pulled back, the hot start valve (1) opens, allowing air to be supplied to the main bore (2) through the hot start air passage (3). This extra air enters the air-fuel mixture from the slow circuit resulting in a lean condition.




(1) hot start valve
(2) main bore
(3) hot start air passage

Accelerator Pump Circuit

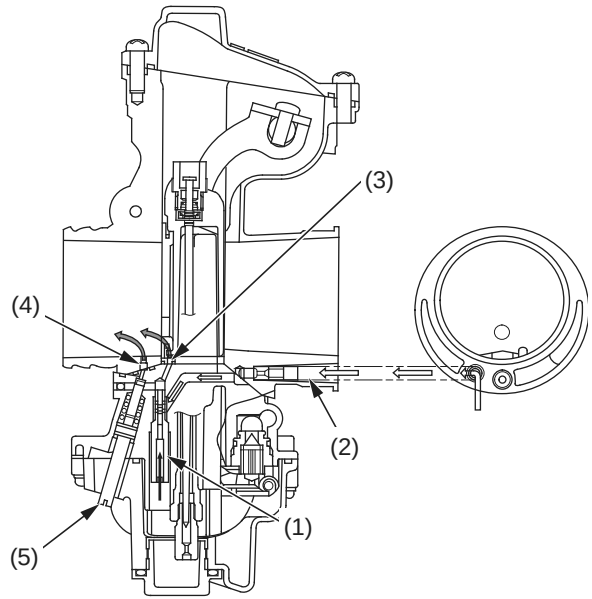
The accelerator pump circuit operates when the throttle is opened. As the throttle valve (1) opens, the pump rod (2) depresses the diaphragm (3). At this time, the inlet check valve (4) is shut resulting in a sharp increase in pressure in the pump chamber (5). The outlet check valve (6) then opens, supplying fuel to the main bore via the accelerator nozzle (7). Leak jet (8) operation is related to both the length of time before the fuel starts flowing after the opening of the throttle (time lag) and the flow amount.




(1) throttle valve
(2) pump rod
(3) diaphragm
(4) inlet check valve
(5) pump chamber
(6) outlet check valve
(7) accelerator nozzle
(8) leak jet

Slow Circuit

Fuel is metered by the slow jet (1) and mixed with air from the air passage (2). The mixture enters the venturi through the bypass (3) and pilot outlet (4) that has been metered by the pilot screw (5).




(1) slow jet
(2) air passage
(3) bypass
(4) pilot outlet
(5) pilot screw

Main Circuit

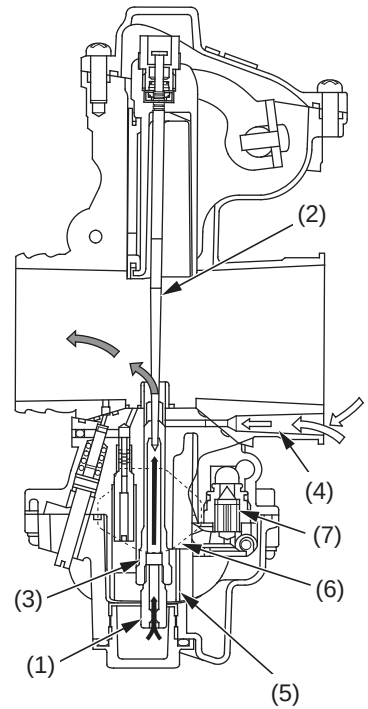
Fuel is metered by the main jet (1), jet needle (2) and needle jet (3). It is then mixed with air coming from the air jet (4) and enters the venturi past the needle jet.

Baffle Plate

The baffle plate (5) prevents foaming of fuel or abnormal fuel level around the main jet.

Float Bowl

The float (6) and float valve (7) operate to maintain a constant level of fuel in the float bowl.



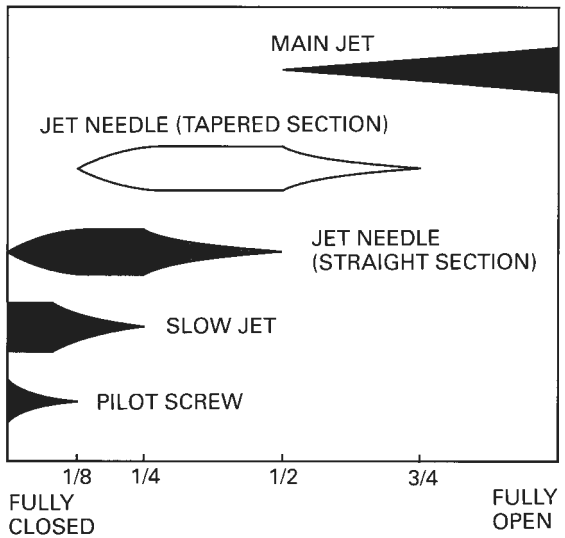

(1) main jet
(2) jet needle
(3) needle jet
(4) air jet
(5) baffle plate
(6) float
(7) float valve

# Carburetor Adjustments & Tuning Tips

## Carburetor Circuit Functions

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

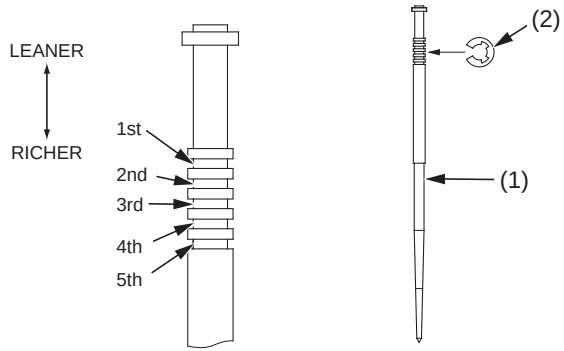
These major circuits overlap as shown below.




Main jet
The main jet affects fuel/air ratio from half (1/2) to full throttle (4/4). The size should be reduced at higher altitudes.

Honda carburetor jet sizes are numbered in increments of 2 or 3. When changing the main jet size, increase or decrease it gradually until the desired jetting is obtained. Because Honda jet size numbers do not correspond with other carburetor manufacturer's jet size numbers, use only Honda jets.

Jet Needle
The jet needle controls fuel/air mixture over fully closed to 3/4 throttle. The straight section (1) affects throttle response at smaller throttle openings. By changing the position of the clip (2) in its groove, you can improve acceleration at medium low and medium speed.




(1) straight section (2) clip

Slow Jet and Pilot Screw
The slow jet and pilot screw affects fuel/air ratio over fully closed to 1/4 throttle. Adjust the pilot screw to obtain the best off-idle performance.

- If the engine blubbers (rich) exiting a corner, turn the pilot screw clockwise to lean the mixture.
- If the engine surges (lean) exiting a corner, turn the pilot screw counterclockwise to richen the mixture.

The minimum to maximum range of pilot screw adjustment is 1 1/2 to 2 1/4 turns out from the lightly seated position. If you exceed 2 1/4 turns out, the next larger slow jet is needed.
If you are under 1 1/2 turns out, the next smaller slow jet is needed.

Leak jet
The smaller the number, the smaller the jet bore diameter. This controls the amount of fuel returned to the float chamber under pressure, therefore the flow amount is increased or decreased. With a small jet, pressure is raised faster and the elapsed time before the fuel starts flowing is shorter.

## Carburetor Removal

1. Remove the seat and fuel tank (pages 29, 30).
2. Drain the remaining fuel in the float bowl by loosening the drain screw (1).

**⚠ WARNING**

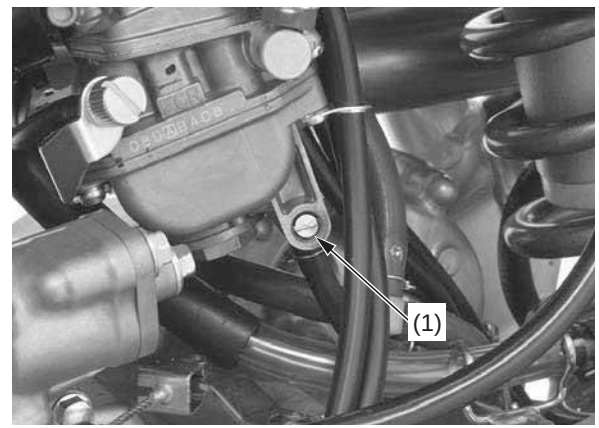
Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.

- Stop the engine and keep heat, sparks and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

3. Drain the carburetor into an approved gasoline container and dispose of it in an approved manner (page 130).

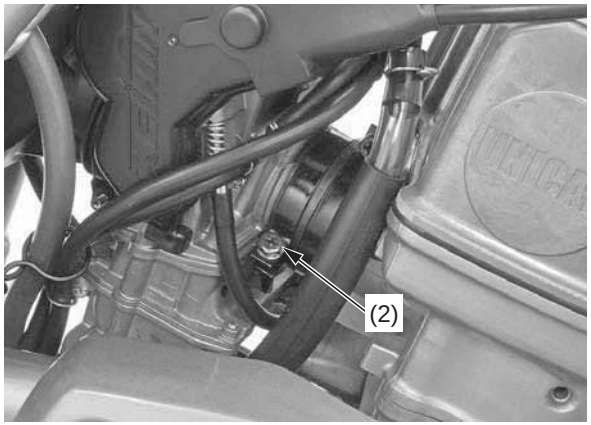
**NOTICE**

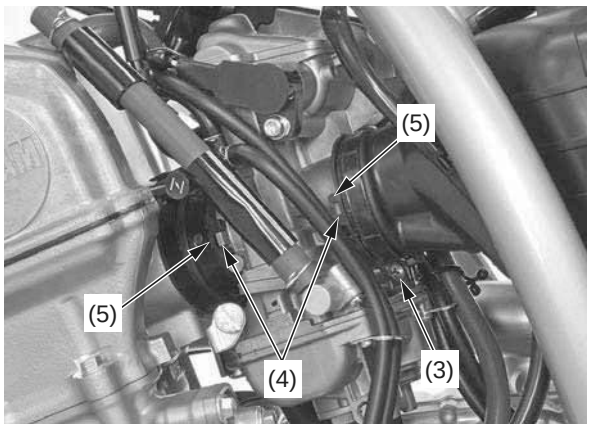
*Improper disposal of drained fluids is harmful to the environment.*




(1) drain screw

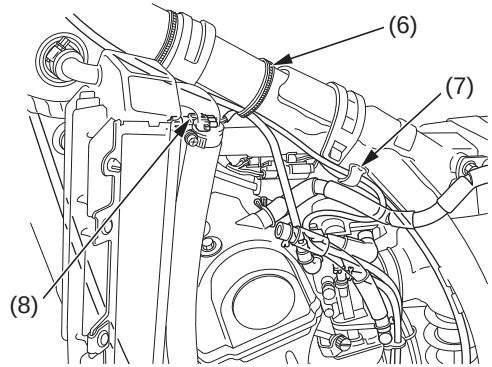
4. Tighten the drain screw.
5. Loosen the insulator band screw (2) and connecting tube clamp screw (3).
6. When installing the carburetor, align the carburetor tabs (4) with the insulator and connecting tube grooves (5).



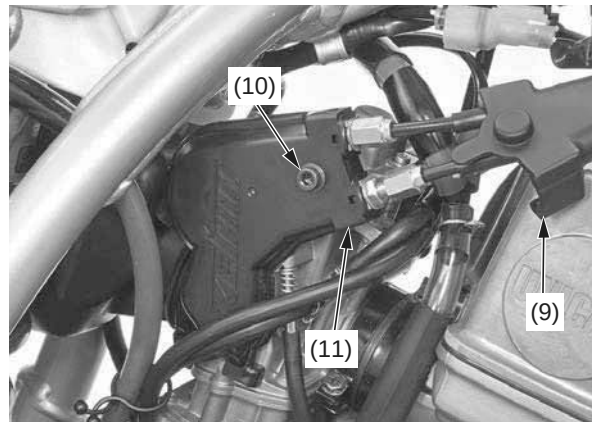

(2) insulator band screw
(3) connecting tube clamp screw
(4) tabs
(5) grooves

7. Release the throttle sensor wire from the wire band (6) and clamp (7).
8. Disconnect the throttle position sensor connector (8).



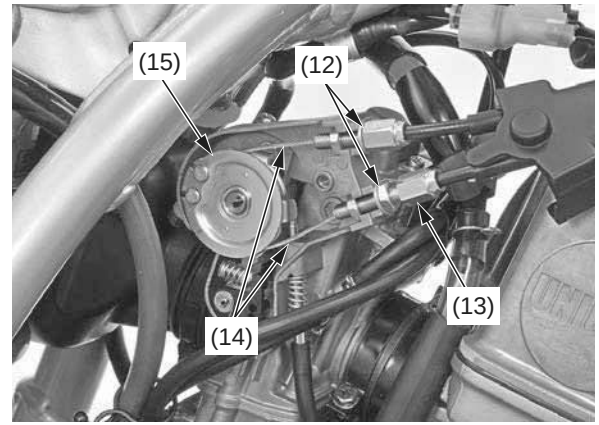

(6) wire band
(7) clamp
(8) throttle position sensor connector

9. Pull the dust cover (9) back.
10. Remove the throttle drum cover bolt (10) and throttle drum cover (11).



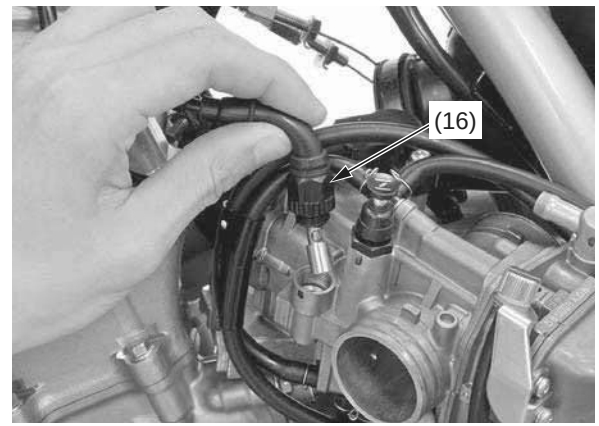

(9) dust cover
(10) throttle drum cover bolt
(11) throttle drum cover

11. Loosen the lock nuts (12), adjuster (13) and disconnect the throttle cables (14) from the throttle drum (15).




(12) lock nuts
(13) adjuster
(14) throttle cables
(15) throttle drum

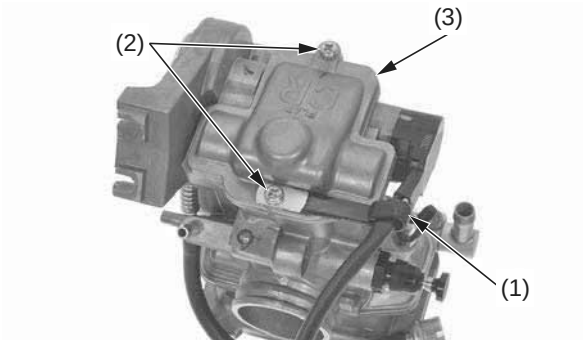
12. Remove the hot start cable holder (16).




