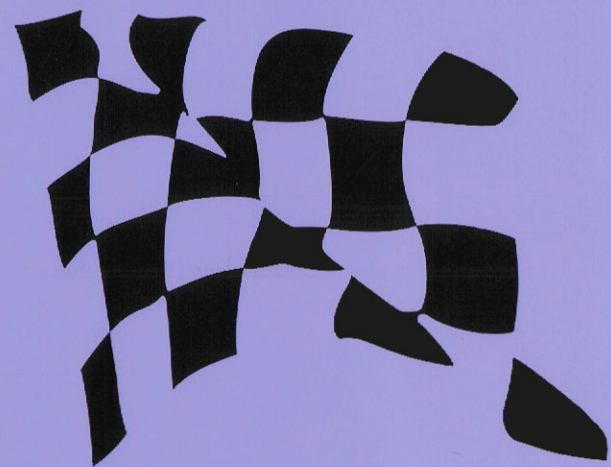




オーナーズマニュアル  
パーツリスト

# 2012-NSF250R



ご使用になる前に、必ずこの取扱説明書をお読みください。





## Important

This machine is designed and manufactured for competition use only and is sold “as-is” with no warranty. It does not conform to federal motor vehicle safety standards and operation on public streets, roads, or highways is illegal.

State laws prohibit operation of this vehicle except in an organized racing or competitive event upon a closed course which is conducted under the auspices of a recognized sanctioning body or permit issued by the local governmental authority having jurisdiction.

First determine that operation is legal.

Operator only, no passengers.

**Read this manual carefully.**

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

## Safety Messages

Your safety and the safety of others is very important. We have provided important safety messages in this manual and on the HRC NSF250R. Please read these messages carefully.

A safety message alerts you to potential hazards that could hurt you or others. Each safety message is preceded by a safety alert symbol  and one of three words, **DANGER**, **WARNING**, or **CAUTION**.

These mean:



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



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



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

Each message tells you what the hazard is, what can happen and what you can do to avoid or reduce injury.

## Damage Prevention Messages

You will also see other important messages that are preceded by the word **NOTICE**.

This word means:

**NOTICE**

Your HRC NSF250R or other property can be damaged if you don't follow instructions.

The purpose of these messages is to help prevent damage to your HRC NSF250R, other property, or the environment.



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# HRC NSF250R

## Owner's Manual/Parts List



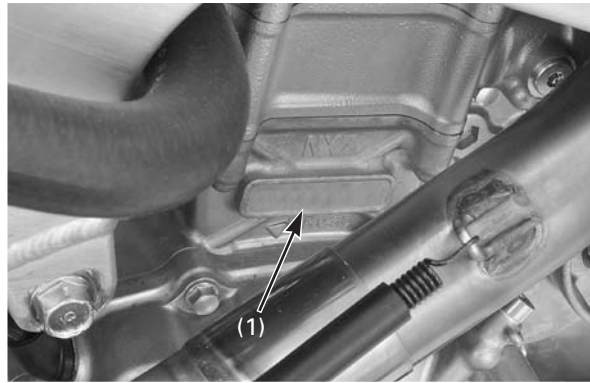
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(1) FRAME SERIAL NUMBER

The frame serial number is attached on the left side of the main frame as shown.



(1) ENGINE SERIAL NUMBER

The engine serial number is stamped on the left side of the crankcase.

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## Image Labels

The following pages describe the label meanings. Some labels warn you of potential hazards that could cause serious injury, Others provide important safety information, Read this information carefully and don't remove the labels.

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

There is a specific symbol on each label.  
The meanings of each symbol and label are as follows.

	Read instructions contained in Owner's Manual carefully.
	Read instructions contained in Shop Manual carefully. In the interest of safety, take the motorcycle to be serviced only by a Honda dealer.
	<b>DANGER (with RED background)</b> You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.
	<b>WARNING (with ORANGE background)</b> You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.
	<b>CAUTION (with YELLOW background)</b> You CAN be HURT if you don't follow instructions.

	<b>RADIATOR CAP SEAL</b> <b>DANGER!</b> NEVER OPEN WHEN HOT. Hot coolant will scald you. Relief pressure valve begins to open at 108 kPa.
	<b>CAUTION LABEL</b> <b>IMPORTANT INFORMATION</b> <ul style="list-style-type: none"> <li>• Operator only. No passengers.</li> <li>• The HRC NSF250R is sold as is without warranty, and the entire risk as to quality and performance is with the buyer. READ OWNER'S MANUAL</li> <li>• The vehicle is designed and manufactured for competition only.</li> <li>• Operation on public streets, roads, or highways is illegal.</li> <li>• Local laws prohibit operation of this vehicle expert in an organized racing or competitive event upon a closed course which is conducted under the auspices of a recognized sanctioning body or by permit issued by the local governmental authority having jurisdiction.</li> <li>• First determine that operation is legal.</li> </ul>
	<b>REAR CUSHION LABEL</b> GAS FILLED Do not heat.

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## To The New Owner

By selecting a HRC roadracer NSF250R as your new machine, you have placed yourself in a distinguished family of owners and riders.

The NSF250R is a high performance racing machine utilizing the latest racing technology. This machine is intended for competition use by experienced riders only.

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

The purpose of this Manual is to help ensure that you obtain the greatest possible satisfaction from your new NSF250R roadracer.

## Importance Of Proper Preparation

Proper pre-competition preparation and regular service is essential to rider safety and the reliability of the motorcycle. Any error or oversight made by the technician during preparation or servicing can easily result in faulty operation, damage to the machine, or injury to the rider.

## How To Use This Manual

The purpose of this Owner's Manual is to help ensure that you obtain the greatest possible satisfaction from your new NSF250R roadracer; satisfaction with the performance of the motorcycle, and through success in competition.

If you plan to do any service on your NSF250R, section 3 describes standard maintenance and sections 4 through 6 contain information on repair, disassembly, assembly and special tools.

Follow the Maintenance Schedule recommendation (page 3-1) to ensure that your NSF250R is always in peak operating condition.

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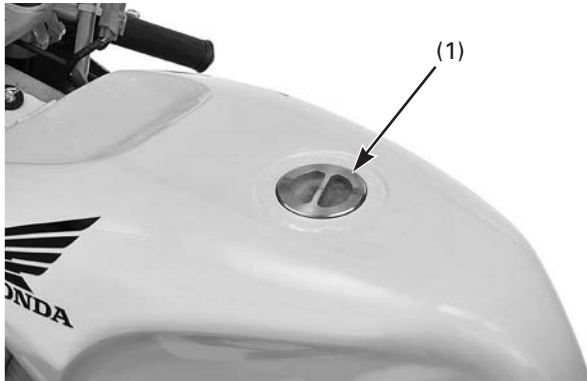
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## Memo

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# 1. Operating Instruction



(1) FUEL FILL CAP

## Fuel

### ⚠ WARNING

**Gasoline is highly flammable and is explosive. You can be burned or seriously injured.**

**When refueling:**

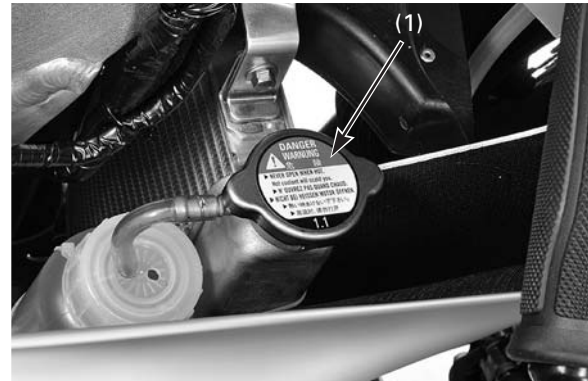
- Stop engine and keep heat, sparks, and flame away.
- Refuel only outdoors.
- Wipe up spills immediately.

Open the tank cap by turning it counterclockwise. Fill the fuel tank with recommended fuel.

**Fuel tank capacity: 11.0 liter (2.90 US gal, 2.42 Imp gal)**  
**Gasoline: Premium unleaded gasoline (commercially available unleaded; research octane number 100 or higher)**

Install the fuel fill cap by turning it clockwise.

Install the three baffle sponge into the fuel tank.



(1) RADIATOR CAP

## Coolant

The engine of the NSF250R is a water-cooled type. In order to provide adequate cooling, it is essential that the radiator be filled with coolant up to the proper level.

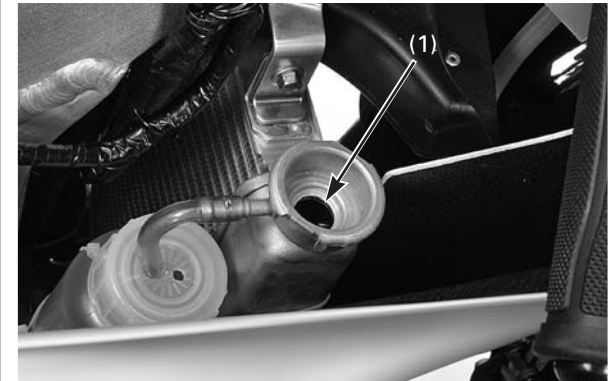
**Coolant:**

**Water only. Use clean tap water or distilled water.**

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

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

Failure to bleed the air completely may cause overheating and damage the engine



(1) FILLER NECK

When filling the cooling system, be sure to bleed air completely so that the system can be sufficiently filled.

Bleed the air thoroughly using the following procedure:

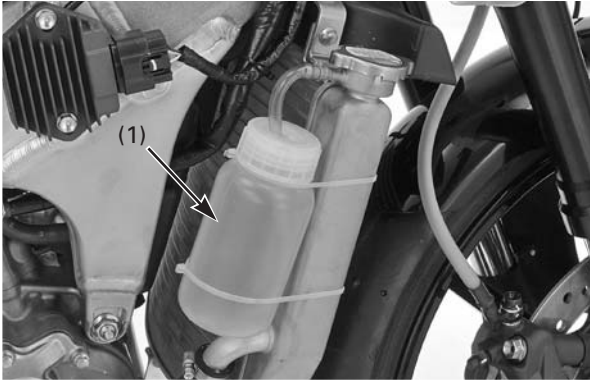
Raise the front end of the machine and put a stand beneath engine.

1. Fill the coolant up to the filler neck.
2. Rock the machine from left to right 2 – 3 times holding the handlebars.
3. Repeat 1 to 2 until the water level does not go down.
4. Reinstall the radiator cap securely.

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

5. After starting the engine, check the coolant level. The coolant level is correct when it is at the bottom of the radiator filler neck. Add coolant up to the filler neck if the level is low.

## Operating Instruction



(1) OVERFLOW CATCH TANK

Before running, drain the coolant from the overflow catch tank.

After running, check the radiator and coolant passages for rusting or clogging. Since the cooling system uses water only, it should be drained completely at the end of each race day to prevent corrosion damage.



(1) ENGINE STOP SWITCH

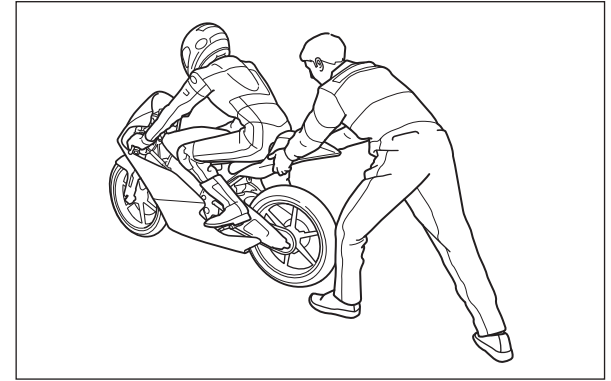
### Basic Operation

#### Starting The Engine

Your NSF250R 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 NSF out of the garage.

#### Cold Engine Starting

1. Turn the engine stop switch to RUN.
2. Shift the transmission into second gear.



3. With the throttle closed, start the engine by pushing the machine.

4. After the engine starts, shift the transmission into neutral, and run it for a few minutes, "blipping" the throttle, until it warms up enough.



(1) ENGINE STOP SWITCH

**Warm Engine Starting**

Follow the cold engine starting procedure.

**Stopping The Engine**

1. Shift the transmission into neutral.
2. Lightly open the throttle 2 – 3 times, and then close it.
3. Turn the engine stop switch OFF until the engine stops completely.



(1) TACHOMETER  
(2) WATER TEMPERATURE METER

**Warming-up The Engine**

- Do not rev the engine more than necessary or engine damage may result.
  - Do not race the engine for an extended period of time during the warm-up while the machine is stationary.
1. Vary the engine speed up to a maximum of 9,000 min<sup>-1</sup> (rpm) until the water temperature meter indicates 50°C (122°F).
  2. When the temperature meter indicates more than 50°C (122°F), vary the engine speed to a maximum of 10,000 min<sup>-1</sup> (rpm) to warm-up the engine.
  3. Warm-up the engine for a few minutes until it is heated to the operating temperature [60°C (140°F)].

**Break-In Procedure**

New Machine

- Use Ultra G1 engine oil for break-in. Using other engine oil, correct break-in effect is not obtained.
- Before running, check that the engine oil is in proper level through the sight glass.

Following proper break-in procedure helps ensure that the most important and expensive components on your new machine will provide maximum performance and service life. (Also follow proper break-in procedure for a newly rebuilt engine.)

When riding a new machine, keep engine speed constantly, and shifting gears within the specified range. Use 5th or 6th gear at circuit straight and always check machine condition:

Below 6,000 min <sup>-1</sup> (rpm).....	About 50 km (30 mi) (About 30 minutes)
Below 8,000 min <sup>-1</sup> (rpm).....	About 15 km (9 mi)
Below 10,000 min <sup>-1</sup> (rpm).....	About 15 km (9 mi)
Above 10,000 min <sup>-1</sup> (rpm).....	About 15 km (9 mi) (About 30 minutes)
Total: About 95 km (57 mi; about one hour)	

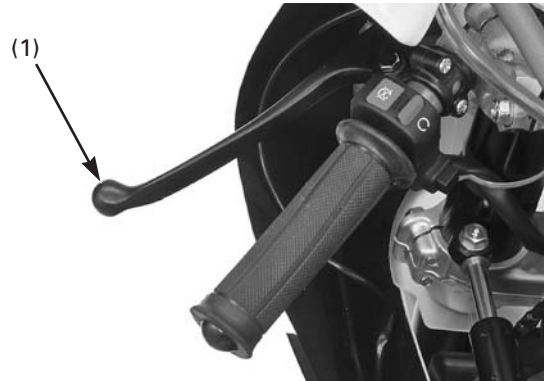
- After break-in, check contamination of engine oil and oil consumption, the change engine oil.
- After break-in, check valve clearance.

### Reconditioned Machine

- After replacing the cylinder and crankshaft, operate the machine for the first 95 km (57 mi; about one hour) observing the same cautions as for a new machine.
- Use same break-in procedure and after break-in check:

Below 6,000 min<sup>-1</sup> (rpm)..... About 20 km (15 mi)  
(About 15 minutes)  
Below 8,000 min<sup>-1</sup> (rpm)..... About 10 km (6 mi)  
Below 10,000 min<sup>-1</sup> (rpm)..... About 10 km (6 mi)  
Above 10,000 min<sup>-1</sup> (rpm)..... About 10 km (6 mi)

Total: About 50 km (30 mi; about 30 minutes)

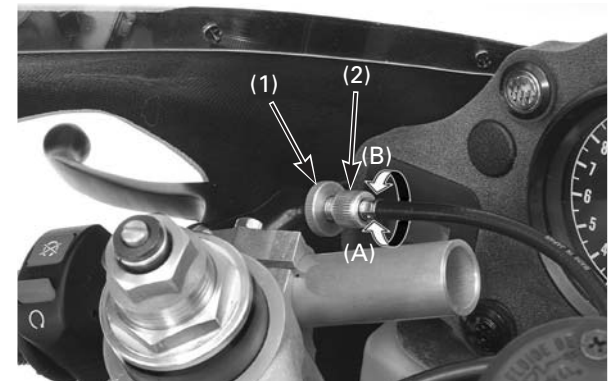


(1) CLUTCH LEVER

## Controls

### Clutch

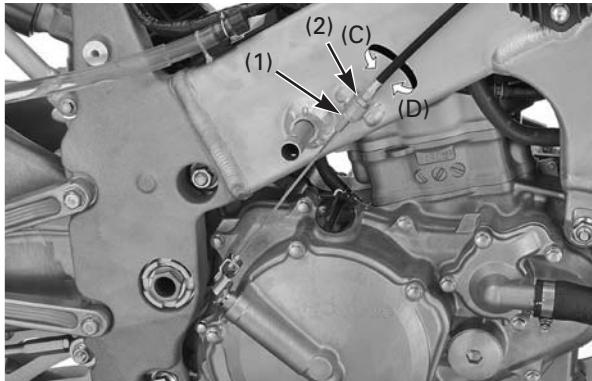
1. The normal clutch lever free play is 10 – 20 mm (0.4 – 0.8 in) measured at the tip of the lever.



(1) LOCK NUT (2) ADJUSTER  
(A) INCREASE (B) DECREASE

2. Minor adjustments can be made with the cable end adjuster.

Loosen the lock nut and turn the adjuster. Turning the adjuster in direction A will increase free play, turning the adjuster direction B will decrease free play. After adjustment, tighten the lock nut. If the adjuster is threaded out near its limit or the correct free play cannot be reached, turn the adjuster all the way in and back out one turn. Tighten the lock nut and make the adjustment with the integral cable adjuster.

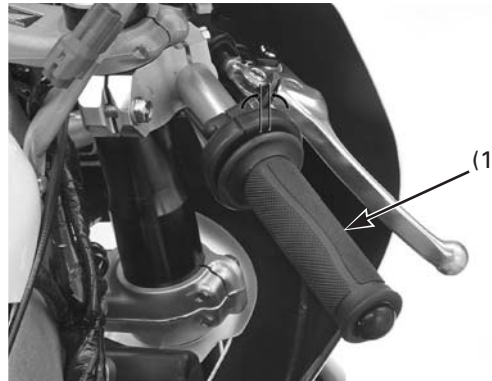


(1) LOCK NUT (2) ADJUSTER  
(C) INCREASE (D) DECREASE

3. Major adjustments can be made at the integral cable adjuster.

Loosen the lock nut and turn the adjuster. Turning the adjuster in direction C will increase free play and turning it in direction D will decrease free play. Tighten the lock nut after adjusting.

4. Test ride to be sure the clutch operates properly without slipping or dragging.



(1) THROTTLE GRIP

### Throttle Grip

#### Throttle Grip Free Play

Measure the throttle grip free play at the grip rotation.

**Free play: 2 – 6 mm (0.08 – 0.24 in)**



(1) LOCK NUT (2) ADJUSTER  
(A) DECREASE (B) INCREASE

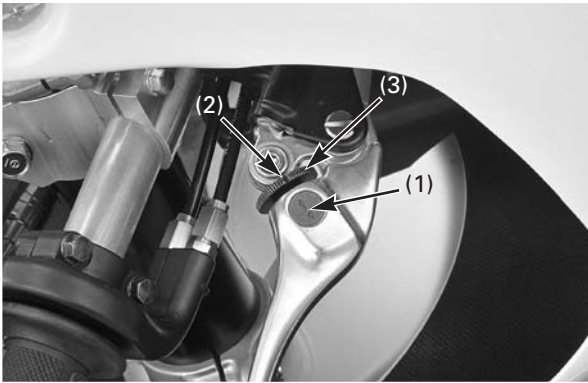
Adjustment is made with the upper adjuster. Loosen the lock nut.

Turning the adjuster in direction A will decrease free play, turning it in direction B will increase free play. Tighten the lock nut and reinstall the dust cover after adjustment.

Operate the throttle grip to ensure that it functions smoothly and returns completely in all steering position.



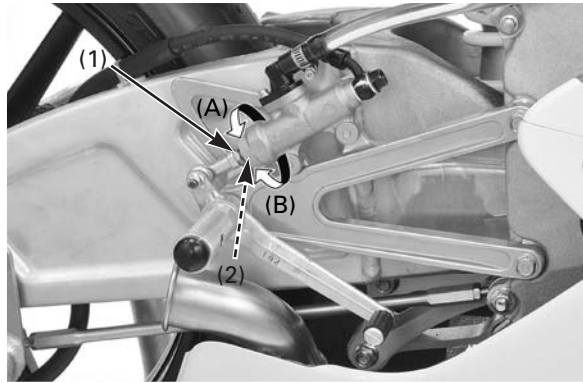
## Operating Instruction



(1) ARROW (2) INDEX MARK (3) ADJUSTER

### Front Brake Lever

The distance between the tip of the brake lever and the grip can be adjusted by turning the adjuster. Align the arrow on the brake lever with index mark on the adjuster.



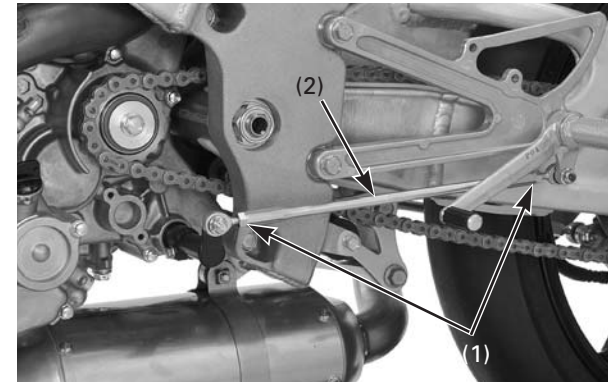
(1) LOCK NUT (2) ADJUSTING BOLT  
(A) RAISE THE PEDAL HEIGHT  
(B) LOWER THE PEDAL HEIGHT

### Brake Pedal Height

The brake pedal height can be adjusted to the rider's preference.

To adjust the rear brake pedal height:

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



(1) LOCK NUTS (2) CHANGE ROD

### Gearshift Pedal Height

The gearshift pedal height can be adjusted to the rider's preference.

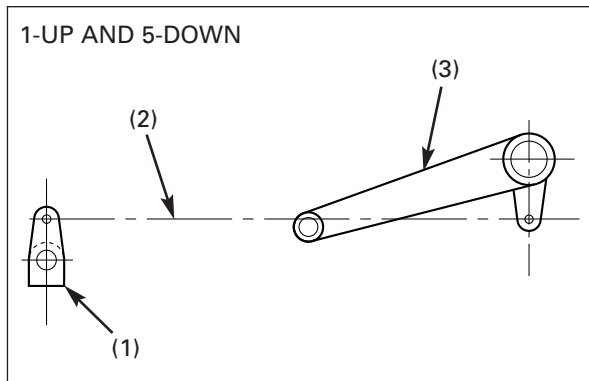
The gearshift pedal height can be adjusted by changing the length of the change rod on its threaded ends.

To adjust the gearshift pedal height:

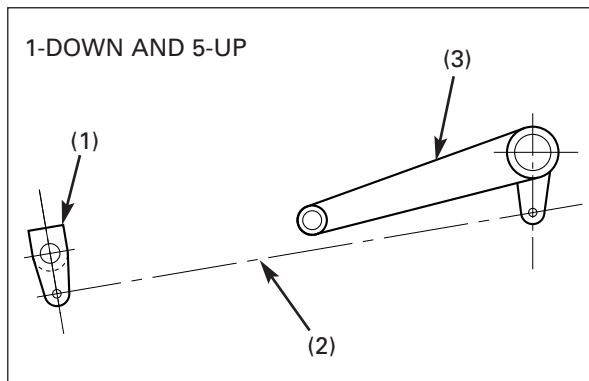
1. Loosen the lock nuts (one lock nut has reverse threads) on both ends of the change rod, and turn the rod as required.
2. Tighten the lock nuts at the desired pedal height. The change arm should be installed so that it has at a right angle to the gearshift pedal lever.

**Shifting pattern: 1-UP and 5-DOWN**



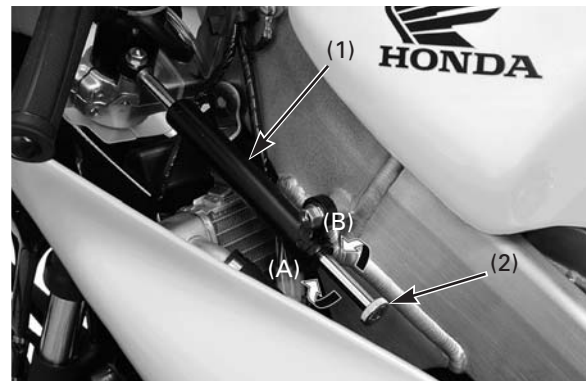


(1) CHANGE ARM (2) CHANGE ROD  
(3) GEARSHIFT PEDAL



(1) CHANGE ARM (2) CHANGE ROD  
(3) GEARSHIFT PEDAL

To change the pattern to "1-DOWN and 5-UP", re-install the change arm upside down (rod connecting end facing down). Before running, apply grease to the change pedal pivot surface.

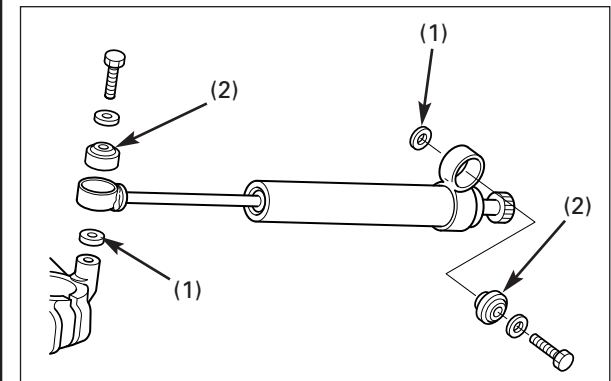


(1) STEERING DAMPER (2) ADJUSTER  
(A) HARD (B) SOFT

### Steering Damper

Turn the adjuster clockwise to increase damping, counterclockwise to decrease damping. There are 12 – 17 notches between minimum and maximum. Do not force the adjuster to pass its limit.

Standard setting: Full soft position  
Improper handling or failure to install the damper properly may damage the steering damper.



(1) THICK WASHER (2) SPHERICAL BEARING

- When installing the damper on the frame, pay careful attention to prevent the piston rod from being applied with excessive bending force beyond the allowable rotation angle of the spherical bearing.
- Handle carefully to avoid scratching, damaging or leaving foreign substances on the rod.
- Do not try to disassemble the steering damper.
- The steering damper must first be set at the standard (full soft) position, than adjust as required.
- At steering damper installation, set the thick washer (2.3 mm) between the spherical bearing and frame, and the spherical bearing and bottom bridge.

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## Memo

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## 2. Service Data

### Specifications

Item	Specification
<b>Dimensions</b>	
Overall length	1,809 mm (71.2 in)
Overall width	560 mm (22.0 in)
Overall height	1,037 mm (40.8 in)
Wheelbase	1,219 mm (48.0 in)
Ground clearance	107 mm (4.2 in)
Seat height	729 mm (28.7 in)
Dry weight	84 kg (185 lbs)
<b>Frame</b>	
Type	Aluminium, twin tube
Front suspension	Telescopic, inverted type
Rear suspension	Swinger, Pro-link
Front tire size	90/580 R17
Rear tire size	120/600 R17
Front brake	Single disc 296 mm, with 4-piston caliper
Rear brake	Single disc 186 mm, with single piston caliper
Fuel capacity	11.0 liter (2.91 US gal, 2.42 Imp. gal)
Caster angle	22° 36'
Trail length	84 mm (3.3 in)
<b>Engine</b>	
Type	Liquid cooled 4-stroke engine
Cylinder arrangement	Single cylinder, inclined 15° from vertical
Bore and stroke	78.0 x 52.2 mm (3.07 x 2.06 in)
Displacement	249.3 cm <sup>3</sup> (15.21 cu-in)
Compression ratio	12.3: 1
Valve train	Chain driven, DOHC
Valve timing	
Intake opens	25° BTDC
Intake closes	50° ABDC
Exhaust opens	50° BBDC
Exhaust closes	20° ATDC
Lubrication system	Semi-dry sump, forced pressure and wet sump
Oil pump type	Trochoid

Item	Specification
<b>Fuel System</b>	
Throttle body type	GQD1A
Throttle bore	50 mm (2.0 in)
<b>Drive Train</b>	
Clutch operating system	Cable operated
Clutch type	Wet, multi-plate
Transmission	6 speeds constant mesh
Primary reduction	2.952 (21/62T)
Gear ratio (STD)	
1st	1.875 (16/30T)
2nd	1.523 (21/32T)
3rd	1.304 (23/30T)
4th	1.166 (24/28T)
5th	1.076 (26/28T)
6th	1.000 (24/24T)
Final reduction	2.333 (15/35T)
Gearshift pattern	1 - N - 2 - 3 - 4 - 5 - 6 (1 up and 5 down)
<b>Electrical</b>	
Fuel Delivery System	PGM-FI
Ignition system	Full Transistor

## Service Data

### Service Data

Unit: mm (in)

Item	Standard	Service Limit
<b>Lubrication System</b>		
Suggested engine oil	Honda 4-stroke motorcycle oil or equivalent	—
Oil recommendation	API service 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	
Engine oil capacity		
lower level	1.16 liter (1.23 US qt, 1.02 Imp qt)	—
upper level	1.37 liter (1.45 US qt, 1.21 Imp qt)	—
at oil change	1.17 liter (1.24 US qt, 1.03 Imp qt)	—
at filter replacement	1.20 liter (1.27 US qt, 1.06 Imp qt)	—
Suggested engine oil	Honda 4-stroke motorcycle oil or equivalent	—
Oil recommendation	API service 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	
Transmission oil capacity		
at disassembly	0.55 liter (0.58 US qt, 0.48 Imp qt)	—
at oil change	0.49 liter (0.52 US qt, 0.43 Imp qt)	—
Oil pump tip clearance	0.15 (0.006) max	—
body clearance	0.15 – 0.21 (0.006 – 0.008)	—
side clearance	0.02 – 0.08 (0.001 – 0.003)	—
<b>Fuel System</b>		
Throttle grip free play	2 – 6 (0.08 – 0.24)	—
Throttle body identification No.	GQD1A	—
Engine idle speed	3,000 ± 300 min <sup>-1</sup> (rpm)	—

Unit: mm (in)

Item	Standard	Service Limit
<b>Cylinder Head/Valves</b>		
Valve clearance		
IN	0.2 ± 0.02 (0.008 ± 0.001)	—
EX	0.3 ± 0.02 (0.012 ± 0.001)	—
Valve lift		
IN	9.0 (0.35)	—
EX	8.0 (0.31)	—
Valve seat width	IN/EX	1.0 (0.04)
<b>Clutch/Gearshift Linkage</b>		
Clutch lever free play	10 – 20 (0.4 – 0.8)	—
Clutch plate warpage	—	0.16 (0.006)
Clutch spring free length	38.8 (1.53)	—
<b>Crankshaft/Transmission</b>		
Shift fork claw thickness	4.93 – 5.00 (0.194 – 0.197)	—

Unit: mm (in)

Item	Standard	Service Limit
<b>Wheels/Tires</b>		
Axle runout	—	0.5 (0.02)
Wheel rim runout	Radial	—
	Axial	—
Drive chain size/link	RK	RK415HRU-120RJ
Drive chain slack	10 – 15 (0.4 – 0.6)	—
<b>Front Suspension</b>		
Fork tube runout	—	0.20 (0.008)
Recommended fork fluid	Honda Ultra Cushion Oil Special (SS19)	—
Fork tube height	15 (0.6) from top bridge	
Preload adjuster setting	18 (0.3)	
Preload adjusting range	10 – 25 (0.4 – 1.0)	
	Right      Left	
Fork oil level	106 (4.2)    101 (4.1)	—
Fork oil capacity	236 cm <sup>3</sup> (9.0 US oz, 9.4 Imp. oz)	—
Compression adjuster standard position	9 clicks out from full hard	—
Rebound adjuster standard position	7 clicks out from full hard	—
<b>Rear Suspension</b>		
Spring pre-load length	147 (5.8)	—
Compression adjuster standard position	8th notch out from full hard	—
Rebound adjuster standard position	5th notch out from full hard	—

Unit: mm (in)

Item	Standard	Service Limit
<b>Hydraulic brakes</b>		
Specified brake fluid	DOT4 brake fluid	—
Front	Brake disc thickness	5.0 (0.20)
	Brake disc runout	—
	Brake pad thickness	—
Rear	Brake disc thickness	4.0 (0.16)
	Brake disc runout	—
	Brake pad thickness	—
		4.5 (0.18)
		0.30 (0.012)
		To the wear indicator
		3.5 (0.14)
		0.30 (0.012)
		To the wear indicator
<b>Ignition System</b>		
Spark plug		
Specified plug (standard)	R0452A-10 (NGK)	—

## Service Data

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### Optional Parts

Item	Description
Mainshaft/M1 gear (standard: 16T)	16, 17T
M2 gear (standard: 21T)	17, 18, 19T
M3/4 gear (standard: 23/24T)	20/20, 20/21, 20/22, 20/24, 21/20, 21/21 21/22, 21/24, 22/20, 22/21, 22/22, 22/24 23/20, 23/21, 23/22T
M5 gear (standard: 26T)	20, 23, 25T
M6 gear (standard: 24T)	23, 26, 27T
C1 gear (standard: 30T)	29, 30, 31, 32T
C2 gear (standard: 32T)	27, 28, 29T
C3 gear (standard: 30T)	27, 29, 31T
C4 gear (standard: 28T)	23, 25, 26, 29T
C5 gear (standard: 28T)	22, 23, 24, 28T
C6 gear (standard: 24T)	26, 27T
Drive sprocket (standard: 15T)	16, 17T
Driven sprocket (standard: 35T)	32, 33, 34, 36, 37, 38, 39, 40T
Top/bottom bridge (standard: 32.5 mm)	30 mm
Fork spring (standard: 0.65 kgf/mm)	0.6, 0.7 kgf/mm
Rear shock absorber spring (standard: 8.0 kgf/mm)	8.5, 7.5, 7.0, 6.5 kgf/mm



## Torque Values

### Standard

Item	Torque N•m (kgf•m, lbf•ft)
5 mm bolt and nut	5.1 (0.5, 3.8)
6 mm bolt and nut	10 (1.0, 7)
8 mm bolt and nut	22 (2.2, 16)
10 mm bolt and nut	34 (3.5, 25)
12 mm bolt and nut	54 (5.5, 40)
5 mm screw	4.1 (0.4, 3)
6 mm screw and flange bolt (SH type)	8.8 (0.9, 6.5)
6 mm flange bolt and nut	12 (1.2, 9)
8 mm flange bolt and nut	26 (2.7, 19)
10 mm flange bolt and nut	39 (4.0, 29)

- Notes: 1. U-nut.  
 2. Apply locking agent to the threads.  
 3. Apply grease to the sliding surface.  
 4. Apply engine oil to the threads and seating surface.  
 5. ALOC bolt (replace it with a new one)  
 6. Wire lock.  
 7. Left hand threads  
 8. Apply sealant

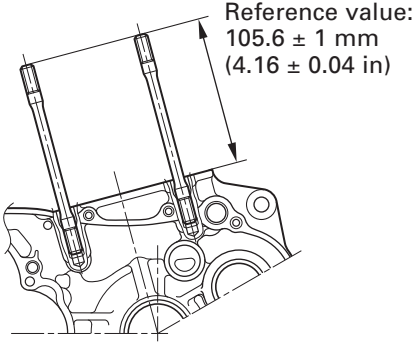
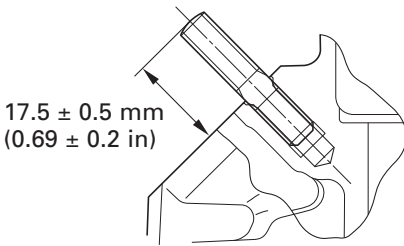
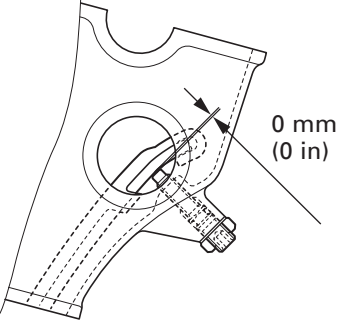
### Engine

Item	Q'ty	Threads Dia. (mm)	Torque N•m (kgf•m, lbf•ft)	Remarks
<b>Maintenance:</b>				
Spark plug	1	10	14 (1.4, 10)	
Engine oil drain bolt	1	8	16 (1.6, 12)	Note 4
Transmission oil drain bolt	1	8	16 (1.6, 12)	Note 4
Timing hole cap	1	14	6 (0.6, 4.4)	Note 3
Crankshaft hole cap	1	30	15 (1.5, 11)	Note 3
Cylinder head hole cap	1	30	15 (1.5, 11)	Note 3
<b>Lubrication:</b>				
Oil pump sprocket bolt	1	5	5 (0.5, 3.7)	Note 2
Oil strainer bolt	1	6	10 (1.0, 7)	
Oil separator plate bolt	1	6	10 (1.0, 7)	Note 2
<b>Cooling System:</b>				
Water pump impeller	1	7	12 (1.2, 9)	Note 7
<b>Fuel System:</b>				
Air funnel bolt	2	5	5.1 (0.52, 3.8)	
Flame trap set bolt	2	5	5.1 (0.52, 3.8)	
<b>Cylinder head/valve:</b>				
Cylinder stud bolt	4	10	12 (1.2, 9)	Note 2
			See page 4-44	
Cylinder head sealing bolt	1	14	18 (1.8, 13)	Note 2
Cylinder head water pipe joint	1	20	12 (1.2, 9)	Note 8
Camshaft holder flange bolt	8	6	12 (1.2, 9)	Note 4
Cylinder head nut	4	9	39 (4.0, 29)	Note 4
Cylinder head stud bolt	3	6	5 (0.5, 3.7)	page 2-6
			See illustration	
Cylinder sealing bolt	1	10	15 (1.5, 11)	Note 2
Breather pipe (head cover)	1	PF 1/4	7 (0.7, 5.2)	Note 8
Cylinder head cover bolt	2	6	10 (1.0, 7)	Note 2
Breather plate bolt	2	6	10 (1.0, 7)	Note 2
Cam sprocket bolt	4	7	22 (2.2, 16)	Note 4
Cam chain tensioner collar bolt	1	6	12 (1.2, 9)	Note 2
Tensioner guide collar bolt	1	6	12 (1.2, 9)	Note 2

## Service Data

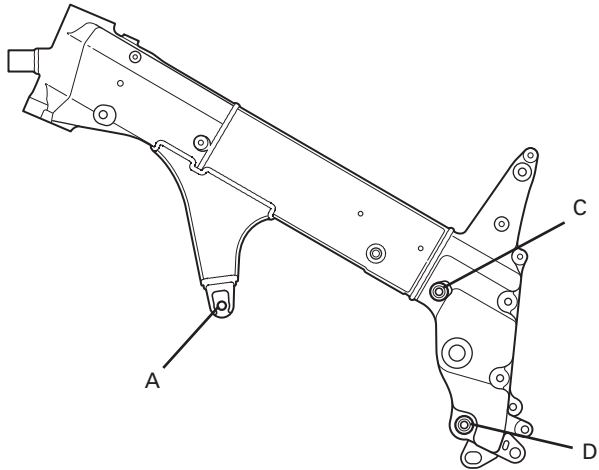
### Engine

Item	Q'ty	Threads Dia. (mm)	Torque N·m (kgf·m, lbf·ft)	Remarks
<b>Cylinder head/valve:</b>				
Cam chain tensioner:				
Adjust bolt	1	6	See page 4-41	Note 4
Adjust bolt tightening nut	1	8	10 (1.0, 7)	
<b>Clutch/gearshift linkage:</b>				
Clutch center nut	1	18	54 (5.5, 40)	Note 4
Clutch spring bolt	5	6	10 (1.0, 7)	
Primary drive gear bolt	1	12	108 (11.0, 80)	Note 4
Shift drum center pin	1	8	22 (2.2, 16)	Note 2
Shift drum guide plate bolt	2	6	10 (1.0, 7)	Note 2
Shift drum stopper arm bolt	1	6	12 (1.2, 9)	Note 2
<b>Alternator:</b>				
Left crankcase cover:				
Sealing bolt, 6 mm	1	6	8 (0.8, 5.9)	Note 2
Sealing bolt, 8 mm	1	8	15 (1.5, 11)	Note 2
Flywheel nut	1	14	69 (7.0, 51)	Note 4
Ignition pulse generator bolt	4	5	5 (0.5, 3.7)	Note 2
Stator mounting bolt	3	5	5 (0.5, 3.7)	Note 2
<b>Crankcase/Transmission:</b>				
Drive sprocket bolt	1	8	31 (3.2, 23)	Note 4
Right crankcase oil jet	1	5	2.0 (0.2, 1.5)	Note 2
Bearing set plate bolt (Mainshaft, Shift drum)	4	6	10 (1.0, 7)	Note 2
Transmission holder bolt	6	6	10 (1.0, 7)	Note 4
Bearing set plate screw	1	6	10 (1.0, 7)	Note 2
Left crankcase sealing bolt	1	8	15 (1.5, 11)	Note 2
Piston oil jet	1	6	10 (1.0, 7)	Note 2
Reed valve stopper bolt	1	6	10 (1.0, 7)	Note 2
Balancer shaft nut	1	12	34 (3.5, 25)	Note 4
Connecting rod bolt:				
new bolt tightening	2	8	See page 4-71	Note 4
at clearance check	2	8	See page 4-71	Note 4

Cylinder stud bolt	Cylinder head stud bolt
 <p>Reference value: 105.6 ± 1 mm (4.16 ± 0.04 in)</p>	 <p>17.5 ± 0.5 mm (0.69 ± 0.2 in)</p>
Cam chain tensioner adjuster	
 <p>0 mm (0 in)</p>	

Frame

Item	Q'ty	Threads Dia. (mm)	Torque N·m (kgf·m, lbf·ft)	Remarks
<b>Engine removal/installation:</b>				
Engine hanger adjusting bolt	2	18	15 (1.5, 11)	
Engine hanger lock nut	2	18	40 (4.1, 30)	
Engine hanger bolt (A)	1	10	40 (4.1, 30)	
Engine hanger bolt (C, D)	2	10	40 (4.1, 30)	

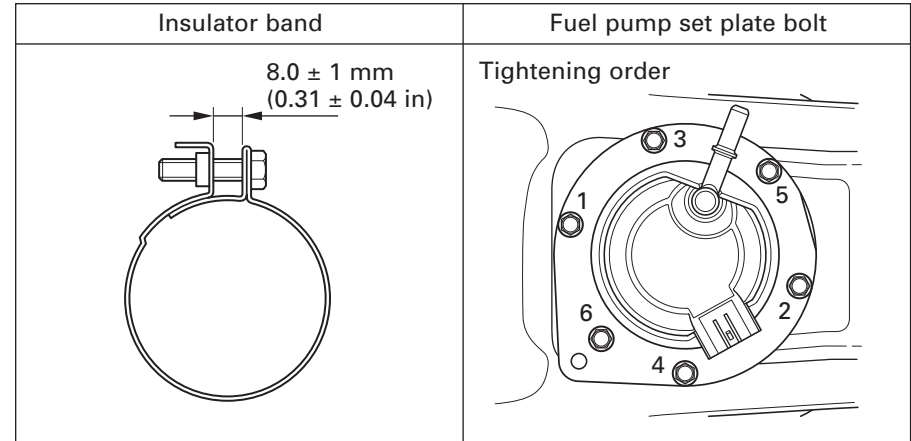
  


The diagram shows a side view of a motorcycle frame component, likely the engine hanger. Callout 'A' points to a bolt on the left side. Callout 'C' points to a bolt on the right side. Callout 'D' points to a bolt on the lower right side of the component.

Item	Q'ty	Threads Dia. (mm)	Torque N·m (kgf·m, lbf·ft)	Remarks
<b>Front wheel/suspension:</b>				
Stem bearing adjusting nut	1	26	6 (0.6, 4.4)	
Steering stem nut	1	18	59 (6.0, 43)	
Top bridge pinch bolt	2	8	22 (2.2, 16)	
Bottom bridge pinch bolt	4	8	22 (2.2, 16)	
Handlebar pinch bolt	2	8	22 (2.2, 16)	
Clutch cable alninum nut	1	8	10 (1.0, 7)	
Clutch lever holder bolt	1	5	4 (0.4, 3.0)	
Clutch lever pivot bolt	1	6	1.0 (0.1, 0.7)	
Front axle nut	1	14	70 (7.1, 5.2)	Note 1
Front axle holder bolt	4	8	22 (2.2, 16)	
Front brake disc bolt	6	6	12 (1.2, 9)	
Fork bolt	2	39	34 (3.5, 25)	
Fork center socket bolt	2	10	34 (3.5, 25)	Note 2
<b>Rear wheel/suspension:</b>				
Rear axle nut	1	14	70 (7.1, 52)	
Rear brake disc bolt	3	8	41 (4.2, 30)	
<b>Swingarm:</b>				
adjust bolt	1	30	15 (1.5, 11)	Note 3
adjust bolt lock nut	1	30	44 (4.5, 32)	
pivot nut	1	18	95 (9.7, 70)	
Final driven sprocket nut	3	10	62 (6.3, 46)	Note 1
<b>Shock absorber:</b>				
upper mounting nut	1	10	39 (4.0, 29)	
lower mounting nut	1	10	39 (4.0, 29)	

## Service Data

Item	Q'ty	Threads Dia. (mm)	Torque N·m (kgf·m, lbf·ft)	Remarks
<b>Hydraulic brake:</b>				
Brake hose oil bolt	3	10	23 (2.3, 17)	
Brake hose bleeder (front)	1	10	23 (2.3, 17)	
Brake bleeder screw	1	8	6 (0.6, 4.4)	
Torque rod mounting bolt	2	8	18 (1.8, 13)	
Front caliper mounting bolt	2	10	51 (5.2, 38)	
Brake lever pivot bolt	1	6	1.0 (0.1, 0.7)	
Brake lever pivot nut	1	6	5.9 (0.6, 4.4)	
Front master cylinder cap screw	2	4	1.5 (0.2, 1.1)	
Front brake caliper pad pin	1	10	17 (1.7, 13)	
Rear brake caliper pad pin	2	10	17 (1.7, 13)	
Pad pin plug	2	10	2 (0.2, 1.5)	
Rear caliper pin	Main: 1	10	22 (2.2, 16)	Note 2
	Sub: 1	8	12 (1.2, 9)	Note 2
Front master cylinder holder	2	6	12 (1.2, 9)	
SH flange bolt				
Rear master cylinder push rod lock nut	1	8	18 (1.8, 13)	
Rear master cylinder hose joint screw/washer	1	4	1.5 (0.2, 1.1)	
<b>Other:</b>				
Insulator band	1	5	See illustration	
Engine stop switch screw	1	2	0.9 (0.1, 0.7)	
Quick shift switch screw	1	2	1.5 (0.1, 0.7)	
Cowl set bolt	5	6	5 (0.5, 3.7)	
Fuel pump set plate bolt	6	5	4.2 (0.43, 3.1)	See illustration



Tools

Description	Tool number	Applicability
<b>Fuel System:</b>		
Fuel pressure gauge	07406-0040004	Fuel pressure check
Manifold	07ZAJ-S5A0111	
Fuel hose, 9-9	07ZAJ-S5A120	
Fuel hose, 8-9	07ZAJ-S7C100	
Fuel joint, 8-9	07ZAJ-S7C200	
<b>Cooling System:</b>		
Bearing remover set, 12 mm	07936-1660101	Water pump bearing
– Bearing remover, 12 mm	07936-1660110	
– Remover shaft, 12 mm	07936-1660120	
– Remover weight	07741-0010201	
Bearing remover	07931-KA30000	
Bearing driver	07946-KA30100	
Driver	07749-0010000	Water pump bearing
Attachment, 24 x 26 mm	07746-0010700	Bearing installation
Pilot, 12 mm	07746-0040200	Bearing installation
Water seal driver	07945-KA30000	Water pump oil seal
<b>Engine Removal/Installation:</b>		
*Lock nut wrench	07907-NX5-010	Engine hanger lock nut
<b>Cylinder Head/Valves:</b>		
Valve spring compressor	07757-0010000	Valve spring
Valve seat cutter	(or equivalent commercially available)	Valve seat refacing
– Seat cutter, 33 mm	07780-0010800	45° IN
– Seat cutter, 27.5 mm	07780-0010200	45° EX
– *Flat cutter, 34 mm	89005-NX7-000	32° IN
– *Flat cutter, 27.5 mm	89006-NX7-000	32° EX
– Interior cutter, 34 mm	07780-0014700	60° IN
– Interior cutter, 26 mm	07780-0014500	60° EX
Cutter holder, 4.5 mm	07781-0010600	
Valve guide reamer 4.5 mm	07HMH-ML00101	Valve spring

The tool marked \* is exclusive for HRC. Order directly from HRC.

Description	Tool number	Applicability
<b>Clutch:</b>		
Clutch center holder	07724-0050002	Clutch center lock nut
Gear holder	07724-0010100	Primary drive gear nut
<b>Alternator:</b>		
Flywheel holder	07725-0040001	Flywheel nut
*Flywheel puller adapter	89009-NX7-000	Flywheel
*Flywheel puller holder	89010-NX7-000	
*Flywheel puller bolt	89011-NX7-000	
Bearing remover set, 15 mm	07936-KC10100	Left crankcase cover seal
– Bearing remove, 15 mm	07936-KC10200	
– Remover weight	07741-0010201	
<b>Crankshaft/Transmission:</b>		
*Bearing holder assembly	89020-NX7-000	Main journal bearing
*Bearing fit spindle	89023-NX7-000	
Bearing remover set, 20 mm	07936-3710001	Countershaft bearing
– Remover handle	07936-3710100	
– Remover remover shaft, 20 mm	07936-3710600	
– Remover weight	07741-0010201	
Bearing remover set, 12 mm	07936-1660101	Left mainshaft bearing
– Bearing remove, 12 mm	07936-1660110	Right countershaft bearing
– Remover shaft	07936-1660120	
– Remover weight	07741-0010201	
Gear holder	07724-0010100	Balancer shaft nut
Driver	07749-0010000	Bearing installation
Attachment, 37 x 40 mm	07746-0010200	Mainshaft bearing
Pilot, 20 mm	07746-0040500	
Attachment, 42 x 47 mm	07746-0010300	Countershaft bearing
Pilot, 17 mm	07746-0040400	
Attachment, 32 x 35 mm	07746-0010100	Left mainshaft bearing
		Right countershaft bearing
		bearing
Attachment, 42 x 47 mm	07746-0010300	Right mainshaft bearing
Pilot, 12 mm	07746-0040200	Left mainshaft bearing
Pilot, 17 mm	07746-0040400	Left countershaft bearing
Pilot, 25 mm	07746-0040600	Right mainshaft bearing

## Service Data

Description	Tool number	Applicability
<b>Front Wheel/Suspension/Steering:</b>		
Fork seal driver	07KMD-KZ30100	Fork
*Fork seal driver attachment	07916-NX4-700	
*Fork set collar	51481-NX4-610	
Steering stem socket	07916-KA50100	Steering stem
*Ball race driver set	07910-NX4-003	
– *Driver shaft nut	07911-NX4-003	
– *Assembly collar	07912-NX4-003	
– *Driver attachment, 47 mm	07913-NX4-003	
– *Driver attachment, 51 mm	07914-NX4-003	
– *Driver shaft	07915-NX4-003	
Steering stem driver	07946-MB00000	
Bearing remover head, 15 mm	07746-0050400	Wheel bearing removal
Bearing remover shaft	07746-0050100	
Driver	07749-0010000	Bearing installation
Attachment, 32 x 35 mm	07746-0010100	
Pilot, 15 mm	07746-0040300	

Description	Tool number	Applicability
<b>Rear Wheel/Suspension:</b>		
Bearing remover head, 15 mm	07746-0050400	Wheel bearing removal
Bearing remover shaft	07746-0050100	
Driver	07749-0010000	Bearing installation
Attachment, 32 x 35 mm	07746-0010100	
Pilot, 15 mm	07746-0040300	
Lock nut wrench	07908-4690002	
Bearing remover set, 20 mm	07936-3710001	Swingarm pivot bearing
– Remover handle	07936-3710100	
– Remover head	07936-3710600	
– Remover weight	07741-0010201	
Bearing remover, 28 mm	07HMC-MR70100	
Needle bearing driver	07946-MJ00000	
– Driver shaft	07946-MJ00100	
– Driver head	07946-MJ00200	
Spherical bearing driver	07946-KA30200	
Attachment, 37 x 40 mm	07746-0010200	Bearing installation
Pilot, 20 mm	07746-0040500	
Pilot, 28 mm	07746-0041100	
Attachment, 24 x 26 mm	07746-0010700	
Pilot, 17 mm	07746-0040400	
Pin spanner	07702-0020001	Rear cushion spring
<b>Hydraulic Brake:</b>		
Snap ring pliers	07914-SA50001	Master cylinder snap ring

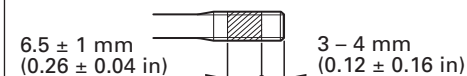


## Lubrication & Seal Points

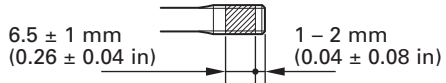
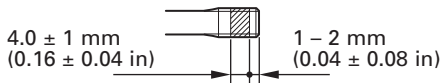
### Engine

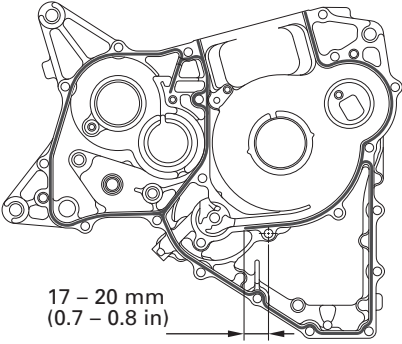
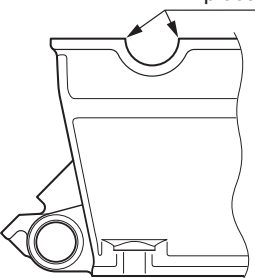
Item	Material	Remarks
Oil drain plug (Engine & transmission)	Engine oil	
Transmission holder bolt		
Camshaft holder bolt		
Cylinder head flange bolt		
Cylinder I.D.		
Piston pin bore, piston outer surface		
Piston pin outer surface		
Piston ring		
Connecting rod bolt		
Primary drive gear bolt		
Flywheel bolt		
Balance shaft nut		
Cam sprocket bolt		
Cam chain whole surface		
Cam chain tensioner adjusting bolt		
Oil pump rotor/shaft/chain		
Oil filter element		
Clutch outer sliding surface		
Clutch disc surface		
Clutch center nut		
Clutch lifter piece needle bearing		
Each transmission gear sliding surface		
Drive sprocket bolt		
Shift drum grooves		
Drum shifter sliding surface		
Shifter collar sliding surface		
Ratchet pawl sliding surface		
Plunger pawl sliding surface		
Shift spindle seration		
Each oil seal lip		
Each bearing rotating area		
Each gear		
Each O-ring		
Other rotating and sliding surface		

Item	Material	Remarks
Left crankcase cover bushing I.D.	Molybdenum disulfide oil (A 50/50 mixture of molybdenum disulfide grease and Honda 4-stroke engine oil	
Connecting rod bearing sliding surface		
Connecting rod small end I.D.		
Connecting rod bearing sliding surface		
Crankshaft bearing sliding surface		
Decompressor cam plate sliding surface		
IN/EX camshaft bearing, cam surface, thrust surface		
Cam chain tensioner/guide collar sliding surface		
IN/EX valve stem and stem end		
Valve lifter sliding surface		
Clutch lifter cam		
Clutch outer collar sliding surface		
Mainshaft spline and gear rotating surface		
Countershaft spline and gear rotating surface		
Mainshaft/countershaft bushing and collar sliding surface		
Shift fork guide pin and I.D.		
Shift fork shaft outer surface		
Crankcase stud bolt threads	Locking agent	Apply area: 6.5 ± 1 mm
Left crankcase piston jet bolt threads		
Cam chain tensioner collar torx bolt threads		
Cam chain guide collar flange bolt threads		
Shift pin threads		



## Service Data

Item	Material	Remarks
Mainshaft/shift drum bearing set plate bolt threads Reed valve stopper bolt/washer threads Cylinder head torx bolt threads Breather plate bolt threads Oil separator bolt threads Guide plate bolt threads Shift drum stopper arm pivot bolt threads Ignition pulse generator bolt threads Stator socket bolt threads	Locking agent  	Apply area: 6.5 ± 1 mm  1 - 2 mm (0.04 ± 0.08 in)
Countershaft bearing set plate bolt threads Left crankcase torx bolt threads Cylinder head water pipe joint threads Cylinder torx bolt threads Cylinder head cover breather joint threads Oil pump driven sprocket bolt threads	Locking agent  	Apply area: 4.0 ± 1 mm  1 - 2 mm (0.04 ± 0.08 in)
Right crankcase oil jet #80 threads	Locking agent	Do not apply tip of bolt threads
Left crankcase cover torx bolt threads	Locking agent	

Item	Material	Remarks
Crankcase mating surface  	Sealant (TB1207B)	
Right crankshaft hole cap threads Water pump oil seal lips Water pump water seal lips Timing hole cap threads Cylinder head cap threads Each O-ring Each oil seal lips	Multi-purpose grease Recommended grease: 08C30-80104L	
Cylinder head semi-circular portion 2 places  	Sealant TB 5211C	

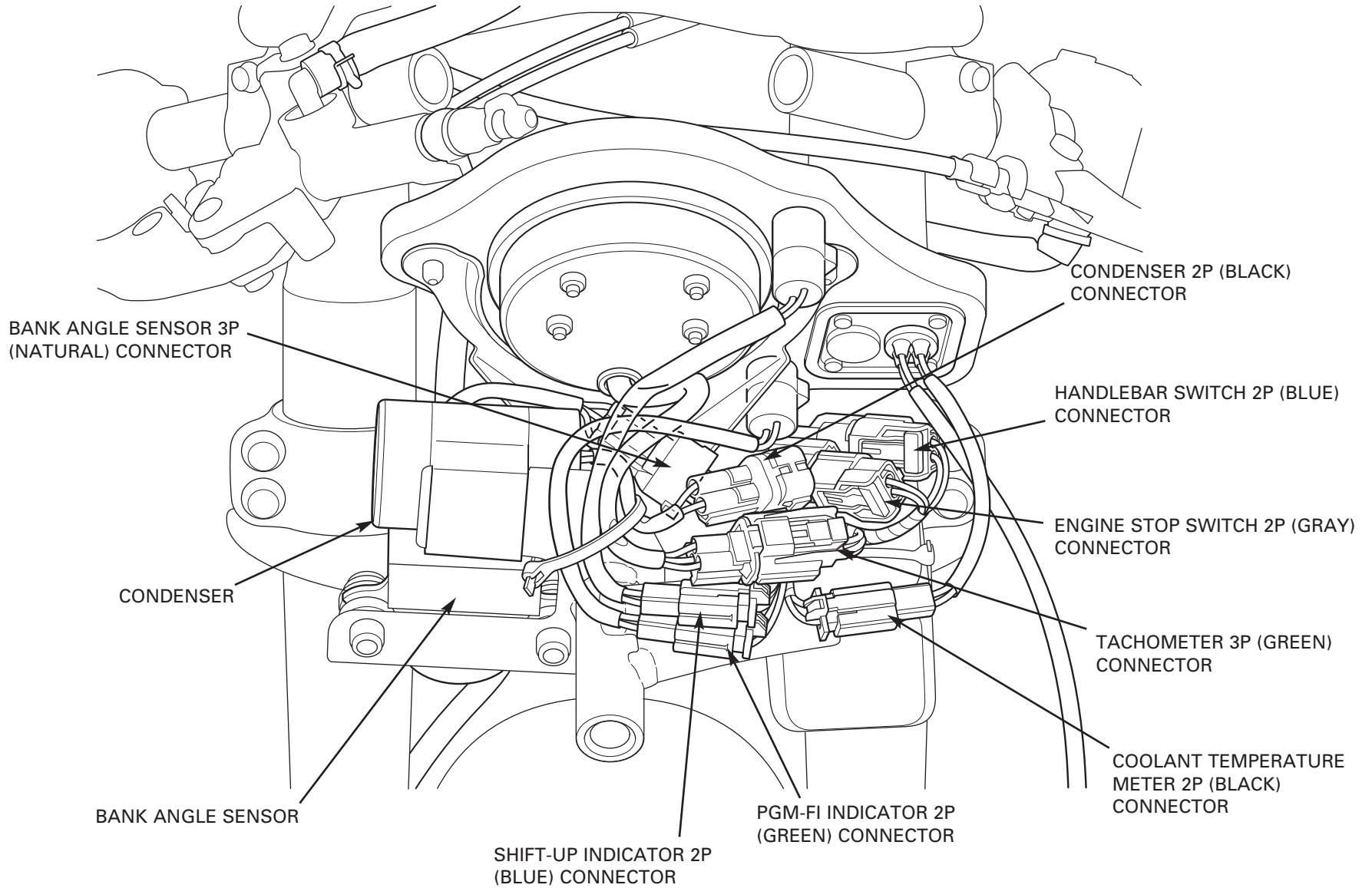
**Frame**

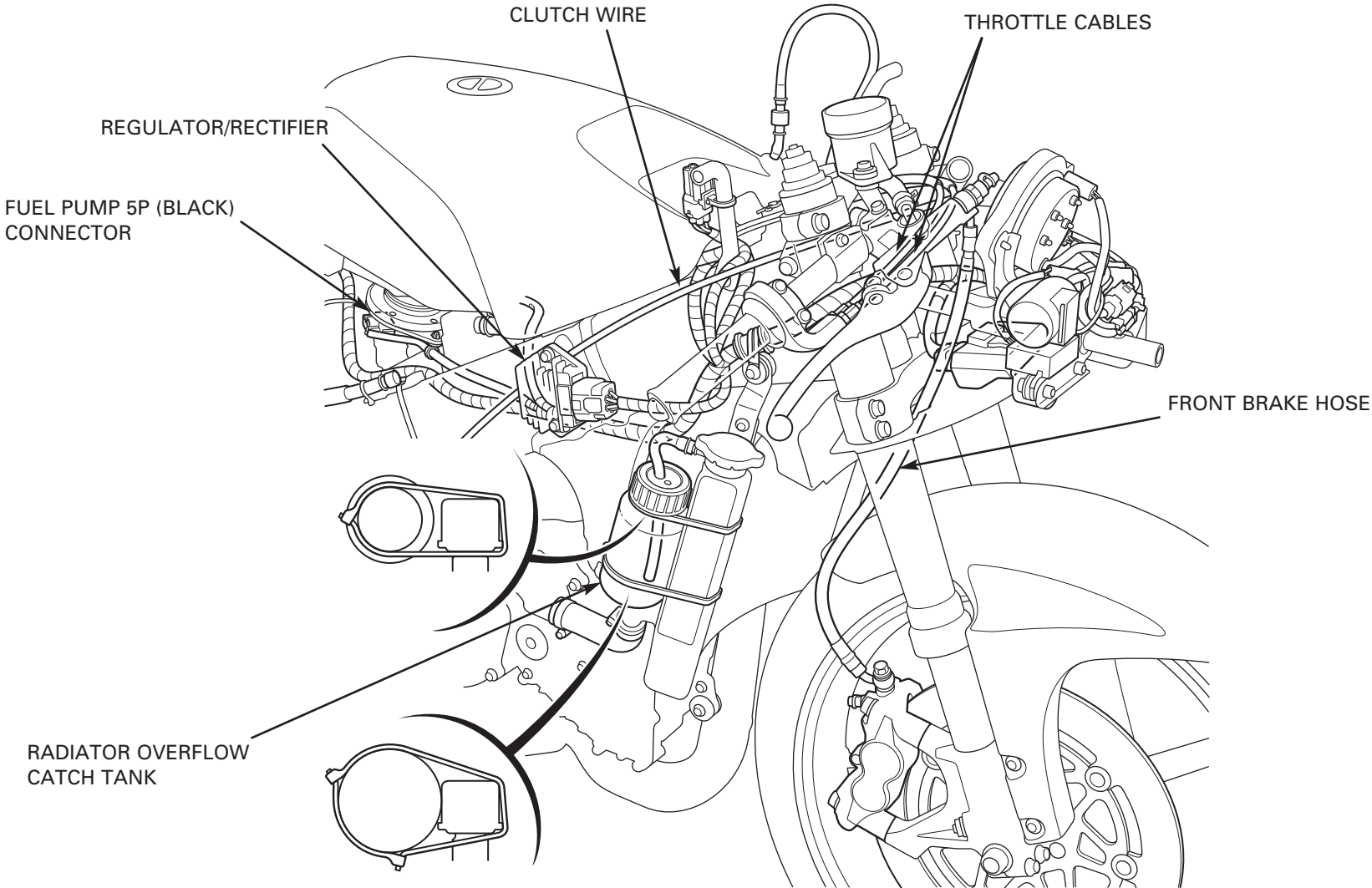
Item	Material	Remarks
Stem upper/lower bearings Stem upper/lower dust seals Left swingarm pivot bearing Right swingarm pivot bearing Swingarm pivot dust seal lips Swingarm pivot adjusting bolt threads Shock arm needle bearing Shock arm dust seal lips Shock link needle bearing Shock link dust seal lips Cable slider sliding surface	Urea based multi-purpose grease for extreme pressure (example: EXCELITE EP2 manufactured by KYODO YUSHI, Japan) or equivalent	
Handle lever pivot sliding surface Wire adjusting bolt threads Clutch wire threads Wheel bearing/dust seal lips Front and rear axle surface Drive sprocket washer both side Driven flange O-ring Steering stem bolt threads and seating surface Rear caliper bracket both side Brake pedal pivot sliding surface and both end Gearshift pedal pivot sliding surface and both end ECT sensor threads Engine hanger adjusting bolt threads Swingarm pivot bearing/dust seal lips	Multi-purpose grease	
Handlebar grip Step arm	Honda Bond A or Cemedine #540	

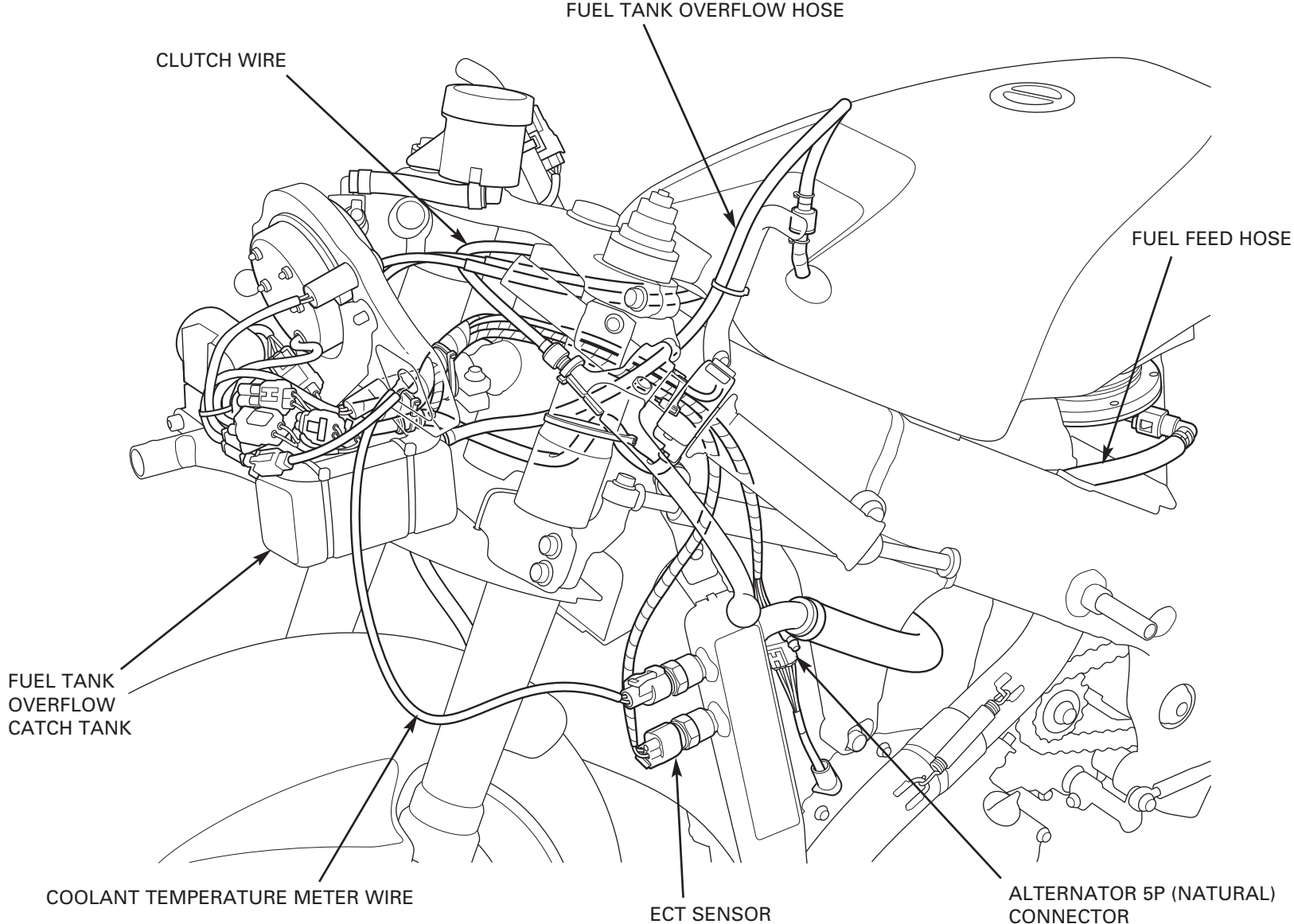
**Frame**

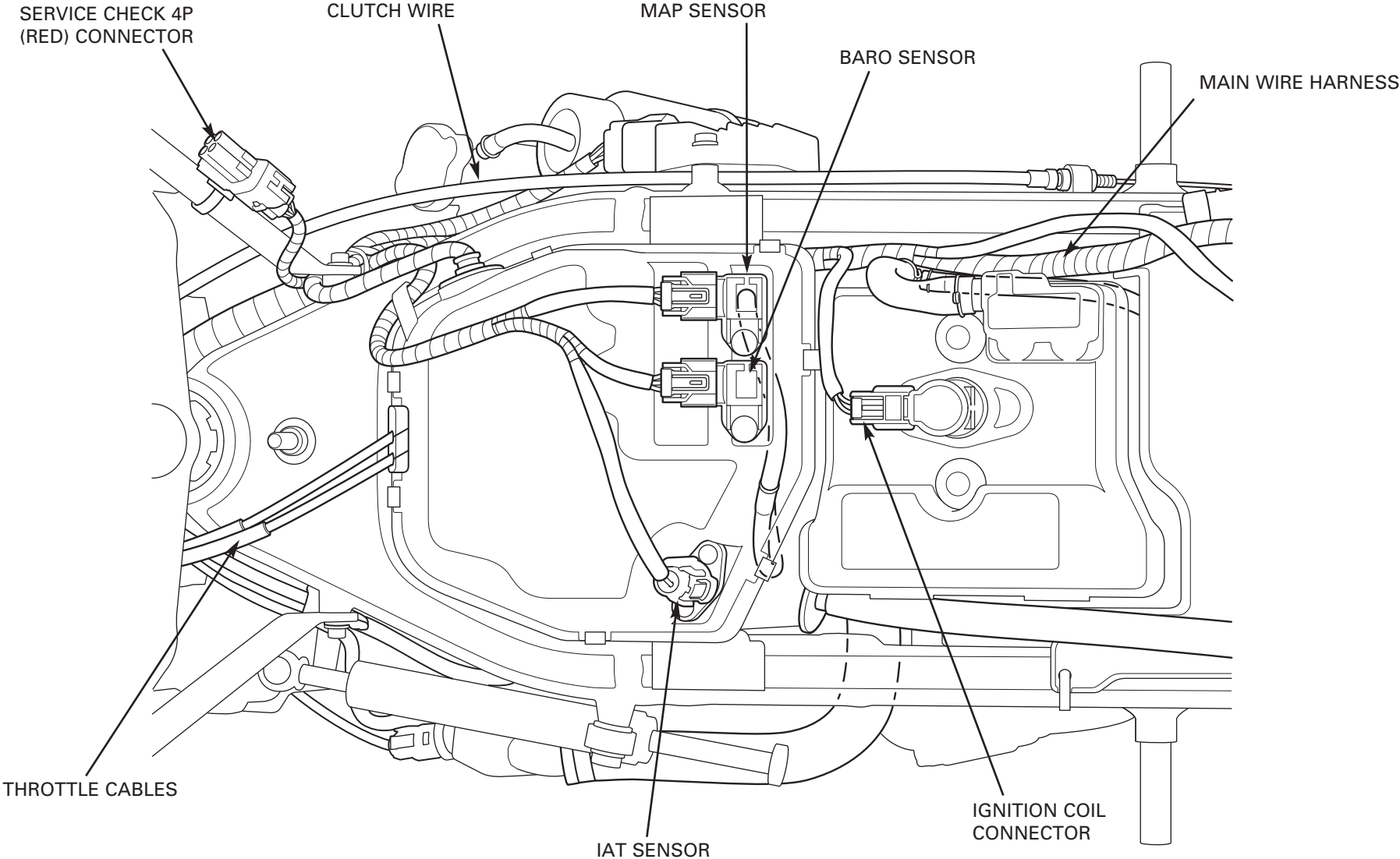
Item	Material	Remarks
Steering stem top thread Stem bearing outer race press area	4-stroke engine oil	
Fork inside Fork oil seal lips	Honda Ultra Cushion Oil #10 or Showa SS8N	
Front brake master cylinder inside Rear brake master cylinder inside	DOT 4 brake fluid	
Caliper piston seal (piston contact area) Brake lever pivot sliding surface Brake lever/master piston contact area Rear brake push rod/master piston contact area Brake caliper pin bolt sliding surface	Silicone grease	
Final driven sprocket bolt threads Fork socket bolt threads	Locking agent	

