

 **HONDA**



ST 1300
ST 1300A

OWNER'S MANUAL



**Honda PAN EUROPEAN
ST1300/A**

OWNER'S MANUAL

IMPORTANT INFORMATION

- **OPERATOR AND PASSENGER**

This motorcycle is designed to carry the operator and one passenger. Never exceed the maximum weight capacity as shown on the accessories and loading label.

- **ON-ROAD USE**

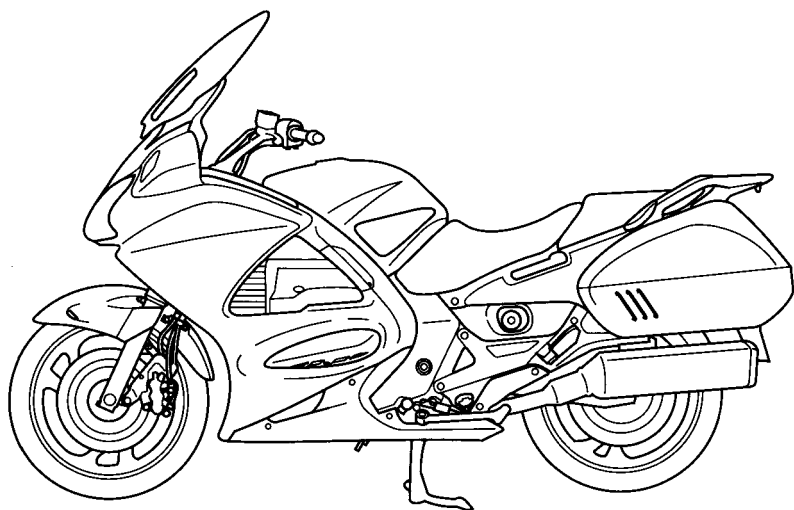
This motorcycle is designed to be used only on the road.

- **READ THIS OWNER'S MANUAL CAREFULLY**

Pay special attention to the safety messages that appear throughout the manual. These messages are fully explained in the "A Few Words About Safety" section which appears before the Contents page.

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

**Honda PAN EUROPEAN
ST1300/A
OWNER'S MANUAL**



All information in this publication is based on the latest production information available at the time of approval for printing. Honda Motor Co.,Ltd. reserves the right to make changes at any time without notice and without incurring any obligation.

No part of this publication may be reproduced without written permission.

WELCOME

The motorcycle presents you a challenge to master the machine, a challenge to adventure. You ride through the wind, linked to the road by a vehicle that responds to your commands as no other does. Unlike an automobile, there is no metal cage around you. Like an airplane, a pre-ride inspection and regular maintenance are essential to your safety. Your reward is freedom.

To meet the challenges safely, and to enjoy the adventure fully, you should become thoroughly familiar with this owner's manual **BEFORE YOU RIDE THE MOTORCYCLE.**

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 motorcycle, other property, or the environment.

When service is required, remember that your Honda dealer knows your motorcycle best. If you have the required mechanical "know-how" and tools, your dealer can supply you with an official Honda Shop Manual to help you perform many maintenance and repair tasks.

Pleasant riding, and thank you for choosing a Honda !

- The following codes in this manual indicate each country.
- The illustrations herein are based on the ST1300A type.
- The illustrations herein are based on the ED type.

E	UK	Ireland	
ED	European direct sales		
	Italy	Switzerland	Norway
	Austria	Sweden	Finland
	Holland	Spain	Portugal
	Greece	Denmark	
F	France		
U	Australia	New Zealand	

- The specifications may vary with each locale.


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, we have provided operating procedures and other information on labels and in this manual. This information alerts you to potential hazards that could hurt you or others.

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.

You will find important safety information in a variety of forms, including:

- **Safety Labels** — on the motorcycle.
- **Safety Messages** — 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.

- **Safety Headings** — such as Important Safety Reminders or Important Safety Precautions.
- **Safety Section** — such as Motorcycle Safety.
- **Instructions** — how to use this motorcycle correctly and safely.

This entire manual is filled with important safety information — please read it carefully.

CONTENTS

OPERATION

Page

- 1 MOTORCYCLE SAFETY**
 - 1 IMPORTANT SAFETY INFORMATION
 - 2 PROTECTIVE APPAREL
 - 4 LOAD LIMITS AND GUIDELINES
 - 8 SAFETY LABELS

- 11 PARTS LOCATION**
 - 14 INSTRUMENTS AND INDICATORS
 - 18 MULTI-DISPLAY

- 28 MAJOR COMPONENTS**
(Information you need to operate this motorcycle)
 - 28 REAR SUSPENSION
 - 30 BRAKES
 - 33 CLUTCH
 - 34 COOLANT
 - 36 FUEL
 - 39 ENGINE OIL
 - 40 FINAL DRIVE OIL
 - 41 TUBELESS TYRES

- 46 ESSENTIAL INDIVIDUAL COMPONENTS**
 - 46 IGNITION SWITCH
 - 47 KEYS
 - 48 IMMOBILIZER SYSTEM (HISS)
 - 50 RIGHT HANDLEBAR CONTROLS
 - 51 LEFT HANDLEBAR CONTROLS
 - 52 WINDSCREEN HEIGHT ADJUSTMENT SWITCH
 - 53 HAZARD WARNING SYSTEM SWITCH

Page

54 FEATURES

(Not required for operation)

- 54 STEERING LOCK
- 55 SEAT
- 57 HELMET HOLDERS
- 58 SADDLEBAGS
- 60 FAIRING POCKETS
- 61 WINDSCREEN HEIGHT ADJUSTMENT
- 62 DOCUMENTS
- 63 STORAGE COMPARTMENT FOR U-SHAPED ANTI-THEFT LOCK
- 64 REARVIEW MIRRORS
- 65 HEADLIGHT AIM VERTICAL ADJUSTMENT
- 66 CLIP
- 67 FUEL TANK MAINTENANCE POSITION

69 OPERATION

- 69 PRE-RIDE INSPECTION
- 70 STARTING THE ENGINE
- 72 RUNNING-IN
- 73 RIDING
- 74 BRAKING
- 77 PARKING
- 78 ANTI-THEFT TIPS

CONTENTS

MAINTENANCE

Page

79 MAINTENANCE

- 79 THE IMPORTANCE OF MAINTENANCE
- 80 MAINTENANCE SAFETY
- 81 SAFETY PRECAUTIONS
- 82 MAINTENANCE SCHEDULE
- 84 TOOL KIT
- 85 SERIAL NUMBERS
- 86 COLOUR LABEL
- 87 COVER REMOVAL
- 91 AIR CLEANER
- 92 ENGINE OIL
- 97 SPARK PLUGS
- 99 THROTTLE OPERATION
- 100 IDLE SPEED
- 101 COOLANT
- 102 FINAL DRIVE OIL
- 103 FRONT AND REAR SUSPENSION INSPECTION
- 104 SIDE STAND
- 105 WHEEL REMOVAL
- 112 BRAKE PAD WEAR
- 113 BRAKE SYSTEM INSPECTION
- 114 BATTERY
- 116 FUSE REPLACEMENT
- 118 BULB REPLACEMENT

122 CLEANING

126 STORAGE GUIDE

- 126 STORAGE
- 127 REMOVAL FROM STORAGE

128 SPECIFICATIONS

130 CATALYTIC CONVERTERS

MOTORCYCLE SAFETY

IMPORTANT SAFETY INFORMATION

Your motorcycle can provide many years of service and pleasure — if you take responsibility for your own safety and understand the challenges that you can meet on the road.

There is much that you can do to protect yourself when you ride. You'll find many helpful recommendations throughout this manual. Following are a few that we consider most important.

Always Wear a Helmet

It's a proven fact: helmets significantly reduce the number and severity of head injuries. So always wear an approved motorcycle helmet and make sure your passenger does the same. We also recommend that you wear eye protection, sturdy boots, gloves, and other protective gear (page 3).

Make Yourself Easy to See

Some drivers do not see motorcycles because they are not looking for them. To make yourself more visible, wear bright reflective clothing, position yourself so other drivers can see you, signal before turning or changing lanes, and use your horn when it will help others notice you.

Ride Within Your Limits

Pushing the limits is another major cause of motorcycle accidents. Never ride beyond your personal abilities or faster than conditions warrant. Remember that alcohol, drugs, fatigue and inattention can significantly reduce your ability to make good judgements 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 Bike in Safe Condition

For safe riding, it's important to inspect your motorcycle before every ride and perform all recommended maintenance. Never exceed load limits, and only use accessories that have been approved by Honda for this motorcycle. See page 5 for more details.

MOTORCYCLE SAFETY

PROTECTIVE APPAREL

For your safety, we strongly recommend that you always wear an approved motorcycle helmet, eye protection, boots, gloves, long pants, and a long-sleeved shirt or jacket whenever you ride. Although complete protection is not possible, wearing proper gear can reduce the chance of injury when you ride.

Following are suggestions to help you choose proper gear.

WARNING

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

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

Helmets and Eye Protection

Your helmet is your most important piece of riding gear because it offers the best protection against head injuries. A helmet should fit your head comfortably and securely. A bright-coloured helmet can make you more noticeable in traffic, as can reflective strips.

An open-face helmet offers some protection, but a full-face helmet offers more. Always wear a face shield or goggles to protect your eyes and help your vision.

Additional Riding Gear

In addition to a helmet and eye protection, we also recommend:

- Sturdy boots with non-slip soles to help protect your feet and ankles.
- Leather gloves to keep your hands warm and help prevent blisters, cuts, burns and bruises.
- A motorcycle riding suit or jacket for comfort as well as protection. Bright-coloured and reflective clothing can help make you more noticeable in traffic. Be sure to avoid loose clothes that could get caught on any part of your motorcycle.

MOTORCYCLE SAFETY

LOAD LIMITS AND GUIDELINES

Your motorcycle has been designed to carry you, one passenger, cargo and accessories. When you add cargo or carry a passenger, you may feel some difference during acceleration and braking. But so long as you keep your motorcycle well-maintained, with good tyres and brakes, you can safely carry loads within the limits and guidelines given below.

However, exceeding the weight limit or carrying an unbalanced load can seriously affect your motorcycle's handling, braking and stability. Non-Honda accessories, improper modifications, and poor maintenance can also reduce your safety margin.

The following pages give more specific information on loading, accessories and modifications.

Loading

How much weight you put on your motorcycle, and how you load it, are important to your safety. Anytime you ride with a passenger or cargo you should be aware of the following information.

WARNING

Overloading or improper loading can cause a crash and you can be seriously hurt or killed.

Follow all load limits and other loading guidelines in this manual.

Load Limits

Following are the load limits for your motorcycle:

Maximum weight capacity: = 196 kg (432 lbs)

Includes the weight of the rider,
passenger, all cargo and all accessories

Putting too much weight in individual storage compartments can also affect stability and handling. So be sure to stay within the limits given below:

Maximum cargo weight: = 31 kg (68 lbs)

includes following maximum
compartment weights:

rear carrier = 9.0 kg (20.0 lbs)

each saddlebag = 9.0 kg (20.0 lbs)

each fairing pocket = 2.0 kg (4.5 lbs)

The weight of added accessories will reduce the maximum cargo weight you can carry.

Loading Guidelines

Improperly loading your motorcycle can affect its stability and handling. Even if your motorcycle is properly loaded, you should ride at reduced speeds and never exceed 130 km/h (80 mph) when carrying cargo.

Follow these guidelines whenever you carry a passenger or cargo:

- Check that both tyres are properly inflated (page 41).
- If you change your normal load, you may need to adjust your rear suspension settings (page 28) and your headlight (page 65).
- To prevent loose items from creating a hazard, make sure that storage lids are properly closed and that any other cargo is securely tied down before you ride away.

MOTORCYCLE SAFETY

- Cargo weight should be carried as low and as close to the centre of a motorcycle as possible. When loading your motorcycle, try to pack heavier items in the saddlebags and put lighter, bulkier items in the travel trunk. If you must carry heavy items in the trunk, put them as far forward as you can.
- Balance cargo weight evenly on both sides. When loading the saddlebags, for example, be sure the weight in each bag is about the same.

Accessories and Modifications

Modifying your motorcycle or using non-Honda accessories can make your motorcycle unsafe. Before you consider making any modifications or adding an accessory, be sure to read the following information.

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 accessories and modifications.

Accessories

We strongly recommend that you use only Honda Genuine Accessories that have been specifically designed and tested for your motorcycle. Because Honda cannot test all other accessories, you must be personally responsible for proper selection, installation and use of non-Honda accessories. Check with your dealer for assistance and always follow these guidelines:

- Make sure the accessory does not obscure any lights, reduce ground clearance and banking angle, limit suspension travel or steering travel, alter your riding position or interfere with operating any controls.

-
- Be sure electrical equipment does not exceed the motorcycle's electrical system capacity (page 129). A blown fuse can cause a loss of lights or engine power.
 - Do not pull a trailer or sidecar with your motorcycle. This motorcycle was not designed for these attachments, and their use can seriously impair your motorcycle's handling.

Modifications

We strongly advise you not to remove any original equipment or modify your motorcycle in any way that would change its design or operation. Such changes could seriously impair your motorcycle's handling, stability and braking, making it unsafe to ride.

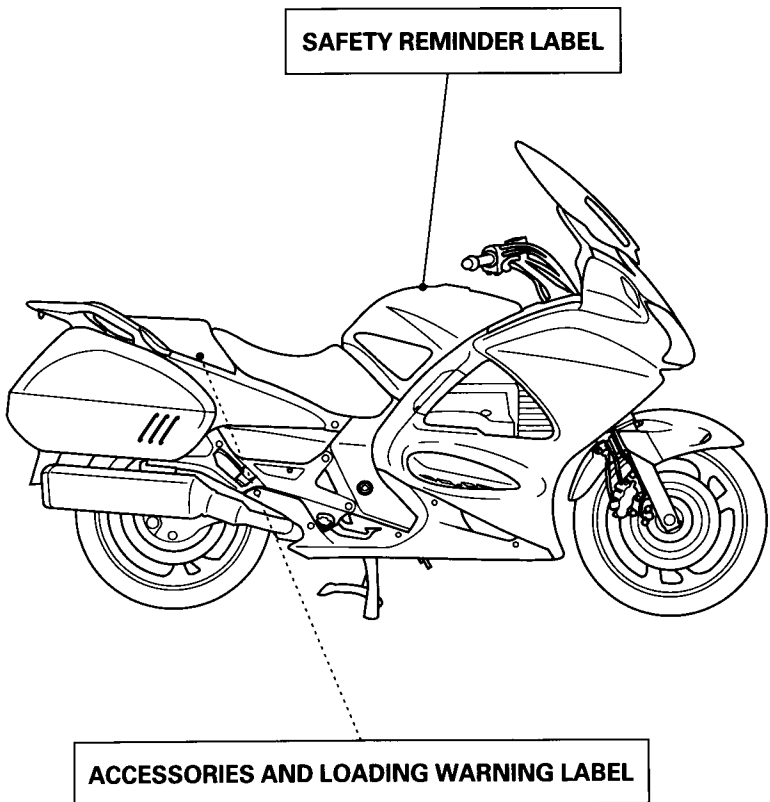
Removing or modifying your lights, mufflers, emission control system or other equipment can also make your motorcycle illegal.

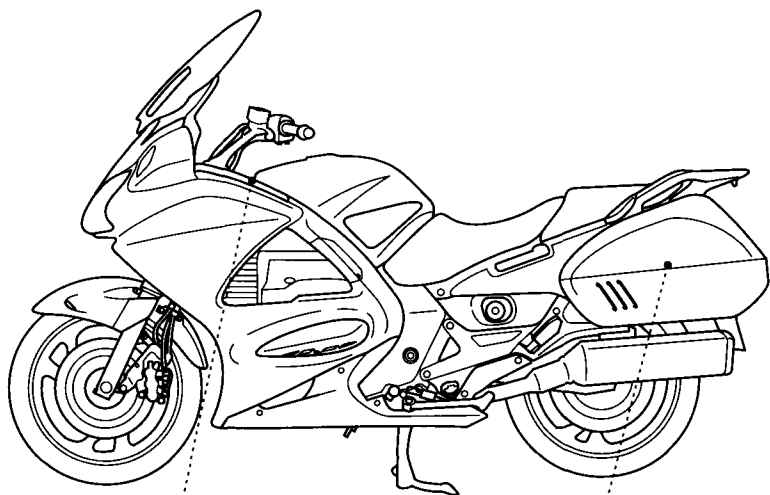
MOTORCYCLE SAFETY

SAFETY LABELS

The following pages show the locations of safety labels on your motorcycle. Some labels warn you of potential hazards that could cause serious injury. Others provide important safety information. Read these labels carefully and don't remove them.