(16) hot start cable holder

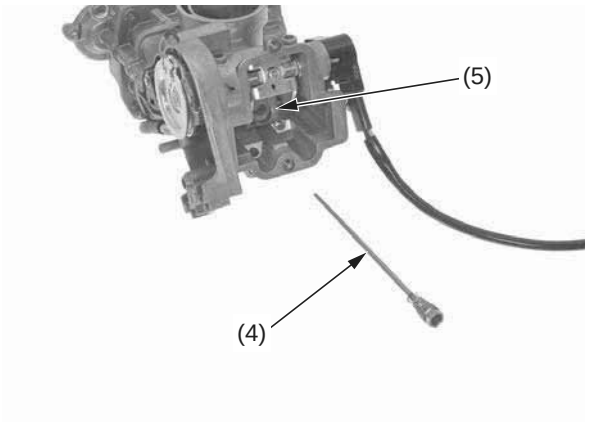
## Carburetor Disassembly/Assembly

1. Pull up the cable clamp (1) and remove the carburetor top screws (2).
   Then remove the carburetor top (3).



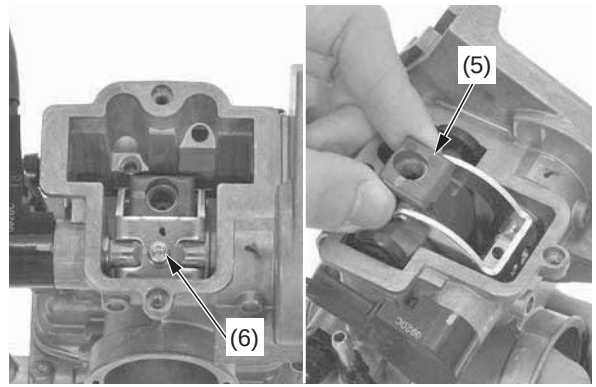

(1) cable clamp
(2) carburetor top screws
(3) carburetor top

2. Remove the jet needle/holder assembly (4) from the throttle valve (5).



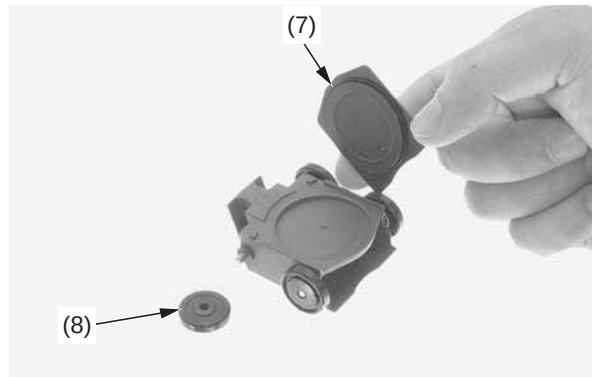

(4) jet needle/holder assembly
(5) throttle valve

3. Remove the link arm torx screw (6).
   When installing the link arm torx screw, apply a locking agent to the link arm torx screw threads.
4. Remove the throttle valve (5).



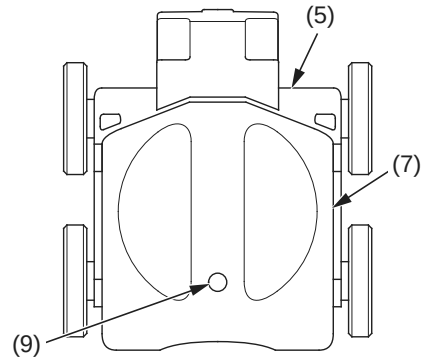

(5) throttle valve
(6) link arm torx screw

5. Remove the floating valve (7) and roller (8) from the throttle valve.



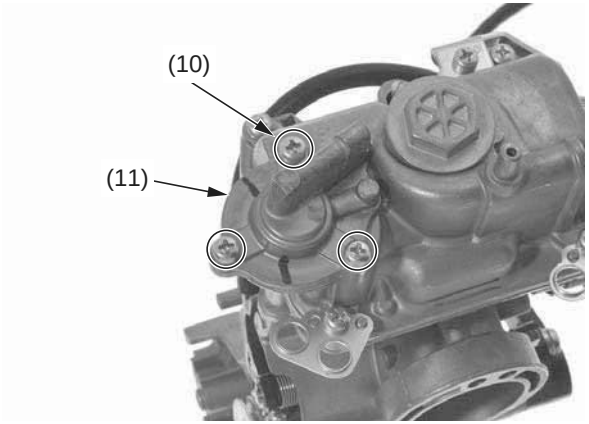

(7) floating valve (8) roller

When installing the floating valve (7) onto the throttle valve (5), make sure the floating valve's flat side faces out and the hole (9) faces down.



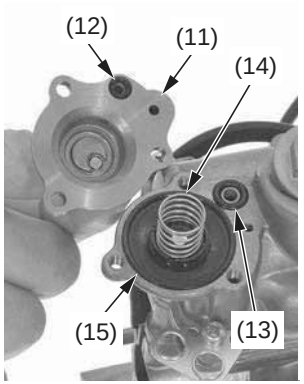

(5) throttle valve
(7) floating valve
(9) hole

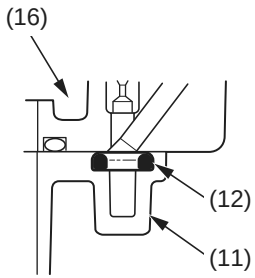
6. Remove the accelerator pump cover screws (10) and accelerator pump cover (11).




(10) accelerator pump cover screws
(11) accelerator pump cover

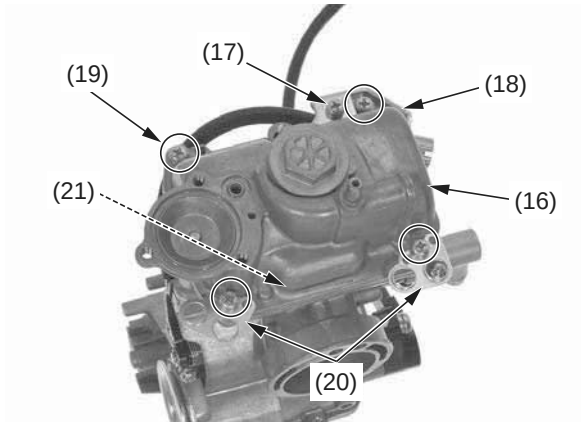
7. Remove the U-ring (12), O-ring (13), spring (14) and diaphragm (15).
   Clean the diaphragm.
   When installing the U-ring into the accelerator pump cover (11) make sure the U-ring flatside faces the accelerator pump cover, away from the float bowl (16).



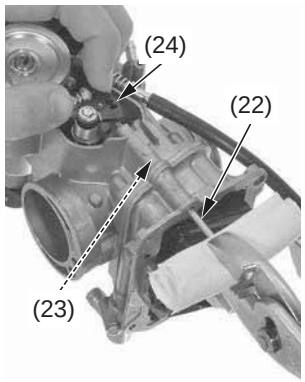

(11) accelerator pump cover
(12) U-ring
(13) O-ring
(14) spring
(15) diaphragm
(16) float bowl

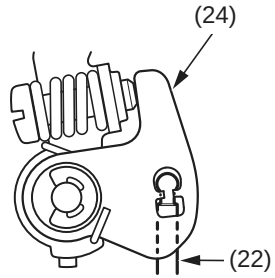
8. Remove the holder screw (17), throttle stop screw holder (18), float bowl screws (19), hose guides (20), float bowl (16) and O-ring (21).




(16) float bowl
(17) holder screw
(18) throttle stop screw holder
(19) float bowl screws
(20) hose guides
(21) O-ring

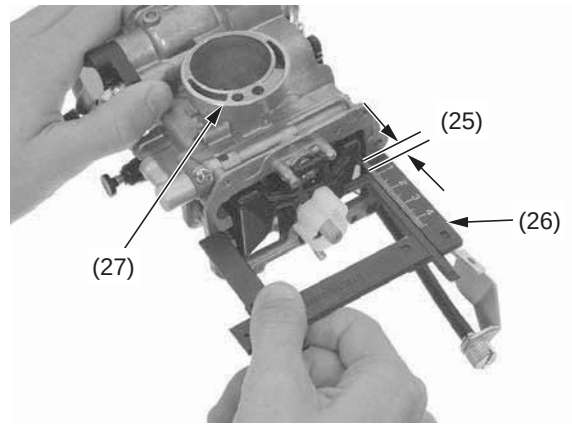
9. Remove the pump rod (22).
   Clean the pump rod and rod passage (23).
   Install the pump rod by pushing the rod forcibly into the link lever (24) until it snaps into place.



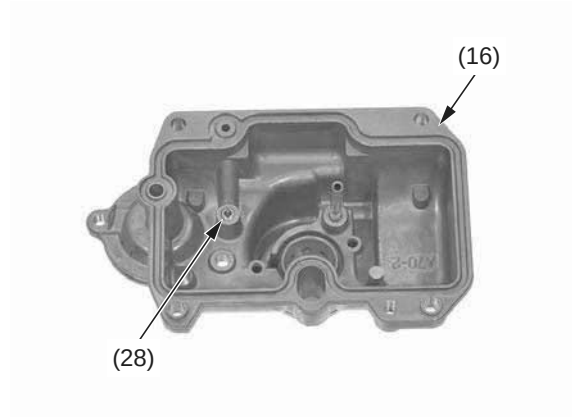

(22) pump rod
(23) rod passage
(24) link lever

10. Measure the float level (25) with the float level gauge (26) while the float tab is just contacting the float valve and the carburetor intake (27) is facing up. The float level should be 0.28 in (7.0 mm). If the float level is out of specification, adjust it by bending the float tab carefully.




(25) float level
(26) float level gauge
(27) carburetor intake

11. Remove the leak jet (28) from the float bowl (16). Clean the leak jet.



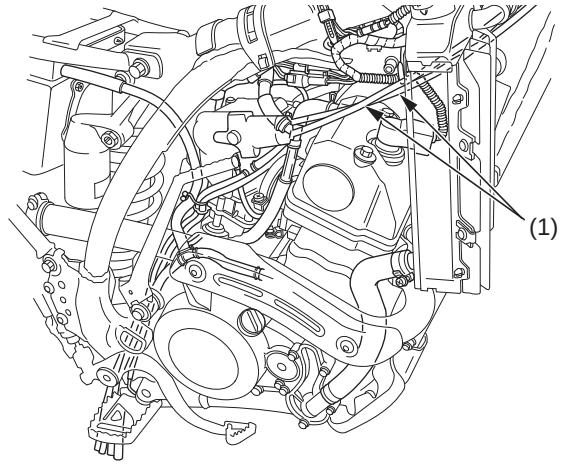

(16) float bowl
(28) leak jet

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

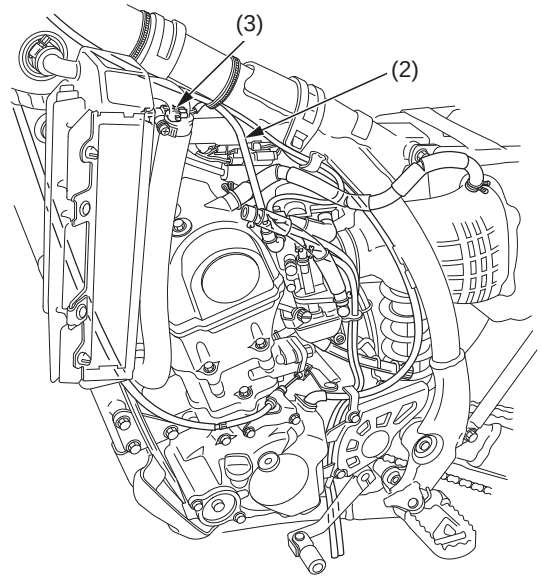
Tighten the following parts to the specified torque.

float bowl screws:
1.5 lbf·ft (2.1 N·m, 0.2 kgf·m)
float bowl plug:
3.6 lbf·ft (4.9 N·m, 0.5 kgf·m)
accelerator pump cover screws:
1.5 lbf·ft (2.1 N·m, 0.2 kgf·m)
carburetor top screws:
1.5 lbf·ft (2.1 N·m, 0.2 kgf·m)
jet needle/holder assembly:
1.5 lbf·ft (2.1 N·m, 0.2 kgf·m)
link arm torx screw:
1.5 lbf·ft (2.1 N·m, 0.2 kgf·m)
throttle drum cover bolt:
2.5 lbf·ft (3.4 N·m, 0.3 kgf·m)
hot start cable nut:
1.5 lbf·ft (2.1 N·m, 0.2 kgf·m)
throttle cable lock nut:
3.0 lbf·ft (4.0 N·m, 0.4 kgf·m)
leak jet:
0.2 lbf·ft (0.3 N·m, 0.03 kgf·m)
main jet:
1.1 lbf·ft (1.5 N·m, 0.2 kgf·m)
slow jet:
1.1 lbf·ft (1.5 N·m, 0.2 kgf·m)

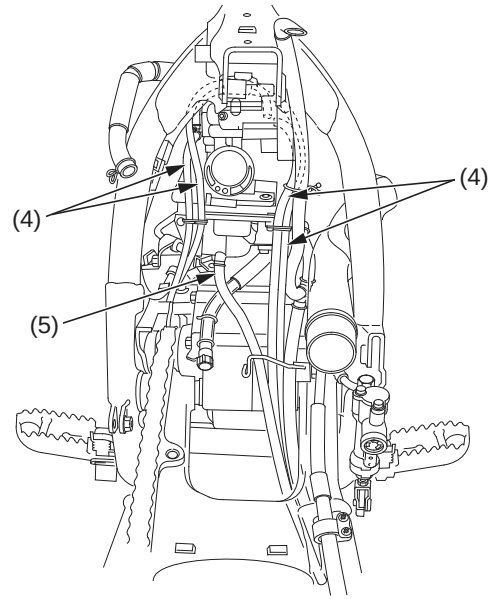
- Route the throttle cables (1), hot start cable (2) and throttle position sensor wire correctly.
- After installing the carburetor, adjust the throttle grip freeplay and hot start lever freeplay.
- After installing the carburetor, check the throttle position sensor connector (3) for correct routing.
- After installing the carburetor, check the air vent hoses (4) and overflow hose (5) for kinking or pinching and correct routing.
- Check that the U-ring and O-ring are in good condition. Replace them if necessary.