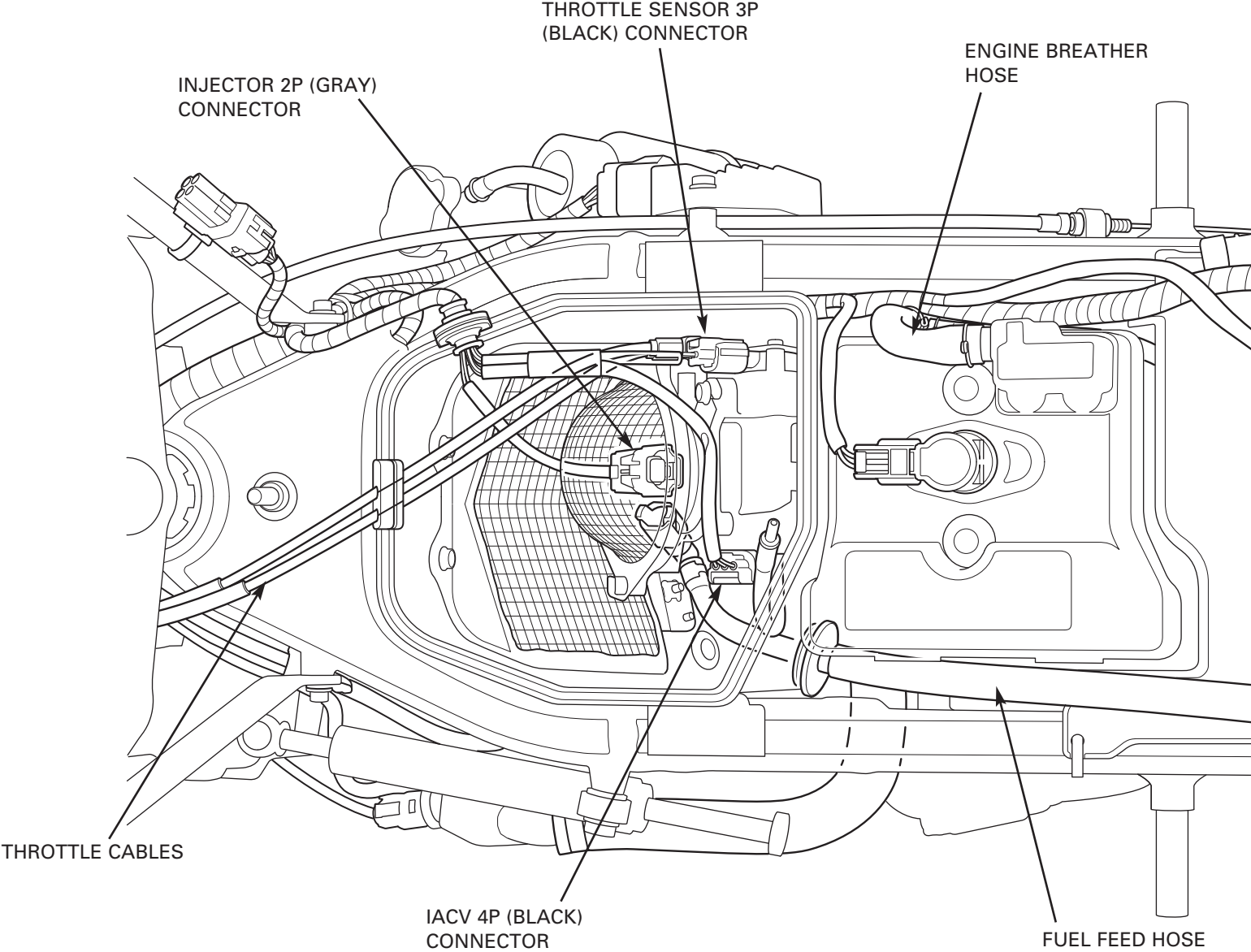
Cable & Harness Routing



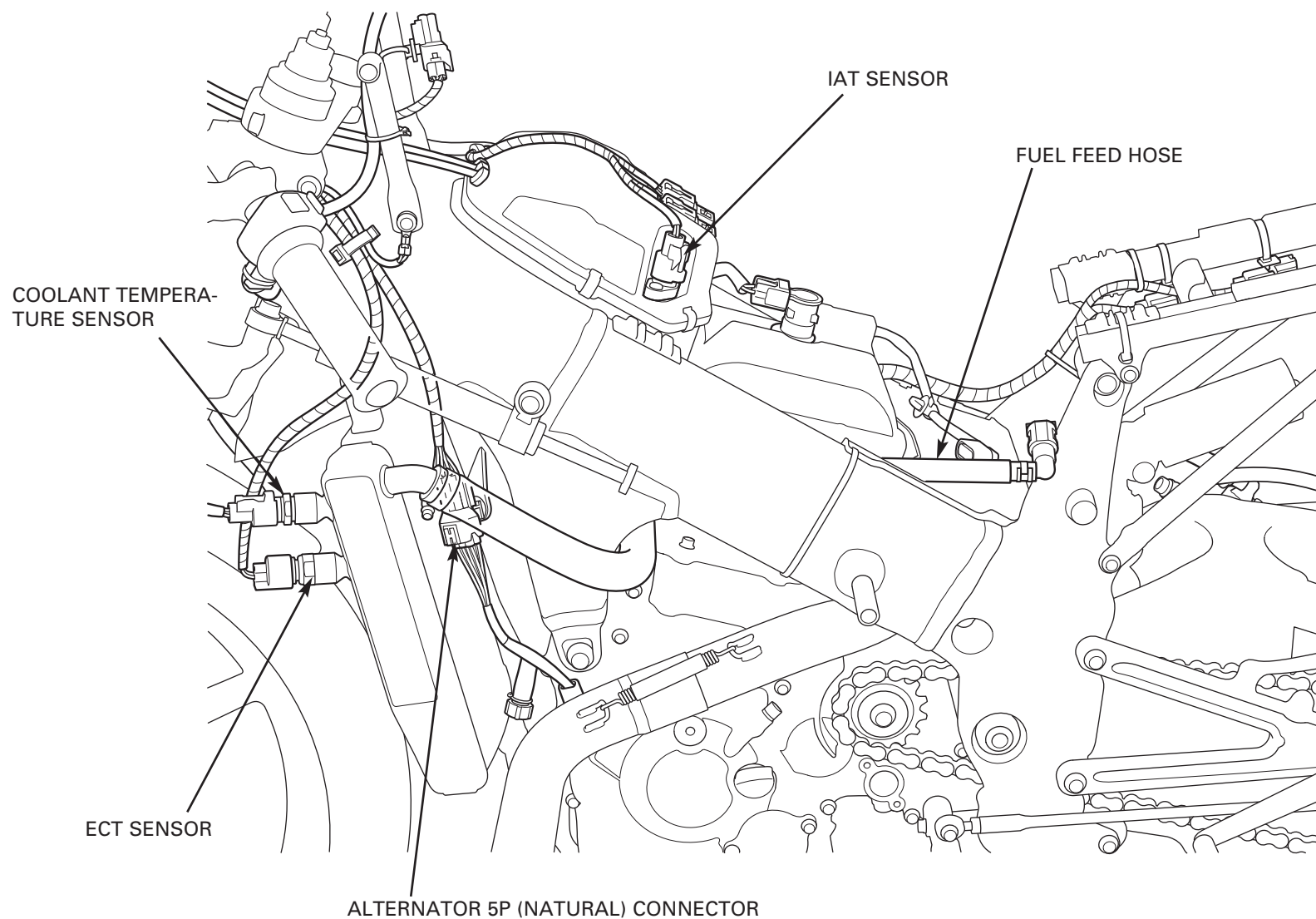


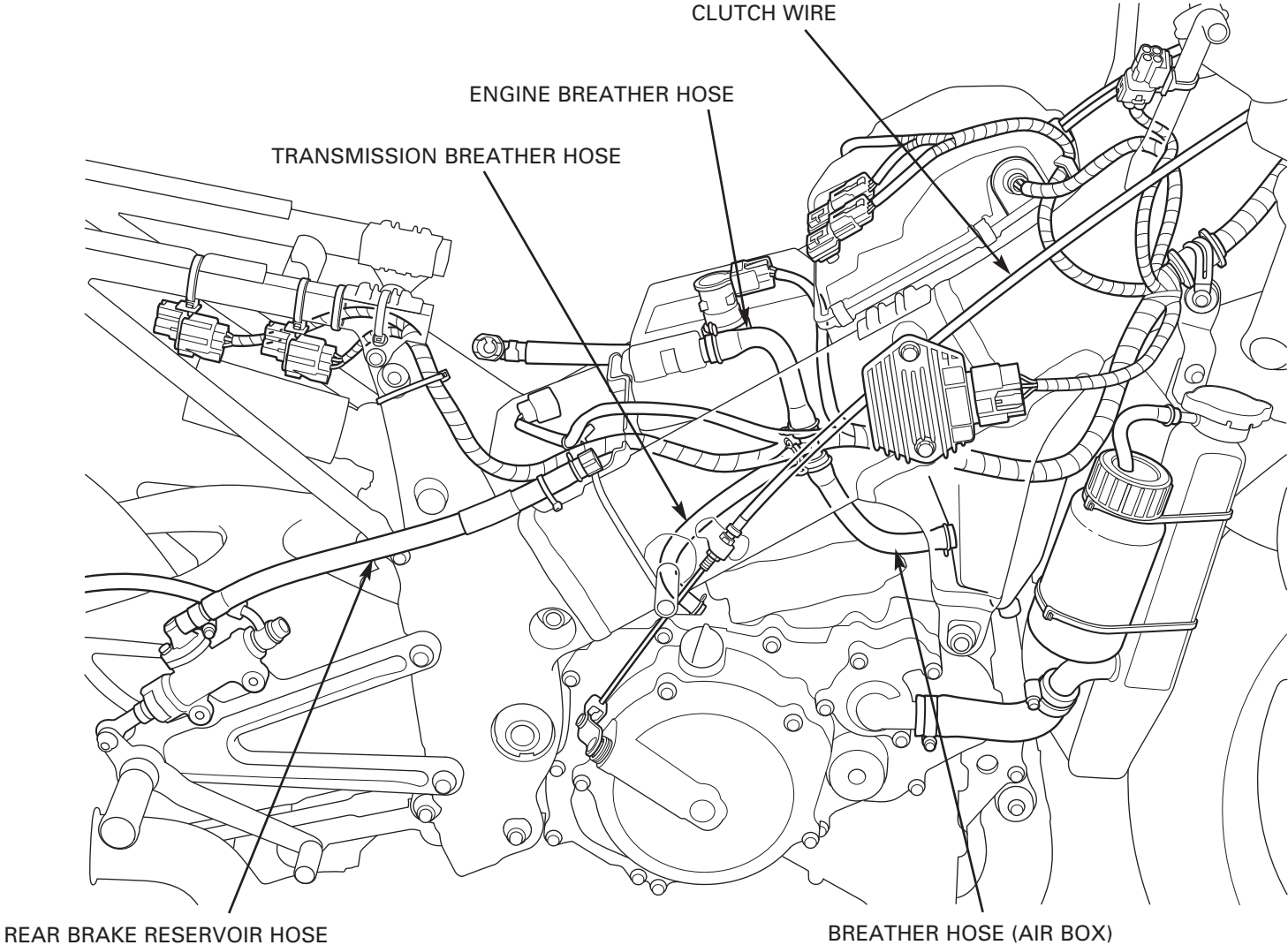


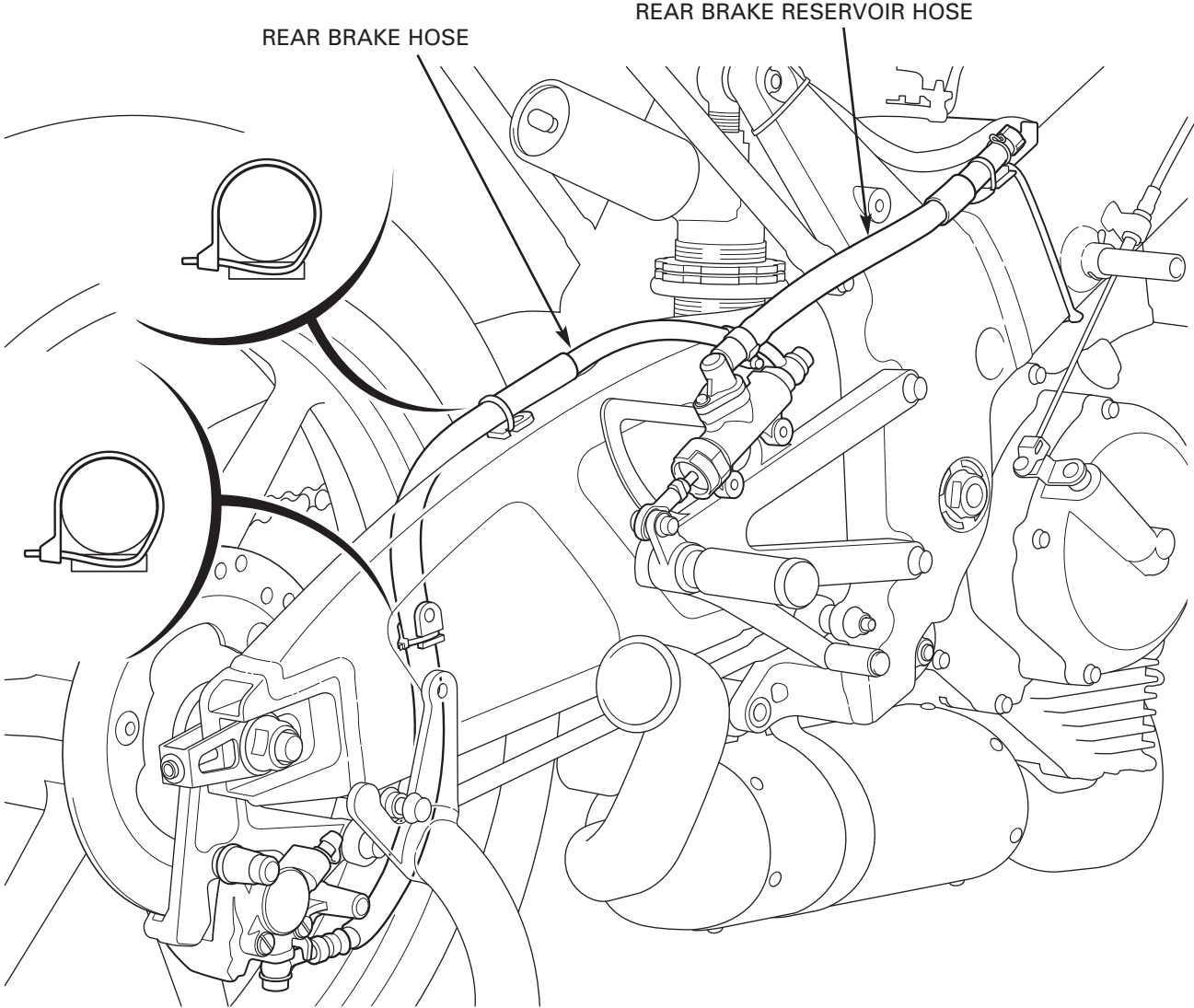












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## Memo

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# 3. Service and Maintenance

## Maintenance Schedule

Perform the Pre-ride Inspection at each scheduled maintenance period.

I: Inspect and Clean, Adjust, Lubricate or Replace if necessary. C: Clean. R: Replace. L: Lubricate.

Item	Frequency	Each race	Remarks
Fuel Line		I	Fuel leak or damage
Air Filter		I	Contamination
Throttle Operation		I	Operation and free play
Spark plug		I	Contamination
Valve Clearance		I	Inspect after breaking in
Engine Oil		R	After breaking in
Transmission Oil		R	After breaking in
Engine Oil Filter		R	After breaking in
Crankcase Breather		I	Drain oil before running
Fuel System		I	Damage
Fuel Pump		I	Clean fuel filter screen
Cooling System		I	Damage and coolant level
Clutch System		I	Slip, clutch grip, cable operation
Clutch discs and plates		R	Slip, clutch grip, wear
Drive Chain		I	Excessive slack, free play
Drive/Driven Sprocket		I	Wear or discoloration Drive sprocket R: 2,000 km
Brake Fluid		I	Fluid level, contamination, R: every 3 races, after riding in rain
Brake System		I	Damage
Brake Pad Wear		I	To the wear limit
Exhaust Pipe/Muffler		I	Damage
Ignition Coil Cap		I	Damage
Suspension		I	Fork fluid: R: first 100 km replace every 5 races
Swingarm/Shock Linkage		I	Wear or damage
Wheel/Tire		I	Wear, grip, runout, wheel damper damage
Steering Head Bearing		I	Bearing operation and excessive play
Nuts/Bolts/Fasteners		I	

- The repair or replacement of any components that are worn or damaged.

## Pre-ride Inspection

For your safety, it is very important to take a few moments before each ride to walk around your NSF250R and check its condition. Improperly maintaining this NSF250R 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 and Pre-race inspection before every ride and correct any problems. Check the following items before you get on the NSF250R:

- Fuel, oil and water leaks
- Engine oil for proper level
- Transmission oil for proper level
- Coolant for proper level
- Spark plug for proper heat range, carbon fouling and spark plug cap terminals for looseness
- Clutch operation and free play
- Steering head bearings and related parts for condition
- Damaged or distorted frame
- Throttle grip and throttle valve operation
- Tires for damaged and proper inflation pressure
- Front and rear suspension for proper operation
- Front and rear brakes, for proper operation
- Drive chain for correct slack and adequate lubrication
- Drive chain slider for damage or wear
- Loose bolts, screws and other fasteners (particularly drain bolt lock wire)

## Service and Maintenance

### Warming-up Inspection

When warming-up the engine:

Do not rev the engine more than necessary or engine damage may result.

Avoid overheating the engine by observing the water temperature meter.

Check for fuel, oil and water leaks

Warm up the engine for a few minutes until it is heated to the operating temperature until the engine responds to the throttle smoothly [water temperature 50 - 60°C (122 - 140°F)].

Always check improper noise and vibration.

### Ride Inspection

When running the NSF, check the following:

Water temperature meter and tachometer

PGM-FI setting

Gear ratio

Improper noise and vibration.

Control system

Brake stopping power

### After Ride Inspection

After riding the NSF, check the following:

Engine oil level

Signs of detonation

Fuel, oil and water leaks

Loose or missing bolts and nuts

### Replacement Parts

#### Parts Requiring Periodic Replacement

When reaches the total running is 2,000 km, must be disassemble the engine and check each part.

Item	Replacement	Inspection	Cause	Remark
<b>Engine</b>		<b>2,000 km</b>		<b>Disassemble check</b>
Crankcase	Every 4,000 km	—	Clack	Cam chain and timing sprocket damage
Cylinder	Every 4,000 km	—	Wear or damage	
Cylinder head	Every 2,000 km	—	Wear or damage	
Valve seat	Every 4,000 km	—	Wear or damage	
Crankshaft	Every 4,000 km	—	Wear or damage	
Crankshaft bearing	Every 4,000 km	—	Wear or damage	Replace with the piston pin Replace with the piston
Connecting rod	Every 4,000 km	—	Wear or damage	
Connecting rod bearing	Every 2,000 km	—	Wear or damage	
Inlet valve	Every 2,000 km	—	Wear or damage	
Exhaust valve	Every 2,000 km	—	Wear or damage	
Valve lifter	Every 4,000 km	—	Wear or damage	
Valve spring	Every 4,000 km	—	Wear or damage	
Valve spring retainer	Every 2,000 km	—	Wear or damage	
Valve spring seat	Every 4,000 km	—	Wear or damage	
Valve stem seal	Every 2,000 km	—	Wear or damage	
Piston	Every 4,000 km	—	Wear or damage	
Piston pin	Every 4,000 km	—	Wear or damage	see page 4-41
Piston ring	Every 2,000 km	—	Wear or damage	
Camshaft (IN/EX)	Every 4,000 km	—	Wear or damage	
Cam sprocket	Every 4,000 km	—	Wear or damage	
Cam chain	Every 2,000 km	—	Stick	
Cam chain tensioner	Every 4,000 km	—	Wear or damage	
		500 km: Adjust clearance		
Cam chain guide	Every 4,000 km	—	Wear or damage	
Cam chain tensioner lifter	Every 2,000 km	—	Wear or damage	
Clutch outer	Every 2,000 km	—	Wear or damage	
Clutch center	Every 2,000 km	—	Wear or damage	

Item	Replacement	Inspection	Cause	Remark
<b>Engine</b>		<b>2,000 km</b>		<b>Disassemble check</b>
Transmission gear/collar/shaft/bearing	Every 2,000 km	—	Wear or damage	
Water pump drive gear	Every 4,000 km	—	Wear or damage	
Water pump driven gear	Every 4,000 km	—	Wear or damage	
Water pump impeller	Every 4,000 km	—	Wear or damage	
Water pump seal/oil seal	Every 4,000 km	—	Wear or damage	
Balancer drive gear	Every 4,000 km	—	Wear or damage	
Balancer driven gear	Every 4,000 km	—	Wear or damage	
Primary drive gear	Every 4,000 km	—	Wear or damage	
Left crankcase cover bushing	Every 4,000 km	—	Wear or damage	
Oil strainer	Every 4,000 km	—	Wear or damage	
Oil pressure relief valve	Every 4,000 km	—	Wear or damage	
Drive sprocket	Every 2,000 km	—	Wear or damage	
Each ball bearing	Every 4,000 km	—	Wear or damage	
Each oil seal	Every 2,000 km	—	Wear or damage	
Fuel filter	Every 2,000 km	—	Contamination	
Engine oil	Every race	—	Contamination	
Engine oil filter	After breaking in Every race	—	Contamination	
Transmission oil	After breaking in Every race	—	Contamination	
Spark plug	After breaking in Every 2,000 km	—	Wear or damage	
<b>Frame</b>				
Drive chain	Every 500 km	—	Slack and wear	
Fork fluid	Every 100 km	—	Contamination	
Brake fluid	Every 5 race	—		
	Every 3 race	—	Contamination	
	After riding in rain			
<b>Electrical</b>				
Ignition coil	Every 4,000 km	—	Wear or damage	

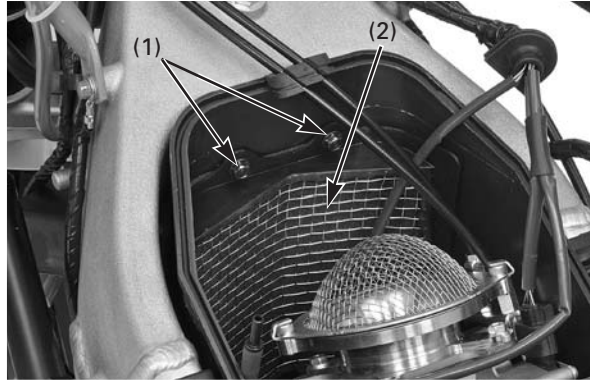
After inspection, replace worn or damaged part with a new one.



(1) FUEL FEED HOSE

### Fuel Line

Check the fuel feed hose for cracks, deterioration or leakage.



(1) BOLTS (2) AIR FILTER

### Air Filter

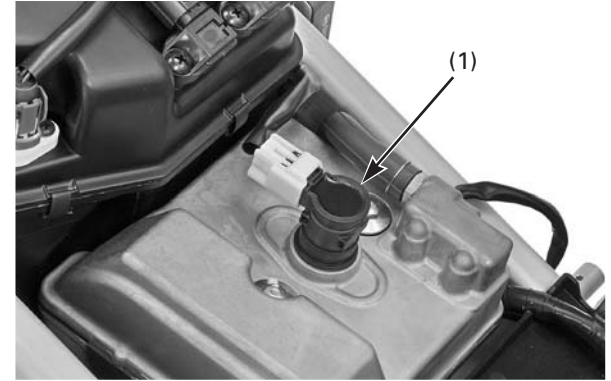
Remove the air box cover (page 4-14).

Remove the bolts and air filter from the air box.

Blow off any dust and dirt from the air filter.

Install the air filter in the reverse order of removal.

Install the bottom of the air filter into the groove in the air box.



(1) DIRECT IGNITION COIL

### Spark Plug

#### **NOTICE**

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

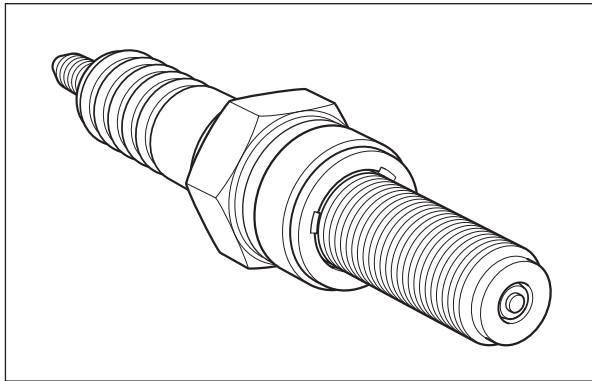
Using a spark plug with the wrong heat range can damage the engine or cause the plugs to foul. Always use specified spark plug for this machine.

**Specified plug:**  
**NGK: R0452A-10 (Iridium)**

Before removing the spark plug, clean around the spark plug bases with compressed air, and be sure that no debris is allowed to enter the combustion chamber.

Remove the direct ignition coil and remove the spark plug.





**Flash Over**

If engine misfire occurs due to arcing, replace both the spark plug and the cap.



(1) TIMING HOLE CAP

**Valve Clearance**

**Inspection**

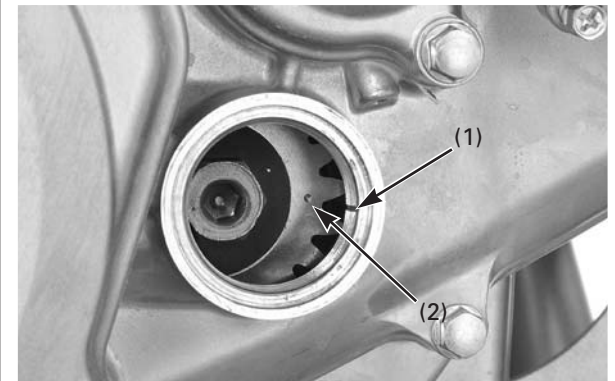
Inspect and adjust the valve clearance while the engine is cold (below 35°C/95°F).

Remove the engine from the frame (page 4-21).  
Remove the cylinder head cover (page 4-27).

Remove the timing hole cap and O-ring from the left crankcase cover.



(1) CRANKSHAFT HOLE CAP

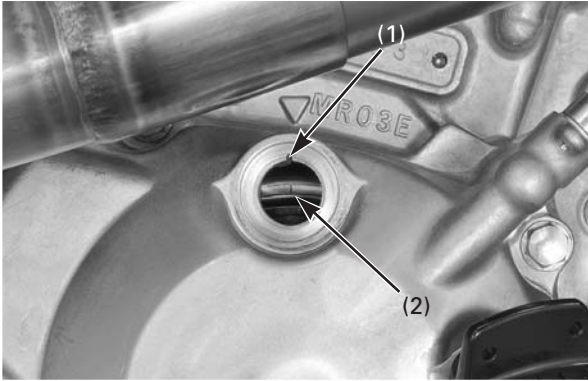


(1) INDEX MARK (2) PUNCH MARK

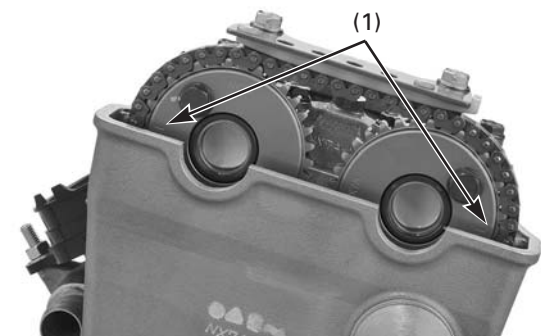
Remove the crankshaft hole cap and O-ring from the right crankcase cover.

Turn the crankshaft clockwise (from the right crankcase cover side), align the "T" mark on the flywheel with the index mark on the left crankcase cover.

## Service and Maintenance



(1) INDEX MARK (2) "T" MARK

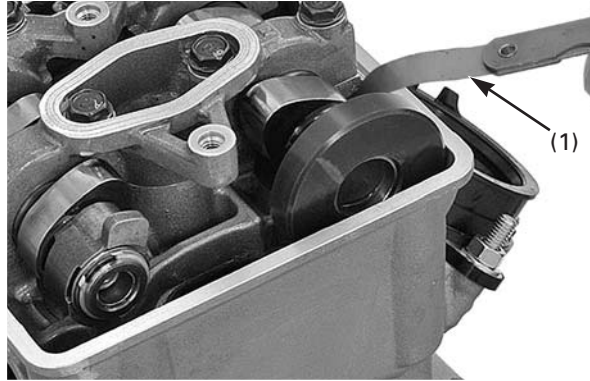


(1) CAM SPROCKET

Make sure the "T" mark on the flywheel aligns with the index mark on the left crankcase cover.

Check that the index lines on the cam sprockets are flush with cylinder head upper surface and facing outward each other (piston at top dead center on a compression stroke).

If the index lines are facing inward, turn the crankshaft one full turn (360°) and align its index lines.

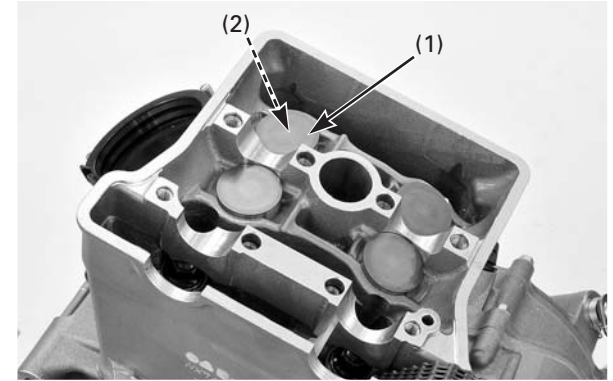


(1) FEELER GAUGE

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

**Valve clearance:**

**IN:**  $0.20 \pm 0.02 \text{ mm}$  ( $0.008 \pm 0.001 \text{ in}$ )  
**EX:**  $0.30 \pm 0.02 \text{ mm}$  ( $0.012 \pm 0.001 \text{ in}$ )

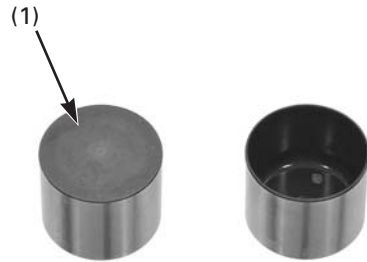


(1) VALVE LIFTER  
(2) SHIM

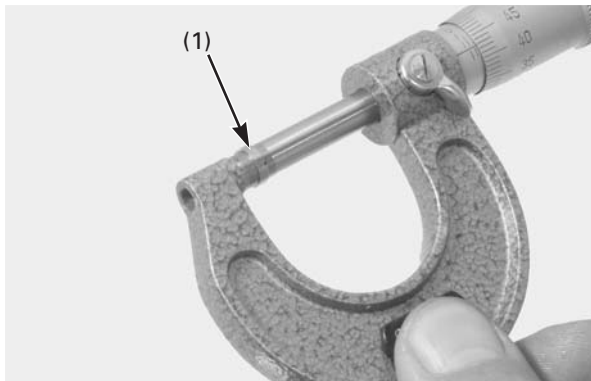
If necessary, adjust the valve clearance.

Remove the valve lifters and shims.

- Shim may be placed to the inside of the valve lifter. Do not allow the shims to fall into the crankcase.
- Mark all valve lifters and shims to ensure correct reassembly in their original locations.
- The valve lifter can be easily removed with a valve lapping tool or magnet.
- The shims can be easily removed with tweezers or a magnet.



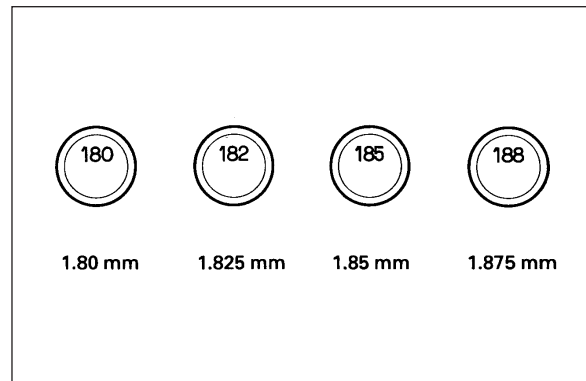
(1) VALVE LIFTER



(1) SHIM

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

Measure the shim thickness and record it.



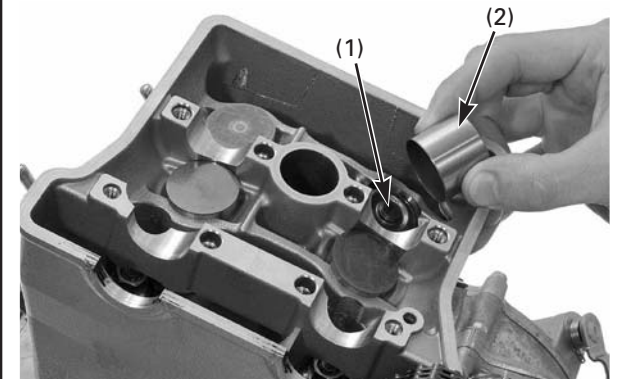
Sixty-five different thickness shims are available from the thinnest 1.200 mm thickness shim to the thickest 2.800 mm shim in intervals of 0.025 mm.

Calculate the new shim thickness using the equation below.

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

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

- Make sure of the correct shim thickness by measuring the shim by micrometer.
- Reface the valve seat if carbon deposit result in a calculated dimension of over 2.800 mm.



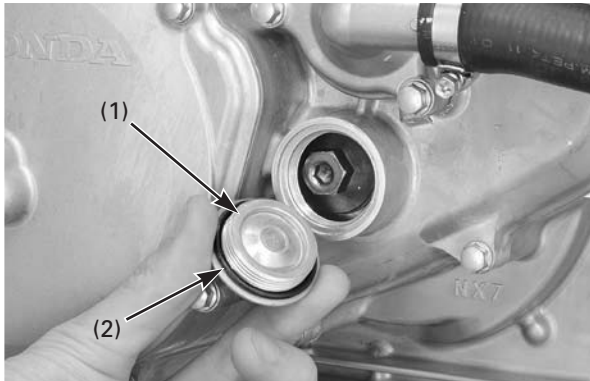
(1) SHIM  
(2) VALVE LIFTER

Install the newly selected shim on the valve retainer. Apply molybdenum disulfide oil to the valve lifters and install them into the valve lifter bores.

- Install the shims and valve lifters in their original locations.

Install the camshaft (page 4-38). Rotate the camshafts by rotating the crankshaft clockwise several times. Recheck the valve clearance.

Remove the cam chain tensioner stopper tool. Install the cam chain tensioner lifter sealing bolt with a new sealing washer, then tighten the bolt.



(1) CRANKSHAFT HOLE CAP  
(2) O-RING



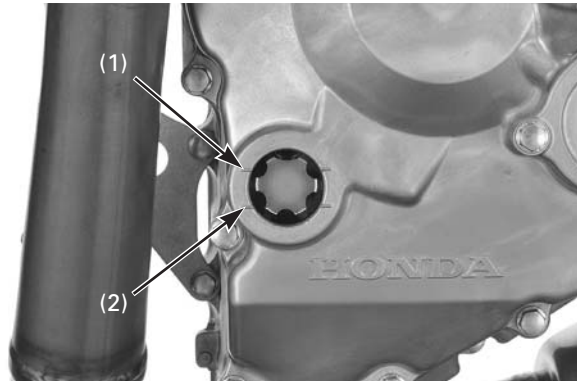
(1) TIMING HOLE CAP  
(2) O-RING

Apply grease to the new O-ring and install it onto the crankshaft hole cap. Install and tighten the crankshaft hole cap to the specified torque.

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

Apply grease to the new O-ring and install it onto the timing hole cap. Install and tighten the timing hole cap to the specified torque.

**Torque: 6 N·m (0.6 kgf·m, 4.4 lbf·ft)**



(1) UPPER LEVEL MARK  
(2) LOWER LEVEL MARK

### Engine Oil/Oil Filter

#### Oil Level Inspection

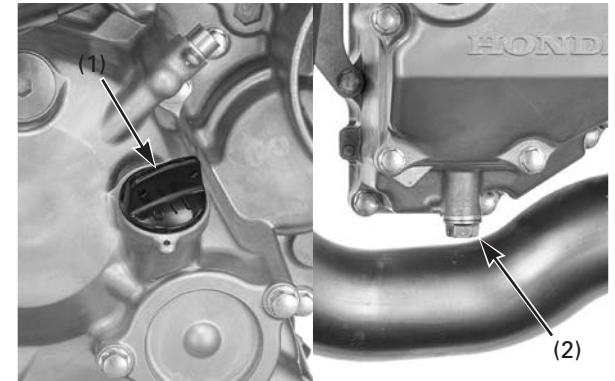
Start the engine and let it idle for a few minutes.

Stop the engine, support the machine using a maintenance stand.

Wait for a few minutes.

Remove the machine from a maintenance stand and support it with upright position on level ground.

Check that the oil level is between the upper and lower level marks in the inspection window.



(1) OIL FILLER CAP  
(2) DRAIN BOLT

#### Oil Change

Change the engine oil with the engine warm. Support the machine using a maintenance stand to assure complete and rapid draining.

1. Cut the locking wires from the oil filler cap and oil drain plug.
2. Remove the oil filler cap.
3. Place an oil drain pan under the engine and remove the drain bolt.
4. After the oil has completely drained, make sure that the sealing washer is in good condition and reinstall the drain bolts. Tighten the drain bolt to the specified torque.

**Torque: 16 N·m (1.6 kgf·m, 12 lbf·ft)**





(1) OIL FILLER CAP

5. Pour the recommended engine oil slowly through the oil filler hole.

**Suggested engine oil:**

**Honda 4-stroke motorcycle oil or equivalent**

**Viscosity: SAE 10W-30**

**API Classification: SG or higher**

**(except oils labeled as energy conserving on the circular API service label)**

**JASO T 903 standard: MA**

**Capacity:**

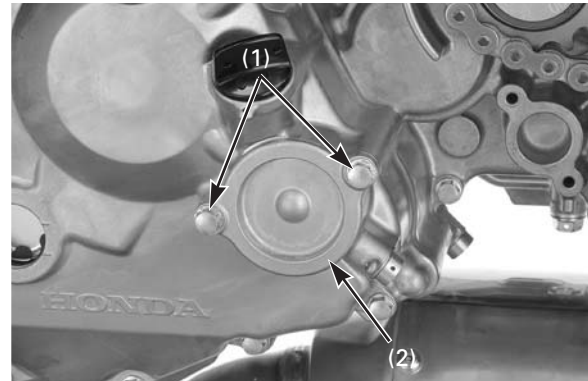
**1.16 liter (1.23 US qt, 1.02 Imp qt) at draining**

**1.20 liter (1.27 US qt, 1.06 Imp qt) at filter change**

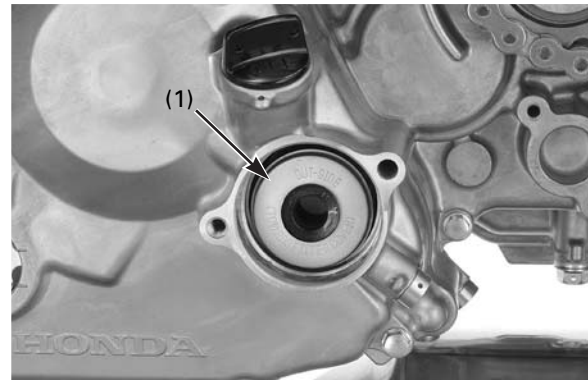
**1.37 liter (1.45 US qt, 1.21 Imp qt) at disassembly**

Install the oil filler cap.

Secure the filler cap and drain bolt using a locking wire.



(1) BOLTS (2) OIL FILTER COVER



(1) OIL FILTER/SPRING

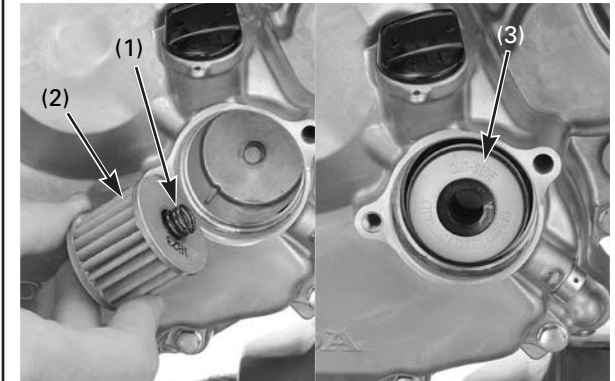
**Oil Filter Change**

Remove the locking wire from the oil pump cover bolts.

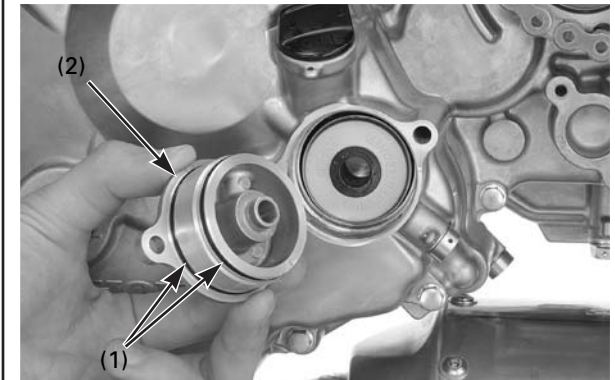
Remove the oil filter cover bolts.

Remove the oil filter cover and O-rings.

Remove the oil filter and spring.



(1) SPRING (2) OIL FILTER  
(3) OUTSIDE MARK

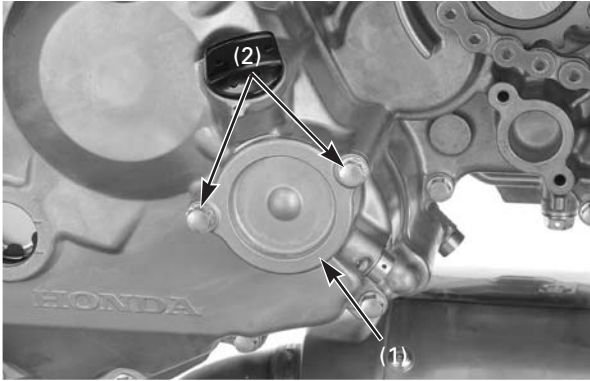


(1) NEW O-RINGS (2) OIL FILTER COVER

Install the oil filter and spring into the left crankcase cover with the "OUTSIDE" mark on the oil filter facing out.

Apply grease to the oil filter cover O-rings.

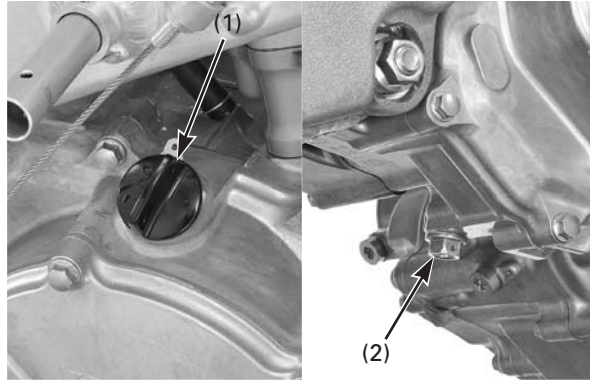
Install the oil filter cover to the left crankcase cover.



(1) OIL FILTER COVER (2) BOLTS

Install and tighten the oil filter cover bolts.  
Secure the drain plug and filter cap with lock wire.

Fill the crankcase with the recommended oil (see previous page).



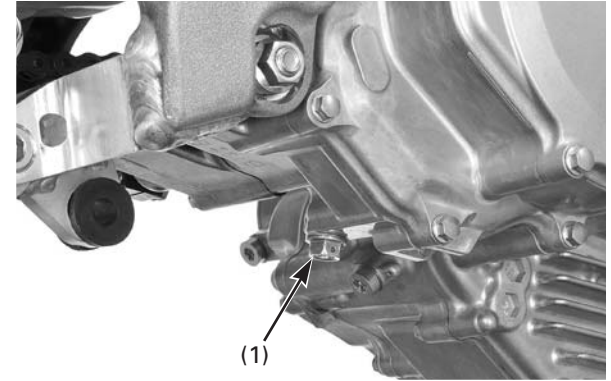
(1) OIL FILLER CAP (2) DRAIN PLUG

### Transmission Oil

#### Oil Change

Change the transmission oil with the engine warm. Support the machine upright to assure complete and rapid draining.

1. Cut and remove the lock wire from the oil drain plug and filler cap.
2. Remove the oil filler cap.



(1) DRAIN PLUG

3. Place an oil drain pan under the engine and remove the drain plug.
4. After the oil has completely drained, make sure that the sealing washer is in good condition and reinstall the drain bolts. Tighten the drain bolt to the specified torque.

**Torque: 16 N·m (1.6 kgf·m, 12 lbf·ft)**

5. Pour the recommended transmission oil slowly through the oil filler hole.

#### Suggested transmission oil:

**Honda 4-stroke motorcycle oil or equivalent**

**Viscosity: SAE 10W-30**

**API Classification: SG or higher**

**(except oils labeled as energy conserving on the circular API service label)**

**JASO T 903 standard: MA**

#### Capacity:

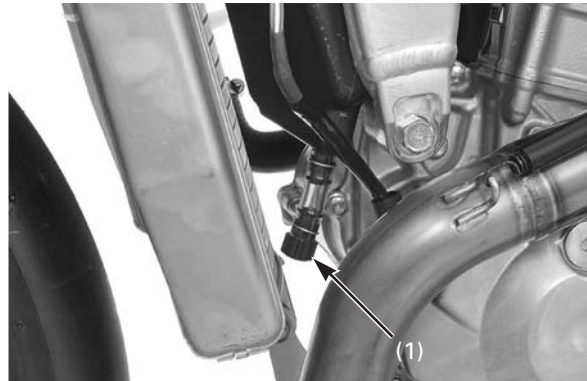
**0.49 liter (0.52 US qt, 0.43 Imp qt) at draining**

**0.55 liter (0.61 US qt, 0.51 Imp qt) at disassembly**



(1) OIL FILLER CAP

6. Install the oil filler cap.
7. Secure the oil filler cap and drain plug with lock wire.



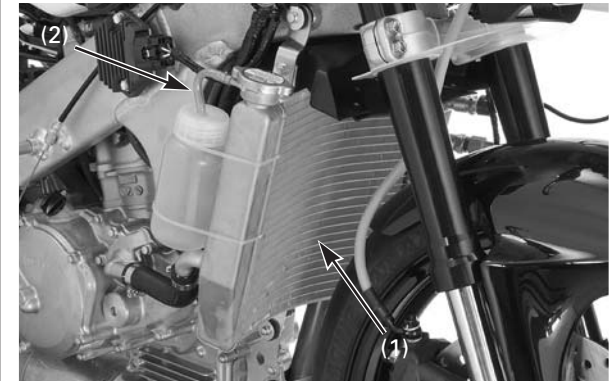
(1) TUBE DRAIN PLUG

### Crankcase Breather

The bottom of the air box serves as an oil catch tank to trap oil bled from the crankcase through the breather tube.

Before starting, remove the drain plug to drain oil from the air box into a proper container.

After draining, be sure to install the drain plug securely.

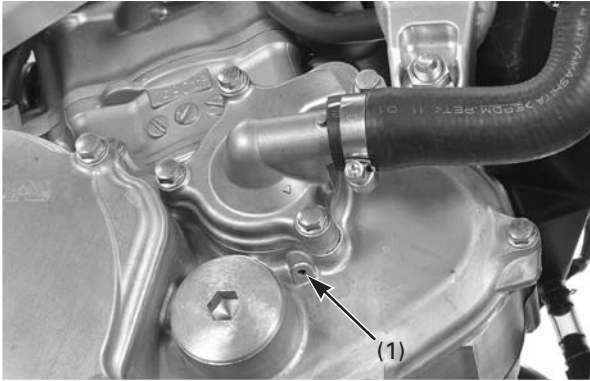


(1) RADIATOR  
(2) OVERFLOW TUBE

### Coolant

#### Cooling System Inspection

1. Check the cooling system for leaks.
2. Check water hoses for cracks, deterioration, and clamp bands for looseness.
3. Check the radiator mount for looseness.
4. Make sure the overflow tube is connected and not clogged.
5. Check radiator fins for obstructions or damage.



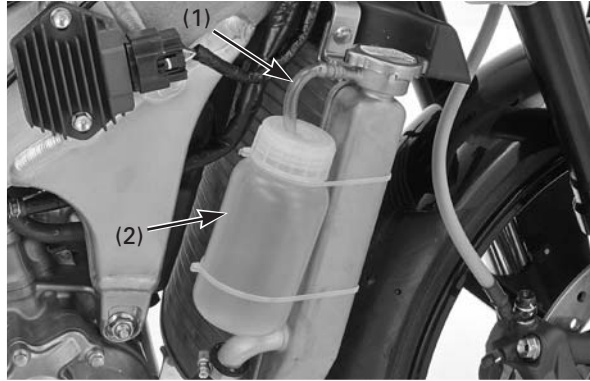
(1) INSPECTION HOLE

6. Check the water pump inspection hole front side of the water pump for leakage. Make sure the hole remains open.

If water leaks through the check hole, the water seal is damaged.

If oil leaks through the check hole, the oil seal is damaged.

Replace the water seal or the oil seal (page 4-24).

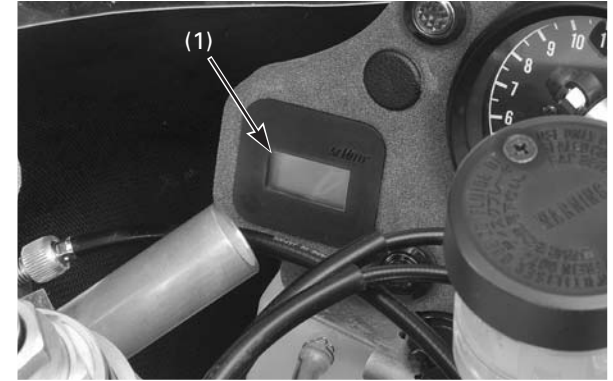


(1) OVERFLOW TUBE  
(2) CATCH TANK

### Coolant Overflow Catch Tank

The coolant overflow catch tank traps coolant vapor from the radiator through the overflow tube. Make sure that the end of the overflow tube is inserted into the hole in the catch tank as shown.

Before starting, drain coolant from the catch tank. Drain the coolant into a suitable container.



(1) COOLANT TEMPERATURE METER

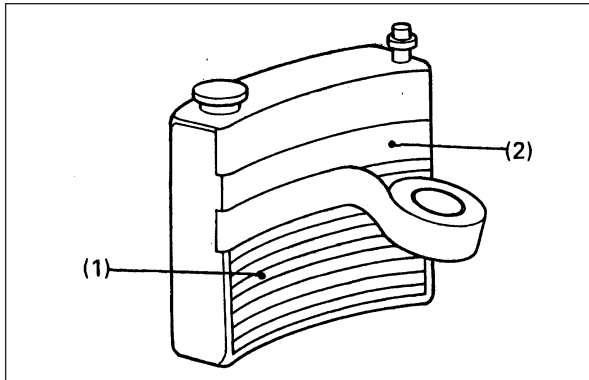
### Coolant Temperature Meter

Block the air flow through the radiator, and make sure the water temperature stays within the operating temperature range.

**Normal operating temperature:**  
**65 – 75°C (149 – 167°F)**

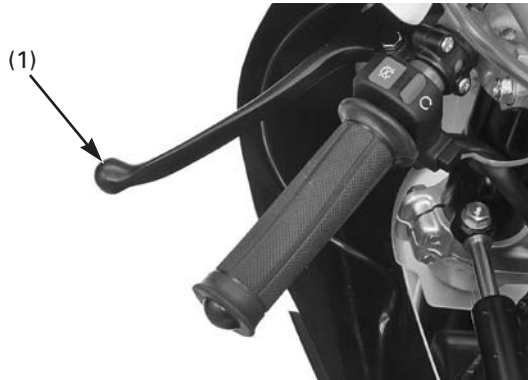
The water temperature will only display in a range from 25°C to 99°C (77°F to 210°F). The figure disappears within 30 minutes after the engine stop button is turned off.





(1) RADIATOR (2) COVERING

If the indication never changes from (-°C), check the radiator coolant level and temperature (25 – 99°C/77 – 210°F), and then inspect the water temperature sensor and harness (page 6-9).

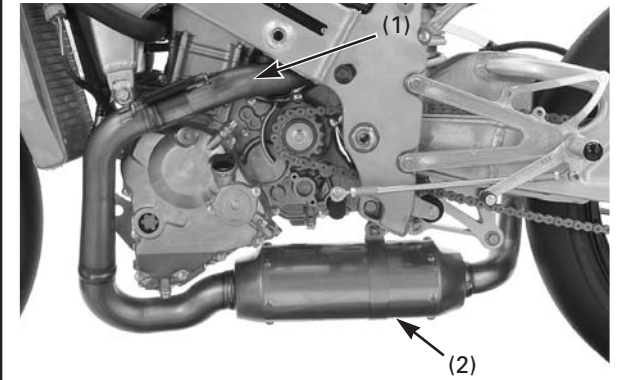


(1) CLUTCH LEVER

### Clutch

#### Operation

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



(1) EXHAUST PIPE (2) MUFFLER

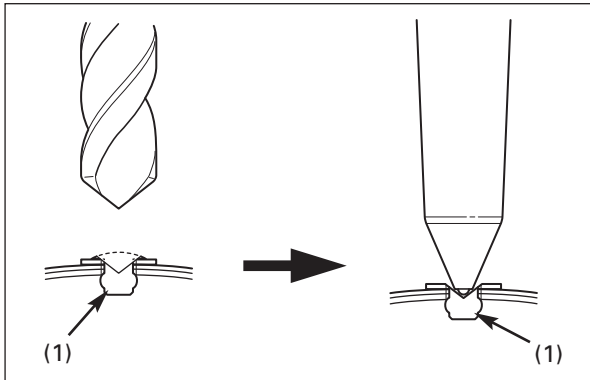
### Exhaust Pipe/Muffler

#### Inspection

Check the muffler for clogging.  
Check for loose or missing bolts and nuts.  
Check for exhaust pipe/muffler for cracks or deformation.

Loss of power will result if the exhaust pipe is broken.

## Service and Maintenance



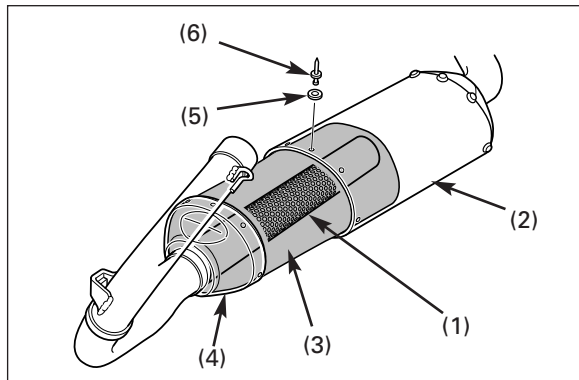
(1) RIVET

### Glass Wool Replacement

The silencer consists of an inner pipe, outer body, noise-absorbing glass wool, front outer, rear outer and exhaust pipe.

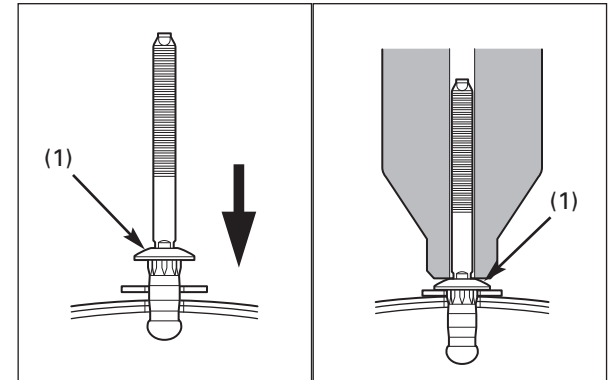
To replace the glass wool:

1. Drill off the heads of 8 rivets at the front end of the front outer. Press the rivets down into the casing using a 5 mm pin or rod.
2. Remove the outer body from the front outer.



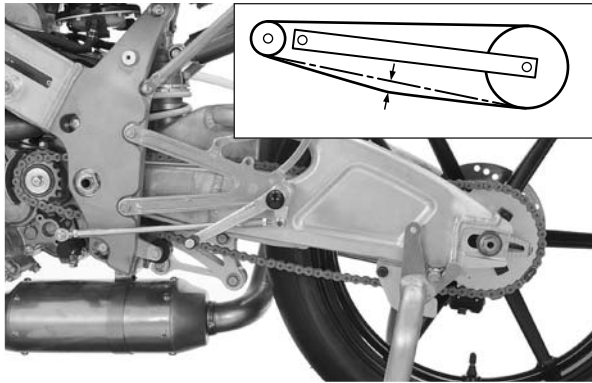
(1) INNER PIPE (2) OUTER BODY  
(3) GLASS WOOL (4) FRONT OUTER  
(5) WASHER (6) RIVET

3. Remove the glass wool.  
Install the new glass wool onto the inner pipe.
4. Apply sealant (HSSK-316C) to the mating surface between the front outer and outer body, then install the glass wool/inner pipe/front outer assembly into the outer body.



(1) RIVET

5. Drive 7 stainless pop rivets (4.8 mm) through the holes in the outer body after applying epoxy based adhesive.



(1) DRIVE CHAIN SLACK

## Drive Chain

### Drive Chain Slack Inspection

During the break-in period, drive chain slack should be checked and adjusted often. This also applies to after drive chain replacement. Regular cleaning, lubrication, and proper adjustment will help to extend the service life of the drive chain.

Turn the engine off and place the machine on the maintenance stand.

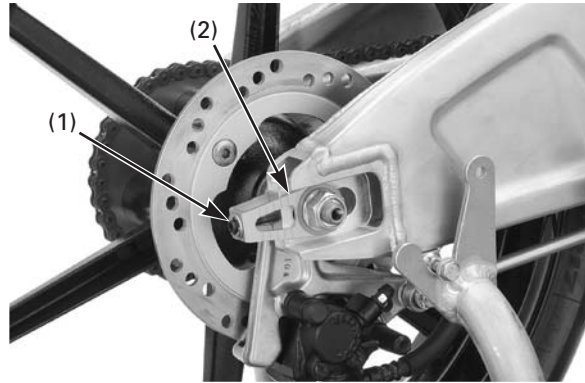
Push the upper section of the drive chain, make sure the lower chain line is straight.

With the transmission in neutral, measure chain slack at the lower section midway between the sprockets by pushing the chain downward.

**Drive chain slack: 11 – 14 mm (0.4 – 0.6 in)**

Rotate the wheel and chain slack in several sections. If slack in one section increases beyond the standard measurement, this indicates the chain has stretched and needs to be replaced.

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



(1) ADJUSTING BOLT (2) REFERENCE MARKS

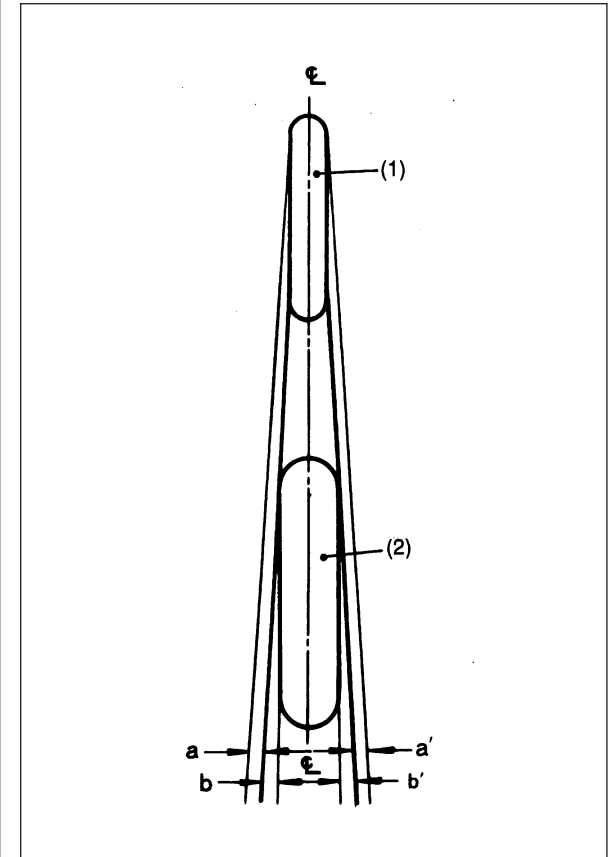
### Drive Chain Slack Adjustment

Loosen the rear axle nut. Turn the adjusting bolt clockwise to increase slack or counterclockwise to decrease slack. Align the same reference marks on both side of the adjusters with the rear ends of the swingarm.

Check the wheel alignment. Tighten the rear axle nut to the specified torque.

**Torque: 70 N·m (7.1 kgf·m, 52 lbf·ft)**

Recheck the drive chain slack and free wheel rotation. Lubricate the drive chain.



(1) FRONT TIRE (2) REAR TIRE

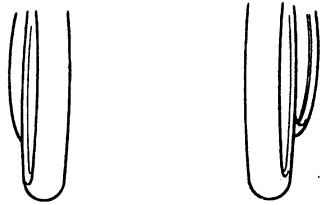
### Wheel Alignment

After adjusting the drive chain slack, check the front and rear wheels for alignment.

1. Place the machine upright on firm, level ground.
2. Stand at a position 1 – 2 m from the rear end of the machine on either side; squat down.

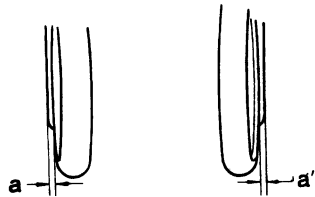
## Service and Maintenance

Adjust the distance "aa" so it is equal on both side



In the illustration above, the handlebar is turned too far toward the right.

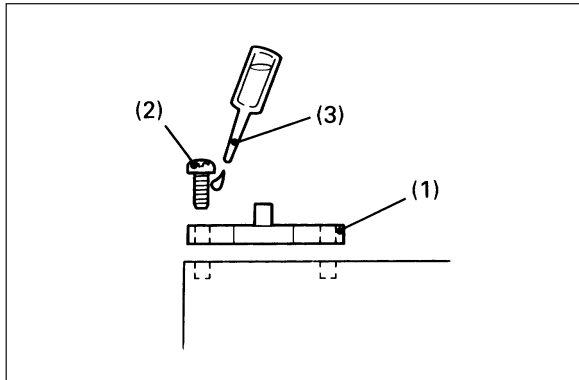
Distance "aa" is equal on both sides



In the illustration above, rear wheel is not yet aligned.

3. Position the front wheel straight-ahead by turning the handlebars and noting the distance between the outer edges of the front and rear wheel on that side.

Repeat steps 2 and 3 on the opposite side, being sure that the difference is equal on both sides. Adjust by loosening the rear axle nut and turning the drive chain adjusting bolt.



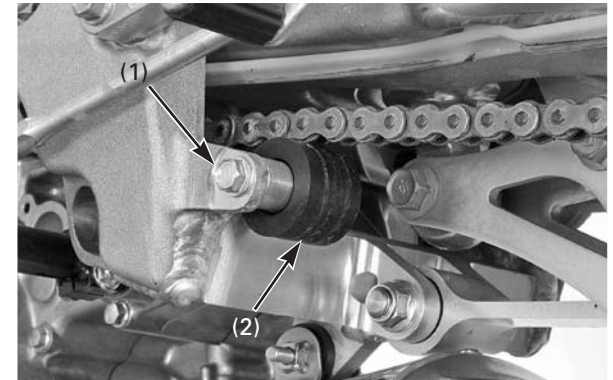
(1) DRIVE CHAIN SLIDER (2) SCREW  
(3) LOCKING AGENT

### Drive Chain Slider/Roller

#### Drive Chain Slider Inspection/Replacement

Check the drive chain slider for wear or damage. If the wear is 2.0 mm (0.08 in) or more, replace the slider.

At replacement, apply a locking agent to the drive chain slider mounting screw threads. The screws must be retightened after break-in.

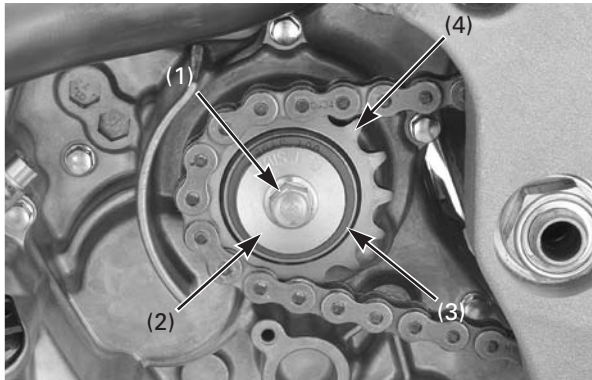


(1) BOLTS/NUTS (2) DRIVE CHAIN ROLLER

#### Drive Chain Roller Inspection

Check for drive chain roller for wear or damage. If the drive chain roller is wear or damage, replace the drive chain roller with a new one.

Tighten the drive chain roller mounting bolt/nut.



(1) BOLT (2) SPROCKET COLLAR  
(3) SPRING WASHER  
(4) DRIVE SPROCKET

## Sprockets

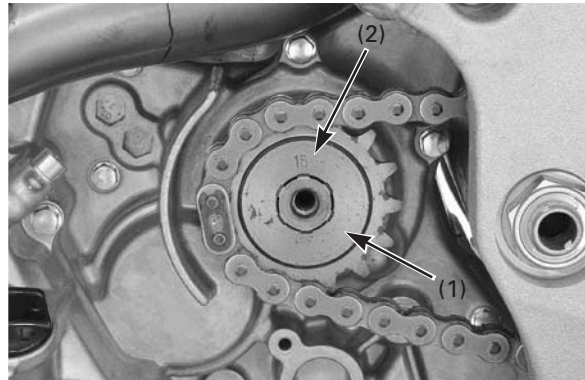
### Drive Sprocket Replacement

Remove the lower cowl.  
Loosen the drive chain (page 3–15).

Shift the transmission into low gear, apply the rear brake.

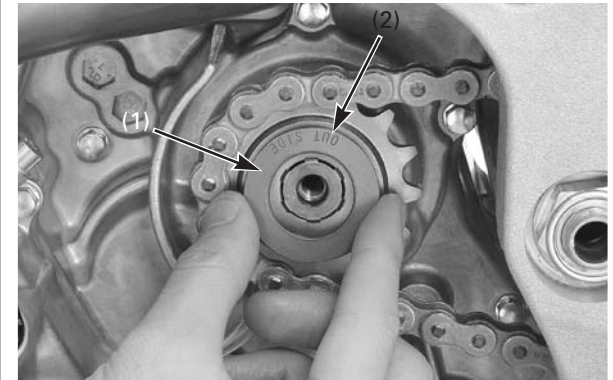
Remove the following:

- Drive sprocket bolt
- Drive sprocket collar
- Spring washer
- Drive sprocket

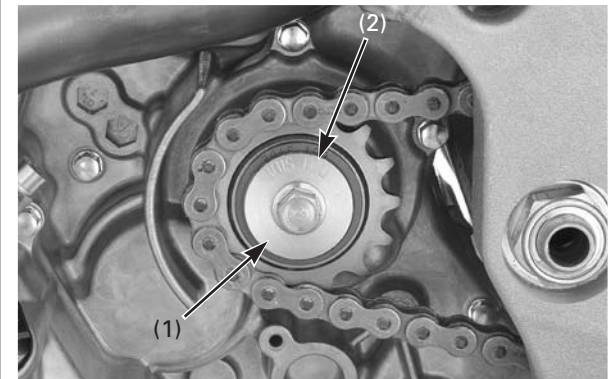


(1) DRIVE SPROCKET (2) NUMBER OF TEETH

Install the drive sprocket with its etched number (number of teeth) facing outward.



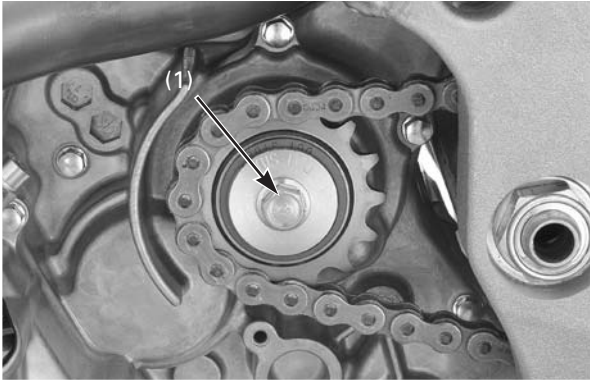
(1) SPRING WASHER (2) "OUTSIDE" MARK



(1) SPROCKET COLLAR (2) "OUTSIDE" MARK

Install the spring washer with its "OUTSIDE" mark facing outward.

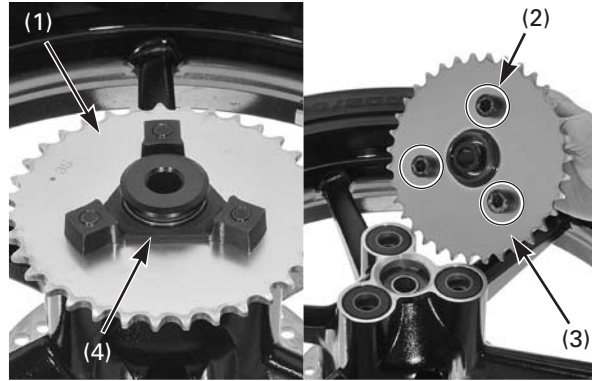
Install the sprocket collar with its "OUTSIDE" mark facing outward.



(1) DRIVE SPROCKET BOLT

Shift the transmission into low gear, apply the rear brake.  
Tighten the drive sprocket bolt to the specified torque.

**Torque: 31 N•m (3.2 kgf•m, 23 lbf•ft)**



(1) DRIVEN FLANGE ASSEMBLY  
(2) SOCKET BOLT (3) DRIVEN SPROCKET  
(4) DRIVEN FLANGE

### Driven Sprocket Replacement

Remove the rear wheel (page 5–19).

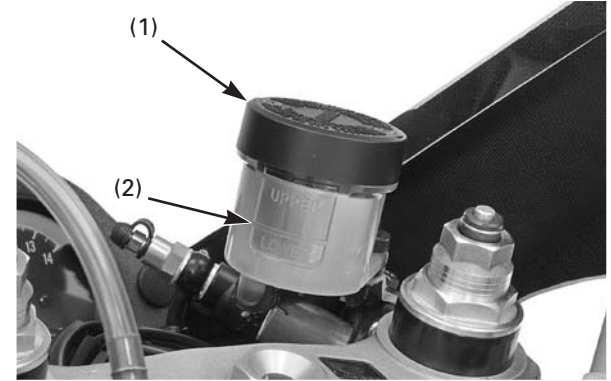
Remove the drive flange assembly from the rear wheel hub.

Remove the driven sprocket bolts and driven sprocket from the driven flange.

Install the driven sprocket in the reverse order of removal.

**Torque: 62 N•m (6.3 kgf•m, 46 lbf•ft)**

Adjust the drive chain slack (page 3–15).  
Check the wheel alignment (page 3–15).



(1) COVER (2) LOWER LEVEL

### Brake Fluid

#### Front Brake Master Cylinder

Always inspect the brake fluid level, and relief the vacuum pressure in the reservoir.

Remove the master cylinder cover, set plate and diaphragm.

If the fluid level is lower than the lower level, check for the brake pad wear.  
Replace the brake pad if necessary.  
Refer to page 5–32 for brake pad replacement.

Also check the brake system for leaks.

Check that the brake hose do not bind or kink in all steering position, and is not pulled when the suspension is extended.

Replace the brake fluid every 3 races.  
Do not service the brake system in high humidity.  
Replace the brake fluid after riding in the rain.

**Brake fluid: DOT 4 Only**





(1) VINYL TUBE

### Rear Master Cylinder

The rear master cylinder uses a vinyl tube in place of the reservoir.

Always inspect the brake fluid level, and relief vacuum pressure in the tube.

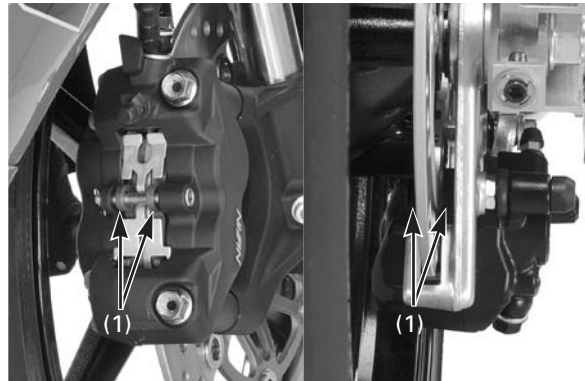
**Fluid level: 40 – 50 mm (1.6 – 2.0 in) from the top of the tube**

If the fluid level is low, check the brake pad for wear. Replace the brake pads if necessary. Refer to page 5-33 for brake pad replacement.

Replace the brake fluid every 3 races. Do not service the brake system in high humidity. Replace the brake fluid after riding in the rain.

### Brake fluid: DOT 4 Only

The vinyl tube will harden over time so it should be replaced every 6 months.

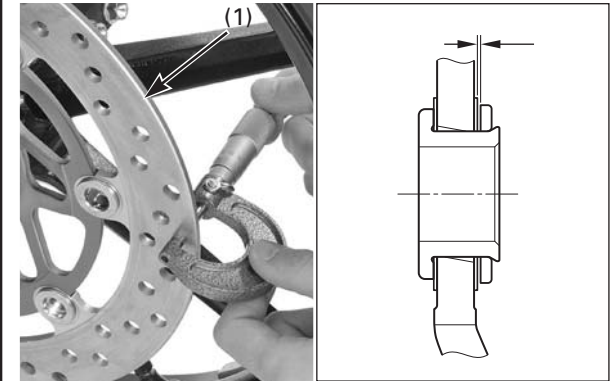


(1) BRAKE PADS

### Brake Pad Wear

Inspect the brake pads visually to determine the pad wear.

If either pad is worn anywhere to a thickness of 1mm, both pads must be replaced (page 5-32).



(1) BRAKE DISC

### Brake System

Refer to page 1-6 for Brake Lever Adjustment. Refer to page 1-6 for Brake Pedal Height Adjustment.

#### Brake Discs

Measure the brake disc thickness.

**Service limit: Front: 3.5 mm (0.14 in)**  
**Rear: 3.5 mm (0.14 in)**

Replace the brake disc if necessary.

Measure the rear brake disc runout with a dial gauge.

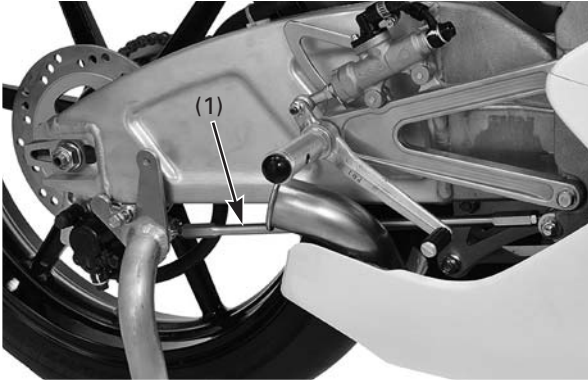
**Service limit: 0.3 mm (0.012 in)**

Measure the floating distance using a feeler gauge.

**Service limit: 0.5 mm (0.02 in)**

Replace the brake disc if the runout exceeds the service limit.

Refer to pages 5-1 and 5-19 for removal.



(1) TORQUE ROD

### Rear Brake Torque Rod

A floating type torque rod is used for the rear brake. The rod should be adjusted so that its length is 370 mm (14.6 in).

#### **Standard length: 370 mm (14.6 in)**

The standard length refers to the distance between the centers of the spherical bearing at the ends of the rod.



(1) PINCH BOLT

### Handlebar And Steering Head Bearings

#### **Handlebar**

Check the handlebar for bends or cracks.

Check that the handlebar has not moved from its proper position.

#### **Standard position: Contact with the bottom of top bridge**

Check that the handlebar pinch bolts are torqued to 22 N•m (2.2 kgf•m, 16 lbf•ft).



### Steering Head Bearings

Support the machine with its front wheel off the ground.

Turn the handlebar to the right and left to check for roughness in the steering head bearings. Stand in front of the machine and grab the fork (at the axle), then push the fork in and out (toward the engine) to check for play in the steering head bearings. If any roughness or play is felt, adjust or replace the steering head bearings.





(1) WHEEL (2) TIRE

## Wheels And Tires

The optional wheels and tires are available. The wheels and tires should be selected for track condition and temperature.

Proper air pressure will provide maximum stability and tire life.

Check tire pressure frequently and adjust if necessary.

Tire air pressure should be checked when the tires are COLD.

### Standard cold tire air pressure:

**Front: 190 kPa (1.9 kg/cm<sup>2</sup>, 27 psi)**

**Rear: 180 kPa (1.8 kg/cm<sup>2</sup>, 26 psi)**

### Recommended cold tire air pressure:

**Front: 170 – 190 kPa (1.7 – 1.9 kg/cm<sup>2</sup>, 24 – 27 psi)**

**Rear: 180 – 200 kPa (1.8 – 2.0 kg/cm<sup>2</sup>, 26 – 28 psi)**

Inspect the wheel for damage.