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





CARGO LIMIT

2.0kg / 4.5lbs

CARGO LIMIT

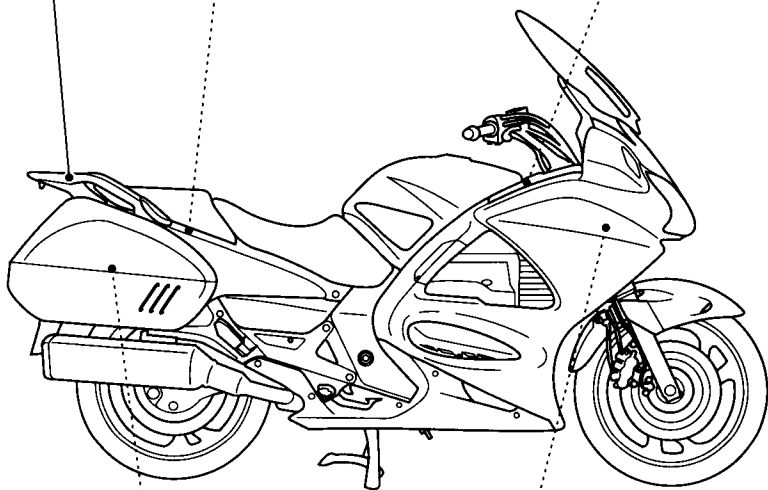
9.0kg / 20.0lbs

MOTORCYCLE SAFETY

CARGO LIMIT
9.0kg / 20.0lbs

TIRE INFORMATION LABEL

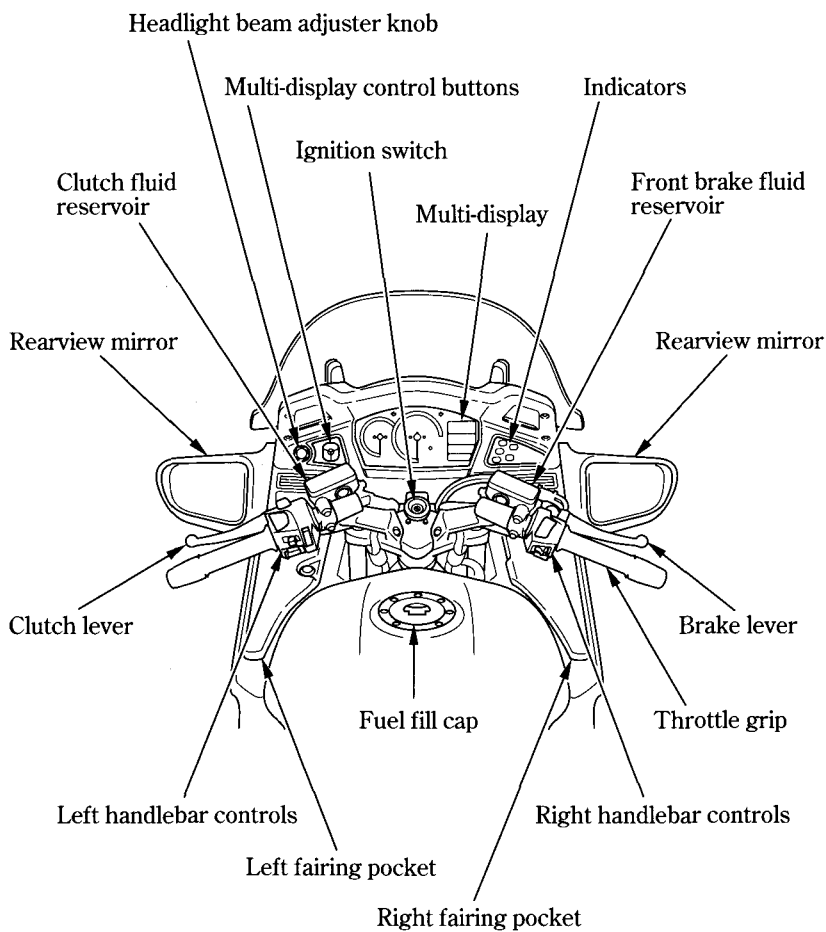
CARGO LIMIT
2.0kg / 4.5lbs



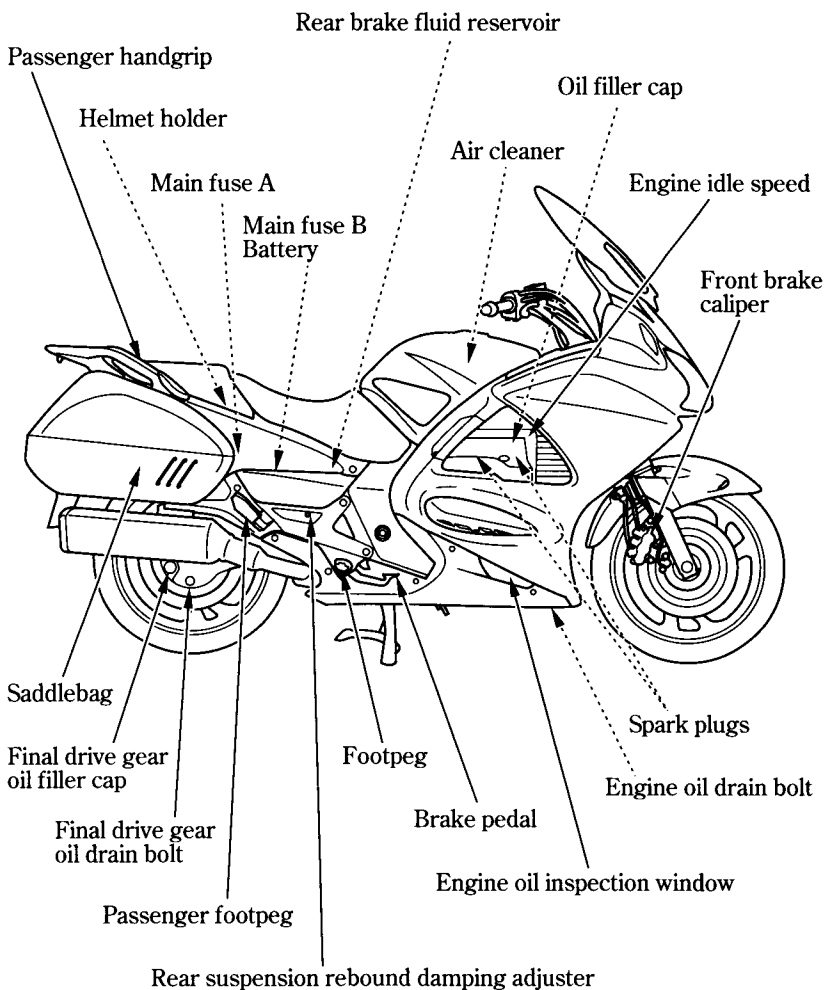
CARGO LIMIT
9.0kg / 20.0lbs

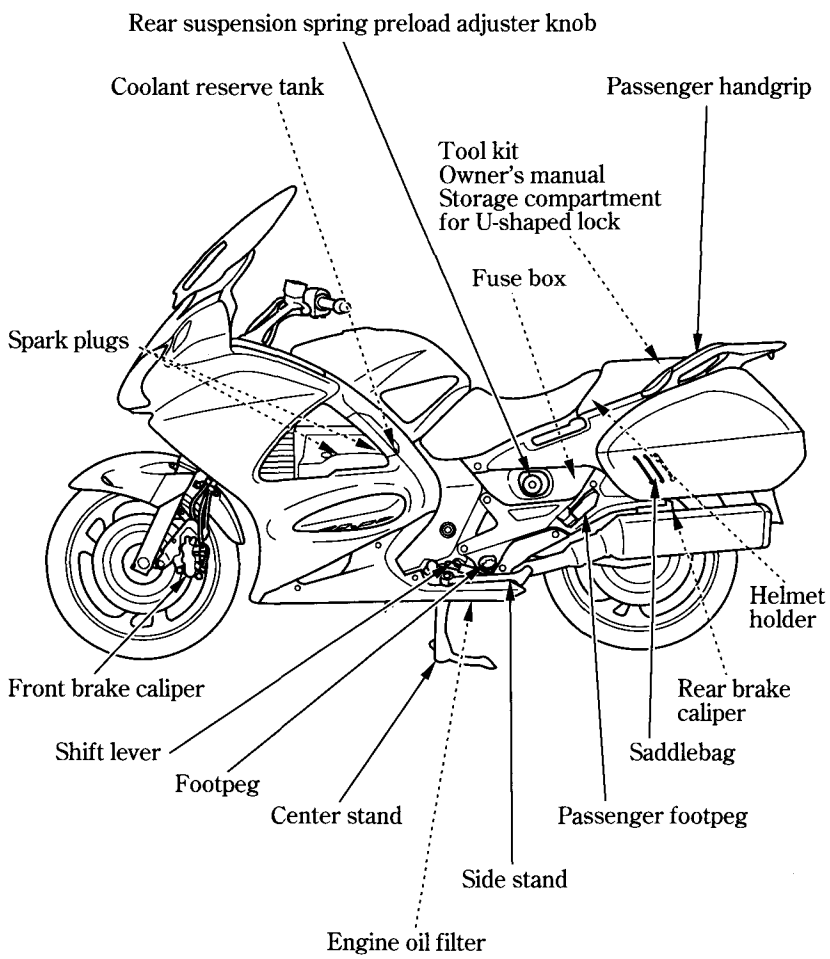
RADIATOR CAP SEAL

PARTS LOCATION



PARTS LOCATION

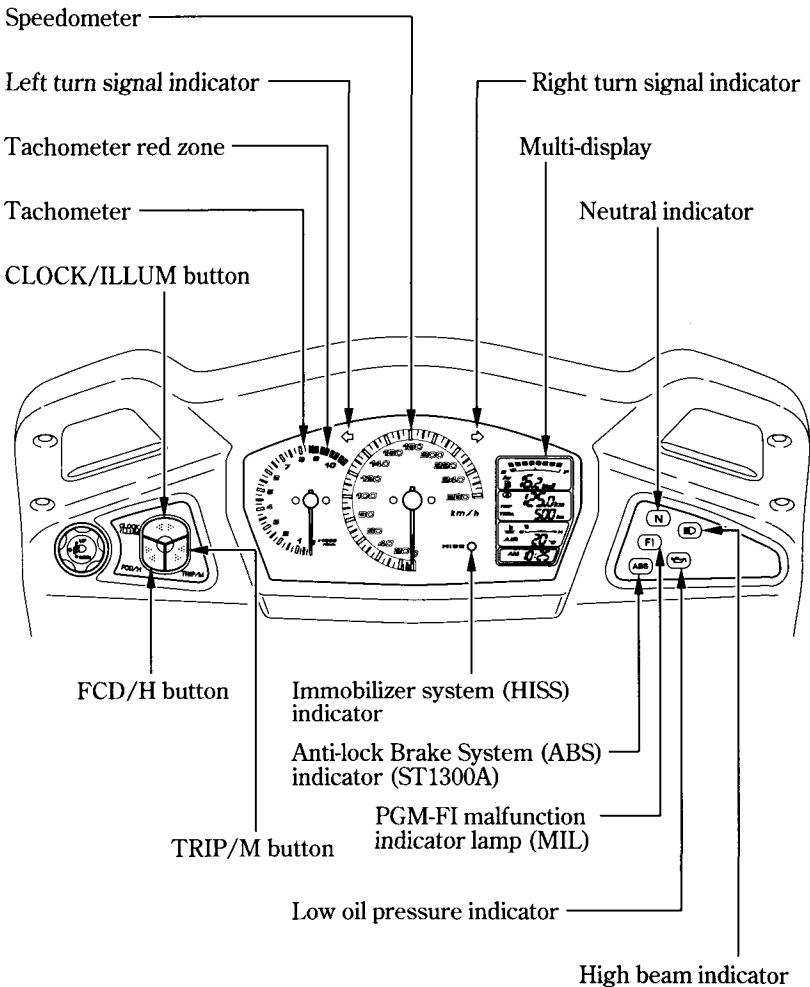




PARTS LOCATION

INSTRUMENTS AND INDICATORS

The indicators are contained in the instrument panel. Their functions are described in the tables on the following pages.





Speedometer

Shows riding speed.

This shows your speed in kilometers per hour (km/h) and/or miles per hour (mph) depending on the type.



Tachometer

Shows engine speed in revolutions per minute.



Tachometer red zone

Never allow the tachometer needle to enter the red zone, even after the engine has been broken in.

NOTICE

Running the engine beyond recommended maximum engine speed (the beginning of the tachometer red zone) can damage the engine.



Turn signal indicators (green)

Flashes when a turn signal operates.



Neutral indicator (green)

Lights when the transmission is in neutral.

PARTS LOCATION



Low oil pressure indicator (red)

Lights when the engine oil pressure is below normal operating range. Should light when ignition switch is ON and engine is not running. Should go out when the engine starts, except for occasional flickering at or near idling speed when engine is warm.

NOTICE

Running the engine with insufficient oil pressure may cause serious engine damage.



PGM-FI malfunction indicator lamp (MIL) (red)

Lights when there is any abnormality in the PGM-FI (Programmed Fuel Injection) system. Should also light for a few seconds and then go off when the ignition switch is turned ON and engine stop switch is at \odot (RUN). If the indicator comes on at any other time, reduce speed and take the motorcycle to a Honda dealer as soon as possible.



Anti-lock Brake System
(ABS) indicator
(red)
(ST1300A)

This light normally comes on when the ignition is turned ON, and goes off after you ride the motorcycle at speed above 10 km/h (6 mph). If there is a problem with the Anti-lock Brake System, this light flashes and remains on (page 76).




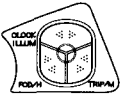
High beam indicator (blue)

Lights when the headlight is on high beam.



Immobilizer system
(HISS) indicator
(red)

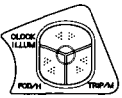
This indicator lights for a few seconds when the ignition switch is turned ON and the engine stop switch is at  (RUN). It will then go off if the properly-coded key has been inserted. If an improperly-coded key has been inserted, the indicator will remain on and the engine will not start (page 48).



CLOCK/ILLUM button

Use this button for the following purposes.

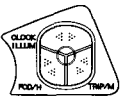
- To adjust time
- To adjust display illumination
- To switch blinking of the immobilizer system (HISS) indicator



FCD/H button

Use this button for the following purposes.

- To adjust time
- To select and reset the fuel mileage meter
- To change the mileage units for the odometer/tripmeter and fuel consumption meter



TRIP/M button

Use this button for the following purposes.

- To adjust time
- To select and reset the tripmeter

PARTS LOCATION

MULTI-DISPLAY

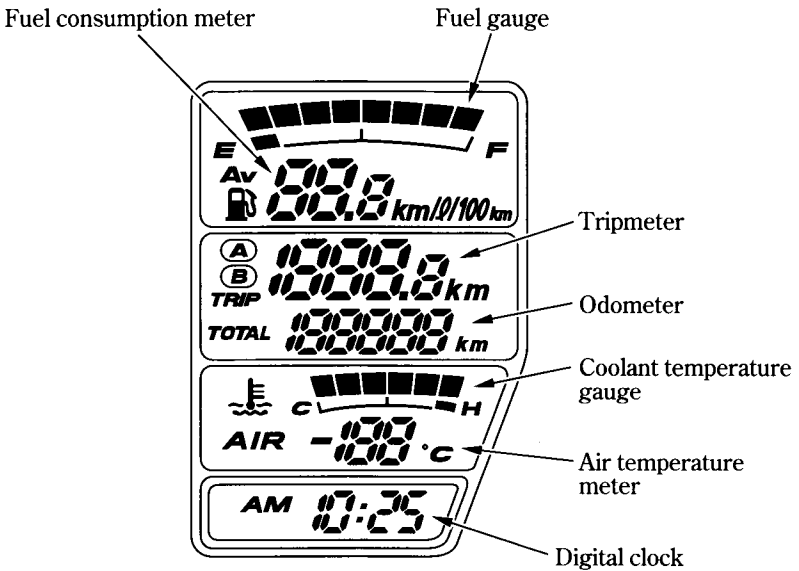
Your motorcycle is equipped with a Multi-display that presents various displays. This section explains display functions and operations.

Initial Display

When the ignition switch is turned ON, the display will temporarily show all the modes and digital segments so you can make sure the liquid crystal display is functioning properly. (Except digital clock)

The unit "mile/ℓ" and "mile" will be displayed only for E type.

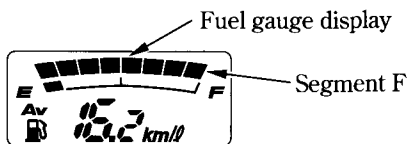
Digital clock and tripmeter will reset if the battery is disconnected.



Fuel Gauge

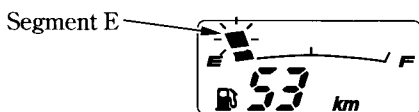
The fuel gauge liquid crystal display shows the approximate fuel supply available in a graduated display. When the segment F goes on, the fuel tank capacity including reserve is:

29.0 l (7.66 US gal , 6.38 Imp gal)



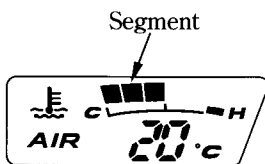
When segment E flashes, fuel will be low and you should refill the tank as soon as possible. The amount of fuel left in the tank with the vehicle set upright is approximately:

5.0 l (1.32 US gal , 1.10 Imp gal)



Coolant Temperature Gauge

When the segment begins to move above the C (Cold) mark, the engine is warm enough for the motorcycle to be ridden. The normal operating temperature range is within the section between the H and C marks.



If the segment H flashes, stop the engine and check the reserve tank coolant level. Read pages 34 – 35 and do not ride the motorcycle until the problem has been corrected.

NOTICE

Exceeding maximum running temperature may cause serious engine damage.

PARTS LOCATION

Air Temperature Meter

Air temperature meter shows air temperature digitally.

Temperature Display

Below -11°C	"— —" is displayed.
Between: -10°C — 50°C	Actual air temperature is indicated.
Above 50°C	The display will remain and blink " 50°C ".

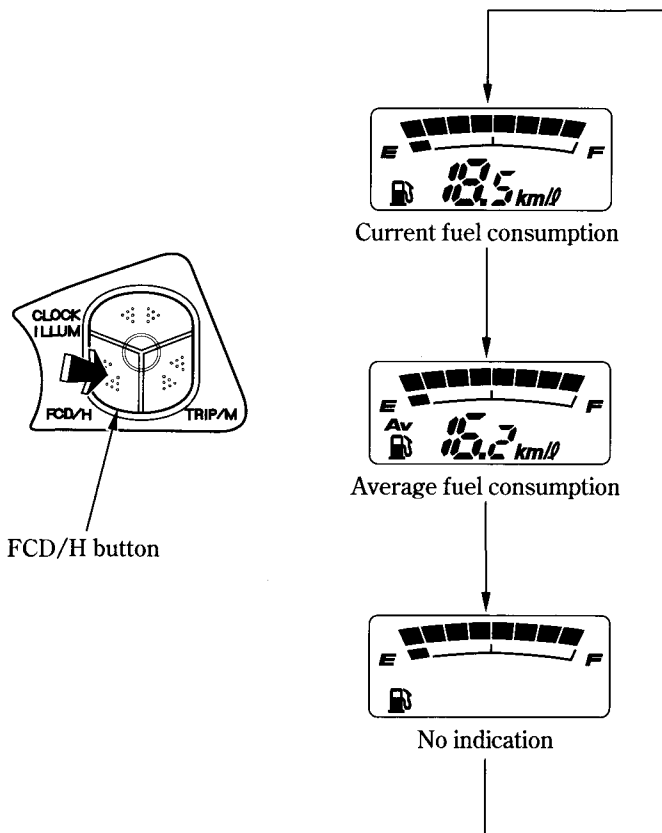
The temperature sensor is located in the fairing. The temperature reading can be affected by heat reflecting from the road surface, engine heat, and the exhaust from surrounding traffic. This can cause an error in the temperature reading when your speed is under 30 km/h (19 mph).



Fuel Consumption Meter

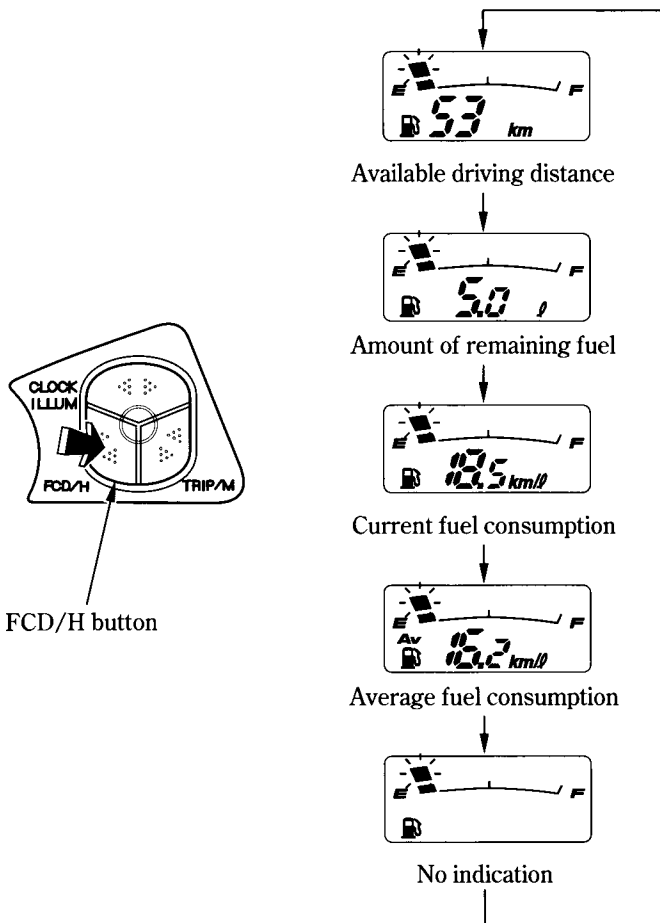
The fuel consumption meter allows indication of the available driving distance, the amount of remaining fuel, the current fuel consumption and the average fuel consumption. Briefly pressing the FCD/H button changes the indication as described below. The available driving distance and the amount of remaining fuel are indicated when the fuel in the fuel tank becomes 5 liters or less.

《When more than 5 liters》



PARTS LOCATION

《When less than 5 liters》



- When the remaining fuel becomes 5 liters or less, the indication automatically changes to the available driving distance.
(Except no indication)
- When the battery terminal is disconnected, the available driving distance, the amount of remaining fuel and the average fuel consumption memories will be reset.
- When the battery terminal is disconnected with 5 liters or less fuel remaining, the available driving distance and the amount of remaining fuel may be shown inaccurately in some cases.

Current Fuel Consumption

Indicates the momentary fuel consumption of each 15 seconds during engine operation. With motorcycle speed 5 km/h or below “- -” is displayed.

The indicated fuel consumption may differ from the actual fuel consumption.

The E type uses mile/ℓ or km/ℓ, the ED, F and U type in km/ℓ or ℓ/100 km.

When “- -” blinks, go to your Honda dealer.

Current fuel consumption



Average Fuel Consumption

The average fuel consumption after reset until that moment is indicated every 15 seconds.

The indicated fuel consumption may differ from the actual fuel consumption.

The E type uses mile/ℓ or km/ℓ, the ED, F and U type in km/ℓ or ℓ/100 km.

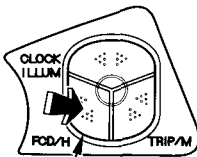
When “- -” blinks, go to your Honda dealer.

Average fuel consumption



To reset average fuel consumption:

Press and hold the FCD/H button for more than 2 seconds with the display in the average fuel consumption.



FCD/H button



PARTS LOCATION

Available Driving Distance

When the amount of remaining fuel becomes less than 5 liters, the estimated allowable distance is indicated.

The E type uses mile or km, and others use km.

When the amount of remaining fuel becomes less than 2 liters, “-.” will be indicated.

The indicated available driving distance is by calculation depending on the driving conditions, and the indicated figure may not always be the actual allowable distance. When the fuel gauge near to E or when E segment blinks, fill fuel promptly.



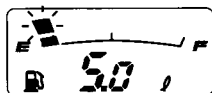
Remaining Fuel

When the amount of remaining fuel becomes less than 5 liters, the estimated amount of remaining fuel is indicated.

When the amount of remaining fuel becomes less than 2 liters, “-.” will be indicated.

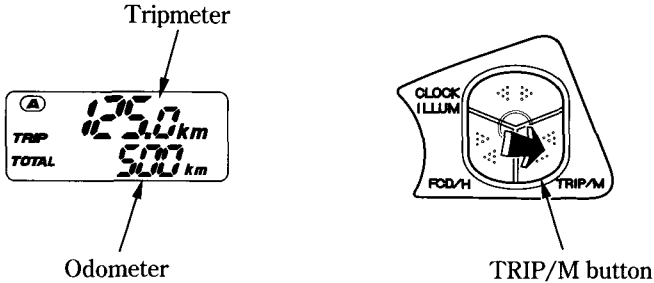
The amount of remaining fuel is calculated from the driving conditions.

The indicated amount of remaining fuel may be different from the actual amount. When the fuel gauge near to E or when E segment blinks, fill fuel promptly.



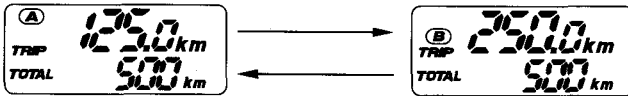
Odometer/Tripmeter

- ODO (Odometer) — shows the total miles (For E type) or kilometer (Except E type) ridden.
- TRIP (Tripmeter) — shows the number of miles (For E type) or kilometer (Except E type) ridden.

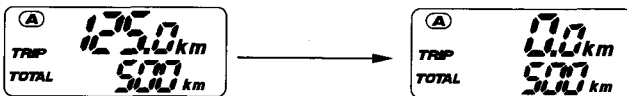


The tripmeter will show mileage in two sub modes, “tripmeter A” and “tripmeter B.”

Press the TRIP/M button to select the “tripmeter A” or “tripmeter B” mode.



To reset the tripmeter, press and hold the TRIP/M button for more than 2 seconds with the display in the “tripmeter A” or “tripmeter B” mode.



PARTS LOCATION

Digital Clock

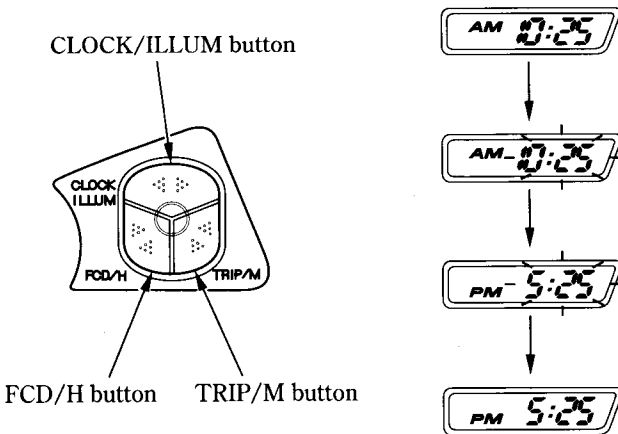
The display shows the hour and minute.

To adjust the time:

1. Turn the ignition switch to ON or ACC.
2. Press and hold the CLOCK/ILLUM button for more than 2 seconds. The clock will be set in the adjust mode with the display flashing.
3. To set the hour, press and release the FCD/H button until the desired hour appears.
 - Quick setting — press and hold the FCD/H button until the desired hour appears.
4. To set the minute, press and release the TRIP/M button until the desired minute appears.
 - Quick setting — press and hold the TRIP/M button until the desired minute appears.
5. To end the adjustment, press the CLOCK/ILLUM button after the last adjustment, or turn the ignition switch OFF.

Wait approximately 5 seconds; the display will stop flashing automatically. If the ignition switch is turned off during the time adjustment mode, the blinking function of the immobilizer system (HISS) indicator will be altered.

After turning ignition switch OFF, the clock will display for 10 days.



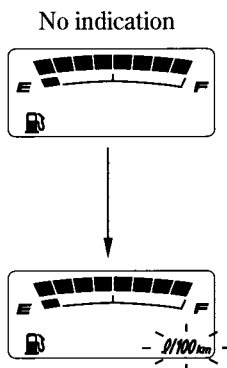
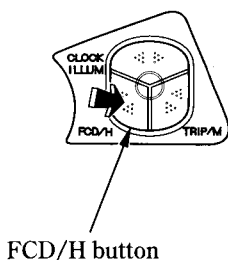
Mileage and Fuel Consumption Unit Change

The odometer/tripmeter displays either “km” or “mile”. (E type only)

The current/average fuel consumption meter displays either “km/ℓ” or “mile/ℓ” (E type)/“km/ℓ” or “ℓ/100 km” (ED, F and U type).