(1) throttle cables




(2) hot start cable
(3) throttle position sensor connector




(4) air vent hoses
(5) overflow hose

## Standard Tuning Recommendations

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.

| Adjustment | Standard settings |
|---|---|
| Pilot screw opening | 2 1/8 turns out |
| Slow jet | #38 |
| Jet needle | NMQT |
| Needle clip position | 3rd groove |
| Main jet | #140 |
| Float level | 0.28 in (7.0 mm) |
| Identification number | FCR08D |

## Adjustments for Altitude & Temperature

All jetting recommendations are based on standard jetting with an unmodified engine. The following conditions can affect the fuel mixture.

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

All jetting is based on
- Standard jetting
- Unmodified Engine

| Temperature | FAHR. | -21°~ 0° | -1°~ 20° | 19°~ 40° | 39°~ 60° | 59°~ 80° | 79°~ 100° | 99°~ 120° |
|---|---|---|---|---|---|---|---|---|
| Altitude | CENT. | -30°~ -17° | -18°~ -6° | -7°~ 5° | 4°~ 16° | 15°~ 27° | 26°~ 38° | 37°~ 49° |
| 10,000 ft (3,050 m) ~ 7,500 ft (2,300 m) | PS:<br>SJ:<br>JN CLIP:<br>JN:<br>MJ: | 2 1/8<br>38<br>3rd<br>NMQT<br>140 | 2 1/8<br>38<br>3rd<br>NMQT<br>138 | 2 1/8<br>38<br>3rd<br>NMQT<br>138 | 1 7/8<br>38<br>3rd<br>NMRT<br>138 | 1 7/8<br>38<br>3rd<br>NMRT<br>138 | 1 5/8<br>38<br>2nd<br>NMQT<br>135 | 1 5/8<br>38<br>2nd<br>NMQT<br>135 |
| 7,499 ft (2,299 m) ~ 5,000 ft (1,500 m) | PS:<br>SJ:<br>JN CLIP:<br>JN:<br>MJ: | 2 1/8<br>38<br>3rd<br>NMQT<br>140 | 2 1/8<br>38<br>3rd<br>NMQT<br>140 | 2 1/8<br>38<br>3rd<br>NMQT<br>138 | 2 1/8<br>38<br>3rd<br>NMQT<br>138 | 1 7/8<br>38<br>3rd<br>NMRT<br>138 | 1 7/8<br>38<br>3rd<br>NMRT<br>138 | 1 5/8<br>38<br>2nd<br>NMQT<br>135 |
| 4,999 ft (1,499 m) ~ 2,500 ft (750 m) | PS:<br>SJ:<br>JN CLIP:<br>JN:<br>MJ: | 2 1/8<br>38<br>3rd<br>NMQT<br>142 | 2 1/8<br>38<br>3rd<br>NMQT<br>140 | 2 1/8<br>38<br>3rd<br>NMQT<br>140 | 2 1/8<br>38<br>3rd<br>NMQT<br>138 | 2 1/8<br>38<br>3rd<br>NMQT<br>138 | 1 7/8<br>38<br>3rd<br>NMRT<br>138 | 1 7/8<br>38<br>3rd<br>NMRT<br>138 |
| 2,499 ft (749 m) ~ 1,000 ft (300 m) | PS:<br>SJ:<br>JN CLIP:<br>JN:<br>MJ: | 2 1/8<br>38<br>3rd<br>NMQT<br>142 | 2 1/8<br>38<br>3rd<br>NMQT<br>142 | 2 1/8<br>38<br>3rd<br>NMQT<br>140 | 2 1/8<br>38<br>3rd<br>NMQT<br>140 | 2 1/8<br>38<br>3rd<br>NMQT<br>138 | 2 1/8<br>38<br>3rd<br>NMQT<br>138 | 1 7/8<br>38<br>3rd<br>NMRT<br>138 |
| 999 ft (299 m) ~ 0 m Sea level | PS:<br>SJ:<br>JN CLIP:<br>JN:<br>MJ: | 2 3/8<br>38<br>4th<br>NMRT<br>142 | 2 1/8<br>38<br>3rd<br>NMQT<br>142 | 2 1/8<br>38<br>3rd<br>NMQT<br>142 | 2 1/8<br>38<br>3rd<br>NMQT<br>140 | STANDARD JETTING<br>2 1/8<br>38<br>3rd<br>NMQT<br>140 | 2 1/8<br>38<br>3rd<br>NMQT<br>138 | 2 1/8<br>38<br>3rd<br>NMQT<br>138 |

Legend
- PS: Pilot Screw opening from fully seated
- SJ: Slow Jet
- JN: Jet Needle
- JN CLIP: Needle Clip position
- MJ: Main Jet

## Optional Muffler Settings

Your CRF dose not conform to AMA noise emission regulation for 2015 year.
If you use optional AMA noise emission regulation conformed muffler, you should change the carburetor settings.

| Adjustment | Settings |
|---|---|
| Pilot screw opening | 1 3/4 turns out |
| Slow jet | #38 |
| Jet needle | NMQT |
| Needle clip position | 3rd groove |
| Main jet | #132 |

All jetting is based on
- Standard jetting
- Unmodified Engine

| Temperature | FAHR. | -21°~ 0° | -1°~ 20° | 19°~ 40° | 39°~ 60° | 59°~ 80° | 79°~ 100° | 99°~ 120° |
|---|---|---|---|---|---|---|---|---|
| Altitude | CENT. | -30°~ -17° | -18°~ -6° | -7°~ 5° | 4°~ 16° | 15°~ 27° | 26°~ 38° | 37°~ 49° |
| 10,000 ft<br>(3,050 m)<br>~<br>7,500 ft<br>(2,300 m) | PS:<br>SJ:<br>JN CLIP:<br>JN:<br>MJ: | 1 3/4<br>38<br>3rd<br>NMQT<br>132 | 1 3/4<br>38<br>3rd<br>NMQT<br>130 | 1 3/4<br>38<br>3rd<br>NMQT<br>130 | 1 1/2<br>38<br>3rd<br>NMRT<br>130 | 1 1/2<br>38<br>3rd<br>NMRT<br>130 | 1 1/4<br>38<br>2nd<br>NMQT<br>128 | 1 1/4<br>38<br>2nd<br>NMQT<br>128 |
| 7,499 ft<br>(2,299 m)<br>~<br>5,000 ft<br>(1,500 m) | PS:<br>SJ:<br>JN CLIP:<br>JN:<br>MJ: | 1 3/4<br>38<br>3rd<br>NMQT<br>132 | 1 3/4<br>38<br>3rd<br>NMQT<br>132 | 1 3/4<br>38<br>3rd<br>NMQT<br>130 | 1 3/4<br>38<br>3rd<br>NMQT<br>130 | 1 1/2<br>38<br>3rd<br>NMRT<br>130 | 1 1/2<br>38<br>3rd<br>NMRT<br>130 | 1 1/4<br>38<br>2nd<br>NMQT<br>128 |
| 4,999 ft<br>(1,499 m)<br>~<br>2,500 ft<br>(750 m) | PS:<br>SJ:<br>JN CLIP:<br>JN:<br>MJ: | 1 3/4<br>38<br>3rd<br>NMQT<br>135 | 1 3/4<br>38<br>3rd<br>NMQT<br>132 | 1 3/4<br>38<br>3rd<br>NMQT<br>132 | 1 3/4<br>38<br>3rd<br>NMQT<br>130 | 1 3/4<br>38<br>3rd<br>NMQT<br>130 | 1 1/2<br>38<br>3rd<br>NMRT<br>130 | 1 1/2<br>38<br>3rd<br>NMRT<br>130 |
| 2,499 ft<br>(749 m)<br>~<br>1,000 ft<br>(300 m) | PS:<br>SJ:<br>JN CLIP:<br>JN:<br>MJ: | 1 3/4<br>38<br>3rd<br>NMQT<br>135 | 1 3/4<br>38<br>3rd<br>NMQT<br>135 | 1 3/4<br>38<br>3rd<br>NMQT<br>132 | 1 3/4<br>38<br>3rd<br>NMQT<br>132 | 1 3/4<br>38<br>3rd<br>NMQT<br>130 | 1 3/4<br>38<br>3rd<br>NMQT<br>130 | 1 1/2<br>38<br>3rd<br>NMRT<br>130 |
| 999 ft<br>(299 m)<br>~<br>0 m<br>Sea level | PS:<br>SJ:<br>JN CLIP:<br>JN:<br>MJ: | 2<br>38<br>4th<br>NMRT<br>135 | 1 3/4<br>38<br>3rd<br>NMQT<br>135 | 1 3/4<br>38<br>3rd<br>NMQT<br>135 | 1 3/4<br>38<br>3rd<br>NMQT<br>132 | OPTIONAL JETTING<br>1 3/4<br>38<br>3rd<br>NMQT<br>132 | 1 3/4<br>38<br>3rd<br>NMQT<br>130 | 1 3/4<br>38<br>3rd<br>NMQT<br>130 |

Legend
PS: Pilot Screw opening from fully seated
SJ: Slow Jet
JN: Jet Needle
JN CLIP: Needle Clip position
MJ: Main Jet

## Special Tuning Conditions

There are some unique atmospheric conditions or situations that may require additional adjustments.

It should not be necessary to go more than one jet size richer or leaner to fine tune your CRF. If larger jetting changes are necessary, check for air leaks, blocked or restricted exhaust or fuel systems, or a dirty air cleaner.

| Condition | Main Jet Adjustment |
|---|---|
| long straights | next larger |
| uphill sections | |
| sand | |
| mud | |
| high humidity | next smaller |
| raining | |
| hotter than 113 °F (45 °C) | |

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.

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 size 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 size when: it is very humid or raining, or it is hotter than 113°F (45°C).

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 CRF. 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.

## Pre-Adjustment Checks

Before adjusting carburetor settings, check the following:

- air cleaner
- air leaks
- float level
- clogged carburetor jets
- spark plug fouling (improper heat range or other cause)
- freshness of fuel
- owner modifications (such as exhaust system, holes in the air cleaner housing, etc.)
- ignition timing
- compression

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 143 for the optional carburetor parts.

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

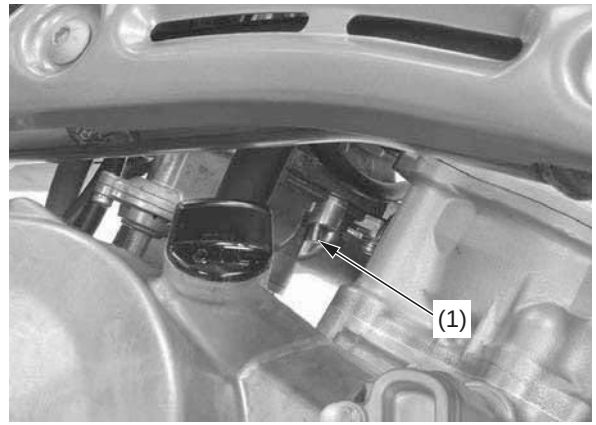
## Carburetor Minor Adjustments

The standard carburetor settings are ideal for the following conditions: sea level altitude, and 68°F (20°C) air temperature. If your conditions are different, you may need to adjust the carburetor settings, using the tuning information on pages 117 to 119. Confirm your settings are correct before proceeding.

Minor Adjustments

1. Adjust the carburetor setting using the tuning information on pages 117 to 119.
2. When the engine is warm enough to run without the choke, push the choke knob in to its off position.
3. Adjust the pilot screw (1) to obtain the best off-idle performance.
   – If the engine blubbers (rich) exiting a corner, turn the pilot screw clockwise to lean the mixture.
   – If the engine surges (lean) exiting a corner, turn the pilot screw counterclockwise to richen the mixture.

The minimum to maximum range of pilot screw adjustments is 1 1/2 to 2 1/4 turns out from the lightly seated position. If you exceed 2 1/4 turns out, the next larger slow jet is needed. If you are under 1 1/2 turn out, the next smaller slow jet is needed.




(1) pilot screw

Adjustment Procedure

1. Turn the pilot screw in until it is lightly seated and record the number of turns. Turn the pilot screw out the same number of turns.
2. Warm up the engine.
3. Adjust the engine idle speed (page 48).
4. Make two or three laps of a course with the standard setting or corrected jetting (page 117) 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 122). It may take more than two or three laps to get a good spark plug reading with a new spark plug.
5. Change carburetor settings or select suitable carburetor jets, taking into consideration the engine conditions and factors for temperature and altitude (page 117).
6. Adjust the pilot screw as required.

**⚠ WARNING**

Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.

- Stop the engine and keep heat, sparks and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

If you've determined that the main and slow jets must be changed, you must rotate the carburetor and remove the float bowl plug.

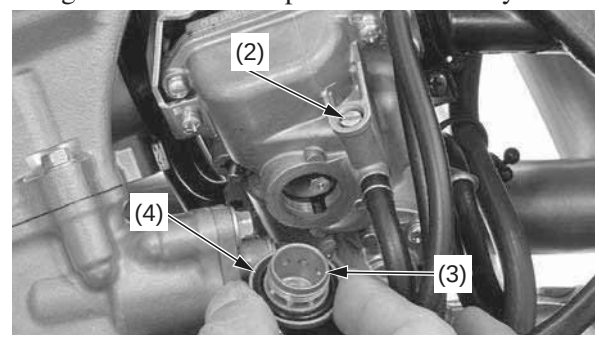
7. Turn the fuel valve OFF.
8. Drain the remaining fuel in the float bowl by loosening the drain screw (2). Then tighten the drain screw after draining the fuel.

Drain the carburetor into an approved gasoline container and dispose of it in an approved manner (page 130).

**NOTICE**

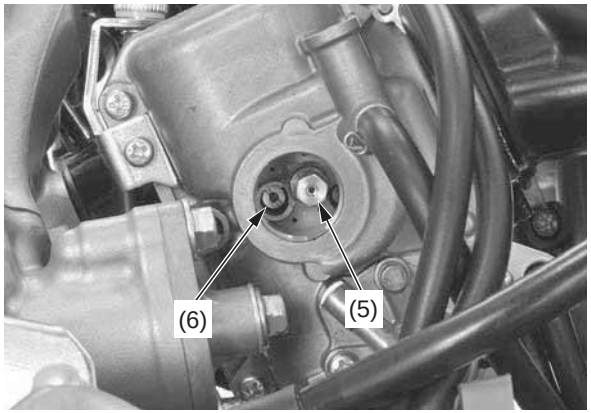
*Improper disposal of drained fluids is harmful to the environment.*

9. Loosen the connecting tube clamp and insulator band screws. Rotate the carburetor.
10. Remove the float bowl plug (3). Check the float bowl plug O-ring (4) is in good condition. Replace it if necessary.