Check the wheel runout. If runout is noticeable, replace the wheel with a new one.

Check the axle for runout.

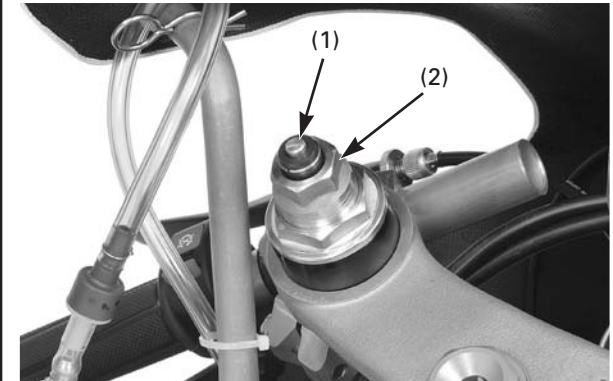
Check the condition of the front and rear wheel bearings.



## Front Suspension

### Inspection

1. Make sure that the fork surfaces and oil seals are clean.
  2. Check for signs of oil leakage. Damaged or leaking fork seals should be replaced before you ride the machine.
  3. Make a quick check of fork operation by locking the front brake and pushing down on the handlebars several times.
- When your NSF is new, break in your NSF to ensure that the suspension has worked in.
  - After break-in, test ride your NSF with the front suspension at the standard setting before attempting any adjustments.



(1) REBOUND ADJUSTER  
(2) PRELOAD ADJUSTER

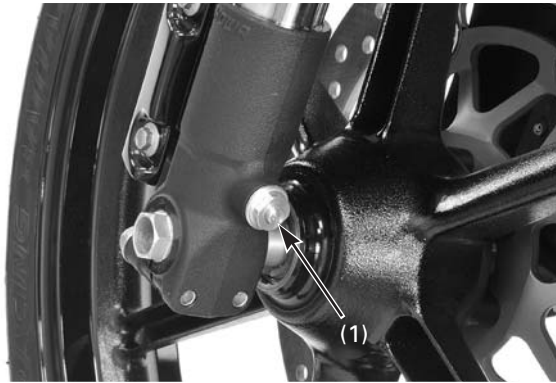
## Fork

The machine is shipped with a light coating of grease on the forks. This is not an indication of a leak.

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

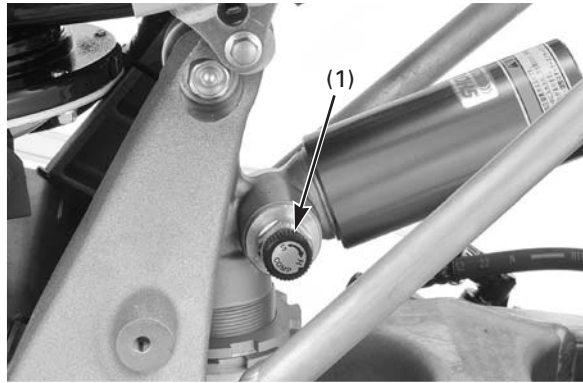
Basically, there are five adjustments you can make to the front suspension:

- Rebound damping  
Turning the rebound damping screw adjusts how quickly the fork extends.
- Compression damping  
Turning the compression damping screw adjusts how quickly the fork compresses.
- Spring preload  
Turning the spring preload adjuster adjusts the spring initial preload length.
- Fork fluid volume  
The effects of higher or lower fork fluid level are only felt during final fork travel.
- Fork spring  
Optional stiffer and softer springs than the standard spring are available.



(1) COMPRESSION ADJUSTER

- For optimum fork performance, we recommended that you disassemble and clean the fork after riding your NSF for three hours. See page 5-4 for fork disassembly/assembly.
- Replace the fork fluid every three races. See page 5-10 for oil level adjustment after changing the fork fluid.
- Use Honda Ultra Cushion Oil Special or equivalent with additives to assure maximum performance of your NSF's front suspension.
- Periodically check and clean all front suspension parts to assure top performance. Check the oil seals for dust, dirt and foreign materials. Check the fluid for any contamination.
- Refer to page 7-7 for Suspension Adjustment information. Make all compression and rebound damping adjustments in one-click increments. Adjusting two or more clicks at a time may cause you to pass over the best adjustment. Test ride after each adjustment.
- If you become confused about adjustment settings, return to the standard position and start over.



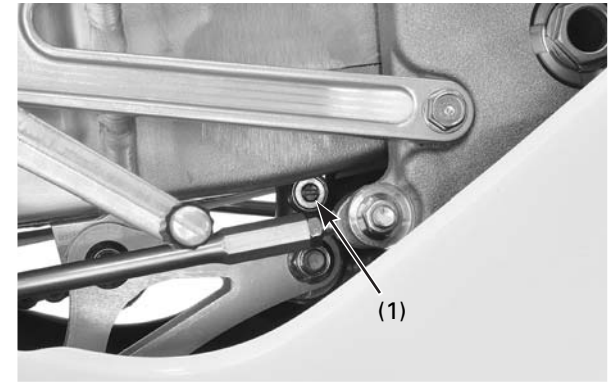
(1) COMPRESSION ADJUSTER

### Rear Suspension

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

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

- Rebound damping  
Turning the rebound damping screw adjusts how quickly the shock absorber extends.
- Compression damping  
Turning the compression damping screw adjusts how quickly the shock absorber compresses.
- Spring pre-load  
Turning the spring pre-load adjuster adjusts the spring initial pre-load length.
- Shock absorber spring  
Optional stiffer and softer springs than the standard spring are available.



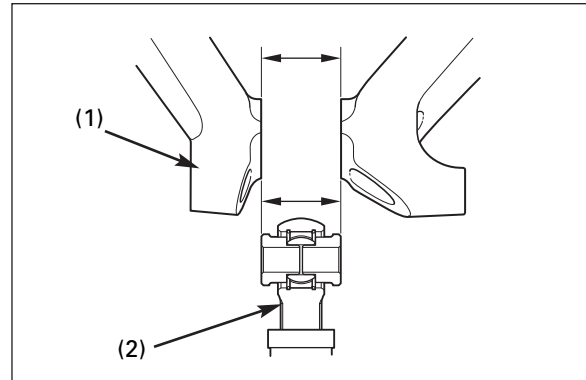
(1) REBOUND ADJUSTER

- When your NSF is new, your suspension will break-in as you ride.
- After break-in is completed, test ride your NSF with the rear suspension at the standard setting before attempting any adjustments.
- Refer to page 7-7 for Suspension Adjustment information. Make all compression and rebound damping adjustments in one-click increments. Adjusting two or more clicks at a time may cause you to pass over the best adjustment. Test ride after each adjustment.
- If you become confused about adjustment settings, return to the standard position and start over.



**Inspection**

1. Check for a broken or collapsed spring.
2. Bounce the rear of the machine up and down and check for smooth suspension action.
3. Check the rear shock absorber for a bent shaft or oil leaks.
4. Push the rear wheel sideways to check for worn or loose swingarm bearings. There should be no movement. If movement is felt, replace the pivot bearings (page 5-27).



(1) FRAME BODY (2) REAR SHOCK ABSORBER

**Shim Adjustment**

The shims must be used to compensate for machining tolerance. It should be adequate clearance between any two sliding or moving parts.

**Rear Shock Absorber Upper Pivot**

Measure and record the clearance as indicated in the illustration.

Shim(s) may be inserted on either side but, when possible, there should be an equal amount on both side.

**Shim:**

- 0.2 mm: 90510-NX4-000**
- 0.6 mm: 90511-NX4-000**
- 1.0 mm: 90512-NX4-000**
- 1.5 mm: 90513-NX4-000**

**Cleaning**

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

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

- Throttle body
- Wheel hubs
- Engine stop switch
- Muffler outlet
- Electrical components
- Drive chain
- Brake and clutch master cylinder

1. After cleaning, rinse your NSF thoroughly with plenty of clean water. Strong detergent residue can corrode alloy parts.
2. Dry your NSF start the engine, and let it run for several minutes.
3. Lubricate the drive chain immediately after washing and drying your NSF.
4. Test the brakes before riding your NSF. Several applications may be necessary to restore normal braking performance. Braking performance may be impaired immediately after washing your NSF.

## Service and Maintenance

### Storage

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

#### Preparing The Motorcycle For Storage

1. Completely clean all parts of your NSF. Wash with fresh water and wipe dry.
2. Drain the fuel from the system into an approved gasoline container.

### **! WARNING**

**Gasoline is highly flammable and explosive. You can be burned or seriously injured when draining or refueling.**

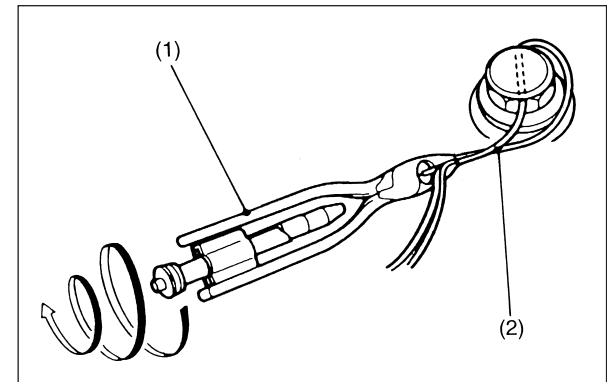
- Stop engine and keep heat, sparks, and flame away.
- Drain or refuel only outdoors.
- Wipe up spills immediately.

3. Remove the lower radiator-to-water joint pipe hose to drain coolant. Drain coolant into a proper container. After the coolant has been completely drained, reinstall the hose and tighten the clamp screw securely.
4. Lubricate the drive chain.
5. Remove the spark plug and pour a table spoon (15 – 20 cm<sup>3</sup>) of clean engine oil into the cylinder. With the spark plug grounded, crank the engine several times to distribute the oil.
6. Disconnect the battery terminals, and remove the battery and keep it in cool place.
7. Seal the throttle body intake ports using piece of tape or equivalent.
8. Inflate the tires to their recommended pressure.
9. Place your NSF on the maintenance stand or equivalent to raise both tires off the ground.

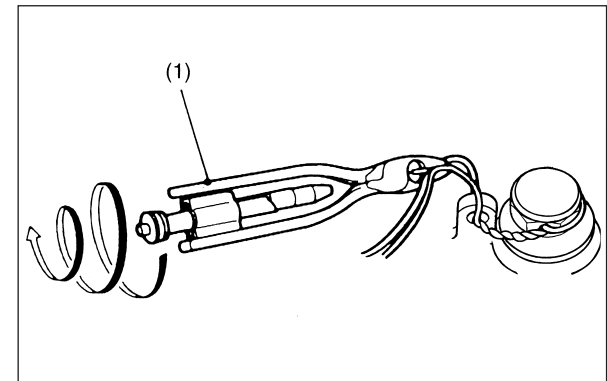
10. Stuff rags into the mufflers outlet. Then tie a plastic bag over the end of the mufflers to prevent moisture from entering.
11. Cover your NSF and store in a place which is free of humidity and dust.

#### Removal From Storage

1. Uncover and clean your NSF. Change the engine oil if more than 4 months have passed since the start of storage.
2. Uncover the end of the mufflers and remove the rags from the muffler outlets.
3. Fill the fuel tank with fuel (page 1-1).
4. Pour the recommended coolant slowly into the radiator filler neck. Bleed the air in the cooling system and install the radiator cap securely (page 1-1).
5. Charge the battery and install it.
6. Perform the maintenance check (page 3-1).



(1) WIRE TWISTING TOOL (2) LOCKING WIRE

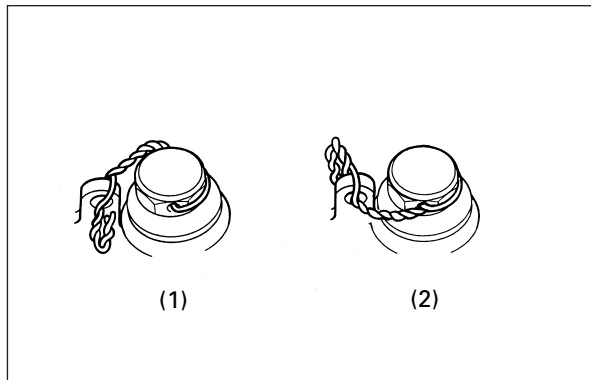


(1) WIRE TWISTING TOOL

### Wire Locking

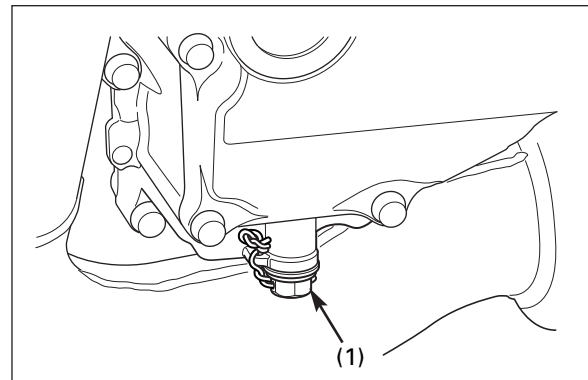
Before starting the engine, secure the engine and transmission oil drain plugs, filter caps, oil line plug bolts.

Insert the proper length locking wire to the bolt, Twist the wire using a commercially available wire twisting tool. Insert the wire to the lock wire holes on the crankcase etc.

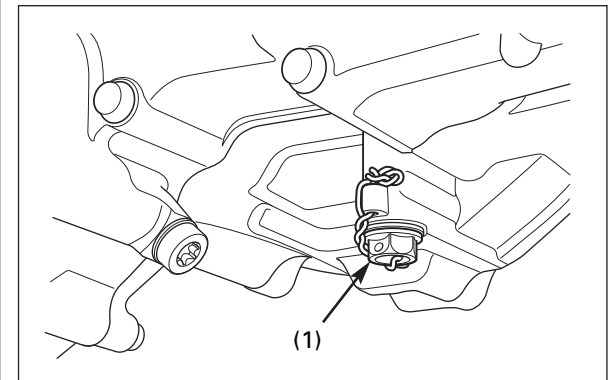


(1) NG (2) OK

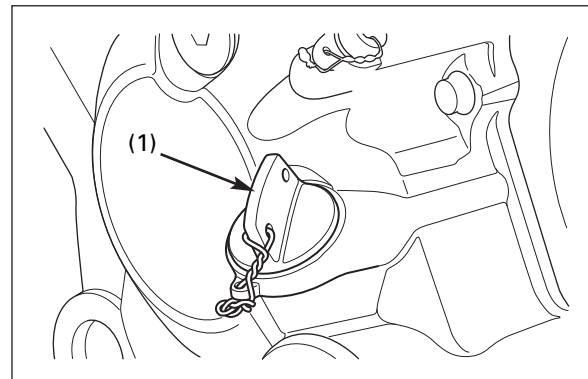
- Use new 0.8 mm (0.03 in) stainless steel wire.
- Secure the bolt as shown so that it cannot come loose.
- Twisting the wire too tightly will break the locking.



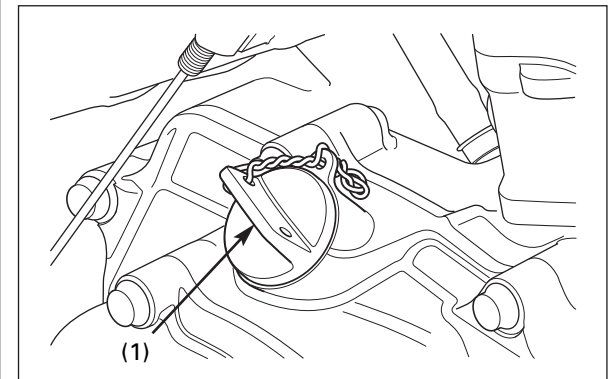
(1) ENGINE OIL DRAIN PLUG



(1) TRANSMISSION DRAIN PLUG

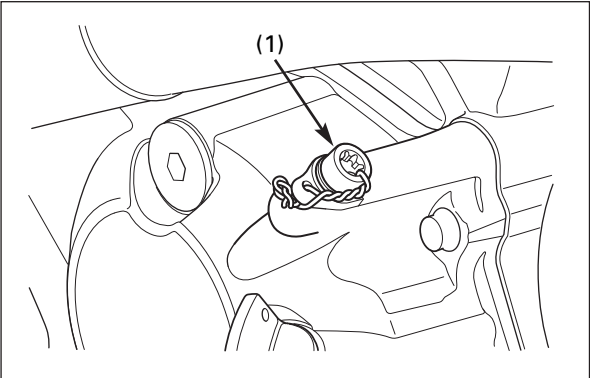


(1) ENGINE OIL FILLER CAP

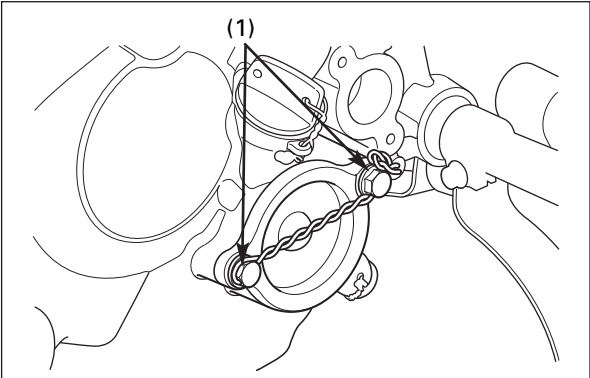


(1) TRANSMISSION OIL FILLER CAP

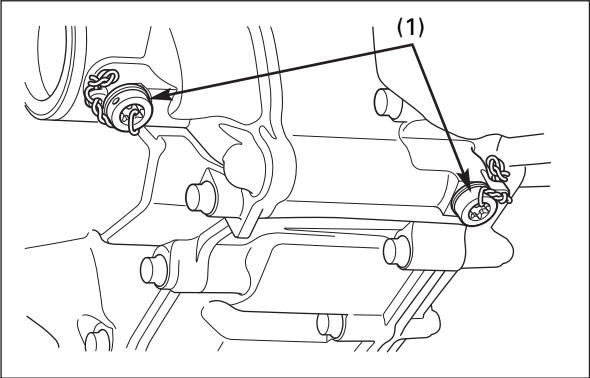
**Service and Maintenance**



(1) OIL LINE PLUG BOLT A



(1) OIL FILTER COVER BOLTS

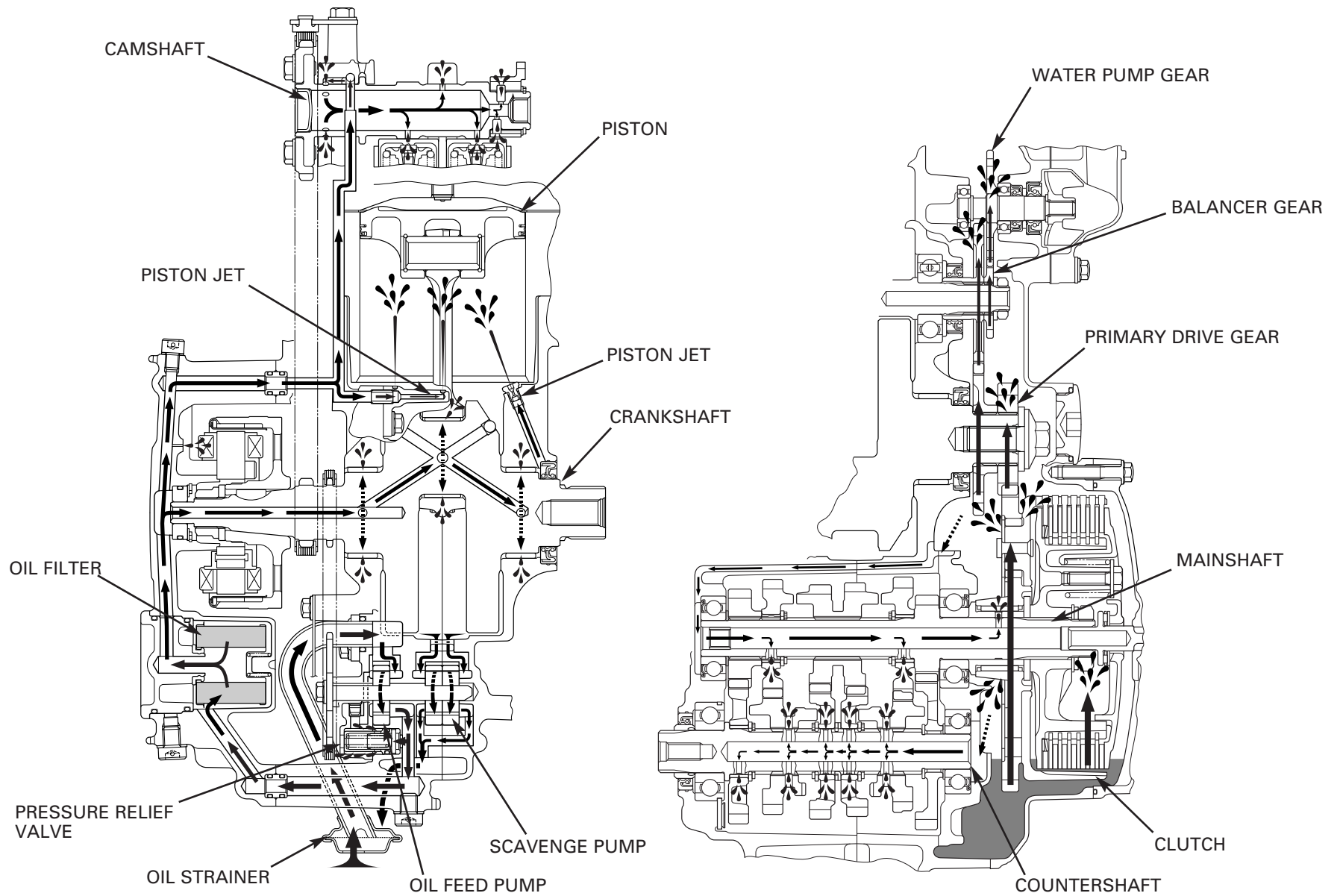


(1) OIL LINE PLUG BOLT B

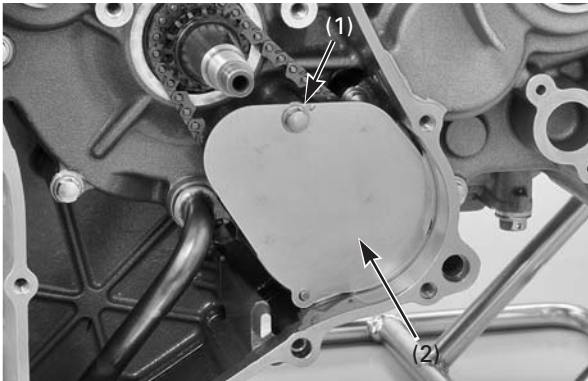


# 4. Engine Servicing

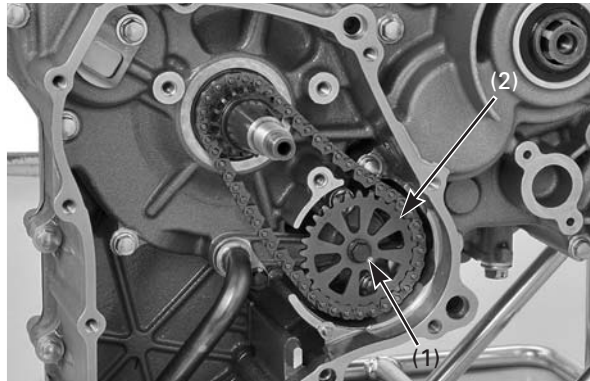
## Lubrication Diagram



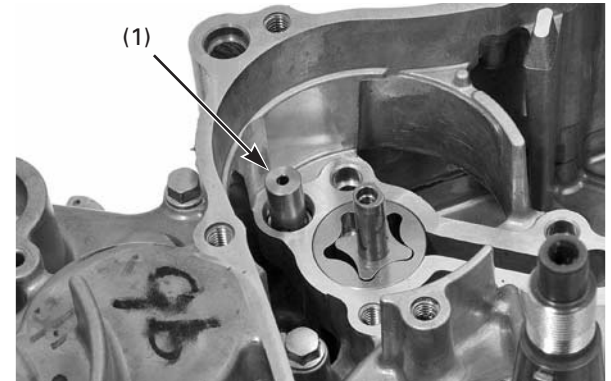
## Engine Servicing



(1) BOLT (2) OIL SEPARATOR PLATE



(1) BOLT (2) OIL PUMP DRIVEN SPROCKET



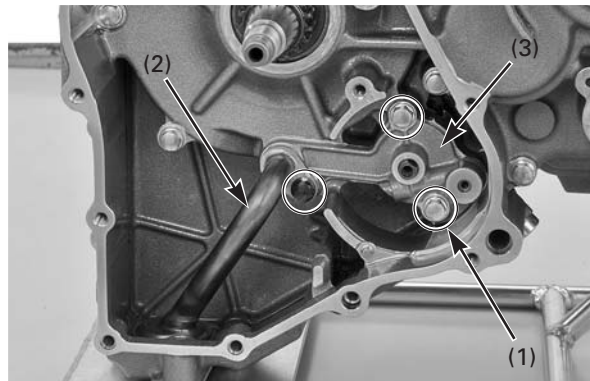
(1) PRESSURE RELIEF VALVE

### Oil Pressure Relief Valve

#### Removal/Inspection

Drain the engine oil (page 3-8).  
Remove the flywheel (page 4-67).

Remove the bolt and oil separator plate.

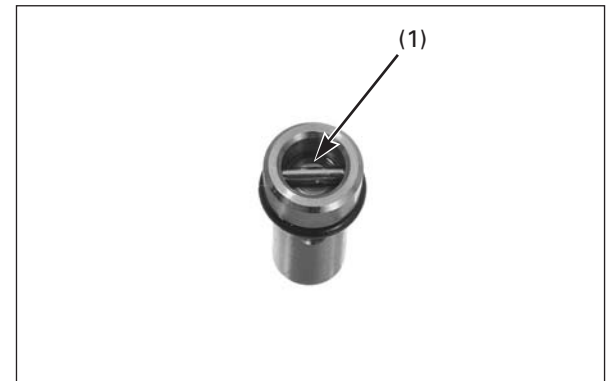


(1) BOLTS (2) OIL STRAINER  
(3) OIL PUMP COVER

Remove the bolt, oil pump driven sprocket and drive chain.

Remove the bolt and then remove the oil strainer from the oil pump cover.

Remove the oil pump cover and dowel pins.

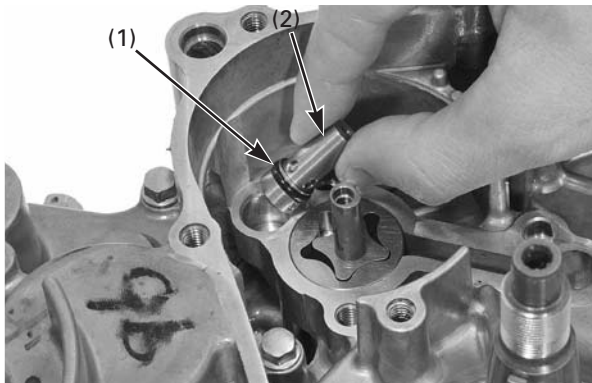


(1) RELIEF VALVE PISTON

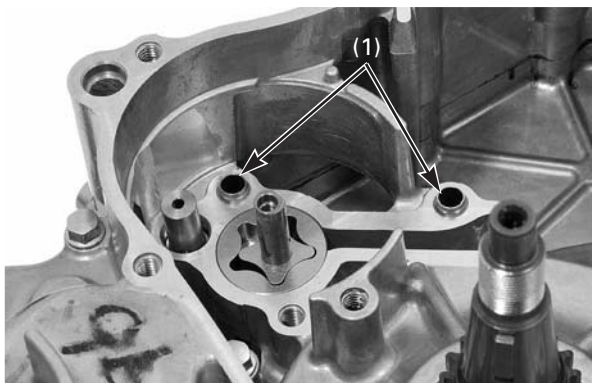
Remove the pressure relief valve from the left crankcase.

Check the relief valve piston operation by pushing the relief valve piston.





(1) O-RING (2) RELIEF VALVE

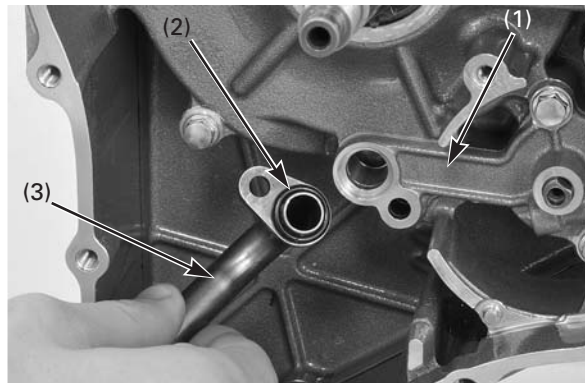


(1) DOWEL PINS

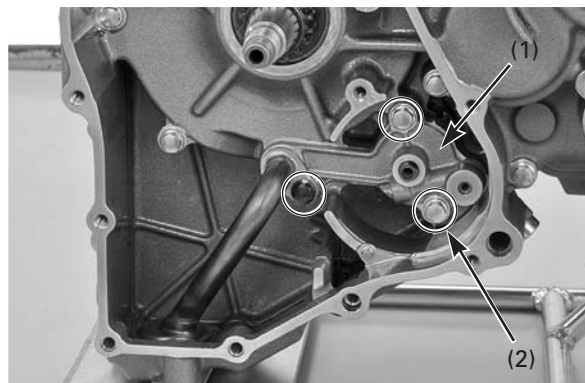
**Installation**

Apply grease to the new O-ring, then install it into the groove of the relief valve.  
Install the relief valve to the left crankcase.

Install the dowel pins.



(1) OIL PUMP COVER  
(2) O-RING  
(3) OIL STRAINER

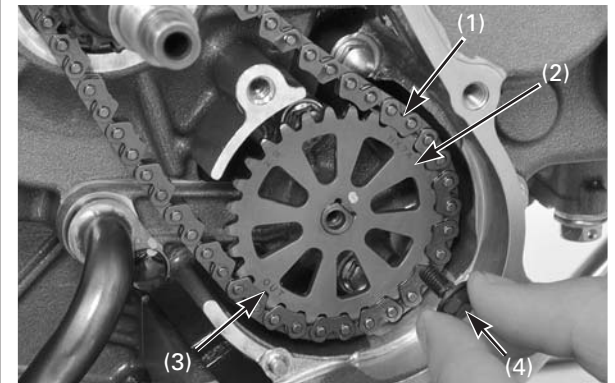


(1) OIL PUMP COVER  
(2) BOLTS

Install the oil pump cover.  
Apply grease to the O-ring and install it oil strainer flange.  
Install the oil strainer to the oil pump cover.

Install and tighten the oil pump cover bolts in a crisscross pattern.  
Tighten the oil strainer bolt to the specified torque.

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



(1) OIL PUMP CHAIN (2) DRIVEN SPROCKET  
(3) "OUT" MARK (4) SPROCKET BOLT

Install the oil pump drive chain to the drive sprocket on the crankshaft.  
Install the oil pump driven sprocket to the oil pump shaft with its "OUT" mark facing out.

Align the cut-outs between the oil pump shaft and driven sprocket.

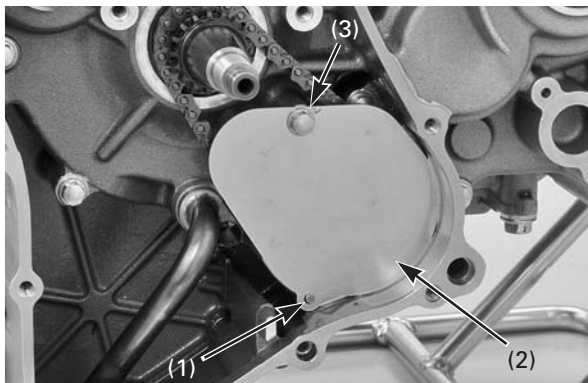
Apply a locking agent to the oil pump driven sprocket bolt threads.



(1) DRIVEN SPROCKET  
(2) SPROCKET BOLT

Tighten the oil pump sprocket bolt to the specified torque.

**Torque: 5 N•m (0.5 kgf•m, 3.7 lbf•ft)**



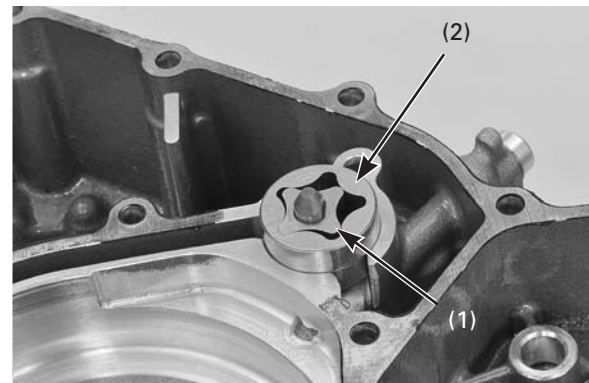
(1) BOSS  
(2) OIL SEPARATOR PLATE  
(3) BOLT

Install the oil separator plate while aligning its hole with the boss on the left crankcase.

Apply a locking agent to the oil separator bolt threads.  
Install and tighten the oil separator plate bolt to the specified torque.

**Torque: 10 N•m (1.0 kgf•m, 7 lbf•ft)**

Install the flywheel (page 4-68).



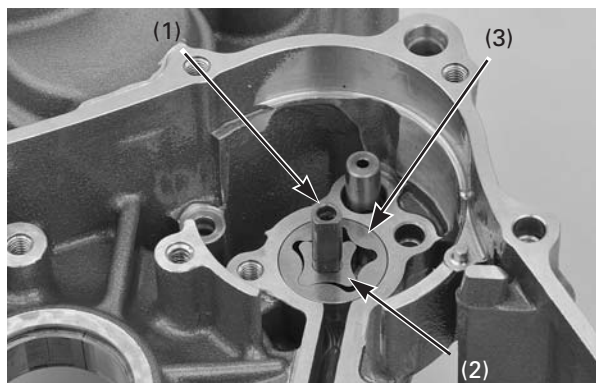
(1) INNER ROTOR  
(2) OUTER ROTOR

### Oil Pump

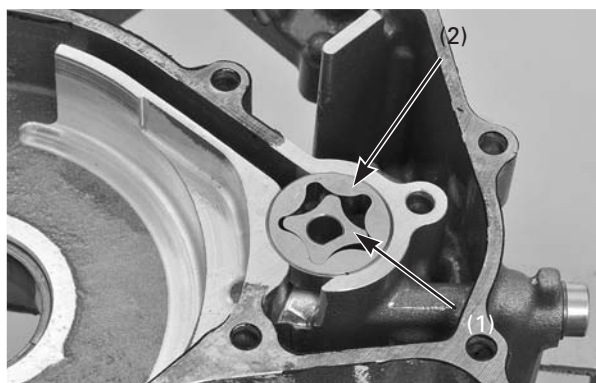
#### Disassembly

Remove the engine from the frame (page 4-21).  
Remove the oil pump cover (page 4-2).  
Separate the crankcase halves (page 4-68).

Remove the right crankcase side scavenge inner and outer rotors from inside of the left crankcase.



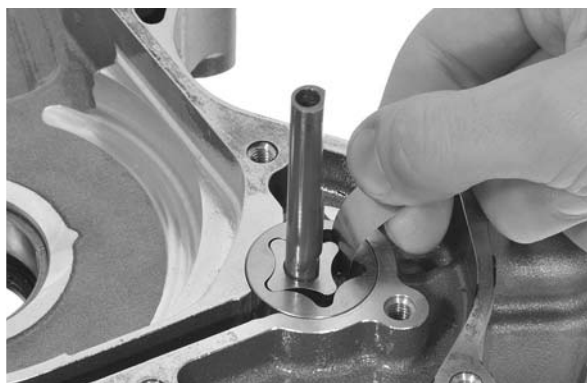
(1) OIL PUMP SHAFT  
(2) INNER ROTOR  
(3) OUTER ROTOR



(1) INNER ROTOR  
(2) OUTER ROTOR

Remove the oil pump shaft, feed pump inner rotor and outer rotor from the outside of the left crankcase.

Remove the scavenge pump inner and outer rotors from inside of the left crankcase.



**Inspection**

Check the oil pump driven gear for wear or damage. Check the oil pump shaft for wear or damage.

Temporarily install the oil pump shaft, inner rotor and outer rotor into the crankcase.

Measure the oil pump tip clearance.

**Standard: 0.15 mm (0.006 in) maximum**

Measure the oil pump body clearance.

**Standard: 0.15 - 0.21 mm (0.006 - 0.008 in)**

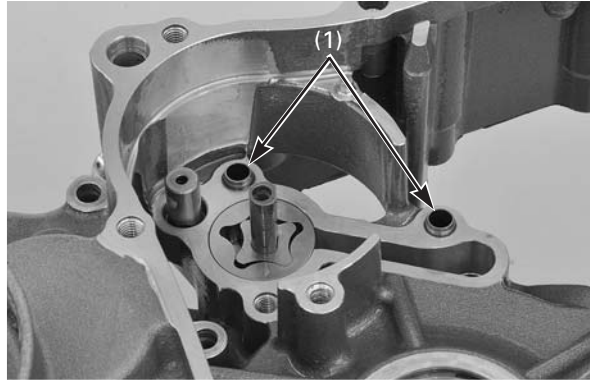
Measure the oil pump side clearance using a straight edge and thickness gauge.

**Standard: 0.02 - 0.08 mm (0.001 - 0.003 in)**

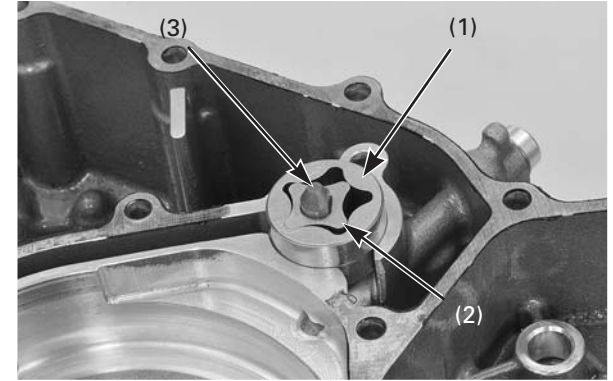




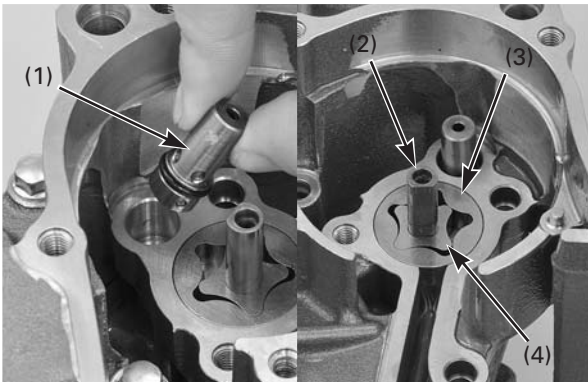
(1) INNER ROTOR (2) OUTER ROTOR



(1) DOWEL PINS



(1) OUTER ROTOR (2) INNER ROTOR  
(3) OIL PUMP SHAFT



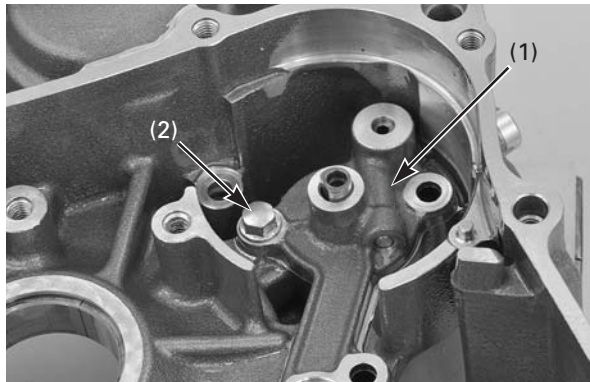
(1) RELIEF VALVE  
(2) OIL PUMP SHAFT (3) OUTER ROTOR  
(4) INNER ROTOR

### Assembly

Apply clean engine oil to the feed pump and scavenge pump rotors and oil pump shaft. Install the scavenge pump outer and inner rotor into the inside of the left crankcase.

Install the relief valve (page 4-2).

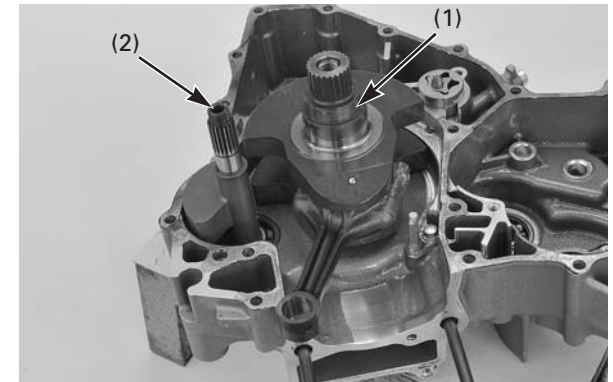
Install the feed pump outer and inner rotor out side of the left crankcase. Install the oil pump shaft by aligning its flat with the inner rotors.



(1) OIL PUMP COVER  
(2) BOLT

Install the dowel pins.

Install the oil pump cover and temporarily tighten the cover bolt.



(1) CRANKSHAFT  
(2) BALANCER SHAFT

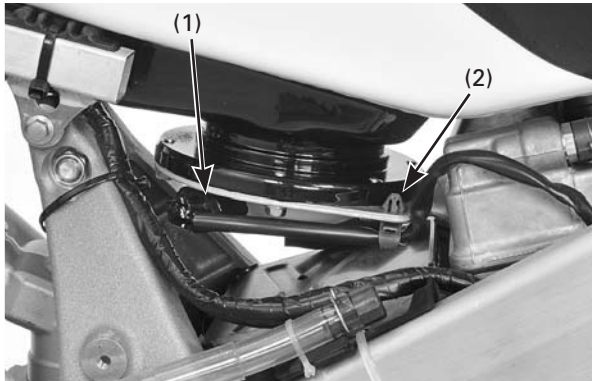
Place the left crankcase with the oil pump cover side facing down.

Install the right crankcase side scavenge pump inner and outer rotor onto the inside of the left crankcase.

Install the balancer shaft and crankshaft to the left crankcase.

Assemble the crankcase (page 4-79).

Install the oil pump strainer and pump cover bolts (page 4-3).



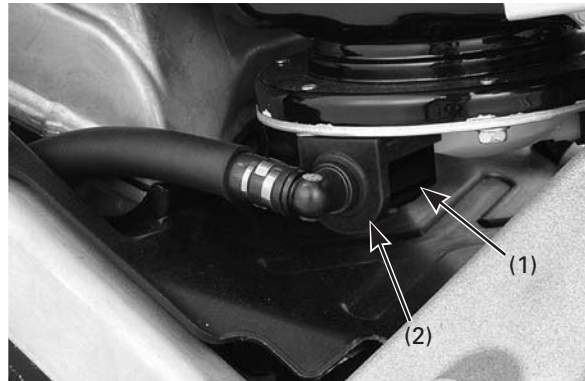
(1) 5P (BLACK) CONNECTOR  
(2) CLIP

### Fuel Hose Removal/Installation

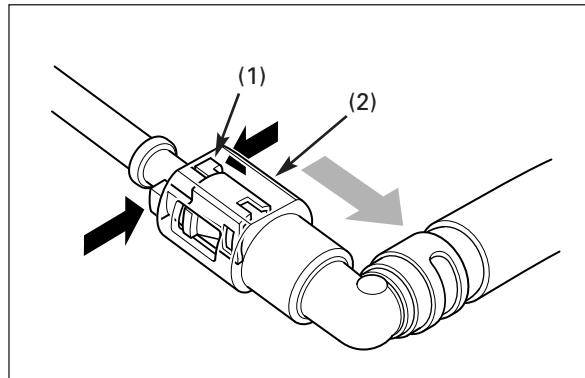
The fuel hose retainer must be replaced, if the fuel feed hose is disconnected.

#### Fuel Pump Side Removal

Turn the engine stop switch OFF.  
Disconnect the fuel pump 5P (Black) connector.  
Turn the engine stop switch ON and start the engine. Operate the engine at idle until the engine stalls.  
Turn the engine stop switch OFF.



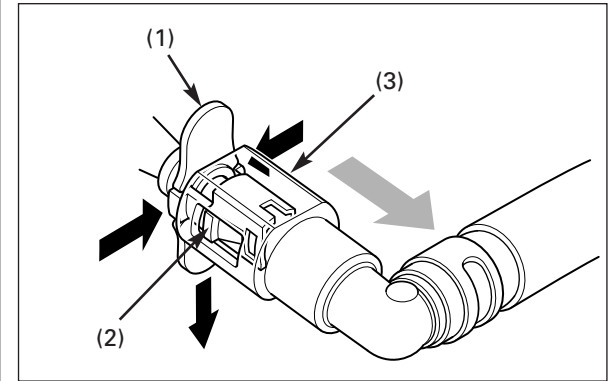
(1) CONNECTOR COVER  
(2) CONNECTOR RUBBER



(1) RETAINER  
(2) QUICK CONNECTOR

#### Fuel pump side:

1. Pull the connector cover out from the fuel feed hose joint.
2. Remove the connector rubber from the fuel joint.
3. Check the fuel feed hose quick connector for dirt, clean if necessary. Cover the quick connector with a shop towel or an equivalent.
4. Hold the quick connector with one hand and push the retainer tabs with the other hand, then remove it from the lock groove. Disconnect the connector, and remove the retainer from the joint.



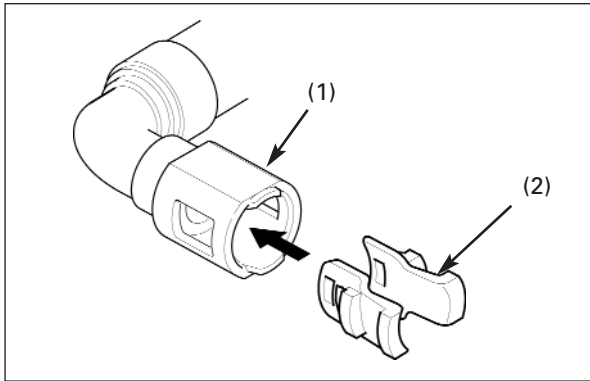
(1) RUBBER CAP (2) RETAINER  
(3) QUICK CONNECTOR

#### Injector side:

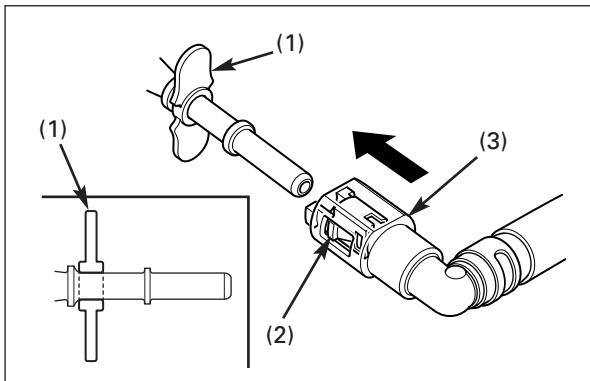
1. Check the fuel feed hose quick connector for dirt, clean if necessary. Cover the quick connector with a shop towel or an equivalent.
2. Pull the rubber cap and remove it from the retainer.
3. Hold the connector with one hand and push the retainer tabs with the other hand, then remove it from the lock groove. Disconnect the connector, and remove the retainer and rubber cap from the joint.

After the fuel feed hose is removed, cover the joint portion to avoid the dust and dirt from entering the fuel line.

## Engine Servicing



(1) FEED HOSE (2) RETAINER

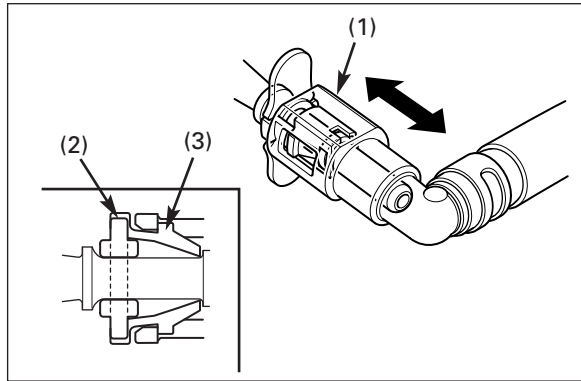


(1) RUBBER CAP (2) RETAINER  
(3) FEED HOSE

### Installation

#### Injector side:

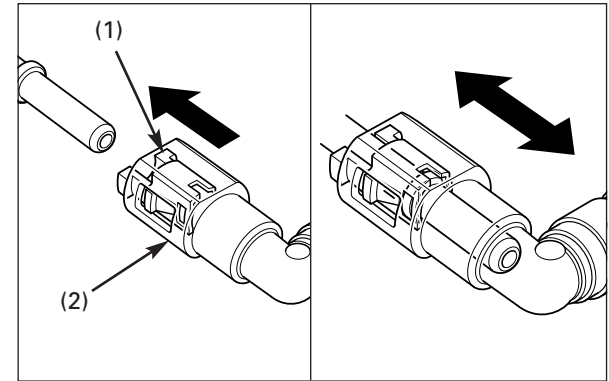
1. Install the new retainer into the quick connector as shown.
2. Check the rubber cap condition, replace it if it is damaged. Install the rubber cap onto the fuel pipe as shown in the illustration.
3. Check that the retainer tabs align with the connector grooves, then install the fuel feed hose to the fuel pipe until it clicks. If it is hard to install, apply a small amount of engine oil to the tip of the fuel pipe.



(1) FEED HOSE (2) RUBBER CAP  
(3) RETAINER

4. Move the fuel feed hose quick connector back and forth, check that the fuel feed hose connector is securely connected.
5. Check that the rubber cap is installed securely between the pipe flange and retainer.

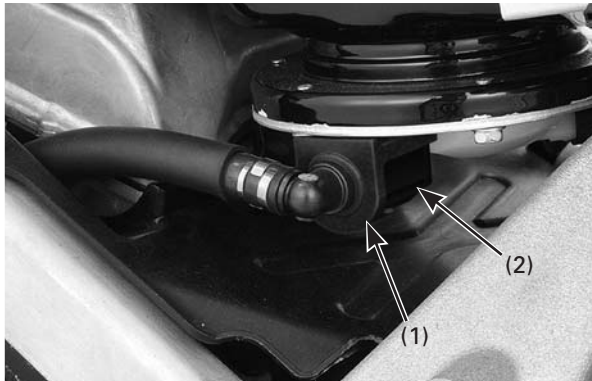
Connect the 12V battery to the DLC connector. Turn the engine stop switch ON and operate the fuel pump about 2 seconds. Repeat this procedure 2 – 3 times and check that there are no fuel leaks. If there are fuel leaks, replace the fuel feed hose with a new one. Always replace the retainer, when the fuel feed hose is removed.



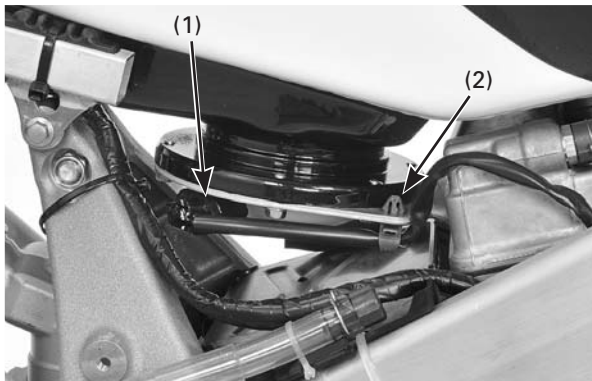
(1) RETAINER (2) FEED HOSE

#### Fuel pump side:

1. Install the pull tab onto the fuel feed hose.
2. Install the new retainer into the quick connector as shown.
3. Check that the retainer tabs align with the connector grooves, then install the fuel feed hose to the fuel pipe until it clicks. If it is hard to install, apply a small amount of engine oil to the tip of the fuel pipe.
4. Move the fuel feed hose quick connector back and forth, check that the fuel feed hose connector is securely connected.



(1) CONNECTOR RUBBER  
(2) CONNECTOR COVER



(1) 5P (BLACK) CONNECTOR  
(2) CLIP

5. Install the connector rubber to the fuel joint properly.
6. Install the connector cover onto the fuel feed hose securely.
7. Connect the fuel pump 5P (Black) connector. Install the harness clip to the fuel pump base as shown.

Check for fuel leaks (see injector side procedure).



(1) FUEL FEED HOSE

## Fuel Line Inspection

### Fuel Pressure Inspection

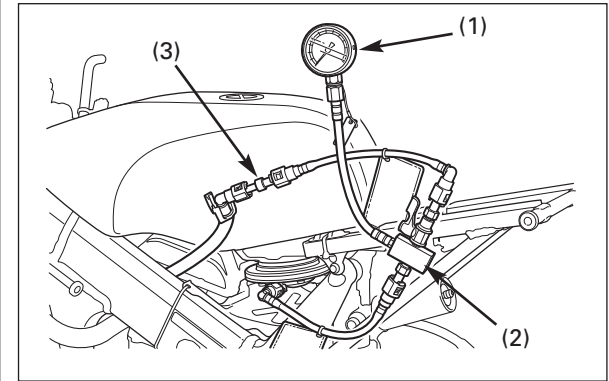
#### **! WARNING**

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

When refueling:

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

Cover the fuel pump side quick connector with a shop towel or an equivalent. Disconnect the fuel pump side quick connector from the fuel joint.



(1) PRESSURE GAUGE  
(2) MANIFOLD  
(3) FUEL JOINT

Install the fuel pressure gauge between the fuel pump side fuel joint and fuel feed hose using the following tools.

#### Tools:

Fuel pressure gauge	07406-0040004
Manifold	07ZAJ-S5A0111
Fuel hose, 9-9	07ZAJ-S5A120
Fuel hose, 8-9	07ZAJ-S7C100
Fuel joint, 8-9	07ZAJ-S7C200

Connect the fuel pump 5P (Black) connector. Start the engine and read the fuel pressure at idle.

**Idle speed: 3,000 ± 300 min<sup>-1</sup> (rpm)**

#### Fuel pressure:

**314 – 382 kPa (3.2 – 3.9 kgf/cm<sup>2</sup>, 46 – 56 psi)**

If the fuel pressure too high, check the following:

- Pressure regulator
- Fuel pump (page 4-10)

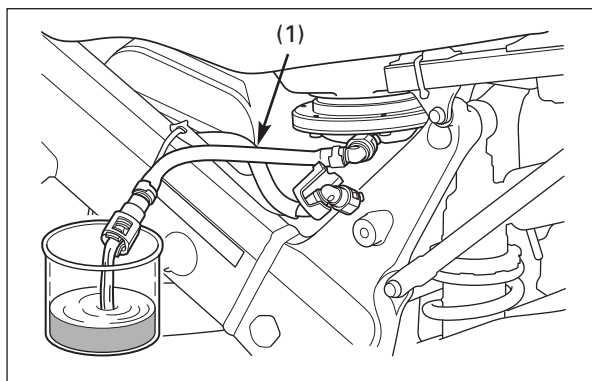
If the fuel pressure too low, check the following:

- Fuel leaks from fuel line
- Clogged fuel filter
- Pressure regulator
- Fuel pump (page 4-10)

Remove the tools and connect the fuel line.



## Engine Servicing



(1) FUEL HOSE

### Fuel Pump Flow Inspection

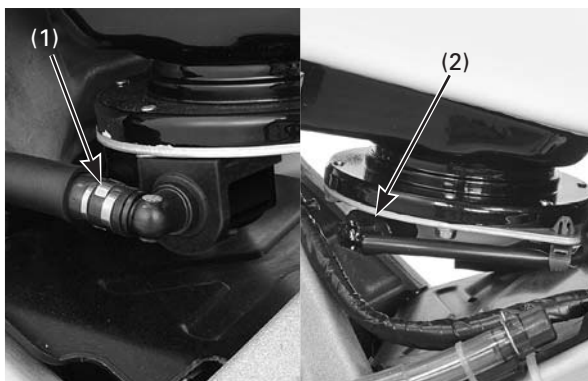
Disconnect the fuel hose from the fuel pump joint. Connect another fuel hose to the fuel pump joint and install the hose end in the approved gasoline container.

Connect the 12 V battery to the fuel pump 5P (Black) connector terminals, check amount of fuel flow for 10 seconds.

**Amount of flow:**  
**125 cm<sup>3</sup> (4.2 US oz, 4.4 Imp oz) minimum/  
10 seconds at 12 V**

If the fuel flow is less than specified, inspect the following:

- pinched or clogged fuel hose
- clogged fuel filter
- pressure regulator
- fuel pump (page 4-10)

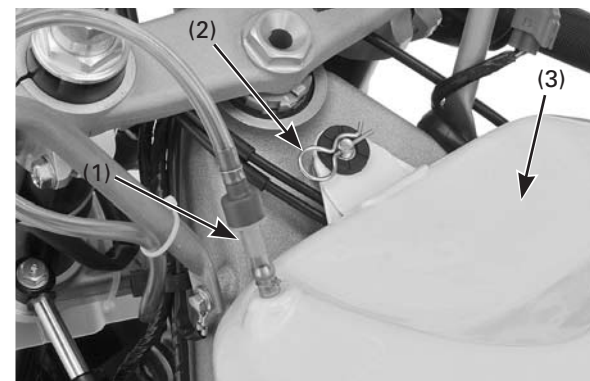


(1) FUEL FEED HOSE  
(2) 5P (BLACK) CONNECTOR

After inspection, remove the temporarily installed fuel hose and reconnect the fuel feed hose to the fuel pump joint.

Connect the fuel pump 5P (Black) connector.

Start the engine and check for fuel leaks.



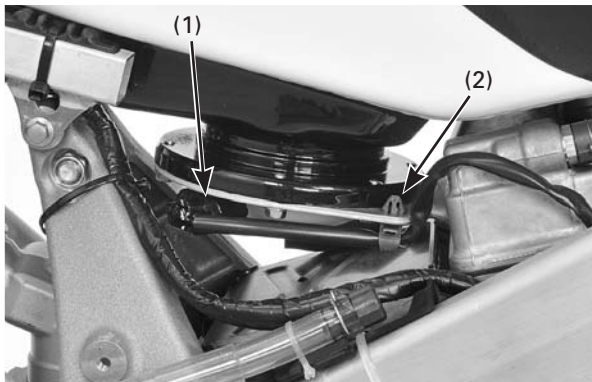
(1) BREATHER HOSE  
(2) CLIP (3) FUEL TANK

### Fuel Tank/Fuel Pump

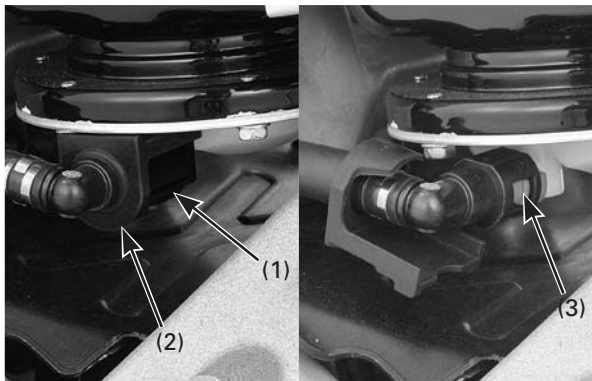
#### Removal

Remove the breather hose to the fuel tank joint.  
Remove the fuel tank mounting clip.





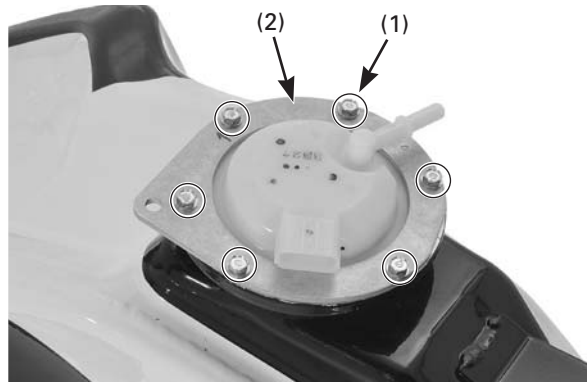
(1) 5P (BLACK) CONNECTOR  
(2) CLIP



(1) CONNECTOR COVER  
(2) CONNECTOR RUBBER  
(3) FUEL JOINT

Disconnect the fuel pump 5P (Black) connector. Remove the harness clip from the fuel pump base.

Remove the connector cover and connector rubber from the fuel hose, then disconnect the fuel hose (page 4-7).



(1) BOLTS (2) FUEL PUMP BASE

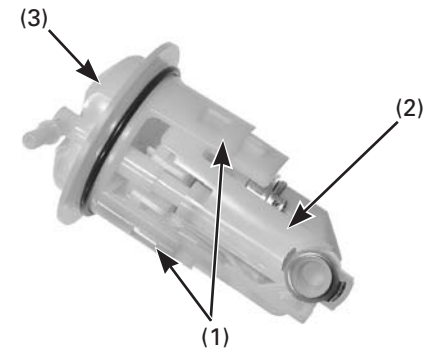


(1) FUEL PUMP ASSEMBLY

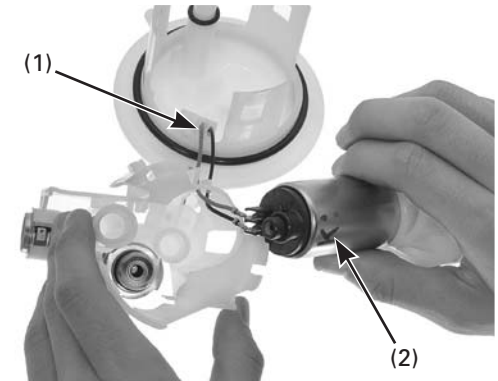
Remove the fuel tank from the frame.

Remove the fuel pump base bolts and pump base.

Remove the fuel pump from the fuel tank being careful not to damage the pump and pump wires.



(1) RETAINER (2) HOLDER  
(3) BASE UNIT



(1) WIRE TERMINALS  
(2) FUEL PUMP MOTOR/FILTER

**Fuel Filter Cleaning**

Push the three retainers between the fuel pump base unit and holder, then remove the holder from the base unit.

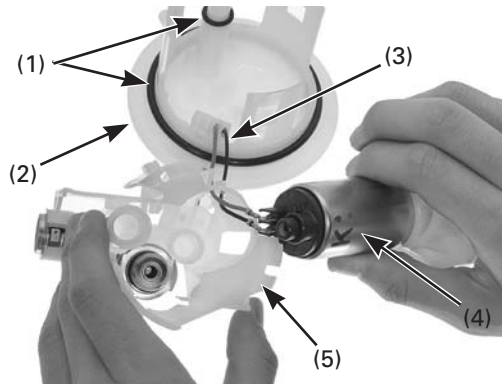
Disconnect the fuel pump motor wire terminals, remove the fuel pump motor/fuel filter assembly.

## Engine Servicing



(1) FUEL FILTER SCREEN

Clean the fuel filter screen.



(1) O-RINGS (2) FUEL PUMP BASE  
(3) FUEL PUMP MOTOR WIRES  
(4) FUEL PUMP MOTOR (5) HOLDER

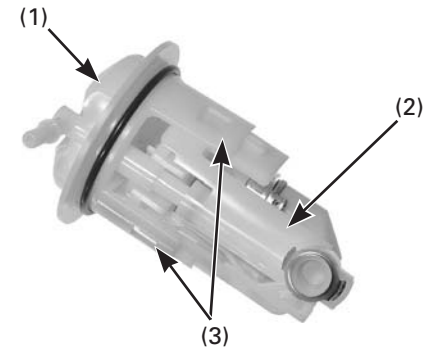
Replace the O-rings whenever the fuel pump is removed.

Clean the fuel pump base and fuel tank mating surface thoroughly and degrease.  
Install new O-rings to the fuel pump base.

Route the fuel pump motor wire through the fuel pump base grooves, then connect to the pump motor terminals.

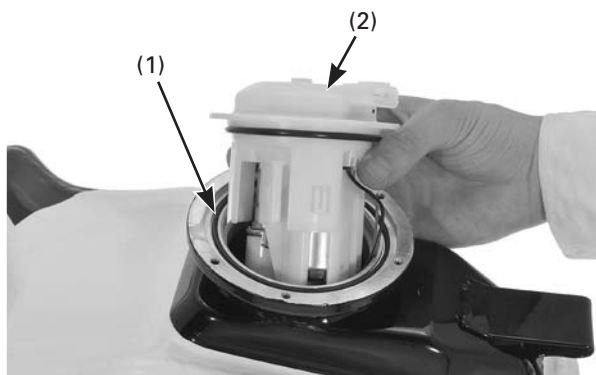
Install a new O-ring to the fuel pipe.  
Install the fuel pump motor to the holder.

Be careful not to damage the pump wire.



(1) FUEL PUMP BASE (2) HOLDER  
(3) RETAINER

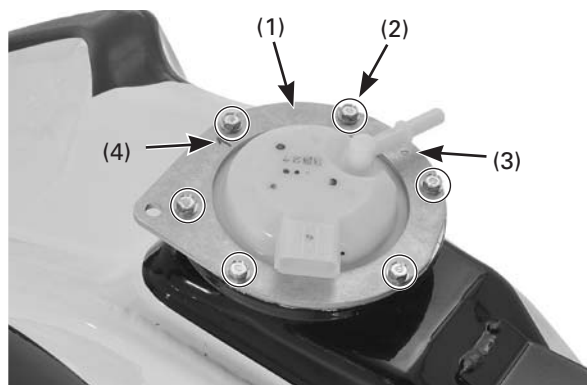
Install the fuel pump holder to the fuel pump base.  
Make sure the retainers are locked properly and seat the pump base and holder correctly.



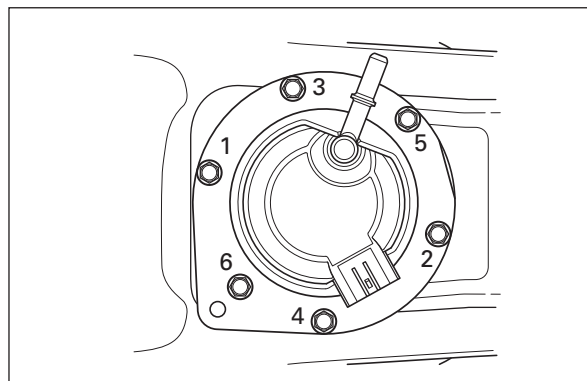
(1) O-RING (2) FUEL PUMP

Install a new O-ring onto the fuel tank flange as shown.  
Install the fuel pump assembly being careful not to damage the O-rings.

Make sure the O-ring is seated on the fuel tank.



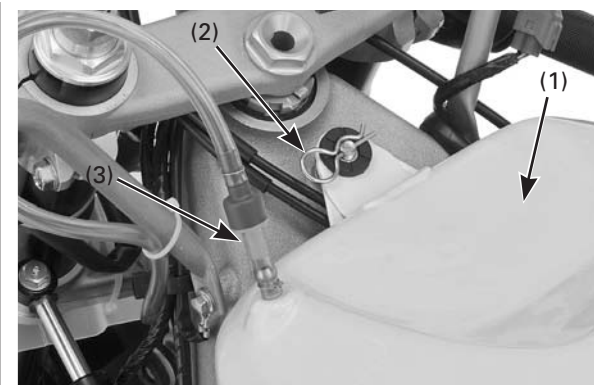
(1) FUEL PUMP BASE (2) BOLTS  
(3) INDEX MARK (4) ARROW MARK



Install the fuel pump mounting bolts.  
Align the index mark on the fuel pump base with the fuel hose joint, and also align the arrow mark on the pump base facing to the front.

Tighten the fuel pump mounting base bolt in the numerical order shown in the illustration.

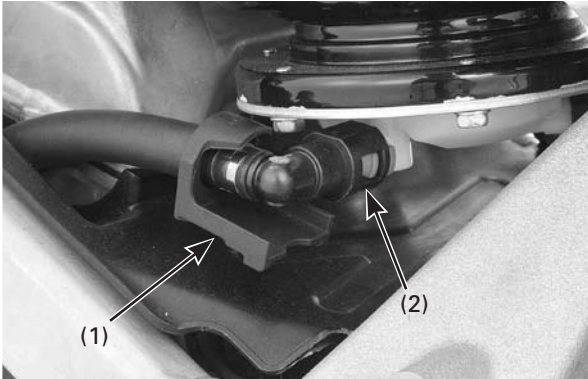
**Torque: 4.2 N·m (0.43 kgf·m, 3.1 lbf·ft)**



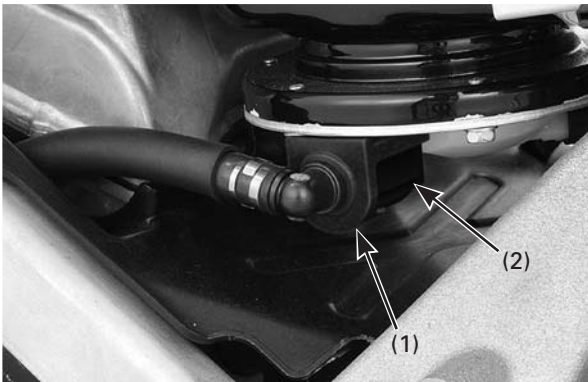
(1) FUEL TANK (2) CLIP  
(3) BREATHER HOSE

Set the fuel tank onto the frame, install the fuel tank clip.  
Connect the breather hose to the fuel tank and secure it with clips.

## Engine Servicing



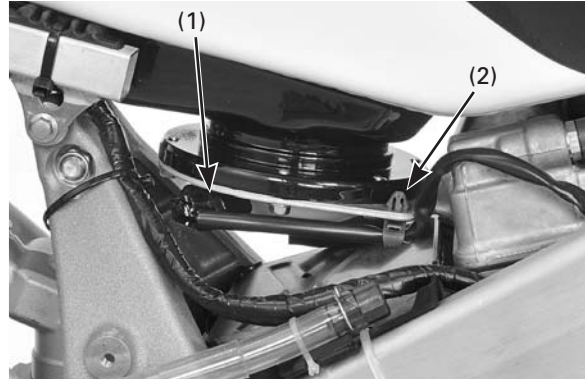
(1) CONNECTOR RUBBER (2) FUEL JOINT



(1) CONNECTOR RUBBER  
(2) CONNECTOR COVER

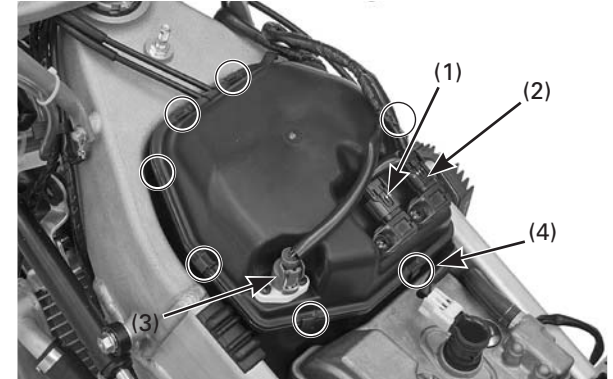
Install the connector rubber onto the fuel feed hose.  
Install the fuel feed hose to the fuel pump joint.

Install the connector rubber between the fuel pump base and the fuel joint properly.  
Set the connector cover to the fuel joint securely.



(1) 5P (BLACK) CONNECTOR  
(2) CLIP

Connect the fuel pump 5P (Black) connector.  
Install the harness clip to the fuel pump base.



(1) BARO sensor connector  
(2) MAP sensor connector  
(3) IAT sensor connector (4) retainers

### Throttle Body/Air Box

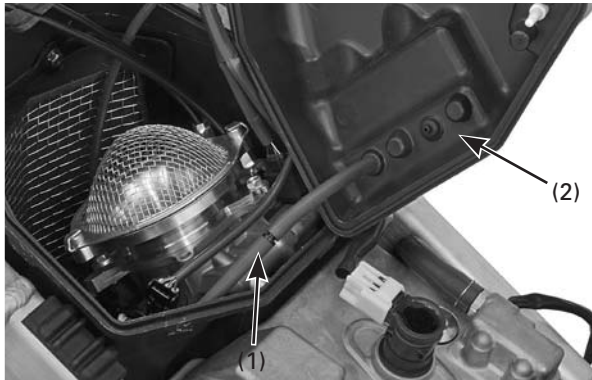
#### Removal

Remove the fuel tank (page 4-10)  
Remove the radiator (page 4-24)

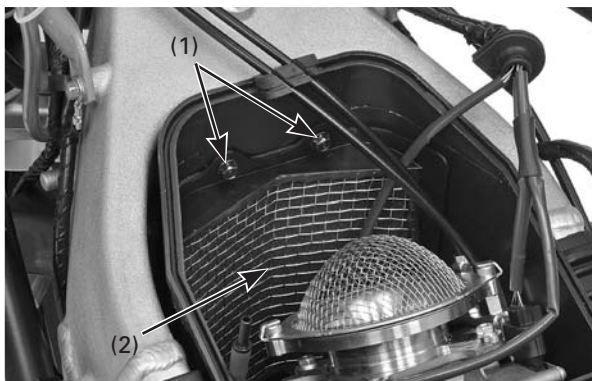
Disconnect the BARO, MAP and IAT sensor connectors.

Remove the seven air box cover retainers.





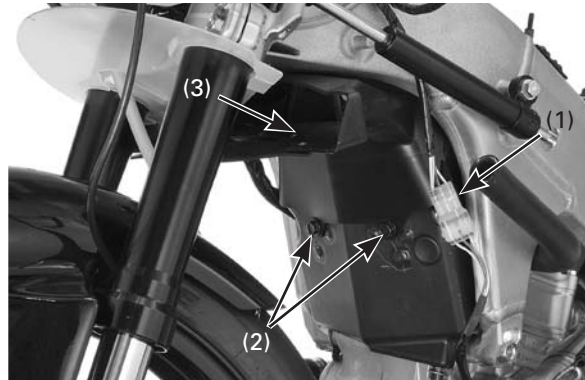
(1) VACUUM HOSE (2) AIR BOX COVER



(1) BOLTS (2) AIR FILTER

Disconnect the MAP sensor vacuum hose, then remove the air box cover assembly.

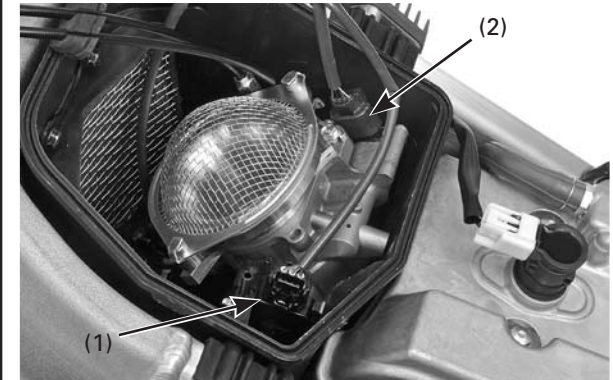
Remove the bolts and air filter.



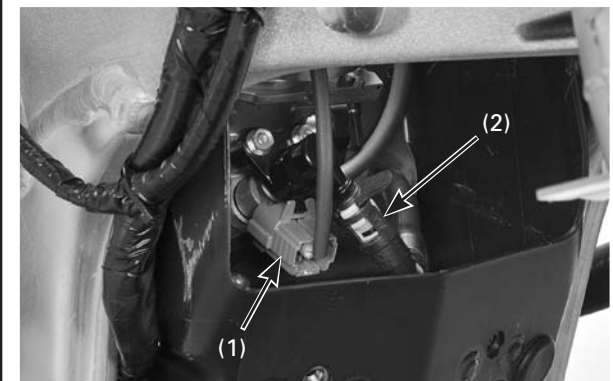
(1) ALTERNATOR 5P (NATURAL) CONNECTOR  
(2) BOLTS (3) AIR DUCT

Remove the alternator/ignition pulse generator 5P (Natural) connector from the air duct.