Press the FCD/H button to get the fuel consumption meter display shown below.

Press and hold the FCD/H button for more than 2 seconds to select.

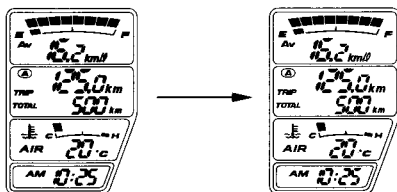
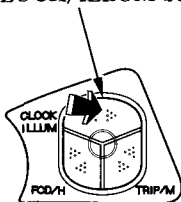


Display Illumination Adjustment

The brightness of a display can be adjusted in three stages.

To adjust the brightness of the display, press the CLOCK/ILLUM button.

CLOCK/ILLUM button



MAJOR COMPONENTS

(Information you need to operate this motorcycle)

REAR SUSPENSION

Rebound Damping:

To reduce (SOFT) :

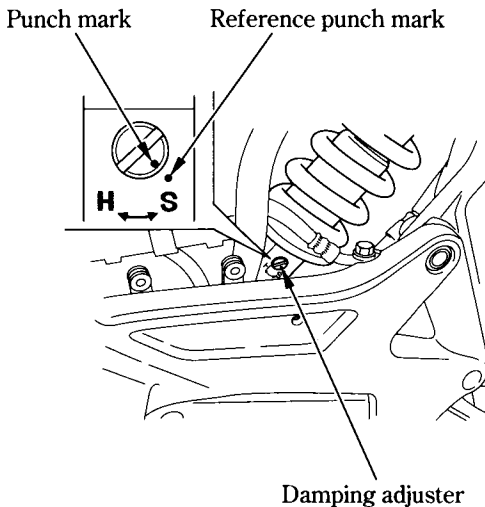
Turn the adjuster counterclockwise toward SOFT for a light load and smooth road condition.

To increase (HARD) :

Turn the adjuster clockwise toward HARD for a firmer ride and rough road condition.

To adjust the adjuster to the standard position, proceed as follows :

1. Turn the damping adjuster clockwise until it will no longer turn (lightly seats). This is the full hard setting.
2. The adjuster is set in the standard position when the adjuster is turned counterclockwise approximately 1 turn so that its punch mark aligns with the reference punch mark.



Spring Preload:

The spring preload adjuster knob has 35 spring preload positions (clicks) or more for different load or riding conditions.

To adjust the spring preload, turn the adjuster knob.

To reduce (LOW) :

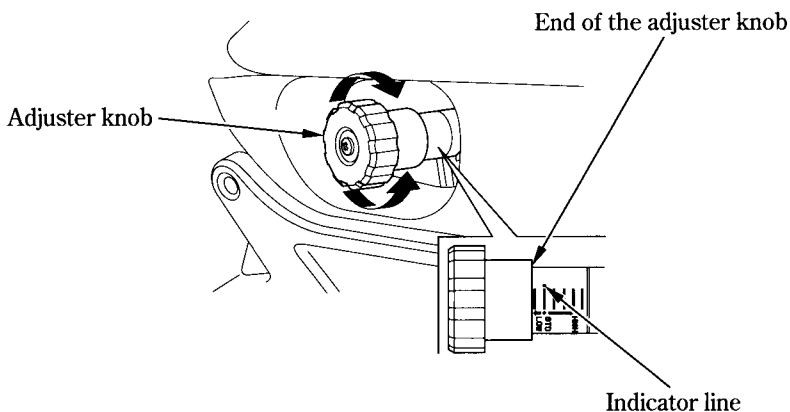
Turn the adjuster counterclockwise toward LOW for a light load and smooth road condition.

To increase (HIGH) :

Turn the adjuster clockwise toward HIGH for a firmer ride and rough road condition.

To adjust to the standard position:

Turn the spring preload adjuster knob counterclockwise until it will no longer turn (lightly seats). This is the full LOW setting. Turn the adjuster clockwise by 7 clicks. At that position, the end of the adjuster knob should be aligned with the indicator line.



The rear shock absorber assembly includes a damper unit that contains high pressure nitrogen gas. Do not attempt to disassemble or service the damper; it cannot be rebuilt and must be replaced when worn out. Disposal should only be done by your Honda dealer. The instructions found in this owner's manual are limited to adjustment of the shock assembly only.

MAJOR COMPONENTS

(Information you need to operate this motorcycle)

BRAKES

Both the front and rear brakes are the hydraulic disc types.

As the brake pads wear, the brake fluid level drops.

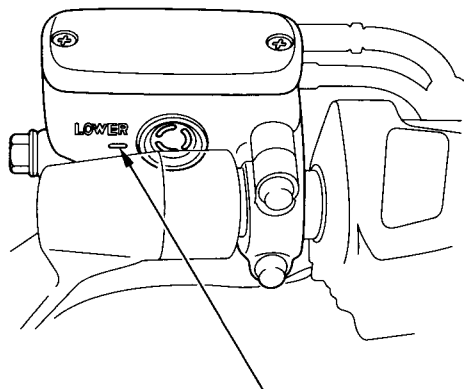
There are no adjustments to perform, but fluid level and pad wear must be inspected periodically. The system must be inspected frequently to ensure there are no fluid leaks. If the control lever or pedal free travel becomes excessive and the brake pads are not worn beyond the recommended limit (page 112), there is probably air in the brake system and it must be bled. See your Honda dealer for this service.

Front Brake Fluid Level:

With the motorcycle in an upright position, check the fluid level. It should be above the LOWER level mark. If the level is at or below the LOWER level mark, check the brake pads for wear (page 112).

Worn pads should be replaced. If the pads are not worn, have your brake system inspected for leaks.

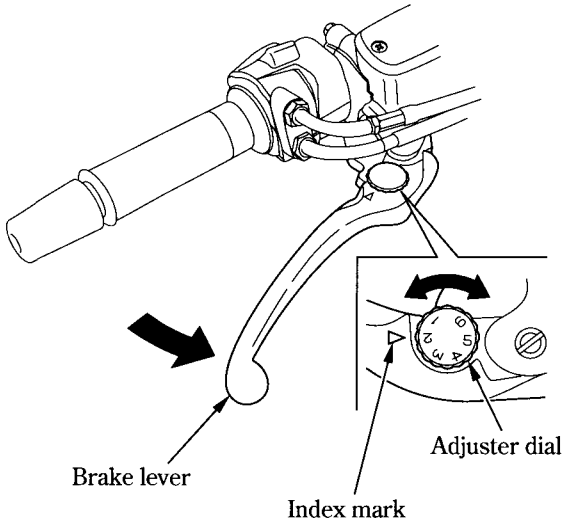
The recommended brake fluid is Honda DOT 4 brake fluid from a sealed container, or an equivalent.



LOWER level mark

The distance between the tip of the brake lever and the grip can be adjusted.

1. Turn the adjuster dial while pushing the brake lever forward.
2. Align the index mark on the brake lever with the numbers on the adjuster dial.
3. Apply the brake, release it, then spin the wheel and check that it rotates freely. Repeat this procedure several times.



Other Checks:

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

MAJOR COMPONENTS

(Information you need to operate this motorcycle)

Rear Brake Fluid Level:

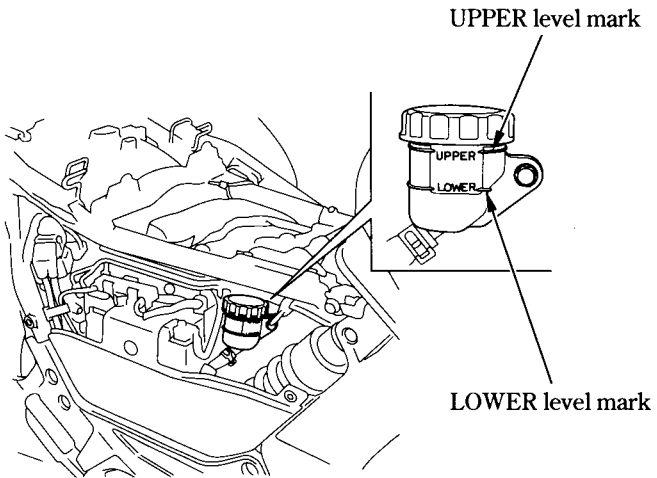
The reserve tank is located below the seat.

Remove the front and rear seat and right side cover (pages 55 , 88).

With the motorcycle in an upright position, check the fluid level. It should be between the UPPER and LOWER level marks. If the level is at or below the LOWER level mark, check the brake pads for wear (page 112).

Worn pads should be replaced. If the pads are not worn, have your brake system inspected for leaks.

The recommended brake fluid is Honda DOT 4 brake fluid from a sealed container, or an equivalent.



Other Checks:

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

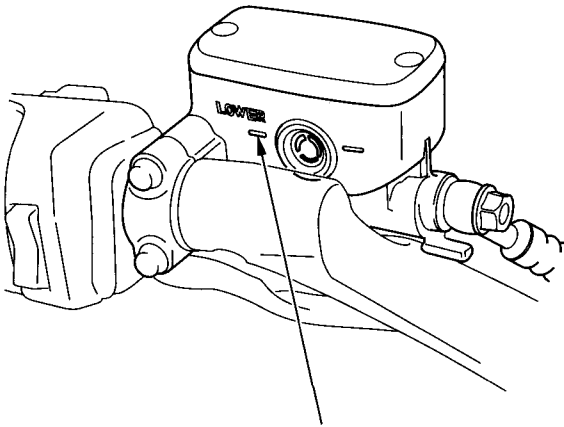
CLUTCH

This motorcycle has a hydraulically actuated clutch. There are no adjustments to perform, but the clutch system must be inspected periodically for fluid level and leakage.

If the motorcycle creeps or stalls when shifted into gear, or if the clutch slips, causing acceleration to lag behind engine speed, there is probably air in the clutch system and it must be bled out. See your Honda dealer for this service.

Fluid Level:

Check that the fluid level is above the LOWER level mark. If the fluid level is near the LOWER level mark, it indicates fluid leakage. See your Honda dealer for repair.



LOWER level mark

Other Checks:

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

MAJOR COMPONENTS

(Information you need to operate this motorcycle)

COOLANT

Coolant Recommendation

The owner must properly maintain the coolant to prevent freezing, overheating, and corrosion. Use only high quality ethylene glycol antifreeze containing corrosion protection inhibitors specifically recommended for use in aluminum engines. (SEE ANTIFREEZE CONTAINER LABEL).

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

Using coolant with silicate inhibitors may cause premature wear of water pump seals or blockage of radiator passages.

Using tap water may cause engine damage.

The factory provides a 50/50 solution of antifreeze and distilled water in this motorcycle. This coolant solution is recommended for most operating temperatures and provides good corrosion protection. A higher concentration of antifreeze decreases the cooling system performance and is recommended only when additional protection against freezing is needed. A concentration of less than 40/60 (40% antifreeze) will not provide proper corrosion protection. During freezing temperatures, check the cooling system frequently and add higher concentrations of antifreeze (up to a maximum of 60% antifreeze) if required.

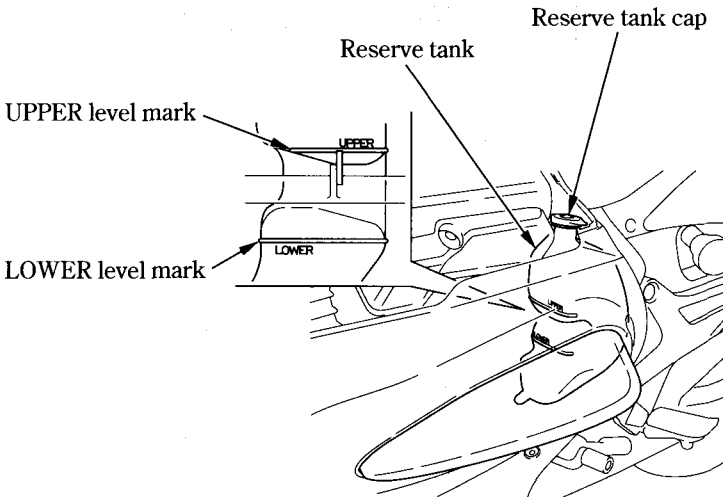
Inspection

The reserve tank is located below the maintenance lid.

Remove the left maintenance lid (page 88).

Check the coolant level in the reserve tank while the engine is at normal operating temperature. Add coolant to the reserve tank as required to bring coolant level to the UPPER level mark. Always add coolant to the reserve tank. Do not attempt to add coolant by removing the radiator cap.

If the reserve tank is empty, or if coolant loss is excessive, check for leaks and see your Honda dealer for repair.



MAJOR COMPONENTS

(Information you need to operate this motorcycle)

FUEL

Fuel Tank

The fuel tank capacity including the reserve supply is:

29.0 ℓ (7.66 US gal , 6.38 Imp gal)

To open the fuel fill cap, insert the ignition key and turn it clockwise. The fuel fill cap is hinged and will lift up.

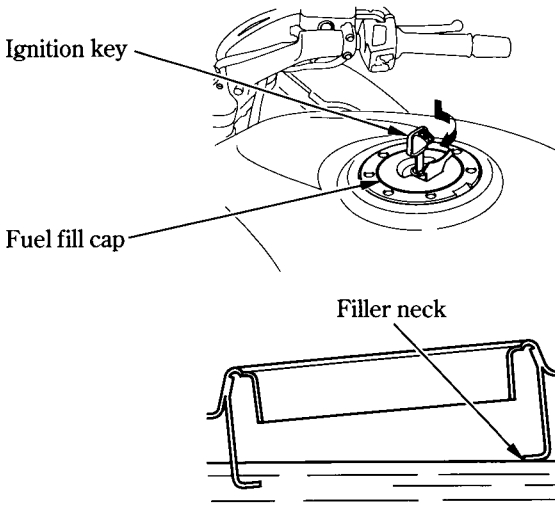
Do not overfill the tank. There should be no fuel in the filler neck.

After refueling, to close the fuel fill cap, push the fuel fill cap into the filler neck until it snaps closed and locks. Remove the key.

⚠ WARNING

Petrol 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.
- Refuel only outdoors.
- Wipe up spills immediately.



Use premium unleaded petrol with a research octane number of 95 or higher. The use of leaded petrol will cause premature damage to the catalytic converters.

Occasionally you may experience light spark knock while operating under heavy loads. This is no cause for concern, it simply means your engine is operating efficiently.

NOTICE

If “spark knock” or “pinking” occurs at a steady engine speed under normal load, change brands of petrol. If spark knock or pinking persists, consult your Honda dealer. Failure to do so is considered misuse, and damage caused by misuse is not covered by Honda’s Limited Warranty.

MAJOR COMPONENTS

(Information you need to operate this motorcycle)

Petrol Containing Alcohol

If you decide to use a petrol containing alcohol (gasohol), be sure it's octane rating is at least as high as that recommended by Honda. There are two types of "gasohol": one containing ethanol, and the other containing methanol. Do not use petrol that contains more than 10 % ethanol. Do not use petrol containing methanol (methyl or wood alcohol) that does not also contain cosolvents and corrosion inhibitors for methanol. Never use petrol containing more than 5 % methanol, even if it has cosolvents and corrosion inhibitors.

Fuel system damage or engine performance problems resulting from the use of fuels that contain alcohol is not covered under the warranty. Honda cannot endorse the use of fuels containing methanol since evidence of their suitability is as yet incomplete.

Before buying fuel from an unfamiliar station, try to find out if the fuel contains alcohol. If it does, confirm the type and percentage of alcohol used. If you notice any undesirable operating symptoms while using a petrol that contains alcohol, or one that you think contains alcohol, switch to a petrol that you know does not contain alcohol.

ENGINE OIL

Engine Oil Level Check

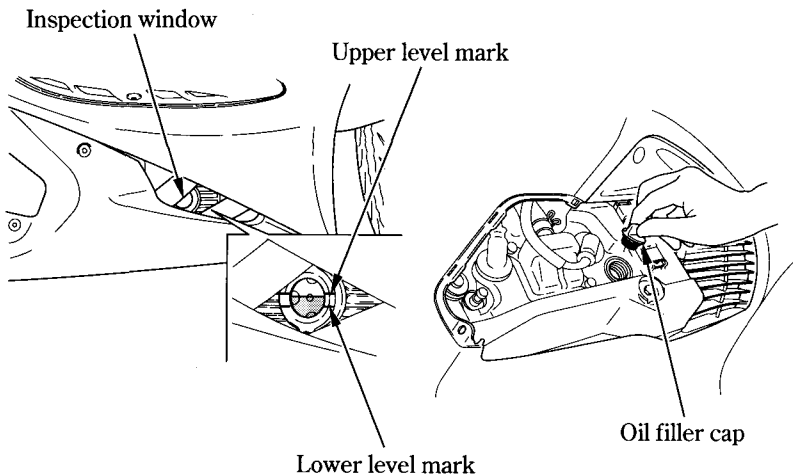
Check the engine oil level each day before riding the motorcycle. The level must be maintained between the upper and lower level marks in the inspection window.

To Check the Oil Level:

1. Start the engine and let it idle for 3–5 minutes. Make sure the low oil pressure indicator goes off. If the indicator remains flashing, stop the engine immediately.
2. Stop the engine and put the motorcycle on its center stand on level ground.
3. After 2–3 minutes, check that the oil level is between the upper and lower level marks in the inspection window.
4. If required, remove the right maintenance lid (page 88), overhead cover (page 90) and oil filler cap and add the specified oil up to the upper level mark. Do not overfill.
5. Reinstall the oil filler cap, overhead cover and right maintenance lid. Check for oil leaks.

NOTICE

Running the engine with insufficient oil pressure may cause serious engine damage.



MAJOR COMPONENTS

(Information you need to operate this motorcycle)

FINAL DRIVE OIL

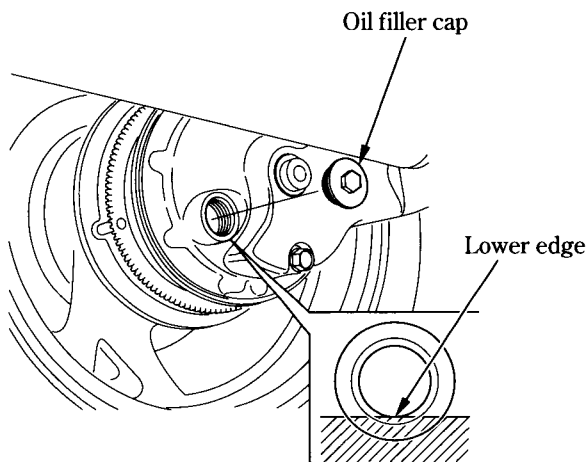
Oil Level Check

Check the final drive oil level when specified by the maintenance schedule (page 83).

1. Place the motorcycle on its center stand on a firm, level surface.
2. Remove the oil filler cap.
3. Check the oil level. It should be flush with the lower edge of the oil filler hole.
4. If the level is low, check for oil leaks. Add the recommended oil through the oil filler hole until it reaches the lower edge of the opening.
5. Install the oil filler cap.

Recommended Oil:

HYPOID GEAR OIL SAE 80



TUBELESS TYRES

To safely operate your motorcycle, your tyres must be the proper type and size, in good condition with adequate tread, and correctly inflated for the load you are carrying. The following pages give more detailed information on how and when to check your air pressure, how to inspect your tyres for damage, and what to do when your tyres need to be repaired or replaced.

WARNING

Using tyres 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 tyre inflation and maintenance.

Air Pressure

Keeping your tyres properly inflated provides the best combination of handling, tread life and riding comfort. Generally, underinflated tyres wear unevenly, adversely affect handling, and are more likely to fail from being overheated. Overinflated tyres make your motorcycle ride harshly, are more prone to damage from road hazards, and wear unevenly.

We recommend that you visually check your tyres before every ride and use a gauge to measure air pressure at least once a month or any time you think the tyres might be low.

Tubeless tyres have some self-sealing ability if they are punctured. However, because leakage is often very slow, you should look closely for punctures whenever a tyre is not fully inflated.

MAJOR COMPONENTS

(Information you need to operate this motorcycle)

Always check air pressure when your tyres are “cold” – when the motorcycle has been parked for at least three hours. If you check air pressure when your tyres are “warm” – when the motorcycle has been ridden for even a few miles – the readings will be higher than if the tyres were “cold”. This is normal, so do not let air out of the tyres to match the recommended cold air pressures given below. If you do, the tyres will be underinflated.

The recommended “cold” tyre pressures are:

Front	290 kPa (2.90 kgf/cm ² , 42 psi)
Rear	290 kPa (2.90 kgf/cm ² , 42 psi)

Inspection

Whenever you check the tyre pressures, you should also examine the tyre treads and sidewalls for wear, damage, and foreign objects:

Look for:

- Bumps or bulges in the side of the tyre or the tread. Replace the tyre if you find any bumps or bulges.
- Cuts, splits or cracks in the tyre. Replace the tyre if you can see fabric or cord.
- Excessive tread wear.

Also, if you hit a pothole or hard object, pull to the side of the road as soon as you can safely and carefully inspect the tyres for damage.

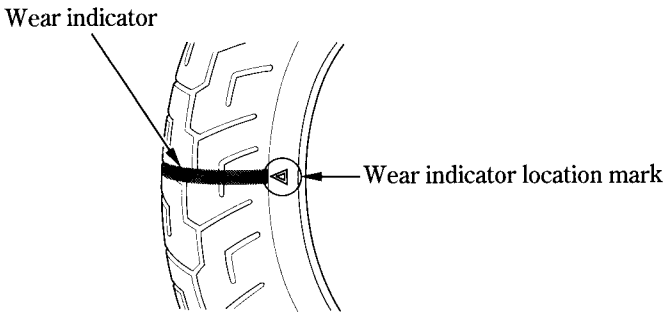
Tread Wear

Replace tyres before tread depth at the center of the tyre reaches the following limit:

Minimum tread depth	
Front	1.5 mm (0.06 in)
Rear	2.0 mm (0.08 in)

< For Germany >

German law prohibits use of tyres whose tread depth is less than 1.6 mm.



Tyre Repair

If a tyre is punctured or damaged, you should replace it, not repair it. As discussed below, a tyre that is repaired, either temporarily or permanently, will have lower speed and performance limits than a new tyre.

A temporary repair, such as an external tubeless tyre plug, may not be safe for normal speeds and riding conditions. If a temporary or emergency repair is made to a tyre, you should ride slowly and cautiously to a dealer and have the tyre replaced. If possible, you should not carry a passenger or cargo until a new tyre is installed.