(2) drain screw
(3) float bowl plug
(4) float bowl plug O-ring

11. Change the main jet (5) and slow jet (6) as required.
    Main jet;
    1.1 lbf·ft (1.5 N·m, 0.2 kgf·m)
    Slow jet:
    1.1 lbf·ft (1.5 N·m, 0.2 kgf·m)

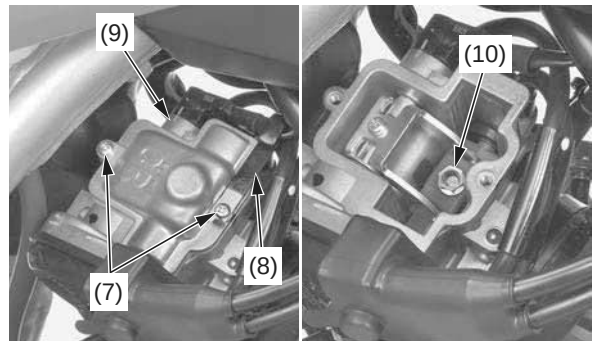



(5) main jet (6) slow jet

12. Reinstall the float bowl plug and tighten it to the specified torque:
    3.6 lbf·ft (4.9 N·m, 0.5 kgf·m)

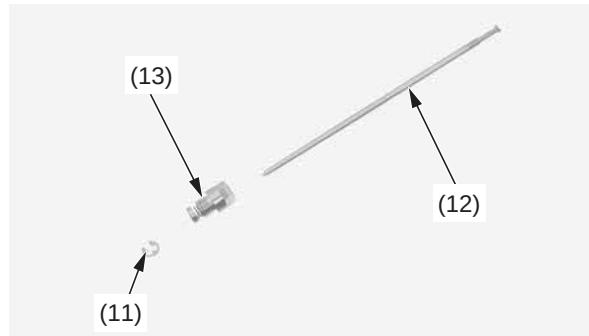
If you've determine that the jet needle or clip position of jet needle must be changed, you must remove the carburetor top.

13. Rotate the carburetor to the right and remove the carburetor top screws (7), cable clamp (8) and carburetor top (9).
14. Remove the jet needle/holder assembly (10).



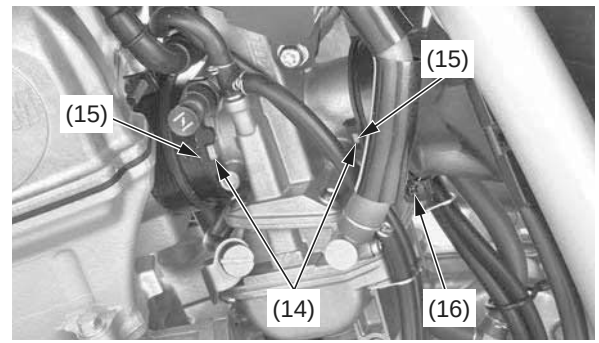

(7) carburetor top screws (9) carburetor top
(8) cable clamp (10) jet needle/holder assembly

15. Remove the clip (11) and jet needle (12) from the jet needle holder (13).

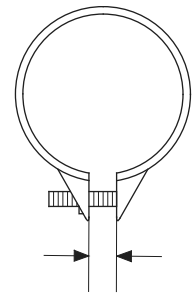



(11) clip (13) jet needle holder
(12) jet needle

16. Change the clip position of jet needle or jet needle as required.
17. Reinstall the jet needle/holder assembly and tighten it to the specified torque:
    1.5 lbf·ft (2.1 N·m, 0.2 kgf·m)
18. Reinstall the carburetor top, cable clamp and carburetor top screws. Tighten the carburetor top screws to the specified torque:
    1.5 lbf·ft (2.1 N·m, 0.2 kgf·m)
19. Rotate the carburetor and align the tabs (14) on the carburetor with the grooves (15) on the insulator and connecting tube.
20. Tighten the connecting tube clamp screw (16) so the gap between the tabs of the clamp is 0.1 ± 0.04 in (3 ± 1 mm).



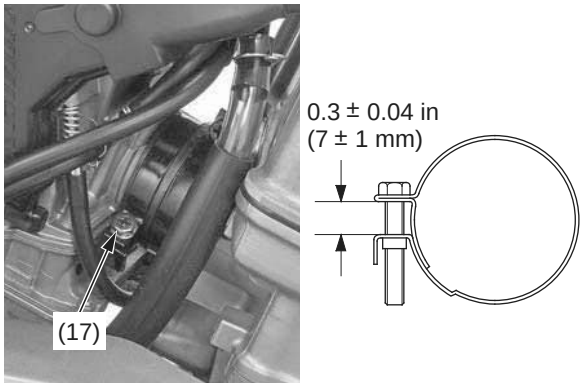

(14) tabs (16) connecting tube clamp screw
(15) grooves



0.1 ± 0.04 in (3 ± 1 mm)

(cont'd)

21. Tighten the insulator band screw (17) so the gap between the tabs of the clamp is 0.3 ± 0.04 in (7 ± 1 mm).




(17) insulator band screw

22. Start the engine.
    If the engine idle speed is too high or too low or engine is not idling, adjust the engine idle speed (page 48).
23. Repeat steps 4 – 22 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.

## Spark Plug Reading

Refer to *Spark Plug* on page 52.

Check any jetting change by reading the spark plug. The following procedure is recommended. You may not get an accurate reading if you simply turn off the engine and pull the plug for inspection.

Use a new spark plug. Inspect the plug before installing it.

**NOTICE**

*Using spark plugs with an improper heat range or incorrect reach can cause engine damage.*

Before removing the spark plug, clean the spark plug area thoroughly to prevent dirt from entering the cylinder.

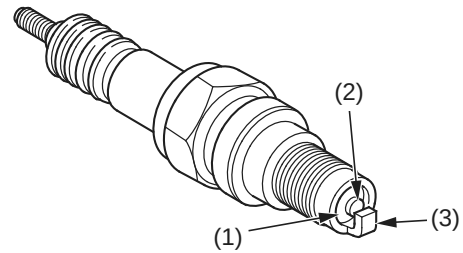
Ride for 10 – 15 minutes before taking a plug reading. A new plug will not color immediately.

To obtain an accurate reading of a new spark plug:

1. Accelerate at full-throttle on a straight.
2. Push the engine stop button and pull the clutch lever in to release the clutch.
3. Coast to a stop.
4. Remove the spark plug.
5. Use a magnifying glass to inspect the spark plug. The porcelain insulator (1) around the center electrode (2) should appear clean and colorless with a gray ring around the center electrode where it exits the porcelain. Metallic specks indicate lean jetting that is removing metal from the piston. Black sooty streaks on the porcelain indicate rich jetting.

**NOTICE**

*An improperly tightened spark plug can damage the engine. If a plug is too loose, a piston may be damaged. If a plug is too tight, the threads may be damaged.*




(1) porcelain insulator (3) side electrode
(2) center electrode

Spark Plug Coloring Guidelines

| Condition | Spark Plug Appearance | Mixture |
|---|---|---|
| Normal | Dark brown to light tan color with dry electrode | correct |
| Overheating (Lean) | Light gray or white color | lean |
| Wet (Rich) | Wet or sooty | rich |

Remember that in addition to improper jetting:

- A lean condition can be caused by air leaks in the inlet tract or exhaust system, the passage of too much air because of the use of the wrong air cleaner, use of a less-restrictive aftermarket exhaust system, or a hole or holes (deliberate or unintentional) in the air cleaner housing.
- A rich condition can be caused by a plugged or dirty air cleaner, use of a more-restrictive aftermarket exhaust system, a clogged spark arrester, or excessive oil on the air cleaner. Excessive smoking will occur.

The following suggestions may improve a specific concern. Subtle changes in overall handling may also be noted.

## Rear End

If you have a problem with rear wheel traction, raise the rear end of your CRF by increasing the rear spring pre-load. Instead of running 3.3 in (85 mm) of sag, you can run 3.1 in (80 mm) or 3.0 in (75 mm) so the rear of the bike will sit a little higher. This should produce more traction because of the change to the swingarm and location of your CRF's center of gravity.

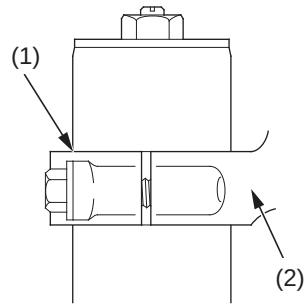
If you have a problem with the steering head shaking when you use the front brake hard or if your CRF wants to turn too quickly, lower the rear of the motorcycle by reducing the rear spring pre-load. This will increase fork rake and trail and should improve stability in a straight line. The effective suspension travel will be transferred toward the firmer end of wheel travel.
Keep the race sag adjustment (page 104) in the 3.3 – 4.1 in (85 – 105 mm) range.

## Fork Height/Angle

The position of the fork tubes in the clamps is not adjustable. Align the groove in the outer tube with the top surface of the upper fork clamp.

Standard Position

Align the groove (1) in the outer tube with the top surface of the upper fork clamp (2).




(1) groove (2) upper fork clamp

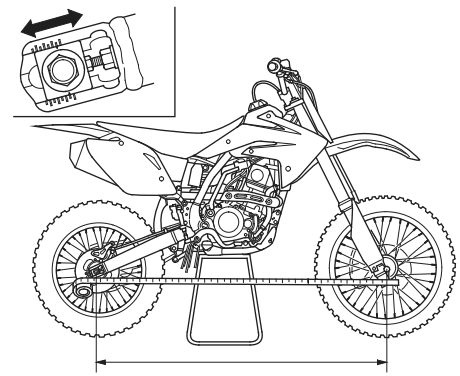
## Wheelbase

Adjusting your CRF's wheelbase can offer subtle changes in overall handling. You may adjust wheelbase by adding or removing links on the drive chain. If you change the wheelbase, be sure to recheck race sag and adjust it, if necessary.

In the past, a general rule was lengthen the wheelbase to add straight line stability, shorten the wheelbase to improve turning. However, we suggest you do not lengthen the wheelbase of your CRF unless you are racing on a track with more fast sections than normal.

As a general recommendation, keep the wheelbase as short as possible. This positions the wheels closer together, improves turning response, increases weighting (traction) on the rear wheel, and reduces weight on the front wheel.

With your CRF, you will probably find that the standard setting or a shorter wheelbase will offer more overall benefits.



# Gearing

You can “adjust” the power delivery of the standard engine to suit track conditions by changing gearing. This allows you to utilize a different portion of the engine’s power range at a given throttle setting. New gearing may provide the change you are looking for without the need to consider further modifications..

The portion of your engine’s power range you use can be adjusted by changing the final drive ratio with different sized rear sprockets. Gearing changes allow you to more closely match the type of terrain and the available traction.
Normally, a change of one tooth on the driven sprocket will be sufficient.

There is a choice of both higher and lower final drive ratios with three optional aluminum driven sprockets. For muddy or sandy courses, standard steel driven sprocket is a more durable. Like the optional springs, these sprockets are listed in the Optional Parts List section of this manual.

Unless you have the required mechanical knowhow, tools, and an official Honda Service Manual, sprocket changing should be done by your dealer.

Higher Gearing (less driven sprocket teeth)
- increases top speed in each gear (provided the engine will pull the higher gearing)
- reduces frequency of shifting (wider gear ratios)
- reduces engine rpm at a given throttle setting or ground speed (which may allow better rear wheel traction on slippery or loose terrain)

However:
- the engine may not pull the higher gearing
- the spacing between gears may be too wide
- engine rpm may be too low

Lower Gearing (more driven sprocket teeth)
- decrease top speed in each gear
- increases frequency of shifting (narrower gear ratios)
- increases engine rpm at a given throttle setting or ground speed (which may provide more power-to-the-ground on good traction surfaces)

However:
- spacing between gears may be too narrow
- engine rpm may be too high

Some tracks may be watered heavily prior to the first race, then lightly or not at all during the day. This results in a track surface that is slippery during the first few races, then changes from good to great and back to good, and possibly ends 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 a higher gear (less teeth) to keep 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 lower gearing (more teeth) 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.

For tight tracks, consider lower gearing to avoid having to slip the clutch frequently. Repeated fanning or pulling of the clutch lever in a turn to raise engine rpm may eventually damage the clutch system.

A gearing change may help for riding in sand, where you want to keep the front end light so it can float from the peak of one sand whoop to the next. Generally, with higher gearing, it is easier to maintain that perfect attitude (maximum rear wheel traction and a light front end) because you remain in the powerband longer in each gear. The higher gearing allows you to steer more efficiently with throttle control and body English.

If you are riding a track with sections where you choose to over-rev the engine temporarily rather than shifting up, higher gearing might help.

Sometimes you have to sacrifice performance on one section of the track to gain a better overall time. Your goal is the fastest overall lap time, even if the trade-off is gearing that feels wrong in some sections.

If you decide to try a gearing change, have someone check your times with a stopwatch (before and after the change) to get an accurate appraisal of the gearing change. “Seat-of-the-pants” feelings can’t be trusted. Eliminating wheelspin with a gearing change can make you feel like you’re going slower when, in reality, you’ve decreased your time by increasing your speed with better traction.

These gearing recommendations should be evaluated by considering your ability, your riding style, and the track.

Choosing the correct tire tread pattern and rubber compound can affect your placing in competition. The tires on your CRF offer a “happy medium” for the variety of soil conditions the majority of riders are likely to encounter.

Experienced competitors often switch to tires developed for specific terrain conditions. If you do switch, stay with the factory recommended sizes. Other tires may affect handling or acceleration.

Be aware that tire sizes (width and aspect ratio) do vary from manufacturer to manufacturer or even among tires made by the same manufacturer. Variations in tires, especially the sidewall profile, can change the attitude of your CRF and its handling. Tire variations that raise or lower the rear of your CRF have a more significant effect on handling than variations in front tires which, generally, don’t vary as much.
Often, you can see or feel the change in tire size. Another way to check is to measure the rolling circumference of the old and new tires. A higher profile tire will have a larger rolling circumference.

If you do switch to tires designed for special terrain use, remember they will be less acceptable in other circumstances. For example, an aggressive mud tire will give excellent grip on wet, loamy terrain, but less impressive grip on a hard surface.

If you choose a tire with a sticky compound for added traction, remember that it may transfer additional loads to the transmission because it grips so well, especially when riding in situations that normally place unusual demands on the transmission.

Complete consumer information can be obtained from the various tire manufacturer representatives and dealers.

Some general recommendations for specific terrain follow:

Hard, Slick Soil
Use 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 roll over easily and affect holding a straight line. These tires tend to wear more quickly than standard tires because of the combination of soft rubber and hard terrain.

Muddy Soil
Use a more open tread pattern to avoid clogging. For these conditions, the relatively long knobs will probably be made from a harder rubber compound to reduce any tendency to bend back under acceleration or wear quickly.

Loose, Sandy Soil
Use a tire that is similar in construction to those needed for tacky soil and mud, but with a few more knobs.