Remove the bolts and then remove the air duct forward.



(1) THROTTLE SENSOR CONNECTOR  
(2) IACV CONNECTOR

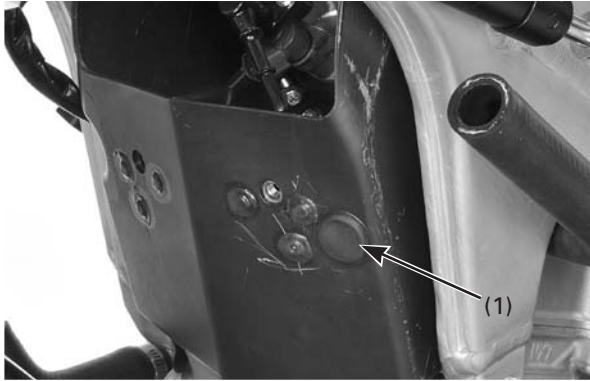


(1) INJECTOR CONNECTOR (2) FUEL FEED HOSE

Disconnect the throttle sensor and IACV connectors from the throttle body.

Disconnect the injector connector and fuel feed hose from the throttle body.

## Engine Servicing



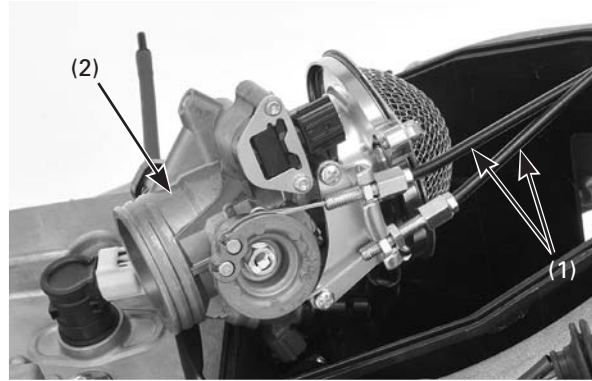
(1) GROMMET



(1) INSULATOR BAND SCREW

Remove the grommet located on left front of the air box.

Install the long type phillips screwdriver through the grommet hole, then loosen the insulator band.

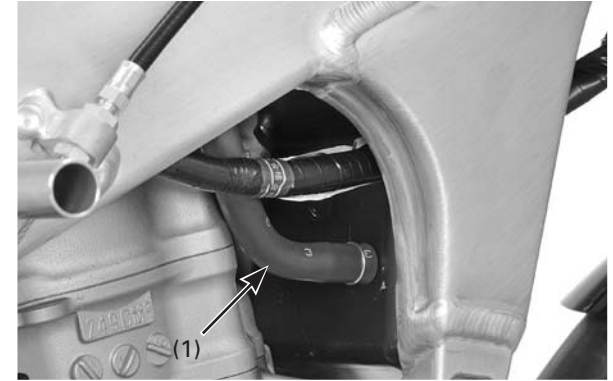


(1) THROTTLE CABLES (2) THROTTLE BODY

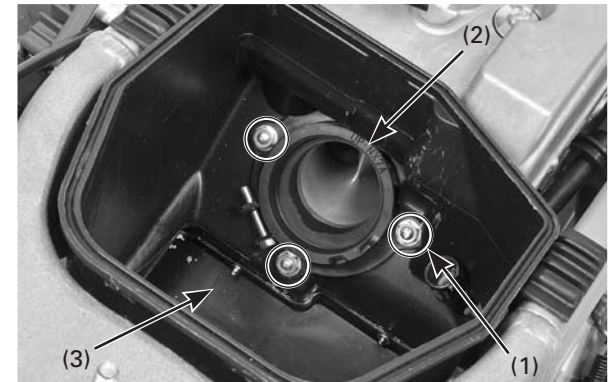
Remove the throttle body from the insulator.

Disconnect the throttle cables from the throttle drum, then remove the throttle body.

Remove the fuel feed hose from the air box.



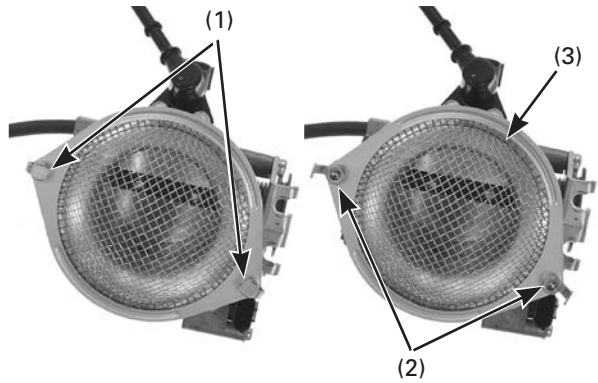
(1) CRANKCASE/TRANSMISSION BREATHER HOSE



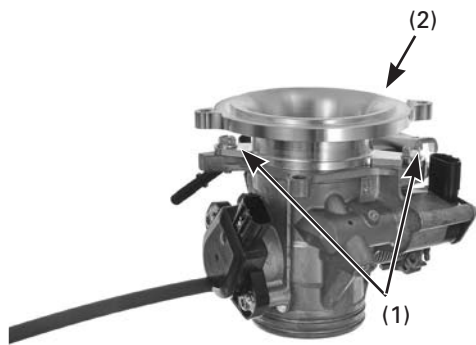
(1) INSULATOR MOUNTING NUTS  
(2) INSULATOR  
(3) AIR BOX

Remove the crankcase/transmission breather hose from the air box.

Remove the insulator mounting nuts.  
Remove the air box upward.



(1) RETAINERS  
(2) BOLTS  
(3) FLAME TRAP

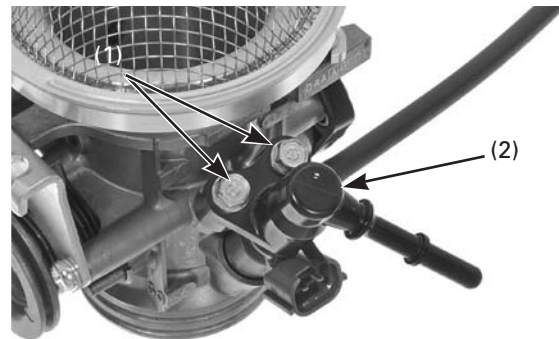


(1) BOLTS  
(2) AIR FUNNEL

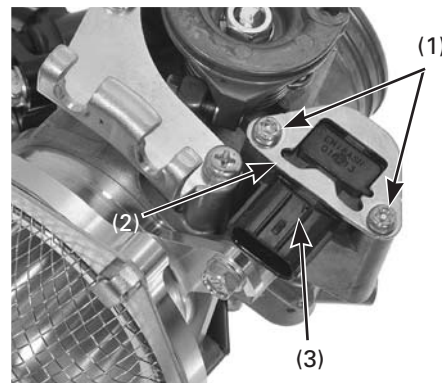
**Throttle Body Disassembly/Assembly**

Bend up the flame trap mounting bolt retainer tabs. Remove the mounting bolts, retainers and flame trap.

Remove the bolts and air funnel.



(1) BOLTS (2) INJECTOR HOLDER



(1) SCREWS (2) RETAINER PLATE  
(3) IACV

Remove the injector holder bolts. Remove the injector holder, injector, O-ring and seal ring.

Remove the screws, retainer plate and IACV.

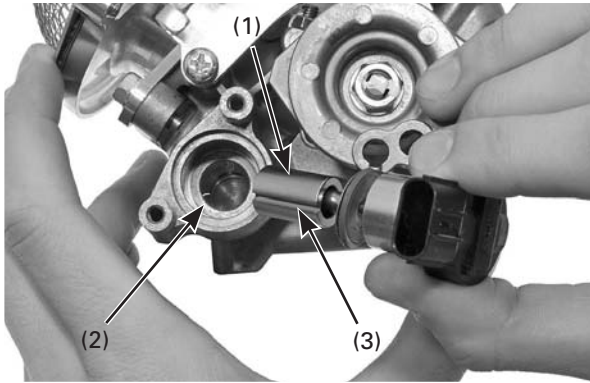


(1) IACV

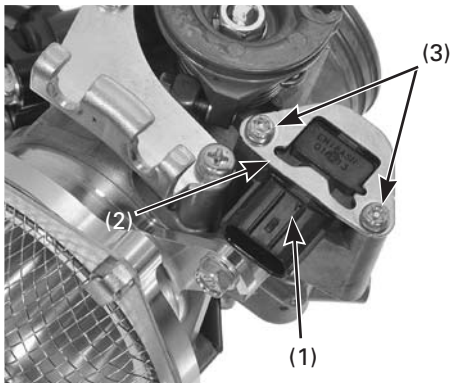
Inspect the IACV for wear or damage. Replace the IACV if the valve has excessive wear or damage.



## Engine Servicing



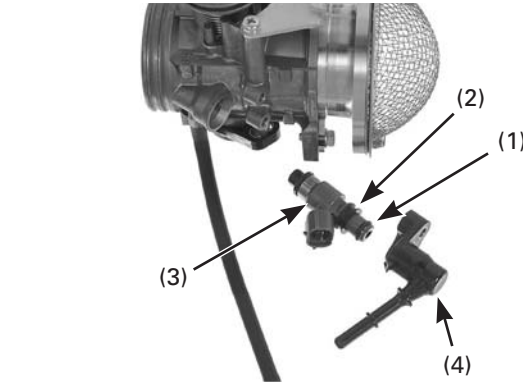
(1) IACV (2) GUIDE PIN  
(3) GROOVE



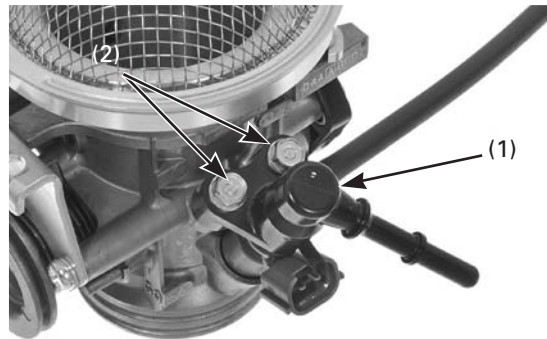
(1) IACV (2) RETAINER PLATE  
(3) SCREWS

Install the IACV while aligning the guide pin into the throttle body with the groove on the IACV valve.

Install the retainer plate aligning the IACV as shown. Install and tighten the screws.



(1) O-RING (2) CUSHION RING  
(3) INJECTOR (4) HOLDER



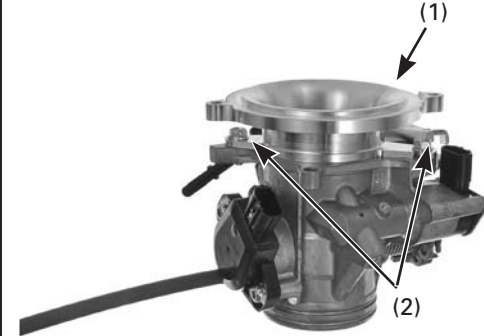
(1) HOLDER (2) BOLTS

Install the new o-ring and cushion ring to the injector.

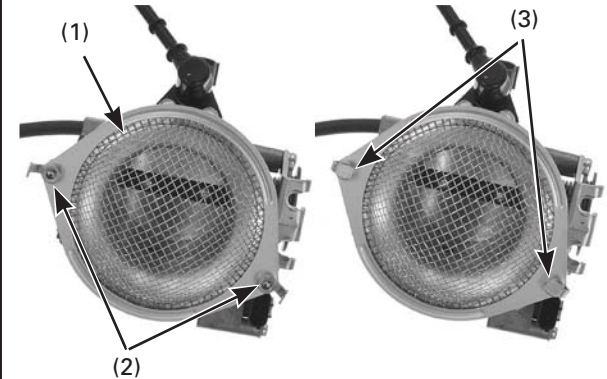
Install the injector onto the throttle body. Install the injector holder.

Install and tighten the injector holder bolts to the specified torque.

**Torque: 5.1 N·m (0.52 kgf·m, 3.8 lbf·ft)**



(1) AIR FUNNEL  
(2) BOLTS



(1) FLAME TRAP  
(2) BOLTS  
(3) RETAINERS

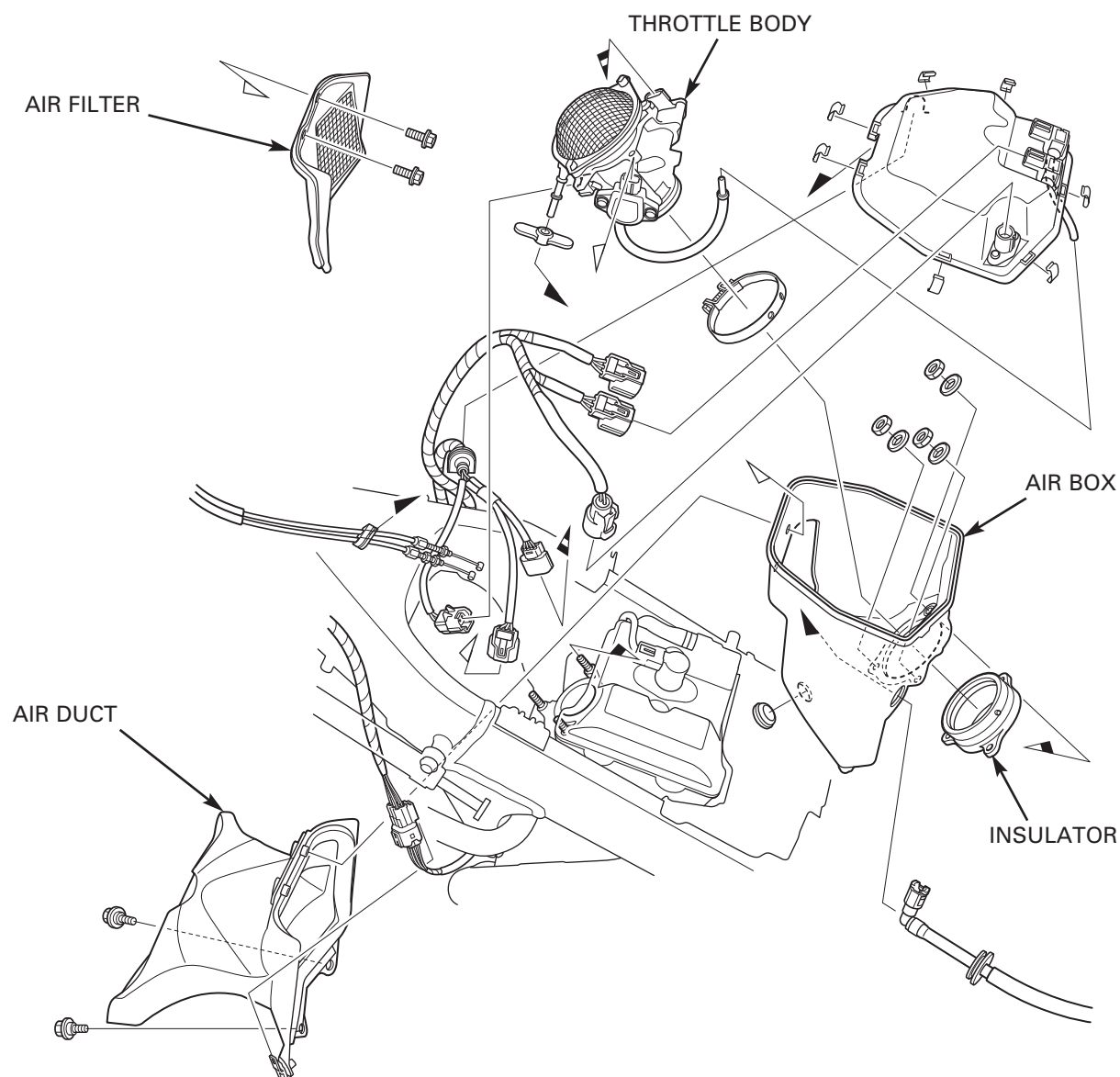
Install the air funnel to the throttle body, then install and tighten the mounting bolts.

Install the flame trap and new retainers. Install and tighten the mounting bolts to the specified torque.

**Torque: 5.1 N·m (0.52 kgf·m, 3.8 lbf·ft)**

Bend the tab of the retainers and secure the bolts.

Assembly



(1) O-RING  
(2) INSULATOR

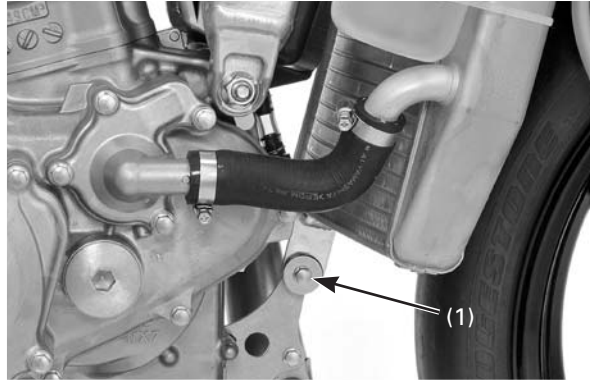
Installation is in the reverse order of removal.

Replace the insulator O-ring with a new one.

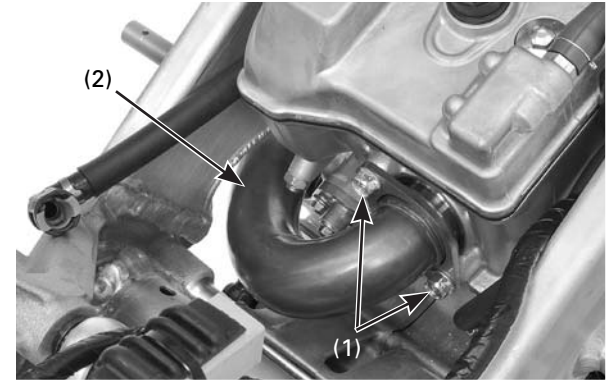
Refer to page 4-7 for fuel hose installation.



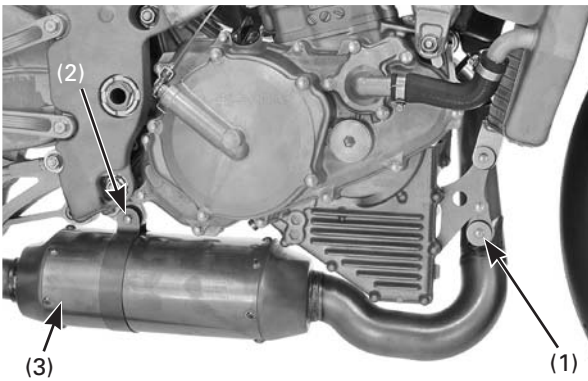
(1) EXHAUST PIPE SPRING



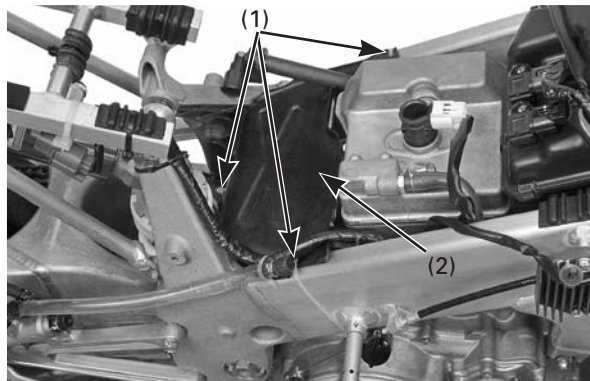
(1) LOWER MOUNTING BOLT/NUT



(1) EXHAUST PIPE JOINT BOLTS  
(2) EXHAUST PIPE



(1) BOLT (2) BAND BOLT  
(3) MUFFLER



(1) TY-RAPS (2) HEAT PROTECTOR



(1) GASKET

### Muffler/Exhaust Pipe

#### Removal

Remove the exhaust pipe spring.

Remove the muffer band bolt and exhaust pipe mounting bolt, then remove the muffer.

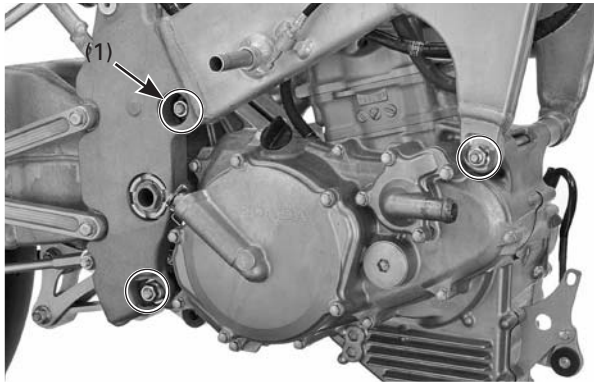
Remove the radiator lower mounting bolt/nut.

Remove the Ty-Raps® and exhaust pipe heat protector.

Remove the exhaust pipe joint bolts and exhaust pipe.

Install the exhaust pipe and muffer in the reverse order of removal.

Replace the exhaust pipe gasket with a new one. Install the muffer and exhaust pipe mounting bolts and nuts loosely, tighten the exhaust pipe joint bolts first, then tighten the mounting bolts/nuts.



(1) HANGER NUTS

### Engine Removal

Support the machine using a safety stand or hoist.

Remove the following:

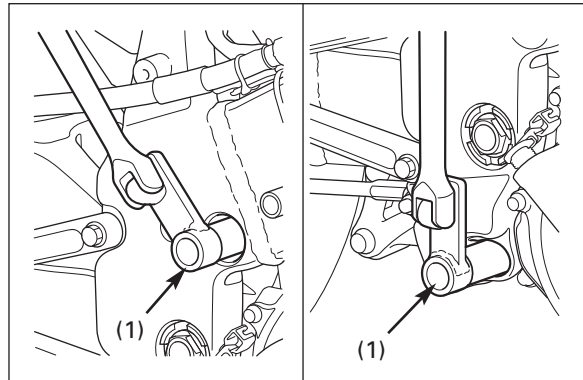
- Muffler/exhaust pipe
- Radiator
- Throttle body/air box
- Alternator/ignition pulse generator connector
- Direct ignition coil
- Drive sprocket
- Gearshift pedal joint
- Clutch cable

Drain the engine and transmission oil (page 3-10). Use floor jack or other adjustable support to carefully maneuver the engine.

Remove the rear upper and rear lower engine hanger nuts.

Remove the front engine hanger nut, bolt and shim.

Mark and store the removed shims to ensure that they are reinstalled in their proper location.



(1) LOCK NUT WRENCH

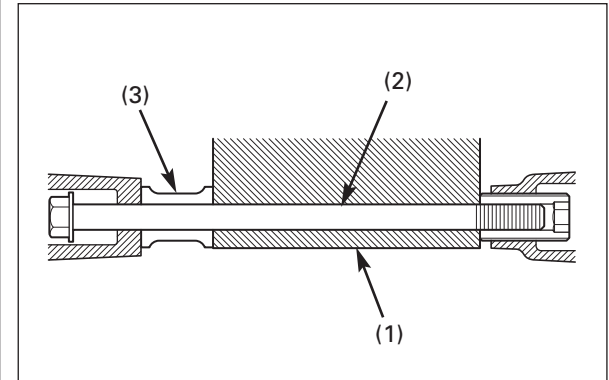
Loosen the rear upper lock nut for the engine adjusting bolt.  
Loosen the rear lower lock nut for the engine adjusting bolt.

**Tool:**  
**Lock nut wrench** **07907-NX5-010**

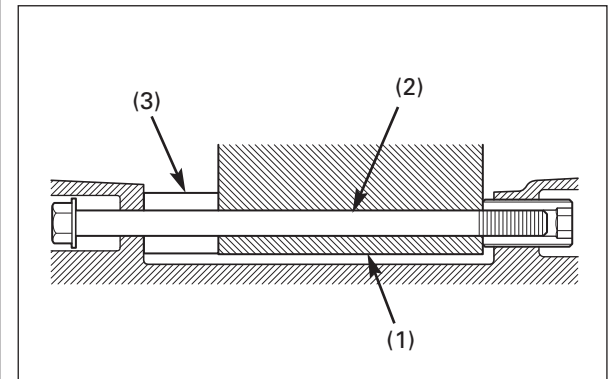
Gently tap the lower engine hanger bolt and turn the adjusting bolt counterclockwise to release the engine mounting from the frame, then remove the hanger bolt, distance collar and shim.

Gently tap the upper engine hanger bolt and turn the adjusting bolt counterclockwise to release the engine mounting from the frame, then remove the hanger bolt and distance collar.

Carefully lower the engine to remove it from the frame.



(1) ENGINE (2) REAR UPPER HANGER BOLT  
(3) DISTANCE COLLAR



(1) ENGINE (2) REAR LOWER HANGER BOLT  
(3) DISTANCE COLLAR

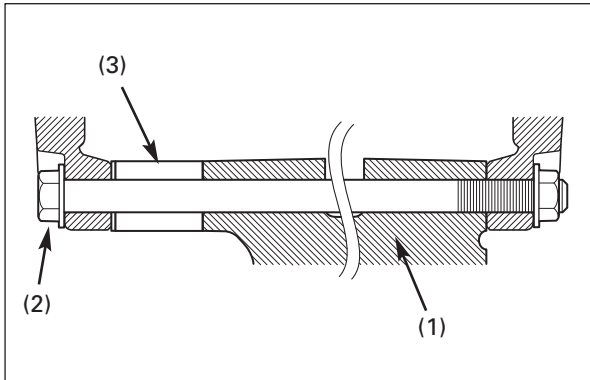
### Engine Installation

Use a floor jack or other adjustable support to carefully maneuver the engine into place. Install the distance collar and rear upper engine hanger bolt. Install the distance collar and rear lower engine hanger bolt.

Do not tighten the adjusting bolts yet.



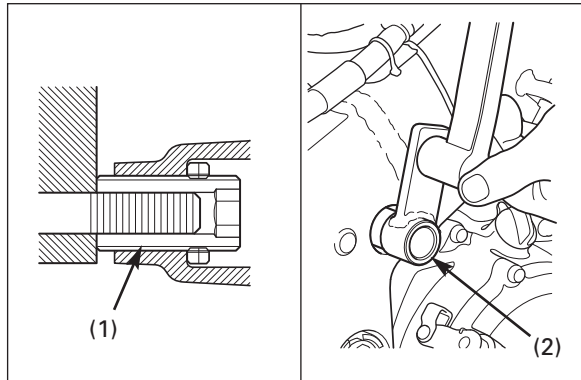
## Engine Servicing



(1) ENGINE (2) FRONT HANGER BOLT  
(3) DISTANCE COLLAR

Install the front engine hanger bolt and distance collar.

Do not tighten the front hanger bolt/nut yet.



(1) ADJUSTING BOLT (2) LOCK NUT WRENCH

Use the right end of the engine (clutch side) as a reference from the frame.

Turn the rear upper adjusting bolt in and adjust the clearance to zero (0).  
Tighten the rear upper adjusting bolt to the specified torque.

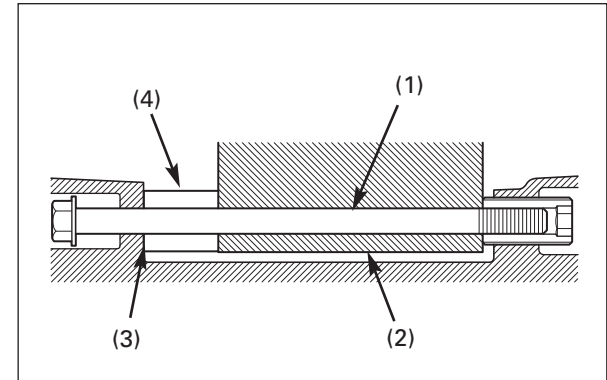
**Torque: 15 N•m (1.5 kgf•m, 11 lbf•ft)**

Tighten the upper adjusting bolt lock nut to the specified torque.

**Tool:**

**Lock nut wrench 07907-NX5-010**

**Torque: 40 N•m (4.1 kgf•m, 30 lbf•ft)**



(1) REAR LOWER HANGER BOLT (2) ENGINE  
(3) SHIM (4) DISTANCE COLLAR

Temporarily install the rear lower engine hanger distance collar.

Measure the clearance between the distance collar and frame using a feeler gauge.  
Measure the old shim thickness and adjust the clearance to zero (0) by selecting shim.

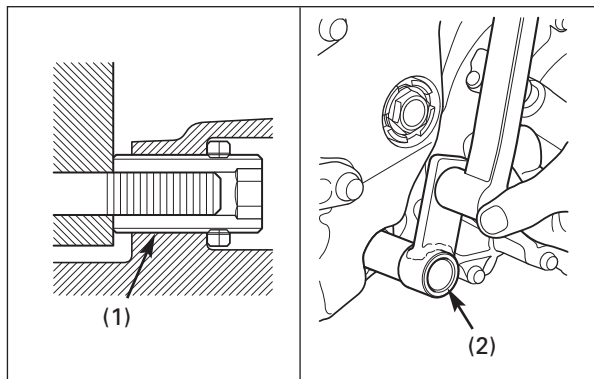
**Engine mount shim:**

**0.2 mm: 90510-NX4-000**

**0.6 mm: 90511-NX4-000**

**1.0 mm: 90512-NX4-000**

**1.5 mm: 90513-NX4-000**



(1) ADJUSTING BOLT (2) LOCK NUT WRENCH

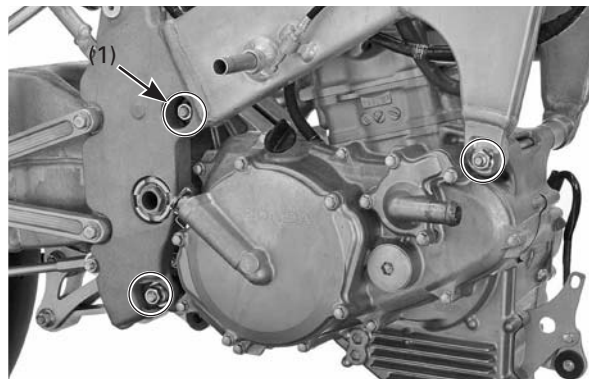
Turn the rear lower adjusting bolt in and adjust the clearance to zero (0).  
Tighten the rear lower adjusting bolt to the specified torque.

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

Tighten the rear lower adjusting bolt lock nut to the specified torque.

**Tool:**  
**Lock nut wrench** 07907-NX5-010

**Torque: 40 N·m (4.1 kgf·m, 30 lbf·ft)**



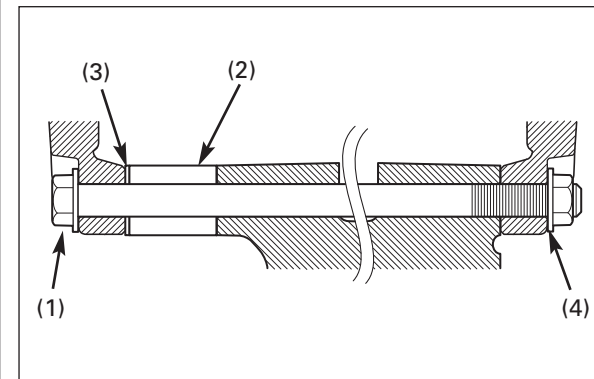
(1) HANGER NUTS

Tighten the rear upper engine hanger nut to the specified torque.

**Torque: 40 N·m (4.1 kgf·m, 30 lbf·ft)**

Tighten the rear lower engine hanger nut to the specified torque.

**Torque: 40 N·m (4.1 kgf·m, 30 lbf·ft)**



(1) FRONT ENGINE HANGER BOLT  
(2) FRONT ENGINE HANGER COLLAR  
(3) SHIM (4) HANGER NUT

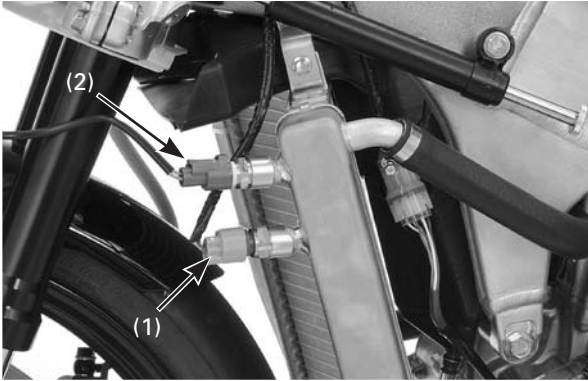
Measure the clearance between the distance collar and frame using a feeler gauge.  
Measure the old shim thickness and adjust the clearance to zero (0) by selecting shim.

**Engine mount shim:**  
**0.2 mm: 90510-NX4-000**  
**0.6 mm: 90511-NX4-000**  
**1.0 mm: 90512-NX4-000**  
**1.5 mm: 90513-NX4-000**

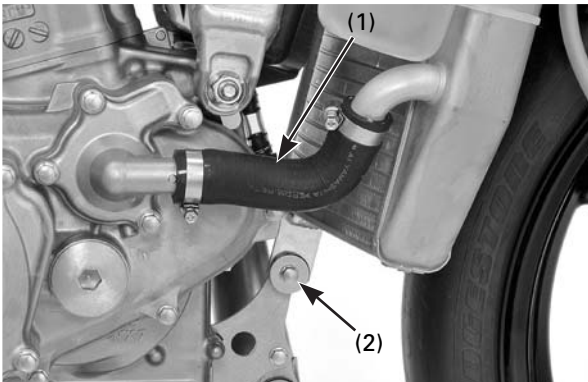
Tighten the front engine hanger nut to the specified torque.

**Torque: 40 N·m (4.1 kgf·m, 30 lbf·ft)**

Install the removed parts in the reverse order of removal.



(1) ECT SENSOR CONNECTOR  
(2) THERMO SENSOR CONNECTOR



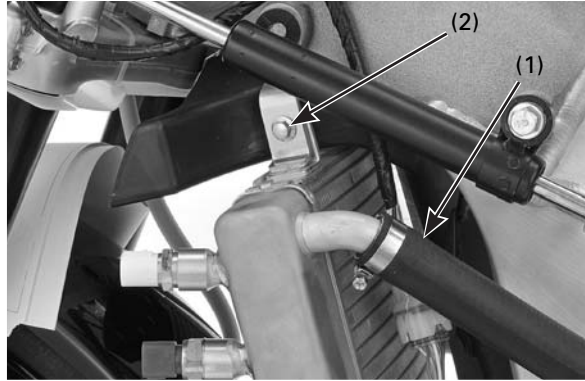
(1) LOWER RADIATOR HOSE  
(2) LOWER MOUNTING BOLT/NUT

### Radiator Removal/Installation

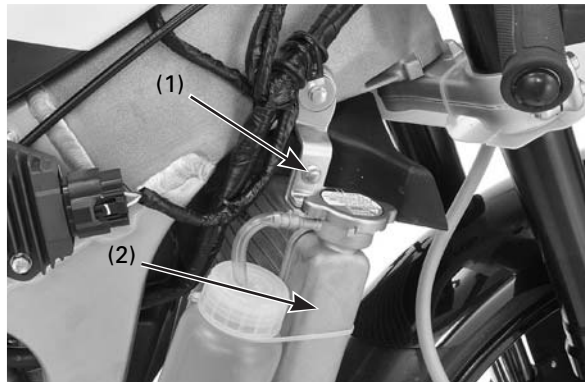
Drain the coolant.

Disconnect the ECT sensor and thermo sensor connectors.

Disconnect the lower radiator hose.  
Remove the radiator lower mounting bolt/nut.



(1) UPPER RADIATOR HOSE  
(2) UPPER MOUNTING BOLT

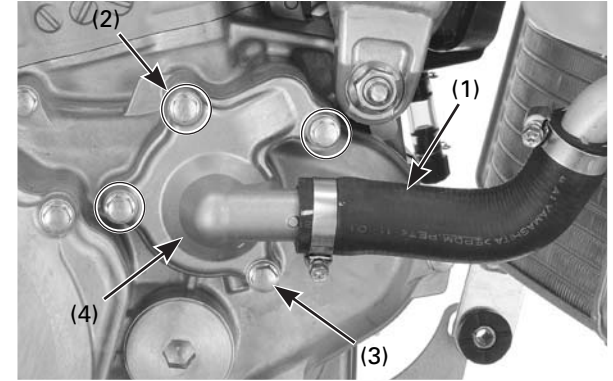


(1) UPPER MOUNTING BOLT  
(2) RADIATOR ASSEMBLY

Disconnect the upper radiator hose.  
Remove the radiator left upper mounting bolt.

Remove the right upper mounting bolt, then remove the radiator.

Installation is in the reverse order of removal.



(1) LOWER RADIATOR HOSE  
(2) BOLTS (3) BOLT/COPPER WASHER  
(4) WATER PUMP COVER

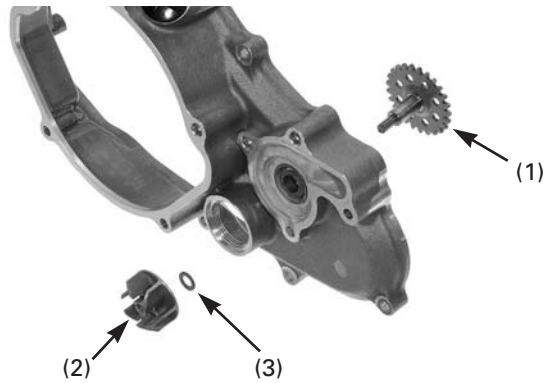
### Water Seal/Bearing Replacement

Drain the transmission oil (page 3-10).

Disconnect the lower radiator hose from the water pump cover.  
Remove the bolts, water pump cover, gasket and dowel pins.

Remove the right crankcase cover (page 4-54).



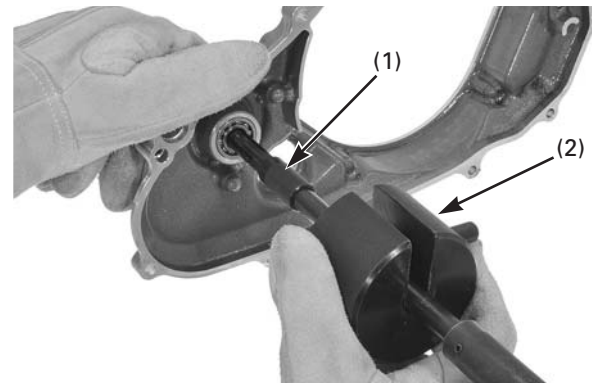


(1) WATER PUMP SHAFT/GEAR  
 (2) IMPELLER (3) COPPER WASHER

Hold the water pump gear using a suitable tool, remove the impeller and copper washer.

**NOTICE**

Be careful, the impeller has left hand threads.

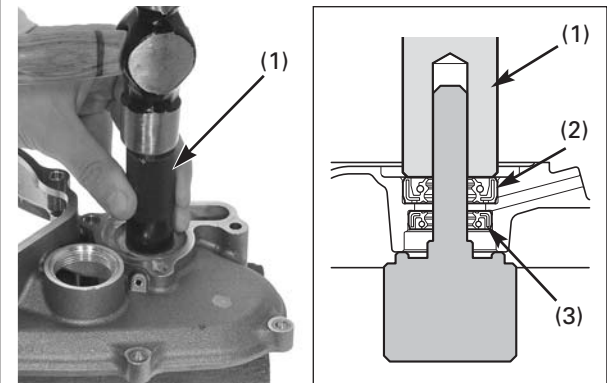


(1) BEARING REMOVER, 12 mm  
 (2) REMOVER WEIGHT

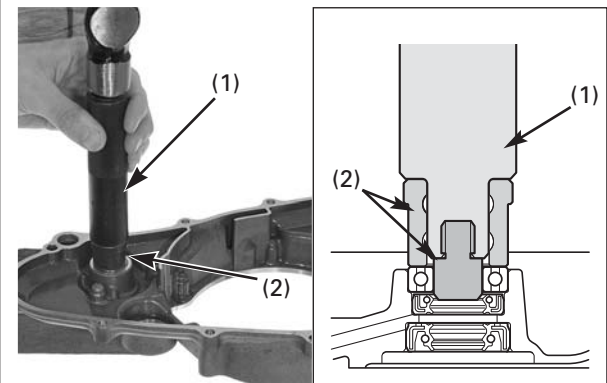
Remove the water pump bearing using the following tools.

- Tools:**  
 Bearing remover set, 12 mm 07936-166010  
 - remover head, 12 mm 07936-166010  
 - remover shaft, 12 mm 07936-1660120  
 - remover weight 07741-0010201

Remove the oil seal and water seal.



(1) WATER SEAL DRIVER  
 (2) WATER SEAL (3) OIL SEAL



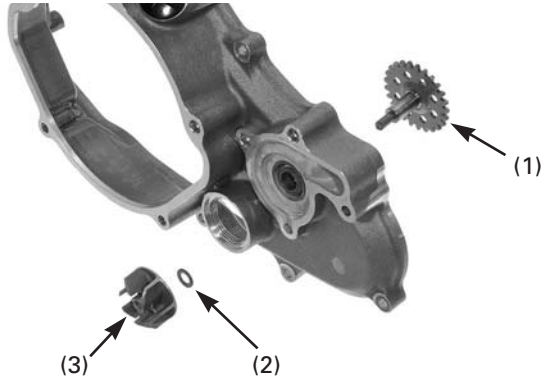
(1) DRIVER  
 (2) ATTACHMENT/PILOT

Apply lithium base multi-purpose grease to the water seal lips, then drive the seal using the special tool.

- Tool:**  
 Water seal driver 07936-KA30000

Apply multi-purpose grease to the oil seal lips, the install it into the right crankcase cover. Drive the new bearing to the right crankcase cover (tools: page 2-9).

## Engine Servicing



- (1) WATER PUMP SHAFT/GEAR  
(2) NEW COPPER WASHER  
(3) IMPELLER

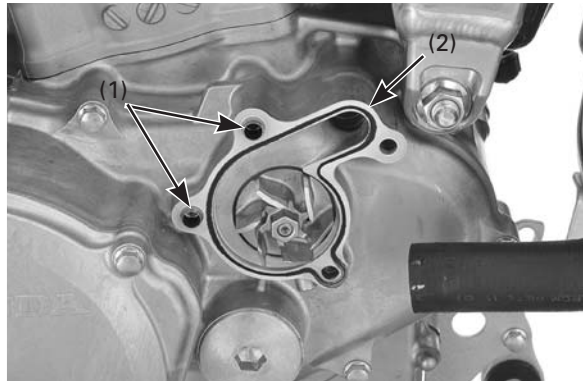
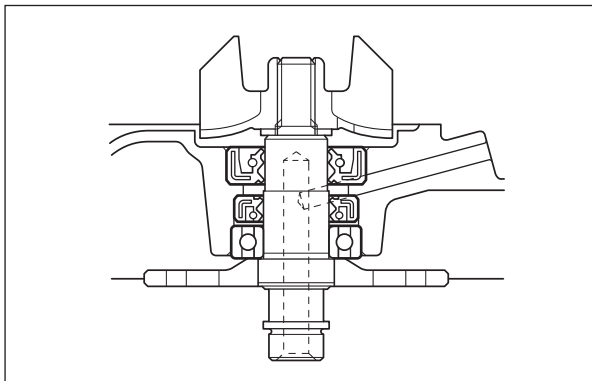
Install the water pump shaft and new copper washer to the right crankcase cover.

Hold the water pump gear using a suitable tool, then install and tighten the impeller to the specified torque.

### NOTICE

Be careful, the water pump impeller has left hand threads.

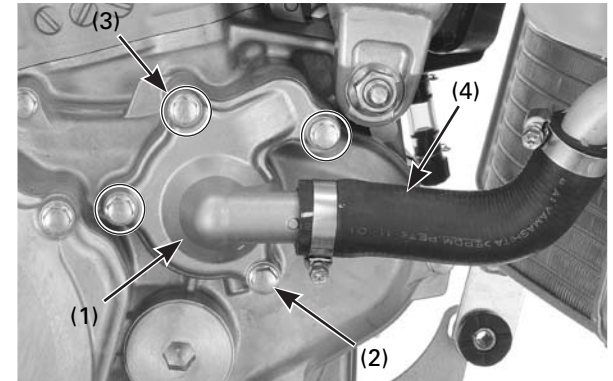
**Torque: 12 N·m (1.2 kgf·m, 9 lbf·ft)**



- (1) DOWEL PINS (2) NEW GASKET

Install the right crankcase cover (page 4-51).

Install the dowel pins and new water pump cover gasket.



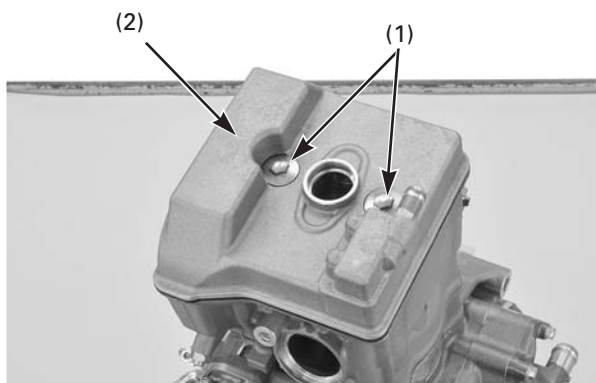
- (1) WATER PUMP COVER  
(2) SEALING WASHER/BOLT  
(3) BOLTS (4) LOWER RADIATOR HOSE

Install the water pump cover, sealing washer and cover bolts.

Tighten the cover bolts in a crisscross pattern in 2-3 steps.

Connect the lower radiator hose and tighten the hose band screw.

Pour specified transmission oil (page 3-10).  
Fill the cooling system and bleed the air (page 1-1).

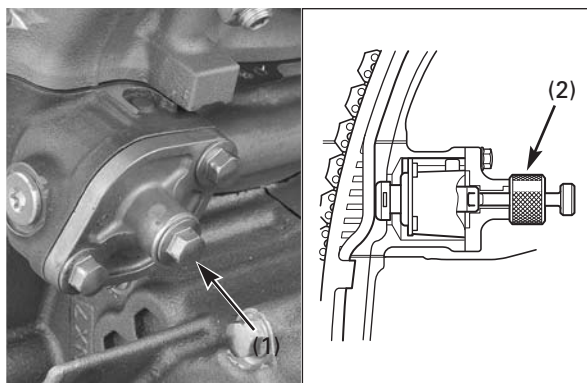


(1) COVER BOLT/WASHER  
(2) CYLINDER HEAD COVER

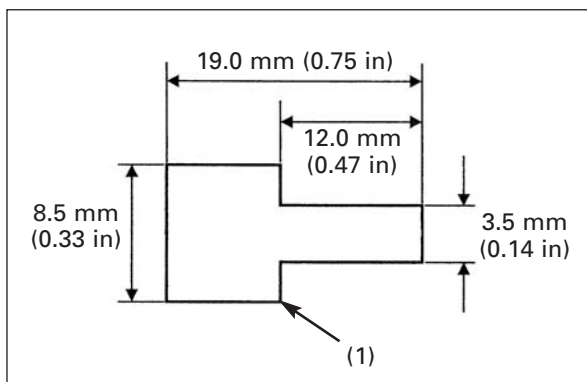
### Cylinder Head Cover/Camshaft Removal

Remove the engine from the frame (page 4-21).

Remove the cylinder head cover bolts, washers and cylinder head cover.



(1) SEALING BOLTS/WASHERS  
(2) STOPPER TOOL



(1) STOPPER TOOL

Remove the cam chain tensioner lifter sealing bolt and sealing washer.

Turn the tensioner lifter clockwise fully and secure it with the stopper tool.  
This tool can be easily be made from a thin (1 mm thick) piece of steel.



(1) TIMING HOLE CAP/O-RING

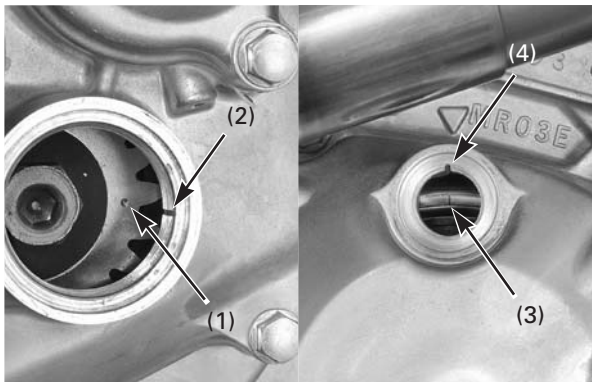


(1) CRANKSHAFT HOLE CAP/O-RING

Remove the timing hole cap and O-ring from the left crankcase cover.

Remove the crankshaft hole cap and O-ring from the right crankcase cover.

## Engine Servicing

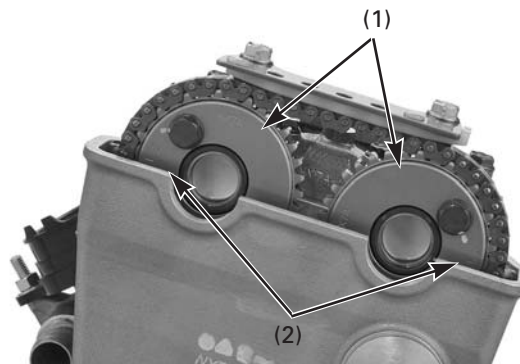


(1) PUNCH MARK (2) INDEX MARK  
(3) "T" MARK (4) INDEX MARK

Remove the spark plug (page 3-4).

Turn the crankshaft clockwise (from the right crankcase cover side), align the punch mark on the primary drive gear with the index mark on the right crankcase cover.

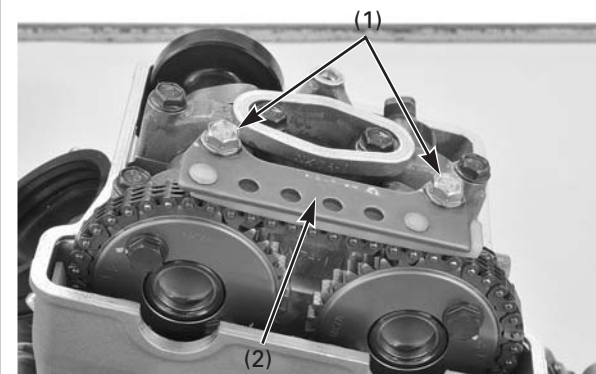
Make sure the "T" mark on the flywheel aligns with the index mark on the left crankcase cover.



(1) CAM SPROCKETS (2) INDEX LINES

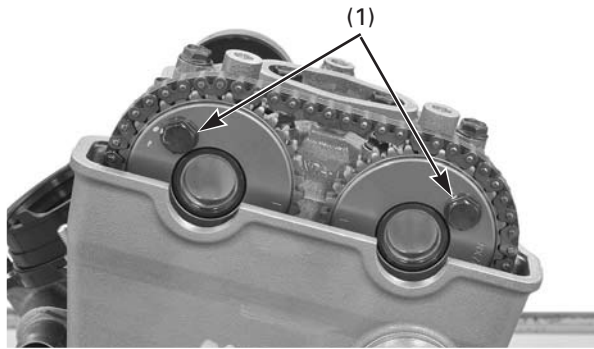
Check that the index lines on the cam sprockets are flush with cylinder head upper surface and facing outward each other (piston at top dead center on a compression stroke).

If the index lines are facing inward, turn the crankshaft one full turn (360°) and align it index lines.

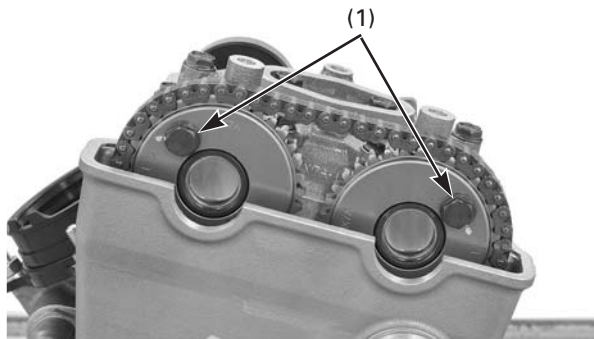


(1) BOLTS (2) CAM CHAIN GUIDE B

Remove the bolts and cam chain guide B.



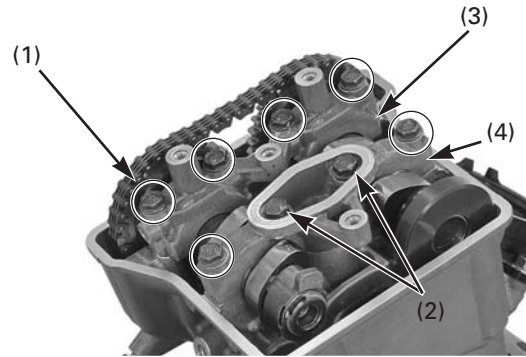
(1) SPROCKET BOLTS



(1) SPROCKET BOLTS

If you plan to replace the camshaft and/or cam sprockets, turn the crankshaft one full turn (360°) from the TDC (Top Dead Center) on the compression stroke, loosen the can sprocket bolts.

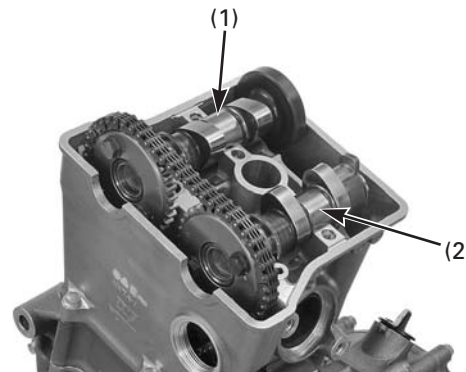
Turn the crankshaft one full turn (360°), loosen the other sprocket bolts.



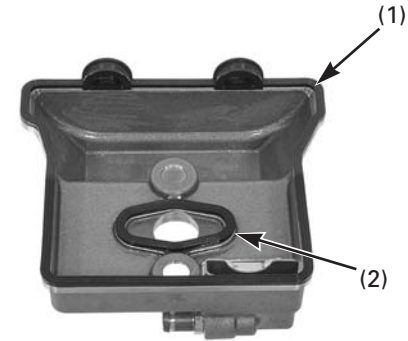
(1) HOLDER BOLTS  
(2) HOLDER BOLTS/COPPER WASHERS  
(3) HOLDER A (4) HOLDER B

Make sure the piston at TDC (Top Dead Center) on the compression stroke, remove the camshaft holder bolts and copper washers, then remove the camshaft holder A and B.

Remove the intake camshaft and exhaust camshaft. Suspend the cam chain with a piece of wire to prevent the cam chain falling into the crankcase.



(1) INTAKE CAMSHAFT  
(2) EXHAUST CAMSHAFT

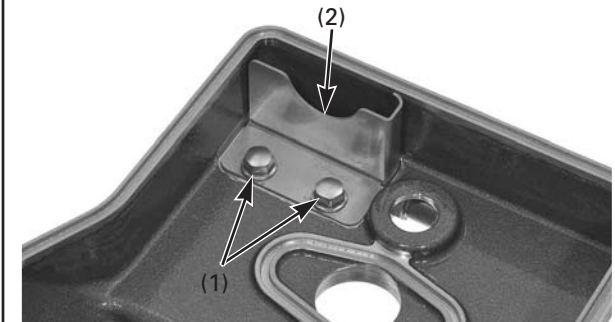


(1) PACKING  
(2) PACKING B

**Disassembly/Inspection**

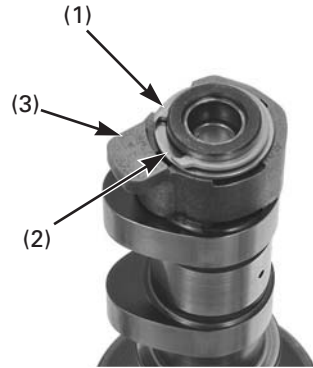
Remove the cylinder head cover packing and packing B from the cylinder head cover.

If necessary remove the bolts and breather plate from the cylinder head cover.

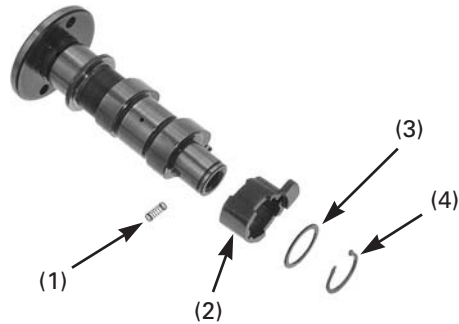


(1) BOLTS  
(2) BREATHER SEPARATOR





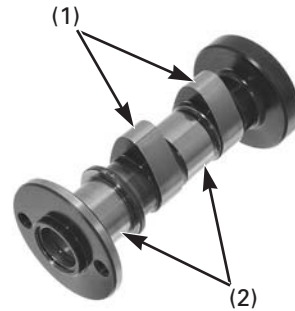
(1) SNAP RING (2) WASHER  
(3) DECOMPRESSER CAM PLATE



(1) SPRING (2) DECOMPRESSION CAM PLATE  
(3) WASHER (4) SNAP RING

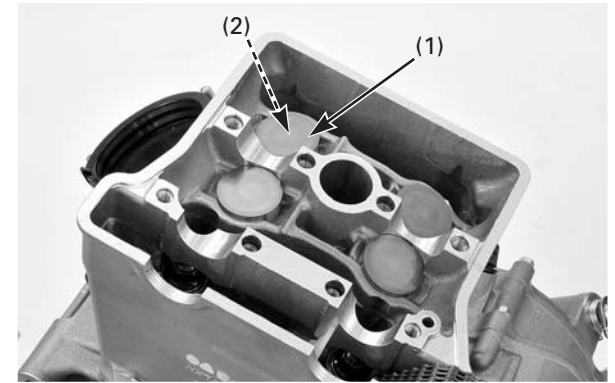
Remove the snap ring and washer, then remove the decompression cam plate and spring from the exhaust camshaft.

Check the decompression cam plate for wear or damage.  
Replace the decompression cam plate if necessary.  
Apply molybdenum disulfide grease to the sliding surface of the decompression cam plate, assemble the decompression cam plate in the reverse order of disassembly.



(1) CAM LOBES  
(2) CAM JOURNALS

Check the cam lobe for wear or damage.  
Check the camshaft journal surface for wear or damage.

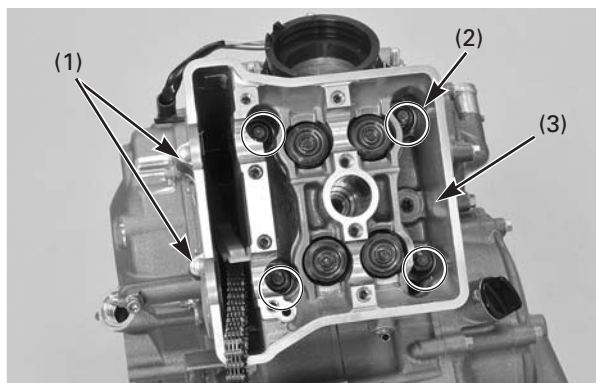


(1) VALVE LIFTER  
(2) SHIM

### Cylinder Head Removal

Remove the camshafts (page 4-27).

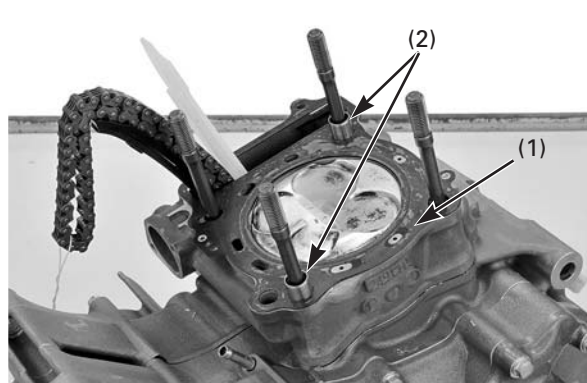
Remove the valve lifters and shims.



- (1) 6 mm BOLTS
- (2) NUTS AND SEALING WASHERS
- (3) CYLINDER HEAD

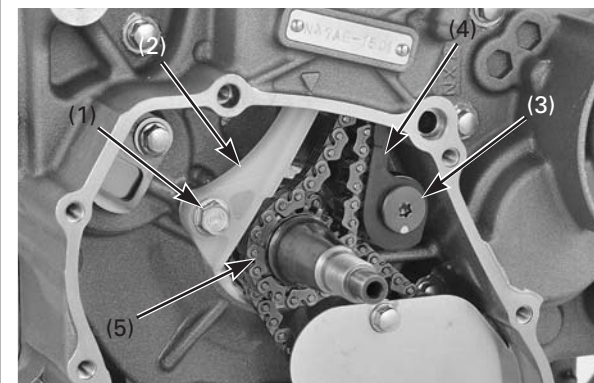
Remove the cylinder head mounting 6 mm bolts.

Loosen the cylinder head nuts in a crisscross pattern in 2 or 3 steps.  
Remove the cylinder head nuts and washers, then remove the cylinder head.



- (1) GASKET (2) DOWEL PINS

Remove the gasket and dowel pins.



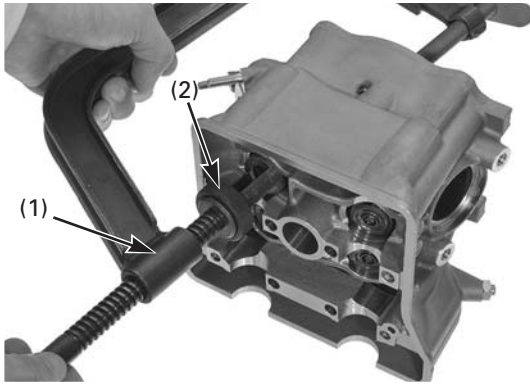
- (1) BOLT/COLLAR (2) CAM CHAIN GUIDE
- (3) BOLT/COLLAR (4) CAM CHAIN TENSIONER
- (5) CAM CHAIN

Remove the flywheel (page 4-67).

Remove the pivot bolt, cam chain guide and pivot collar.  
Remove the pivot bolt, cam chain tensioner and pivot collar.

Remove the cam chain from the cam chain drive sprocket on the crankshaft.





(1) VALVE SPRING COMPRESSOR  
(2) ATTACHMENT

### Cylinder Head Disassembly

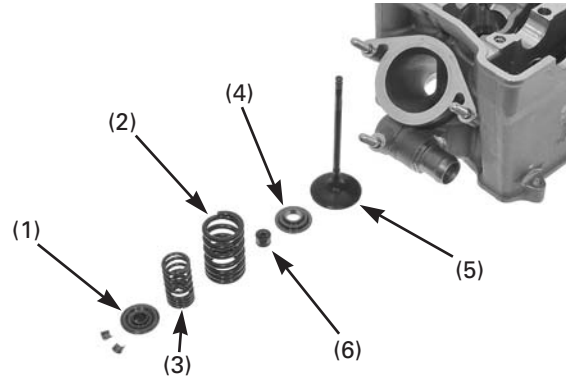
Remove the cylinder head (page 4-30).

Remove the valve spring cotter using the following tools.

#### Tools:

**Valve spring compressor**      07757-0010000  
**Compressor attachment**      07956-KM30101

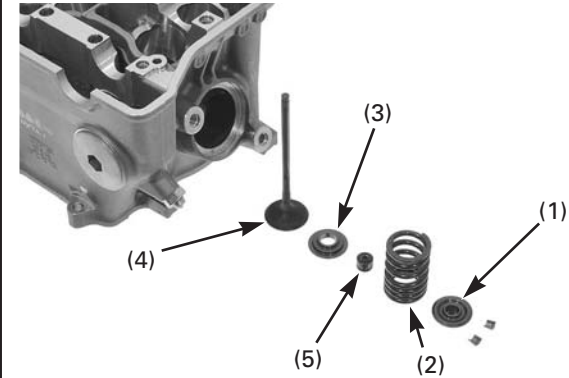
To prevent loss of tension, do not compress the valve springs more than necessary.



(1) RETAINER (2) OUTER VALVE SPRING  
(3) INNER VALVE SPRING (4) SPRING SEAT  
(5) INTAKE VALVE (6) STEM SEAL

Remove the following:

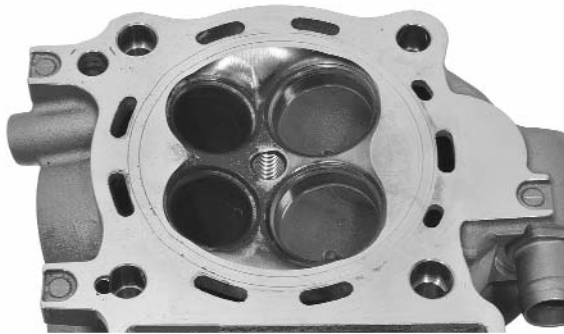
- spring seat retainer
- outer and inner valve spring
- valve spring seat
- intake valve
- stem seal



(1) RETAINER (2) VALVE SPRING  
(3) SPRING SEAT (4) EXHAUST VALVE  
(5) STEM SEAL

Remove the following:

- spring retainer
- valve spring
- valve spring seat
- exhaust valve
- stem seal

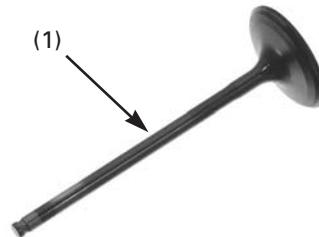


## Cylinder Head Inspection

### Cylinder Head

Remove the carbon deposits from the combustion chamber or exhaust port.  
Use care not to scratch the combustion chamber or the head gasket surface.

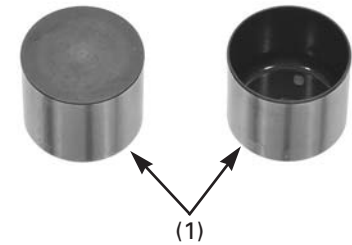
Check the spark plug hole and valve area for cracks.



(1) VALVE

This machine's intake and exhaust valves are titanium with a special coating.  
If the brown coating of the valve is removed, or the metal surface is appeared, replace the valve with a new one.

Check the valve for wear or damage.



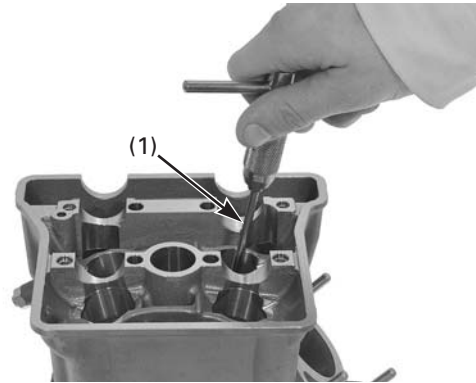
(1) VALVE LIFTER

Check that the top and outer surface of the valve lifter for wear or damage.



### Valve spring

Check the valve springs for fatigue or damage.

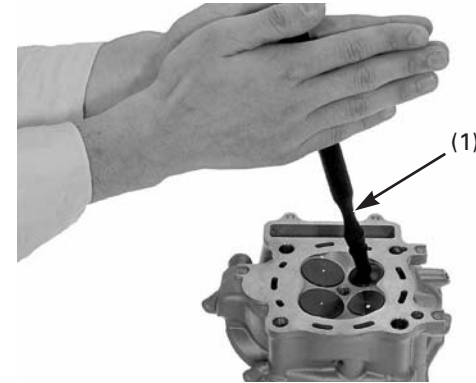


(1) VALVE GUIDE REAMER

### Valve Seat Inspection/Refacing

This machine's intake and exhaust valves are titanium. If the brown coating of the valve is removed, or the metal surface is appeared, replace the valve with a new one.

Clean the intake and exhaust valves thoroughly to remove carbon deposits. Ream the valve guide to remove any carbon build-up.



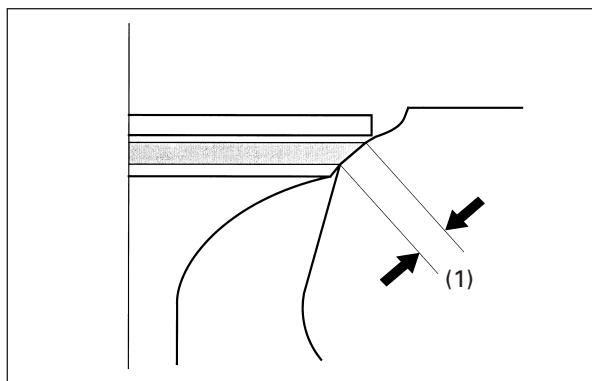
(1) VALVE LAPPING TOOL

Apply a light coating of Prussian Blue to the valve seat.

Tap the valves and seats using a rubber hose or other hand lapping tool. Remove the valve and inspect the valve seat face.

If a valve face is burned or badly worn or if it contacts the seat unevenly, replace the valve.

The valve seat contact should be within the specified width and even all around the circumference.

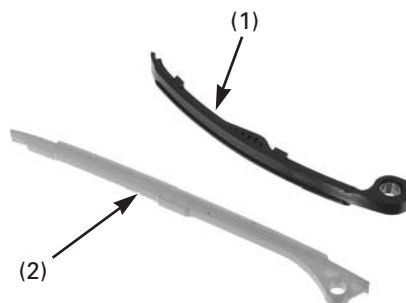


(1) VALVE SEAT WIDTH

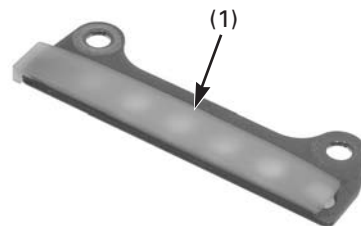
Inspect the width of each valve seat.

**Valve seat width:**  
**IN/EX: 1.0 mm (0.04 in)**

If the seat is too wide, too narrow or has low spots, replace the cylinder head and valve as a set.



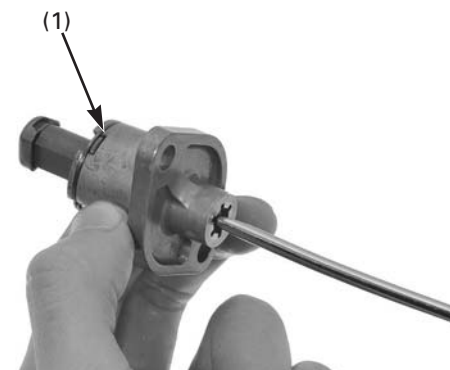
(1) CAM CHAIN TENSIONER  
 (2) CAM CHAIN GUIDE



(1) CAM CHAIN GUIDE B

Check that the cam chain guide and cam chain tensioner for excessive wear or damage, replace if necessary.

Check that the cam chain guide B for excessive wear or damage, replace if necessary.

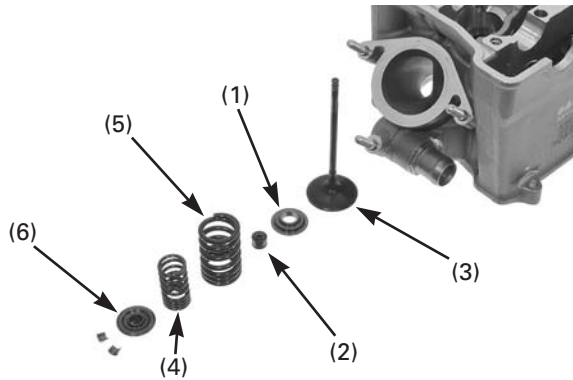


(1) TENSIONER LIFTER

**Tensioner lifter**

Check the tensioner lifter operation as follows:

- The tensioner shaft should not go into the body when it is pushed.
- When it is turned clockwise with a screwdriver, the tensioner shaft should be pulled into the body. The shaft should spring out of the body as soon as the screwdriver is released.



(1) SPRING SEAT (2) STEM SEAL  
(3) VALVE (4) INNER SPRING  
(5) OUTER SPRING (6) RETAINER

### Cylinder Head Assembly

Blow out all oil passages in the cylinder head with compressed air.

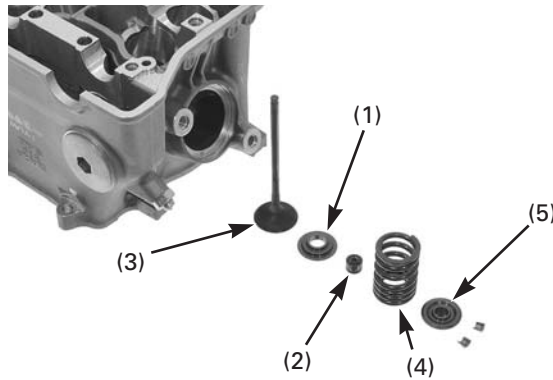
Install the spring seats and new stem seals.

Lubricate the valve stem sliding surface with molybdenum solution.

Insert the intake valves into the guide while turning it slowly to avoid damage to the stem seals.

Install the valve springs with the tightly wound coils facing the combustion chamber.

Install the spring retainers.



(1) SPRING SEAT (2) STEM SEAL  
(3) VALVE (4) VALVE SPRING  
(5) RETAINER

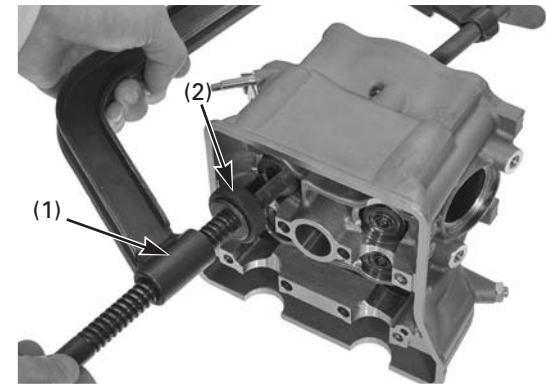
Install the spring seats and new stem seals.

Lubricate the valve stem sliding surface with molybdenum solution.

Insert the exhaust valves into the guide while turning it slowly to avoid damage to the stem seals.

Install the valve spring with the tightly wound coils facing the combustion chamber.

Install the spring retainers.



(1) VALVE SPRING COMPRESSOR  
(2) ATTACHMENT

Compress the valve springs with the special tools and install the cotters.  
Grease the cotters to ease installation.

#### Tools:

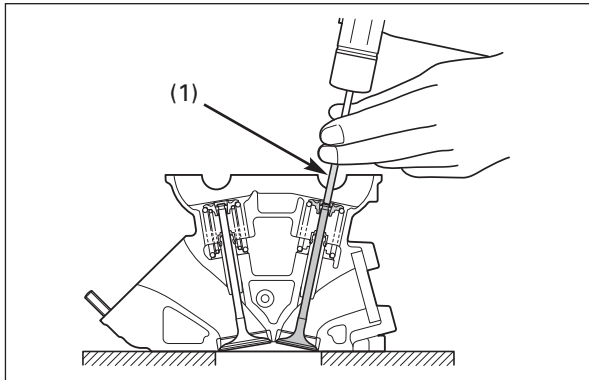
**Valve spring compressor**

**07757-001000**

**Compressor attachment**

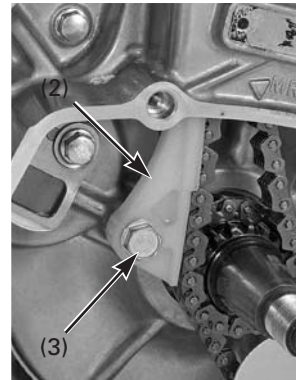
**07959-KM30101**

To prevent loss of tension, do not compress the valve springs more than necessary.



(1) PLASTIC PIN DRIVER

Tap the valve stems gently with plastic pin driver as shown to seat the cotters firmly. Support the cylinder head so the valve heads do not contact anything that may damage them.