Even if a tyre is professionally repaired with a permanent internal patch plug, it will not be as good as a new tyre. You should not exceed 80 km/h (50 mph) for the first 24 hours, or 130 km/h (80 mph) at any time thereafter. In addition, you may not be able to safely carry as much weight as with a new tyre. Therefore, we strongly recommend that you replace a damaged tyre. If you choose to have a tyre repaired, be sure the wheel is balanced before you ride.

MAJOR COMPONENTS

(Information you need to operate this motorcycle)

Tyre Replacement

The tyres that came on your motorcycle were designed to match the performance capabilities of your motorcycle and provide the best combination of handling, braking, durability and comfort.

WARNING

Installing improper tyres 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 tyres recommended in this owner's manual.

The recommended tyres for your motorcycle are:

Front	120/70ZR18M/C (59W)
	BRIDGESTONE BT020F F DUNLOP D220FST L
Rear	170/60ZR17M/C (72W)
	BRIDGESTONE BT020R F DUNLOP D220ST L
Type	radial-ply, tubeless

Whenever you replace a tyre, use one that is equivalent to the original and be sure the wheel is balanced after the new tyre is installed.

Important Safety Reminders

- Do not install a tube inside a tubeless tyre on this motorcycle. Excessive heat build-up can cause the tube to burst.
- Use only tubeless tyres on this motorcycle. The rims are designed for tubeless tyres, and during hard acceleration or braking, a tube-type tyre could slip on the rim and cause the tyre to rapidly deflate.
- Do not install a bias-ply tyre on this motorcycle. Mixing bias-ply and radial tyres can adversely affect handling and stability.
- Do not install car tyres on this motorcycle. During installation the tyre may separate from the rim with enough force to cause serious injury or death.
- When replacing tyres, use only the recommended tyres as shown above and on the tyre information label. Use of other tyres on the model equipped with ABS may impair proper ABS function.

The ABS computer works by comparing wheel speed.

Non-recommended tyres can affect wheel speed and may confuse the ABS computer.

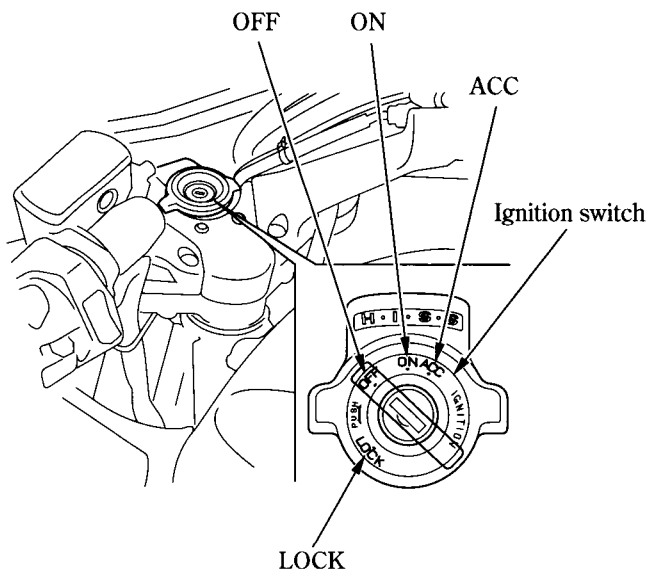
ESSENTIAL INDIVIDUAL COMPONENTS

IGNITION SWITCH

The ignition switch is below the indicator panel.

The headlight, position light and taillights will come on whenever you turn the ignition switch ON. If your motorcycle is stopped with the ignition switch ON and the engine is not running, the headlight, position light and taillights will still be on, resulting in battery discharge.

Key Position	Function	Key Removal
LOCK (steering lock)	No electrical circuits function. Locks the steering head.	can be removed
OFF	No electrical circuits function.	can be removed
ON	Electrical circuits on.	cannot be removed
ACC	Only the accessory circuits function.	cannot be removed

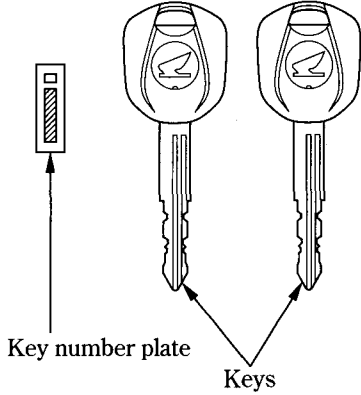
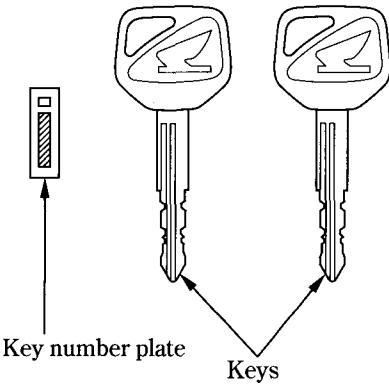


KEYS

This motorcycle has two keys and a key number plate.

< Except F type >

< For F type >



You will need the key number if you ever have to replace a key. Store the plate in a safe place.

To reproduce keys, bring all keys, key number plate and motorcycle to your Honda dealer.

Up to four keys can be registered with the immobilizer system (HISS), including the ones in hand.

If all keys are lost, the PGM-FI unit/ignition control module must be replaced. To avoid this possibility we recommend that if only one key is left, you immediately have it reproduced to ensure that a back-up is available.

These keys contain electronic circuits that are activated by the immobilizer system (HISS). They will not work to start the engine if the circuits are damaged.

- Do not drop the keys or set heavy objects on them.
- Do not grind, drill or in any way alter the original shape of the keys.
- Keep the keys away from magnetic objects.

ESSENTIAL INDIVIDUAL COMPONENTS

IMMOBILIZER SYSTEM (HISS)

HISS is the abbreviation of Honda Ignition Security System.

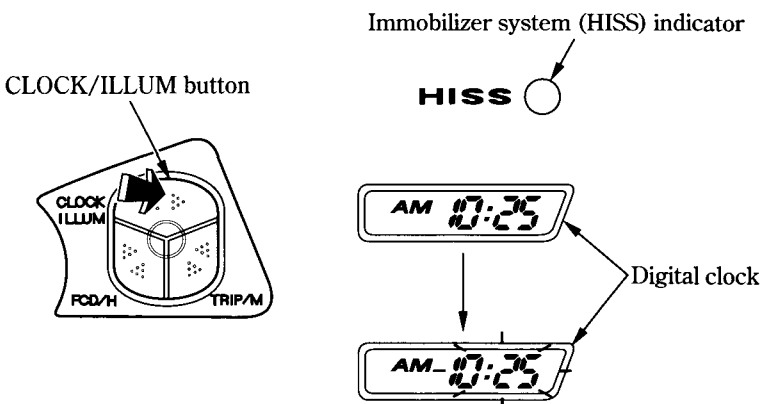
The immobilizer system (HISS) protects your motorcycle from theft. A properly-coded key must be used in the ignition switch for the engine to start. If an improperly-coded key (or other device) is used the engine's starting circuit is disabled.

When the ignition switch is turned ON and the engine stop switch is at " \bigcirc " (RUN), the immobilizer system (HISS) indicator lights for a few seconds, then goes off. If the indicator remains on, it means the system does not recognize the coding of the key. Turn the ignition switch to OFF, remove the key, reinsert and turn the switch ON again.

The immobilizer system has such a function that keeps the immobilizer system (HISS) indicator blinking at 2 second intervals for 24 hours. This blinking function can be turned on or off.

To alter the blinking function.

1. Turn the ignition switch ON.
2. Press and hold the CLOCK/ILLUM button for more than 2 seconds. The clock will be set in the adjust mode with the display flashing.
3. Turn the ignition switch OFF within 5 seconds.



If the system repeatedly does not recognize the coding of your key, contact your Honda dealer.

- The system may not recognize the key's coding if any other immobilizer key is near the ignition switch. To make sure the system recognizes the key code, keep each immobilizer key on a separate ring.
- Do not attempt to alter the immobilizer system (HISS) or add other devices to it. Electrical problems could result, making it impossible to start your motorcycle.
- If all keys are lost, the PGM-FI unit/ignition control module must be replaced.

EC Directives

This immobilizer system complies with the R & TTE (Radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity) Directive.






The declaration of conformity to R & TTE Directive is provided to the owner at the time of purchase. The declaration of conformity should be kept at a safe place. When the declaration of conformity is lost or is not provided, contact your Honda dealer.

ESSENTIAL INDIVIDUAL COMPONENTS


RIGHT HANDLEBAR CONTROLS

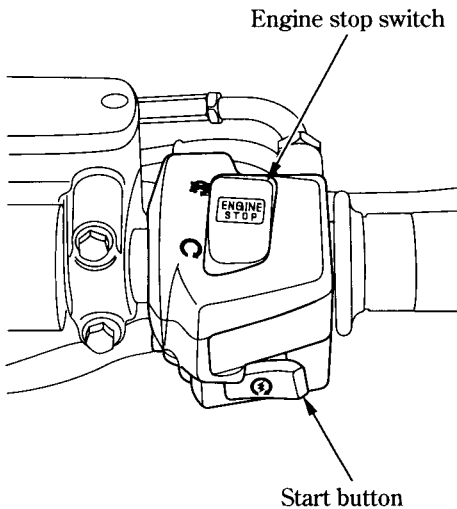
Engine Stop Switch

The engine stop switch is next to the throttle grip. When the switch is in the  (RUN) position, the engine will operate. When the switch is in the  (OFF) position, the engine will not operate. This switch is intended primarily as a safety or emergency switch and should normally remain in the  (RUN) position.

Start Button

The start button is below the engine stop switch.



When the start button is pressed, the starter motor cranks the engine. If the engine stop switch is in the  (OFF) position, the starter motor will not operate. See page 71 for the starting procedure.



LEFT HANDLEBAR CONTROLS

The controls next to left handlebar grip are:

Headlight Dimmer Switch

Push the dimmer switch to  (HI) to select high beam or to  (LO) to select low beam.


Passing Light Control Switch

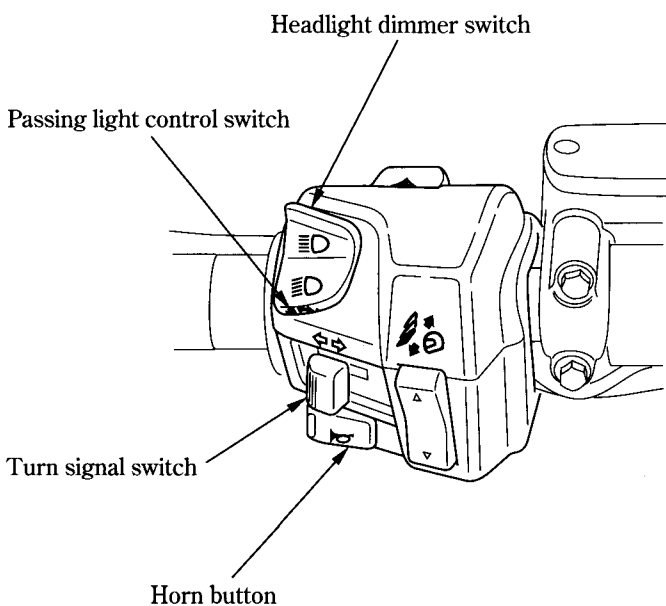
When this switch is pressed, the headlight flashes on to signal approaching cars or when passing.

Horn Button

Press the button to sound the horn.

Turn Signal Switch

Move to  to signal a left turn,  to signal a right turn. Press to turn signal off.



ESSENTIAL INDIVIDUAL COMPONENTS

WINDSCREEN HEIGHT ADJUSTMENT SWITCH

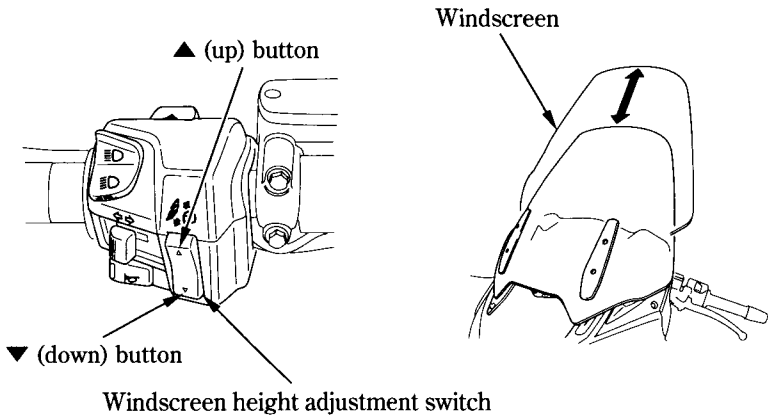
The maximum amount of height adjustment is about 190 mm (7.4 in). Adjust the height with the adjusting buttons according to your preference as described below.

To Adjust the Height of the Windscreen:

1. Turn the ignition switch ON.

To raise the windscreen:
push the ▲ (up) button.


To lower the windscreen:
push the ▼ (down) button.



The windscreen will be raised or lowered while the adjusting buttons are kept depressed.

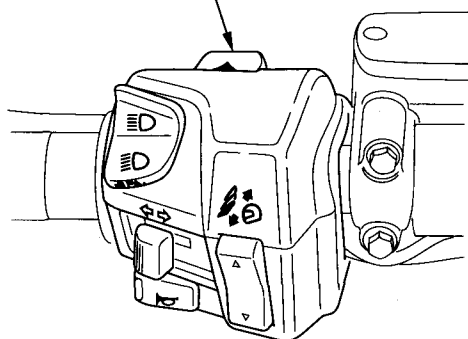
When you lower the windscreen, please check the new position will allow safe operation of the motorcycle.

HAZARD WARNING SYSTEM SWITCH

This system should be used only when your motorcycle is stopped under emergency or hazardous conditions. To turn it on, turn the ignition key to the ON or ACC position, and then push the switch marked . The front and rear turn signals will blink simultaneously.

Be sure to turn the switch off when the hazard warning is no longer required, or the turn signals will not work properly, and may confuse other drivers.

Hazard warning system switch



FEATURES

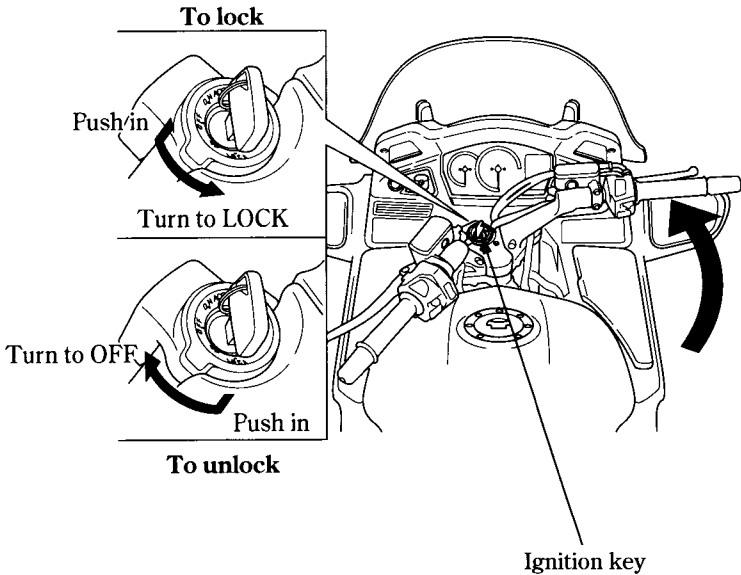
(Not required for operation)

STEERING LOCK

To lock the steering, turn the handlebars all the way to the left or right, turn the key to LOCK while pushing in. Remove the key.

To unlock the steering, turn the key to OFF while pushing in.

Do not turn the key to LOCK while riding the motorcycle; loss of vehicle control will result.



SEAT

To Remove the Rear Seat:

Insert the ignition key and turn it clockwise to open the left latch lever. Pull the rear seat back and up while depressing a seat opener.

To Remove the Front Seat:

Remove the front seat. Pull the front seat back and up.

To Install the Front Seat:

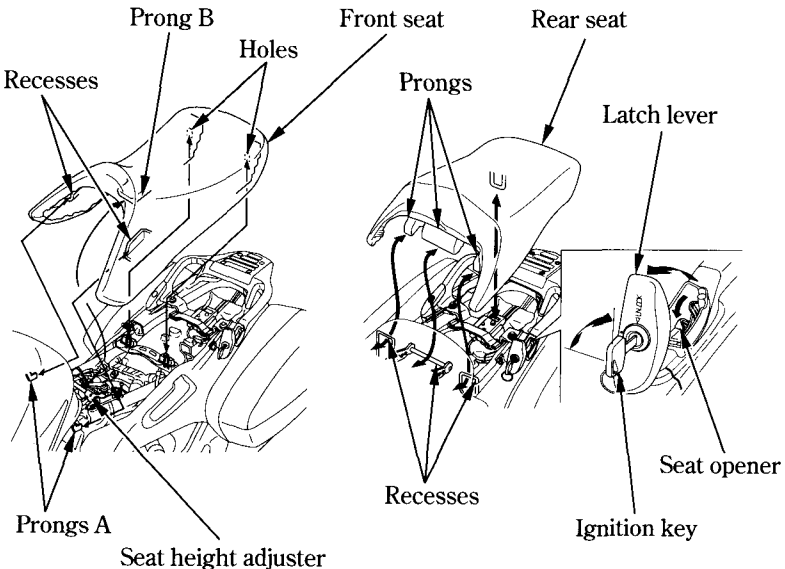
Insert the prongs A into the recesses. Insert the prong B into the seat height adjuster. Push down on the rear of the front seat.

Be sure to align the holes in the rear of the front seat with the adjuster when install the front seat.

To Install the Rear Seat:

Install the front seat. Insert the prongs into the recesses under the frame cross member and then push down on the rear of the rear seat. Close the latch lever and turn the ignition key counterclockwise.

Be sure the seat is locked securely in position after installation.



FEATURES

(Not required for operation)

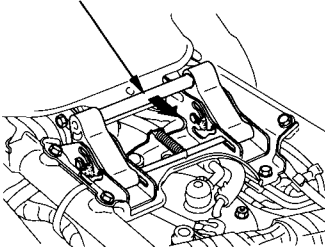
The front seat can be adjusted to one of three positions in 15 mm (0.6 in) increments.

Adjust the height according to your preference as described below.

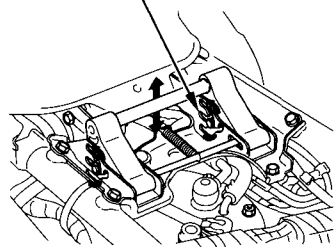
To Adjust the Height of the Front Seat:

1. Remove the front and rear seat (page 55).
2. Slide the seat height adjuster toward the rear, then set it in the guide.

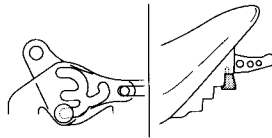
Seat height adjuster



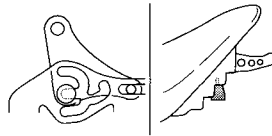
Guide



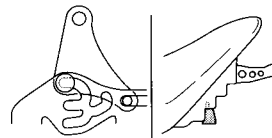
Be sure to align the hole in the rear of the front seat with the adjuster when install the front seat.



LOW position



MID position



HIGH position

3. Install the front and rear seat (page 55).

HELMET HOLDERS

The helmet holders are located below the seat.

Remove the rear seat (page 55).

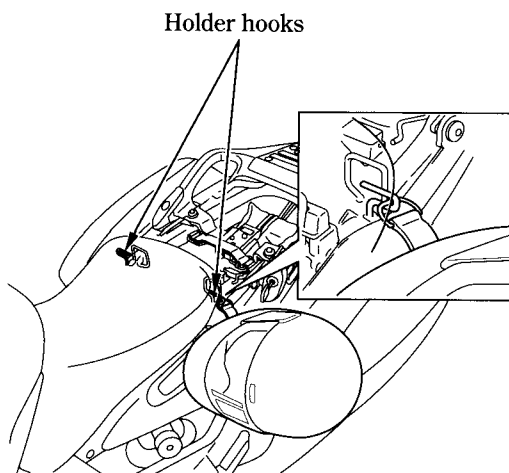
Hang the helmets on the holder hooks.

Install the rear seat and lock it securely.

⚠ WARNING

Riding with a helmet attached to the holder can interfere with the rear wheel or suspension and could cause a crash in which you can be seriously hurt or killed.

Use the helmet holder only while parked. Do not ride with a helmet secured by the holder.



FEATURES

(Not required for operation)

SADDLEBAGS

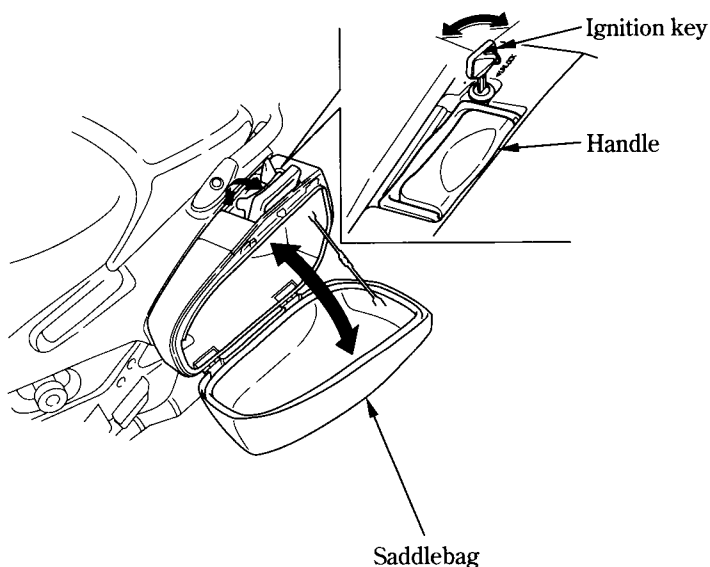
The saddlebags are for lightweight items. Do not carry more than 9.0 kg (20.0 lbs) in each saddlebag.

To Open the Saddlebags:

Install the ignition key and turn it clockwise. Pull the handle up to open the saddlebags.

To Lock the Saddlebags:

Close the saddlebags and handle. Turn the ignition key counterclockwise. Make sure the saddlebags are locked.



To Remove the Saddlebags:

Insert the ignition key and turn it clockwise to open the latch lever. Remove the saddlebag by lifting up and pulling it out toward you as shown. After removing, lock the latch lever with ignition key.