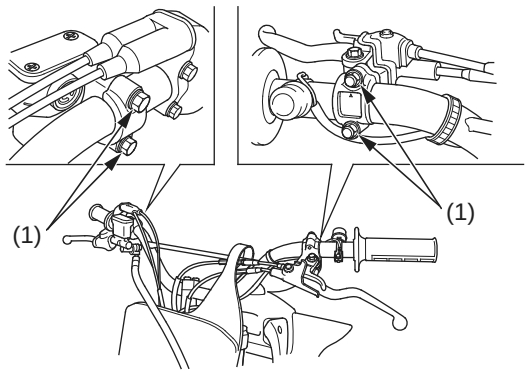
# Personal Fit Adjustments

The following suggestions may make your ride both more comfortable and more responsive to your control input.

## Control Positioning

- Position the control levers so that you can use them comfortably when seated and standing.
- Adjust the mounting bolt torque of the clutch and brake lever assemblies so that they can rotate on the handlebar in a fall. If an assembly does not rotate, it may bend or break a control lever. Make sure that the bolts are torqued securely enough to prevent slippage during normal operation.

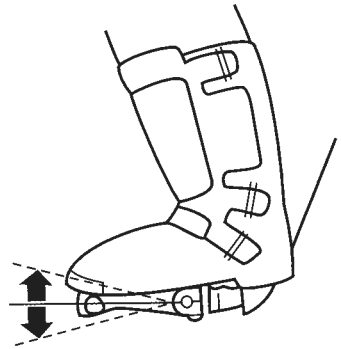
Apply Pro Honda Hondalock or an equivalent to the threads of these bolts prior to adjustment to help ensure the correct torque is retained. Tighten the top bolts first.




(1) control lever mounting bolts

As an alternative, consider wrapping the handlebar area under the control assemblies with teflon tape. Then tighten the assemblies to their normal torque. Upon impact, the fully-tightened assemblies should rotate on the teflon tape.

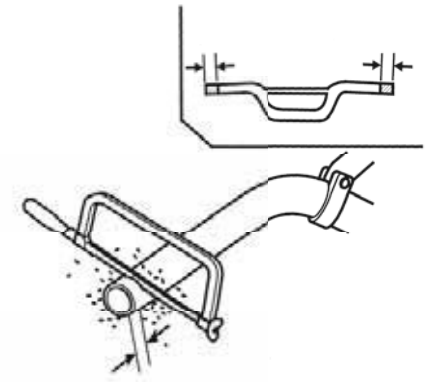
- Position the shift lever and brake pedal so they are close to your boot for rapid access, but not so close that either is depressed when sitting or standing comfortably on your CRF.



## Handlebar Position, Width & Shape

- Position the handlebar so that both gripping the bar and operating the controls is comfortable while both seated and standing, while riding straight ahead and turning.
  Tighten the forward bolts first.
- Be sure to check control cable and wiring harness routing after the 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.



- 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.

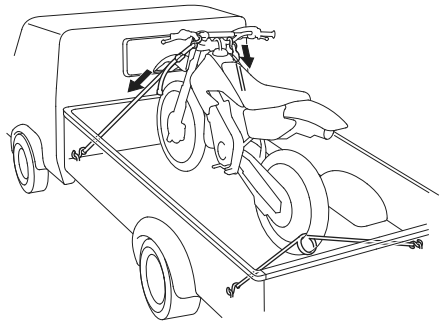
Here's helpful advice on how to transport and store your Honda, as well as three troubleshooting flow charts.

Transporting Your Motorcycle..... 128
Storing Your Honda ..... 129
  Preparation for Storage..... 129
  Removal from Storage ..... 129
You & the Environment ..... 130
Troubleshooting..... 131

# Transporting Your Motorcycle

If you use a truck or motorcycle trailer to transport your Honda, we recommend that you follow these guidelines:

- Use a loading ramp.
- Make sure the fuel valve is off.
- Secure the motorcycle in an upright position, using motorcycle tie-down straps. Avoid using rope, which can loosen and allow the motorcycle to fall over.



To secure your CRF, brace the front wheel against the front of the truck bed or trailer rail.
Attach the lower ends of two straps to the tie-down hooks on your CRF. Attach the upper ends of the straps to the handlebar (one on the right side, the other on the left), close to the fork.

Check that the tie-down straps do not contact any control cables or electrical wiring.

Tighten both straps until the front suspension is compressed about half-way. Too much pressure is unnecessary and could damage the fork seals.

Use another tie-down strap to keep the rear of the motorcycle from moving.

We recommend that you do not transport your CRF on its side. This can damage the motorcycle, and leaking gasoline could be a hazard.

If you won't be riding for an extended period, such as during the winter, thoroughly inspect your Honda and correct any problem before storing it. That way, needed repairs won't be forgotten and it will be easier to get your CRF running again.

To reduce or prevent deterioration that can occur during storage, also follow the following procedures.

## Preparation for Storage

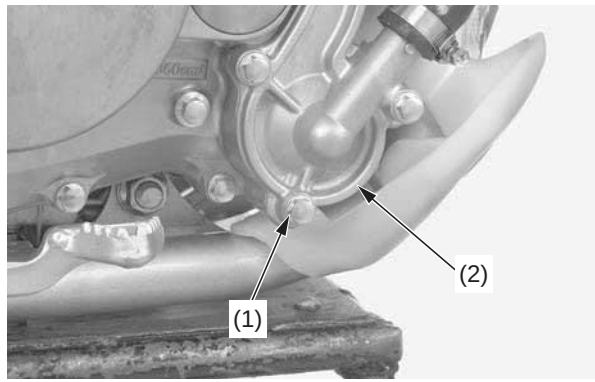
1. Completely clean all parts of your CRF. If your CRF has been exposed to sea air or salt water, wash it down with fresh water and wipe dry.
2. Change the engine oil and filter (page 37).
3. Replace the transmission oil (page 40).
4. Drain the fuel from the fuel tank and carburetor into an approved gasoline container.
   Turn the fuel valve OFF and loosen the carburetor drain screw. Drain gasoline into an approved container. Retighten the drain screw.

**⚠ WARNING**

Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.

- Stop the engine and keep heat, sparks and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

5. Remove the radiator cap and coolant drain bolt/sealing washer (1) at the water pump (2) to drain coolant.
   After the coolant has been completely drained, ensure that the drain bolt sealing washer is in good condition and install the drain bolt/sealing washer and radiator cap.
   Coolant drain bolt:
   7 lbf·ft (10 N·m, 1.0 kgf·m)




(1) coolant drain bolt/sealing washer
(2) water pump

6. Lubricate the drive chain.
7. Inflate the tires to their recommended pressures.
8. Place your CRF on an optional workstand or equivalent to raise both tires off the ground.
9. Stuff a rag into the muffler outlet. Then tie a plastic bag over the end of the muffler to prevent moisture from entering.
10. Store your CRF in an unheated area, free of dampness, away from sunlight, with a minimum of daily temperature variation.
11. Cover your CRF with a porous material. Avoid using plastic or similar non-breathing, coated materials that restrict air flow and allow heat and moisture to accumulate.

## Removal from Storage

1. Uncover and clean your CRF.
   Change the engine and transmission oil if more than 4 months have passed since the start of storage.
2. Uncover the end of the muffler and remove the rag from the muffler outlet.
3. Fill the fuel tank with the recommended fuel (page 34).
4. Pour a fresh recommended coolant mixture (page 41) slowly into the radiator fill hole up to the filler neck.
   Capacity:
   0.80 US qt (0.76 ℓ)
   after disassembly

   Lean your CRF 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 9).

# You & the Environment

Owning and riding a motorcycle can be enjoyable, but you must do your part to protect nature. When you show respect for the land, wildlife, and other people, you also help preserve the sport of off road riding.

Following are tips on how you can be an environmentally responsible motorcycle owner.

- **Choose Sensible Cleaners.** Use a biodegradable detergent when you wash your CRF. Avoid aerosol spray cleaners that contain chlorofluorocarbons (CFCs) which damage the atmosphere's protective ozone layer. Don't throw cleaning solvents away; see the following guidelines for proper disposal.
- **Recycle Wastes.** It's illegal and thoughtless to put used engine oil in the trash, down a drain, or on the ground. Used oil, gasoline, and cleaning solvents contain poisons that can hurt refuse workers and contaminate our drinking water, lakes, rivers, and oceans.
  Before changing your oil, make sure you have the proper containers. Put oil and other toxic wastes in separate sealed containers and take them to a recycling center. Call your local or state office of public works or environmental services to find a recycling center in your area and get instructions on how to dispose of nonrecyclable wastes.

**NOTICE**

*Improper disposal of drained fluids is harmful to the environment.*

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 (*).

## ENGINE DOES NOT START OR IS HARD TO START

| CHECK | | POSSIBLE CAUSES |
|---|---|---|
| 1. Check the fuel flow to carburetor | NOT REACHING CARBURETOR | • No fuel in fuel tank<br>• Clogged fuel line or fuel filter (P.34)<br>• Sticking float valve*<br>• Clogged fuel fill cap breather tube |
| REACHING CARBURETOR | | |
| 2. Try spark test* | WEAK OR NO SPARK | • Faulty spark plug (P.52)<br>• Fouled spark plug (P.52)<br>• Faulty ignition control module*<br>• Broken or shorted direct ignition coil wire<br>• Faulty exciter coil*<br>• Broken or shorted direct ignition coil<br>• Faulty engine stop button*<br>• Loose or disconnected ignition system wires<br>• Faulty ignition pulse generator* |
| GOOD SPARK | | |
| 3. Test cylinder compression* | LOW | • Valve stuck open<br>• Worn cylinder and piston ring*<br>• Leaking/damaged cylinder head gasket<br>• Improper valve timing*<br>• Seized valve |
| NORMAL | | |
| 4. Start by following normal starting procedure | ENGINE STARTS BUT SOON STOPS | • Improper choke operation<br>• Pilot screw incorrectly adjusted*<br>• Insulator leaking<br>• Improper ignition timing (Faulty direct ignition coil or ignition pulse generator)*<br>• Fuel contaminated<br>• Improper hot start operation (P. 13) |
| ENGINE DOES NOT FIRE | | |
| 5. Remove and inspect spark plug | WET PLUG | • Carburetor flooded<br>• Choke closed<br>• Throttle valve open<br>• Air cleaner dirty (P. 43) |
| DRY | | |
| 6. START WITH CHOKE ON | | |

## POOR PERFORMANCE AT LOW AND UNSTABLE IDLE SPEED

| CHECK | | POSSIBLE CAUSES |
|---|---|---|
| 1. Check if air cleaner is overoiled (P.43) | INCORRECT | • Over-oiled air cleaner |
| CORRECT | | |
| 2. Check if the connecting tube and/or insulator is leaking | LEAKING | • Loose connecting tube and/or insulator band<br>• Damaged connecting tube and/or insulator |
| NOT LEAKING | | |
| 3. Check carburetor pilot screw adjustment | INCORRECT | • Fuel-air mixture too lean (Turn the pilot screw out) (P.120)<br>• Fuel-air mixture too rich (Turn the pilot screw in) (P. 120) |
| CORRECT | | |
| 4. Check carburetor jets and accelerator pump for clogs | CLOGGED | • Contaminants in the fuel<br>• Not cleaned frequently enough (P.112) |
| NOT CLOGGED | | |
| 5. Try spark test | WEAK OR INTERMITTENT SPARK | • Faulty, carbon or wet fouled spark plug (P.52)<br>• Faulty ignition control module*<br>• Faulty exciter coil*<br>• Faulty engine stop button<br>• Faulty direct ignition coil*<br>• Broken or shorted direct ignition coil wire<br>• Loose or disconnected ignition system wires<br>• Faulty ignition pulse generator* |
| GOOD SPARK | | |
| 6. Check the throttle position sensor* | INCORRECT | • Faulty throttle position sensor* |
| CORRECT | | |
| 7. Test cylinder compression* | LOW | • Ring worn<br>• Cylinder worn or damaged*<br>• Piston worn or damaged*<br>• Head gasket not sealing<br>• Valve stuck open |
| CORRECT | | |

## POOR PERFORMANCE AT HIGH SPEED

| CHECK | | POSSIBLE CAUSES |
|---|---|---|
| 1. Disconnect fuel line at carburetor and check for clogging (P.34) | FUEL FLOW RESTRICTED | • Lack of fuel in tank (P.34)<br>• Clogged fuel line (P.34)<br>• Clogged fuel fill cap breather tube (P.34)<br>• Clogged fuel filter (P.35)<br>• Clogged fuel valve (P.34) |
| UNRESTRICTED FUEL FLOW | | |
| 2. Remove air cleaner (P.43) | DIRTY | • Not cleaned frequently enough (P.43) |
| AIR FILTER NOT DIRTY | | |
| 3. Install a larger carburetor main jet (P. 117) | CONDITION WORSE | • Jet size wrong, rejet in the opposite direction (P.120) |
| CORRECT | | |
| 4. Check carburetor jets for clogging | CLOGGED | • Contaminants in the fuel |
| NOT CLOGGED | | |
| 5. Check valve timing | INCORRECT | • Cam sprocket not installed properly |
| CORRECT | | |
| 6. Try spark test | WEAK OR INTERMITTENT SPARK | • Faulty, carbon or wet fouled spark pulg (P.52)<br>• Faulty ignition control module*<br>• Faulty exciter coil*<br>• Faulty engine stop button<br>• Faulty direct ignition coil*<br>• Broken or shorted direct ignition coil wire<br>• Loose or disconnected ignition system wires<br>• Faulty ignition pulse generator* |
| GOOD SPARK | | |
| 7. Test cylinder compression* | LOW | • Ring worn<br>• Cylinder worn or damaged<br>• Piston worn or damaged<br>• Head gasket not sealing<br>• Valve stuck open |
| CORRECT | | |

# Technical Information

This section contains dimensions, capacities, and other technical data.

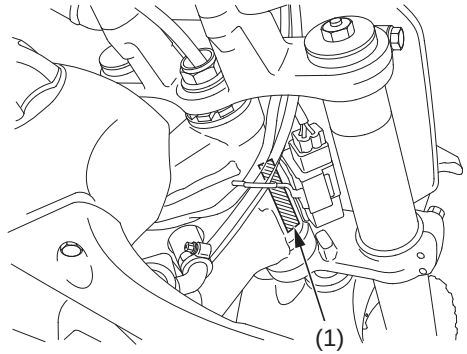

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## Serial Numbers

The VIN and engine serial number are required when you register your CRF. They may also be required when ordering replacement parts. You may record these numbers in the Quick Reference section at the rear of this manual.

The VIN (vehicle identification number) (1) is stamped on the right side of the steering head.