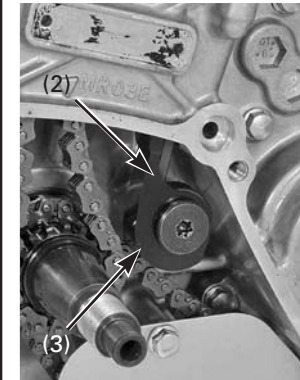
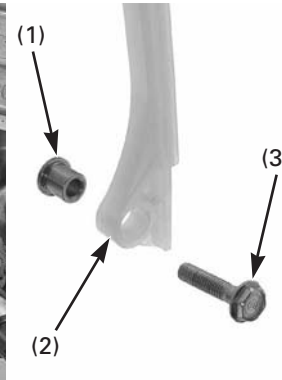
(1) PIVOT COLLAR  
(2) CAM CHAIN GUIDE  
(3) PIVOT BOLT

### Cylinder Head Installation

Apply oil to the whole surface of the cam chain. Install the cam chain to the drive sprocket on the crankshaft.

Apply molybdenum oil solution to the sliding surface of the cam chain guide. Apply a locking agent to the cam chain guide pivot bolt threads. Install the cam chain guide pivot collar, cam chain guide and pivot bolt. Tighten the cam chain guide pivot bolt to the specified torque.

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

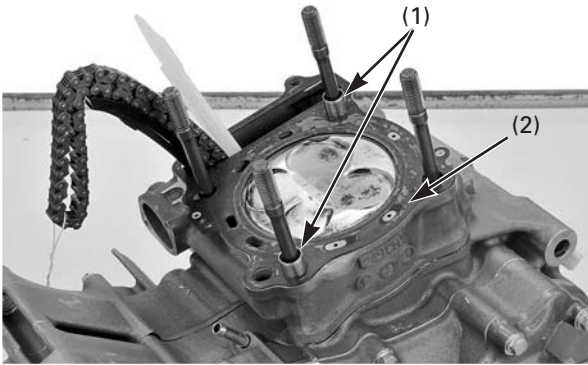


(1) PIVOT COLLAR  
(2) CAM CHAIN TENSIONER  
(3) PIVOT BOLT

Apply molybdenum solution to the sliding surface of the cam chain tensioner. Apply a locking agent to the cam chain tensioner pivot bolt threads. Install the cam chain tensioner pivot collar, cam chain guide and pivot bolt. Tighten the cam chain tensioner pivot bolt to the specified torque.

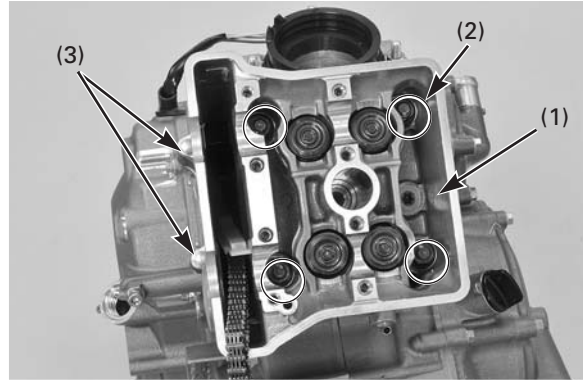
**Torque: 12 N·m (1.2 kgf·m, 9 lbf·ft)**





- (1) DOWEL PINS
- (2) NEW CYLINDER HEAD GASKET

Install the dowel pins and new cylinder head gasket.



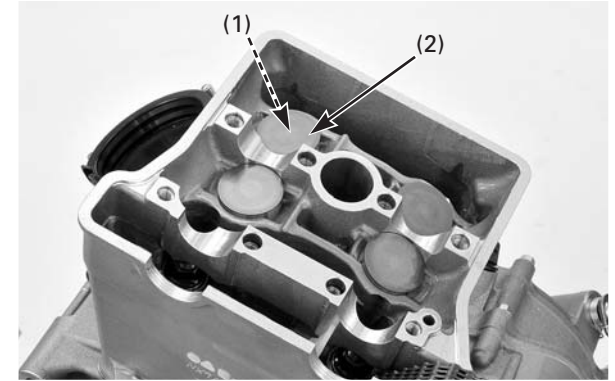
- (1) CYLINDER HEAD
- (2) SEALING WASHERS/NUTS
- (3) 6 mm BOLTS

Install the cylinder head onto the cylinder. Apply engine oil to the cylinder head mounting nut threads and seating surface, then install the sealing washers and nuts. install the cylinder head mounting 6 mm bolts.

Tighten the cylinder head nuts in a crisscross pattern in 2 - 3 steps, then tighten the nuts to the specified torque.

**Torque: 39 N•m (4.0 kgf•m, 29 lbf•ft)**

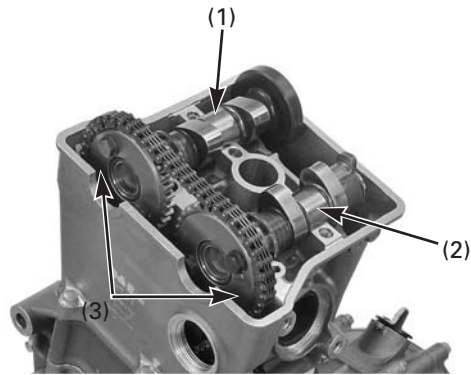
Tighten the cylinder head 6 mm bolts.



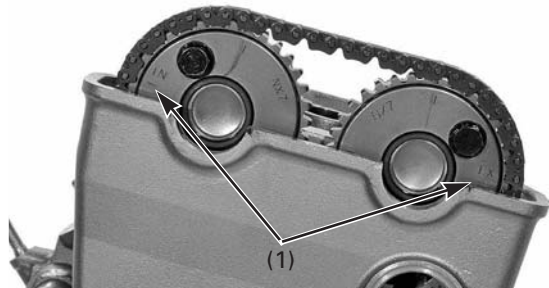
- (1) SHIM
- (2) VALVE LIFTERS

### Camshaft/Cylinder Head Cover Installation

Apply molybdenum solution to the outer surface of the valve lifter. Install the shims and valve lifters.



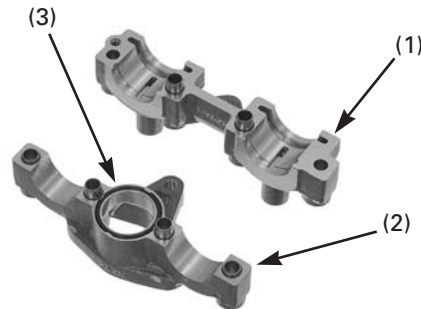
(1) INTAKE CAMSHAFT  
(2) EXHAUST CAMSHAFT  
(3) INDEX LINES



(1) INDEX LINES

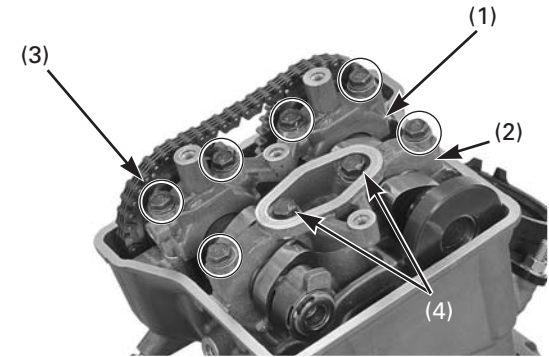
Place the piston top dead center.

Apply molybdenum oil solution to the cam lobes, journals and thrust surfaces.  
Install the cam chain over the cam sprocket, then set the intake and exhaust camshafts to the cylinder head.  
Make sure that the index lines on the cam sprocket are flush with upper surface of the cylinder head and facing outward as shown.



(1) CAMSHAFT HOLDER A  
(2) CAMSHAFT HOLDER B  
(3) O-RING

Install a new O-ring to the camshaft holder B groove.  
Apply molybdenum oil solution to the camshaft journals.

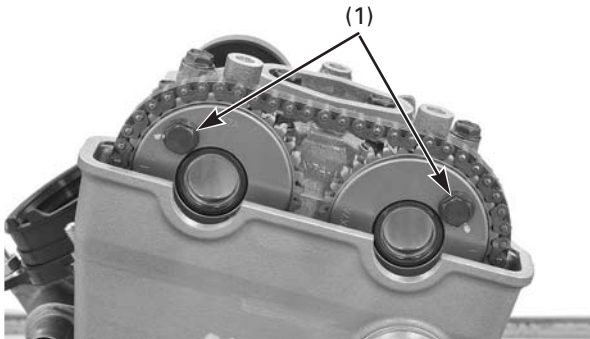


(1) CAMSHAFT HOLDER A  
(2) CAMSHAFT HOLDER B (3) HOLDER BOLTS  
(4) COPPER WASHERS/BOLTS

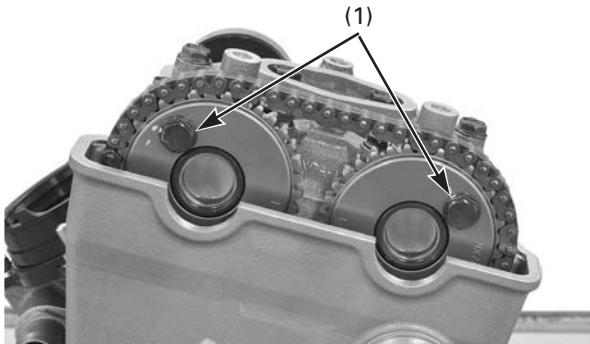
Apply engine oil to the camshaft holder bolt threads.  
Install the camshaft holder A and B to the cylinder head, then install the copper washers and holder bolts.  
Tighten the holder bolts in a crisscross pattern starting with dowel pin side.  
Tighten the holder bolts to the specified torque.

**Torque: 12 N•m (1.2 kgf•m, 9 lbf•ft)**

## Engine Servicing



(1) CAM SPROCKET BOLTS



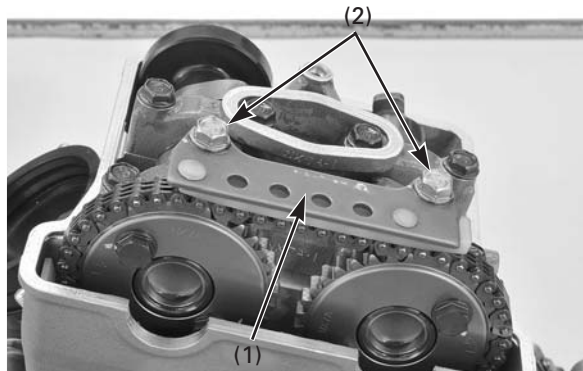
(1) CAM SPROCKET BOLTS

If the cam sprocket bolts are loosen or removed, apply oil to the cam sprocket bolt threads. Install the cam sprocket bolts to the specified torque.

**Torque: 22 N•m (2.2 kgf•m, 16 lbf•ft)**

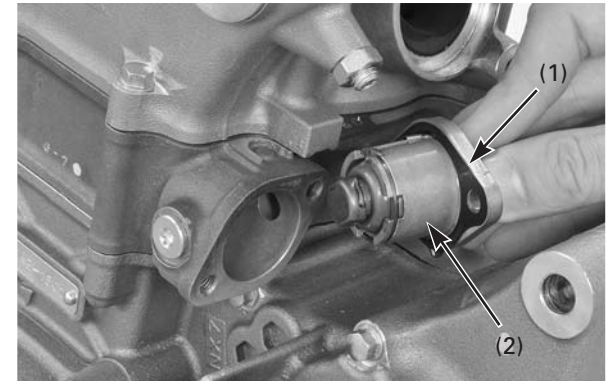
Turn the crankshaft one full turn (360°), tighten the other cam sprocket bolts to the specified torque.

**Torque: 22 N•m (2.2 kgf•m, 16 lbf•ft)**

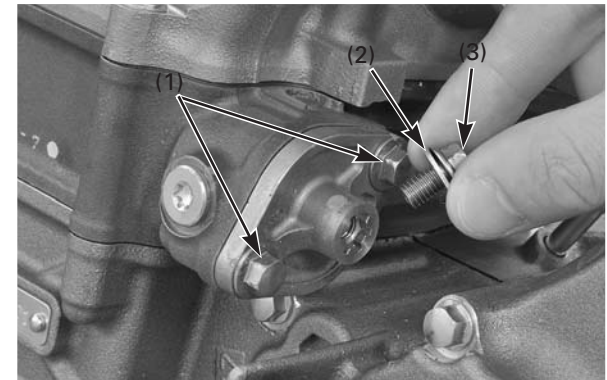


(1) CAM CHAIN GUIDE B  
(2) BOLTS

Install the cam chain guide and tighten the bolts.



(1) GASKET  
(2) CHAIN TENSIONER LIFTER

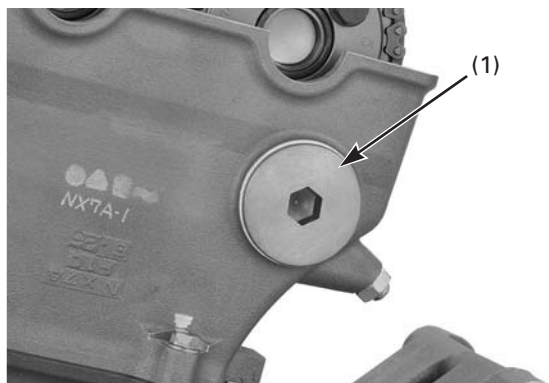


(1) BOLTS  
(2) SEALING WASHER  
(3) SEALING BOLT

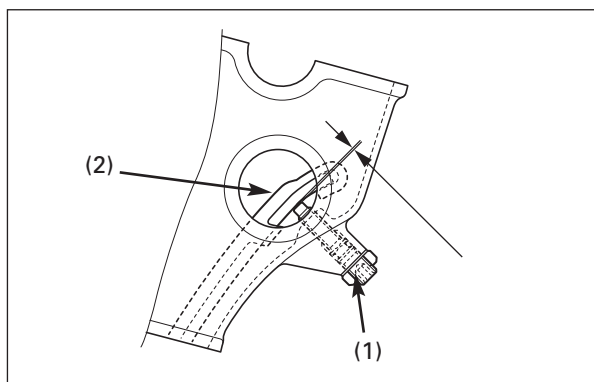
Install the gasket and cam chain tensioner lifter to the cylinder. Install and tighten the cam chain tensioner lifter mounting bolts.

Release the cam chain tensioner.

Install a new sealing washer and sealing bolt, then tighten the bolt securely.



(1) ADJUSTER HOLE CAP

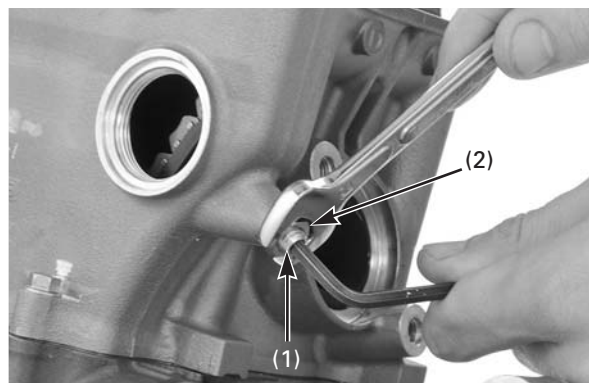


(1) ADJUSTER  
(2) TENSIONER

Remove the cam chain adjuster hole cap from the cylinder head.

Turn the crankshaft clockwise 3 turns.  
Check the clearance between the cam chain adjuster tip and cam chain tensioner.

**Clearance: 0 mm (0 in)**



(1) ADJUSTER  
(2) LOCK NUT

To adjust the clearance, loosen the lock nut, turning the adjuster.  
After adjustment, hold the adjuster and tighten the lock nut to the specified torque.

**Torque: 1.0 N·m (0.1 kgf·m, 0.7 lbf·ft)**



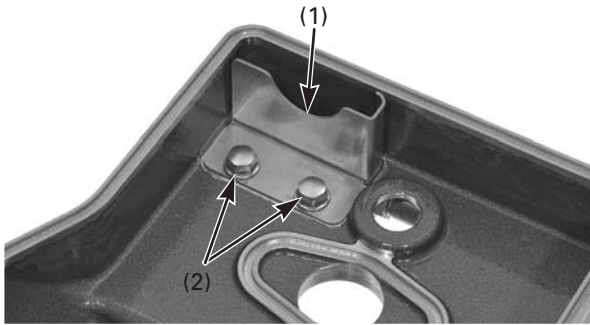
(1) O-RING  
(2) ADJUSTER HOLE CAP

Apply multi-purpose grease to the threads and seating surface of the cam chain adjuster hole cap.

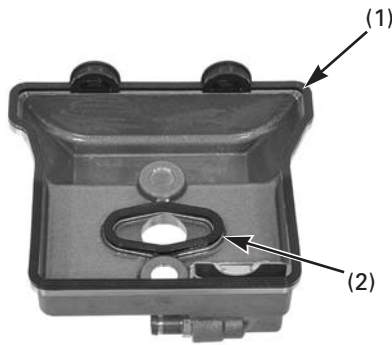
Apply grease to a new O-ring and install it to the cam chain adjuster hole cap.  
Install and tighten the cam chain adjuster hole cap to the specified torque.

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





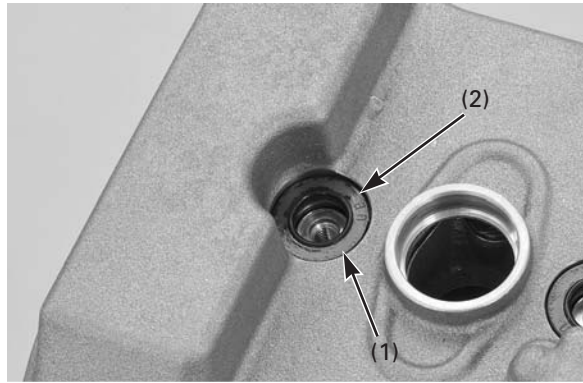
(1) BREATHER SEPARATOR  
(2) BOLTS



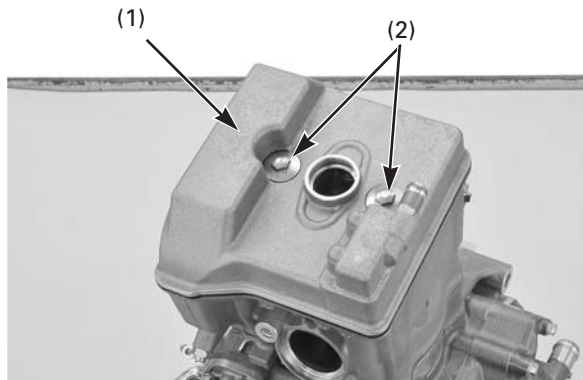
(1) PACKING  
(2) PACKING B

If the breather separator was removed, install it to the cylinder head cover.  
Apply a locking agent to the breather separator bolt threads, then install and tighten the bolts.

Install the cylinder head cover packing A and packing B to the cylinder head cover.



(1) WASHER  
(2) "UP" MARK

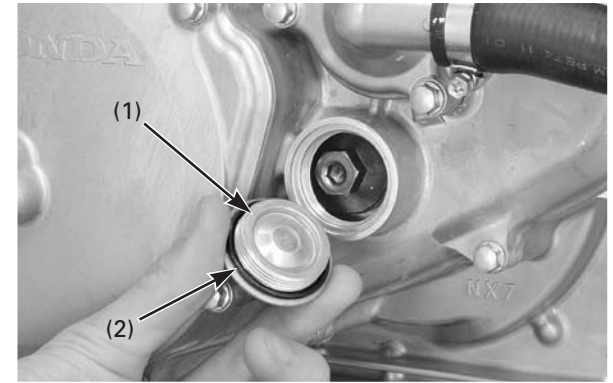


(1) CYLINDER HEAD COVER  
(2) BOLTS

Install the washers with its "UP" mark facing up.

Install and tighten the cylinder head cover bolt to the specified torque.

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



(1) CRANKSHAFT HOLE CAP  
(2) O-RING



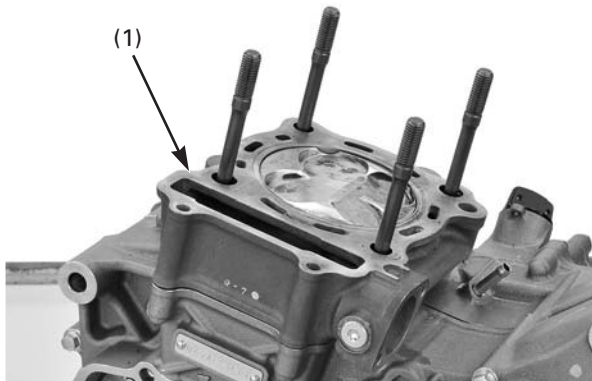
(1) TIMING HOLE CAP  
(2) O-RING

Apply grease to the new O-ring and install it onto the crankshaft hole cap. Install and tighten the crankshaft hole cap to the specified torque.

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

Apply grease to the new O-ring and install it onto the timing hole cap. Install and tighten the timing hole cap to the specified torque.

**Torque: 6 N·m (0.6 kgf·m, 4.4 lbf·ft)**



(1) CYLINDER

## Cylinder, Piston

### Cylinder Removal

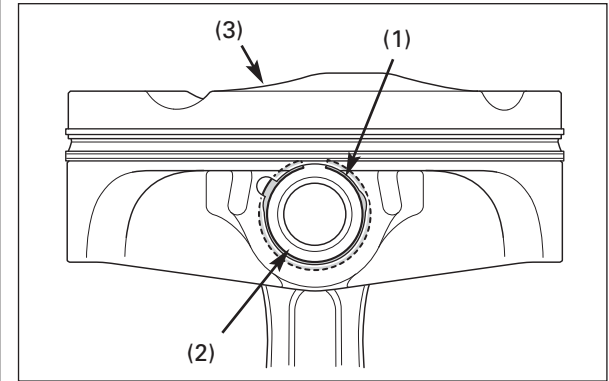
Remove the cylinder head (page 4-30).  
Remove the cam chain tensioner lifter and gasket (page 4-27).

Remove the cylinder.



(1) GASKET  
(2) DOWEL PINS

Remove the gasket and dowel pins.



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

### Piston Removal

Place a clean shop towel over the crankcase to prevent the clip from falling into the crankcase.  
Remove the piston pin clips with pliers.

Press the piston pin out of the piston and remove the piston.

- The piston pin clip fitting area has plating processing.
- Do not use tool which may damage a piston ring groove or piston pin clip.
- Replace the piston with a new one, whenever the piston pin clip is removed.

Be careful not to damage the plating while removing the piston pin clip.





Spread the piston rings and remove them by lifting up at a point just opposite the gap.

Piston rings are easily broken; take care not to damage them during removal.



(1) CYLINDER



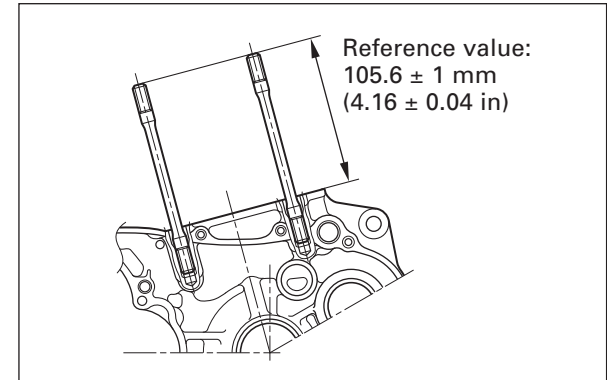
### Inspection

#### Cylinder

Inspect the cylinder bore for wear or damage.

#### Piston/Piston Ring

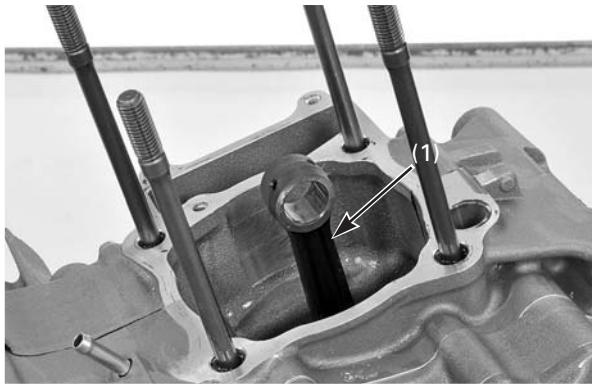
Remove the carbon deposits from the piston head or piston ring grooves using old piston rings. Inspect the piston for damage and the ring grooves for wear.



If the cylinder stud bolt was removed, install the stud bolts as shown. Tighten the stud bolts to the specified torque.

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

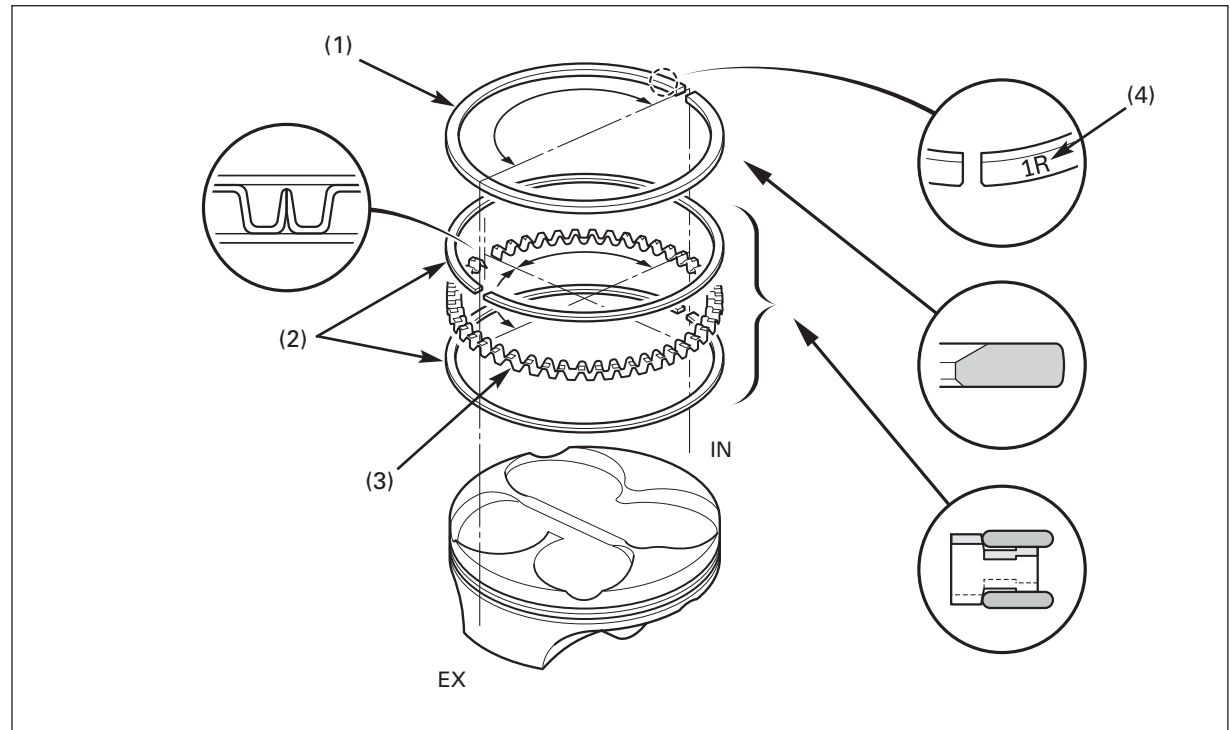
**Reference value: 105.6 ± 1 mm (4.16 ± 0.04 in)**



(1) CONNECTING ROD

**Connecting Rod**

Check the connecting rod small end for wear or damage.



(1) TOP RING (2) SIDE RAILS  
(3) SPACER (4) MARKING

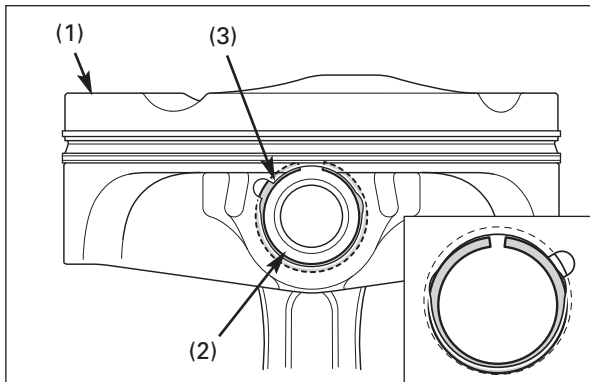
**Piston Ring Installation**

Clean the piston ring grooves thoroughly. Apply engine oil to the piston rings and piston ring grooves. Install the piston ring into the grooves with their marking facing up.

- Do not damage the piston ring by spreading the ends too far.
- Be careful not to damage the piston during piston ring installation.
- Install the top ring with its marking facing up and with its gap facing intake side.
- Install the upper side rail with its gap facing exhaust side and the lower side rail facing intake side.
- Install the expander gap facing the piston pin direction and being careful not to overlap the gap.
- For easy piston installation, apply grease to the expander gap after the oil ring is installed.

After installation, the rings should rotate freely in the ring grooves.

## Engine Servicing



(1) "IN" MARK (2) PISTON PIN  
(3) NEW PISTON PIN CLIP

### Piston Installation

Place a shop towel over the cylinder opening to prevent dust or dirt from entering the engine. Clean any gasket material from the cylinder mating surfaces of the crankcase. Apply molybdenum oil solution to the connecting rod small end.

Place a shop towel around the piston skirt and in the crankcase to prevent the piston pin clips from falling into the crankcase.

Apply engine oil to the piston pin outer surface and piston pin bore of the piston. Install the piston with the "IN" mark facing intake side.

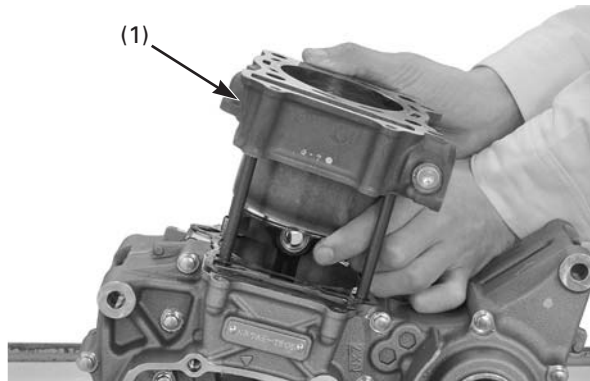
Install the piston pin.

Install new piston pin clip gap facing up and then install the gap side first then install the opposite side into the groove.

- Do not use tool which may damage a piston ring groove or piston pin clip.
- Do not rotate the piston pin clip after installation.
- To prevent damage the piston ring groove plating, install opposite side of the piston pin clip before installing the piston pin.



(1) DOWEL PINS  
(2) NEW GASKET

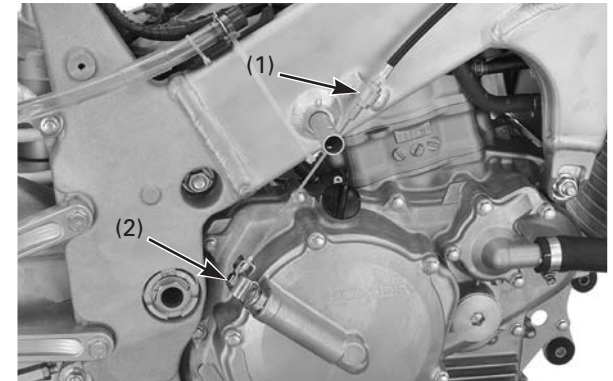


(1) CYLINDER

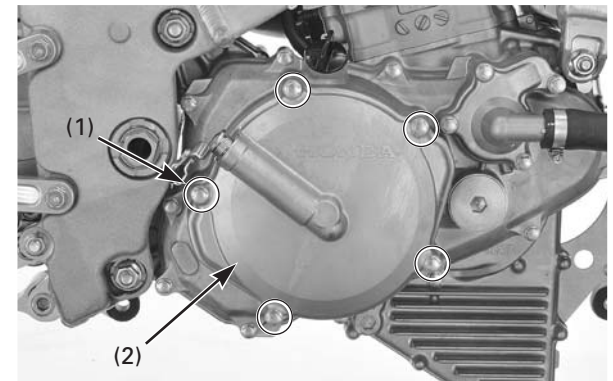
### Cylinder Installation

Install the dowel pins and new gasket.

Coat the cylinder bore, piston and piston rings with clean engine oil and install the cylinder while compressing the piston rings being careful not to damage the rings.



(1) CLUTCH CABLE HOLDER  
(2) RELEASE ARM



(1) BOLTS  
(2) CLUTCH COVER

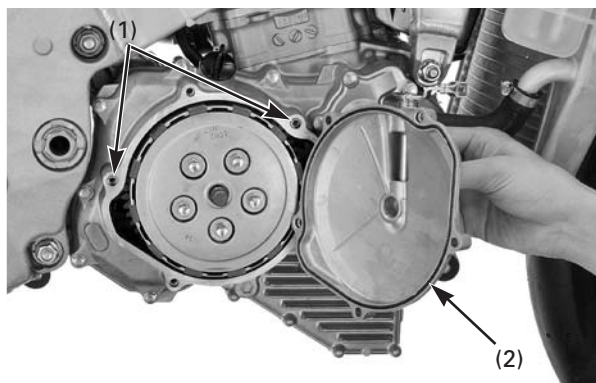
### Clutch

#### Removal

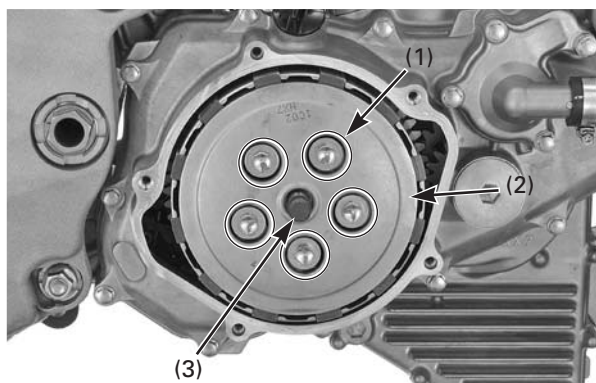
Remove the clutch cable from the cable holder, then disconnect the clutch cable end from the release arm.

Remove the clutch cover bolts.

Remove the clutch cover while turning the clutch release arm.



(1) DOWEL PINS  
(2) O-RING



(1) BOLTS/SPRINGS (2) PRESSURE PLATE  
(3) LIFTER PIECE

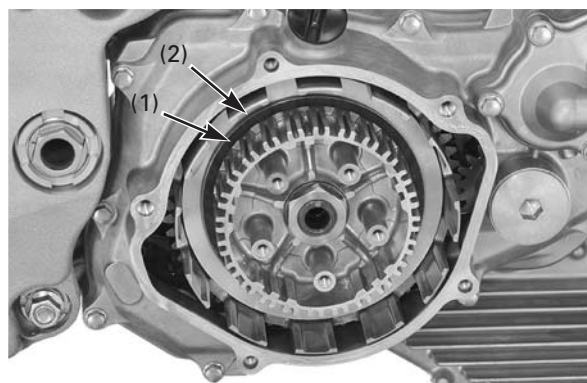
Remove the dowel pins and O-ring.

Remove the clutch spring bolts, springs and pressure plate.

Remove the lifter piece, needle bearing and thrust washer from the pressure plate.



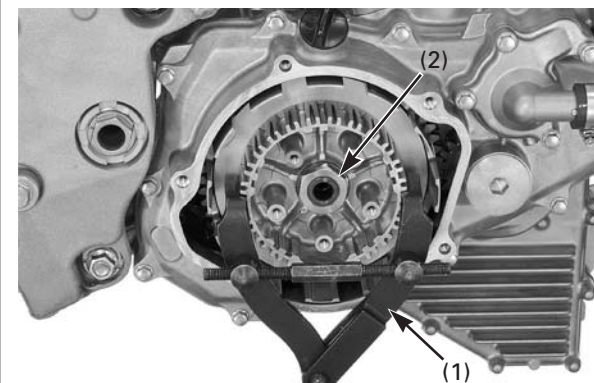
(1) CLUTCH DISCS/PLATES



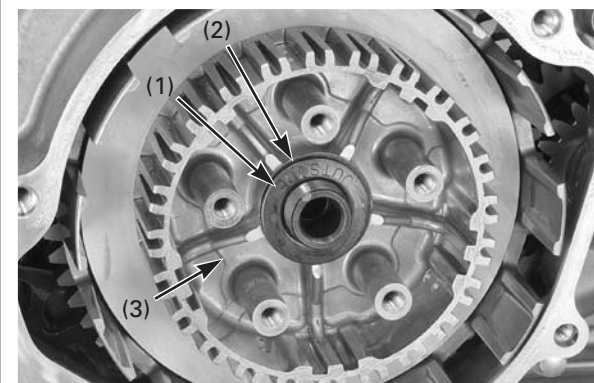
(1) JUDDER SPRING  
(2) JUDDER SPRING SEAT

Remove the following:

- six clutch disc A
- six clutch plate
- clutch disc B
- judder spring
- judder spring seat



(1) CLUTCH CENTER HOLDER  
(2) LOCK NUT



(1) LOCK WASHER (2) PLAIN WASHER  
(3) CLUTCH CENTER

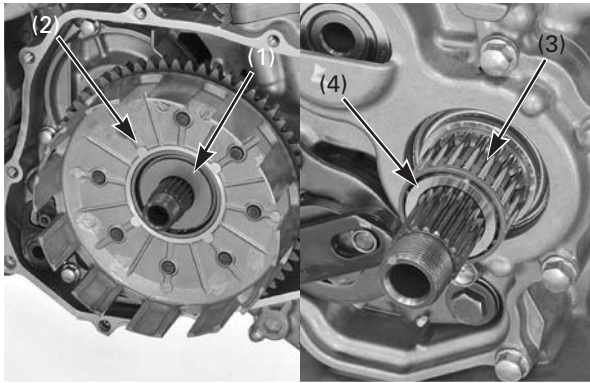
Hold the clutch center using the following tool, and loosen the clutch center lock nut.

**Tool:**  
**Clutch center holder** 07724-0050002

Remove the lock washer, plain washer and clutch center.



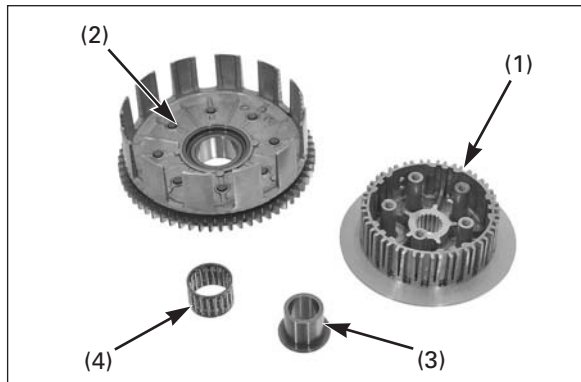
## Engine Servicing



(1) THRUST WASHER (2) CLUTCH OUTER  
(3) NEEDLE BEARING (4) CLUTCH OUTER GUIDE

Remove the right crankcase cover (page 4-51).

Remove the thrust washer, clutch outer, needle bearing and clutch outer guide.

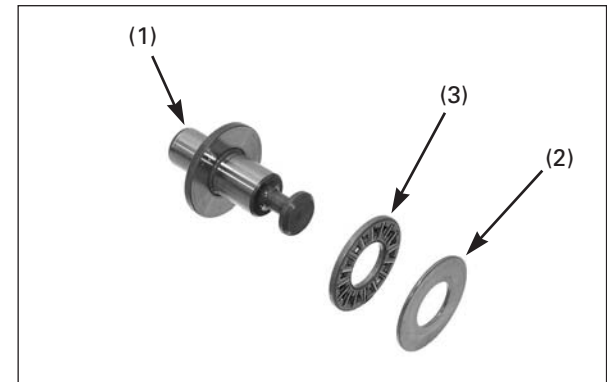


(1) CLUTCH CENTER (2) CLUTCH OUTER  
(3) OUTER GUIDE (4) NEEDLE BEARING

### Inspection

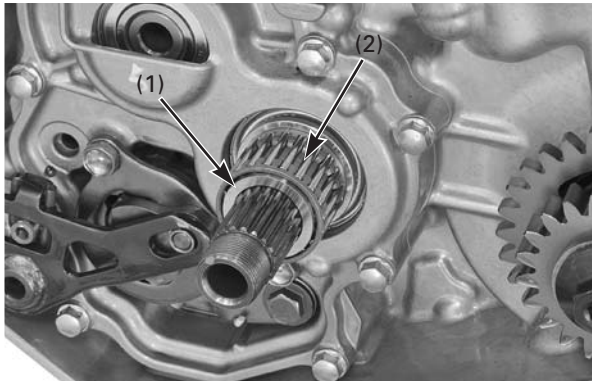
Check the following items (specifications; 2-2).

- Clutch outer for wear, cracks or indentation by the clutch discs.
- Clutch center grooves for damage, crack or indentation by the clutch plates.
- Clutch outer needle bearing for wear or damage.
- Clutch spring free length
- Clutch disc thickness
- Clutch plate warpage
- Clutch outer I.D.
- Clutch outer guide I.D. and O.D.
- Clutch pressure plate for wear or damage
- Mainshaft O.D. at clutch outer guide



(1) LIFTER PIECE  
(2) THRUST WASHER  
(3) THRUST NEEDLE BEARING

Check the needle bearing operation by turning the thrust washer on the lifter piece.  
Replace the needle bearing if it turn smoothly.



(1) OUTER GUIDE  
(2) NEEDLE BEARING



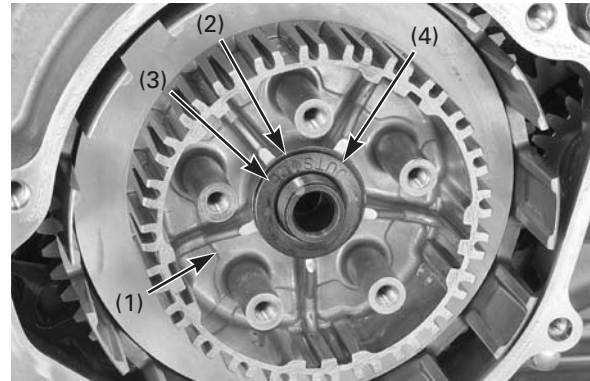
(1) CLUTCH OUTER  
(2) THRUST WASHER

**Installation**

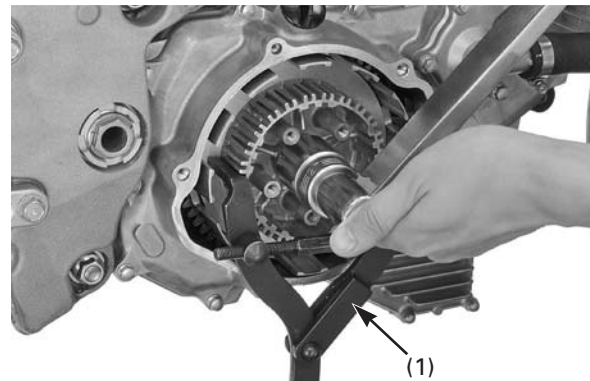
Apply molybdenum oil solution to the clutch outer guide sliding surface.  
Apply engine oil to the clutch outer sliding surface.

Install the clutch outer guide and needle bearing to the mainshaft.

Install the clutch outer and thrust washer.



(1) CLUTCH CENTER  
(2) THRUST WASHER (3) LOCK WASHER  
(4) "OUTSIDE" MARK

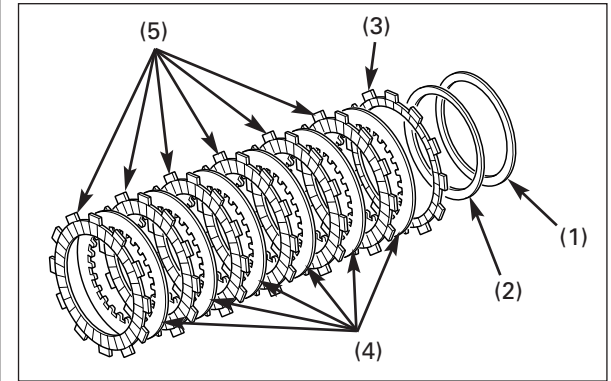


(1) CLUTCH CENTER HOLDER

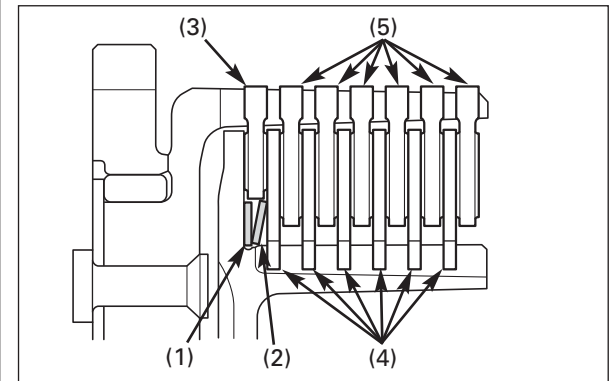
Install the clutch center then install the lock washer with its "OUTSIDE" mark facing out.  
Apply engine oil to the clutch center lock nut threads and seating surface, then install it.  
Hold the clutch center with the following tool, tighten the lock nut to the specified torque.

**Tool:**  
**Clutch center holder** 07724-0050002

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



(1) JUDDER SPRING SEAT  
(2) JUDDER SPRING (3) CLUTCH DISC B  
(4) CLUTCH PLATE (5) CLUTCH DISC A



(1) JUDDER SPRING SEAT  
(2) JUDDER SPRING (3) CLUTCH DISC B  
(4) CLUTCH PLATE (5) CLUTCH DISC A

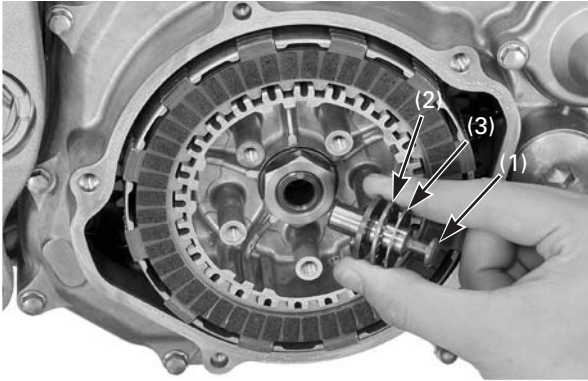
Install the right crankcase cover (page 4-52).

Apply clean engine oil to the clutch discs and plates.  
Install the judder spring and judder spring seat to the clutch center.  
Install the clutch disc B (larger I.D. disc).

Install the clutch disc A and plates alternately onto the clutch center starting with the clutch plate.



## Engine Servicing



(1) LIFTER PIECE (2) NEEDLE BEARING  
(3) THRUST WASHER

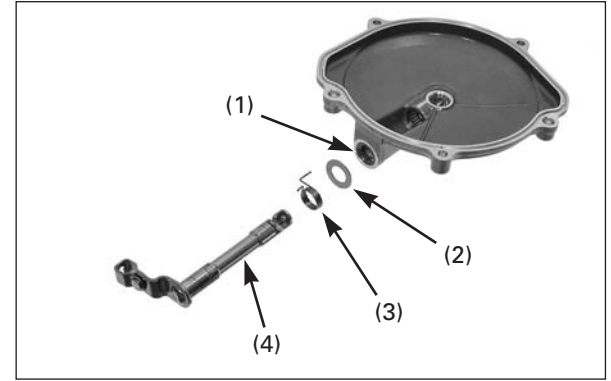
Apply engine oil to the clutch lifter piece needle bearing.  
Install the thrust washer, thrust needle bearing and lifter piece to the mainshaft.



(1) PRESSURE PLATE (2) SPRINGS/BOLTS

Install the pressure plate assembly.  
Install the clutch springs and spring bolts.  
Tighten the clutch spring bolts gradually, then tighten them to the specified torque.

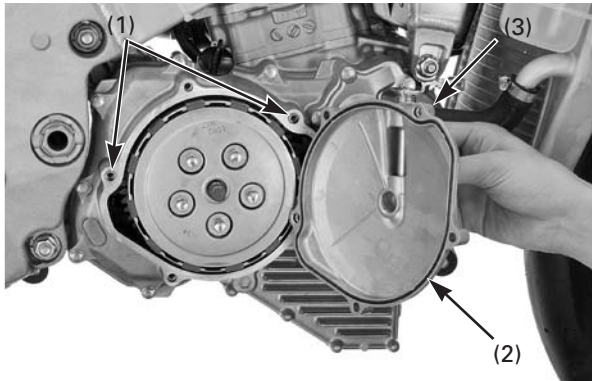
**Torque: 10 N·m (1.0 kgf·m, 7 lbf·ft)**



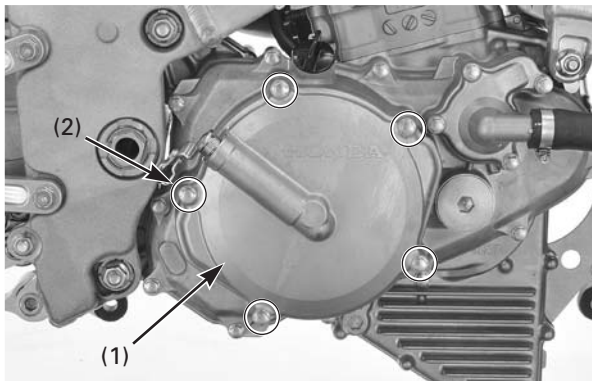
(1) OIL SEAL (2) WASHER  
(3) RETURN SPRING (4) LIFTER ARM

Apply grease to the clutch lifter oil seal lips, then install it to the clutch cover.  
Apply molybdenum oil solution to the clutch lifter cam.

Install the washer, return spring, clutch lifter arm to the clutch cover.



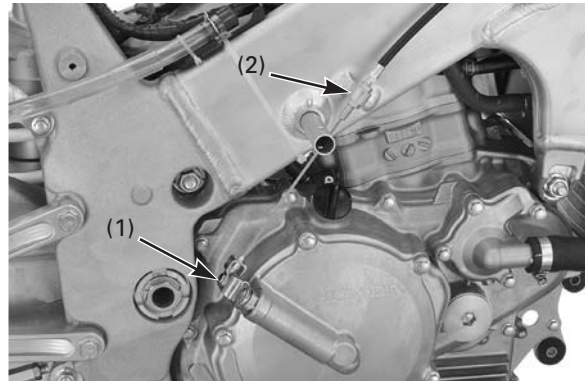
(1) DOWEL PINS (2) NEW O-RING  
(3) CLUTCH COVER



(1) CLUTCH COVER  
(2) BOLTS

Install the dowel pins.  
Apply grease to a new O-ring, then install it into the clutch cover groove.

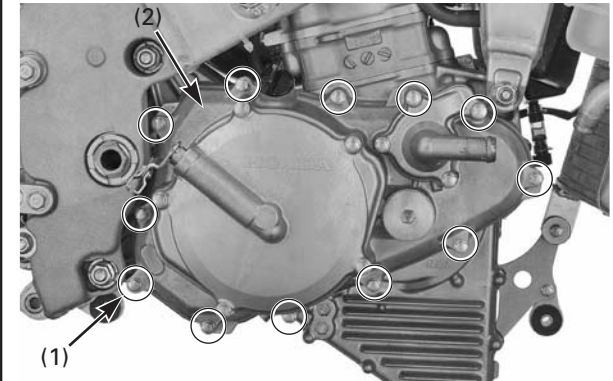
Install the clutch cover to the right crankcase cover.  
Install and tighten the bolts in a crisscross pattern in 2 - 3 steps.



(1) RELEASE ARM (2) CLUTCH CABLE

Connect the clutch cable end to the release arm.  
Set the clutch cable to the clutch cable guide.

Adjust the clutch cable (page 1-4).



(1) BOLTS  
(2) RIGHT CRANKCASE COVER

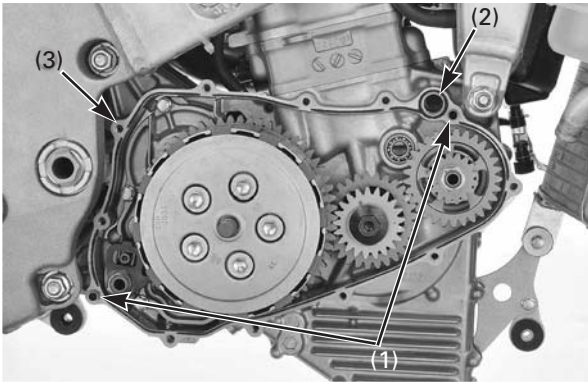
### Right Crankcase Cover

#### Removal

Drain transmission oil (page 3-10).  
Drain coolant (page 1-1).

Disconnect the lower radiator hose from the water pump cover.  
Disconnect the clutch cable from the release arm.

Remove the bolts, water pump cover and right crankcase cover.  
See page 4-24 for water pump cover removal.

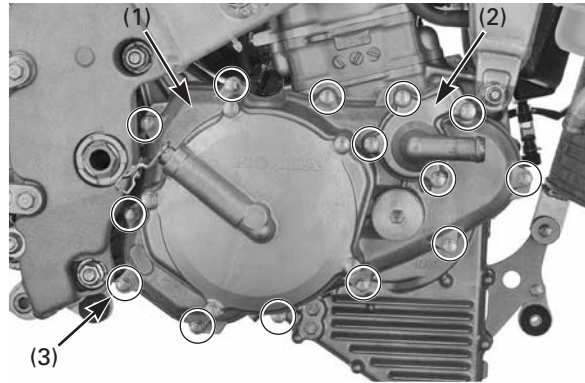


(1) DOWEL PINS (2) COLLAR  
(3) NEW GASKET

Remove the gasket and dowel pins.

### Installation

Install the dowel pins and new gasket.



(1) RIGHT CRANKCASE COVER  
(2) WATER PUMP COVER  
(3) BOLTS

Install the right crankcase cover while aligning the water pump drive and driven gear by turning the water pump impeller.

Check the clutch cover O-ring condition, replace if necessary.  
Install the dowel pins and clutch cover onto the right crankcase cover.

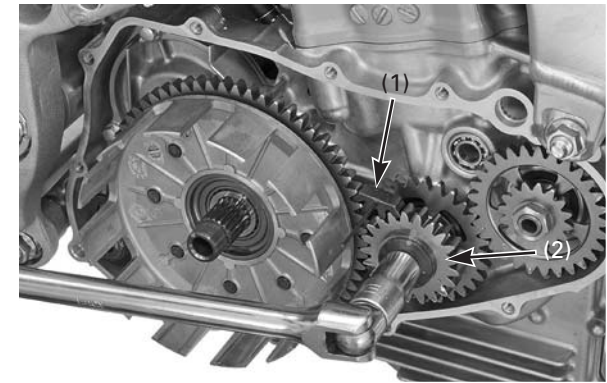
Install the right crankcase cover bolts.

Install the water pump cover (page 4-26).

Install the right crankcase cover/water pump cover bolts, then tighten the bolts in a crisscross pattern in 2 - 3 steps.

Connect the lower radiator hose.

Pour specified transmission oil (page 3-10).  
Fill the system coolant and bleed air (page 1-1).



(1) GEAR HOLDER  
(2) PRIMARY DRIVE GEAR BOLT

### Primary Drive Gear

#### Removal

Remove the right crankcase cover (page 4-51).

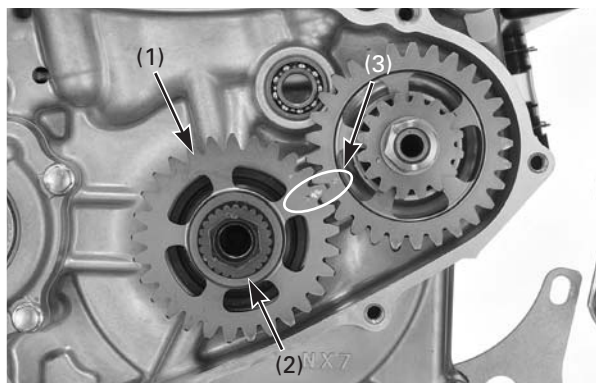
Hold the primary drive gear and driven gear with gear holder.  
Loosen the primary drive gear bolt.

#### Tool:

**Gear holder**

**07724-0010100**

Remove the primary drive gear bolt, plain washer and primary drive gear.



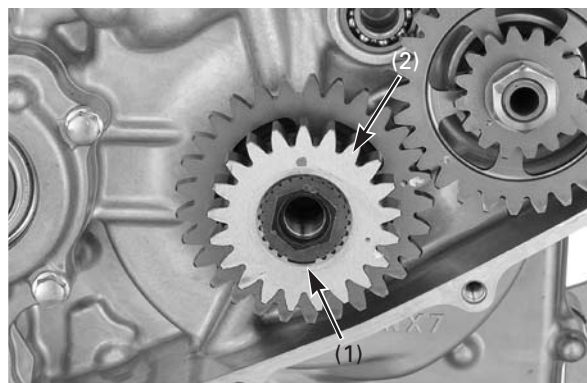
(1) BALANCER DRIVE GEAR  
 (2) CUT-OUT  
 (3) PUNCH MARK

Remove the balancer drive gear from the crankshaft.

**Installation**

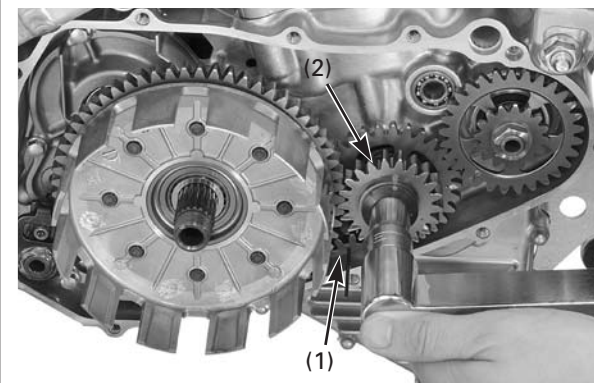
Install the balancer drive gear while aligning its wide serration between the balancer drive gear and the crankshaft.

Align the punch marks between the balancer drive and driven gear.



(1) WIDE SERRATION  
 (2) PRIMARY DRIVE GEAR

Install the primary drive gear while aligning the wide serration between the primary drive gear and the crankshaft.



(1) GEAR HOLDER  
 (2) PRIMARY DRIVE GEAR

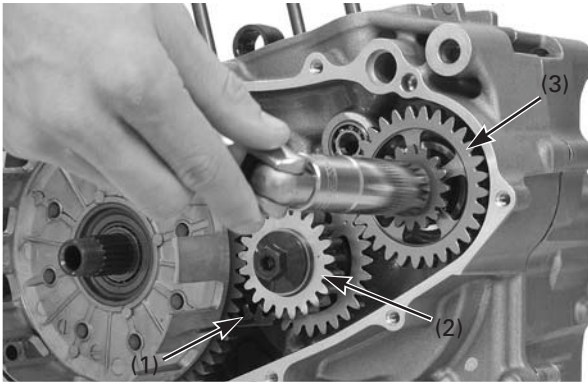
Apply engine oil to the primary drive gear bolt threads and seating surface. Install the washer and primary drive gear bolt.

Hold the primary drive and driven gear with gear holder, and tighten the primary drive gear bolt to the specified torque.

**Tool:**  
**Gear holder** 07724-0010100

**Torque: 108 N·m (11.0 kgf·m, 80 lbf·ft)**





(1) GEAR HOLDER  
(2) PRIMARY DRIVE GEAR  
(3) BALANCER DRIVEN GEAR

### Balancer

#### Removal

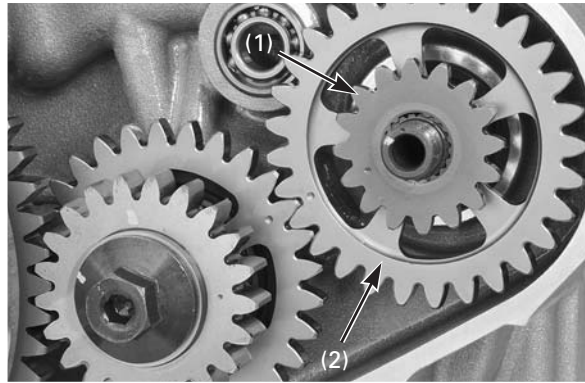
Hold the primary drive and driven gear with gear holder.

#### Tool:

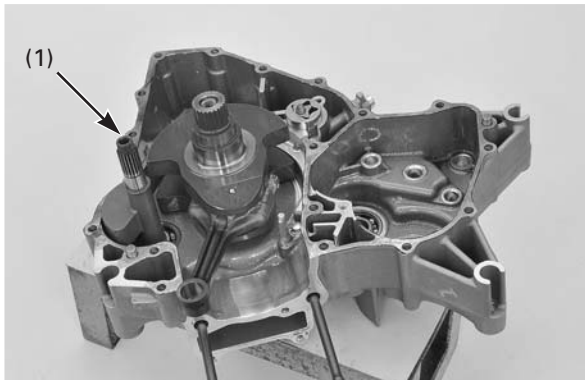
**Gear holder**

**07724-0010100**

Loosen the balancer driven gear lock nut, remove the lock nut and lock washer.



(1) WATER PUMP DRIVE GEAR  
(2) BALANCER DRIVEN GEAR

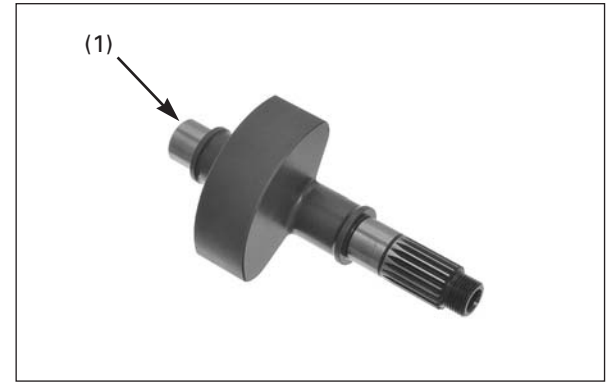


(1) BALANCER SHAFT

Remove the water pump drive gear and balancer driven gear from the balancer shaft.

Separate the crankcase halves (page 4-68).

Remove the balancer shaft from the left crankcase.



(1) BALANCER SHAFT

#### Inspection

Turn the balancer shaft bearing inner race with your finger. Check that the bearing turns smoothly and quietly. Replace the bearing if it does not turn smoothly or loosely fits in the crankcase.

Check the balancer shaft for damage.



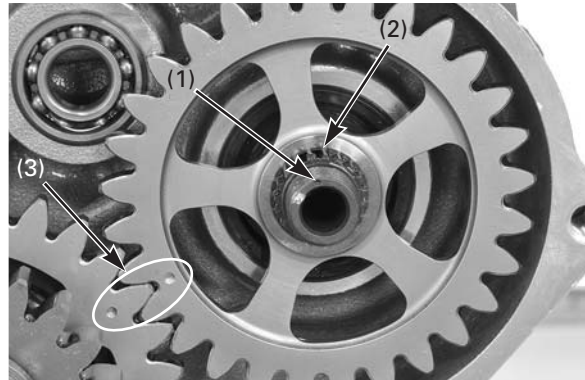


(1) BALANCER SHAFT

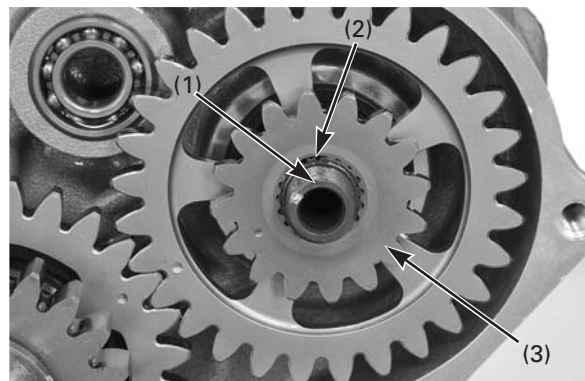
**Installation**

Install the balancer shaft into the left crankcase.

Assemble the crankcase (page 4-79).



(1) PUNCH MARK (2) WIDE CUTOUT (3) PUNCH MARKS



(1) PUNCH MARK (2) CUTOUT (3) WATER PUMP DRIVE GEAR

Align the punch mark on the balancer shaft with the cutout in the balancer driven gear.  
Also install the balancer driven gear while aligning the punch marks between the balancer drive and driven gear.

Install the water pump drive gear while aligning the punch mark on the balancer shaft with the cut-out in the water pump drive gear.



(1) GEAR HOLDER (2) LOCK NUT

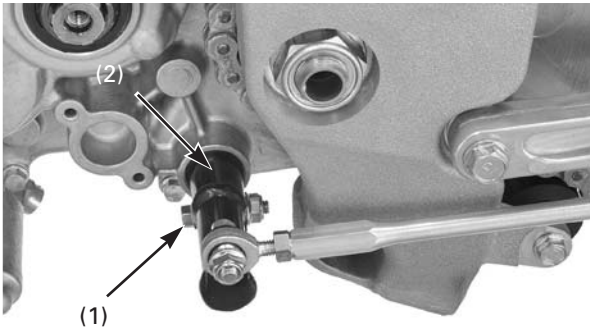
Apply engine oil to the balancer driven gear lock nut threads and seating surface.  
Install the lock washer and lock nut to the balancer shaft.

Hold the primary drive and driven gear with a gear holder.

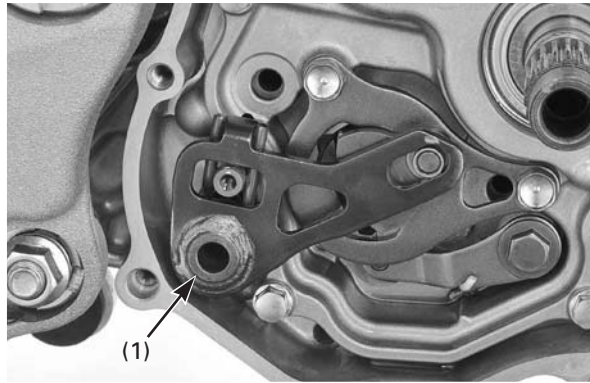
**Tool:**  
**Gear holder** 07724-0010100

Tighten the lock nut to the specified torque.

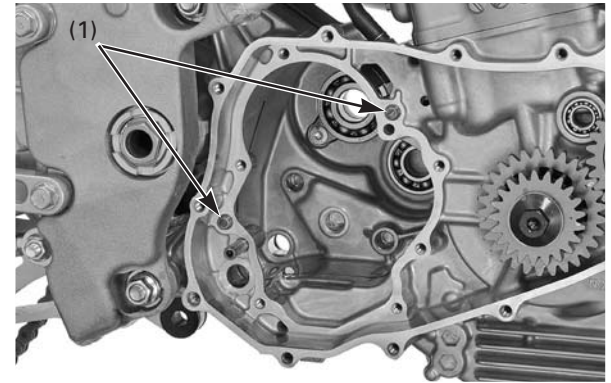
**Torque: 34 N·m (3.5 kgf·m, 25 lbf·ft)**



(1) BOLT/NUT  
(2) GEARSHIFT ARM



(1) GEARSHIFT SPINDLE



(1) DOWEL PINS

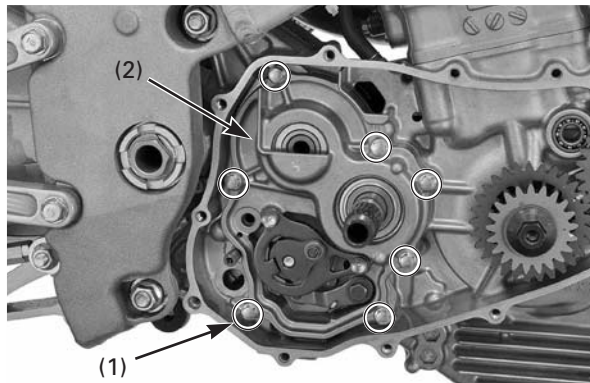
## Transmission

### Removal

Remove the clutch outer (page 4-46).  
Remove the drive sprocket (page 3-17).

Prevent dust and dirt from entering the crankcase.  
Clean crankcase around the gearshift spindle.

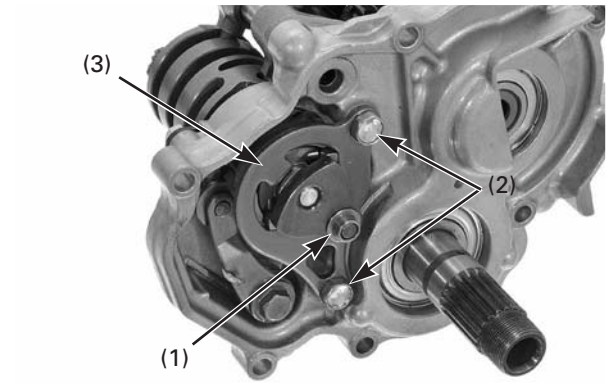
Remove the bolt/nut and gearshift arm from the gearshift spindle.



(1) BOLTS  
(2) TRANSMISSION ASSEMBLY

Remove the gearshift spindle and washer from the crankcase.

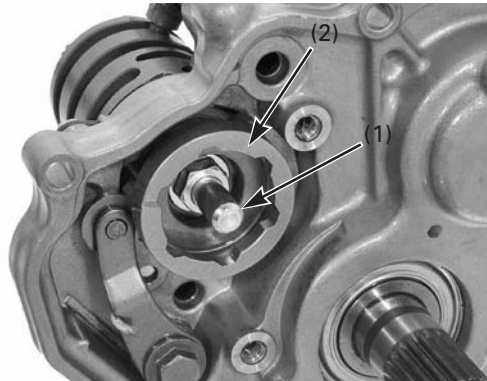
Remove the bolts and transmission assembly from the crankcase.



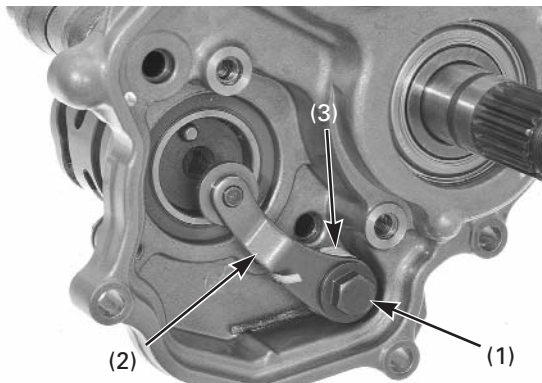
(1) SHIFTER COLLAR (2) BOLTS  
(3) GUIDE PLATE ASSEMBLY

Remove the dowel pins.

Remove the shifter collar.  
Remove the bolts and guide plate assembly.



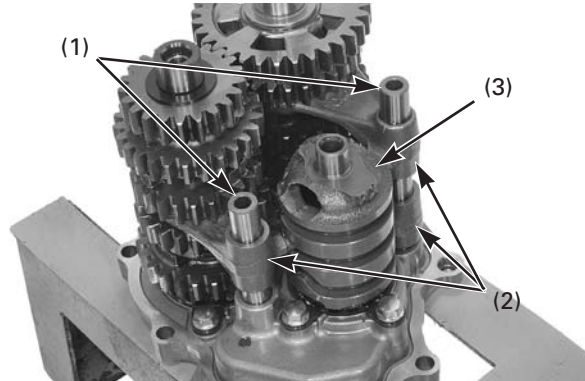
(1) CENTER BOLT  
(2) SHIFT DRUM CENTER



(1) STOPPER ARM BOLT  
(2) STOPPER ARM  
(3) RETURN SPRING

Remove the center bolt, and then remove the drum center and dowel pin.

Remove the stopper arm bolt, stopper arm, return spring and washer.



(1) SHIFT FORK SHAFTS  
(2) SHIFT FORKS  
(3) SHIFT DRUM

Remove the shift fork shafts and shift forks.

Remove the mainshaft/countershaft as an assembly from the transmission holder.

Check the transmission bearing and replace if necessary (page 4-59, 77).

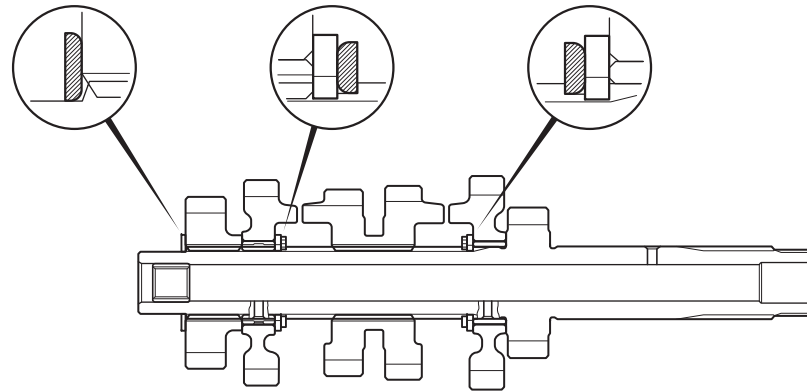
## Engine Servicing

### Disassembly/Assembly

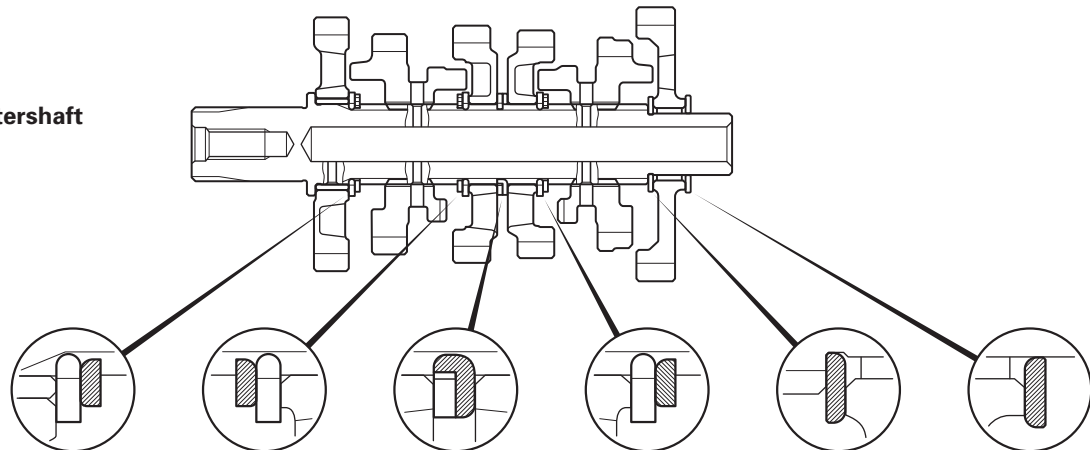
- Always install the thrust washers and snap rings with the chamfered (rolled) edge facing away from thrust load.
- After installing a snap ring, slightly open the ring and rotate it in its groove to be sure it is fully seated.
- Do not reuse the snap rings which could easily spin in the groove. They may be too loose to properly seat in groove. Align the gap in the snap ring with the spline groove.
- Apply molybdenum oil solution to the following portion:
  - Mainshaft spline and gear rotation surface
  - Countershaft spline and gear rotation surface
  - Main/countershaft bushing and collar sliding surface
- Apply transmission oil to the gear contact surface and other sliding surface.

- When installing the C5 and C6 gears to the countershaft, make sure to align the oil holes of the C5, C6 gears and countershaft. Also align the oil holes of M5 collar and mainshaft.