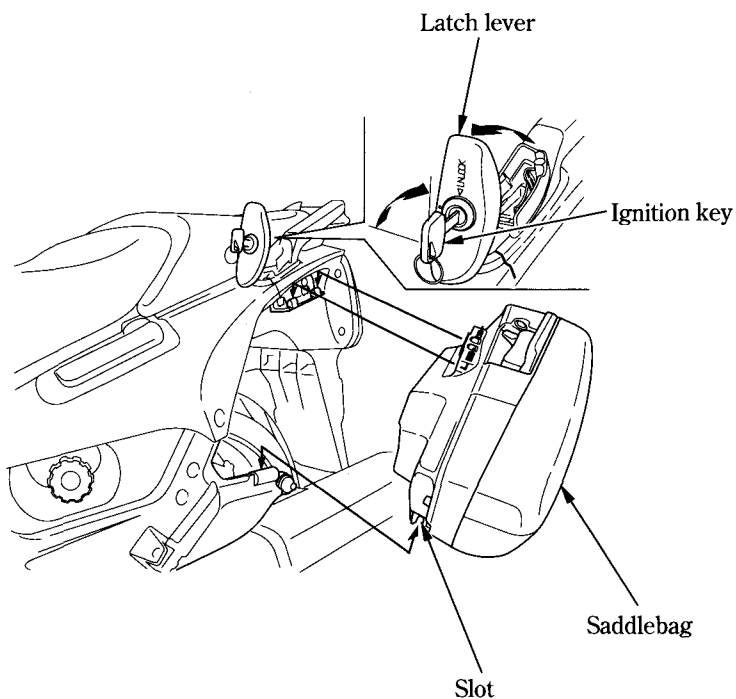
To Install the Saddlebags:

Installation can be done in the reverse order of removal.

After installing the saddlebag, check that the slot engages securely.

Close the latch lever and turn the ignition key counterclockwise.

Make sure the latch levers are locked before riding.



FEATURES

(Not required for operation)

FAIRING POCKETS

The fairing pockets are for lightweight items. Do not carry more than 2.0 kg (4.5 lbs) in each fairing pocket.

To open the left fairing pocket, insert the ignition key, turn it clockwise.

To open the right fairing pocket, pull the knob.

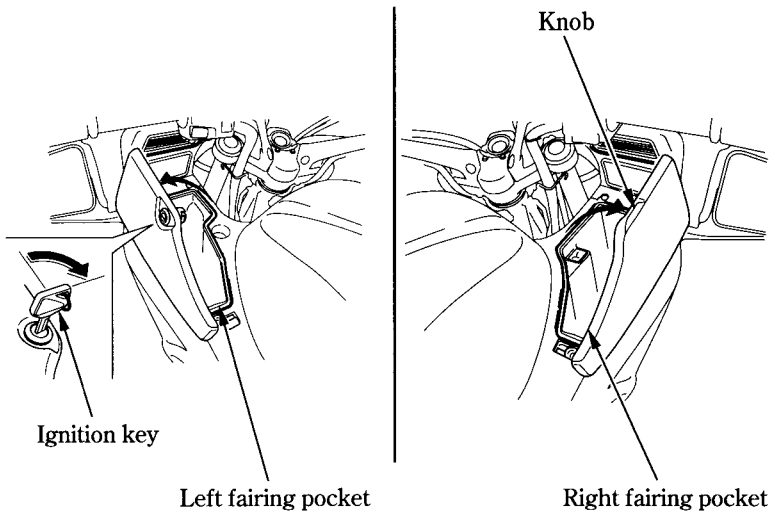
To shut each fairing pocket, place your hands flat on the edges of its lid and press down until it is firmly closed.

Do not open the each fairing pocket while riding the motorcycle.

Make sure the fairing pockets are closed before riding.

When washing your motorcycle, be careful not to flood this area with water.

Do not store valuables or fragile articles in the fairing pockets.



WINDSCREEN HEIGHT ADJUSTMENT

The height of the initial position may be adjusted 60 mm (2.3 in) to a higher or lower position.

To Adjust the Height of an Initial Configuration:

1. Raise the windscreen to the top position (page 52).
2. Remove the windscreen cover by removing the screws.

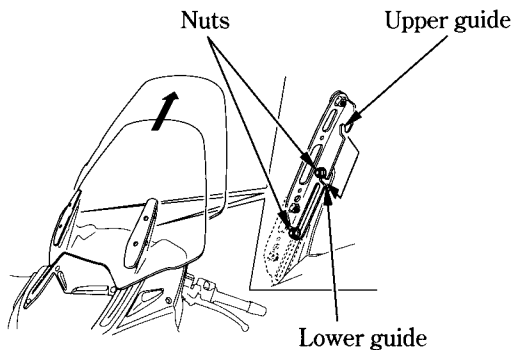
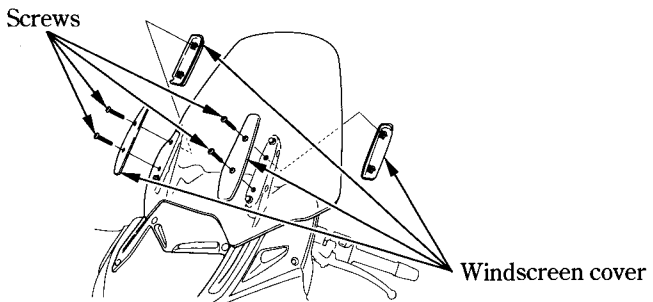
To raise:

Loosen the nuts and slide the windscreen to set lower guide.

To lower:

Loosen the nuts and slide the windscreen to set upper guide.

3. Tighten the nuts and install the windscreen cover after adjustment.
Make sure the windscreen is fixed before riding.



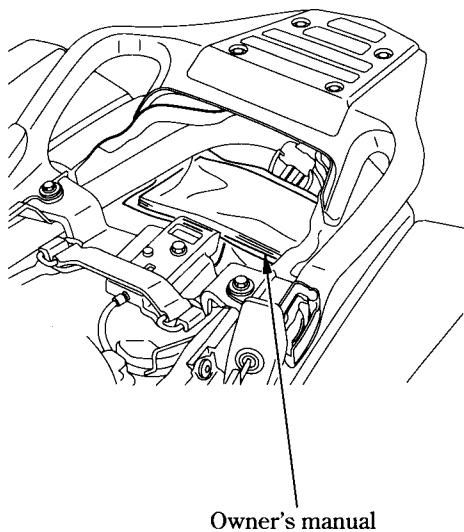
FEATURES

(Not required for operation)

DOCUMENTS

The owner's manual and other documents should be stored under the rear seat.

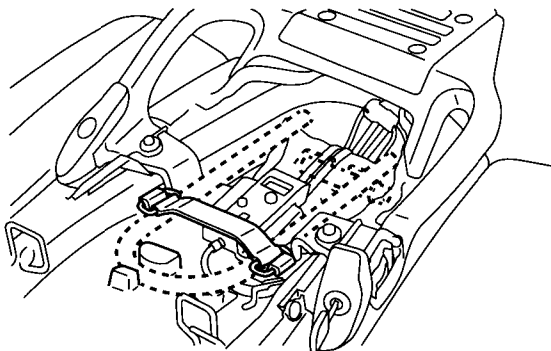
When washing your motorcycle, be careful not to flood this area with water.



STORAGE COMPARTMENT FOR U-SHAPED ANTI-THEFT LOCK

The rear fender has a storage compartment to store a U-shaped anti-theft lock under the seat. After storing, be sure to fasten the lock with the rubber band securely.

Some U-shaped locks may not be stored in the compartment due to their size or design.



FEATURES

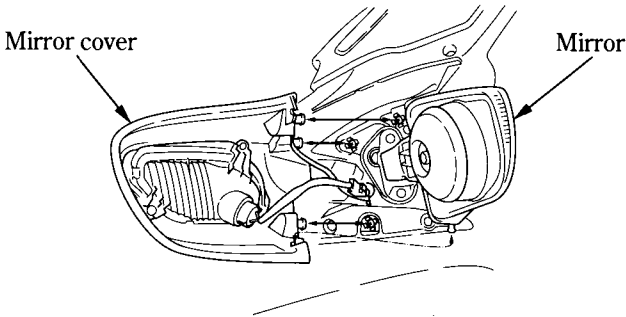
(Not required for operation)

REARVIEW MIRRORS

Both rear view mirror assemblies use a special breakaway mount which allows a controlled separation of the mirror assembly from its base upon impact with an obstacle. A short cable keeps the mirror assembly connected to the mirror bracket.

Inspection:

- Check the mirror for correct angle.
- Press on the mirror cover firmly until it clicks into position on the mirror mount.
- After reinstalling, check the mirror for correct angle and the front turn signals for proper operation.



For your safety, be sure to immediately reinstall any separated mirror assembly. Otherwise, the mirror and turn signal will not be available to you while riding.

If a mirror assembly is damaged so badly that it cannot be reused or reinstalled on its base, remove it from the base and transport the motorcycle to Honda dealer.

NOTICE

Riding with a mirror assembly hanging by its retaining cable may damage the motorcycle's plastic body.

HEADLIGHT AIM VERTICAL ADJUSTMENT

Vertical adjustment can be made by turning the headlight beam adjustment knob as necessary.

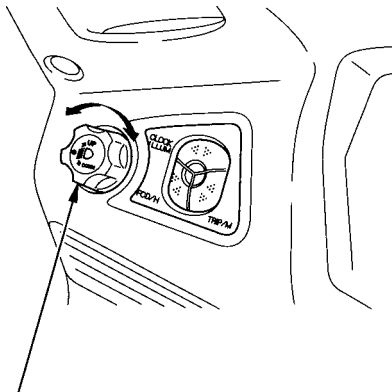
Obey local laws and regulations.

To Operate:

Turn the ignition switch to ON.

To lower the beam, turn headlight beam adjustment knob counterclockwise.

To raise the beam, turn the knob clockwise.



Headlight beam adjustment knob

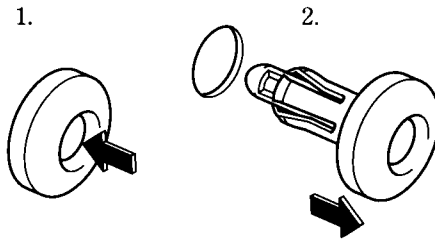
FEATURES

(Not required for operation)

CLIP

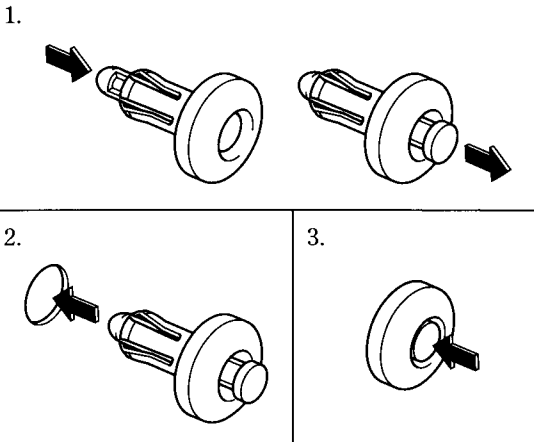
Removal:

1. Press down on the center pin to release the lock.
2. Pull out the clip from the hole.



Installation:

1. Push the bottom of the pin.
2. Insert the clip into the hole.
3. Lightly press down on the center pin to lock the clip.

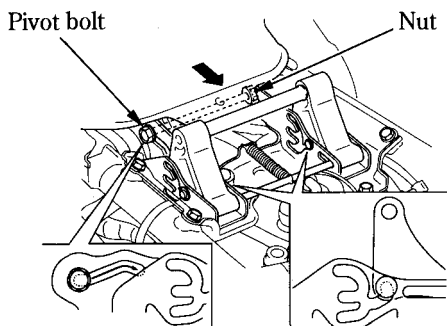
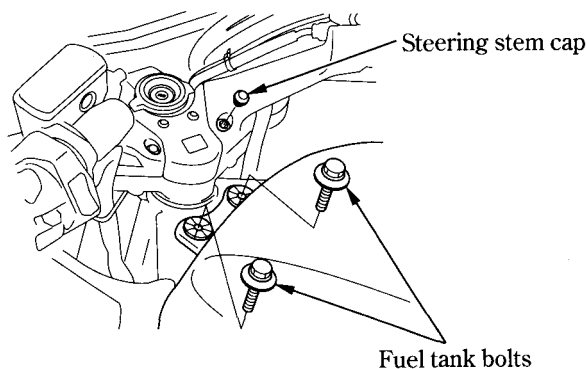


FUEL TANK MAINTENANCE POSITION

The front of the fuel tank can be tilted up for maintenance.
The fuel tank does not require draining.

To Raise:

1. Place the motorcycle on its center stand on a firm, level surface with the transmission in neutral and the ignition switch OFF. Check that the fuel fill cap is closed.
2. Remove the front and rear seat (page 55).
3. Remove the fuel tank bolts and steering stem cap.
4. The seat adjuster is set in the maintenance position after sliding it to the rear of the motorcycle.
5. Loosen the nut while holding the pivot bolt at the other end with a wrench.
6. Slide the fuel tank to the rear of the motorcycle.



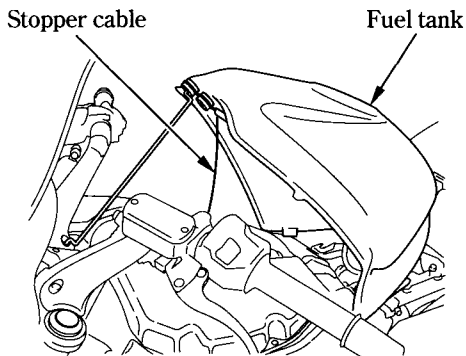
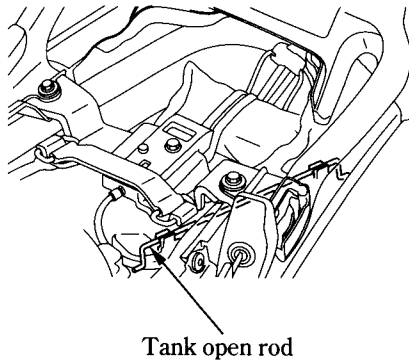
FEATURES

(Not required for operation)

7. Remove the tank open rod from under the seat.
8. Raise the front of the fuel tank and place the tank open rod between the front of the fuel tank and steering stem.

Do not raise the fuel tank higher than the stopper cable allows.

9. Tighten the nut while holding the pivot bolt at the other end with a wrench.



OPERATION

PRE-RIDE INSPECTION

For your safety, it is very important to take a few moments before each ride to walk around your motorcycle and check its condition. If you detect any problem, be sure you take care of it, or have it corrected by your Honda dealer.

⚠ 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.

1. Engine oil level—add engine oil if required (page 39). Check for leaks.
2. Fuel level—fill fuel tank when necessary (page 36). Check for leaks.
3. Coolant level—add coolant if required. Check for leaks (pages 34 – 35).
4. Front and rear brakes—check operation; make sure there is no brake fluid leakage (pages 30 – 32).
5. Tyres – check condition (pages 41 – 45) and pressure (page 41).
6. Throttle—check for smooth opening and full closing in all steering positions.
7. Lights and horn—check that headlight, brake/tail light, turn signals, indicators and horn function properly.
8. Engine stop switch—check for proper function (page 50).
9. Side stand ignition cut-off system—check for proper function (page 104).

OPERATION

STARTING THE ENGINE

Always follow the proper starting procedure described below.

This motorcycle is equipped with a side stand ignition cut-off system. The engine cannot be started if the side stand is down, unless the transmission is in neutral. If the side stand is up, the engine can be started in neutral or in gear with the clutch lever pulled in. After starting with the side stand down, the engine will shut off if the transmission is put in gear before raising the side stand.


To protect the catalytic converters in your motorcycle's exhaust system, avoid extending idling and the use of leaded petrol.

Your motorcycle's exhaust contains poisonous carbon monoxide gas. High levels of carbon monoxide can collect rapidly in enclosed areas such as a garage. Do not run the engine with the garage door closed. Even with the door open, run the engine only long enough to move your motorcycle out of the garage.

Do not use the electric starter for more than 5 seconds at a time. Release the start button for approximately 10 seconds before pressing it again.

Preparation

Before starting, insert the key, turn the ignition switch ON and confirm the following:

- The transmission is in neutral (neutral indicator light ON).
- The engine stop switch is at  (RUN).
- The low oil pressure indicator is ON.
- The PGM-FI malfunction indicator lamp (MIL) is OFF.
- The immobilizer system (HISS) indicator is OFF.
- The ABS indicator light is ON. (ST1300A)

The malfunction indicator lamp and low oil pressure indicator should go off a few seconds after the engine starts. If the malfunction indicator lamp and the low oil pressure indicator light during operation, stop the engine immediately and check the engine oil level.

NOTICE

Operating the engine with insufficient oil pressure can cause serious engine damage.

Starting Procedure

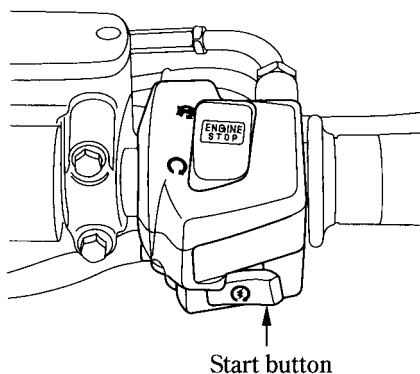
This motorcycle has a fuel-injected engine with an automatic fast idle. Follow the procedure indicated below.

Any Air Temperature:

- Press the start button with the throttle completely closed.


The engine will not start if the throttle is fully open (because the electronic control module cuts off the fuel supply).

Snapping the throttle or fast idling for more than about 5 minutes at normal air temperature may cause exhaust pipe discoloration.



Flooded Engine

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

1. Leave the engine stop switch set to  (RUN).
2. Open throttle fully.
3. Press the start button for 5 seconds.
4. Follow the normal starting procedure.
5. If the engine starts with unstable idle, open the throttle slightly.

If the engine does not start, wait for 10 seconds, then follow steps 1–4 again.

Ignition Cut Off

Your motorcycle is designed to automatically stop the engine and fuel pump if the motorcycle is over-turned (a banking sensor cuts off the ignition system). Before restarting the engine, you must turn the ignition switch to the OFF position and then back to ON.

OPERATION

RUNNING-IN

Help assure your motorcycle's future reliability and performance by paying extra attention to how you ride during the first 500 km (300 miles).

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

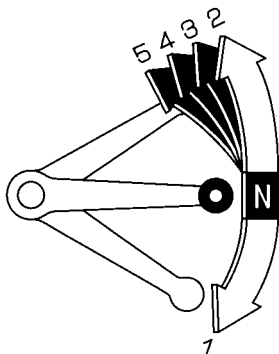
RIDING

Review Motorcycle Safety (pages 1 – 10) before you ride.

Make sure you understand the function of the side stand mechanism. (See MAINTENANCE SCHEDULE on page 83 and explanation for SIDE STAND on page 104).

Make sure flammable materials such as dry grass or leaves do not come in contact with the exhaust system when riding, idling, or parking your motorcycle.

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.
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.
This sequence is repeated to progressively shift to 3rd, 4th and 5th (top) gears.
5. Coordinate the throttle and brakes for smooth deceleration.
6. Both front and rear brakes should be used at the same time and should not be applied strongly enough to lock the wheel, or braking effectiveness will be reduced and control of the motorcycle be difficult.



OPERATION

BRAKING

This motorcycle is equipped with a Dual Combined Brake System. Operating the front brake lever applies the front brake and a portion of the rear brake. Operating the rear brake pedal applies the rear brake and a portion of the front brake. For full braking effectiveness, use both the lever and pedal simultaneously, as you would with a conventional motorcycle braking system.

As with a conventional motorcycle braking system, excessively hard application of the brake controls may cause wheel lock, reducing control of the motorcycle.

For normal braking, apply both the brake pedal and lever while down-shifting to match your road speed. For maximum braking, close the throttle and firmly apply the pedal and lever; pull in the clutch lever before coming to a complete stop to prevent stalling the engine.

Important Safety Reminders:

- When possible, reduce speed or brake before entering a turn; closing the throttle or braking in mid-turn may cause wheel slip. Wheel slip will reduce control of the motorcycle.
- When riding in wet or rainy conditions, or on loose surfaces, the ability to maneuver and stop will be reduced. All of your actions should be smooth under these conditions. Rapid acceleration, braking or turning may cause loss of control. For your safety, exercise extreme caution when braking, accelerating or turning.
- When descending a long, steep grade, use engine compression braking by downshifting, with intermittent use of both brakes. Continuous brake application can overheat the brakes and reduce their effectiveness.
- Riding with your foot resting on the brake pedal or your hand on the brake lever may actuate the brakelight, giving a false indication to other drivers. It may also overheat the brakes, reducing effectiveness.

Anti-lock Brake System (ABS) (ST1300A)

This model is also equipped with an Anti-lock Brake System (ABS) designed to help prevent wheel lock up during hard braking on uneven or other poor surfaces while running straight. Although the wheel may not lock up—if you are braking too hard in a turn the motorcycle can still lose traction, causing a loss of control.

In some situations, a motorcycle with ABS may require a longer stopping distance to stop on loose or uneven surfaces than an equivalent motorcycle without ABS.

ABS cannot make up for road conditions, bad judgment, or improper operation of the brakes. It is still your responsibility to ride at reasonable speeds for weather, road surface, and traffic conditions, and to leave a margin of safety.

ABS is self-checking and always on.

- ABS may be activated by riding over a sharp drop or rise in the road level. It is important to follow the tyre recommendations (page 44). The ABS computer works by comparing wheel speed. Non-recommended tyres can affect wheel speed and may confuse the ABS computer.
- ABS does not function at low speeds (approximately 10 km/h (6 mph) or below).
- ABS does not function if the battery is discharged.

OPERATION

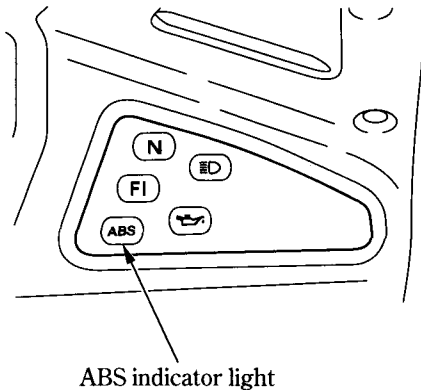
ABS Indicator Light (ST1300A)

Normally, this light comes on when the ignition is turned ON, and goes off after you ride the motorcycle at speed above 10 km/h (6 mph). If there is an ABS problem, the indicator light flashes and remains on. The ABS system does not operate when the ABS indicator light is on.

If the ABS indicator light comes on while riding, stop the motorcycle in a safe place and turn off the engine.

Turn the ignition ON again. The light should come on, and go off after you ride the motorcycle at speeds above 10 km/h (6 mph). If it does not go off, ABS is not functioning, but the brakes still work a Dual Combined Brake System and provide normal stopping ability. However, you should have the system checked by Honda dealer as soon as possible.

The ABS indicator light may flash if you turn the rear wheel while the motorcycle is upright on the stand. This is normal. Turn the ignition OFF, then turn it ON. The indicator should come on, then go off after you run the motorcycle above 10 km/h (6 mph).