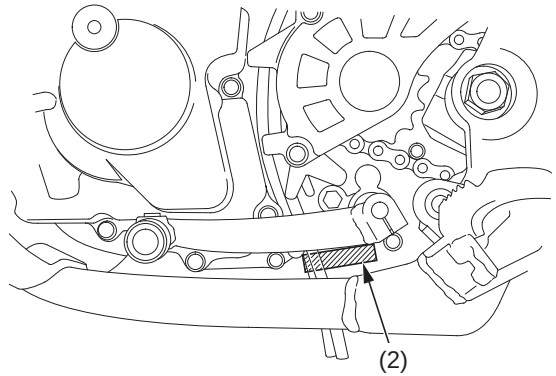
RIGHT SIDE




(1) VIN

The engine number (2) is stamped on the left crankcase.

LEFT SIDE




(2) engine number

**CRF150R**

| Item | English | | Metric |
|---|---|---|---|
| **Dimension** | | | |
| Overall length | 72.1 in | | 1,832 mm |
| Overall width | 30.3 in | | 770 mm |
| Overall height | 44.6 in | | 1,133 mm |
| Wheelbase | 49.6 in | | 1,260 mm |
| Seat height | 32.8 in | | 832 mm |
| Footpeg height | 14.9 in | | 379 mm |
| Ground clearance | 11.9 in | | 301 mm |
| **Frame** | | | |
| Type | Semi double cradle | | |
| F. suspension | Telescopic fork<br>travel 9.5 in (241 mm)<br>stroke 10.8 in (275 mm) | | |
| R. suspension | Pro-link,<br>travel 10.7 in (272 mm) | | |
| Front tire | AC | 70/100 – 17 40M | |
| | | DUNLOP | MX71F |
| | CM | 70/100 – 17 40M | |
| | | BRIDGESTONE | M23 |
| Rear tire | AC | 90/100 – 14 49M | |
| | | DUNLOP | MX71 |
| | CM | 90/100 – 14 49M | |
| | | BRIDGESTONE | M22 |
| Tire type | bias-ply, tube | | |
| Tire pressure, front (cold) | 15 psi (100 kPa, 1.0 kgf/cm$^2$) | | |
| Tire pressure, rear (cold) | 15 psi (100 kPa, 1.0 kgf/cm$^2$) | | |
| F. brake, swept area | Single disc brake<br>55.5 in$^2$ (358.1 cm$^2$) | | |
| R. brake, swept area | Single disc brake<br>46.6 in$^2$ (300.7 cm$^2$) | | |
| Fuel recommendation | unleaded gasoline, pump octane number of 91 or higher | | |
| Fuel capacity | 1.14 US gal | | 4.3 ℓ |
| Caster angle | 27°2’ | | |
| Trail length | 3.1 in | | 78 mm |
| Fork oil capacity | 12.04 US oz | | 356 cm$^3$ |

| Item | English | Metric |
|---|---|---|
| **Engine** | | |
| Type | Liquid cooled, 4-stroke | |
| Cylinder arrangement | Single 19° inclined from vertical | |
| Bore and stroke | 2.60 x 1.72 in | 66.0 x 43.7 mm |
| Displacement | 9.13 cu-in | 149.7 cm$^3$ |
| Compression ratio | 11.7 : 1 | |
| Valve clearance | Intake: 0.006 ± 0.001 in (0.16 ± 0.03 mm)<br>Exhaust: 0.010 ± 0.001 in (0.26 ± 0.03 mm) | |
| Engine oil capacity | | |
| After draining | 0.59 US qt | 0.56 ℓ |
| After draining and oil filter change | 0.62 US qt | 0.59 ℓ |
| After disassembly | 0.74 US qt | 0.70 ℓ |
| Transmission oil capacity | | |
| After draining | 0.60 US qt | 0.57 ℓ |
| After disassembly | 0.69 US qt | 0.65 ℓ |
| **Carburetor** | | |
| Type | Piston valve | |
| Identification number | FCR08D | |
| Main jet (standard) | # 140 | |
| Jet needle (standard) | NMQT | |
| Needle clip position (standard) | 3rd groove | |
| Slow jet (standard) | # 38 | |
| Pilot screw opening | 2 1/8 turns out | |
| Float level | 0.28 in | 7.0 mm |
| Idle speed | 2,100 ± 100 rpm | |
| **Cooling system** | | |
| Cooling capacity | | |
| After disassembly | 0.80 US qt | 0.76 ℓ |

| Item | English | Metric |
|---|---|---|
| **Drive train** | | |
| Clutch type | Wet, multi-plate type | |
| Transmission | 5-speed, constant mesh | |
| Primary reduction | 4.117 | |
| Gear ratio I | 2.214 | |
| Gear ratio II | 1.647 | |
| Gear ratio III | 1.318 | |
| Gear ratio IV | 1.105 | |
| Gear ratio V | 0.956 | |
| Final reduction | 3.333 | |
| Gear shift pattern | Left foot-operated return system 1-N-2-3-4-5 | |
| **Electrical** | | |
| Ignition | ICM | |
| Starting system | Kickstarter | |
| Spark plug :<br>Standard | NGK CR8EH-9<br>DENSO U24FER9 | |
| Optional | NGK CR9EH-9<br>DENSO U27FER9 | |
| Spark plug gap | 0.031 – 0.035 in<br>(0.8 – 0.9 mm) | |

# Specifications

**CRF150RB**

| Item | English | | Metric |
|---|---|---|---|
| **Dimension** | | | |
| Overall length | 74.8 in | | 1,900 mm |
| Overall width | 30.3 in | | 770 mm |
| Overall height | 46.1 in | | 1,171 mm |
| Wheelbase | 50.6 in | | 1,285 mm |
| Seat height | 34.1 in | | 866 mm |
| Footpeg height | 16.3 in | | 413 mm |
| Ground clearance | 13.2 in | | 336 mm |
| **Frame** | | | |
| Type | Semi double cradle | | |
| F. suspension | Telescopic fork<br>travel 9.5 in (241 mm)<br>stroke 10.8 in (275 mm) | | |
| R. suspension | Pro-link<br>travel 11.1 in (282 mm) | | |
| Front tire | AC | 70/100 – 19 42M | |
| | | DUNLOP | MX71F |
| | CM | 70/100 – 19 42M | |
| | | BRIDGESTONE | M61 |
| Rear tire | AC | 90/100 – 16 52M | |
| | | DUNLOP | MX71 |
| | CM | 90/100 – 16 52M | |
| | | BRIDGESTONE | M58 |
| Tire type | bias-ply, tube | | |
| Tire pressure, front (cold) | 15 psi (100 kPa, 1.0 kgf/cm$^2$) | | |
| Tire pressure, rear (cold) | 15 psi (100 kPa, 1.0 kgf/cm$^2$) | | |
| F. brake, swept area | Single disc brake<br>55.5 in$^2$ (358.1 cm$^2$) | | |
| R. brake, swept area | Single disc brake<br>46.6 in$^2$ (300.7 cm$^2$) | | |
| Fuel recommendation | unleaded gasoline, pump octane number of 91 or higher | | |
| Fuel capacity | 1.14 US gal | | 4.3 ℓ |
| Caster angle | 27°48’ | | |
| Trail length | 3.8 in | | 96 mm |
| Fork oil capacity | 11.57 US oz | | 342 cm$^3$ |

| Item | English | Metric |
|---|---|---|
| **Engine** | | |
| Type | Liquid cooled, 4-stroke | |
| Cylinder arrangement | Single 19° inclined from vertical | |
| Bore and stroke | 2.60 x 1.72 in | 66.0 x 43.7 mm |
| Displacement | 9.13 cu-in | 149.7 cm$^3$ |
| Compression ratio | 11.7 : 1 | |
| Valve clearance | Intake: 0.006 ± 0.001 in (0.16 ± 0.03 mm)<br>Exhaust: 0.010 ± 0.001 in (0.26 ± 0.03 mm) | |
| Engine oil capacity | | |
| After draining | 0.59 US qt | 0.56 ℓ |
| After draining and oil filter change | 0.62 US qt | 0.59 ℓ |
| After disassembly | 0.74 US qt | 0.70 ℓ |
| Transmission oil capacity | | |
| After draining | 0.60 US qt | 0.57 ℓ |
| After disassembly | 0.69 US qt | 0.65 ℓ |
| **Carburetor** | | |
| Type | Piston valve | |
| Identification number | FCR08D | |
| Main jet (standard) | # 140 | |
| Jet needle (standard) | NMQT | |
| Needle clip position (standard) | 3rd groove | |
| Slow jet (standard) | # 38 | |
| Pilot screw opening | 2 1/8 turns out | |
| Float level | 0.28 in | 7.0 mm |
| Idle speed | 2,100 ± 100 rpm | |
| **Cooling system** | | |
| Cooling capacity | | |
| After disassembly | 0.80 US qt | 0.76 ℓ |

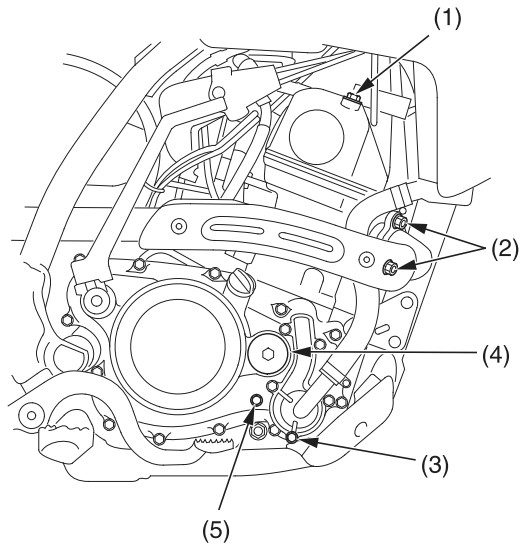
| Item | English | Metric |
|---|---|---|
| **Drive train** | | |
| Clutch type | Wet, multi-plate type | |
| Transmission | 5-speed, constant mesh | |
| Primary reduction | 4.117 | |
| Gear ratio I | 2.214 | |
| Gear ratio II | 1.647 | |
| Gear ratio III | 1.318 | |
| Gear ratio IV | 1.105 | |
| Gear ratio V | 0.956 | |
| Final reduction | 3.733 | |
| Gear shift pattern | Left foot-operated return system 1-N-2-3-4-5 | |
| **Electrical** | | |
| Ignition | ICM | |
| Starting system | Kickstarter | |
| Spark plug :<br>Standard | NGK CR8EH-9<br>DENSO U24FER9 | |
| Optional | NGK CR9EH-9<br>DENSO U27FER9 | |
| Spark plug gap | 0.031 – 0.035 in<br>(0.8 – 0.9 mm) | |

## Nuts, Bolts, Fasteners

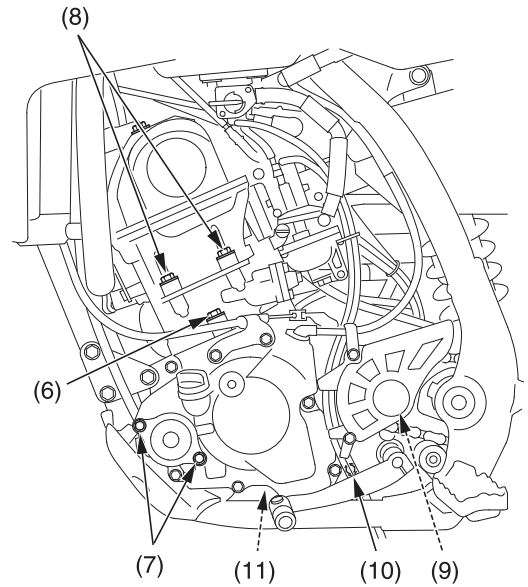
Check and tighten nuts, bolts, and fasteners before every outing.

Engine

RIGHT SIDE




LEFT SIDE



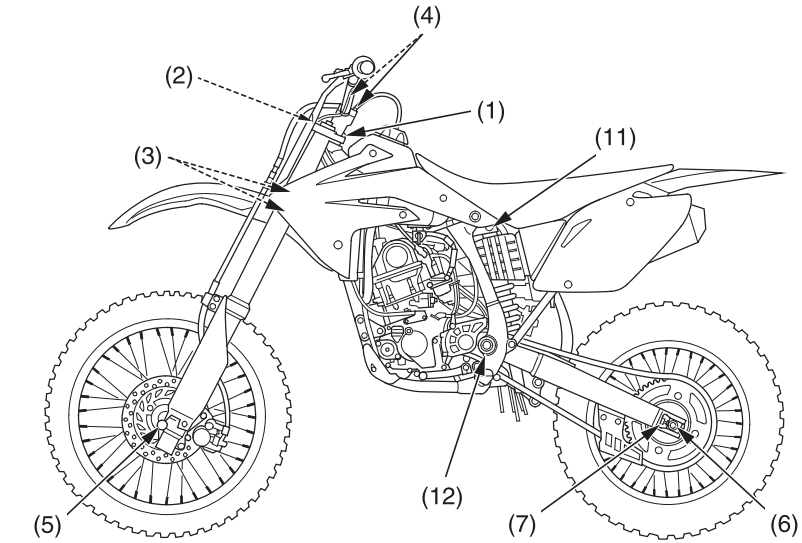

**ENGINE**

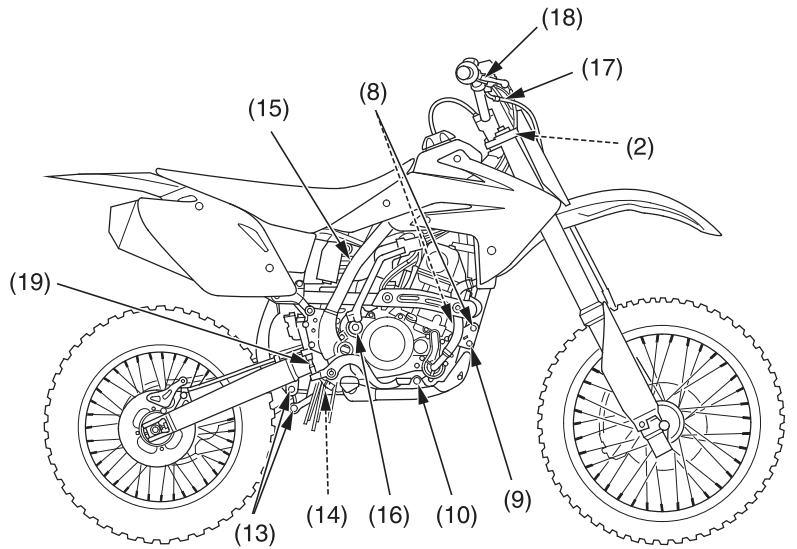
| Item | | Torque | | | Remarks |
|---|---|---|---|---|---|
| | | lbf•ft | N•m | kgf•m | |
| 1 | Cylinder head cover bolts | 7 | 10 | 1.0 | |
| 2 | Exhaust pipe joint nuts | 8 | 11 | 1.1 | |
| 3 | Coolant drain bolt | 7 | 10 | 1.0 | |
| 4 | Crankshaft hole cap | 11 | 15 | 1.5 | NOTE 5 |
| 5 | Transmission oil check bolt | 7 | 10 | 1.0 | |
| 6 | Cylinder bolt | 7 | 10 | 1.0 | |
| 7 | Oil filter cover bolts | 7 | 10 | 1.0 | |
| 8 | Cylinder head bolts | 7 | 10 | 1.0 | |
| 9 | Drive sprocket bolt | 10 | 13 | 1.3 | |
| 10 | Transmission oil drain bolt | 16 | 22 | 2.2 | NOTE 3 |
| 11 | Engine oil drain bolt | 16 | 22 | 2.2 | NOTE 3 |

NOTES: 1. U-nut.
2. UBS nut.
3. Apply oil to the threads and seating surface.
4. Alock bolt.
5. Apply grease to the threads.
6. Apply locking agent to the threads.