**Mainshaft**



**Countershaft**



(1) Spline washer, 22 mm (3 points)  
(90464-KZ4-730)

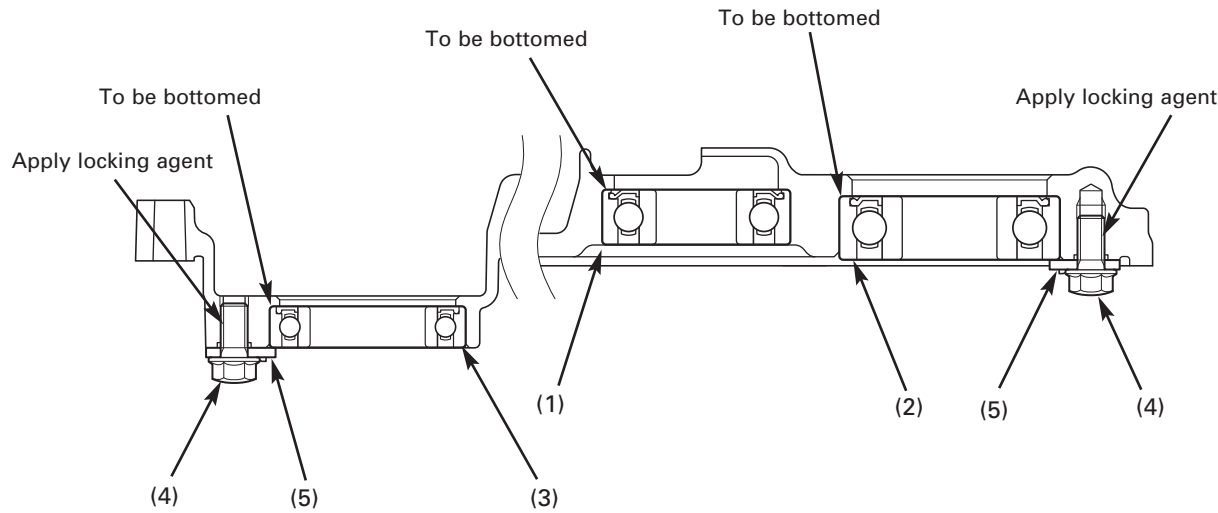
- Install the outside of the C3, C4 gear and C2 gear
- This washer has the chamfered edges on the each side of I.D.

(2) Spline washer, 22 mm (1 point)  
(90464-444-000)

Install between the C3 gear and C4 gear.

**Transmission Holder Bearing Replacement**

Drive the holder bearings with their sealed side facing the right crankcase cover.



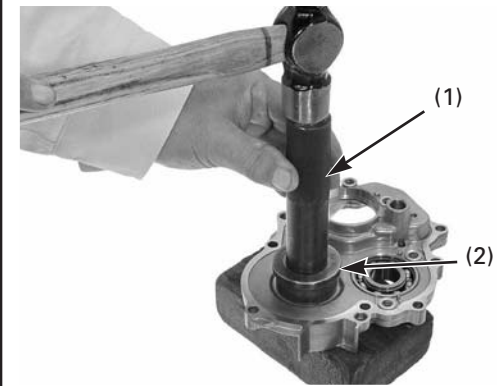
- (1) COUNTERSHAFT BEARING
- (2) MAINSHAFT BEARING
- (3) SHIFT DRUM BEARING
- (4) BOLTS
- (5) SET PLATES

Turn the mainshaft and countershaft bearing inner race with your finger. Check that the bearing turns smoothly and quietly. Replace the bearing if it does not turn smoothly or loosely fits in the bearing holder.

Remove the bolts and set plates. Remove the shift drum bearing. Drive the countershaft bearing out of the transmission holder.

Remove the mainshaft bearing using the following tools.

- Tools:**
- Bearing remover set** 07936-3710001
  - remover handle 07936-3710100
  - bearing remover 07936-3710600
  - remover weight 07741-0010201

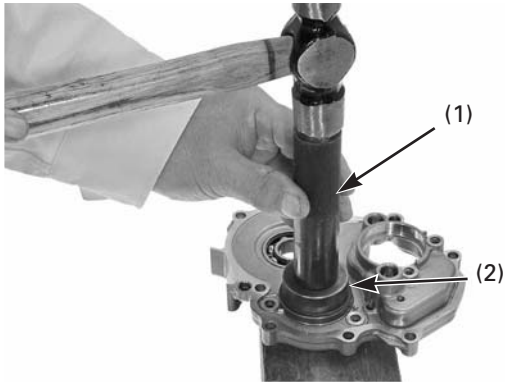


(1) DRIVER (2) ATTACHMENT

Drive the countershaft bearing out using the following tools.

- Tools:**
- Driver** 07749-0010000
  - Attachment, 42 x 47 mm** 07746-0010300
  - Pilot, 20 mm** 07746-0040500

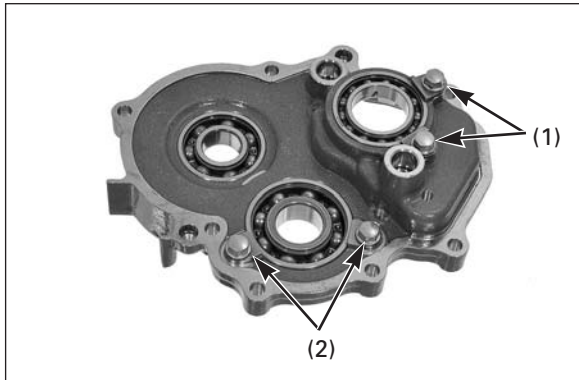




(1) DRIVER (2) ATTACHMENT

Drive the mainshaft bearing in using the following tools.

**Tools:**  
**Driver** 07749-001000  
**Attachment, 37 x 40 mm** 07746-0010200  
**Pilot, 17 mm** 07746-0040400

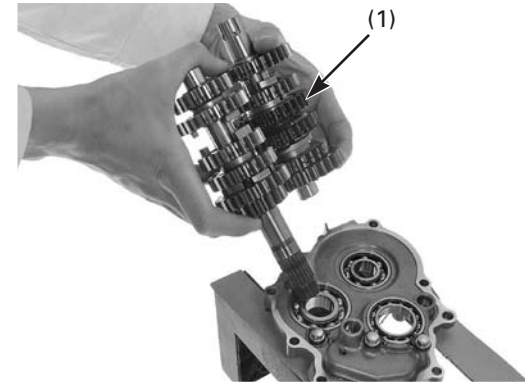


(1) SHIFT DRUM BEARING SET PLATES/BOLTS  
(2) MAINSHAFT BEARING SET PLATES/BOLTS

Apply a locking agent to the shift drum bearing and mainshaft bearing set plate bolt threads.

Install the set plates and bolts, then tighten the bolts to the specified torque.

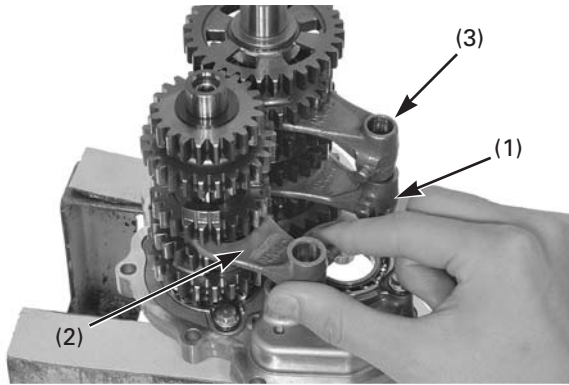
**Torque: 10 N·m (1.0 kgf·m, 7 lbf·ft)**



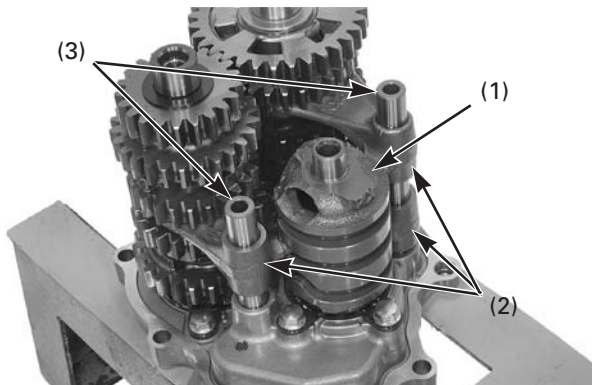
(1) MAINSHAFT/COUNTERSHAFT ASSEMBLY

**Assembly**

Install the mainshaft/countershaft assembly onto the transmission holder.



(1) RIGHT SHIFT FORK (2) CENTER SHIFT FORK  
(3) LEFT SHIFT FORK

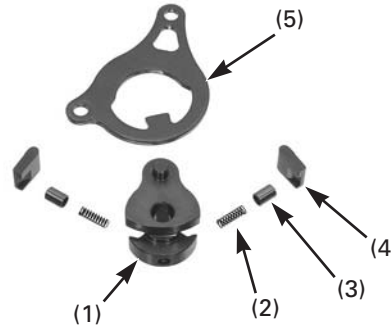


(1) SHIFT DRUM (2) SHIFT FORKS  
(3) SHIFT FORK SHAFTS

Apply molybdenum oil solution to the shift fork guide pin, shift fork I.Ds and shift fork shaft outer surface.

Install the shift drum to the transmission holder.

Install the each shift forks into the each shifter gear groove with their identification mark facing up.  
Install the shift fork shaft.

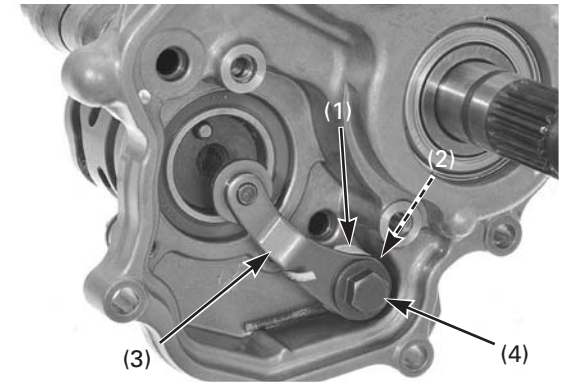


(1) DRUM SHIFTER (2) SPRING  
(3) PLUNGER (4) RATCHET PAWL  
(5) GUIDE PLATE

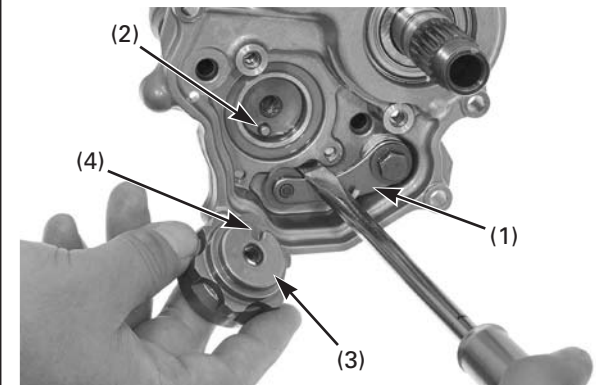
If the shift drum has been removed, install the gearshift linkage as follows:

Apply clean transmission oil to the ratchet pawls, plungers, springs and drum shifter.

Apply transmission oil to the drum shifter, each ratchet pawl and plunger sliding surfaces, then assemble them.



(1) RETURN SPRING (2) WASHER  
(3) STOPPER ARM (4) BOLT



(1) STOPPER ARM  
(2) DOWEL PIN (3) DRUM CENTER  
(3) CUTOUT

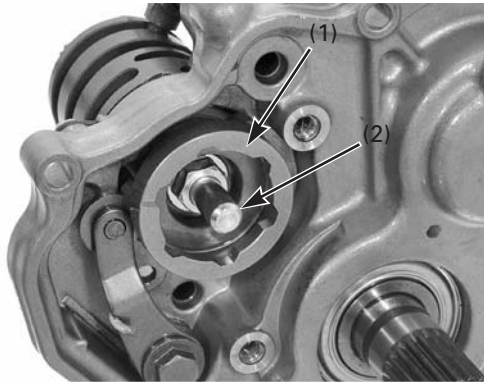
Apply a locking agent to the threads of the stopper arm pivot bolt.

Install the washer, return spring and pivot bolt, then tighten the pivot bolt to the specified torque.

**Torque: 12 N•m (1.2 kgf•m, 9 lbf•ft)**

Check the stopper arm operation.

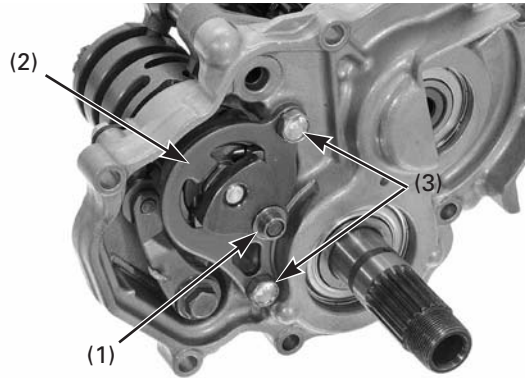
Hold the stopper arm with a driver, install the shift drum center by aligning its cutout with the dowel pin on the shift drum.



(1) SHIFT DRUM CENTER PIN  
(2) CENTER PIN

Apply a locking agent to the shift drum center pin threads.  
Tighten the center pin to the specified torque.

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

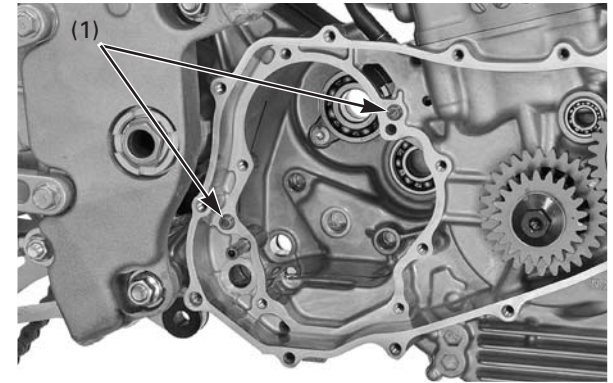


(1) SHIFTER COLLAR  
(2) GUIDE PLATE/SHIFT DRUM ASSEMBLY  
(3) BOLTS

Place the shift drum center position other than neutral.  
Hold the ratchet pawls in the drum shifter, install the guide plate/ratchet pawl assembly into the shift drum center.  
Apply a locking agent to the guide plate bolt threads.  
Install and tighten the guide plate bolts to the specified torque.

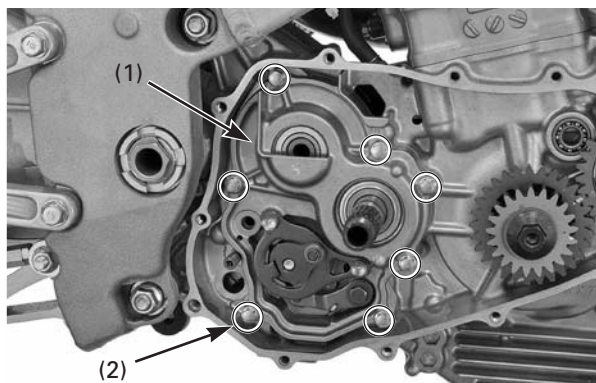
**Torque: 10 N·m (1.0 kgf·m, 7 lbf·ft)**

Apply transmission oil to the shifter collar sliding surface.  
Install the shifter collar to the drum shifter.



(1) DOWEL PINS

Install the dowel pins.

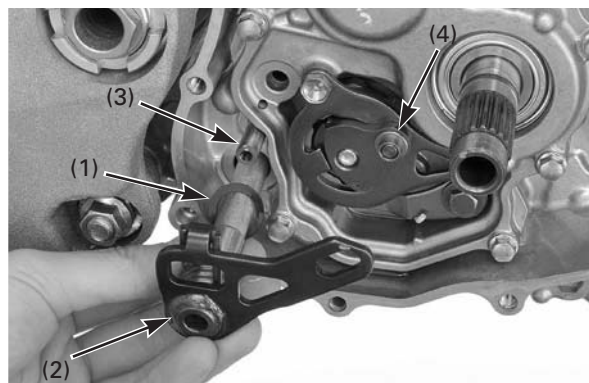


(1) TRANSMISSION ASSEMBLY  
(2) BOLTS

Install the transmission holder assembly into the crankcase.

Install the transmission holder bolts. Tighten the bolts in a crisscross pattern in 2 - 3 steps and then tighten them to the specified torque.

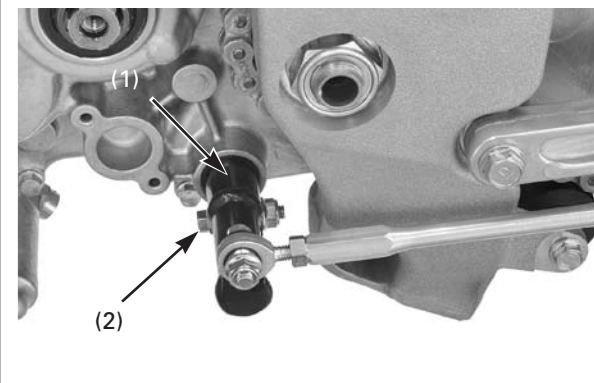
**Torque: 10 N·m (1.0 kgf·m, 7 lbf·ft)**



(1) WASHER  
(2) GEARSHIFT SPINDLE (3) STOPPER PIN  
(4) SHIFTER COLLAR

Install the washer onto the gearshift spindle. Install the gearshift spindle by aligning the spring ends with the stopper pin and also aligning the shift arm groove with the shifter collar.

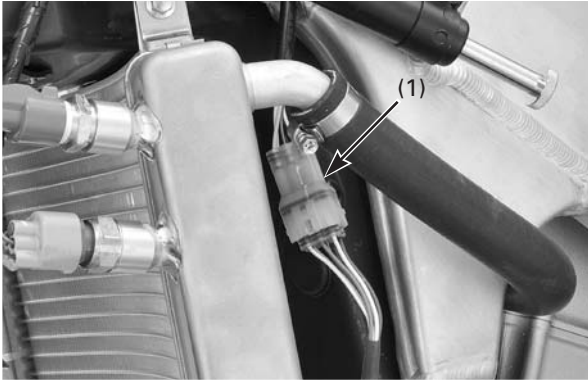
Check that the gearshift linkage operate properly.



(1) GEARSHIFT ARM  
(2) BOLT/NUT

Install the gearshift arm and tighten the bolt/nut.

Install the drive sprocket (page 3-17).  
Install the clutch (page 4-49).

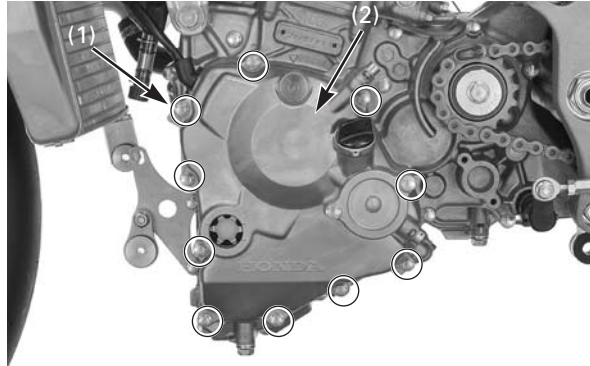


(1) 6P (NATURAL) CONNECTOR

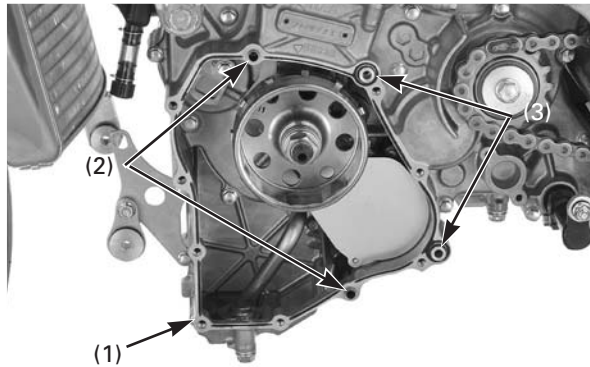
### Left Crankcase Cover

#### Removal

Disconnect the alternator/ignition pulse generator 6P (Natural) connector.



(1) BOLTS  
(2) LEFT CRANKCASE COVER

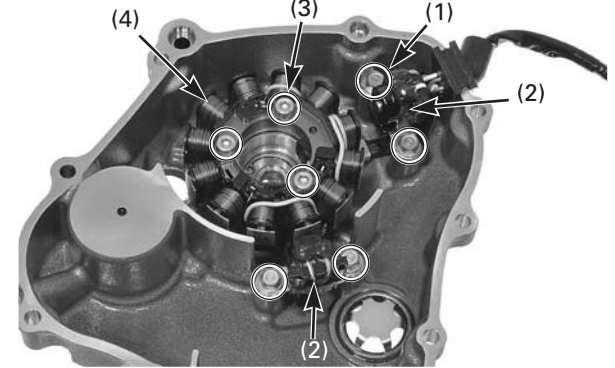


(1) GASKET  
(2) DOWEL PINS  
(3) OIL COLLARS

Remove the bolts and left crankcase cover.

### NOTICE

Remove the gasket, dowel pins and oil collars.



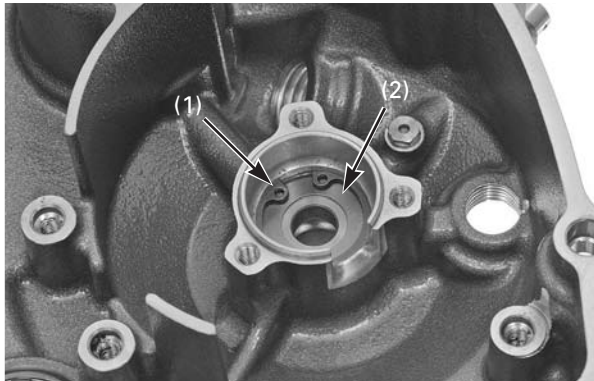
(1) BOLTS (2) IGNITION PULSE GENERATORS  
(3) SOCKET BOLTS (4) STATOR

#### Disassembly/Assembly

Remove the ignition pulse generator flange bolts.

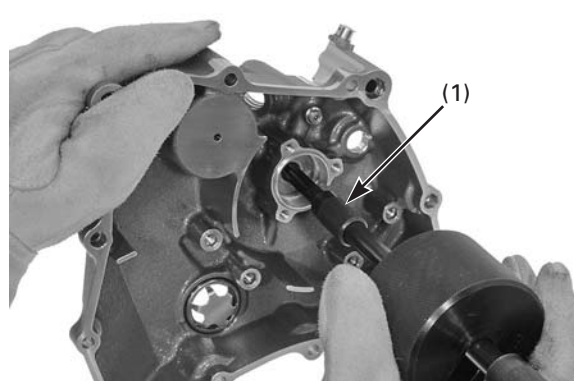
Remove the stator mounting socket bolts.  
Remove the stator/ignition pulse generator from left crankcase cover.





(1) SNAP RING (2) WASHER

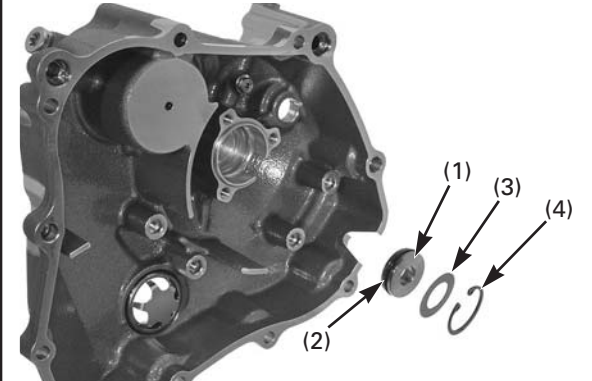
Check the crankshaft bushing for wear or damage, replace if necessary.  
Remove the snap ring and washer.



(1) BEARING REMOVER

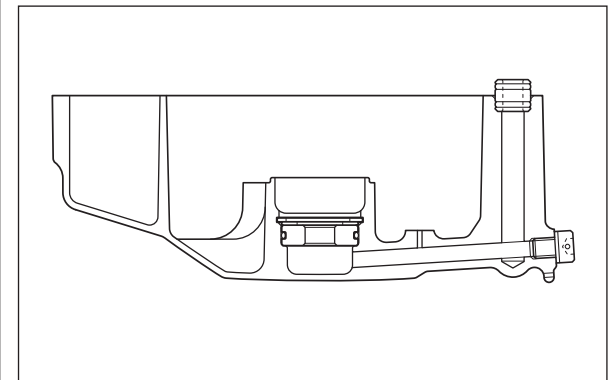
Remove the crankshaft bushing using the following tools:

- Tools:**
- |                              |               |
|------------------------------|---------------|
| Bearing remover shaft, 15 mm | 07935-KC10100 |
| - remover head, 15 mm        | 07936-KC10200 |
| - remover weight             | 07741-0010201 |

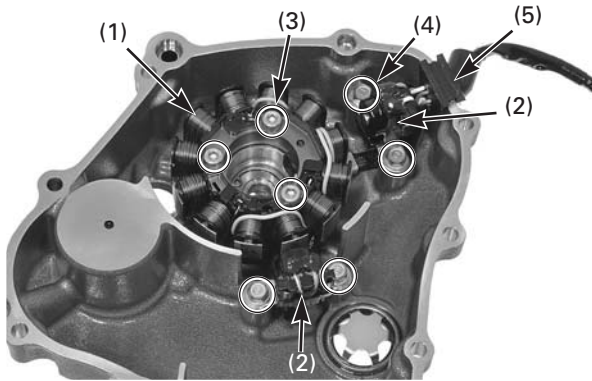


(1) BUSHING (2) O-RING  
(3) WASHER (4) SNAP RING

Apply grease to a new O-ring, then install it into the crankshaft bushing groove.  
Install the crankshaft bushing into the left crankcase cover.  
Install the washer and snap ring.



## Engine Servicing



- (1) STATOR (2) IGNITION PULSE GENERATORS  
(3) SOCKET BOLTS (4) BOLTS  
(5) GROMMET

Install the stator/ignition pulse generator assembly into the left crankcase cover.

Apply a locking agent to the stator mounting bolt and ignition pulse generator mounting bolt threads.

Install the stator/ignition pulse generator bolts.

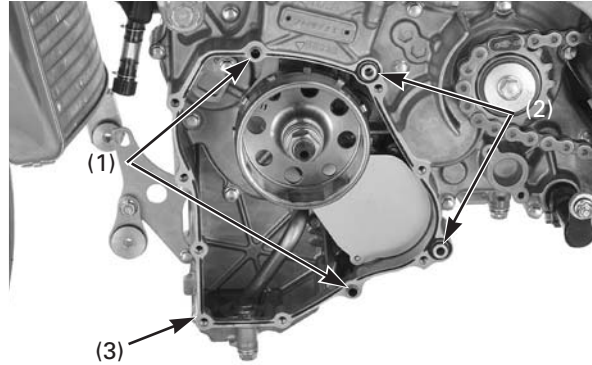
Tighten the stator mounting socket bolts to the specified torque.

**Torque: 5 N•m (0.5 kgf•m, 3.7 lbf•ft)**

Tighten the ignition pulse generator mounting bolts to the specified torque.

**Torque: 5 N•m (0.5 kgf•m, 3.7 lbf•ft)**

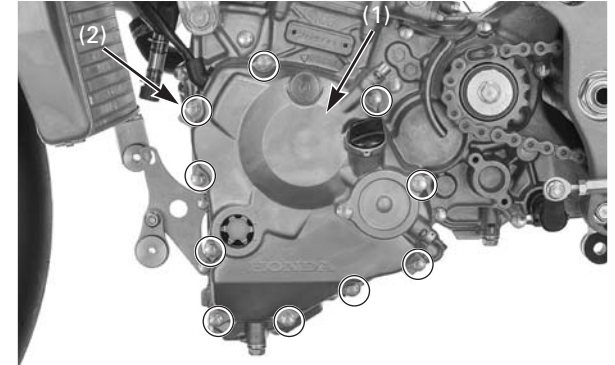
Apply sealant to the grommet. Install it into the left crankcase cover groove.



- (1) DOWEL PINS (2) OIL COLLAR  
(3) NEW GASKET

### Installation

Install the dowel pins and new gasket. Apply grease to new O-rings, then install them into the grooves of the oil collar. Install the oil collars.



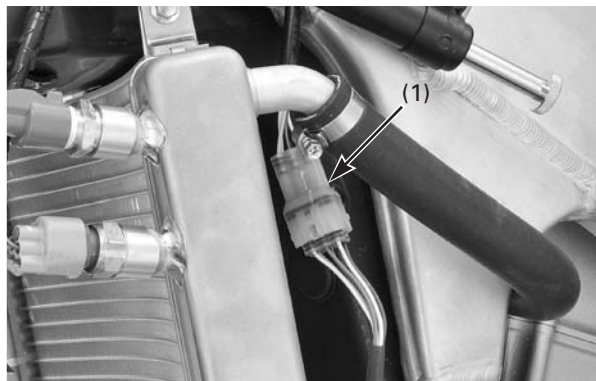
- (1) LEFT CRANKCASE COVER  
(2) BOLTS

Install the left crankcase cover being careful not to damage the oil collar O-rings.

### NOTICE

*The left crankcase cover (stator) is magnetically attached to the flywheel, be careful during installation.*

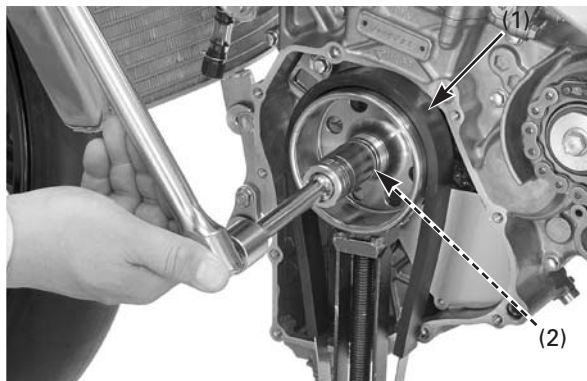
Install and tighten the left crankcase cover bolts in a crisscross pattern in 2 - 3 steps.



(1) 6P (NATURAL) CONNECTOR

Connect the alternator/ignition pulse generator 6P (Natural) connector.

Pour transmission oil to the specified level.



(1) FLYWHEEL HOLDER  
(2) FLYWHEEL NUT

### Flywheel

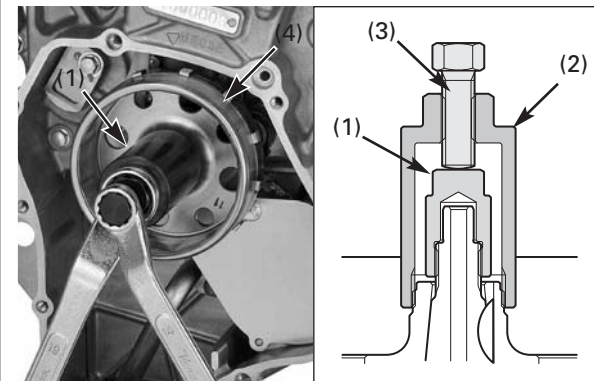
#### Removal

Remove the left crankcase cover (page 4-64).

Hold the flywheel with a flywheel holder. Loosen the flywheel nut.

**Tool:**  
Flywheel holder

07725-0040001



(1) FLYWHEEL PULLER ADAPTER  
(2) FLYWHEEL PULLER HOLDER  
(3) FLYWHEEL PULLER BOLT (4) FLYWHEEL

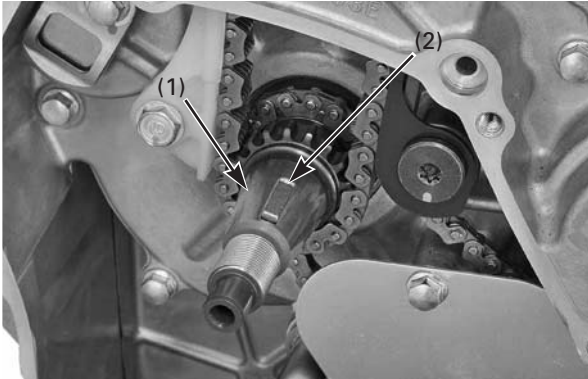


(1) WOODRUFF KEY

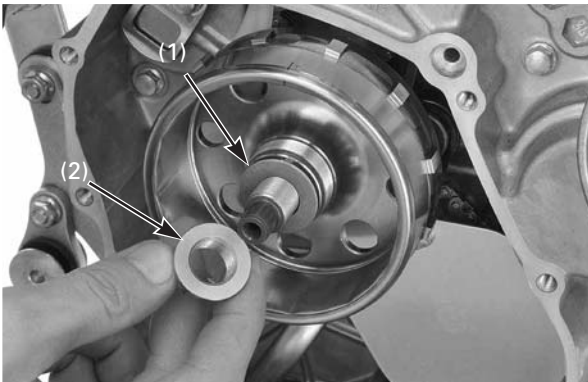
Remove the flywheel using the special tool.

**Tools:**  
Flywheel puller adapter 89009-NX7-000  
Flywheel puller holder 89010-NX7-000  
Flywheel puller bolt 89011-NX7-000

Remove the woodruff key.



(1) TAPER  
(2) WOODRUFF KEY



(1) WASHER  
(2) FLYWHEEL NUT

### Installation

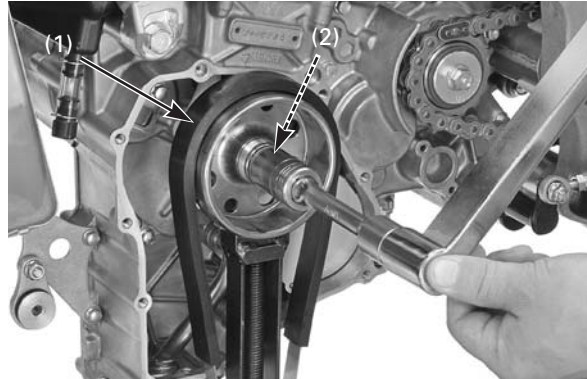
Clean any oil off from the crankshaft taper.

Install the woodruff key onto the crankshaft groove.

Install the flywheel onto the crankshaft.

Apply oil to the flywheel nut threads and seating surface.

Install the washer and flywheel nut.



(1) FLYWHEEL HOLDER (2) FLYWHEEL NUT

Hold the flywheel with a flywheel holder and tighten the flywheel nut to the specified torque.

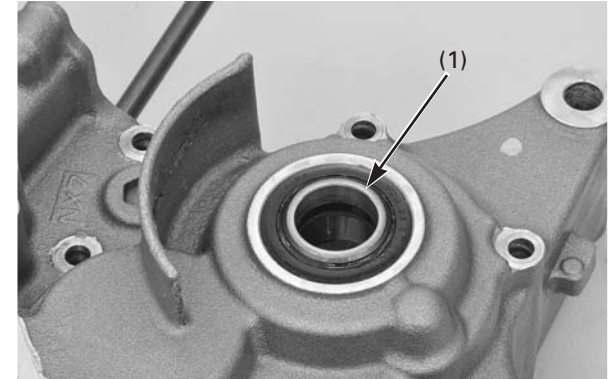
### Tool:

**Flywheel holder**

**07725-0040001**

**Torque: 69 N•m (7.0 kgf•m, 51 lbf•ft)**

Install the left crankcase cover (page 4-66).



(1) COUNTERSHAFT COLLAR

### Crankcase Separation/Disassembly

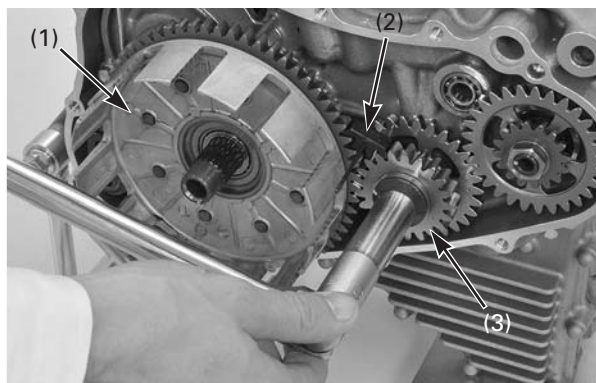
Remove the engine from the frame.

Remove the following:

- cylinder head, cylinder, piston
- clutch
- gearshift linkage/transmission
- flywheel and stator
- primary drive gear/balancer drive gear
- crankcase breather hose

Remove the countershaft collar and O-ring.





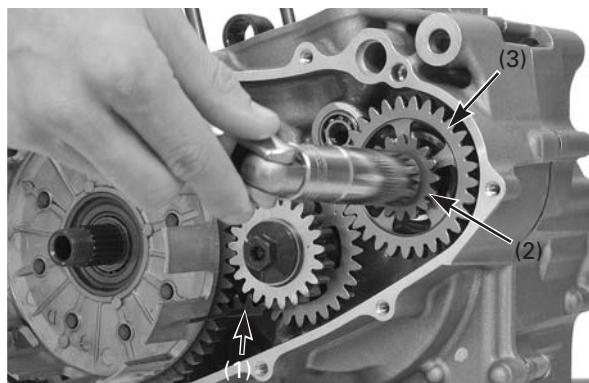
(1) CLUTCH OUTER (2) GEAR HOLDER  
(3) PRIMARY DRIVE GEAR

Temporarily install the clutch outer guide, needle bearing and clutch holder onto the mainshaft and attach the gear holder between the primary drive and driven gears.

Loosen the primary drive gear bolt.

**Tool:**  
**Gear holder**

**07724-0010100**

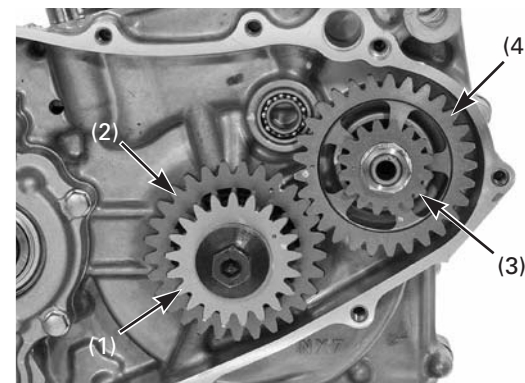


(1) GEAR HOLDER (2) WATER PUMP DRIVE GEAR  
(3) BALANCER DRIVEN GEAR

Hold the primary drive and driven gear with the gear holder.

**Tool:**  
**Gear holder** **07724-0010100**

Loosen the balancer drive gear lock nut.



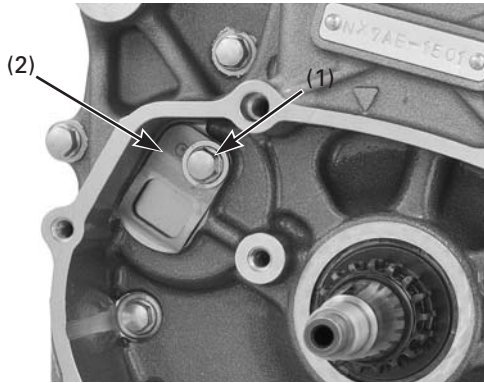
(1) PRIMARY DRIVE GEAR (2) BALANCER DRIVE GEAR  
(3) WATER PUMP DRIVE GEAR  
(4) BALANCER DRIVEN GEAR

Remove the primary drive gear, washer, primary driven gear and balancer drive gear from the crankshaft.

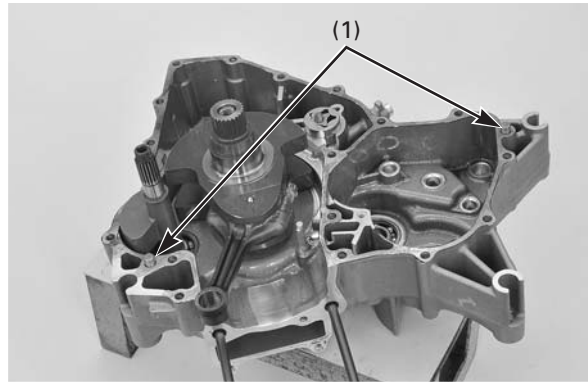
Remove the balancer drive gear lock nut, water pump drive gear and balancer driven gear from the balancer shaft.



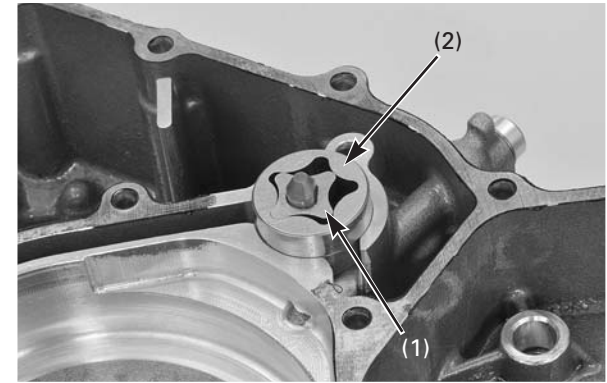
## Engine Servicing



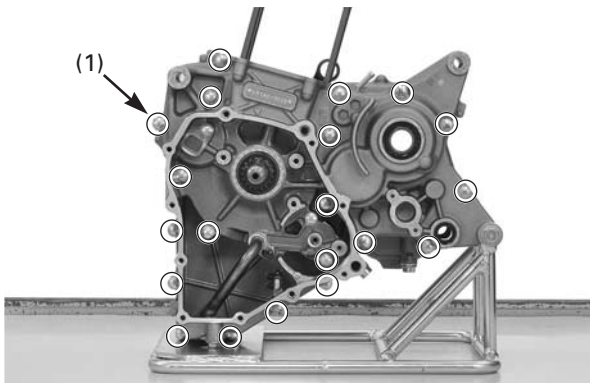
(1) BOLT (2) REED VALVE STOPPER



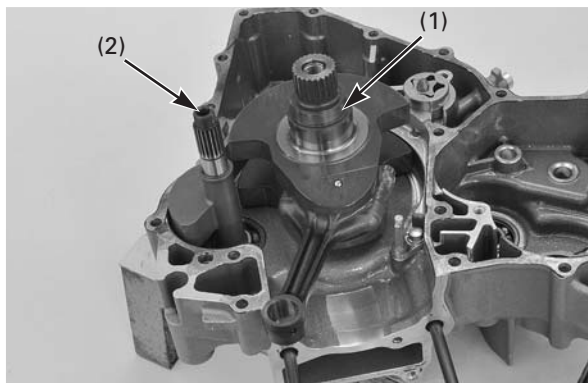
(1) DOWEL PINS



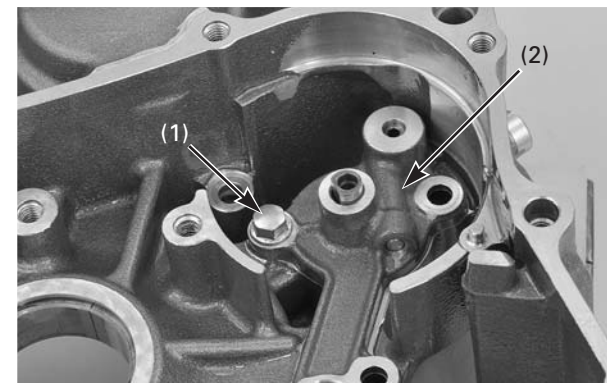
(1) INNER ROTOR (2) OUTER ROTOR



(1) CRANKCASE BOLTS



(1) CRANKSHAFT  
(2) BALANCER SHAFT



(1) BOLT  
(2) OIL PUMP COVER

Remove the bolt and reed valve/reed valve stopper.

Loosen the crankcase bolts in a crisscross pattern in 2 - 3 steps, then remove the bolts.

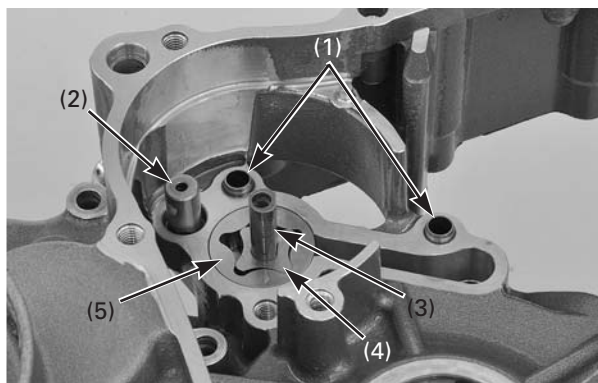
Place the left crankcase facing down, remove the right crankcase from the left crankcase.

Remove the dowel pins.

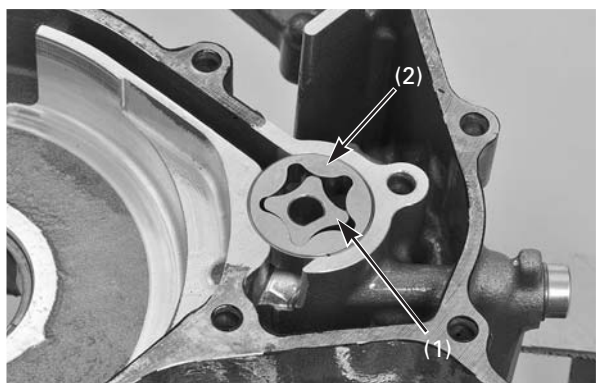
Remove the crankshaft and balancer shaft from the left crankcase.

Remove the scavenge pump inner and outer rotor from the oil pump shaft.

Remove the bolt and oil pump cover.



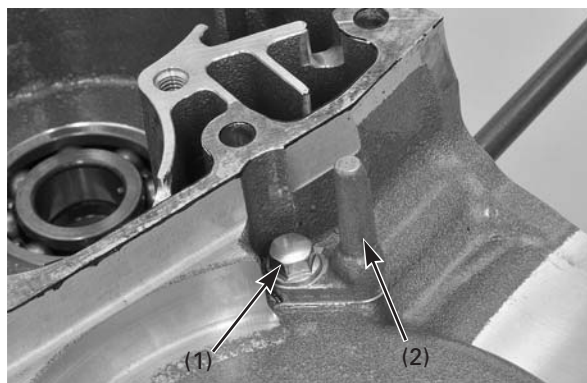
(1) DOWEL PINS (2) RELIEF VALVE  
(3) OIL PUMP SHAFT (4) INNER ROTOR  
(5) OUTER ROTOR



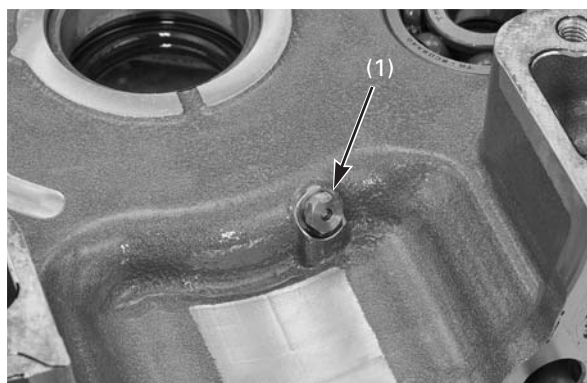
(1) INNER ROTOR (2) OUTER ROTOR

Remove the pressure relief valve.  
Remove the oil pump shaft, feed pump inner and outer rotor.

Remove the scavenge pump inner and outer rotor from the inside of the left crankcase.



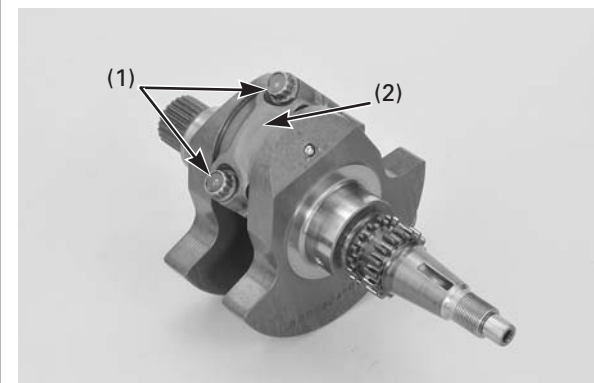
(1) BOLT (2) PISTON JET



(1) OIL JET

Remove the bolt and piston jet #80 from the left crankcase.

Check the oil jet #80 for clog.  
Clean the oil jet passage.

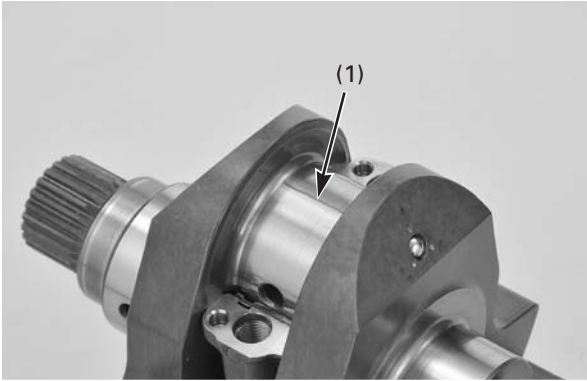


(1) CONNECTING ROD BOLTS  
(2) BEARING CAP

### Crankshaft

#### Inspection

Remove the connecting rod bolts, bearing cap and connecting rod.



(1) PLASTIGAUGE

### Crankpin Bearing Inspection

Check the bearing inserts for unusual wear or peeling.

Check the bearing tabs for damage.

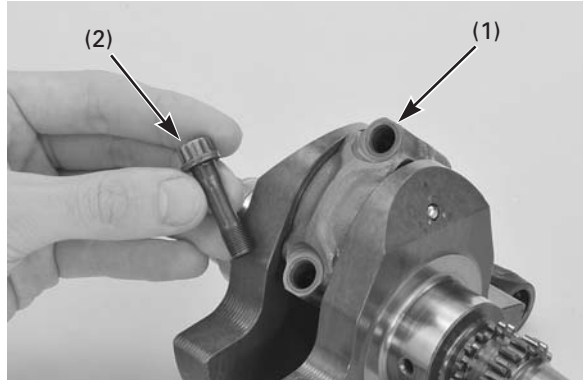
### Oil Clearance Inspection

Clean off any oil from the bearing inserts and crankpins.

Set the connecting rod onto the crankpin.

Put a strip of plastigauge lengthwise on crankpin avoiding the oil hole.

- Do not rotate the crankshaft during inspection.



(1) BEARING CAP  
(2) CONNECTING ROD BOLT

Carefully install the connecting rod bearing cap, aligning the dowel pins with the holes in the connecting rod.

Apply oil to the connecting rod bearing cap bolt threads and seating surfaces and install the bolts.

- Use the removed connecting rod bolts when checking the oil clearance.
- Do not reuse the connecting rod bolts when final assembly.
- Tighten the connecting rod bolts using the Plastic Region Tightening Method described on next procedure.



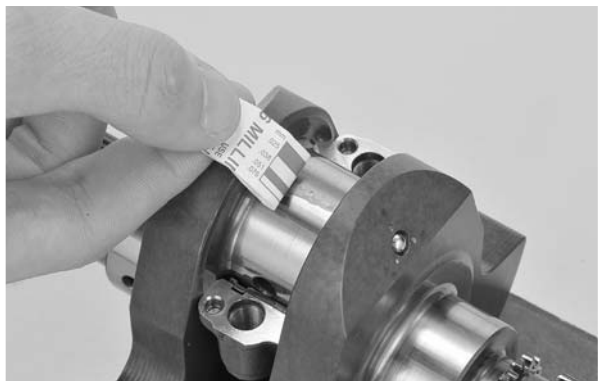
Tighten the bolts in 2 -3 steps alternately, then tighten the bolts to the specified torque.

### Torque:

**New bolt: 26 N·m (2.7 kgf·m, 20 lbf·ft)**

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

**Further tighten the connecting rod bolts 90° alternately.**



Remove the connecting rod bolts and bearing cap, and measure the compressed plastigauge at its widest point on the crankpin to determine the oil clearance.

**Service limit: 0.030 – 0.048 mm (0.0012 – 0.0019 in)**

If the oil clearance exceeds the service limit, select the correct replacement bearings.



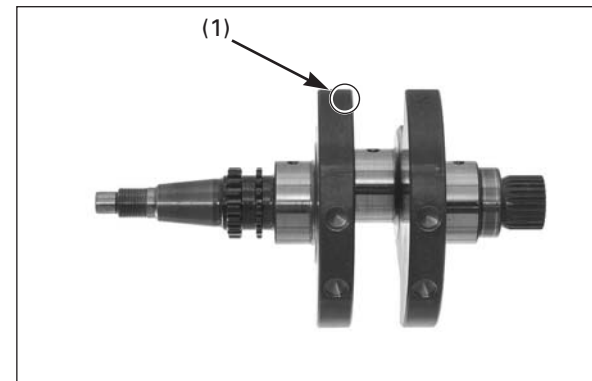
(1) CONNECTING ROD I.D. CODE

**Bearing Selection**

The crankpin bearing must be selected, if the crankshaft and/or connecting rod are replaced.

Record the connecting rod I.D. code letter (1, 2 or 3) or measure the I.D. with the connecting rod bearing cap installed without bearing inserts.

- Numbers (1, 2 or 3) on the connecting rods are the codes for the connecting rod I.D.



(1) CRANKPIN O.D. CODE

If you plan to replace the crankshaft, record the corresponding crankpin O.D. code letter (A, B and C).

- Letters (A, B and C) on the crank weight are the codes for the crankpin O.D.

## Engine Servicing

Cross-reference the connecting rod and crankpin codes to determine the replacement bearing color.

### Crankpin bearing selection table:

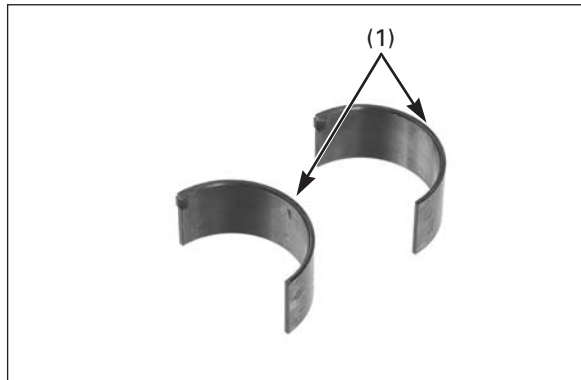
		Connecting Rod I.D. Code			
		1	2	3	
		38.000 - 38.006 mm (1.4961 - 1.4963 in)	38.006 - 38.012 mm (1.4963 - 1.4965 in)	38.012 - 38.018 mm (1.4965 - 1.4968 in)	
Crankpin O.D. Code	A	34.997 - 35.003 mm (1.3778 - 1.3781 in)	E	D	C
	B	34.991 - 34.997 mm (1.3776 - 1.3778 in)	D	C	B
	C	34.985 - 34.991 mm (1.3774 - 1.3776 in)	C	B	A

**Oil Clearance: 0.030 – 0.048 mm (0.0012 – 0.0019 in)**

### Bearing thickness:

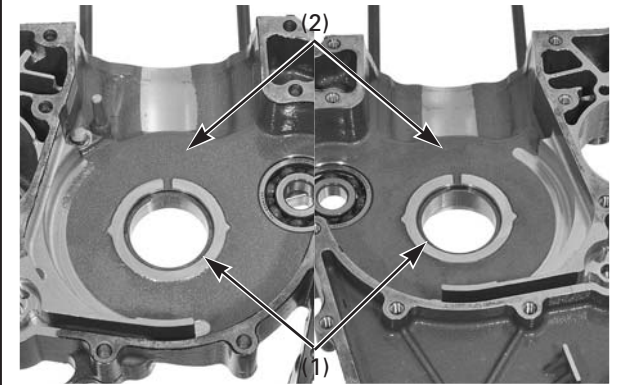
A (Blue): Thickest  
 B (Black):  
 C (Brown):  
 D (Green):  
 E (Yellow): Thinnest

↕



(1) COLOR CODE

- After selecting new bearings, recheck the clearance with a plastigauge. Incorrect clearance can cause severe engine damage.



(1) MAIN JOURNAL BEARING  
 (2) CRANKCASE I.D. CODE

### Main Journal Bearing Inspection

Check the main journal bearing inserts for unusual wear or peeling.

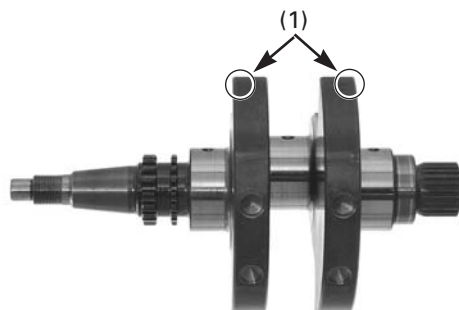
### Bearing Selection

The main journal bearing must be selected, if the crankshaft and/or crankcase are replaced.

Record the crankcase I.D. code letter (A or B) or measure the I.D. without bearing inserts.

- Letters (A or B) on the crankcases are the codes for the crankcase I.D.





(1) MAIN JOURNAL O.D. CODE

If you plan to replace the crankshaft, record the corresponding main journal O.D. code letter (1, 2 and 3).

- Letters (1, 2 and 3) on the crank weight are the codes for the main journal O.D.

Cross-reference the crankcase I.D. code and measured main journal O.D., calculate the main journal oil clearance.

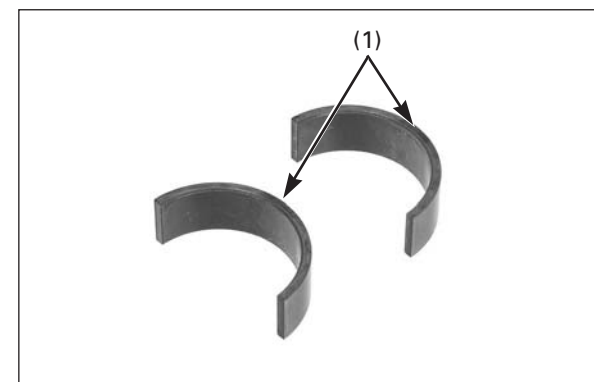
**Main Journal Bearing Selection Table:**

		Main journal O.D. Code			
		1	2	3	
		37.994 - 38.000 mm (1.4958 - 1.4961 in)	37.988 - 37.994 mm (1.4956 - 1.4958 in)	37.982 - 37.988 mm (1.4954 - 1.4956 in)	
Crankcase I.D. Code	A	43.000 - 43.006 mm (1.6929 - 1.6931 in)	D	C	B
	B	43.006 - 43.012 mm (1.6931 - 1.6934 in)	C	B	A

**Oil clearance: 0.020 – 0.038 mm (0.0008 – 0.0015 in)**

**Bearing thickness:**

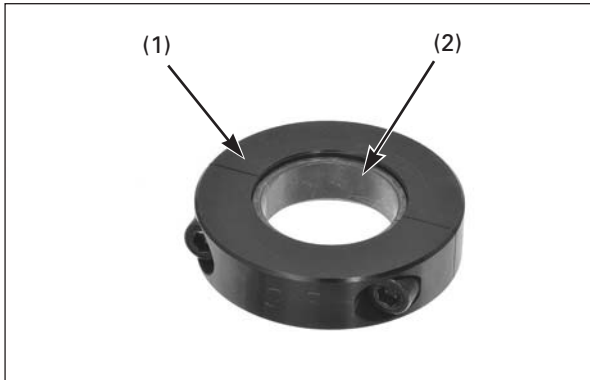
- A (Blue): Thickest
  - B (Black):
  - C (Brown):
  - D (Green): Thinnest
- ↑  
↓



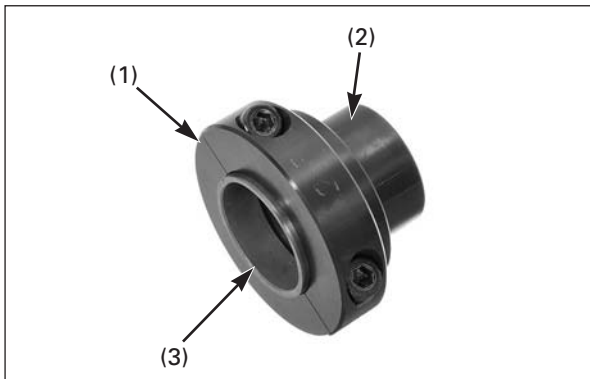
(1) COLOR CODE

- After selection new bearings, recheck the clearance with a plastigauge. Incorrect clearance can cause severe engine damage.

## Engine Servicing



(1) BEARING HOLDER ASSEMBLY  
(2) MAIN JOURNAL BEARING



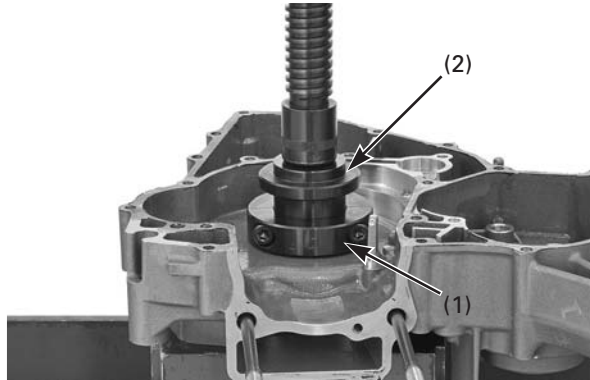
(1) BEARING HOLDER ASSEMBLY  
(2) BEARING FIT SPINDLE  
(3) MAIN JOURNAL BEARING

Set the selected main journal bearings into the bearing holder tool, lightly tighten the holder bolts.

Push the bearing using the 7 mm side of the bearing fit spindle as shown.

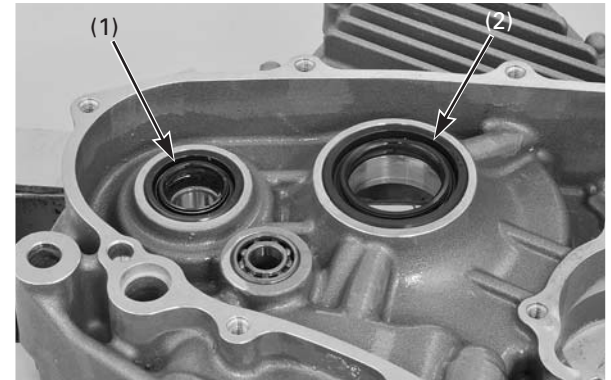
### Tools:

Bearing holder assembly      89020-NX7-000  
Bearing fit spindle          89023-NX7-000

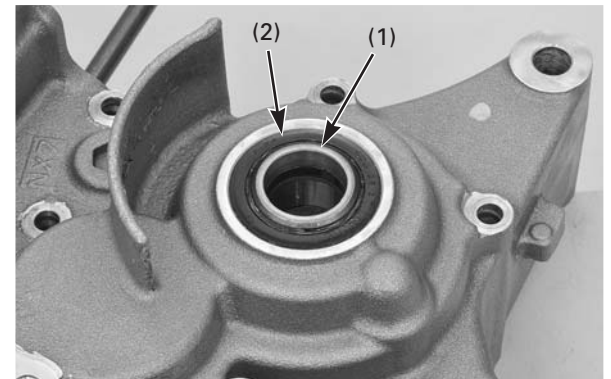


(1) BEARING HOLDER ASSEMBLY  
(2) BEARING FIT SPINDLE

Set the bearing with bearing holder assembly. Press the bearing into the crankcase while pushing the bearing using the 20.5 mm side of the bearing fit spindle as shown.



(1) BALANCER OIL SEAL  
(2) CRANKSHAFT OIL SEAL

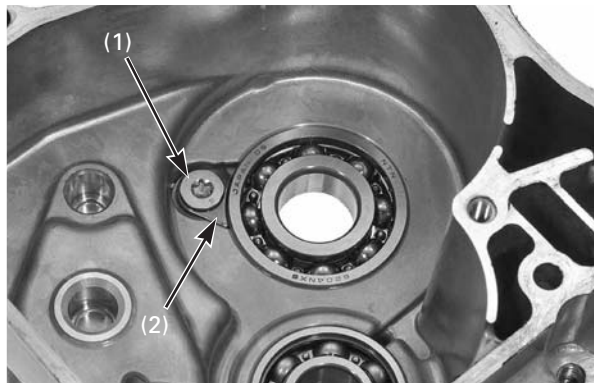


(1) COUNTERSHAFT COLLAR  
(2) OIL SEAL

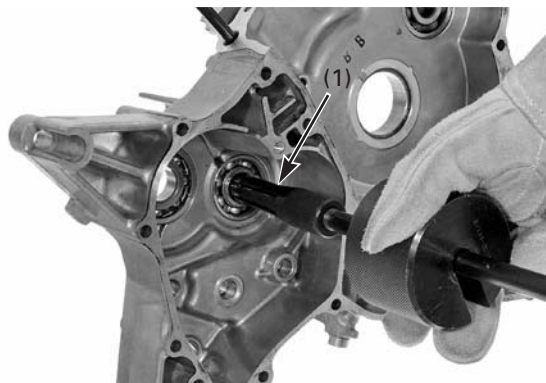
## Crankcase Bearing Replacement

Remove the balancer and crankshaft oil seals.

Remove the countershaft collar and oil seal.



(1) SCREW (2) SET PLATE



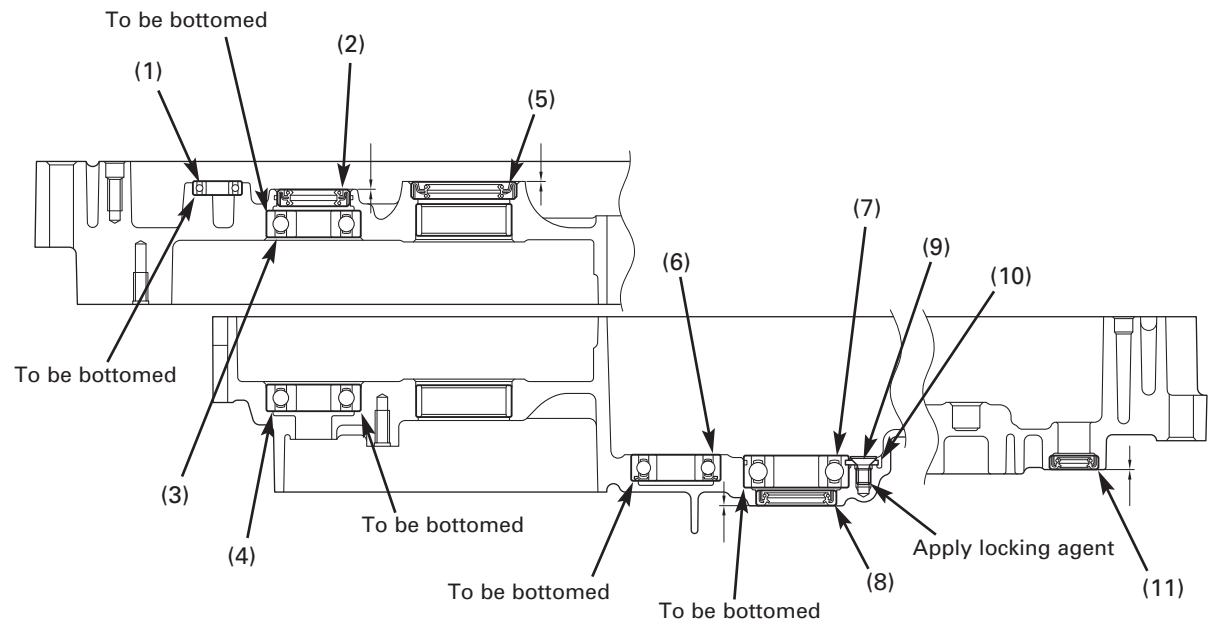
(1) BEARING REMOVER

Remove the screw and countershaft bearing set plate.

Remove the mainshaft bearing using the special tools.

**Tools:**  
**Bearing remover, 17 mm** 07936-3710300  
 – remover handle 07936-3710100  
 – remover weight 07741-0010201

**Crankcase Bearings/Oil Seals**



- (1) WATER PUMP BEARING
- (2) BALANCER OIL SEAL
- (3) RIGHT BALANCER BEARING
- (4) LEFT BALANCER BEARING
- (5) RIGHT CRANKSHAFT OIL SEAL

Remove the left balancer bearing using the special tools.

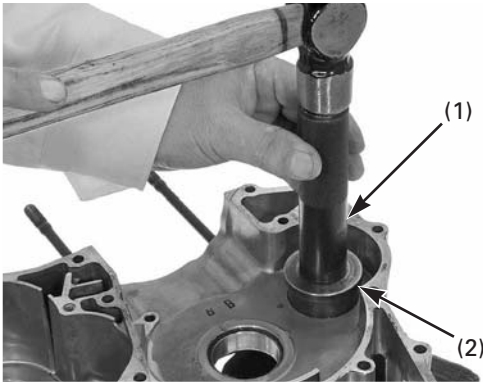
**Tools:**  
**Bearing remover head, 15 mm** 07936-KC10200  
 – Bearing remover shaft, 15 mm 07936-KC10100  
 – remover weight 07741-0010201

- (6) LEFT MAINSHAFT BEARING
- (7) LEFT COUNTERSHAFT BEARING
- (8) LEFT COUNTERSHAFT OIL SEAL
- (9) SCREW (10) SET PLATE
- (11) GEARSHIFT SPINDLE OIL SEAL

Remove the right balancer bearing and countershaft bearing using the special tools.

**Right balancer bearing:**  
**Driver** 07749-0010000  
**Attachment, 32 x 35 mm** 07746-0010100  
**Pilot, 15 mm** 07746-0040300  
**Countershaft bearing:**  
**Driver** 07749-0010000  
**Attachment, 37 x 40 mm** 07746-0010200  
**Pilot, 20 mm** 07746-0040500

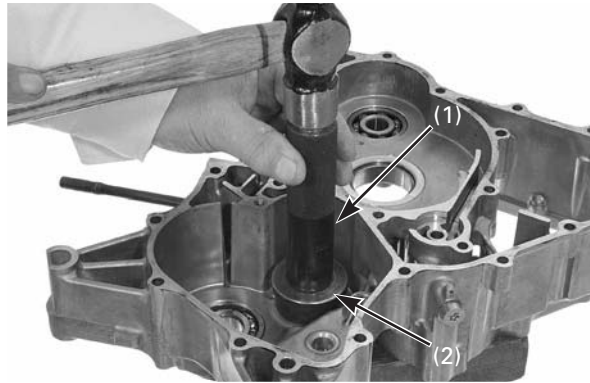
## Engine Servicing



(1) DRIVER  
(2) ATTACHMENT/PILOT

Drive the balancer bearings in using the following tools.

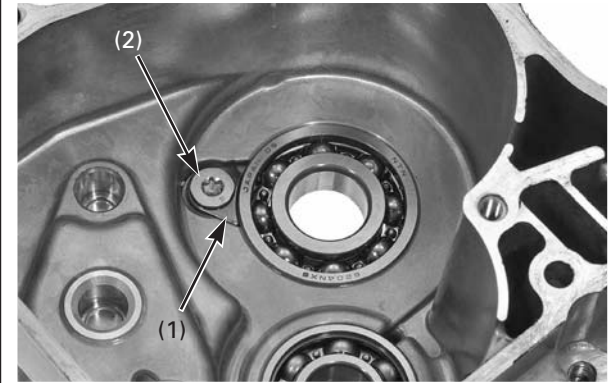
**Tools:**  
**Driver** 07749-0010000  
**Attachment, 42 x 47 mm** 07746-0010300  
**Pilot, 15 mm** 07746-0040300



(1) DRIVER  
(2) ATTACHMENT/PILOT

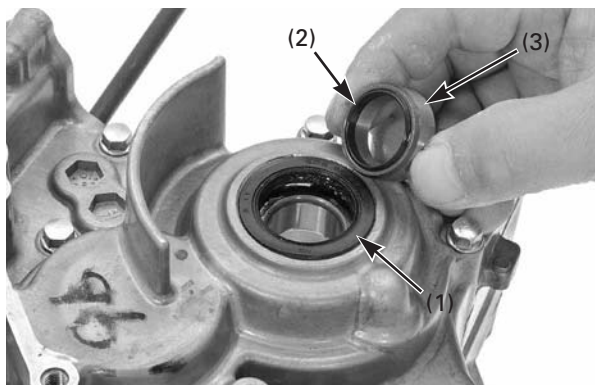
Drive the bearing in using the following tools.

**Tools:**  
**Mainshaft bearing:**  
**Driver** 07749-0010000  
**Attachment, 37 x 40 mm** 07746-0010200  
**Pilot, 17 mm** 07746-0040400  
**Countershaft bearing:**  
**Driver** 07749-0010000  
**Attachment, 42 x 47 mm** 07746-0010300  
**Pilot, 20 mm** 07746-0040500

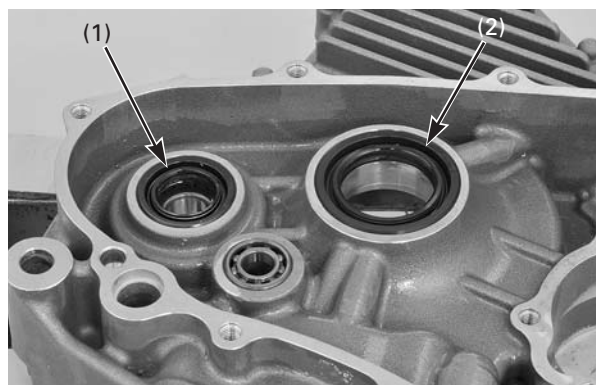


(1) SET PLATE  
(2) SCREW

Apply a locking agent to the countershaft bearing set plate screw threads.  
Install the countershaft bearing set plate and tighten the screw to the specified torque.



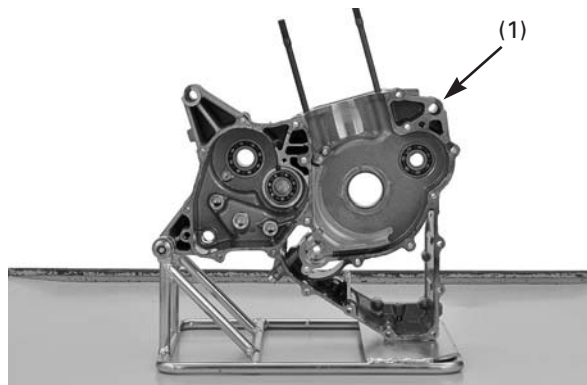
(1) OIL SEAL (2) O-RING  
(3) COUNTERSHAFT COLLAR



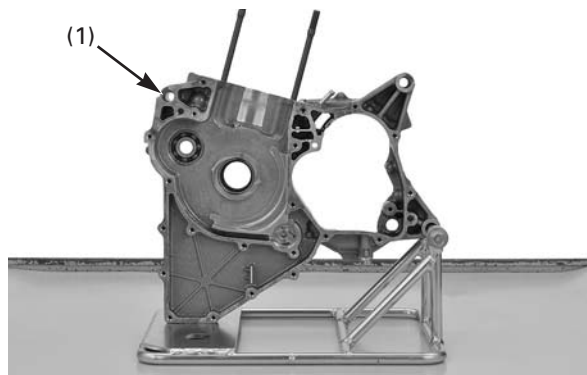
(1) BALANCER OIL SEAL  
(2) CRANKSHAFT OIL SEAL

Apply grease to the new dust seal lips.  
Install the countershaft oil seal.  
Install the new O-ring into the countershaft collar.  
Install the countershaft collar into the countershaft oil seal.

Install the right balancer oil seal and right crankshaft oil seal.



(1) LEFT CRANKCASE



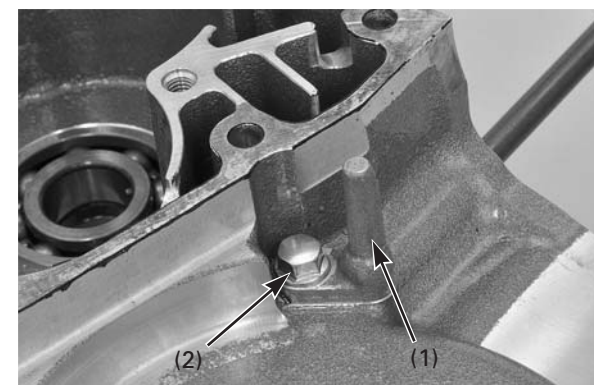
(1) RIGHT CRANKCASE

### Crankcase Assembly

Clean the crankcase with solvent, and check for crack or other damage.  
Clean mating surfaces before assembling and check for wear or damage.  
If the minor roughness or irregularities on the crankcase mating surfaces, dress them with an oil stone.



(1) PISTON JET



(1) PISTON JET (2) BOLT

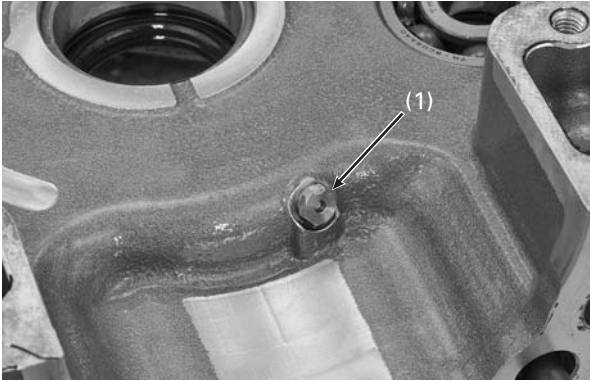
Install the piston jet to the left crankcase.