PARKING

1. After stopping the motorcycle, shift the transmission into neutral, turn the ignition switch OFF and remove the key.
2. Use the side or center stand to support the motorcycle while parked.

Park the motorcycle on firm, level ground to prevent it from falling over. If you must park on a slight incline, aim the front of the motorcycle uphill to reduce the possibility of overturning or rolling off the center or side stand.

3. Lock the steering to help prevent theft (page 54).

Make sure flammable materials such as dry grass or leaves do not come in contact with the exhaust system when parking your motorcycle.

OPERATION

ANTI-THEFT TIPS

1. Always lock the steering and never leave the key in the ignition switch. This sounds simple but people do forget.
2. Be sure the registration information for your motorcycle is accurate and current.
3. Park your motorcycle in a locked garage whenever possible.
4. Use an additional anti-theft device of good quality.
5. Put your name, address, and phone number in this Owner's Manual and keep it on your motorcycles at all times.

Many times stolen motorcycles are identified by information in the Owner's Manuals that are still with them.

NAME: _____

ADDRESS: _____

PHONE NO: _____

MAINTENANCE

THE IMPORTANCE OF MAINTENANCE

A well-maintained motorcycle is essential for safe, economical and trouble-free riding. It will also help reduce air pollution.

To help you properly care for your motorcycle, the following pages include a Maintenance Schedule and a Maintenance Record for regularly scheduled maintenance.

These instructions are based on the assumption that the motorcycle will be used exclusively for its designed purpose. Sustained high speed operation or operation in unusually wet or dusty conditions will require more frequent service than specified in the Maintenance Schedule. Consult your Honda dealer for recommendations applicable to your individual needs and use.

If your motorcycle overturns or becomes involved in a crash, be sure your Honda dealer inspects all major parts, even if you are able to make some repairs.

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.

MAINTENANCE

MAINTENANCE SAFETY

This section includes instructions on some important maintenance tasks. You can perform some of these tasks with the tools provided – if you have basic mechanical skills.

Other tasks that are more difficult and require special tools are best performed by professionals. Wheel removal should normally be handled only by a Honda technician or other qualified mechanic; instructions are included in this manual only to assist in emergency service.

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.

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 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 the center stand or a maintenance stand to provide support.
- To reduce the possibility of a fire or explosion, be careful when working around petrol or batteries. Use only nonflammable solvent, not petrol, to clean parts. Keep cigarettes, sparks and flames away from the battery and all fuel-related parts.

Remember that your Honda dealer knows your motorcycle best and is fully equipped to maintain and repair it.

To ensure the best quality and reliability, use only new Honda Genuine Parts or their equivalents for repair and replacement.

MAINTENANCE

MAINTENANCE SCHEDULE

Perform the Pre-ride Inspection (page 69) at each scheduled maintenance period.

I: INSPECT AND CLEAN, ADJUST, LUBRICATE OR REPLACE IF NECESSARY

C: CLEAN R: REPLACE A: ADJUST L: LUBRICATE

The following Maintenance Schedule specifies all maintenance required to keep your motorcycle in peak operating condition. Maintenance work should be performed in accordance with standards and specifications of Honda by properly trained and equipped technicians. Your Honda dealer meets all of these requirements.

- * Should be serviced by your Honda dealer, unless the owner has proper tools and service data and is mechanically qualified. Refer to the Official Honda Shop Manual.
- ** In the interest of safety, we recommend these items be serviced only by your Honda dealer.

Honda recommends that your Honda dealer should road test your motorcycle after each periodic maintenance is carried out.

NOTES:

1. At higher odometer readings, repeat at the frequency interval established here.
2. Service more frequently if the motorcycle is ridden in unusually wet or dusty areas.
3. Replace every 2 years, or at indicated odometer interval, whichever comes first. Replacement requires mechanical skill.

ITEMS	FREQUENCY	WHICHEVER → COMES	ODOMETER READING [NOTE (1)]									Refer to page
			FIRST	× 1,000 km	1	6	12	18	24	30	36	
			↓ NOTE	× 1,000 mi	0.6	4	8	12	16	20	24	
		MONTH		6	12	18	24	30	36			
* FUEL LINE					I		I		I		—	
* THROTTLE OPERATION					I		I		I		99	
AIR CLEANER	2					R			R		91	
SPARK PLUGS					I		R		I		97	
* VALVE CLEARANCE								I			—	
ENGINE OIL				R		R		R		R	92	
ENGINE OIL FILTER				R		R		R		R	94	
* ENGINE IDLE SPEED				I	I	I	I	I	I	I	100	
RADIATOR COOLANT	3					I		I		R	101	
* COOLING SYSTEM						I		I		I	—	
* SECONDARY AIR SUPPLY SYSTEM						I		I		I	—	
FINAL DRIVE OIL						I		I		R	102	
BRAKE FLUID	3				I	I	R	I	I	R	30, 32	
BRAKE PADS WEAR					I	I	I	I	I	I	112	
BRAKE SYSTEM				I		I		I		I	113	
* BRAKELIGHT SWITCH						I		I		I	—	
* HEADLIGHT AIM						I		I		I	—	
CLUTCH SYSTEM						I		I		I	—	
CLUTCH FLUID	3				I	I	R	I	I	R	33	
SIDE STAND						I		I		I	104	
* SUSPENSION						I		I		I	103	
* NUTS, BOLTS, FASTENERS				I		I		I		I	—	
** WHEELS/TYRES						I		I		I	—	
** STEERING HEAD BEARINGS				I		I		I		I	—	

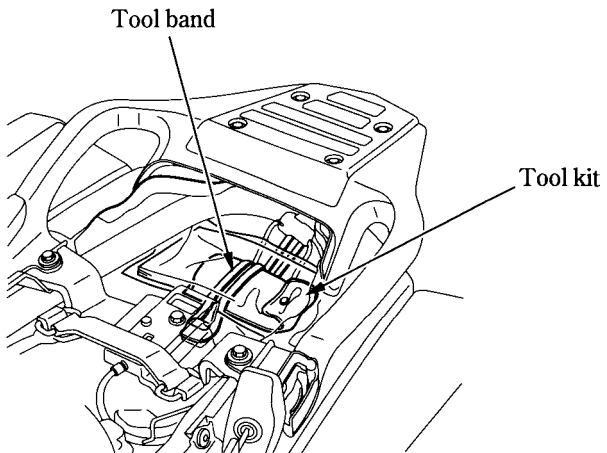
MAINTENANCE

TOOL KIT

The tool kit is under the rear seat (page 55).

Some roadside repairs, minor adjustments and parts replacement can be performed with the tools contained in the kit.

- Spark plug wrench
- 17 mm Box end wrench
- 10 × 12 mm Box end wrench
- 8 mm Open end wrench
- Extension bar
- Pliers
- Screwdriver handle
- No. 2 Phillips screwdriver
- No. 2 screwdriver
- 5 mm Hex wrench
- 10 mm Box wrench
- 0.7 mm Feeler gauge
- Fuse puller
- Tool bag



SERIAL NUMBERS

The frame and engine serial numbers are required when registering your motorcycle. They may also be required by your dealer when ordering replacement parts.

Record the numbers here for your reference.

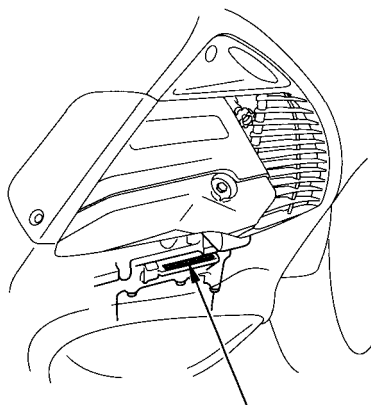
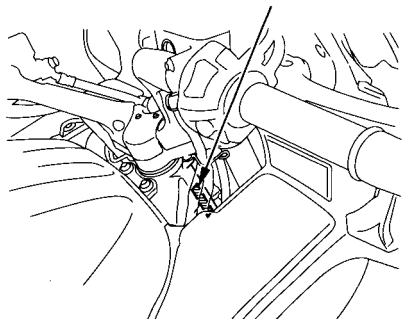
The frame number is stamped on the right side of the steering head.

The engine number is stamped on the right side of the crankcase.

FRAME NO. _____

ENGINE NO. _____

Frame number



Engine number

MAINTENANCE

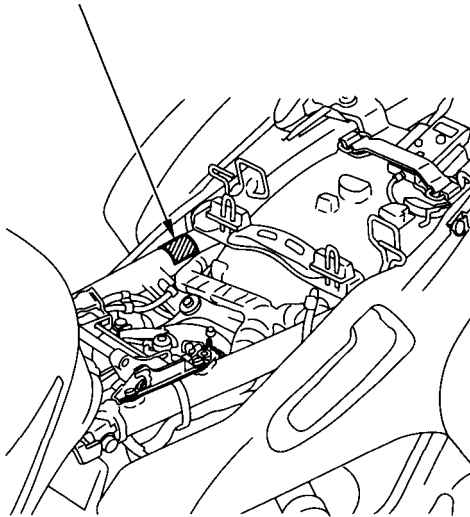
COLOUR LABEL

The colour label is attached to the frame below the front seat (page 55). It is helpful when ordering replacement parts. Record the colour and code here for your reference.

COLOUR _____

CODE _____

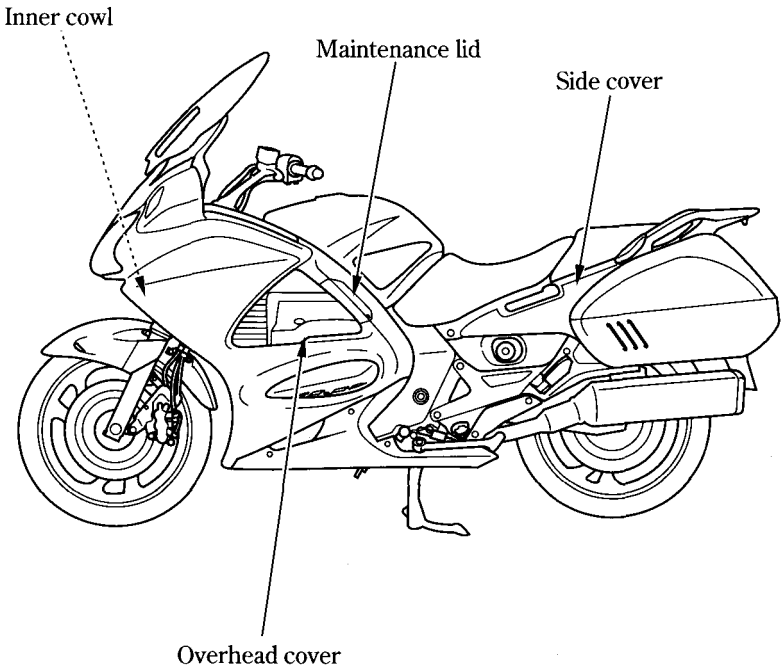
Colour label



COVER REMOVAL

Refer to the Safety Precautions on page 81 .

Left side shown; right side similar.



MAINTENANCE

Side Cover

The right side cover must be removed for battery and fuse maintenance.
The left side cover must be removed for fuse maintenance.

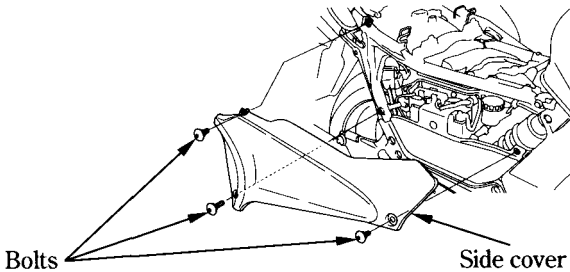
The right and left side cover can be removed in the same manner.

Removal:

1. Remove the saddlebag (page 59).
2. Remove the front and rear seat (page 55).
3. Remove the side cover by removing the bolts.

Installation:

1. Install the side cover. Install and tighten the bolts.
2. Install the front and rear seat (page 55).
3. Install the saddlebag (page 59).

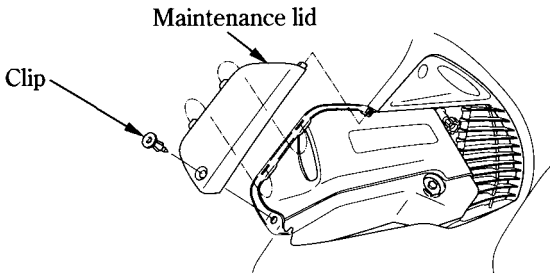


Maintenance Lid

The maintenance lid must be removed to remove the overhead cover.
The left maintenance lid must be removed to inspect the coolant reserve tank.

The right and left maintenance lid can be removed in the same manner.

Remove the maintenance lid by removing the clip (page 66).



Inner Cowl

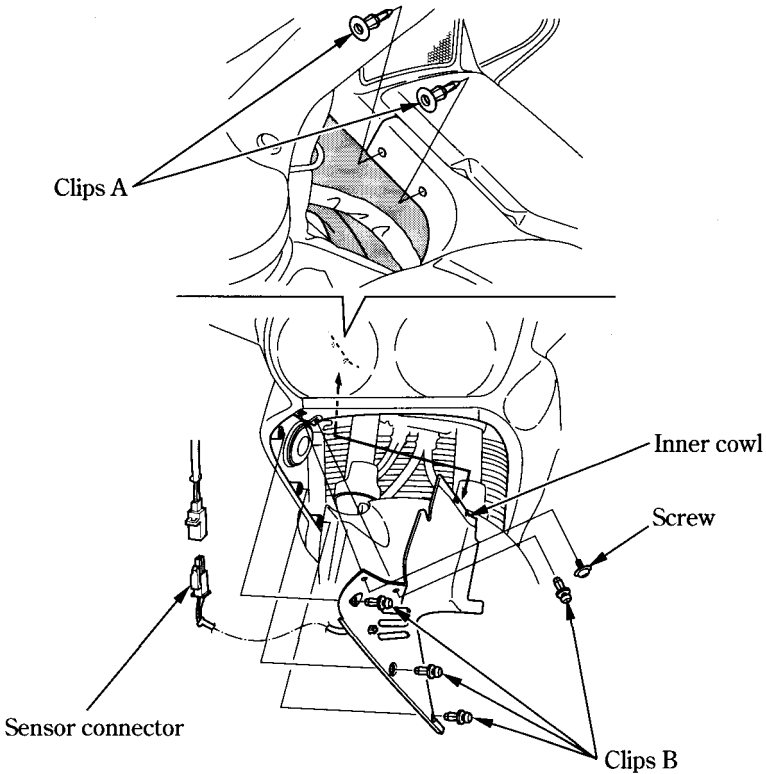
The inner cowl must be removed for position light bulb replacement.

Removal:

1. Remove the clips A (page 66).
2. Remove the inner cowl by removing the screw and clips B.
 - Left inner cowl removal: Remove the sensor connector additionally.

Installation:

- Installation can be done in the reverse order of removal.



MAINTENANCE

Overhead Cover

The overhead cover must be removed for engine oil and spark plug maintenance.

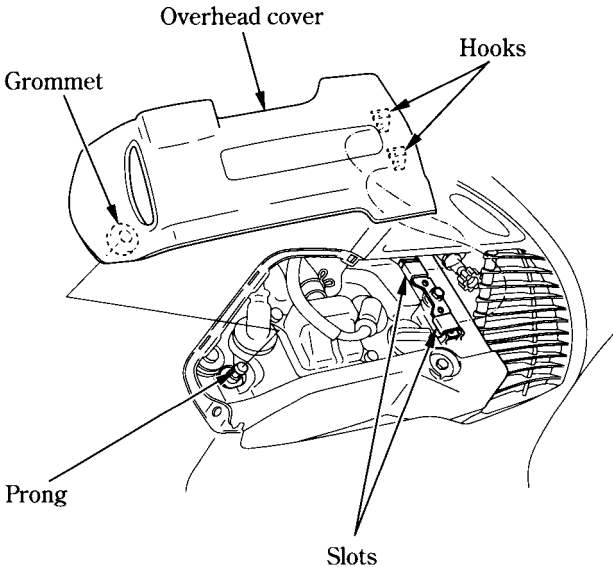
The right and left overhead cover can be removed in the same manner.

Removal:

1. Remove the maintenance lid (page 88).
2. Remove the prong from the grommet.
3. Remove the overhead cover by removing the hooks from the slots.

Installation:

- Installation can be done in the reverse order of removal.

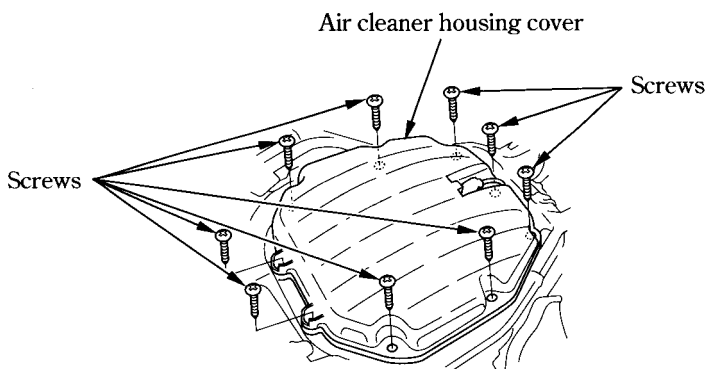


AIR CLEANER

Refer to the Safety Precautions on page 81 .

The air cleaner should be serviced at regular intervals (page 83). Service more frequently when riding in unusually wet or dusty areas.

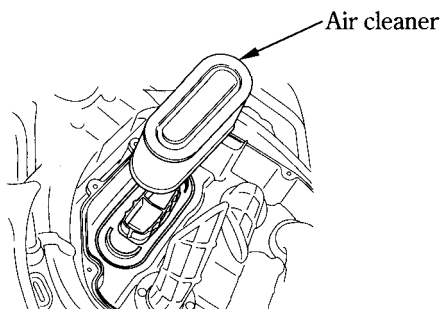
1. Raise the fuel tank (page 67).
2. Remove the air cleaner housing cover by removing the screws.



3. Remove and discard the air cleaner.
4. Install a new air cleaner.

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.

5. Install the removed parts in the reverse order of removal.



MAINTENANCE

ENGINE OIL

Refer to the Safety Precautions on page 81 .

Oil Recommendation

API classification	SG or higher except oils labeled as energy conserving on the circular API service label
Viscosity	SAE 10W-30
JASO T 903 standard	MA

Suggested Oil
Honda "4-STROKE MOTORCYCLE OIL" or equivalent.

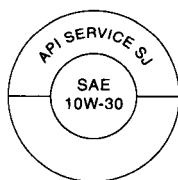
Your motorcycle does not need oil additives. Use the recommended oil.

Do not use oils with graphite or molybdenum additives. They may adversely affect clutch operation.

Do not use API SH or higher oils displaying a circular API "energy conserving" service label on the container. They may affect lubrication and clutch performance.



NOT RECOMMENDED

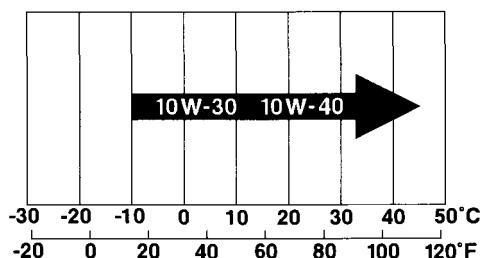


OK

Do not use non-detergent, vegetable, or castor based racing oils.

Viscosity:

Viscosity grade of engine oil should be based on average atmospheric temperature in your riding area. The following provides a guide to the selection of the proper grade or viscosity of oil to be used at various atmospheric temperatures.



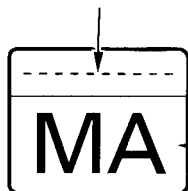
JASO T 903 standard

The JASO T 903 standard is an index for choosing 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.

Code number of the sales company of the oil



Oil classification

PRODUCT MEETING JASO T 903
COMPANY GUARANTEEING THIS MA PERFORMANCE:

MAINTENANCE

Engine Oil and Filter

Engine oil quality is the chief factor affecting engine service life. Change the engine oil as specified in the maintenance schedule (page 83).

When running in very dusty conditions, oil changes should be performed more frequently than specified in the maintenance schedule.

Please dispose of used engine oil in a manner that is compatible with the environment. We suggest you take it in a sealed container to your local recycling center or service station for reclamation. Do not throw it in the trash or pour it on the ground or down a drain.

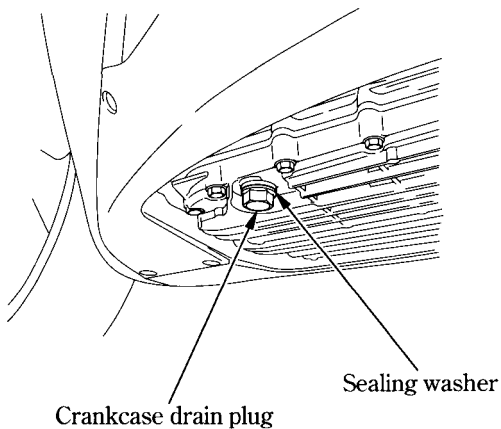
Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

Changing the oil filter requires a special oil filter tool and a torque wrench. If you do not have these tools and the necessary skill, we recommend that you have your Honda dealer perform this service.

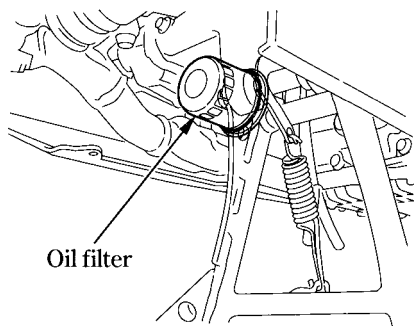
If a torque wrench is not used for this installation, see your Honda dealer as soon as possible to verify proper assembly.

Change the engine oil with the engine at normal operating temperature and the motorcycle on its center stand to assure complete and rapid draining.

-
1. Park your motorcycle on its center stand on a firm, level surface.
 2. To drain the oil, remove the oil filler cap, crankcase drain plug, and sealing washer.

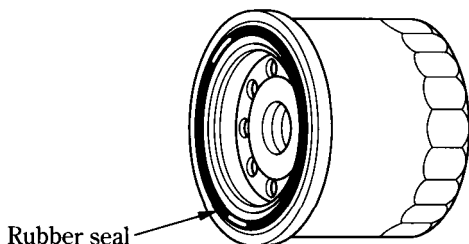


3. Remove the oil filter with a filter wrench and let the remaining oil drain out. Discard the oil filter.



MAINTENANCE

4. Apply a thin coat of engine oil to the new oil filter rubber seal.



5. Using a special tool and a torque wrench, install the new oil filter and tighten to a torque of:

26 N·m (2.7 kgf·m , 20 lbf·ft)

Use only the Honda genuine oil filter or a filter of equivalent quality specified for your model. Using the wrong Honda filter or a non-Honda filter which is not of equivalent quality may cause engine damage.