# Torque Specifications

Frame



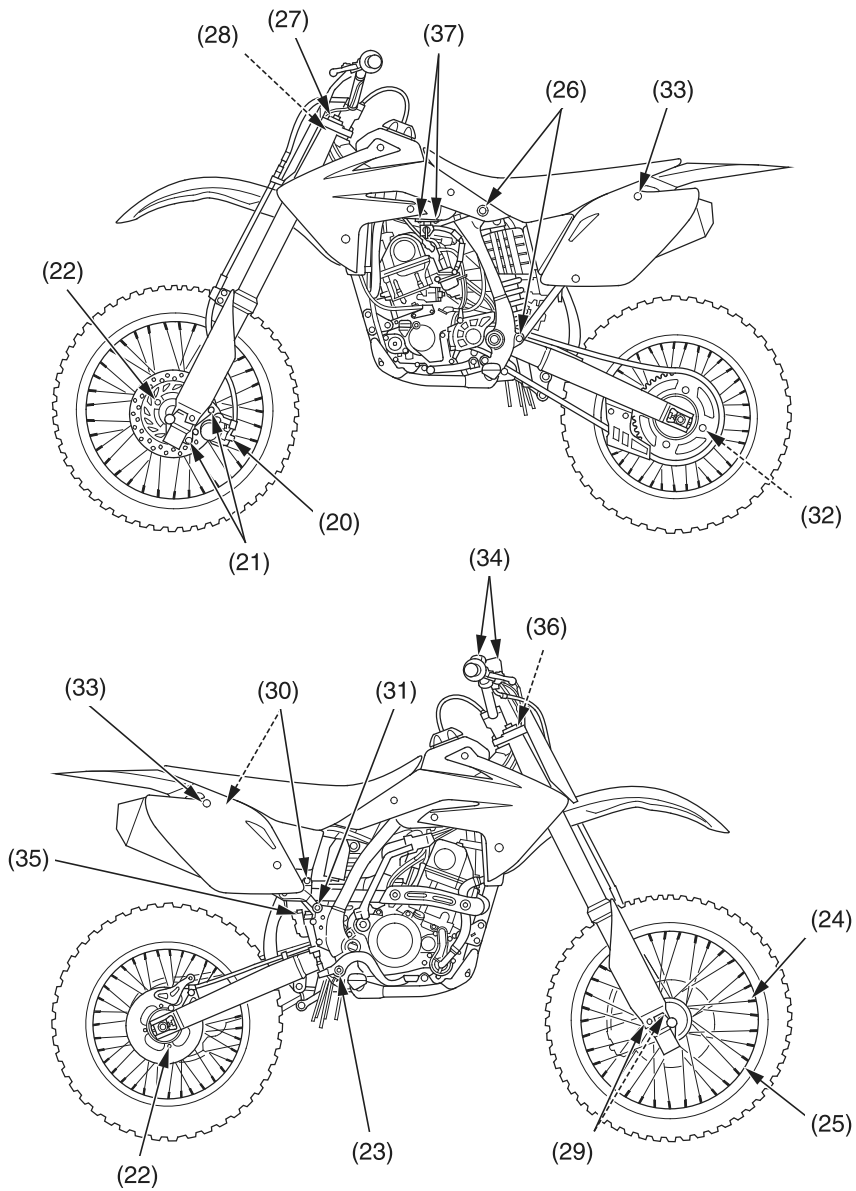




**FRAME**

| Item | | Torque | | | Remarks |
|---|---|---|---|---|---|
| | | lbf•ft | N•m | kgf•m | |
| 1 | Steering stem nut | 94 | 128 | 13.1 | |
| 2 | Fork bridge upper pinch bolts | 16 | 22 | 2.2 | |
| 3 | Fork bridge lower pinch bolts | 16 | 22 | 2.2 | |
| 4 | Handlebar upper holder bolts | 16 | 22 | 2.2 | |
| 5 | Front axle nut | 51 | 69 | 7.0 | NOTE 1 |
| 6 | Rear axle nut | 65 | 88 | 9.0 | NOTE 1 |
| 7 | Chain adjuster lock nuts | 20 | 27 | 2.8 | NOTE 2 |
| 8 | Front engine hanger bracket nuts (10 mm) | 47 | 64 | 6.5 | |
| 9 | Front engine hanger bracket nut (8 mm) | 25 | 34 | 3.5 | |
| 10 | Middle engine mounting nut | 47 | 64 | 6.5 | |
| 11 | Shock absorber | 32 | 44 | 4.5 | NOTE 1 |
| 12 | Swingarm pivot nut | 61 | 83 | 8.5 | |
| 13 | Rear shock arm nuts (swingarm side) | 32 | 44 | 4.5 | NOTE 1 |
| | (shock link side) | 32 | 44 | 4.5 | NOTE 1 |
| 14 | Rear shock link nuts (frame side) | 32 | 44 | 4.5 | NOTE 1 |
| 15 | Shock spring lock nut | 32 | 44 | 4.5 | |
| 16 | Kickstarter arm bolt | 28 | 38 | 3.9 | |
| 17 | Throttle cable adjuster lock nut | 3.0 | 4.0 | 0.4 | |
| 18 | Brake lever adjuster lock nut | 4.4 | 5.9 | 0.6 | |
| 19 | Brake pedal adjuster lock nut | 4.4 | 5.9 | 0.6 | |

NOTES: 1. U-nut.
2. UBS nut.
3. Apply oil to the threads and flange surface.
4. Alock bolt.
5. Apply grease to the threads.
6. Apply locking agent to the threads.

Frame




**FRAME**

| Item | | Torque | | | Remarks |
|---|---|---|---|---|---|
| | | lbf•ft | N•m | kgf•m | |
| 20 | Brake hose bolts | 25 | 34 | 3.5 | |
| 21 | Brake caliper mounting bolts | 22 | 30 | 3.1 | NOTE 4 |
| 22 | Brake disc bolts | 15 | 20 | 2.0 | NOTE 4 |
| 23 | Brake pedal pivot bolt | 24 | 32 | 3.3 | |
| 24 | Spokes | 2.7 | 3.7 | 0.4 | |
| 25 | Rim locks | 9 | 12.4 | 1.3 | |
| 26 | Subframe upper/lower mounting bolts | 22 | 30 | 3.1 | |
| 27 | Fork cap | 25 | 34 | 3.5 | |
| 28 | Fork cap lock nut | 15 | 19.7 | 2.0 | |
| 29 | Fork protector bolts | 5.2 | 7 | 0.7 | NOTE 4 |
| 30 | Muffler mounting bolts | 24 | 32 | 3.3 | |
| 31 | Muffler clamp bolt | 15 | 21 | 2.1 | |
| 32 | Driven sprocket nuts | 24 | 32 | 3.3 | NOTE 1 |
| 33 | Seat mounting bolts | 19 | 26 | 2.7 | |
| 34 | Front brake reservoir cap screws | 1.1 | 1.5 | 0.2 | |
| 35 | Rear brake reservoir cap bolts | 1.1 | 1.5 | 0.2 | |
| 36 | Fork air pressure release screw | 1.0 | 1.3 | 0.1 | |
| 37 | Fuel valve bolts | 7 | 10 | 1.0 | |

NOTES: 1. U-nut
2. UBS nut.
3. Apply oil to the threads and flange surface.
4. Alock bolt.
5. Apply grease to the threads.
6. Apply locking agent to the threads.

# Oxygenated Fuels

Some conventional gasolines are being blended with alcohol or an ether compound. These gasolines are collectively referred to as oxygenated fuels. To meet clean air standards, some areas of the United States and Canada use oxygenated fuels to help reduce emissions.

If you use an oxygenated fuel, be sure it is unleaded and meets the minimum octane rating requirement.

Before using an oxygenated fuel, try to confirm the fuel's contents. Some states/provinces require this information to be posted on the pump.

The following are the EPA-approved percentages of oxygenates:

ETHANOL (ethyl or grain alcohol) up to 10% by Volume
You may use gasoline containing up to 10% ethanol by volume. Gasoline containing ethanol may be marketed under the name "Gasohol".

METHANOL (methyl or wood alcohol) up to 5% by Volume
You may use gasoline containing methanol containing up to 15% methanol by volume as long as it contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of your fuel system.

If you notice any undesirable operating symptoms, try another service station or switch to another brand of gasoline.

Fuel system damage or performance problems resulting from the use of an oxygenated fuel containing more than the percentages of oxygenates mentioned above are not covered under warranty.

Oxygenated fuels can damage paint and plastic. Be careful not to spill fuel when filling the fuel tank. Wipe up any spills immediately.

**NOTICE**

*Oxygenated fuels can damage paint and plastic.*

Any serious competition effort relies heavily on the knowledge gained and compiled from previous racing events. The best way to organize the many bits of information is to record them in a logbook.

Your logbook can include such information as suspension adjustments, carburetor adjustments, gearing, and tire selection. This detailed information, along with your comments, can prove valuable when you compete at the same track or on similar terrain.

Your logbook can also tell you when maintenance was performed and when it will be necessary again. Your logbook also lets you record any repairs and lets you keep track of the running time on the engine and suspension components.

If you choose to sell your CRF, the accurate maintenance records in your logbook might be the deciding deal-maker for a potential buyer.

Consider using different color pens or pencils to record important information on specific subjects. For example, record results in black, jetting changes in red, suspension/chassis settings in blue, and gearing selections in green. Color codes will help you identify the information you want with a glance.

**Tuning & Adjustment Records**
Keep track of the settings and adjustments that worked best at a particular location. These items include:

- basic track conditions, altitude, and temperature
- carburetion changes
- suspension settings
- chassis adjustments tested and selected
- gearing
- tire selection
- air pressure

**Competition Records**

- your placings
- thoughts to improve performance next time: both yours and your CRF
- strategy notes

**Maintenance Records**

- regular interval maintenance
- repairs
- running time on engine
- running time on suspension components

**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 CRF.

An official “guesstimate” 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).

**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 progressed 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.

**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
- Engine, transmission, and suspension oil changes
- Chain, sprocket, chain guide and slider replacements
- Coolant changes and related component replacements
- Spark plug, brake pad and control cable replacements

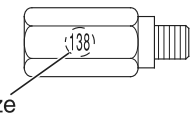
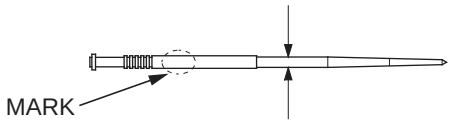
In addition, you should record any irregularities noted in component wear so you’ll remember to keep a close eye on these areas in the future.

# Competition Logbook

| Date | Running Time | Location/Event | Comments (Jetting, Suspension Settings, Gearing, Chassis Adjustments, Maintenance, Performed, etc.) |
|---|---|---|---|
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(Make several photocopies of this page for future use)

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

| CARBURETOR | | Remarks |
|---|---|---|
| Main jet<br>(Standard: #140) | | #128 – #148 (in increments of 2 or 3)<br><br> |
| Slow jet<br>(Standard: #38) | | #35 – #42<br>(in increments of 2 or 3) |
| Jet Needle<br>Standard needle: NMQT<br>Straight diameter: ø2.775 mm)<br><br> | | |
| Specific flow characteristics at 1/16 to 1/4 throttle | Jet needle number (standard series) | Jet needle number (1/2 clip position leaner than standard at 1/8 to 3/4 throttle) |
| Rich<br>↑ | NMQR<br>ø2.755 mm | NMRR<br>ø2.755 mm |
| | NMQS<br>ø2.765 mm | NMRS<br>ø2.765 mm |
| | (standard needle)<br>NMQT<br>ø2.775 mm | NMRT<br>ø2.775 mm |
| ↓ | NMQU<br>ø2.785 mm | NMRU<br>ø2.785 mm |
| Lean | NMQV<br>ø2.795 mm | NMRV<br>ø2.795 mm |

| CARBURETOR | Remarks |
|---|---|
| Fuel flow amount | Leak jet number |
| decrease<br>↑ | #75 |
| | #70 |
| | #65 (standard) |
| ↓ | #60 |
| increase | #55 |

| MUFFLER | Remarks |
|---|---|
| AMA Noise Emission Regulation Conformed Muffler | Using an optional muffler, change the carburetor settings.<br>See page 118 for more details. |

* Your CRF dose not conform to AMA noise emission regulation for 2015 year.
An optional AMA noise emission regulation conformed muffler may be available. Contact your dealer.