Install and tighten the bolt to the specified torque.

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



## Engine Servicing

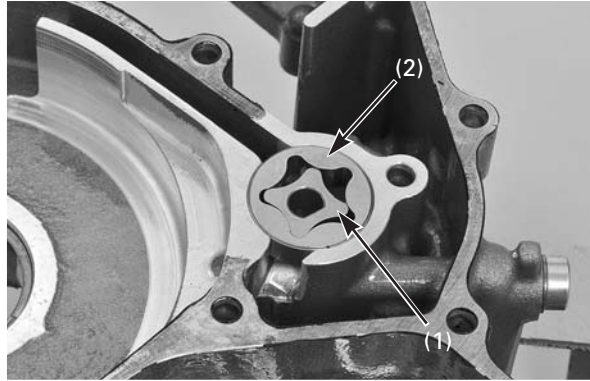


(1) OIL JET

If the oil jet is removed, apply a locking agent to the oil jet threads.

Do not apply locking agent to the tip of the oil jet. Install the oil jet to the right crankcase. Tighten it to the specified torque.

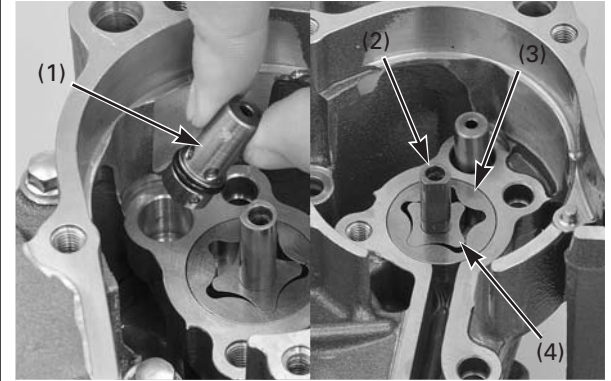
**Torque: 2.0 N·m (0.2 kgf·m, 1.5 lbf·ft)**



(1) INNER ROTOR (2) OUTER ROTOR

Apply engine oil to each pump rotors.

Install the scavenge pump inner and outer rotor to inside of the left crankcase.

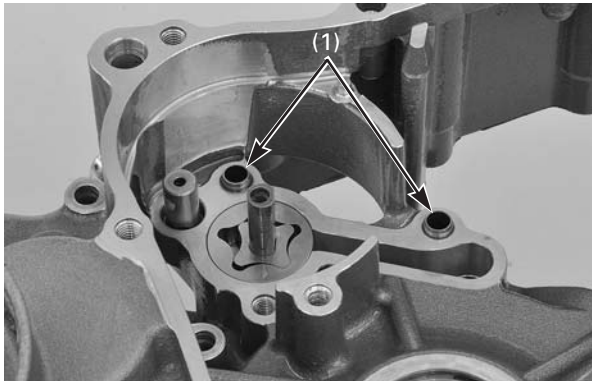


(1) RELIEF VALVE  
(2) OIL PUMP SHAFT (3) OUTER ROTOR  
(4) INNER ROTOR

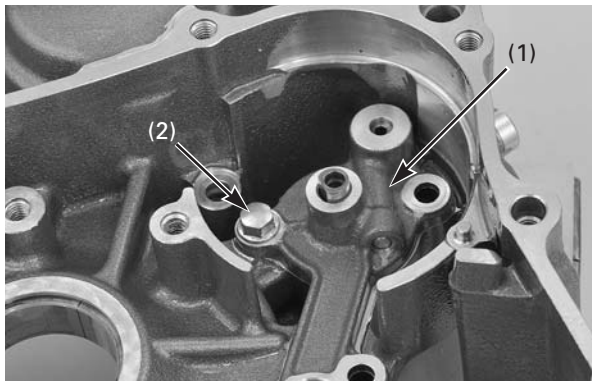
Install a new O-ring into the groove of the pressure relief valve.

Apply grease to the new O-ring and install the relief valve into the left crankcase.

Install the feed pump outer and inner rotor out side of the left crankcase. Install the oil pump shaft by aligning its flat with the inner rotors.



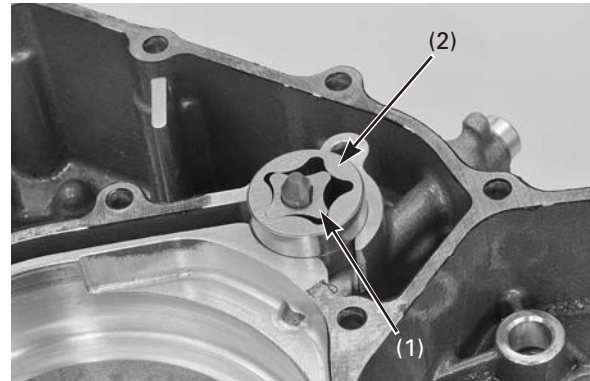
(1) DOWEL PINS



(1) OIL PUMP COVER  
(2) BOLT

Install the dowel pins.

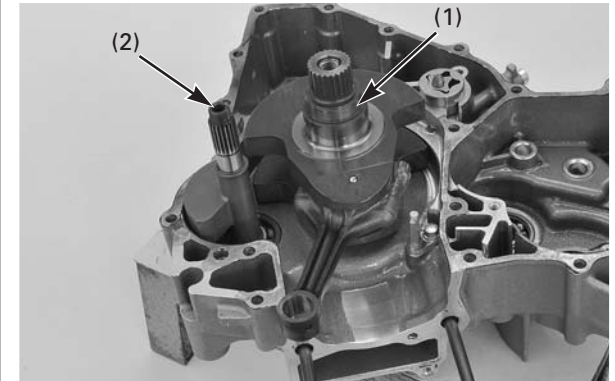
Install the oil pump cover and temporarily tighten the cover bolt.



(1) INNER ROTOR (2) OUTER ROTOR

Place the left crankcase with the oil pump cover side facing down.

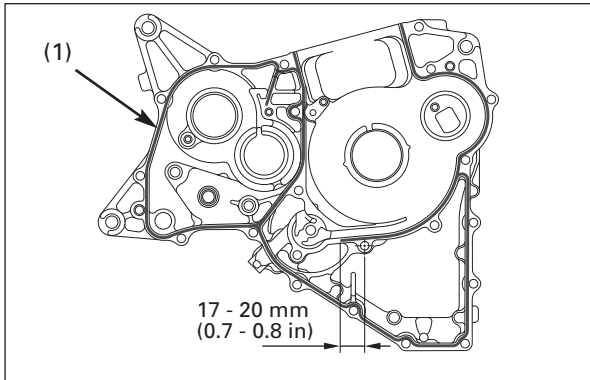
Install the right crankcase side scavenge pump inner and outer rotor onto the inside of the left crankcase.



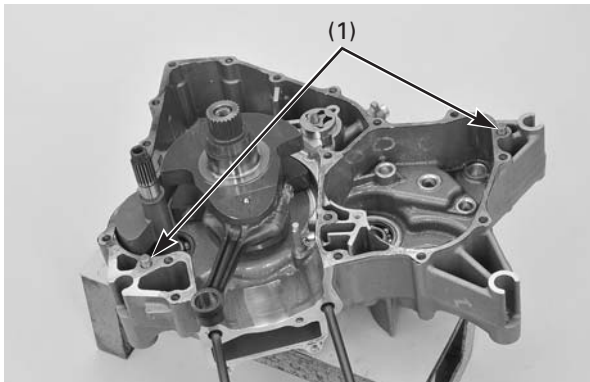
(1) CRANKSHAFT  
(2) BALANCER SHAFT

Install the balancer shaft and crankshaft to the left crankcase.

## Engine Servicing



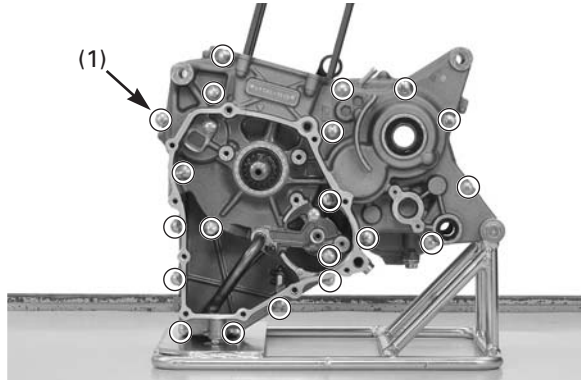
(1) SEALANT



(1) DOWEL PINS

Apply a light, but thorough, coating of liquid sealant to the crankcase mating surface.  
Do not apply sealant to the oil passage area as shown.

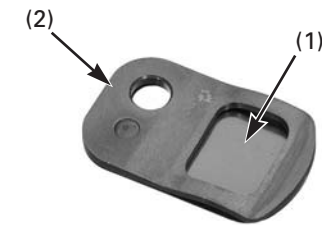
Install the dowel pins.



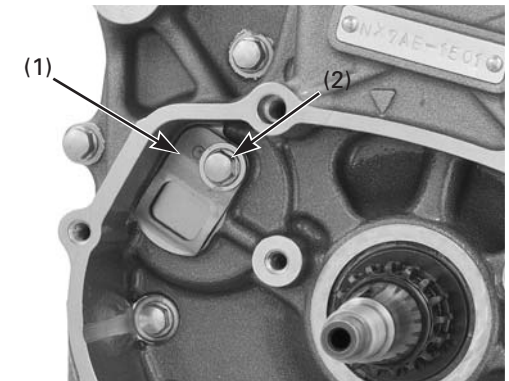
(1) BOLTS

Install the right crankcase onto the left crankcase.

Install the crankcase bolts.  
Tighten the crankcase bolts in a crisscross pattern 2 - 3 steps.



(1) REED VALVE (2) REED VALVE STOPPER

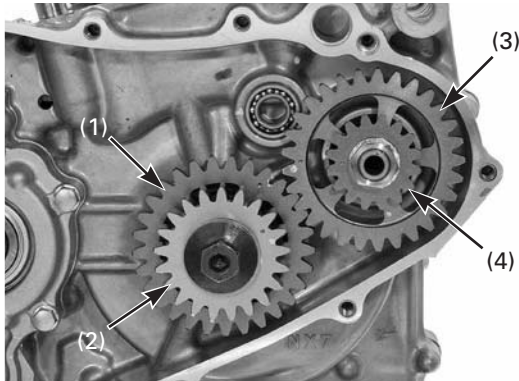


(1) REED VALVE/REED VALVE STOPPER  
(2) BOLT

Check the reed valve for damage.

Apply a locking agent to the reed valve stopper bolt threads.  
Install the reed valve/reed valve stopper and tighten the stopper bolt to the specified torque.

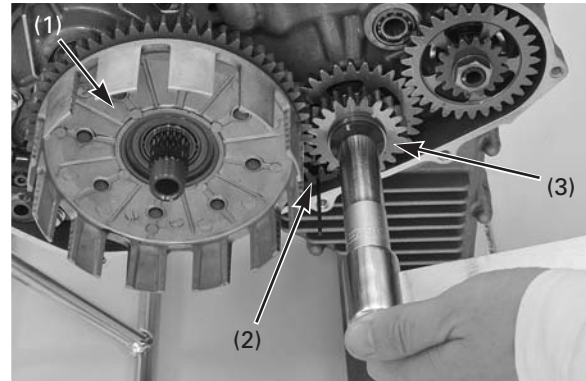
**Torque: 10 N·m (1.0 kgf·m, 7 lbf·ft)**



(1) BALANCER DRIVE GEAR (2) PRIMARY DRIVE GEAR  
(3) BALANCER DRIVEN GEAR  
(4) WATER PUMP DRIVE GEAR

Install the balancer drive gear and primary drive gear to the crankshaft.  
Apply engine oil to the primary drive gear bolt threads and seating surface.  
Install the washer and primary drive gear.

Install the balancer driven gear and water pump drive gear.  
Apply engine oil to the balancer driven gear lock nut threads and seating surface.  
Install the lock washer and lock nut.



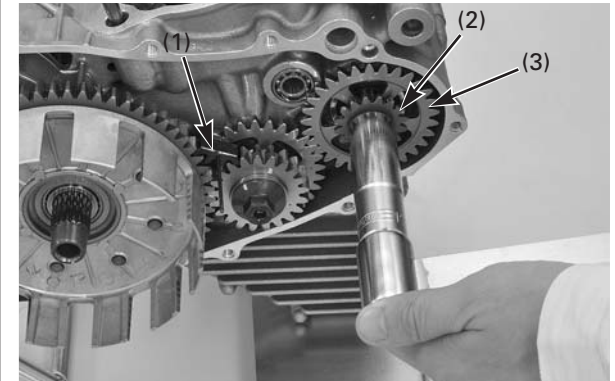
(1) CLUTCH OUTER (2) GEAR HOLDER  
(3) PRIMARY DRIVE GEAR

Temporarily install the clutch outer guide, needle bearing and clutch outer to the mainshaft, then hold the primary drive and driven gear with the gear holder.

**Tool:**  
**Gear holder** **07724-0010100**

Tighten the primary drive gear bolt to the specified torque.

**Torque: 108 N·m (11.0 kgf·m, 80 lbf·ft)**



(1) GEAR HOLDER (2) WATER PUMP DRIVE GEAR  
(3) BALANCER DRIVEN GEAR

Hold the primary drive and driven gear with the gear holder.

**Tool:**  
**Gear holder** **07724-0010100**

Tighten the balancer driven gear nut to the specified torque.

**Torque: 34 N·m (3.5 kgf·m, 25 lbf·ft)**

Install the following:

- crankcase breather hose
- cylinder head, cylinder, piston
- gearshift linkage/transmission
- clutch
- flywheel

Pour specified transmission oil (page 3-10).  
Fill the system coolant and bleed air (page 1-1).

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## Memo

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# 5. Frame Servicing



(1) AXLE NUT (2) AXLE PINCH BOLTS

## Front Wheel

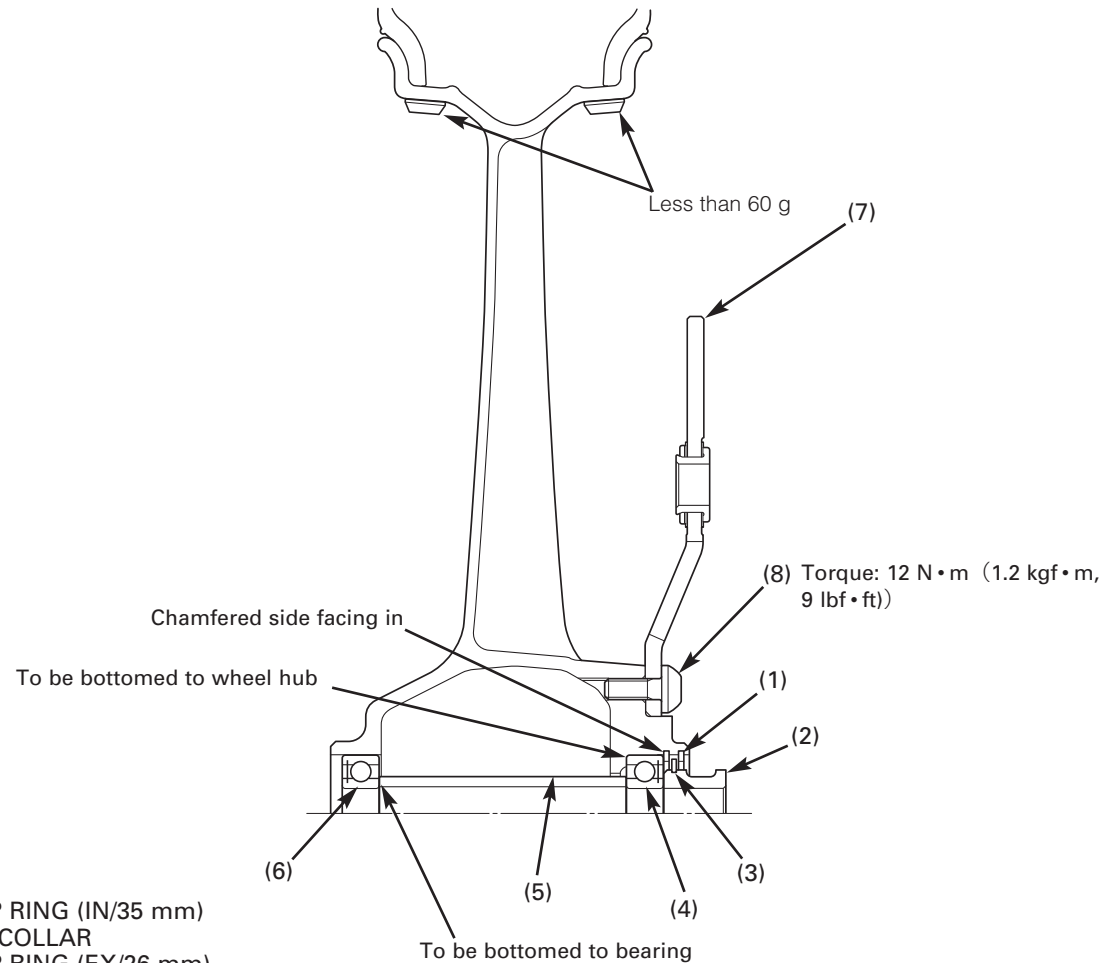
### Removal

Remove the axle nut.  
Loosen the axle pinch bolts.

Support the machine and front wheel off the ground.  
Remove the axle and front wheel.

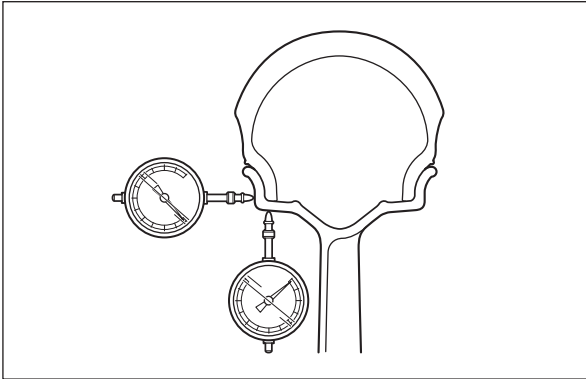
Do not depress the brake lever after the front wheel is removed. The caliper pistons will move and make reassembly difficult.

### Disassembly/Assembly



- (1) SNAP RING (IN/35 mm)
- (2) SIDE COLLAR
- (3) SNAP RING (EX/26 mm)
- (4) RIGHT WHEEL BEARING (6202U)
- (5) DISTANCE COLLAR
- (6) LEFT WHEEL BEARING (6202U)
- (7) BRAKE DISC
- (8) FLANGE BOLT, 6X20 mm

## Frame Servicing



(1) DIAL GAUGE

### Inspection

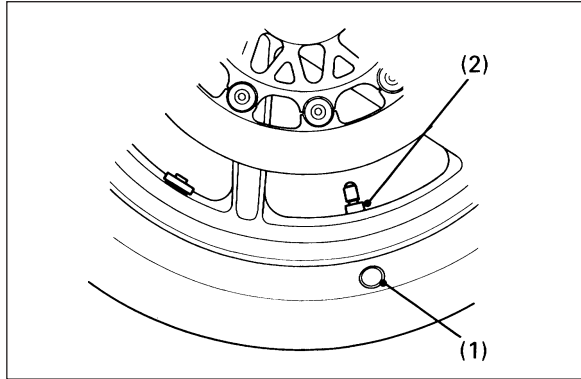
#### Wheel Rim

Spin the wheel slowly and measure the runout using a dial indicator.

The wheel cannot be repaired and must be replaced with a new one if the runout exceeds the service limit.

**Service limit: 0.3 mm (0.01 in)**

Check the wheel balance.

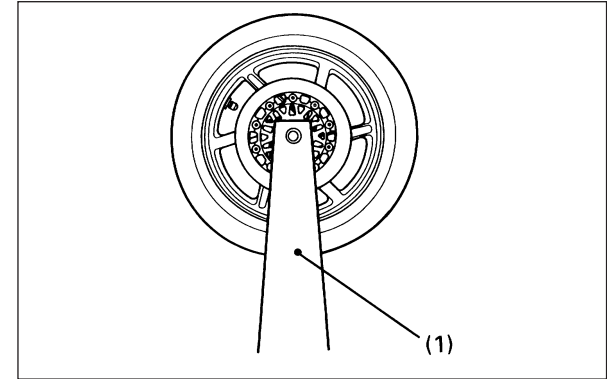


(1) BALANCE MARK (2) VALVE STEM

### Wheel/Tire Balance

Wheel balance directly affects the stability, handling and overall safety of the machine. Always check the balance when the tire has been removed from the rim.

For optimum balance, the tire balance mark (a paint dot or circle on the side wall) must be located next to the valve stem. Remount the tire if necessary.



(1) INSPECTION STAND

Mount the wheel, tire and brake disc assembly in an inspection stand.

Spin the wheel, allow it to stop, and mark the lowest (heaviest) part of the wheel with chalk.

Do this two or three times to verify the heaviest area.

If the wheel is balanced, it will not stop consistently in the same position.

To balance the wheel, install wheel weights on the upper most point of the rim, the opposite side of the chalk marks.

Add just enough weight so the wheel will no longer stop in the same position when it's spun.

Clean the wheel surface and attach the balance weight.

Do not add more than 60 grams per wheel.



(1) AXLE

**Installation**

Clean the surfaces where the axle and axle clamps contact each other.

Place the front wheel between the fork legs.

Use care to avoid damaging the brake pads.

Apply a thin layer of grease to the axle.  
Install the axle from the left side.



(1) AXLE NUT (2) AXLE HOLDER BOLTS

Hold the axle and tighten the axle nut to the specified torque.

**Torque: 70 N·m (7.1 kgf·m, 51 lbf·ft)**

Tighten the right axle holder bolts to the specified torque.

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



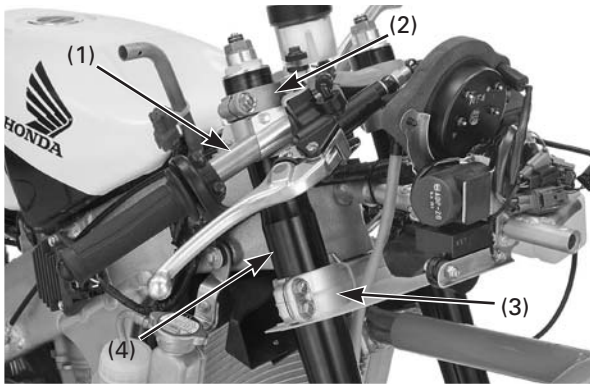
(1) AXLE HOLDER BOLTS

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

Tighten the left axle holder bolt to the specified torque.

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

## Frame Servicing



(1) HANDLEBAR (2) TOP BRIDGE  
(3) BOTTOM BRIDGE (4) FORK LEG

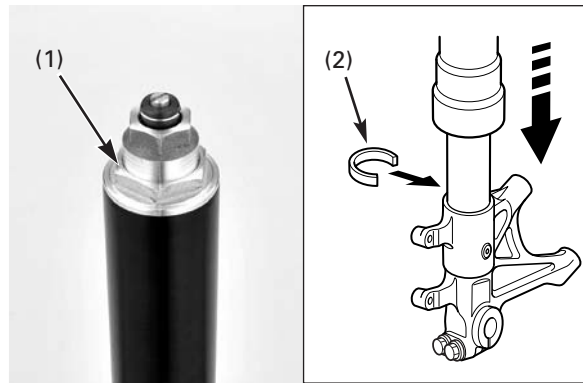
### Fork

#### Removal

Remove the front wheel (page 5-1).  
Remove the bolts and front fender.

Loosen the handlebar pinch bolt.  
Loosen the top bridge pinch bolt .  
If the fork legs are to be disassembled, loosen the fork bolt.  
To avoid damaging the fork bolt threads, loosen the top bridge pinch bolt before loosening the fork bolt.

Loosen the bottom bridge pinch bolts, and pull the fork tube down and out.



(1) FORK BOLT (2) FORK SET COLLAR

#### Disassembly

Before disassembling the fork, clean the entire sliding surface and around the bottom socket bolt.

Be careful not to scratch the slider. A scratched slider will damage the seal, causing an oil leak.  
To avoid damaging the outer tube, install the fork set collar on the axle holder.  
Hold the outer tube, remove the fork bolt and slide the outer tube down onto the fork set collar.

#### Tool:

**Fork set collar**

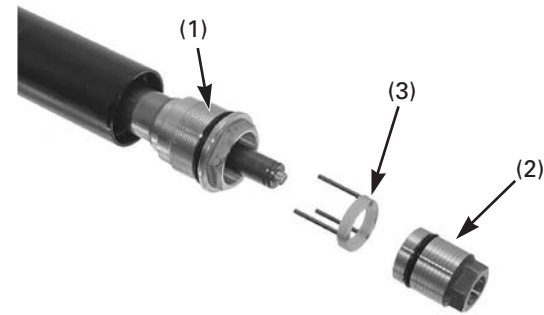
**51481-NX4-610**

When the fork bolt is removed from the outer tube, the slider can move up and down freely in the outer tube.

Always hold both the slider pipe and outer tube with your hands after removing the fork bolt, or the guide bushings might be damaged and fork oil will leak from the slider.



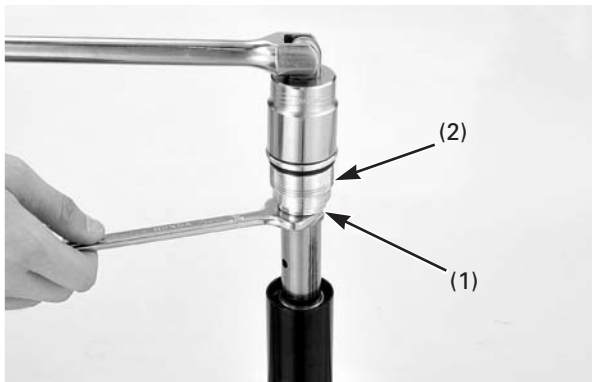
(1) STOP RING



(1) FORK BOLT (2) PRELOAD ADJUSTER  
(3) SPRING ADJUSTING PLATE

Remove the stop ring.

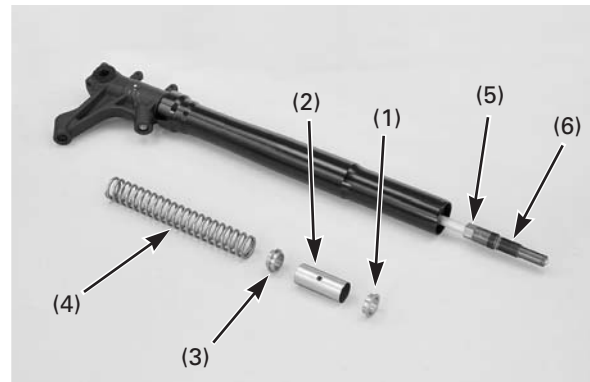
Hold the fork bolt and turn the spring preload adjuster counterclockwise.  
Remove the preload adjuster.  
Remove the spring adjusting plate.



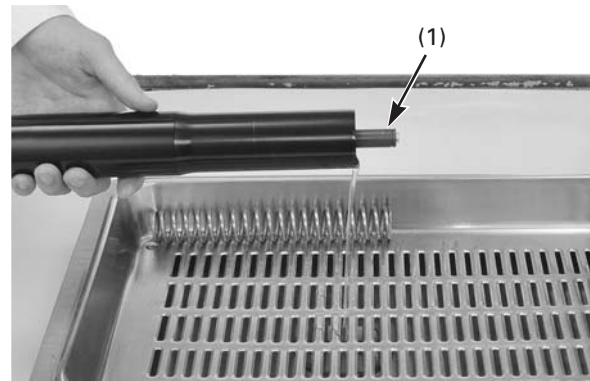
(1) SPRING SEAT STOPPER (2) FORK BOLT

Pull the fork spring seat stopper down to access the cut-out in the damping adjuster with an 17 mm open end wrench.

Hold the damper rod and remove the fork bolt from the rebound damping adjuster.



(1) SPRING SEAT STOPPER (2) SPRING COLLAR  
(3) JOINT PLATE (4) FORK SPRING  
(5) LOCK NUT (6) REBOUND ADJUSTER



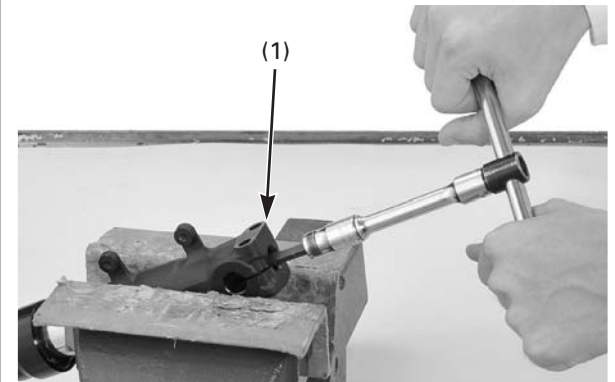
(1) DAMPER ROD

Remove the following:

- spring seat stopper
- spring collar
- spring joint plate
- fork spring

Pour out the fork fluid.

Empty the fork fluid from the fork damper by pumping the damper rod 8-10 times.



(1) AXLE HOLDER

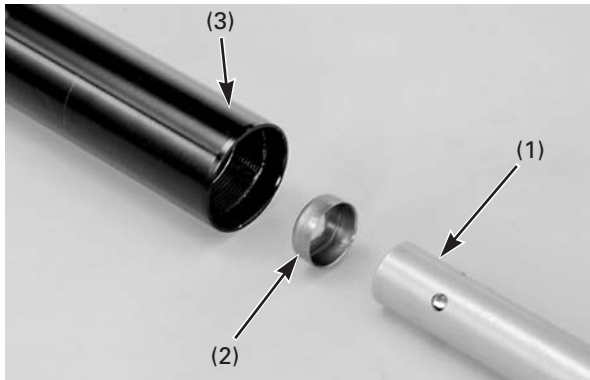
Hold the axle holder in a vise protected with a piece of wood or soft jaws to avoid damage. Do not overtighten.

Loosen and remove the fork bottom socket bolt and sealing washer.

If the socket bolt turns together with the fork damper, temporarily install the fork spring, spacer and fork bolt.



## Frame Servicing



(1) FORK DAMPER (2) CENTERING PLATE  
(3) SLIDER

Remove the following:

- fork damper
- centering plate

Do not try to remove the rebound damping adjuster from the damper rod.

Check that the slider moves smoothly in the outer tube. If it does not, check the slider bending or damage, and the bushings for wear or damage.

If the slider and bushing are normal, check the outer tube.

Remove the fork set collar.  
Remove the slider from the outer tube.

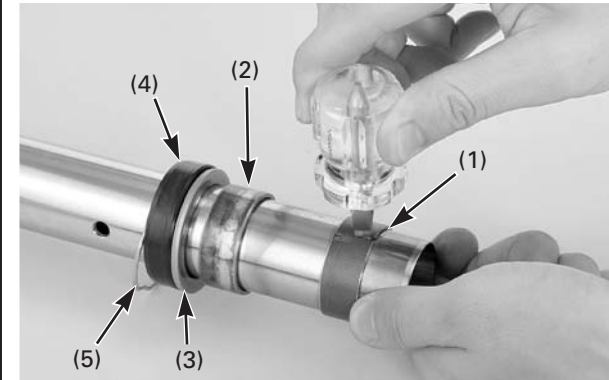


(1) STOP RING



Remove the oil seal stop ring.  
Be careful not to scratch the slider.

In quick successive motions, pull the slider out of the outer tube.



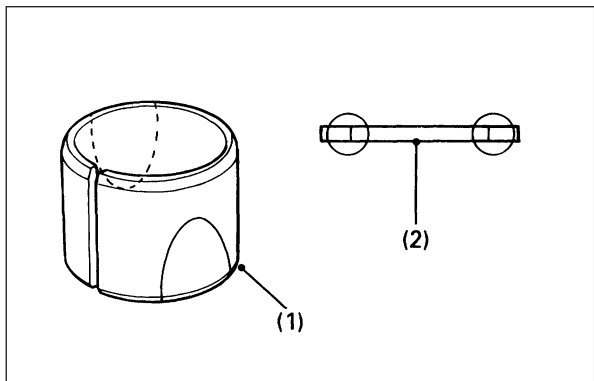
(1) SLIDER BUSHING (2) GUIDE BUSHING  
(3) BACK-UP RING (4) OIL SEAL (5) STOP RING

Remove the slider bushing by prying the slot with a screw driver until the bushing can be pulled off by hand.

Remove the following:

- guide bushing
- back-up ring
- oil seal
- stop ring

Be careful not to scratch the teflon coating of the guide bushing.



(1) GUIDE BUSHING (2) BACK-UP RING

**Inspection**

- Do not disassemble the fork damper. Do not loose the rebound adjuster lock nut or remove the rebound adjuster.

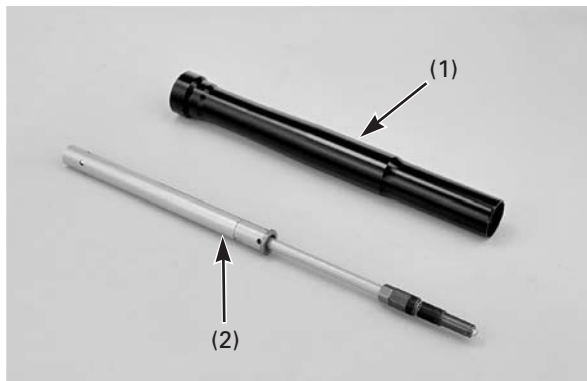
Guide Bushing/Back-up Ring

Check the guide bushings for excessive wear or scratches.

Remove any metal powder from the guide bushings with a nylon brush and fork fluid.

If copper appears on the entire surface, replace the bushing.

Replace the back-up ring if there is any distortion at the points shown.

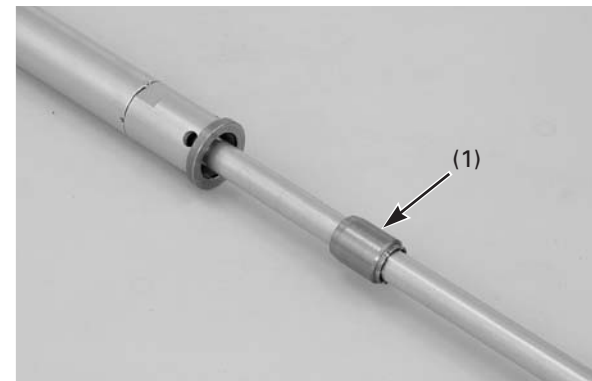


(1) OUTER TUBE (2) FORK DAMPER

Outer Tube/Fork Damper

Check the outer tube for damage or deformation.

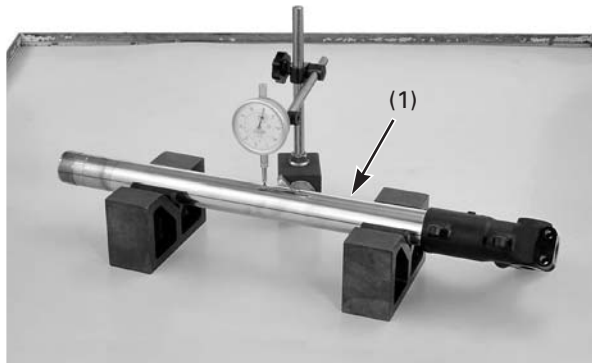
Check the damper rod of the damper for wear or damage.



(1) OIL LOCK VALVE

Check the oil lock valve for wear or damage.

## Frame Servicing



(1) FORK SLIDER

### Fork Slider

- Inspect the fork slider sliding surfaces for damaging, whenever the oil seal is replaced due to oil leaks.

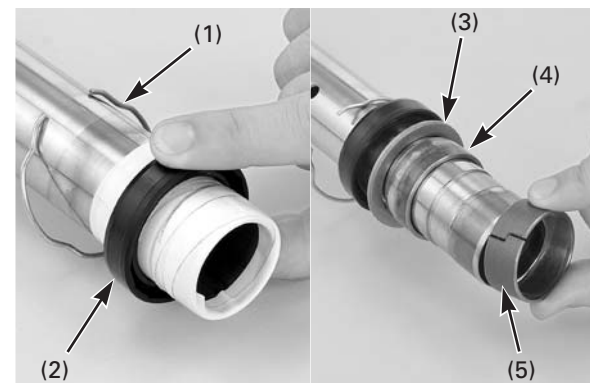
Check the slider for score marks, scratches and excessive or abnormal wear.

Set the slider on V-blocks and measure the runout. Take 1/2 the total indicator reading to determine the actual runout.

**Service limit: 0.20 mm (0.008 in)**

### **Assembly**

- Clean the parts thoroughly with non-flammable or high flash point solvent before assembly.
- When the bushing, fork slider, outer tube are replaced, break in your NSF at the standard setting.
- For optimum fork performance, the fork fluid should be used the Honda Ultra Cushion Oil Special (SAE 5W), Showa SS05 Operation Oil or equivalent.
- Vegetable oils is harmful to the oil seals, resulting in oil leaks.



(1) NEW SLIDER BUSHING (2) GUIDE BUSHING  
(3) BACK-UP RING (4) NEW OIL SEAL  
(5) STOP RING

Wrap the end of the slider with a tape.

Install the stop ring.

Coat the new oil seal lips with recommended fork fluid and install with its seal mark facing the stop ring.

Remove the tape.

Install the back-up ring.

Be careful not to scratch the teflon coating of the bushings.

Coat the guide bushing with recommended fork fluid and install it.

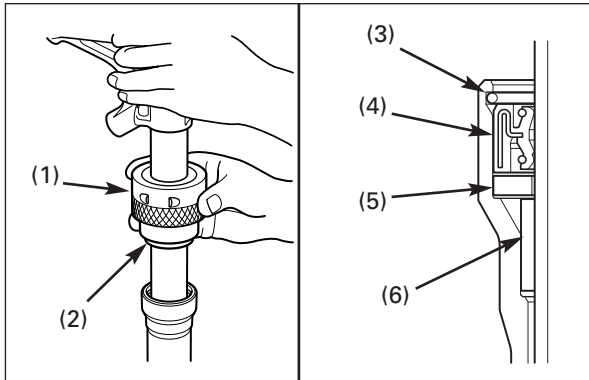
Coat new slider bushing with recommended fork fluid.

Always replace the slider bushing when the fork is disassembled.

Carefully install the slider bushing with your finger. Do not pry open the bushing more than necessary.

Coat the slider and guide bushings with recommended fork fluid.

Install the slider into the outer tube.



(1) OIL SEAL DRIVER (2) ATTACHMENT  
 (3) STOP RING (4) NEW OIL SEAL  
 (5) BACK-UP RING (6) GUIDE BUSHING

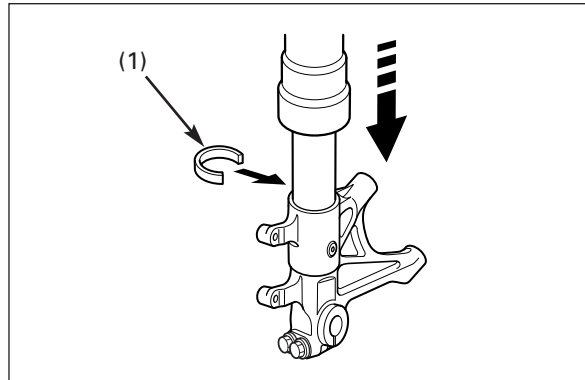


(1) STOP RING

Drive in the guide bushing into the outer tube with the back-up ring.  
 Drive in the oil seal until the stop ring groove is visible.

**Tools:**  
**Fork seal driver** 07KMD-KZ30100  
**Fork seal driver attachment** 07916-NX4-700

Install the oil seal stop ring into the outer tube groove securely.

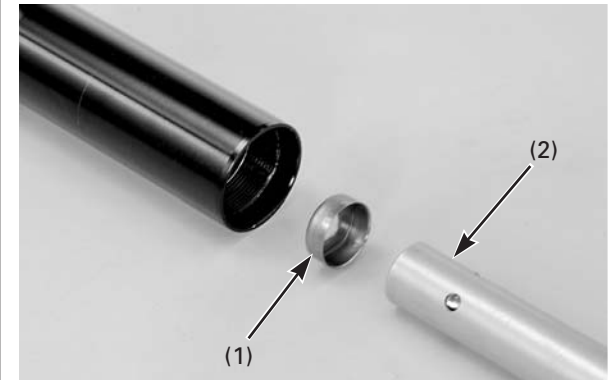


(1) FORK SET COLLAR

The slider can move up and down freely in the outer tube. Always hold both the slider pipe and outer tube with your hands, or the guide bushings might be damaged and fork oil will leak from the slider.

To avoid damaging the outer tube, install the fork set collar and lower the outer tube gently onto the tool.

**Tool:**  
**Fork set collar** 51481-NX4-610



(1) CENTERING PLATE (2) FORK DAMPER

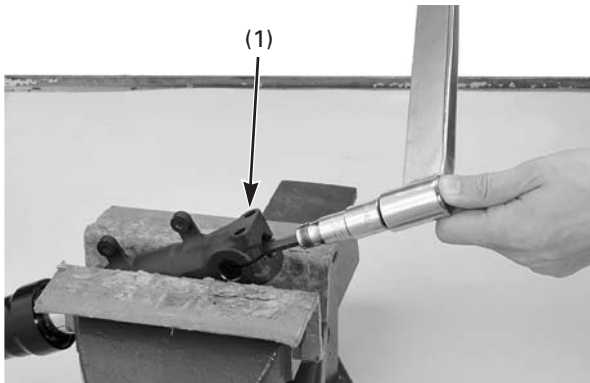


(1) NEW SEALING WASHER (2) SOCKET BOLT

Install the centering plate onto the fork damper.  
 Install the fork damper into the slider.

Install new sealing washer and socket bolt.

## Frame Servicing



(1) AXLE HOLDER

Hold the axle holder in a vise protected with a piece of wood or soft jaws to avoid damage. Do not overtighten the vise.

Tighten the fork bottom socket bolt to the specified torque.

**Torque: 34 N·m (3.5 kgf·m, 25 lbf·ft)**

If the socket bolt turns together with the fork damper, temporarily install the fork spring, spacer and fork bolt.



(1) OUTER TUBE

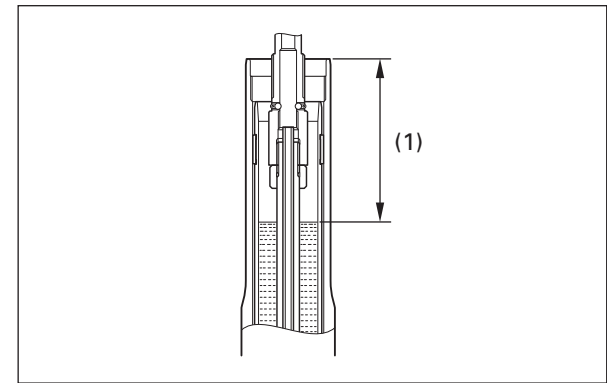
You must use the fork set collar for correct oil level adjustment.

Pour half the required amount of recommended fork fluid in the fork leg.

**Recommended fork fluid:**  
**Honda Ultra Cushion Oil Special (SAE 5W)**  
**Showa SS05 Operation Oil or equivalent**

Bleed the air as follows:

1. Extend the fork. Cover the top of the outer tube with your hand and compress the fork slowly. The fork fluid will spill out of the oil hole in the slider. Do not pull up the outer tube more than 225 mm (8.8 in) from the axle holder to extend the fork.
2. Pump the outer tube and damper rod slowly 8–10 times.
3. Pour additional fluid to the specified capacity and repeat step 2. Compress the outer tube fully and leave it for 5 minutes to settle the oil level.

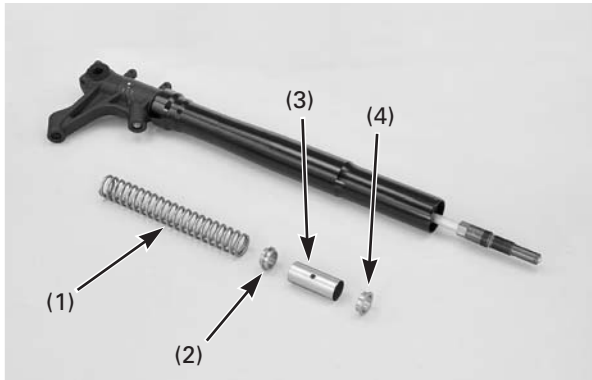


(1) OIL LEVEL

Measure the oil level from the top of the slider.

**Standard oil level: 85 mm (3.3 in)**  
**Standard oil capacity: 234 cm<sup>3</sup> (7.9 US oz, 8.2 Imp oz)**



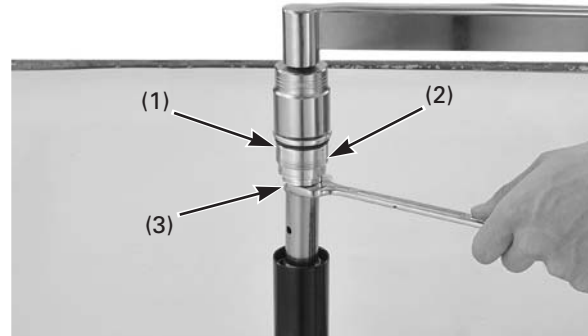


(1) FORK SPRING (2) JOINT PLATE  
(3) SPRING COLLAR (4) SPRING SEAT STOPPER

Install the fork spring with the identification mark facing up.

Install the following:

- spring joint plate
- spring collar
- spring seat stopper



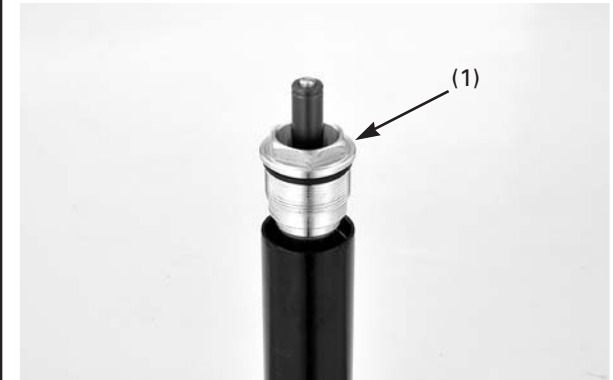
(1) NEW O-RING (2) FORK BOLT  
(3) CUT-OUT

Install a new O-ring onto the fork bolt. Install the fork bolt onto the rebound damping adjuster while holding the rebound damping adjuster and pulling down the spring seat stopper.

Place a 17 mm open end wrench on the cut-out of the rebound damping adjuster while holding the fork bolt and pulling down the spring seat stopper.

Hold the rebound adjuster and tighten the fork bolt to the specified torque.

**Torque: 34 N·m (3.5 kgf·m, 25 lbf·ft)**



(1) FORK BOLT



(1) ADJUSTING PLATE

Apply recommended fork fluid to the O-ring, then screw the fork bolt into the outer tube.

Install the spring adjusting plate, aligning its pins with the fork bolt holes.

## Frame Servicing



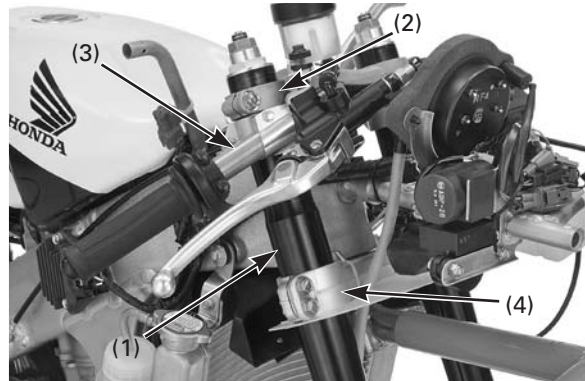
(1) NEW O-RING (2) PRELOAD ADJUSTER



(1) STOP RING

Apply the recommended fork fluid to the O-ring, then install it onto the spring preload adjuster. Hold the fork bolt and turn the preload adjuster into the fork bolt.

Install the stop ring.



(1) OUTER TUBE (2) TOP BRIDGE  
(3) HANDLEBAR  
(4) BOTTOM BRIDGE PINCH BOLTS

### Installation

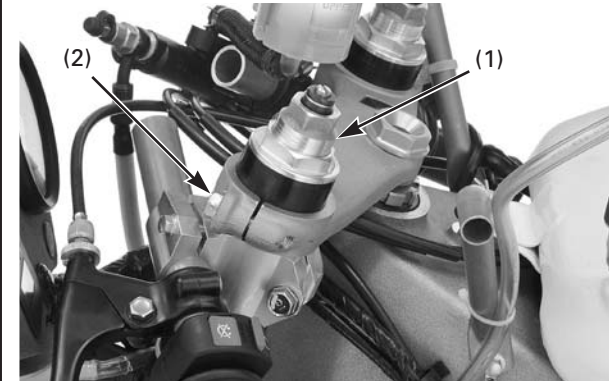
Install the fork leg.  
Raise the fork through the bottom bridge, handlebar and top bridge.

For standard setting, position the upper surface of the outer tube 15 mm (0.6 in) from top of the outer tube.

Tighten the bottom bridge pinch bolts to the specified torque.

**Torque: 23 N•m (2.3 kgf•m, 17 lbf•ft)**

Overtightening the pinch bolts can deform the outer tube. It may cause incorrect fork operation. A deformed outer tube must be replaced.



(1) FORK BOLT (2) TOP BRIDGE PINCH BOLT

Tighten the fork bolt to the specified torque.

**Torque: 34 N•m (3.5 kgf•m, 25 lbf•ft)**

Tighten the top bridge pinch bolt to the specified torque.

**Torque: 23 N•m (2.3 kgf•m, 17 lbf•ft)**

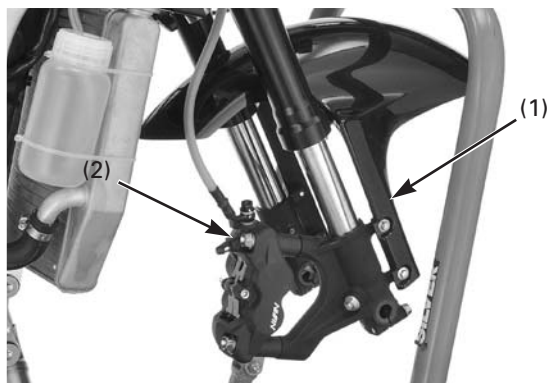
Adjust the handlebar position, tighten the pinch bolt to the specified torque.

**Torque: 23 N•m (2.3 kgf•m, 17 lbf•ft)**

Overtightening the top bridge and handlebar pinch bolts can deform the outer tube. It may cause incorrect fork operation.

A deformed outer tube must be replaced.

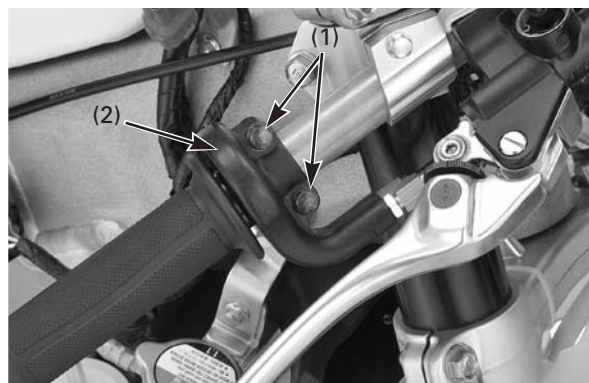
Return the spring preload/rebound/compression adjusters to their original positions as noted during removal.



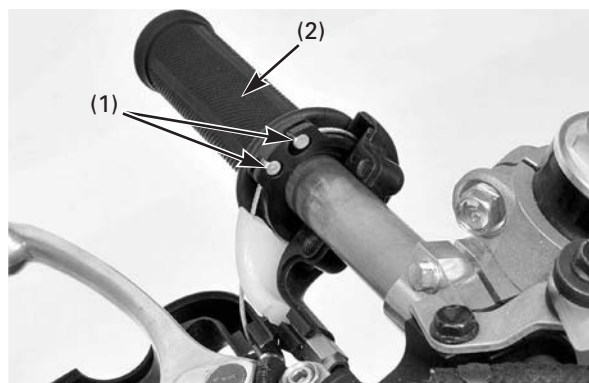
(1) FRONT FENDER (2) BRAKE CALIPER

Install the front fender and tighten the bolts.  
Install the brake caliper and tighten the bolts.

Install the front wheel (page 5-3)



(1) SCREWS (2) COVER



(1) THROTTLE CABLES (2) THROTTLE PIPE

### Handlebar

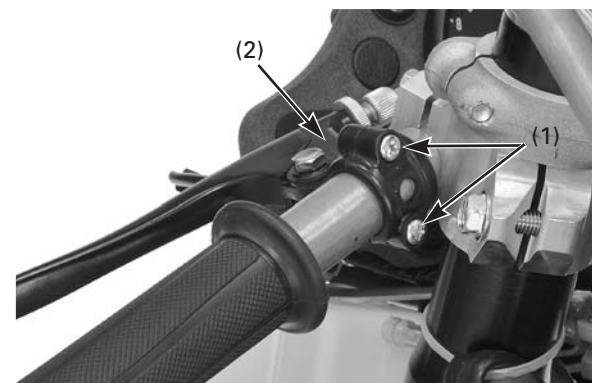
#### Removal

Remove the screws and throttle housing cover.

Disconnect the throttle cable from the throttle pipe.  
Remove the bolts and throttle housing.  
Remove the throttle pipe.  
Remove the front brake master cylinder (page 5-35).



(1) SCREW (2) ENGINE STOP SWITCH

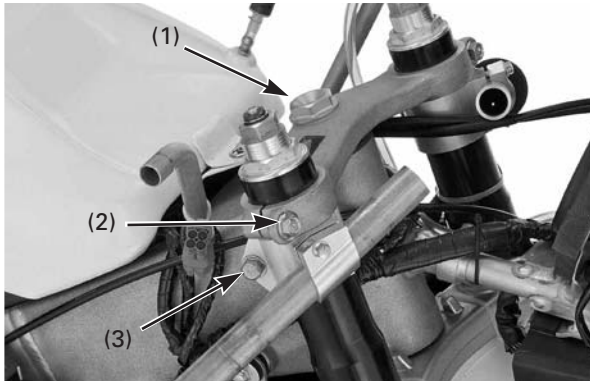


(1) SCREW (2) CLUTCH LEVER BRACKET

Remove the two screws and engine stop switch.

Remove the two screws and clutch lever bracket.

## Frame Servicing



- (1) STEM BOLT  
(2) TOP BRIDGE PINCH BOLTS  
(3) HANDLEBAR PINCH BOLTS

Remove the steering stem bolt.  
Loosen the top bridge pinch bolts and remove the top bridge.

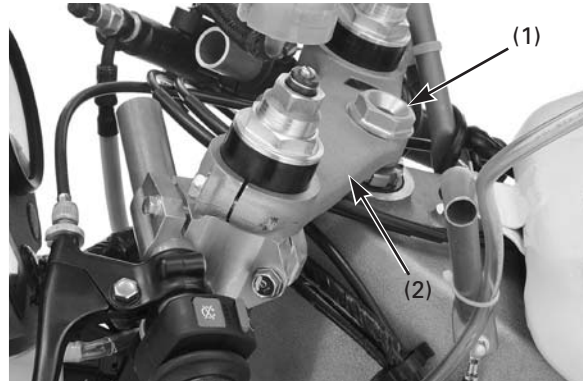
Loosen the handlebar pinch bolts and handlebar.

Installation is in the reverse order of removal.

Standard position: Contact with the top bridge

### Torque:

- Handlebar pinch bolt:** 23 N·m (2.3 kgf·m, 17 lbf·ft)  
**Top bridge pinch bolt:** 23 N·m (2.3 kgf·m, 17 lbf·ft)  
**Steering stem bolt:** 60 N·m (6.0 kgf·m, 43 lbf·ft)

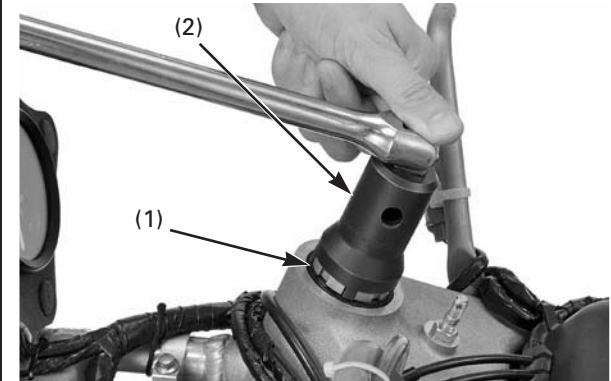


- (1) STEM BOLT (2) TOP BRIDGE

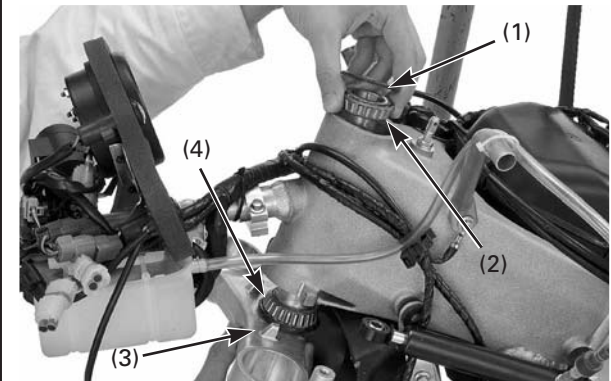
## Steering Stem

### Removal

- Remove the following:
- upper cowl
  - front wheel (page 5-1)
  - steering stem bolt
  - fork legs (page 5-4)
  - top bridge



- (1) ADJUSTING NUT  
(2) STEERING STEM SOCKET



- (1) DUST SEAL (2) UPPER BEARING  
(3) STEERING STEM (4) LOWER BEARING

Remove the lock washer.  
Remove the stem bearing adjusting nut.

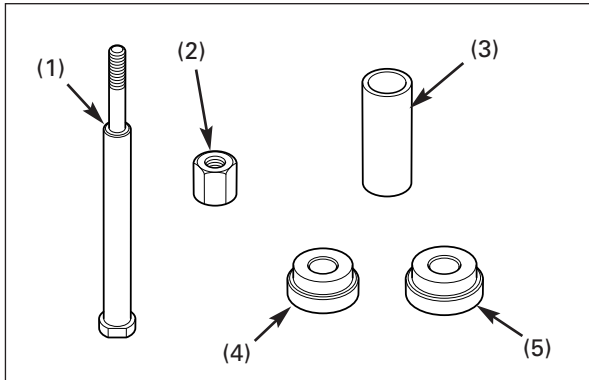
### Tool:

**Steering stem socket**

**07916-KA50100**

Remove the following:

- dust seal
- upper bearing
- steering stem/lower bearing



(1) DRIVER SHAFT (2) NUT  
 (3) COLLAR (4) ATTACHMENT, 47 MM  
 (5) ATTACHMENT, 51 MM

**Outer Race Replacement**

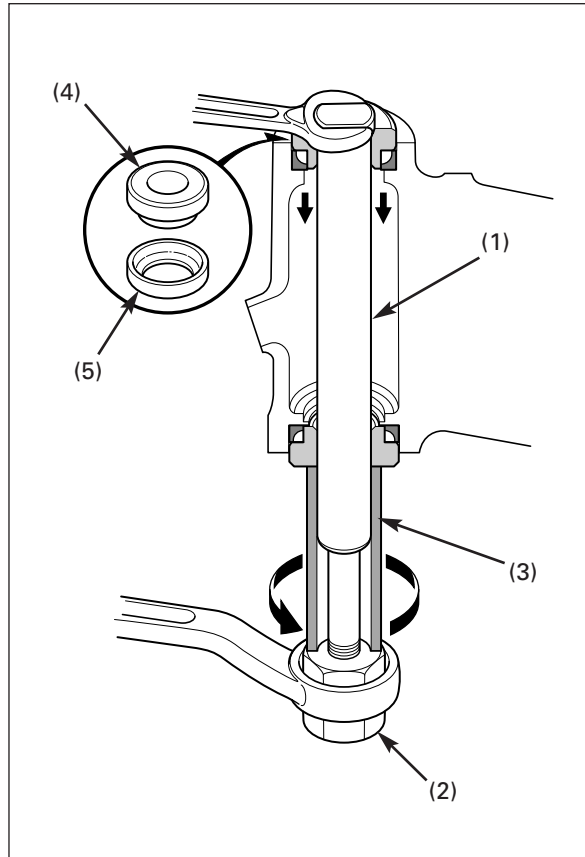
Always replace the steering bearings and races as a set.  
 If the machine has been involved in an accident, examine the steering stem and the area around the steering head for cracks.

Remove the outer races.

Install the new outer races using the Ball Race Driver Set as described in the following procedure.

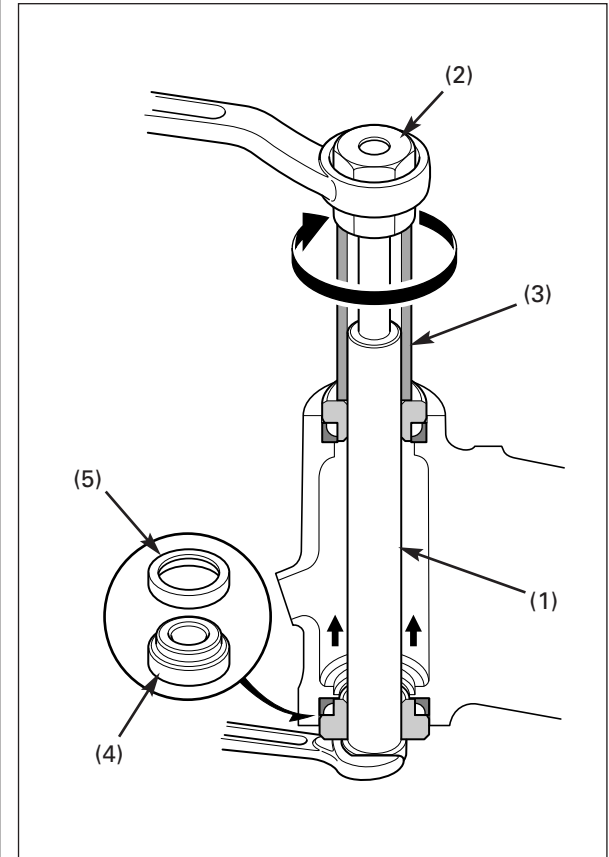
**Tools:**

- |                             |                      |
|-----------------------------|----------------------|
| <b>Ball race driver set</b> | <b>07910-NX4-003</b> |
| - driver shaft nut          | <b>07911-NX4-003</b> |
| - assembly collar           | <b>07912-NX4-003</b> |
| - driver attachment, 47 mm  | <b>07913-NX4-003</b> |
| - driver attachment, 51 mm  | <b>07914-NX4-003</b> |
| - driver shaft              | <b>07915-NX4-003</b> |



(1) DRIVER SHAFT (2) NUT (3) COLLAR  
 (4) DRIVER ATTACHMENT, 47 MM  
 (5) UPPER OUTER RACE

Install a new upper outer race and the ball race driver as shown.  
 Holding the driver shaft (1) with a wrench, turn nut (2) gradually until the groove in the driver attachment (4) aligns with the upper end of the steering head to install the upper outer race.

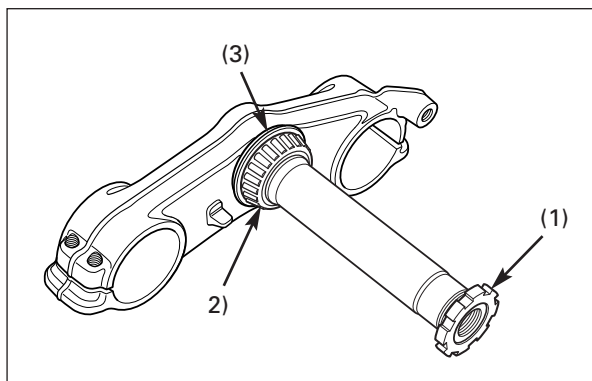


(1) DRIVER SHAFT (2) NUT (3) COLLAR  
 (4) DRIVER ATTACHMENT, 51 mm  
 (5) LOWER OUTER RACE

Install a new lower outer race and the ball race driver as shown.  
 Holding the driver shaft (1) with a wrench, turn nut (2) gradually until the groove in driver attachment (4) aligns with the upper end of the steering head to install the lower outer race.



## Frame Servicing

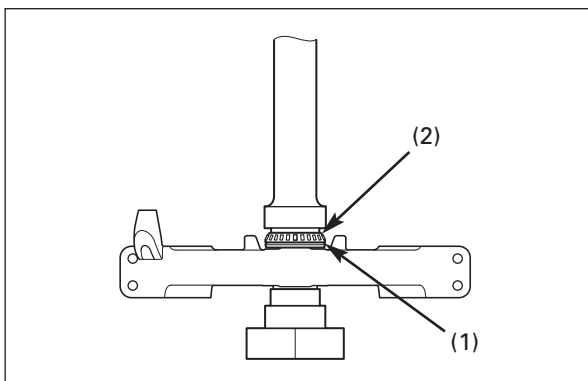


(1) ADJUSTING NUT (2) LOWER BEARING  
(3) DUST SEAL

### Lower Bearing Replacement

Temporarily install the stem bearing adjusting nut onto the steering stem to prevent damage to the threads.

Remove the lower bearing and dust seal, and discard them.



(1) NEW DUST SEAL  
(2) NEW LOWER BEARING

Install the following:

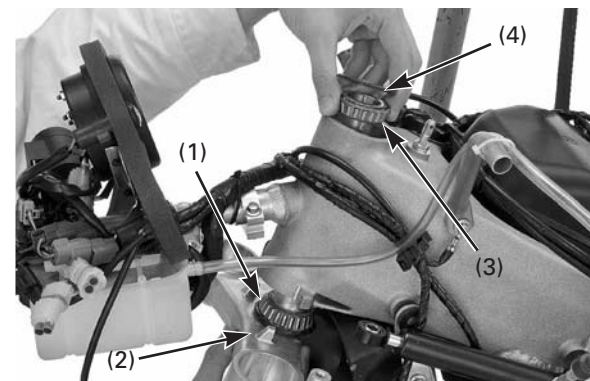
- new dust seal
- new lower bearing

Press the lower bearing in, using the special tool and a hydraulic press.

### **Tool:**

**Steering stem driver**

**07946-MB00000**



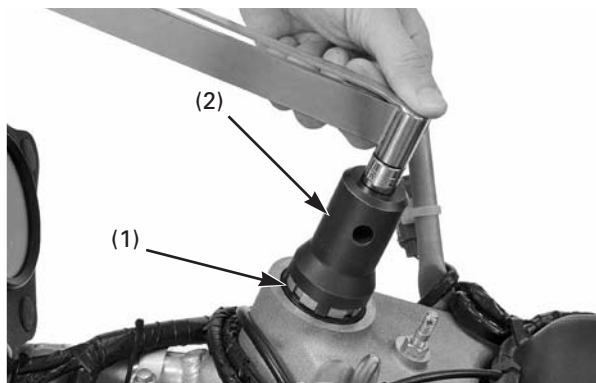
(1) LOWER BEARING (2) STEERING STEM  
(3) NEW UPPER BEARING  
(4) NEW DUST SEAL

### **Installation**

Apply grease to the upper and lower bearings and races.

Slide the steering stem through the steering head from the bottom.

Install the new upper bearing and new dust seal.



(1) BEARING ADJUSTING NUT  
(2) STEERING STEM SOCKET

Install the steering stem as follows:

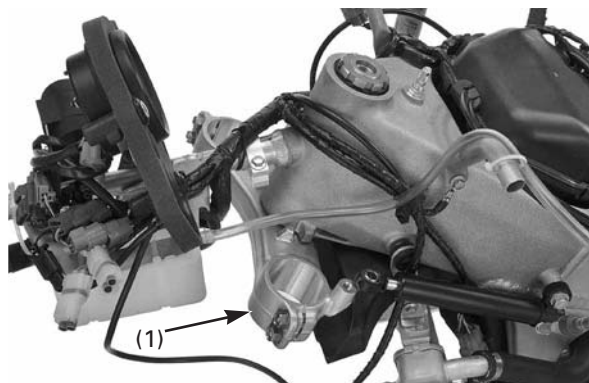
1. Apply oil to the stem bearing adjusting nut threads.

Tighten the adjusting nut to the specified torque using the special tool.

**Tool:**

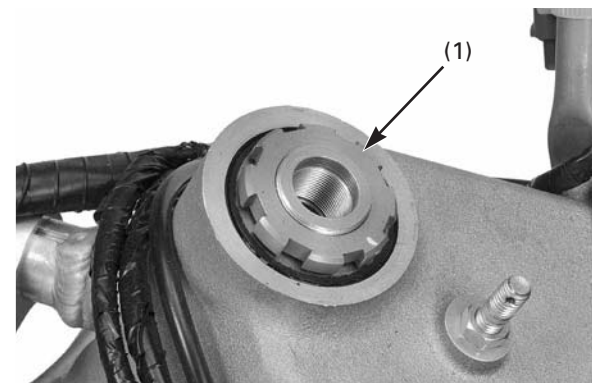
**Steering stem socket**                      **07916-KA50100**

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



(1) STEERING STEM

2. Move the steering stem right and left, lock-to-lock several times to seat the bearings. Make sure that the steering stem moves smoothly, without play or binding.

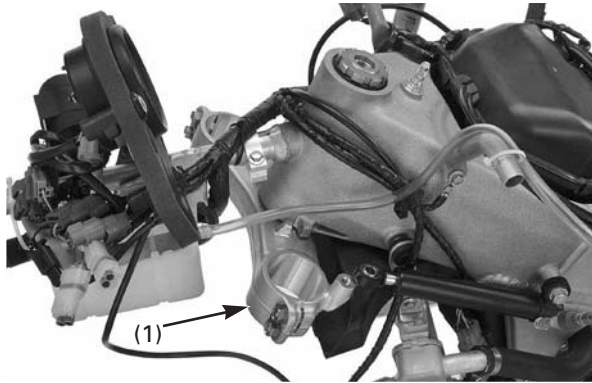


(1) BEARING ADJUSTING NUT

3. Loosen the bearing adjusting nut, so that the adjusting nut turns by hand. Do not loosen the adjusting nut more than necessary.

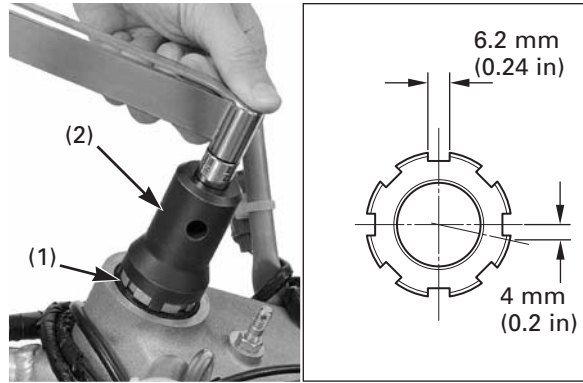
4. Retighten the stem bearing adjusting nut by hand.

## Frame Servicing

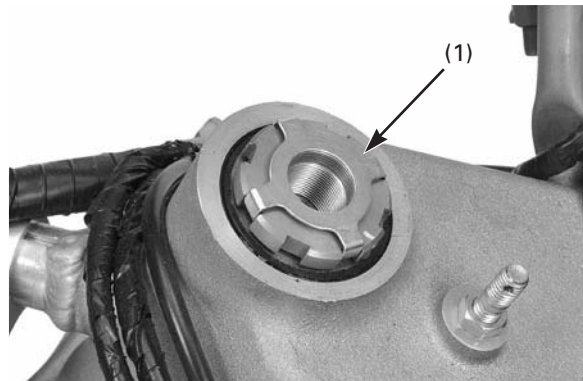


(1) STEERING STEM

5. Move the steering stem right and left, lock-to-lock several times to seat the bearings.
6. Retighten the adjusting nut by hand.
7. Repeat step 4-6 about 3 times.  
Then tighten the adjusting nut, so that the adjusting nut does not move by hand.



(1) ADJUSTING NUT  
(2) STEERING STEM SOCKET



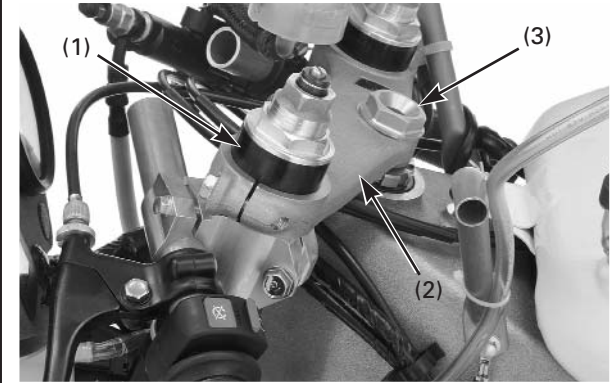
(1) LOCK WASHER

8. Further tighten the adjusting nut to the specified torque using the special tool.  
If a torque wrench is not available, further tighten the nut about 4.0 mm (0.16 in) as shown.

**Tool:**  
**Steering stem socket**                      **07916-KA50100**

**Torque: 4 N·m (0.40 kgf·m, 2.9 lbf·ft)**

9. Install the lock washer onto the adjusting nut.



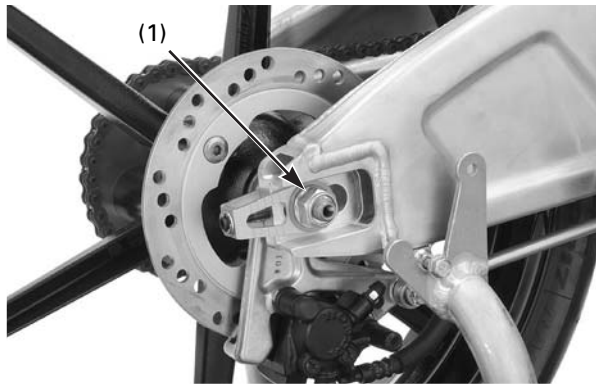
(1) FORK LEGS    (2) TOP BRIDGE  
(3) STEM BOLT

- Install the following:
- fork legs (page 5-12)
  - handlebar
  - top bridge
  - steering stem bolt

Apply grease to the steering stem bolt threads.  
Tighten the steering stem bolt to the specified torque.

**Torque: 59 N·m (6.0 kgf·m, 43 lbf·ft)**

Install the front wheel (page 5-2).  
Install the upper cowl.



(1) AXLE NUT

## Rear Wheel

### Removal

Support the machine using the maintenance stand.

Loosen the drive chain.