6. Check that the sealing washer on the drain plug is in good condition and install the plug. Replace the sealing washer every other time the oil is changed, or each time if necessary.

Oil drain plug torque:

29 N·m (3.0 kgf·m , 22 lbf·ft)

7. Fill the crankcase with the recommended grade oil; approximately:

3.9 ℓ (4.1 US qt , 3.4 Imp qt)

8. Install the oil filler cap.

9. Start the engine and let it idle for 3–5 minutes.

10. 2–3 minutes after stopping the engine, check that the oil level is at the upper level mark in the inspection window with the motorcycle upright on firm, level ground. Make sure there are no oil leaks.

SPARK PLUGS

Refer to the Safety Precautions on page 81 .

Recommended plugs:

Standard:

CR7EH-9 (NGK) or U22FER9 (DENSO)

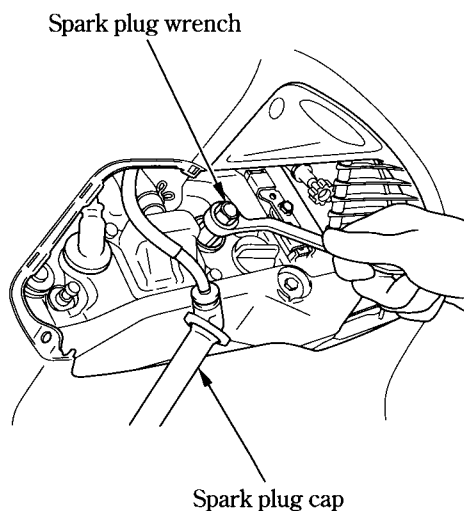
For extended high speed riding:

CR8EH-9 (NGK) or U24FER9 (DENSO)

NOTICE

Never use a spark plug with an improper heat range. Severe engine damage could result.

1. Remove the right and left maintenance lid (page 88).
2. Remove the right and left overhead cover (page 90).
3. Clean any dirt from around the spark plug bases.
4. Disconnect the spark plug caps. Take care to avoid damaging the spark plug wire when disconnecting the caps.
5. Using a spark plug wrench provided in the tool kit, remove the spark plugs.

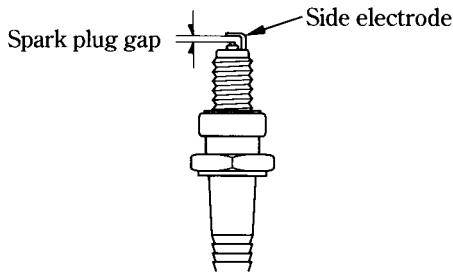


MAINTENANCE

6. Inspect the electrodes and center porcelain for deposits, erosion or carbon fouling. If the erosion or deposit is heavy, replace the plug. Clean a carbon or wet-fouled plug with a plug cleaner, otherwise use a wire brush.
7. Check the spark plug gap using a wire-type feeler gauge. If adjustment is necessary, bend the side electrode carefully.

The gap should be:

0.8 – 0.9 mm (0.03 – 0.04 in)



8. With the plug washers attached, thread the spark plugs in by hand to prevent cross-threading.
9. Tighten each 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

Improperly tightened spark plugs 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.

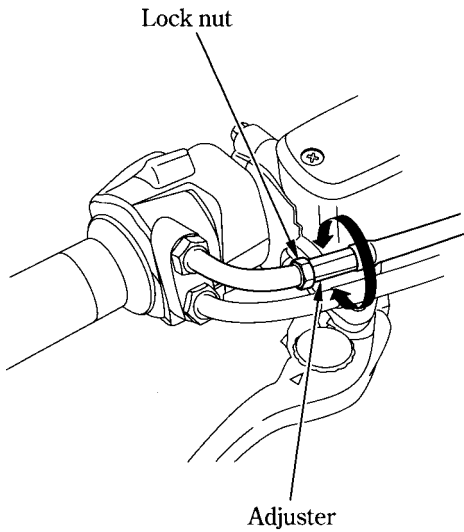
10. Reinstall the spark plug caps. Take care to avoid pinching any cables or wires.
11. Reinstall the both overhead covers and the both maintenance lids.

THROTTLE OPERATION

Refer to the Safety Precautions on page 81 .

1. Check for smooth rotation of the throttle grip from the fully open to the fully closed position at both full steering positions.
2. Measure the throttle grip freeplay at the throttle grip flange.
The standard freeplay should be approximately:
2.0 – 6.0 mm (0.08 – 0.24 in)

To adjust the freeplay, loosen the lock nut and turn the adjuster.



MAINTENANCE

IDLE SPEED

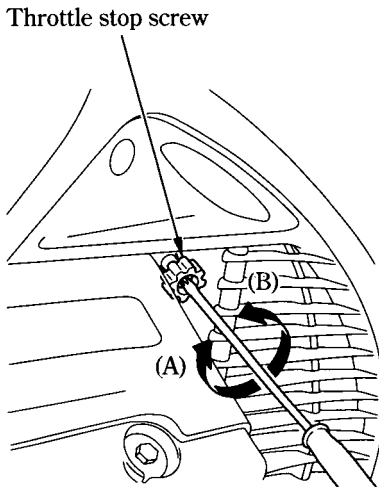
Refer to the Safety Precautions on page 81 .

The engine must be at normal operating temperature for accurate idle speed adjustment. 10 minutes of stop-and-go riding is sufficient.

1. Warm up the engine, shift to neutral and place the motorcycle on its center stand.
2. Adjust idle speed with the throttle stop screw.

Idle speed (In neutral):

$1,000 \pm 100 \text{ min}^{-1} \text{ (rpm)}$



(A) Increase
(B) Decrease

COOLANT

Refer to the Safety Precautions on page 81 .

Coolant Replacement

Coolant should be replaced by a Honda dealer, unless the owner has proper tools and service data and is mechanically qualified. Refer to an official Honda Shop Manual.

Always add coolant to the reserve tank. Do not attempt to add coolant by removing the radiator cap.

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.

MAINTENANCE

FINAL DRIVE OIL

Refer to the Safety Precautions on page 81 .

Change the oil as specified in the maintenance schedule.

Change the oil with the final drive at normal operating temperature and the motorcycle upright on firm, level ground to assure complete and rapid draining.

1. Place the motorcycle on its center stand on a firm, level surface.
2. To drain the oil, remove the oil filler cap, drain plug and sealing washer.
3. After the oil has completely drained, check that the sealing washer on the drain plug is in good condition. If necessary, replace the sealing washer.

Install the drain plug.

Drain plug torque:

20 N·m (2.0 kgf·m , 15 lbf·ft)

4. Fill the final drive with the recommended oil; approximately:

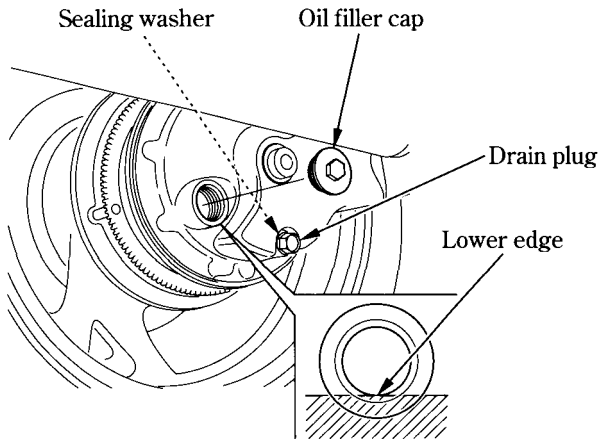
155 cm³ (5.2 US oz , 5.5 Imp oz)

Make sure the final drive oil level is slightly lower than the lower edge of the oil filler hole.

5. Install the oil filler cap.

Recommended Oil:

HYPOID GEAR OIL SAE 80



FRONT AND REAR SUSPENSION INSPECTION

Refer to the Safety Precautions on page 81 .

1. Check the fork assembly by locking the front brake and pumping the fork up and down vigorously. Suspension action should be smooth and there must be no oil leakage.
2. Swingarm bearings should be checked by pushing hard against the side of the rear wheel while the motorcycle is on the center stand. Freeplay indicates worn bearings.
3. Carefully inspect all front and rear suspension fasteners for tightness.

MAINTENANCE

SIDE STAND

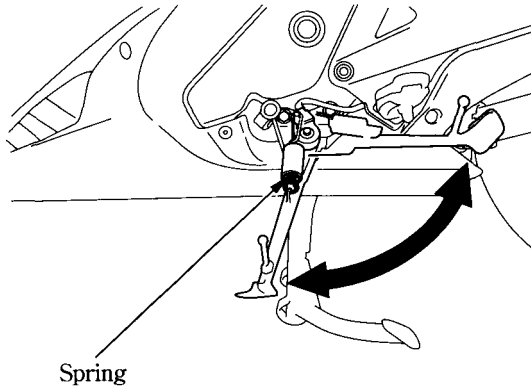
Refer to the Safety Precautions on page 81 .

Perform the following maintenance in accordance with the maintenance schedule.

Functional Check:

- Check the spring for damage or loss of tension and the side stand assembly for freedom of movement.
- Check the side stand ignition cut-off system:
 1. Sit astride the motorcycle; put the side stand up and the transmission in neutral.
 2. Start the engine and with the clutch lever pulled in, shift the transmission into gear.
 3. Lower the side stand. The engine should stop as you put the side stand down.

If the side stand system does not operate as described, see your Honda dealer for service.



WHEEL REMOVAL

Refer to the Safety Precautions on page 81.

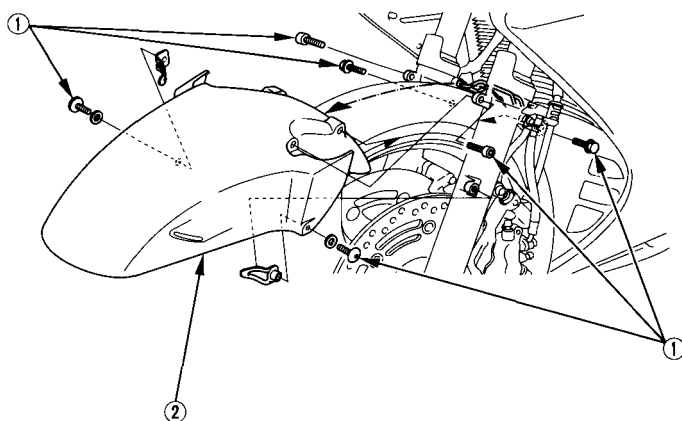
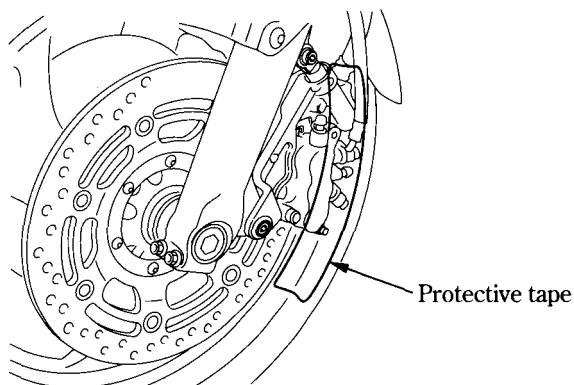
Front Wheel Removal

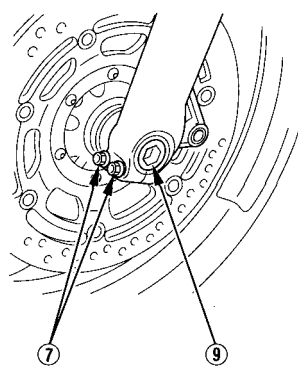
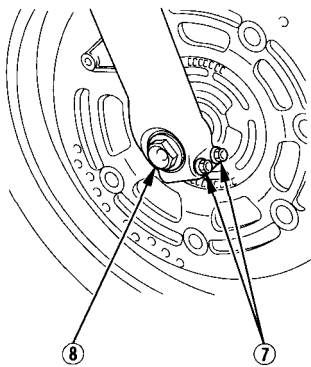
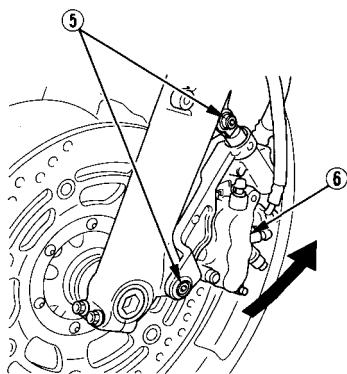
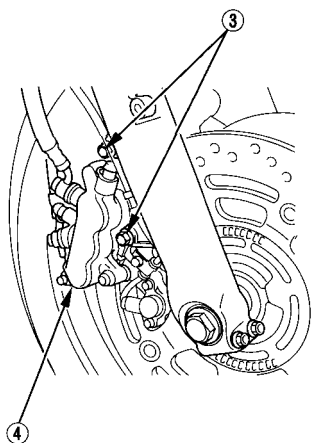
We recommend wheel removal be done only by your Honda dealer or another qualified mechanic. Do not attempt to remove the wheel on your own. Wheel removal requires mechanical skill and professional tools.

1. Park your motorcycle on a firm, level surface.
2. Raise the front wheel off the ground by placing a support block under the engine, being careful to avoid contact with the exhaust pipe and front lower cover.
3. Remove the parts in sequence, according to the order in the illustration.
 - When removing and installing the wheel, be careful not to damage the sensor and pulser ring (Model equipped with ABS).
 - To avoid damage to the brake hose, support the caliper assembly so that it doesn't hang from the hose. Do not twist the brake hose.
Avoid getting grease, oil, or dirt on the disc or pad surfaces. Any contamination can cause poor brake performance or rapid pad wear after reassembly.
 - Avoid depressing the brake lever and brake pedal when the wheel is off the motorcycle.
This will force the caliper piston out of the cylinders. The result will be a loss of brake fluid. If this occurs, the brake system will require service. See your Honda dealer for this service.

MAINTENANCE

For related torque specifications, see page 108 . Cover both sides of the front wheel with protective tape or an equivalent. The numbers indicate the disassembly sequence.



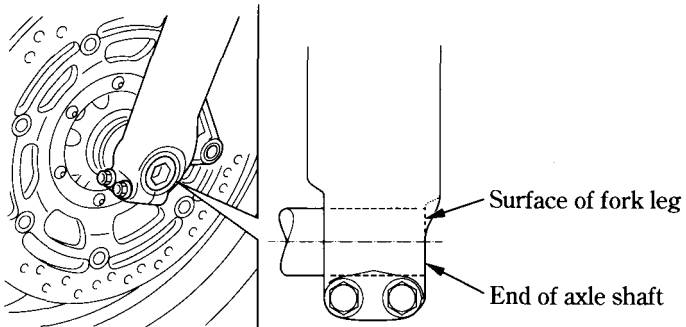


MAINTENANCE

Installation:

1. Reassemble the removed parts in the reverse order of removal.

- Position the wheel between the fork legs and insert the front axle shaft from the left side, through the left fork leg and wheel hub.
- Align the end of axle shaft with the surface of fork leg.
- Fit the brake disc carefully between the brake pads to avoid damaging the pads.



2. Install the bolts and tighten to the specified torque:

axle bolt:

79 N·m (8.1 kgf·m , 58 lbf·ft)

right caliper fixing bolts:

31 N·m (3.2 kgf·m , 23 lbf·ft)

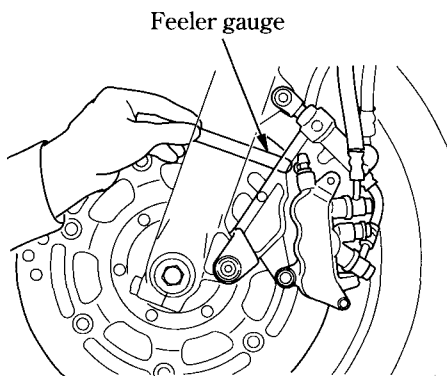
left caliper socket bolts:

31 N·m (3.2 kgf·m , 23 lbf·ft)

3. Measure the clearance between the brake disc and the caliper holder on each side with a 0.7 mm (0.028 in) feeler gauge.

- If the feeler gauge inserts easily, remove it and tighten the axle pinch bolts to the specified torque:
22 N·m (2.2 kgf·m , 16 lbf·ft)
- If the feeler gauge cannot be inserted easily, loosen the left axle pinch bolt and pull the left fork outward or push inward to adjust the clearance. Then tighten the axle pinch bolts to the specified torque.

Failure to provide adequate disc to caliper holder clearance may damage the brake discs and impair braking efficiency.



4. After installing the wheel, apply the brake lever AND brake pedal several times, then recheck both discs for caliper holder to disc clearance. Do not operate the motorcycle without adequate clearance.

- Check for free wheel rotation after the brake lever and brake pedal are released. Recheck the wheel if the brake drags or if the wheel does not rotate freely.
- After installing the wheel, operate the brake lever AND brake pedal several times until you feel pressure. You must restore pressure from BOTH the lever AND the pedal because this motorcycle is equipped with a Dual Combined Brake System.
- Verify proper brake operation before riding.

5. Remove the protective tapes from the front wheel.

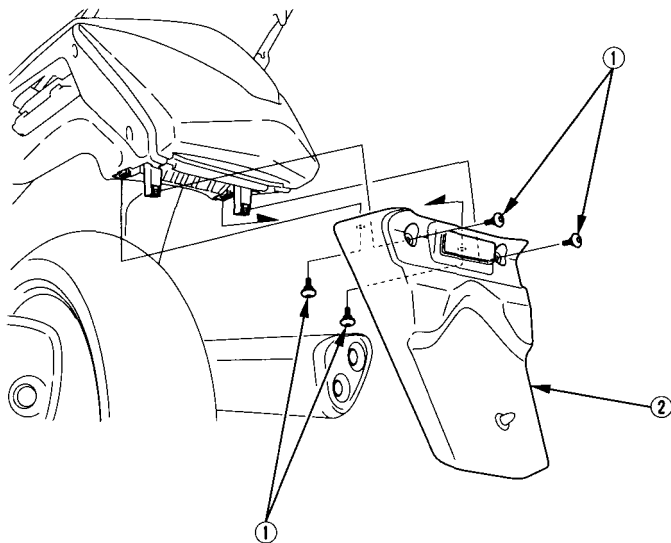
If a torque wrench was not used for installation, see your Honda dealer as soon as possible to verify proper assembly. Improper assembly may lead to loss of braking capacity.

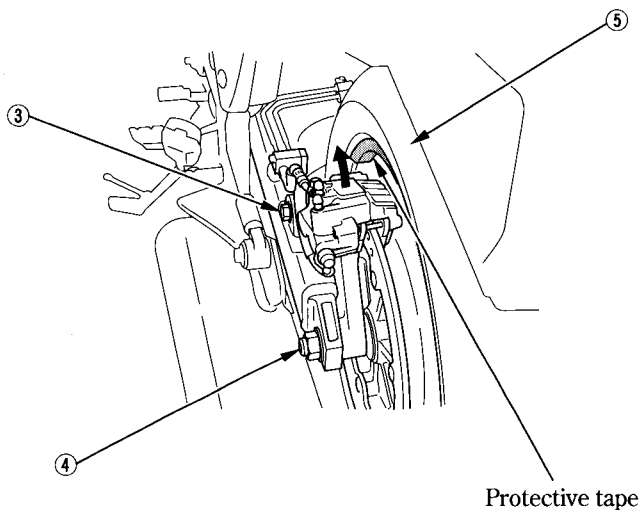
MAINTENANCE

Rear Wheel Removal

We recommend wheel removal be done only by your Honda dealer or another qualified mechanic. Do not attempt to remove the wheel on your own. Wheel removal requires mechanical skill and professional tools.

1. Place the motorcycle on its center stand on firm, level ground.
2. Remove the saddlebags (page 59).
3. Remove the parts in sequence, according to the order in the illustration.
 - Avoid getting grease, oil, or dirt on the disc or pad surfaces. Any contamination can cause poor brake performance or rapid pad wear after reassembly.
 - When removing and installing the wheel, be careful not to damage the sensor and pulser ring (Model equipped with ABS).





Installation:

1. Reassemble the removed parts in the reverse order of removal.

2. Tighten the rear wheel nuts to the specified torque:

108 N·m (11.0 kgf·m , 80 lbf·ft)

Tighten the rear caliper stopper bolt to the specified torque:

69 N·m (7.0 kgf·m , 51 lbf·ft)

3. After installing the wheel, apply the brake several times and then check if the wheel rotates freely. Recheck the wheel if the brake drags or if the wheel does not rotate freely.

4. Operate the brake pedal and check the brake operation.

5. Inspect the brake system (page 113).

If a torque wrench was not used for installation, see your Honda dealer as soon as possible to verify proper assembly. Improper assembly may lead to loss of braking capacity.

MAINTENANCE

BRAKE PAD WEAR

Refer to the Safety Precautions on page 81 .

Brake pad wear depends upon the severity of usage, the type of riding, and road conditions. (Generally, the pads will wear faster on wet and dirty roads.) Inspect the pads at each regular maintenance interval (page 83).

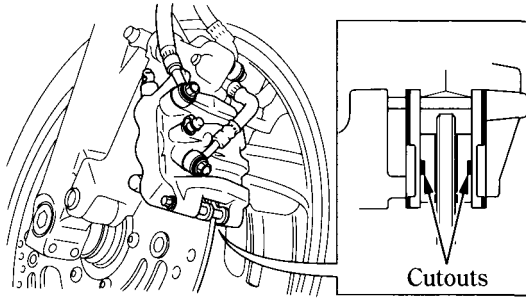
Front Brake

Always inspect each pad in both right and left brake calipers.

Check the cutout in each pad.

If either pad is worn to the cutout, replace both pads as a set. See your Honda dealer for this service.

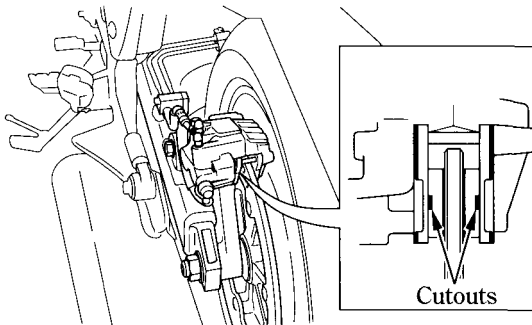
Illustration shows left side, right side similar.



Rear Brake

Check the cutout in each pad.

If either pad is worn to the cutout, replace both pads as a set. See your Honda dealer for this service.