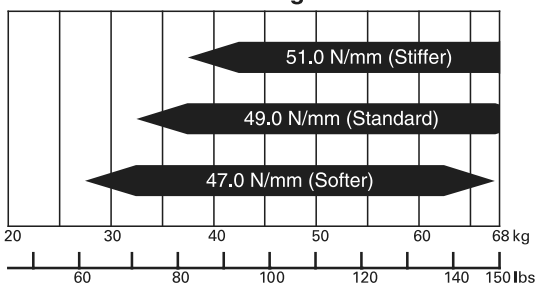
| FRAME | | Remarks |
|---|---|---|
| Driven sprocket | CRF150R | < >: Drive chain links<br>49T, Aluminum <120><br>50T, steel <120> (standard)<br>50T, Aluminum <120><br>51T, Aluminum <120> |
| | CRF150RB | < >: Drive chain links<br>55T, Aluminum <126><br>56T, steel <126> (standard)<br>56T, Aluminum <126><br>57T, Aluminum <126> |
| Drive chain | Standard | DID420DS3:<br>120 Links (CRF150R)<br>126 Links (CRF150RB) |
| | Optional | DID420DS3: 130 Links |

| TOOLS | Remarks |
|---|---|
| Workstand<br> | For maintenance |
| Pin spanner A<br> | To adjust spring preload |
| Pin spanner B<br> | To torque the shock spring lock nut |

# Optional Parts List

| FRAME | | Remarks |
|---|---|---|
| Shock springs | CRF150R | |
| Softer | | 268.4 lbf/in (47.0 N/mm) ← Red mark |
| Standard | | 279.8 lbf/in (49.0 N/mm) ← White mark |
| Stiffer | | 291.2 lbf/in (51.0 N/mm) ← No mark |

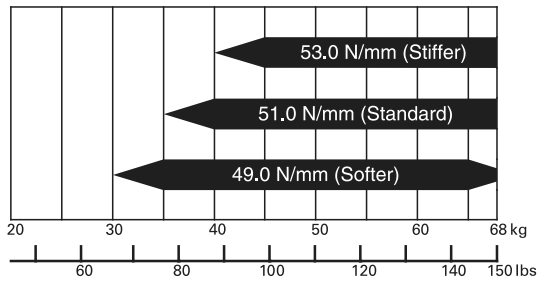
**Rider Weight**




The maximum load capacity is 150 lb (68 kg).
Rider weight must not exceed this limit.

| FRAME | | Remarks |
|---|---|---|
| Shock springs | CRF150RB | |
| Softer | | 279.8 lbf/in (49.0 N/mm) ← White mark |
| Standard | | 291.2 lbf/in (51.0 N/mm) ← No mark |
| Stiffer | | 302.6 lbf/in (53.0 N/mm) ← Black mark |

**Rider Weight**




The maximum load capacity is 150 lb (68 kg).
Rider weight must not exceed this limit.

| FRAME | | Remarks |
|---|---|---|
| Fork springs | CRF150R | |
| Softer | | 17.9 lbf/in (3.14 N/mm) ← 2 coils at one end; 1 coil at other end |
| Standard | | 19.0 lbf/in (3.33 N/mm) ← 1 coil at both ends |
| Stiffer | | 20.2 lbf/in (3.53 N/mm) ← 1 scribe mark |
| | CRF150RB | |
| Softer | | 19.0 lbf/in (3.33 N/mm) ← 1 coil at both ends |
| Standard | | 20.2 lbf/in (3.53 N/mm) ← 1 scribe mark |
| Stiffer | | 21.3 lbf/in (3.73 N/mm) ← 2 scribe mark |

There are numerous spare parts you can take to an event to help ensure you get in a full day of riding. In addition to the usual nuts and bolts, consider the following:

## Spare Parts

spark plugs
air cleaner (clean & oiled, sealed in a plastic bag)
optional carburetor jets/needles
chain & masterlinks
chain guide slider
chain guide
chain rollers
inner tubes (front & rear)
fenders
footpegs
number plate & side covers
handlebar
grips
levers (brake, clutch & hot start)
clutch lever handlebar mount
clutch cable
hot start cable
throttle assembly
throttle cable
shift lever
brake pedal
spokes (front & rear, each side)
sprockets (larger & smaller than standard, for gearing changes & collision damage replacement)
assorted nuts, bolts, washers, screws, cotter pins

**Additional Spares**
front brake master cylinder
rear brake assembly
wheels & tires (front & rear, mounted)
clutch discs and plates
engine & transmission oil
seat
ignition components
radiator hoses
radiator shrouds (L & R)
brake hoses (front & rear)

## General Tools

sockets (3/8 in drive)
screwdrivers: blade & Phillips No. 1, 2, 3
wrench, large adjustable
wrenches: open end & box
wrenches: hex (Allen)
wrench, spoke
torque wrench (metric scale, click-stop style)
pliers: standard, needle-nose, channel-lock set
hammer, plastic head
syringe with adjustable stop
tire pressure gauge
tire irons
tire pump or air tank
feeler gauge set
vernier caliper (metric)
pressure/vacuum testing equipment (USA only)

## Honda Special Tools

Any special tools for your CRF purchased from your dealer.

| | |
|---|---|
| • Spoke Wrench | 07701-0020300 |
| • Tensioner Stopper | 070MG-0010100<br>07AMG-001A100<br>(USA only) |

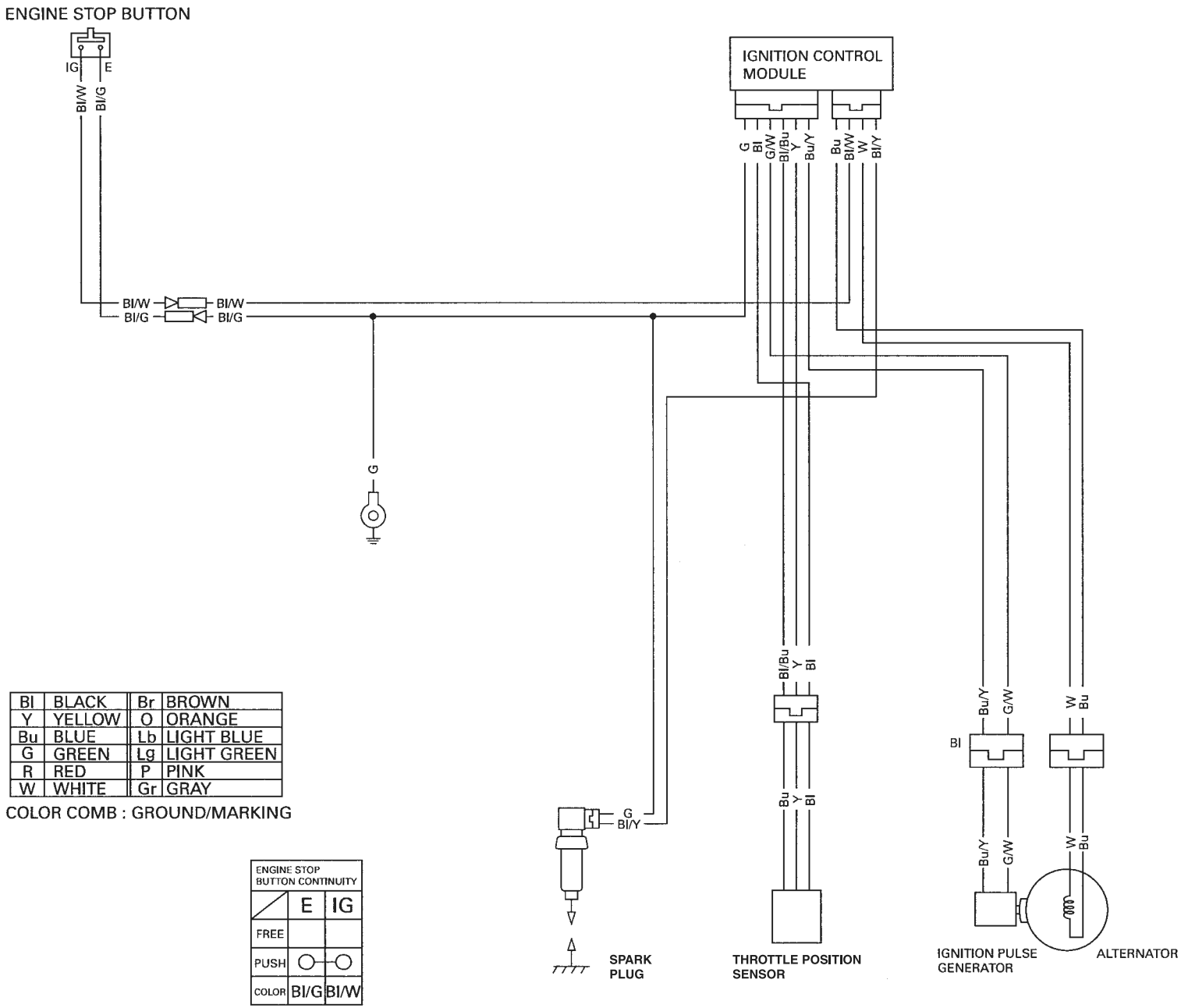
## Chemical Products

Pro Honda GN4 4-stroke Oil
(Engine and Transmission Oil)
SAE 80 or 90 gear oil
HP Fork Oil, SS-19
Pro Honda DOT 4 Brake Fluid
Pro Honda HP Chain Lube
Pro Honda Foam Filter Oil
Pro Honda Hondabrite
Pro Honda Dielectric Grease
Pro Honda Handgrip Cement
Pro Honda Hondalock
Molybdenum Disulfide Grease (containing more than 3% molybdenum disulfide additive)
Pro Honda White Lithium Grease
Multi-purpose Grease
Rust-inhibiting Oil
Cable lubricant
Pro Honda HP Coolant
Urea based multi-purpose grease with extreme pressure (example: EXCELITE EP2 manufactured by KYODO YUSHI, Japan or Shell Stamina EP2 or equivalent)

## Other Products

pliers-safety wire
safety wire
mechanic's wire
duct tape
plastic tie-wraps
hose clamps
drop light
electrical tape
Scotch-Brite Hand Pad #7447 (maroon)
Teflon tape

# Wiring Diagram



This section contains information about contacting Honda and how to get an official Honda Service Manual.

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# Authorized Manuals

The Service Manual used by your authorized dealer is available from your Honda dealer or Helm, Inc. (USA only, Canada: See your dealer to order authorized manuals.)

Also available but not necessary to service your model is the Honda Common Service Manual which explains theory of operation and basic service information for various systems on Honda motorcycles, scooters, ATVs, SxSs, and PWCs.

The *Winter Storage Guide* in conjunction with the *Owner's Manual* and *Service Manual* can help you prepare your Honda motorcycle, scooter, ATV, and SxS for winter storage.

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 |
|---|---|
| 61KSE07 | 2016 CRF150R/RB Service Manual |
| 61CSM00 | Common Service Manual |
| S9507 | Winter Storage Guide |
| 31KSE670 | 2016 CRF150R/RB Owner's Manual |

**Order On-Line: www.helminc.com**
**Order Toll Free: 1-888-CYCLE93 (1-888-292-5393)**
*(NOTE: For Credit Card Orders Only)*
Monday - Friday 8:00 AM - 6:00 PM EST

Your owner's manual was written to cover most of the questions you might ask about your Honda. Any questions not answered in the owner's manual can be answered by your dealer. If he doesn't have the answer right away, he will get it for you.

If you have a difference of opinion with your dealer, please remember that each dealership is independently owned and operated. That's why it's important to work to resolve any differences at the dealership level.

If you wish to comment on your experiences with your Honda or with your dealer, please send your comments to the following address:

Motorcycle Division, American Honda Motor Co., Inc., P.O. Box 2200, Torrance CA 90509- 2200, mailstop: 100-4C-7B,
telephone: (866) 784-1870.

Canada: Honda Canada Inc., Customer Relations Dept, 180 Honda Boulevard, Markham, Ontario L6C 0H9, telephone: (888) 946 – 6329, facsimile: (877) 939 – 0909.
E-mail: honda_cr@ch.honda.com

Please include the following information in your letter:

- name, address, and telephone number
- product model, year, and VIN
- date of purchase
- dealer name and address

We will likely ask your dealer to respond, or possibly acknowledge your comments directly.

# Your Honda Dealer

Once you purchase your new Honda, get familiar with the organization of your Honda dealer so you can utilize the full range of services available.

The service department is there to perform regular maintenance and unexpected repairs. It has the latest available service information from Honda.

The parts department offers Honda Genuine Parts, Pro Honda products, Honda Genuine Accessories (USA only), and Honda accessories and products (Canada only). The same quality that went into your Honda can be found in Honda Genuine replacement parts. You'll also find comparable quality in the accessories and products available from the parts department.

Your dealer can inform you about competition events in your area. You'll also find that your dealer is a source of information (USA only) the Honda Rider's Club of America.

We're sure you'll be as pleased with the service your dealer continues to provide after the sale as you are with the quality and dependability of your Honda.

# The Honda Rider's Club (USA only)

The Honda Rider's Club of America (HRCA) sponsors local riding chapters at Authorized Honda Dealerships across the country. You can log on to the HRCA Clubhouse website for more information at *www.hrca.honda.com.*

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# Quick Reference

The following is a brief, but important collection of information you need to know about your Honda. You'll also find space to record important notes.

## How To Avoid Costly Repairs

The engine of your Honda can be the most expensive component to repair. Proper maintenance, especially the use of the recommended fluids and filters, prevents premature wear and damage.

Frequent causes of costly engine repairs are:

- Transmission oil & engine oil: insufficient quantity, improper oil.
- Air cleaner: dirty, leaking because of improper installation (poor seal).

Record important information here:

| | |
|---|---|
| VIN | |
| Engine No. | |
| Owner's: | |
| Name | |
| Address | |
| City/State | |
| Phone | |
| Dealer's: | |
| Name | |
| Address | |
| City/State | |
| Phone | |
| Service Mgr. | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Maintenance | The maintenance schedule (page 21) lists service frequencies for:<br>each race or about 2.5 hours,<br>every 3 races or about 7.5 hours, and<br>every 6 races or about 15.0 hours<br>every 9 races or about 22.5 hours | | | | | | | | | |
| Pre-ride Inspection | Check the items listed on the Pre-ride inspection checklist each time before you ride (page 9): | | | | | | | | | |
| Fuel/Capacity | unleaded gasoline, pump octane number of 91 or higher<br>tank: 1.14 US gal (4.3 ℓ) | | | | | | | | | |
| Engine oil | Pro Honda GN4 4-stroke oil (USA & Canada), or Honda 4-stroke oil, or an equivalent motorcycle oil. | | | | | | | | | |
| Transmission oil | Pro Honda GN4 4-stroke oil (USA & Canada), or Honda 4-stroke oil, or an equivalent motorcycle oil. | | | | | | | | | |
| Tires | CRF150R | Front | 70/100–17 40M | | | Rear | 90/100–14 49M | | | |
| | | | AC | DUNLOP | MX71F | | AC | DUNLOP | MX71 | |
| | | | CM | BRIDGESTONE | M23 | | CM | BRIDGESTONE | M22 | |
| | CRF150RB | Front | 70/100–19 42M | | | Rear | 90/100–16 52M | | | |
| | | | AC | DUNLOP | MX71F | | AC | DUNLOP | MX71 | |
| | | | CM | BRIDGESTONE | M61 | | CM | BRIDGESTONE | M58 | |
| | Type | | bias-ply, tube | | | | | | | |
| Tire Pressure (cold) | Front: 15 psi (100 kPa, 1.0 kgf/cm²)<br>Rear: 15 psi (100 kPa, 1.0 kgf/cm²) | | | | | | | | | |
| Spark Plug | Standard: CR8EH-9 (NGK), U24FER9 (DENSO)<br>Optional: CR9EH-9 (NGK), U27FER9 (DENSO) | | | | | | | | | |
| Coolant | ethylene glycol antifreeze (silicate-free) for aluminum engines in 50/50 solution with Pro Honda HP Coolant or equivalent distilled water. | | | | | | | | | |
| Drive Chain | DID420DS3 | | | | | | | | | |