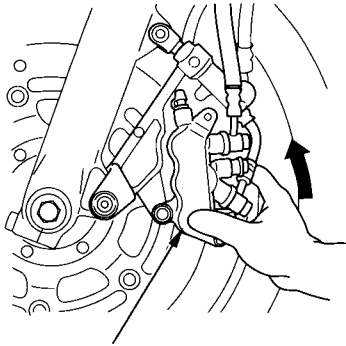


BRAKE SYSTEM INSPECTION

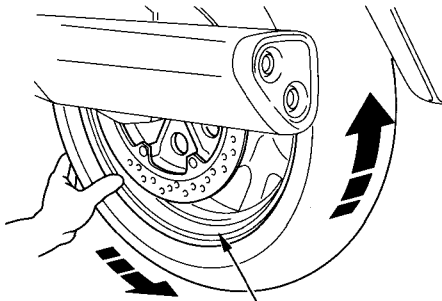
Refer to the Safety Precautions on page 81 .

Check the brake system as follows:

1. Place the motorcycle on its center stand, stop the engine, and place the transmission in neutral.
2. Move the left caliper assembly upward while slowly rotating the rear wheel. The brake system is normal if the rear wheel stops. If the rear wheel does not stop, see your Honda dealer.



Left caliper assembly



Rear wheel

MAINTENANCE

BATTERY

Refer to the Safety Precautions on page 81 .

It is not necessary to check the battery electrolyte level or add distilled water as the battery is a maintenance-free (sealed) type. If your battery seems weak and/or is leaking electrolyte (causing hard starting or other electrical troubles), contact your Honda dealer.

NOTICE

Your battery is a maintenance-free type and can be permanently damaged if the cap strip is removed.

WARNING

The battery gives off explosive hydrogen gas during normal operation.

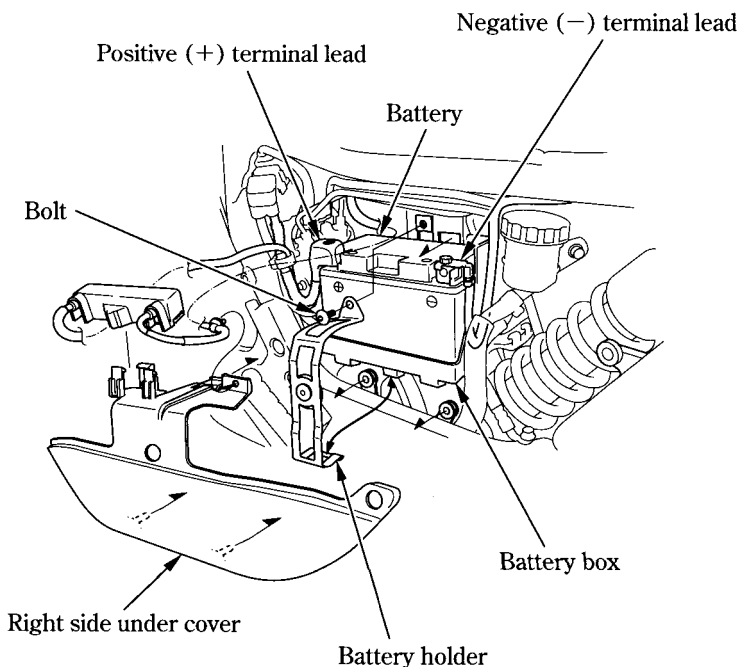
A spark or flame can cause the battery to explode with enough force to kill or seriously hurt you.

Wear protective clothing and a face shield, or have a skilled mechanic do the battery maintenance.

The battery is located in the battery box behind the right side cover.

Removal:

1. Make sure the ignition switch is OFF.
2. Remove the right side cover (page 88).
3. Remove the right side under cover.
4. Disconnect the negative (-) terminal lead from the battery first.
5. Remove the battery holder by removing the bolt.
6. Disconnect the positive (+) terminal lead.
7. Pull the battery out of the battery box.



Installation:

1. Reinstall in the reverse order of removal. Be sure to connect the positive (+) terminal first, then the negative (-) terminal.
2. Check all bolts and other fasteners are secure.

MAINTENANCE

FUSE REPLACEMENT

Refer to the Safety Precautions on page 81 .

When frequent fuse failure occurs, it usually indicates a short circuit or an overload in the electrical system. See your Honda dealer for repair.

NOTICE

Never use a fuse with a different rating from that specified. Serious damage to the electrical system or a fire may result, causing a dangerous loss of lights or engine power.

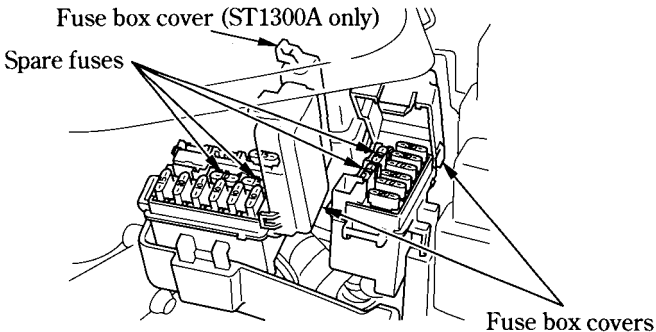
Recommended Fuses:

Main fuse A:	30 A
Main fuse B:	65 A
Circuit fuses:	30 A, 20 A, 15 A, 10 A

The fuse box (including spare fuses) is located behind the left side cover.
The main fuse is located behind the right side cover.

Circuit Fuses:

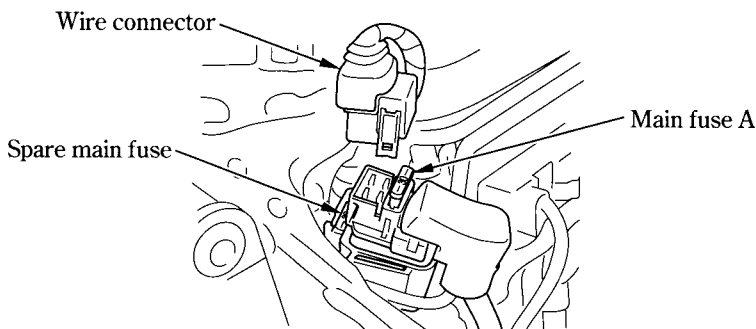
1. To prevent an accidental short circuit, turn the ignition switch OFF before checking or replacing the fuses.
2. Remove the left side cover (page 88).
3. Open the fuse box covers.



4. Pull out the fuse with the fuse puller furnished in the tool kit. If the fuse is blown, install a new fuse.
The spare fuses are located in the fuse boxes.
5. Close the fuse box covers and install the left side cover.

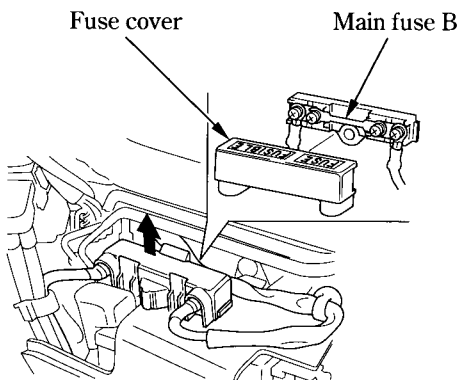
Main Fuse A:

1. Remove the right side cover (page 88).
2. Disconnect the wire connector of the starter magnetic switch.
Pull out the old fuse and install a new fuse.
3. The spare fuse is located behind the starter magnetic switch.
4. Reconnect the connector and install the right side cover.



Main Fuse B:

1. Remove the right side cover (page 88).
2. Remove the fuse cover.
3. Loosen the screws, then replace the fuse.
After replacing the fuse, tighten the screws.
Install the fuse cover and right side cover.



MAINTENANCE

BULB REPLACEMENT

Refer to the Safety Precautions on page 81 .

The light bulb becomes very hot while the light is ON, and remains hot for a while after it is turned OFF. Be sure to let it cool down before servicing.

Do not put finger prints on the headlight bulb, as they may create hot spots on the bulb and cause it to break.

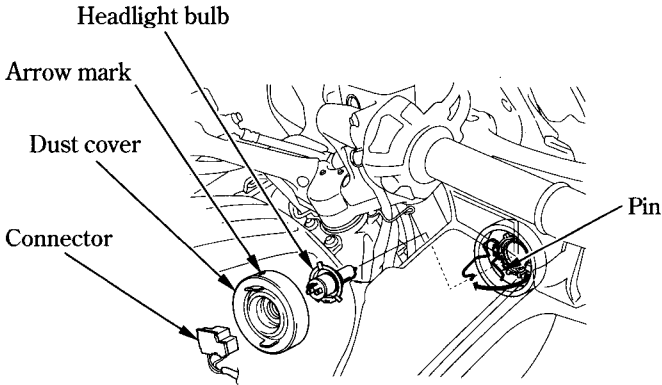
Wear clean gloves while replacing the bulb.

If you touch the bulb with your bare hands, clean it with a cloth moistened with alcohol to prevent its early failure.

- Be sure to turn the ignition switch OFF when replacing the bulb.
- Do not use bulbs other than those specified.
- After installing a new bulb, check that the light operates properly.

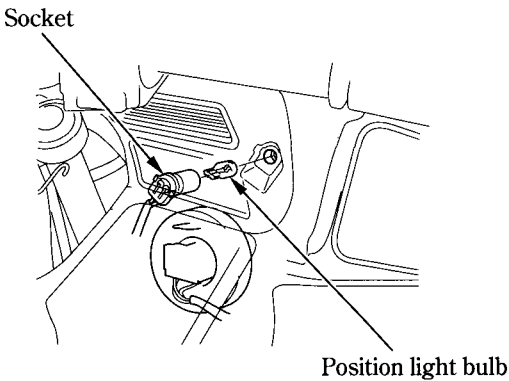
Headlight Bulb

1. Disconnect the connector.
2. Remove the dust cover.
3. Remove the bulb while pressing down on the pin.
4. Install a new bulb in the reverse order of removal.
 - Install the dust cover with its arrow mark facing up.



Position Light Bulb

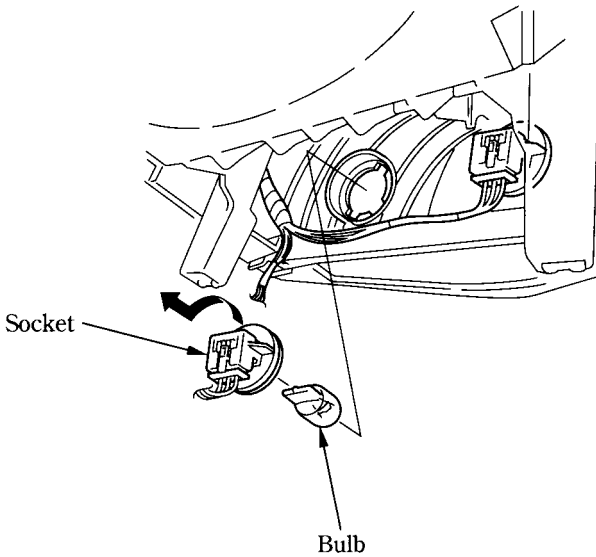
1. Remove the inner cowl (page 89).
2. Pull the position light socket and remove it.
3. Pull out the bulb without turning.
4. Install a new bulb in the reverse order of removal.



MAINTENANCE

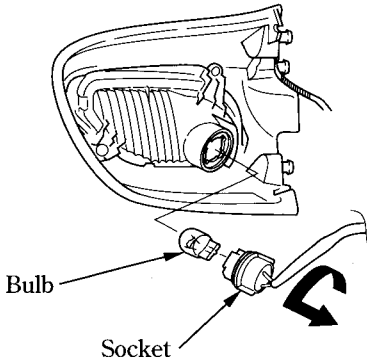
Brake/Tail Light Bulb

1. Remove the rear fender (page 110).
2. Turn the socket 90° counterclockwise, then pull it out toward you.
3. Pull out the bulb without turning.
4. Install a new bulb in the reverse order of removal.



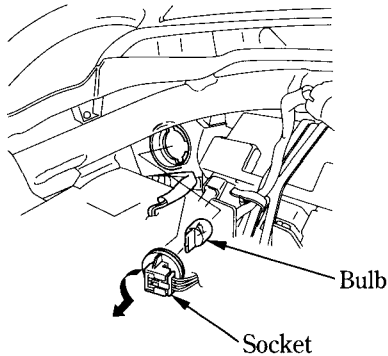
Front Turn Signal Bulb

1. Remove the mirror cover (page 64).
2. Turn the socket 90° counterclockwise, then pull it out toward you.
3. Pull out the bulb without turning.
4. Install a new bulb in the reverse order of removal.



Rear Turn Signal Bulb

1. Remove the rear seat (page 55).
2. Turn the socket 90° counterclockwise, then pull it out toward you.
3. Pull out the bulb without turning.
4. Install a new bulb in the reverse order of removal.



CLEANING

CLEANING

Clean your motorcycle regularly to protect the surface finishes and inspect for damage, wear, and oil, coolant, or fluid (brake and clutch) leakage.

Avoid cleaning products that are not specifically designed for motorcycle or automobile surfaces.

They may contain harsh detergents or chemical solvents that could damage the metal, paint, and plastic on your motorcycle.

If your motorcycle is still warm from recent operation, give the engine and exhaust system time to cool off.

Park in a shady area. Washing your motorcycle in bright sunlight may cause the finish to fade because water droplets intensify the sun's brightness. Spotting is also more likely because surface water can dry before you have time to wipe it off.

We recommend avoiding the use of high pressure water spray (typical in coin-operated car washes).

NOTICE

High pressure water (or air) can damage certain parts of the motorcycle.

Washing the Motorcycle

1. Rinse the motorcycle thoroughly with cool water to remove loose dirt.
2. Clean the motorcycle with a sponge or soft cloth using cool water.
Avoid directing water to muffler outlets and electrical parts.
3. Clean the plastic parts using a cloth or sponge dampened with a solution of mild detergent and water. Rub the soiled area gently rinsing it frequently with fresh water.
Take care to keep brake fluid or chemical solvents off the motorcycle.
They will damage the plastic and painted surfaces.

The inside of the headlight lens may be clouded immediately after washing the motorcycle. Moisture condensation inside the headlight lens will disappear gradually by lighting the headlight in high beam. Run the engine while keeping the headlight on.

4. After cleaning, rinse the motorcycle thoroughly with plenty of clean water.
Strong detergent residue can corrode alloy parts.
5. Dry the motorcycle, start the engine, and let it run for several minutes.
6. Test the brakes before riding the motorcycle. Several applications may be necessary to restore normal braking performance.

Braking efficiency may be temporarily impaired immediately after washing the motorcycle.

Anticipate longer stopping distance to avoid a possible accident.

CLEANING

Finishing Touches

After washing your motorcycle, consider using a commercially-available spray cleaner/polish or quality liquid or paste wax to finish the job. Use only a non-abrasive polish or wax made specifically for motorcycles or automobiles. Apply the polish or wax according to the instructions on the container.

Removing Road Salt

The salt contained in the road surface freezing prevention medicine which a road was sprayed with in winter, and the seawater becomes the cause which rust occurs in.

Wash your motorcycle by the following point after it runs through such a place.

1. Clean the motorcycle using cool water (page 123).

Do not use warm water.

This worsens the effect of the salt.

2. Dry the motorcycle and the surface of the metal is protected with the wax.

Clean the Mat Colour Painted Surface

Using plenty of water, clean the mat colour painted surface with a soft cloth or sponge. Dry with a soft, clean cloth.

Use neutral detergent to clean mat colour painted surface.

Do not use waxes containing compounds.

Painted Aluminum Wheel Maintenance

Aluminum may corrode from contact with dirt, mud, or road salt. Clean the wheels after riding through any of these substances. Use a wet sponge and mild detergent. Avoid stiff brushes, steel wool, or cleaners containing abrasives or chemical compounds.

After washing, rinse with plenty of water and dry with a clean cloth.

Exhaust Pipe and Muffler Maintenance

The exhaust pipe and muffler is 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 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.

Clean the Windscreen

Using plenty of water, clean the windscreen with a soft cloth or sponge. (Avoid using detergents or any kind of chemical cleaner on the windscreen.) Dry with a soft, clean cloth.

NOTICE

To avoid possible scratching or other damage, use only water and a soft cloth or sponge to clean the windscreen.

For a dirtier windscreen, use a diluted neutral detergent with a sponge and plenty of water. Make sure to wash off all the detergent. (Detergent residue may cause windscreen cracks.)

Replace the windscreen if scratches cannot be removed and they obstruct clear vision.

Do not let battery electrolyte, brake fluid or other acid chemicals get on the windscreen and screen garnish. They will damage the plastic.

STORAGE GUIDE

Extended storage, such as for winter, requires that you take certain steps to reduce the effects of deterioration from non-use of the motorcycle. In addition, necessary repairs should be made **BEFORE** storing the motorcycle; otherwise, these repairs may be forgotten by the time the motorcycle is removed from storage.

STORAGE

1. Change the engine oil and filter.
2. Make sure the cooling system is filled with a 50/50 % antifreeze solution.
3. Fill the fuel tank. Make sure the fuel fill cap is properly installed.

WARNING

Petrol 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.
- Refuel only outdoors.
- Wipe up spills immediately.

4. To prevent rusting in the cylinders, perform the following:
 - Remove the spark plug caps from the spark plugs. Using tape or string, secure the caps to any convenient plastic body part so that they are positioned away from the spark plugs.
 - Remove the spark plugs from the engine and store them in a safe place. Do not connect the spark plugs to the spark plug caps.
 - Pour a tablespoon (15–20 cm³) of clean engine oil into each cylinder and cover the spark plug holes with a piece of cloth.
 - Crank the engine several times to distribute the oil.
 - Reinstall the spark plugs and spark plug caps.

-
5. Remove the battery. Store in an area protected from freezing temperatures and direct sunlight.
Slow charge the battery once a month.
 6. Wash and dry the motorcycle. Wax all painted surfaces. Coat chrome with rustinhibiting oil.
 7. Inflate the tyres to their recommended pressures. Place the motorcycle on blocks to raise both tyres off the ground.
 8. Cover the motorcycle (don't use plastic or other coated materials) and store in an unheated area, free of dampness with a minimum of daily temperature variation. Do not store the motorcycle in direct sunlight.

REMOVAL FROM STORAGE

1. Uncover and clean the motorcycle.
2. Change the engine oil if more than 4 months have passed since the start of storage.
3. Charge the battery as required. Install the battery.
4. If your motorcycle has been stored for more than 2 months — ask your Honda dealer to drain and replace the fuel.
5. Check the final drive oil, adding the recommended gear oil if necessary. Change the final drive oil as specified by the Maintenance Schedule.
6. Perform all Pre-ride Inspection checks (page 69).
Test ride the motorcycle at low speeds in a safe riding area away from traffic.

SPECIFICATIONS

DIMENSIONS

Overall length	2,270 mm (89.4 in)
Overall width	860 mm (33.9 in)
Overall height	1,390 mm (54.7 in) ... (Extra lowest) 1,575 mm (62.0 in) ... (Electric slide highest) 1,630 mm (64.2 in) ... (Extra highest)
Wheelbase	1,490 mm (58.7 in)

CAPACITIES

Engine oil	
– After disassembly	4.7 ℓ (5.0 US qt , 4.1 Imp qt)
– After oil filter change	3.9 ℓ (4.1 US qt , 3.4 Imp qt)
– After draining	3.6 ℓ (3.8 US qt , 3.2 Imp qt)
Final drive gear oil	
– After draining	155 cm ³ (5.2 US oz , 5.5 Imp oz)
Fuel tank	29.0 ℓ (7.66 US gal , 6.38 Imp gal)
Cooling system capacity	3.5 ℓ (3.7 US qt , 3.1 Imp qt)
Passenger capacity	Operator and one passenger
Maximum weight capacity	196 kg (432 lbs)

ENGINE

Bore and stroke	78.0 × 66.0 mm (3.07 × 2.60 in)
Compression ratio	10.8 : 1
Displacement	1,261 cm ³ (76.9 cu-in)
Spark plug	
Standard	CR7EH-9 (NGK) or U22FER9 (DENSO)
For extended high speed riding	CR8EH-9 (NGK) or U24FER9 (DENSO)
Spark plug gap	0.8–0.9 mm (0.03–0.04 in)
Idle speed	1,000 ± 100 min ⁻¹ (rpm)
Valve clearance (cold)	Intake: 0.16 mm (0.006 in) Exhaust: 0.25 mm (0.010 in)

CHASSIS AND SUSPENSION

Caster	26°00'
Trail	98 mm (3.9 in)
Tyre size, front	120/70ZR18M/C (59W) BRIDGESTONE BT020F F DUNLOP D220FST L
Tyre size, rear	170/60ZR17M/C (72W) BRIDGESTONE BT020R F DUNLOP D220ST L
Tyre type	radial-ply, tubeless

POWER TRANSMISSION

Primary reduction	1.785
Secondary reduction	0.925
Final reduction	2.833
Gear ratio, 1st	2.571
2nd	1.722
3rd	1.285
4th	1.041
5th	0.862

ELECTRICAL

Battery	12 V—11.2 Ah
Generator	0.675 kW/5,000 min ⁻¹ (rpm)

LIGHTS

Headlight	12 V—60/55 W × 2 E, ED, F type
	12 V—45/45 W × 2 U type
Brake/tail light	12 V—21/5 W × 2
Turn signal light (front)	12 V—21 W × 2
(rear)	12 V—21 W × 2
Position light	12 V—5 W × 2

FUSES

Main fuse A	30 A
Main fuse B	65 A
Other fuses	30 A, 20 A, 15 A, 10 A

CATALYTIC CONVERTERS

This motorcycle is equipped with catalytic converters.

Each catalytic converter contains precious metals that serve as catalysts, promoting chemical reactions to convert the exhaust gasses without affecting the metals.

The catalytic converters act on HC, CO, and NOx. Replacement parts must be original Honda parts or their equivalents.

The catalytic converters must operate at a high temperature for the chemical reactions to take place. They can set on fire any combustible materials that come near them. Park your motorcycle away from high grasses, dry leaves, or other flammables.

Defective catalytic converters contribute to air pollution, and can impair your engine's performance. Follow these guidelines to protect your motorcycle's catalytic converters.

- Always use unleaded petrol. Even a small amount of leaded petrol can contaminate the catalyst metals, making the catalytic converters ineffective.
- Keep the engine in good running condition.
A poorly running engine can cause the catalytic converter to overheat causing damage to the converter or the motorcycle.
- If your engine is misfiring, backfiring, stalling, or otherwise not running properly, stop riding and turn off the engine. Have your motorcycle serviced as soon as possible.



HONDA
The Power of Dreams

32 MCS630
00X22-MCS-6300



© HC 2006-2007 10.8

PRINTED IN JAPAN