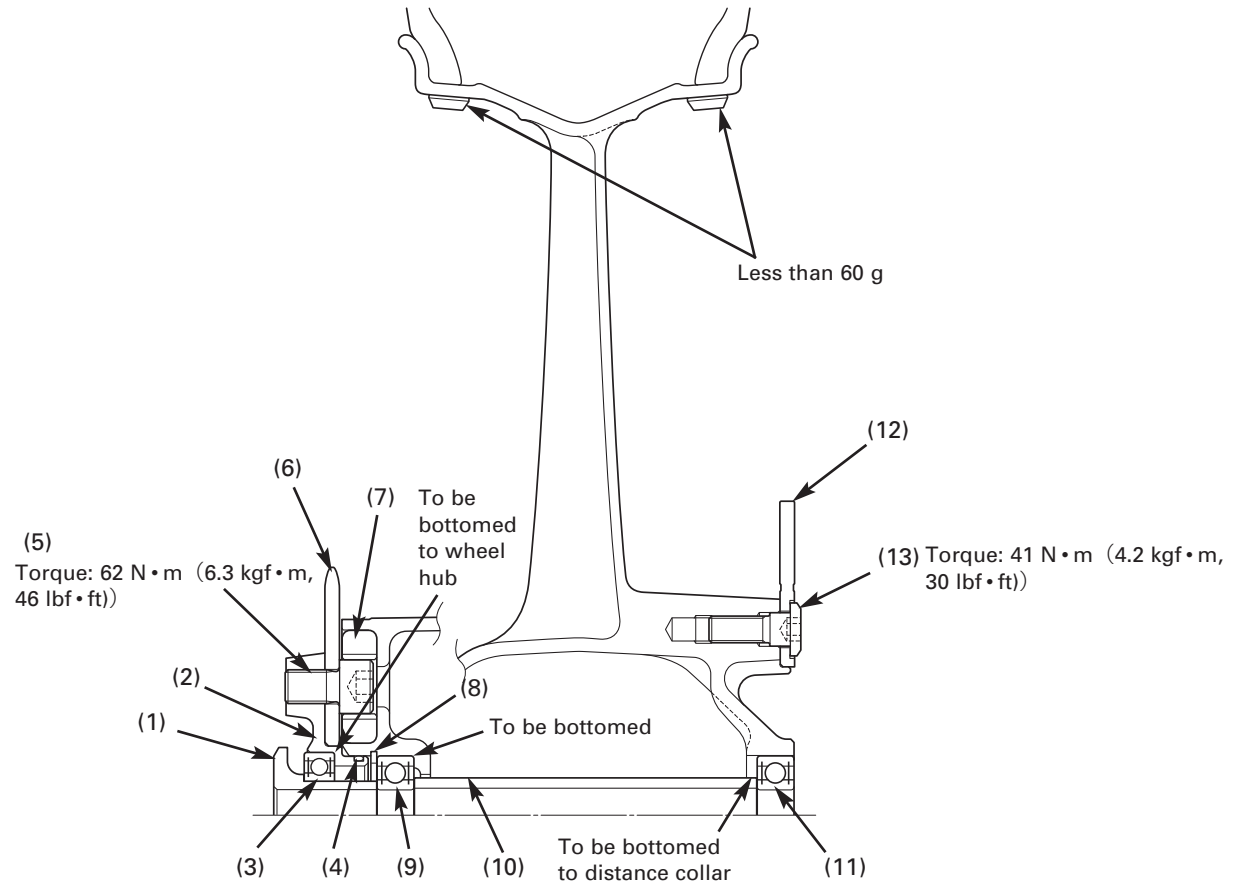
Hold the axle and remove the rear axle nut.  
Remove the axle and washers.

Derail the drive chain from the driven sprocket and remove the rear wheel.

Do not depress the brake pedal after the rear wheel is removed. The caliper piston will move and make reassembly difficult.

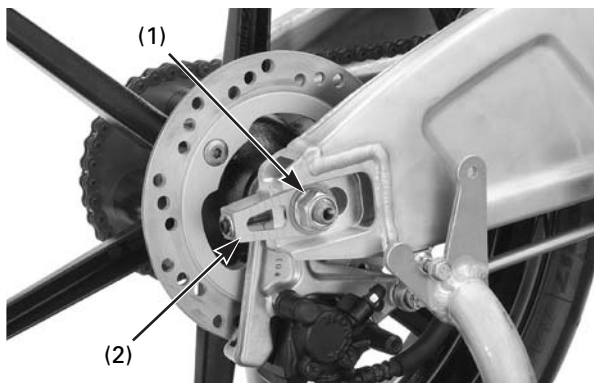
See page 5-2 for inspection.

### Disassembly/Assembly



- |                                    |                                   |
|------------------------------------|-----------------------------------|
| (1) SIDE COLLAR                    | (10) DISTANCE COLLAR              |
| (2) DRIVEN FLANGE                  | (11) RIGHT WHEEL BEARING (6202UU) |
| (3) DRIVEN FLANGE BEARING (6904UU) | (12) BRAKE DISC                   |
| (4) O-RING                         | (13) BRAKE DISC BOLT              |
| (5) DRIVEN SPROCKET BOLT           |                                   |
| (6) DRIVEN SPROCKET                |                                   |
| (7) REAR WHEEL DAMPER              |                                   |
| (8) SNAP RING                      |                                   |
| (9) LEFT WHEEL BEARING (6202UU)    |                                   |

## Frame Servicing



- (1) AXLE NUT
- (2) DRIVE CHAIN ADJUSTER

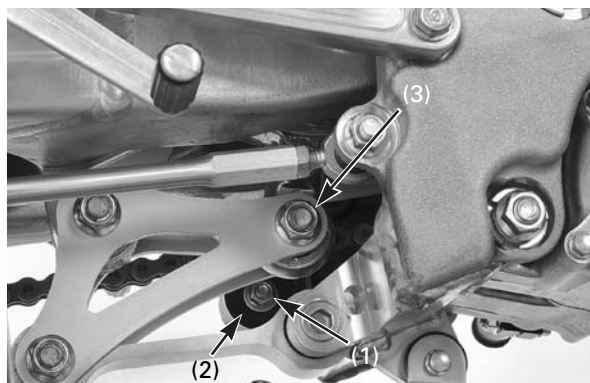
### Installation

Place the rear wheel between the swingarm while aligning the brake disc between the brake pads. Install the drive chain.

Use care to avoid damaging the brake pads.

Apply a thin layer of grease to the axle surface. Install the washer and rear axle from the left side. Install the washer and axle nut. Check the drive chain slack (page 3-8). Tighten the axle nut to the specified torque while holding the rear axle.

**Torque: 70 N·m (7.1 kgf·m, 51 lbf·ft)**



- (1) BOLT/NUT
- (2) DRIVE CHAIN ROLLER
- (3) LOWER MOUNTING BOLT/NUT

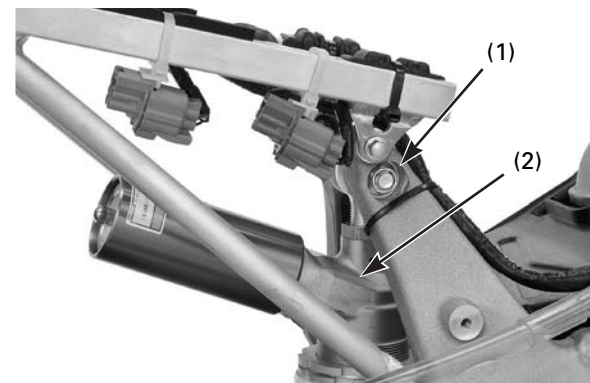
### Rear Shock Absorber

#### Removal

Remove the seat cowl.  
Support the machine using a maintenance stand.

If you will replace the spring, loosen the lock nut and adjuster before removing the rear shock absorber.

Remove the nut, bolt and drive chain roller.  
Remove the rear shock absorber lower mounting bolt/nut.

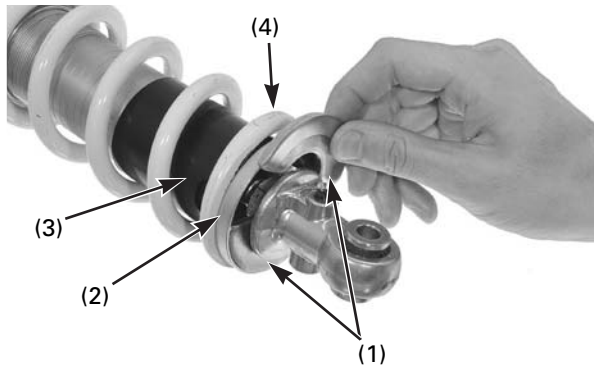


- (1) UPPER MOUNTING BOLT/NUT
- (2) REAR SHOCK ABSORBER

Remove the following:

- upper mounting nut and bolt
- rear shock absorber





(1) SPRING SEAT STOPPERS (2) SPRING SEAT  
(3) SPRING GUIDE (4) SPRING

**Disassembly**

Loosen the spring lock nut and adjuster.

Remove the following:

- spring seat stoppers
- spring seat
- spring guide
- spring
- O-ring

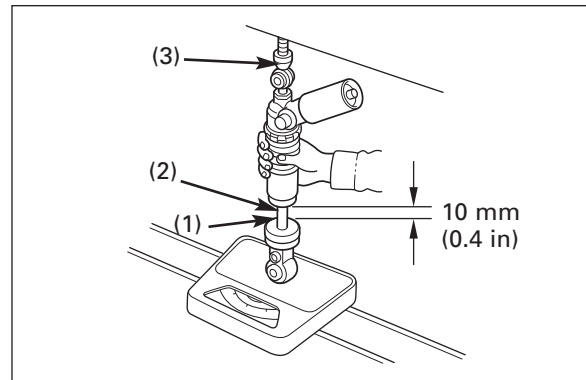
**Inspection**

Spring

Check the spring for fatigue or damage.

Spherical Bearings

Check the spherical bearings for smooth operation or damage.



(1) DAMPER ROD (2) MARK  
(3) HYDRAULIC PRESS

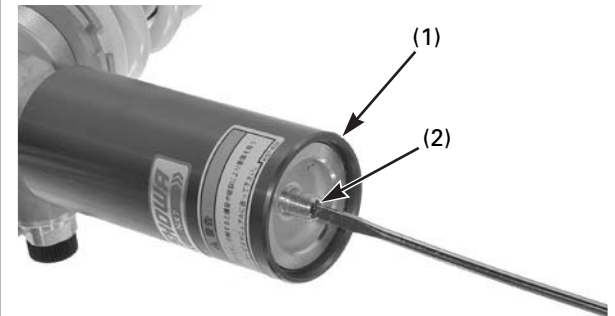
Damper

Check for oil leakage from the damper rod.  
Replace the damper assembly if the oil is leaking.

Mark the damper rod at the first 10 mm (0.4 in) exposed from the damper body.  
Place the damper rod on a scale and measure the force required to compress the damper until the 10mm (0.4 in) mark is flush with the damper body.

**Compression force: 150 - 195 N (15.4 - 20.0 kg)**

If the force required is less than 150 N (15.4 kg), nitrogen is leaking.  
Fill the reservoir with 980 - 1,280 kPa (10.0 - 13.0 kg/cm<sup>2</sup>, 142 - 185 psi) of nitrogen gas.



(1) RESERVOIR (2) VALVE CORE

Nitrogen Releasing Procedure

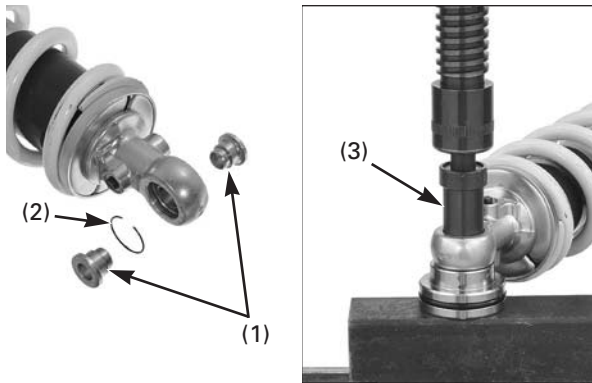
**! WARNING**

**High pressure gas can cause severe injury to your eyes. Wear safety glasses and point the valve away from you when releasing pressure.**

Remove the reservoir valve cap.  
Release the nitrogen from the reservoir by depressing the valve core until pressure is released.

Before disposal of the rear shock absorber, release the nitrogen from the reservoir and then remove the valve core.

## Frame Servicing



(1) PIVOT COLLARS (2) STOP RINGS  
(3) SPHERICAL BEARING DRIVER

### Spherical Bearing Replacement

Hold the shock absorber in a vise with a piece of wood or shop towel.

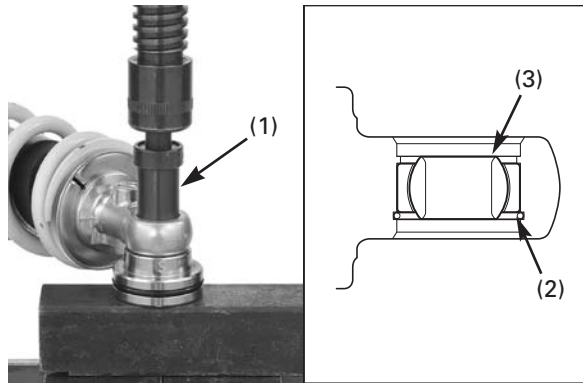
Ply the collars out from the spherical bearing using screwdrivers being careful not to damage the shock absorber.

Remove the stop rings from the upper joint.  
Remove the stop ring from the lower joint.

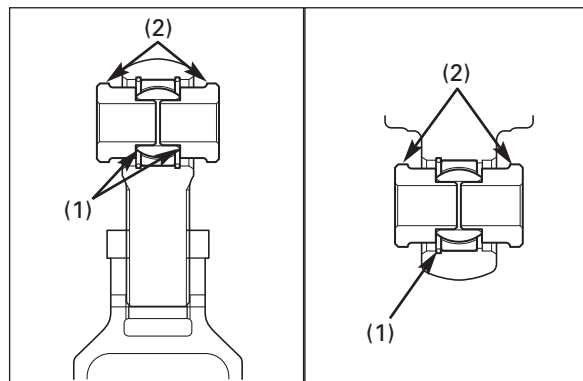
Press out the spherical bearing using the special tool.

**Tool:**  
**Spherical bearing driver**

**07946-KA30200**



(1) SPHERICAL BEARING DRIVER  
(2) STOP RING (3) SPHERICAL BEARING

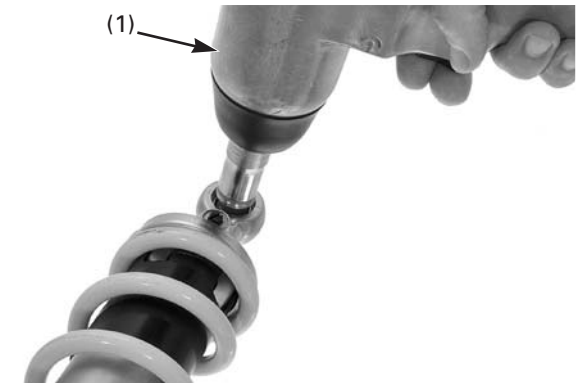


(1) STOP RINGS (2) PIVOT COLLARS

Install the stop ring into the groove.  
Press the new spherical bearing using the special tool.

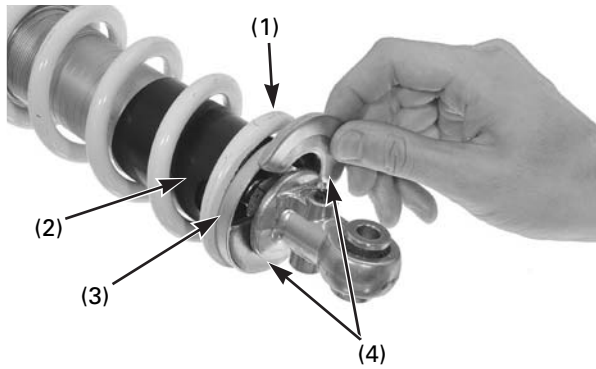
**Tool:**  
**Spherical bearing driver** **07946-KA30200**

Install the opposite side stop ring into the upper joint groove securely.  
Install the pivot collars.



(1) AIR TOOL

Inspect the spherical bearing prior to extensive use. If the movement is not smooth, be sure to perform braking-in procedures to the extent that the parts may be rotated by hand. Unless this precaution is taken, proper suspension setting cannot be done. For the braking-in procedure, attach the bolt and nut to the bearing, and rotate with an air tool. In order to avoid overheating, allow intervals in between rotations and apply oil.



(1) SPRING (2) SPRING GUIDE  
(3) SPRING SEAT (4) SPRING SEAT STOPPERS

**Assembly**

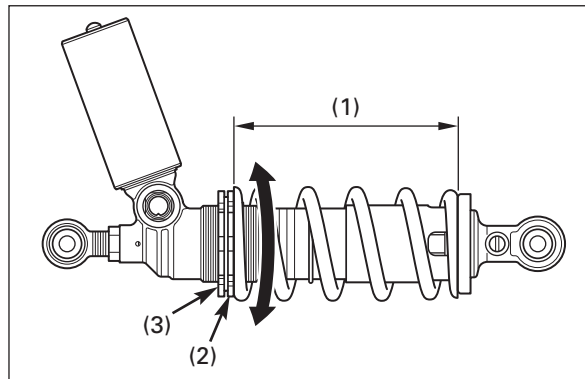
Install the O-ring onto the damper case.  
Install the shock absorber spring with tapered end facing down.

Install the following:

- spring guide
- spring seat
- spring seat stoppers



(1) REBOUND ADJUSTER

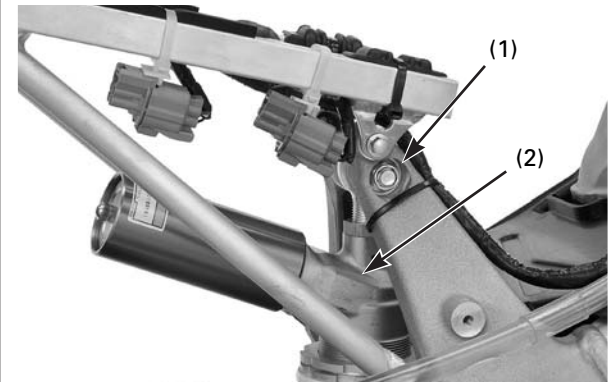


(1) PRELOAD LENGTH (2) ADJUSTER  
(3) LOCK NUT

Note the direction of the rebound adjuster.

Adjust the spring preload length (page 7-16).  
Hold the spring adjuster and tighten the lock nut to the specified torque.

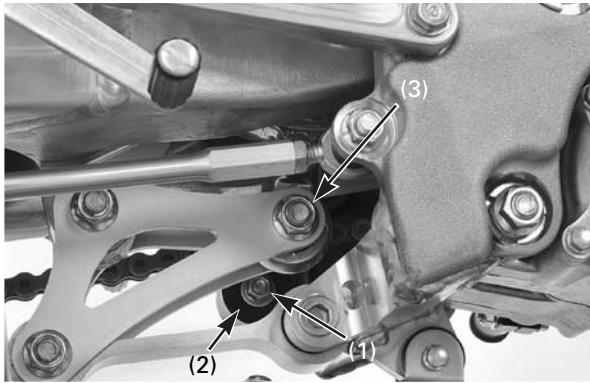
**Torque: 50 N·m (5.0 kgf·m, 36 lbf·ft)**



(1) UPPER MOUNTING BOLT/NUT  
(2) REAR SHOCK ABSORBER

**Installation**

Install the rear shock absorber with its tension adjuster facing to the right.  
Install the upper mounting bolt from the left side.

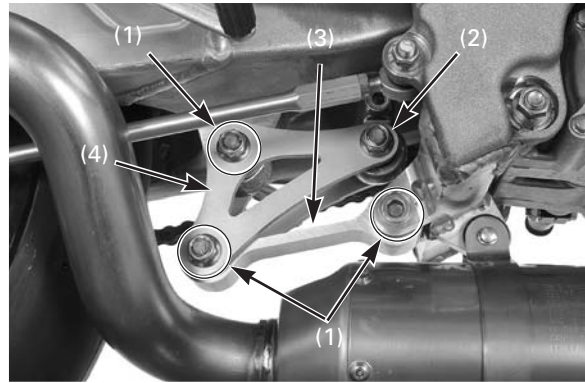


- (1) LOWER MOUNTING BOLT/NUT  
 (2) DRIVE CHAIN ROLLER  
 (3) BOLT/NUT

Move the swingarm aligning the upper mount, then install the lower mounting bolt from the left side.

Install and tighten the upper and lower mounting nuts.

Install the drive chain roller, then install and tighten the mounting bolt/nut.



- (1) BOLTS/NUTS (2) LOWER MOUNTING BOLT/NUT  
 (3) SHOCK LINK  
 (4) SHOCK ARM PLATES

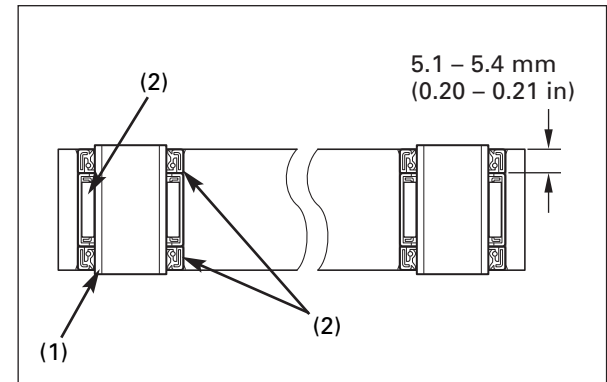
### Shock Linkage

#### Removal

Support the machine using the maintenance stand.

Remove the following:

- shock link-to-shock arm plate bolt/nut
- shock link-to-frame bolt/nut
- shock link
- rear shock absorber lower mounting bolt/nut
- shock arm plate-to-swingarm bolt/nut
- shock arm plates
- teflon washers



- (1) PIVOT COLLAR  
 (2) DUST SEALS  
 (3) NEEDLE BEARING

#### Bearing Replacement

Remove the pivot collars and dust seals. Remove the pivot bearing using the special tools and hydraulic press.

#### Tools:

- |                              |                      |
|------------------------------|----------------------|
| <b>Needle bearing driver</b> | <b>07946-MJ00000</b> |
| - driver shaft               | <b>07946-MJ00100</b> |
| - driver head                | <b>07946-MJ00200</b> |

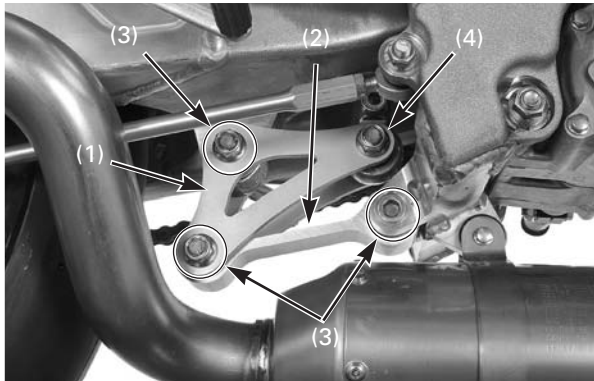
Apply grease to the bearing rollers, then press the bearing into the shock link so that it is 5.1-5.4 mm (0.20-0.21 in) below the shock arm end.

Press the bearings with their marked side.

#### Tools:

- |                               |                      |
|-------------------------------|----------------------|
| <b>Driver</b>                 | <b>07749-0010000</b> |
| <b>Attachment, 24 x 26 mm</b> | <b>07746-0010700</b> |
| <b>Pilot, 17 mm</b>           | <b>07746-0040400</b> |

Apply grease to the dust seal lips, install them. Install the pivot collars.



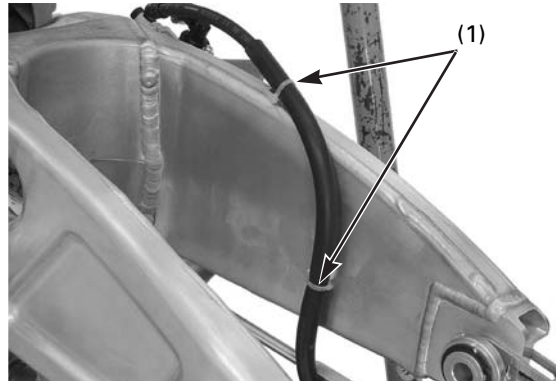
(1) SHOCK ARM PLATES (2) SHOCK LINK  
(3) BOLTS/NUTS  
(4) LOWER MOUNTING BOLT/NUT

**Installation**

Install the following:

- shock arm plates
- shock arm-to-swingarm bolt/nut
- rear shock absorber lower mounting bolt/nut
- teflon washers
- shock link
- shock link-to-shock arm plate bolt/nut
- shock link-to-frame bolt/nut

Tighten the shock linkage mounting nuts.  
Tighten the rear shock absorber lower mounting nut.

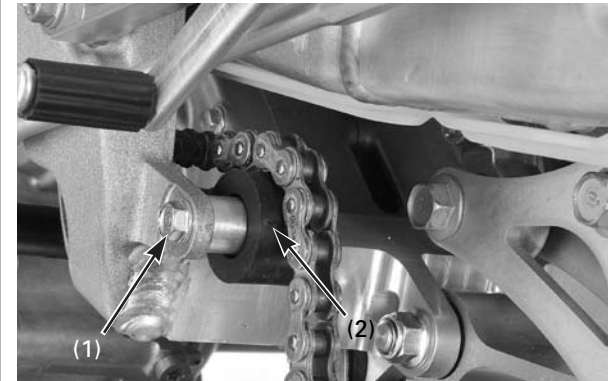


(1) TIE-WRAPPS

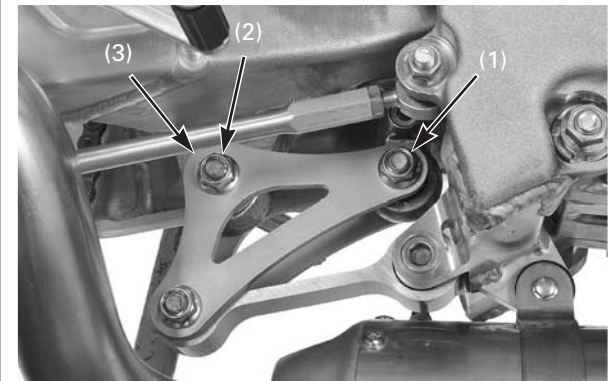
**Swingarm**

**Removal**

- Remove the following:
- rear wheel (page 5-19)
  - rear brake caliper bracket (page 5-33)
  - rear brake hose tie wraps



(1) BOLT/NUT  
(2) DRIVE CHAIN ROLLER



(1) LOWER MOUNTING BOLT/NUT  
(2) SHOCK ARM PLATE BOLT/NUT  
(3) SHOCK ARM PLATES

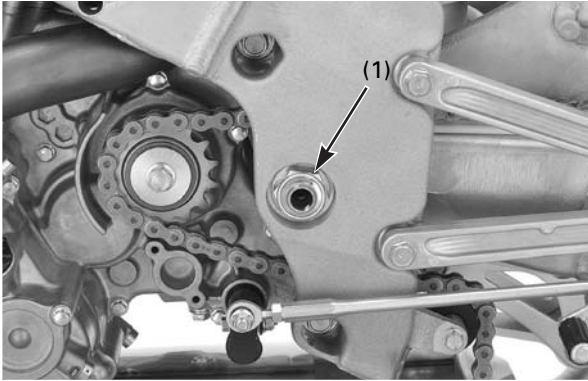
Remove the bolt/nut and drive chain roller.

Remove the following:

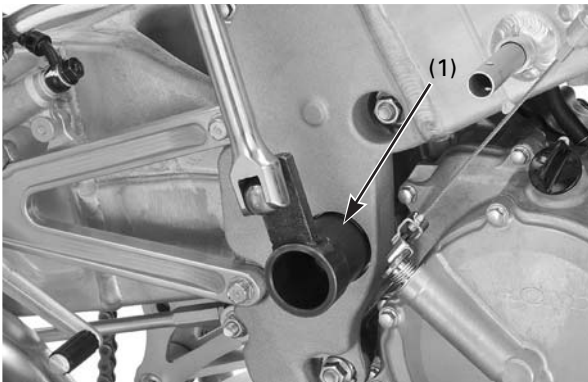
- shock absorber lower mounting bolt/nut
- shock arm plates-to-swingarm bolt/nut
- shock arm plates
- teflon washers



## Frame Servicing



(1) PIVOT NUT



(1) LOCK NUT WRENCH

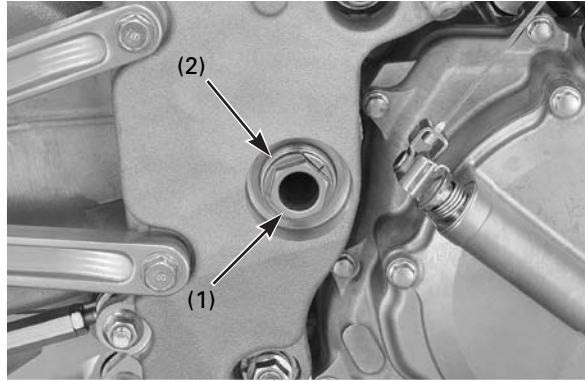
Remove the swingarm pivot nut.

Loosen the swingarm pivot lock nut.

### Tool:

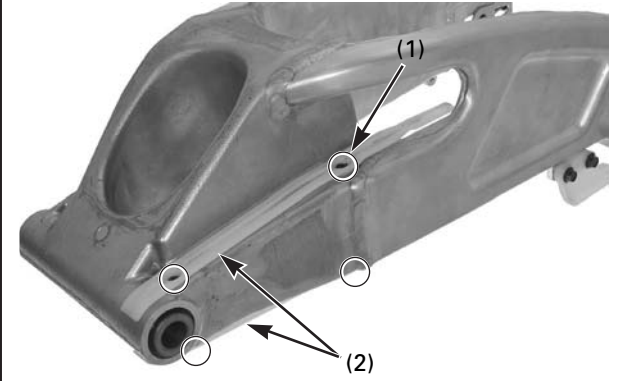
Lock nut wrench

07908-4690003

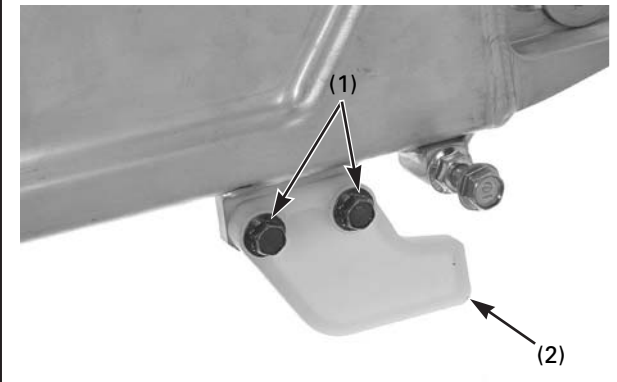


(1) PIVOT BOLT  
(2) ADJUSTING BOLT

Turn the swingarm pivot bolt and loosen the pivot adjusting bolt.  
Remove the swingarm pivot bolt and swingarm.



(1) SCREWS (2) DRIVE CHAIN SLIDER

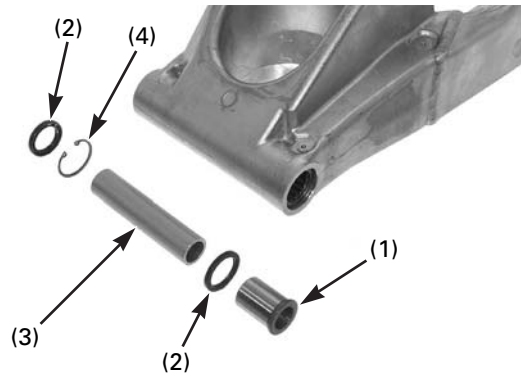


(1) SCREWS (2) DRIVE CHAIN SLIDER

### Disassembly

Remove the screws and drive chain sliders.

Remove the bolts and drive chain guard.



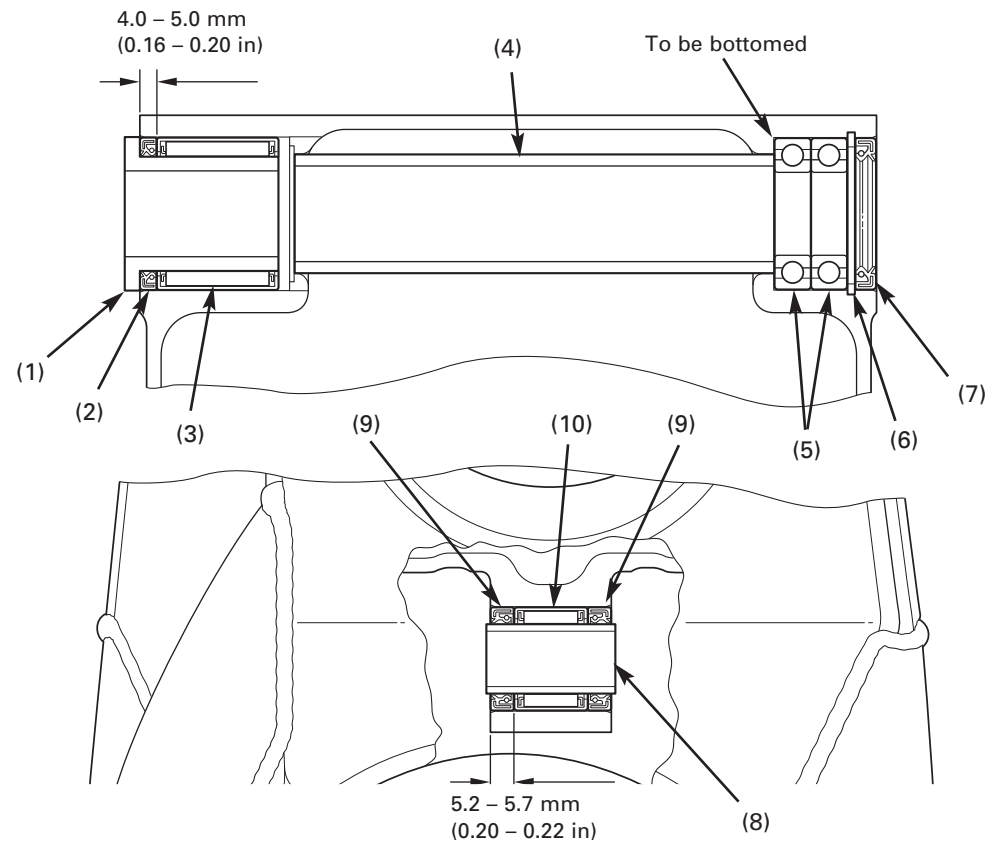
- (1) PIVOT COLLAR B
- (2) DUST SEALS
- (3) DISTANCE COLLAR
- (4) SNAP RING

Remove pivot collar B.  
Remove the dust seals and distance collar.

Remove the snap ring.

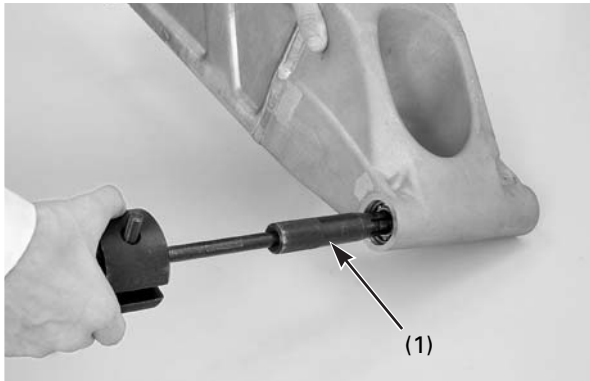
### Swingarm Pivot Bearing Replacement

- Replace the swingarm bearings as a set.

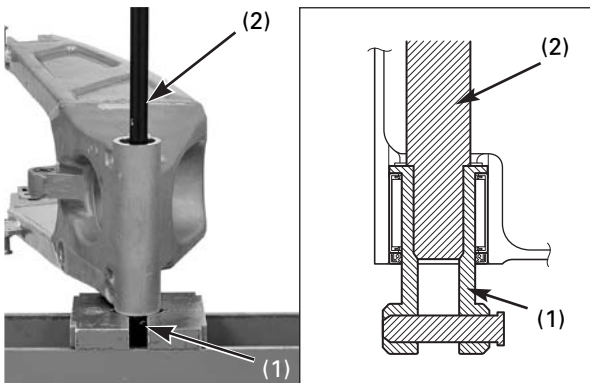


- (1) PIVOT COLLAR B
- (2) LEFT DUST SEAL
- (3) NEEDLE BEARING
- (4) DISTANCE COLLAR
- (5) LEFT PIVOT BEARING (20X37X9 mm)
- (6) SNAP RING
- (7) RIGHT DUST SEAL
- (8) SHOCK ARM PLATE PIVOT COLLAR
- (9) DUST SEAL (17X24X5 mm)
- (10) NEEDLE BEARING (17X24X17 mm)

## Frame Servicing



(1) BEARING REMOVER SET



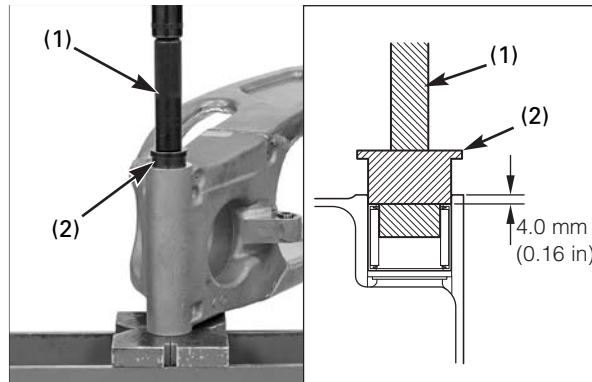
(1) NEEDLE BEARING REMOVER  
(2) DRIVER SHAFT

Remove the right pivot bearings using the special tool.

**Tool:**  
**Bearing remover set, 20 mm**      **07936-3710001**

Remove the left pivot bearing using the special tools.

**Tools:**  
**Needle bearing remover**      **07HMC-MR70100**  
**Driver shaft**      **07946-MJ00100**

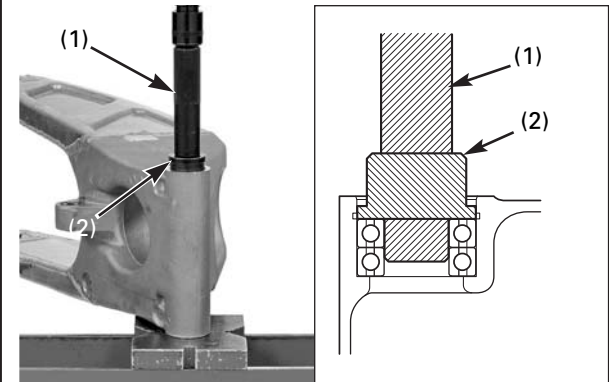


(1) DRIVER    (2) ATTACHMENT/PILOT

Press a new left pivot bearing in using the special tools.

Face the bearing with its marked side facing out. Press the needle bearing so that it is 4.0 mm (0.16 in) below the swingarm end.

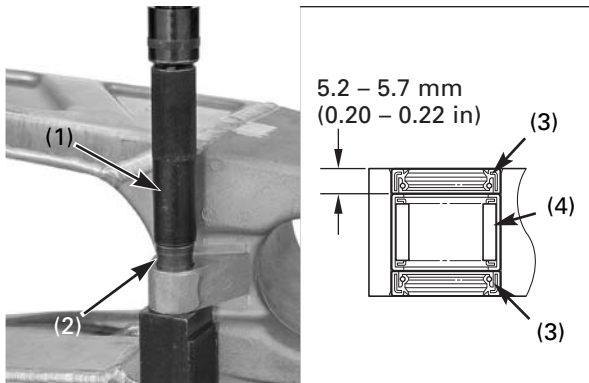
**Tools:**  
**Driver**      **07749-0010000**  
**Attachment, 37 x 40 mm**      **07746-0010200**  
**Pilot, 28 mm**      **07746-0041100**



(1) DRIVER    (2) ATTACHMENT/PILOT

Press the new right pivot bearings in using the special tools.

**Tools:**  
**Driver**      **07749-0010000**  
**Attachment, 37 x 40 mm**      **07746-0010200**  
**Pilot, 20 mm**      **07746-0040500**



(1) DRIVER (2) ATTACHMENT/PILOT  
(3) DUST SEALS (4) NEEDLE BEARING

Press the shock arm plate pivot needle bearing out using the special tools.

**Tools:**

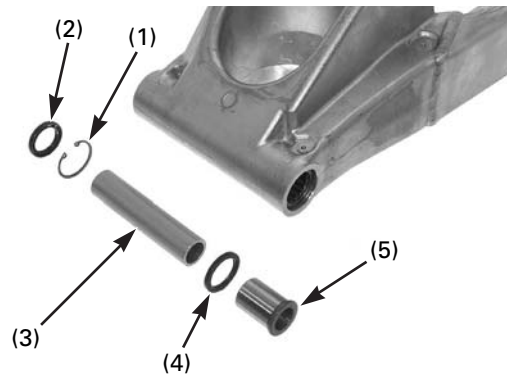
- Needle bearing driver** 07946-MJ00000
- driver shaft 07946-MJ00100
- driver head 07946-MJ00200

Press a new shock arm plate pivot bearing in using the special tools.  
Face the bearing with its marked side facing out.  
Press the needle bearing so that it is 5.2-5.7 mm (0.20-0.22 in) below the pivot end.

**Tools:**

- Driver** 07749-0010000
- Attachment, 24 x 26 mm** 07746-0010700
- Pilot, 17 mm** 07746-0040400

Apply grease to the dust seal lips, install them.  
Install the pivot collars.

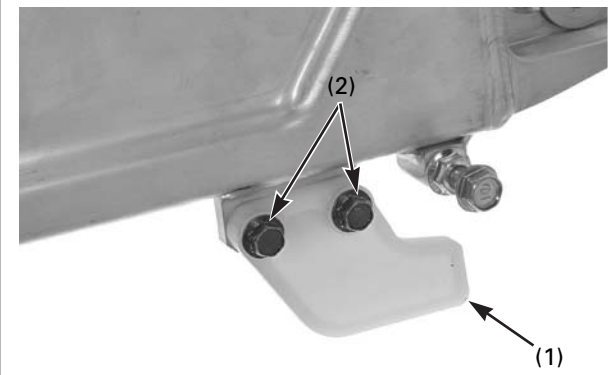


(1) SNAP RING (2) RIGHT DUST SEAL  
(3) DISTANCE COLLAR (4) LEFT DUST SEAL  
(5) PIVOT COLLAR B

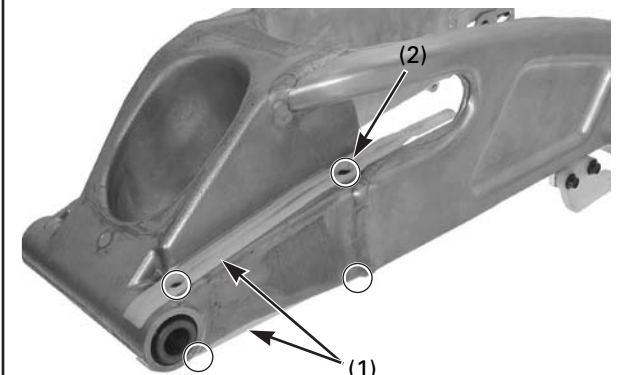
**Assembly**

Install a snap ring into the swingarm groove securely.  
Apply grease to the bearings and lips of a new dust seal, and install the dust seal into the right pivot.

Install the distance collar.  
Apply grease to the left pivot bearing and lips of a new dust seal, then install the dust seal into the left pivot.  
Install pivot collar B.



(1) CHAIN GUARD (2) BOLTS

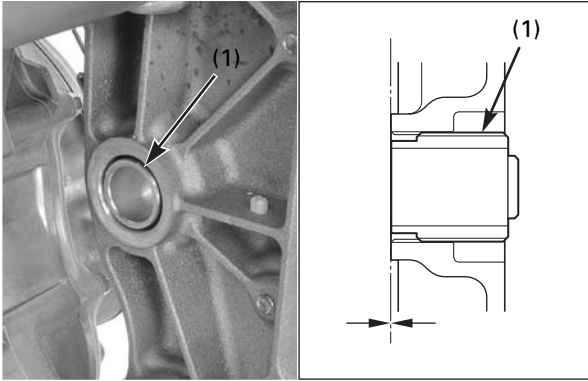


(1) CHAIN SLIDER (2) SCREWS

Install the drive chain guard onto the swingarm, then tighten the bolts securely.

Install the drive chain sliders onto the swingarm.  
Apply a locking agent to the drive chain slider screw threads.  
Install and tighten the screws.

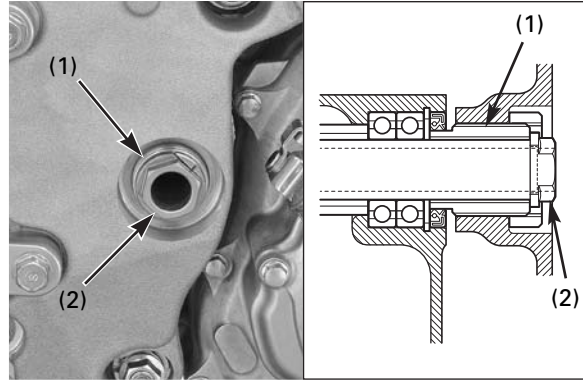
## Frame Servicing



(1) ADJUSTING BOLT

### Installation

Apply grease to the swingarm adjusting bolt threads.  
Partially install the swingarm adjusting bolt so that the tip will not interfere with installation of the swingarm.

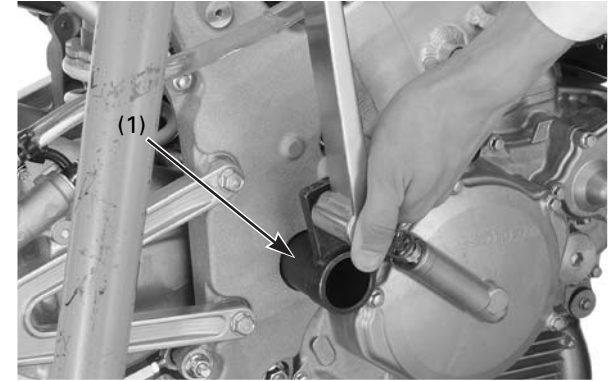


(1) ADJUSTING BOLT (2) PIVOT BOLT

Install the swingarm.  
Apply a thin layer of grease to the swingarm pivot bolt surface.  
Install the swingarm and pivot bolt.

Turn the pivot bolt and tighten the adjusting bolt to the specified torque.

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



(1) LOCK NUT WRENCH

Install and tighten the swingarm adjusting bolt lock nut to the specified torque.

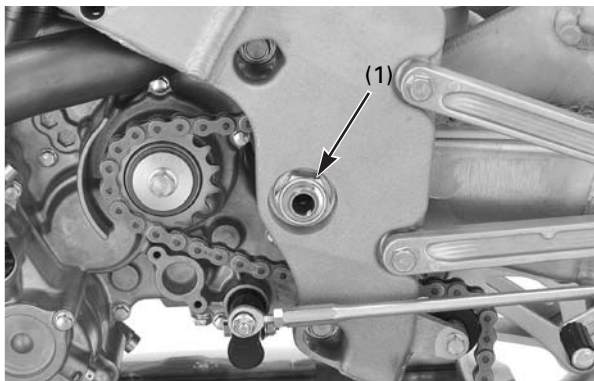
### Tool:

**Lock nut wrench**

**07908-4690002**

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

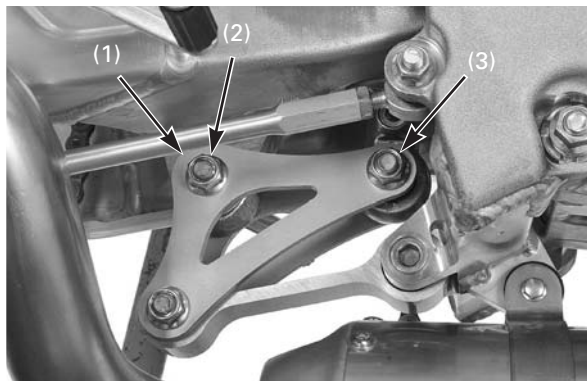




(1) PIVOT NUT

Hold the pivot bolt and install and tighten the swingarm pivot nut to the specified torque.

**Torque: 95 N·m (9.7 kgf·m, 70 lbf·ft)**



(1) SHOCK ARM PLATES  
 (2) SHOCK ARM PLATE BOLT/NUT  
 (3) LOWER MOUNTING BOLT/NUT

Install the following:

- shock arm plates-to-swingarm bolt/nut
- rear shock absorber lower mounting bolt/nut

Tighten the shock arm plate bolt.

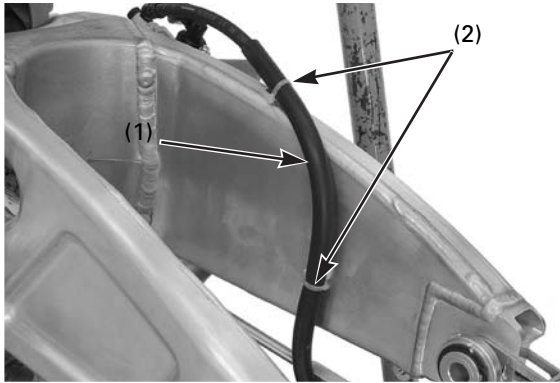
Tighten the rear shock absorber lower mounting bolt.



(1) drive chain roller  
 (2) bolt/nut

Install the drive chain roller and tighten the bolt/nut.

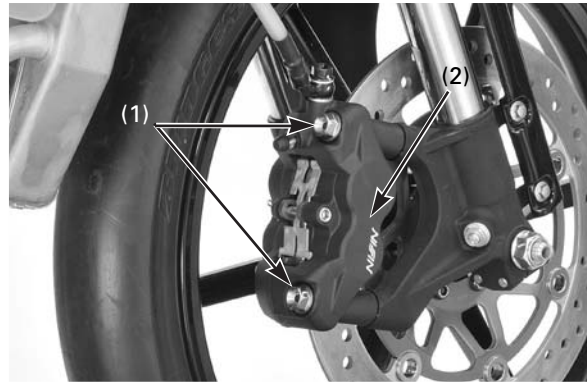
## Frame Servicing



(1) BRAKE HOSE  
(1) TIE-WRAPS

Route the brake hose properly, install the rear brake caliper bracket (page 5-35).  
Secure the brake hose using the tie-wraps as shown.

Install the rear wheel (page 5-20).



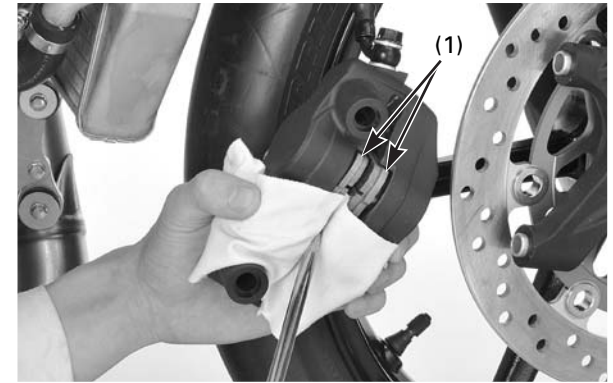
(1) BOLTS (2) CALIPER

### Brake Pad Replacement

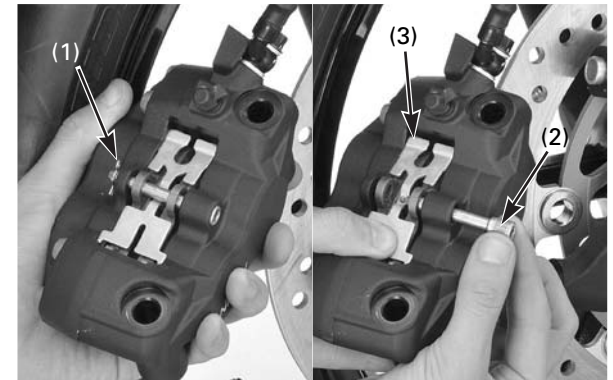
#### Front Brake Pad Replacement

Clean the brake disc or pads with a high quality degreasing agent if they are contaminated with oil or grease. If the pads cannot be cleaned, replace them.

Remove the brake caliper mounting bolts and caliper.



(1) BRAKE PADS

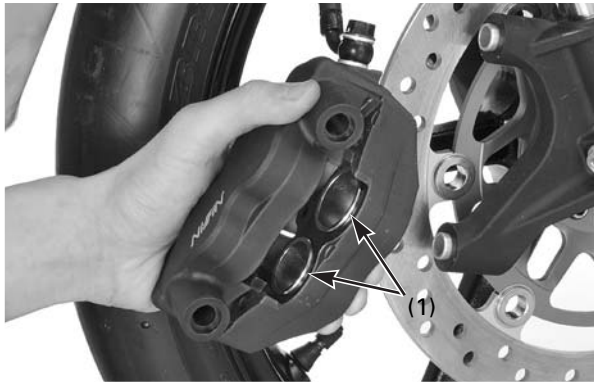


(1) B-CLIP (2) PAD PIN (3) BRAKE PADS

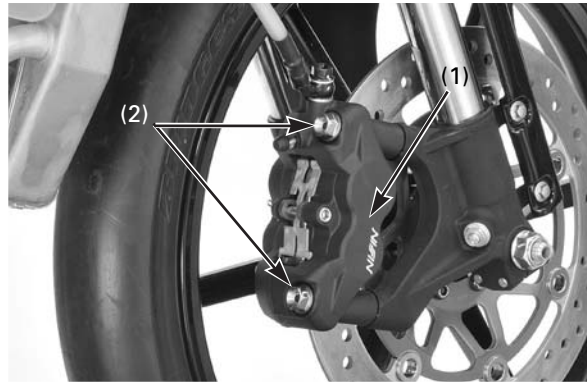
Push the pistons all the way in to allow installation of new brake pads.

Check the brake fluid level in the reservoir as this operation causes the level to rise.

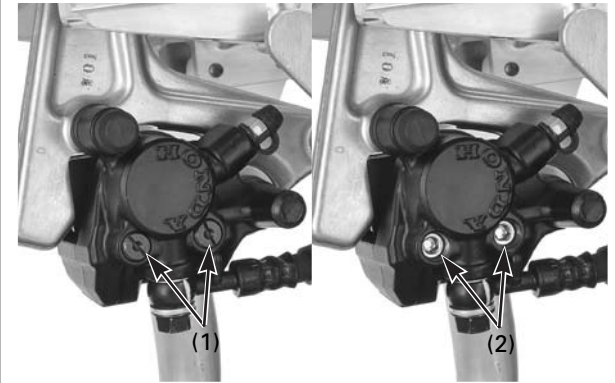
Remove the B-clip.  
Gently tap the pad pin end using a plastic hammer, then remove the pad pin.  
Remove the brake pads.



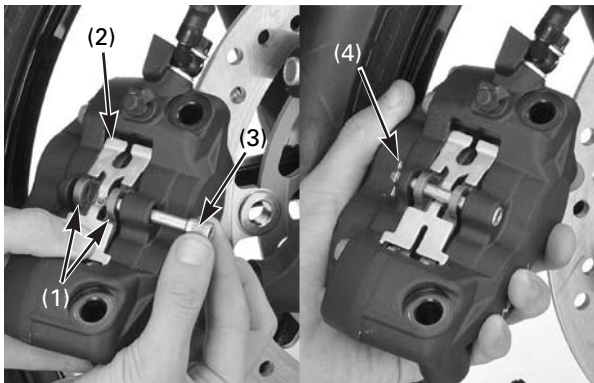
(1) CALIPER PISTONS



(1) BRAKE CALIPER (2) BOLTS



(1) PAD PIN PLUGS (2) PAD PINS



(1) NEW PADS (2) PAD RETAINER  
(3) PAD PIN (4) B-CLIP

Clean the brake caliper inside especially around the caliper pistons.

Install the new brake pads and pad pin.

Gently tap the pad pin using a plastic hammer until it "clicks" into place.  
Install the B-clip.

Install the caliper to the fork slider so the disc is positioned between the pads, being careful not to damage the pads.  
Install and tighten the brake caliper mounting bolts.

Operate the brake lever to seat the caliper pistons against the pads.

#### Rear Brake Pad Replacement

Clean the brake disc or pads with a high quality degreasing agent if they are contaminated with oil or grease. If the pads cannot be cleaned, replace them.

Remove the rear wheel (page 5-19).

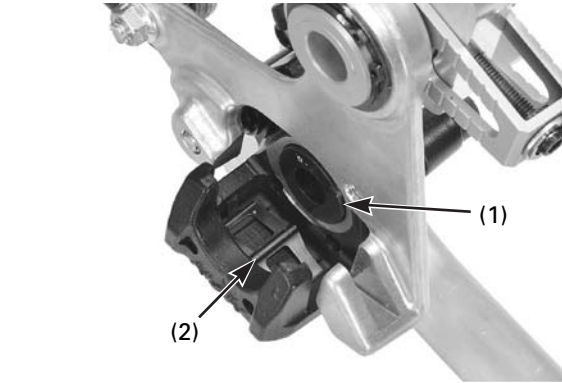
Remove the brake pad pin plugs and loosen the pad pins.

## Frame Servicing

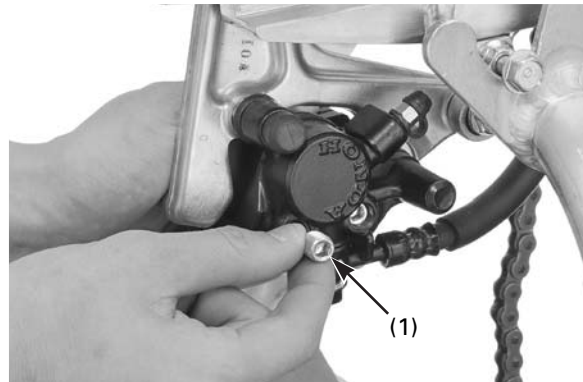


Push the piston all the way in to allow installation of new brake pads.  
Check the brake fluid level in the vinyl tube as this operation causes the level to rise.

Remove the pad pins, pads and pad spring.



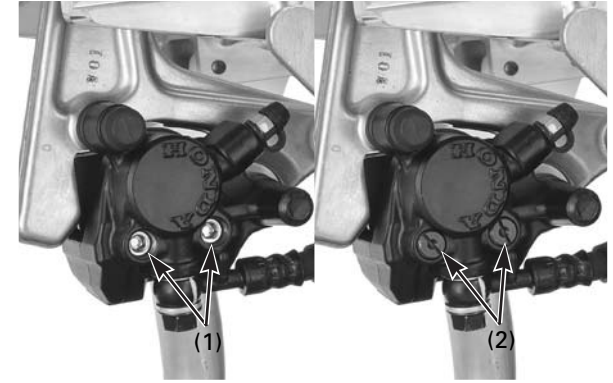
(1) CALIPER PISTON (2) PAD SPRING



(1) PAD PINS

Clean inside the brake caliper, especially around the caliper piston.  
Position the pad spring in the caliper as shown.

Install the new pads by pushing the pads against the caliper to depress the pad spring.  
Install the pad pins.



(1) PAD PINS (2) PAD PIN PLUGS

Tighten the pad pins.

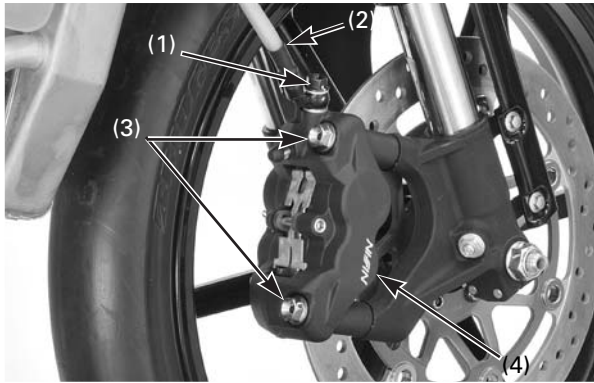
**Torque: 18 N·m (1.8 kgf·m, 13 lbf·ft)**

Install and tighten the pad pin plugs.

**Torque: 1.5 N·m (0.15 kgf·m, 1.1 lbf·ft)**

Install the rear wheel (page 5-20).





(1) OIL BOLT (2) BRAKE HOSE  
(3) BOLTS (4) BRAKE CALIPER

## Front Brake Caliper

### Removal

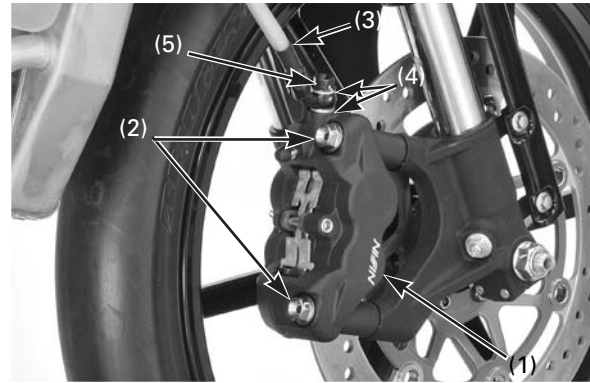
Drain the front brake system.

Place a clean container under the caliper. Avoid spilling brake fluid on painted, plastic or rubber parts. Place a shop rag over these parts whenever the system is serviced.

Spilled brake fluid will damage painted, plastic or rubber parts. If fluid does get on these parts, wipe it off with a clean cloth.

Remove the following:

- brake hose oil bolt/sealing washers
- brake hose
- caliper mounting bolts and caliper
- brake pads (page 5-30)



(1) BRAKE CALIPER (2) BOLTS  
(3) BRAKE HOSE (4) NEW SEALING WASHERS  
(5) OIL BOLT

Never disassemble the caliper. If the caliper is damaged, replace the caliper assembly.

Disassemble the caliper may damage it.

### Installation

Install the caliper assembly over the brake disc so that the disc is positioned between the pads. Be careful not to damage the brake pads.

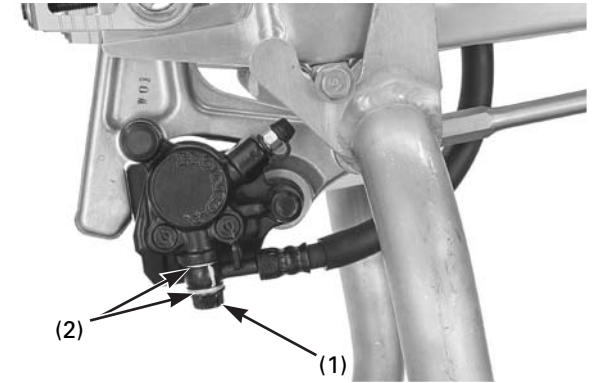
Install and tighten the brake caliper mounting bolts.

Install the brake hose eyelet joint with new sealing washers.

Install and tighten the brake hose bolt to the specified torque.

**Torque: 24 N•m (2.4 kgf•m, 17 lbf•ft)**

Fill the brake fluid reservoir and bleed the system.



(1) OIL BOLT (2) BRAKE HOSE

## Rear Brake Caliper

### Removal

Drain the rear brake system.

Remove the rear wheel (page 5-19).

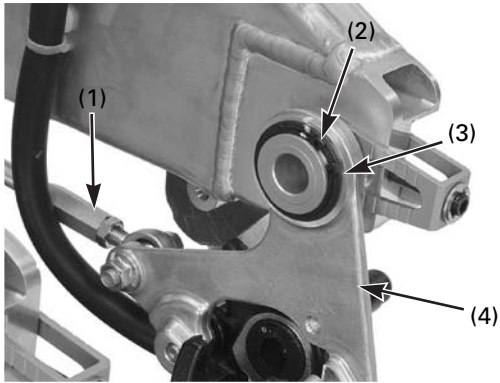
Place a clean container under the caliper.

Avoid spilling brake fluid on painted, plastic or rubber parts. Place a shop rag over these parts whenever the system is serviced.

Spilled brake fluid will damage painted, plastic or rubber parts. If fluid does get on these parts, wipe it off with a clean cloth.

Remove the oil bolt, sealing washers and brake hose.



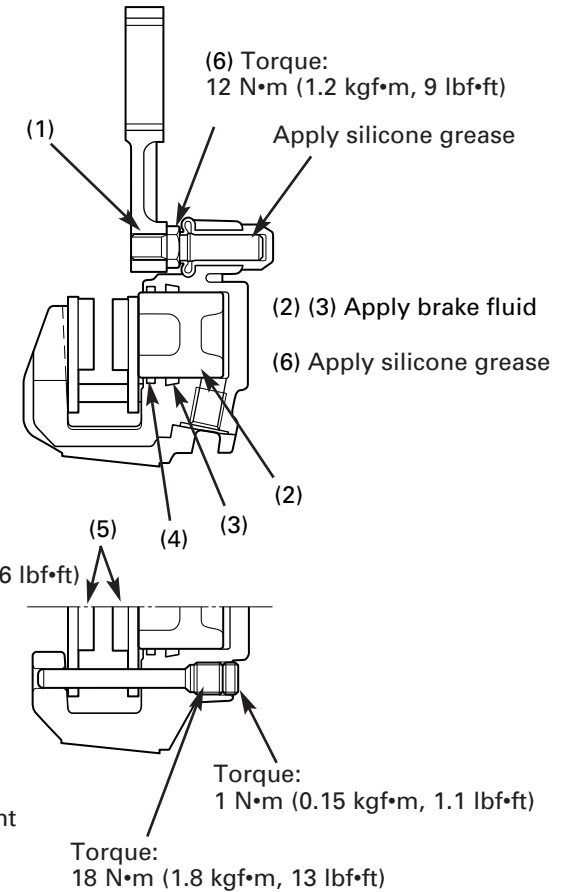
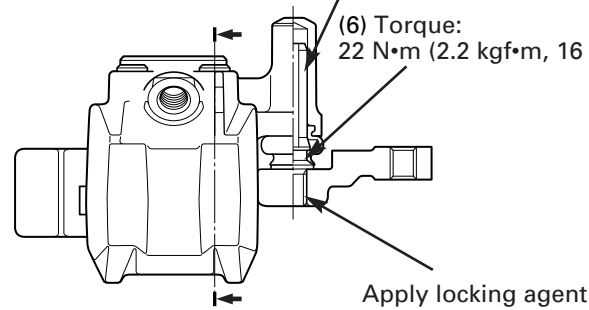
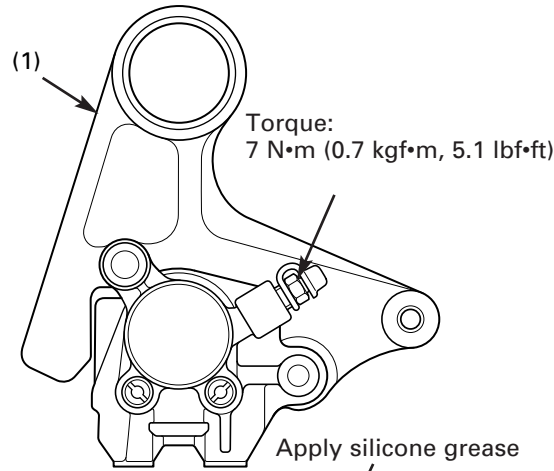


(1) TORQUE LINK (2) SNAP RING (3) WASHER (4) BRACKET

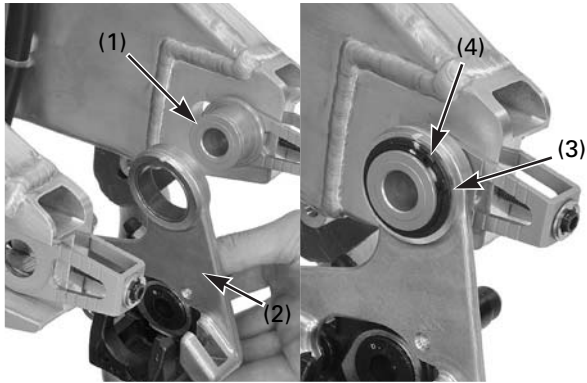
Remove the rear brake torque link bolt/nut. Remove the snap ring, washer and brake caliper/bracket assembly.

Remove the brake pads (page 5-31).

## Disassembly/Assembly



- (1) CALIPER BRACKET
- (2) CALIPER PISTON
- (3) PISTON SEAL
- (4) DUST SEAL
- (5) BRAKE PADS
- (6) PIN BOLT A
- (7) PIN BOLT



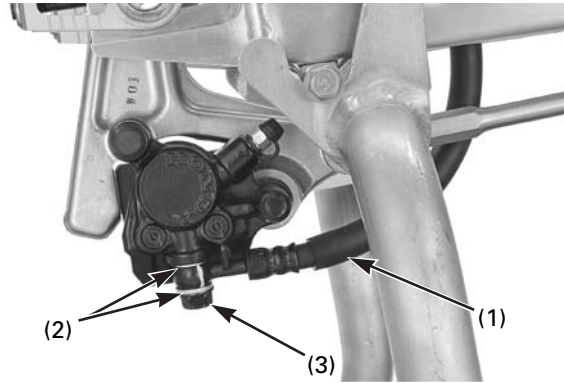
(1) BRACKET COLLAR  
 (2) CALIPER BRACKET ASSEMBLY  
 (3) WASHER (4) SNAP RING

**Installation**

Install the caliper assembly onto the caliper bracket collar.

Install the washer with its chamfered side facing in. Install the snap ring into the bracket collar groove securely.

Install the rear brake torque link and tighten the bolt/nut.

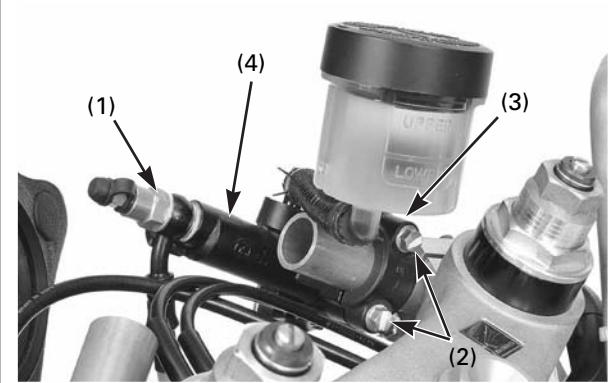


(1) BRAKE HOSE (2) NEW SEALING WASHERS  
 (3) OIL BOLT

Install the brake hose eyelet joint with new sealing washers. Install and tighten the brake hose bolt to the specified torque.

**Torque: 23 N:m (2.4 kgf·m, 17 lbf·ft)**

Fill the brake fluid and bleed the system.



(1) OIL BOLT (2) BOLTS (3) HOLDER  
 (4) MASTER CYLINDER

**Front Master Cylinder**

**Removal**

Avoid spilling brake fluid on painted, plastic or rubber parts. Place a shop rag over these parts whenever the system is serviced.

When removing the brake hose bolt, cover the end of the hoses to prevent contamination. Secure the hoses to prevent fluid from leaking out.

Spilled brake fluid will damage painted, plastic or rubber parts. If fluid does get on these parts, wipe it off with a clean cloth.

Drain the brake fluid from the hydraulic system into a suitable container.

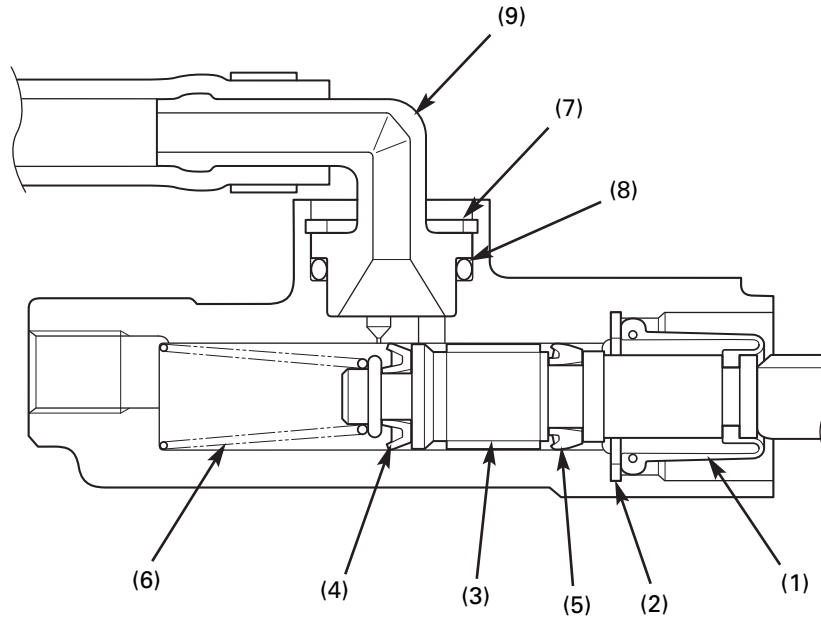
Remove the brake lever from the master cylinder.

Remove the following:

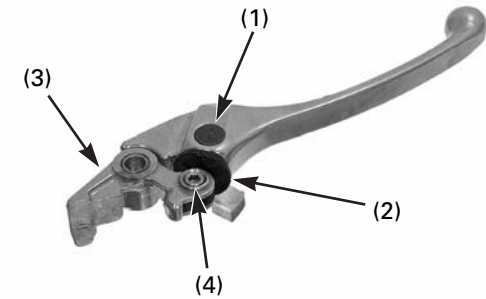
- brake hose bolt and sealing washers
- brake hose
- master cylinder holder bolts and holder
- master cylinder

## Frame Servicing

### Disassembly/Assembly



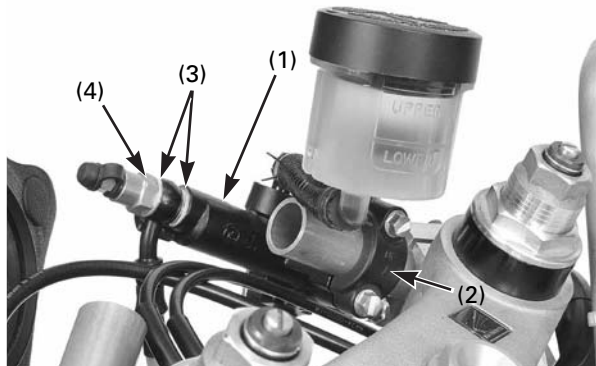
- (1) BOOT
- (2) SNAP RING
- (3) MASTER PISTON
- (4) PRIMARY CUP
- (5) SECONDARY CUP
- (6) SPRING
- (7) SNAP RING
- (8) O-RING
- (9) RESERVOIR JOINT



- (1) JOINT PIN
- (2) ADJUSTER
- (3) ADJUSTER ARM
- (4) PIVOT SCREW

If the brake lever was disassembled, assemble as follows:

1. Install the joint pin with its arrow facing to the adjuster.
2. Apply silicone grease to the adjuster rod.
3. Apply a locking agent to the pivot screw threads. Assemble the adjuster arm and the brake lever, tighten the pivot screw.



(1) MASTER CYLINDER (2) UP MARK  
(3) NEW SEALING WASHERS (4) OIL BOLT

**Installation**

Place the master cylinder assembly onto the handlebar and install the holder with its "UP" mark facing up.  
Install the holder bolts.

Tighten the upper bolt first, then the lower bolt.

Install the brake hose eyelet joints with new sealing washers.  
Install the brake hose bolt.

Adjust the brake hose position and tighten the hose bolt to the specified torque.

**Torque: 23 N·m (2.4 kgf·m, 17 lbf·ft)**



(1) TIE-WRAP (2) JOINT BOLT/NUT

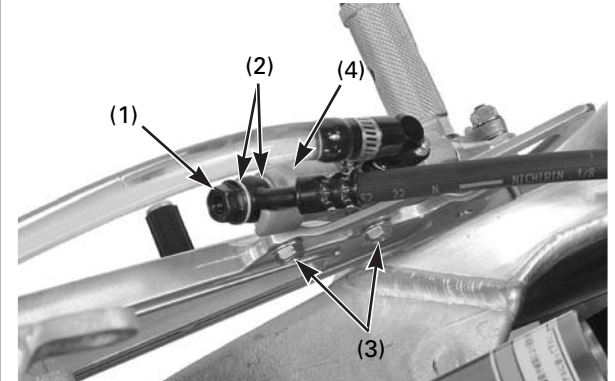
**Rear Master Cylinder**

**Removal**

Avoid spilling brake fluid on painted, plastic or rubber parts. Place a shop rag over these parts whenever the system is serviced.

Spilled brake fluid will damage painted, plastic or rubber parts. If fluid does get on these parts, wipe it off with a clean cloth.  
Drain the brake fluid from the hydraulic system into a suitable container.

Remove the tie-wrap from the vinyl tube.  
Remove the push rod joint nut and bolt.



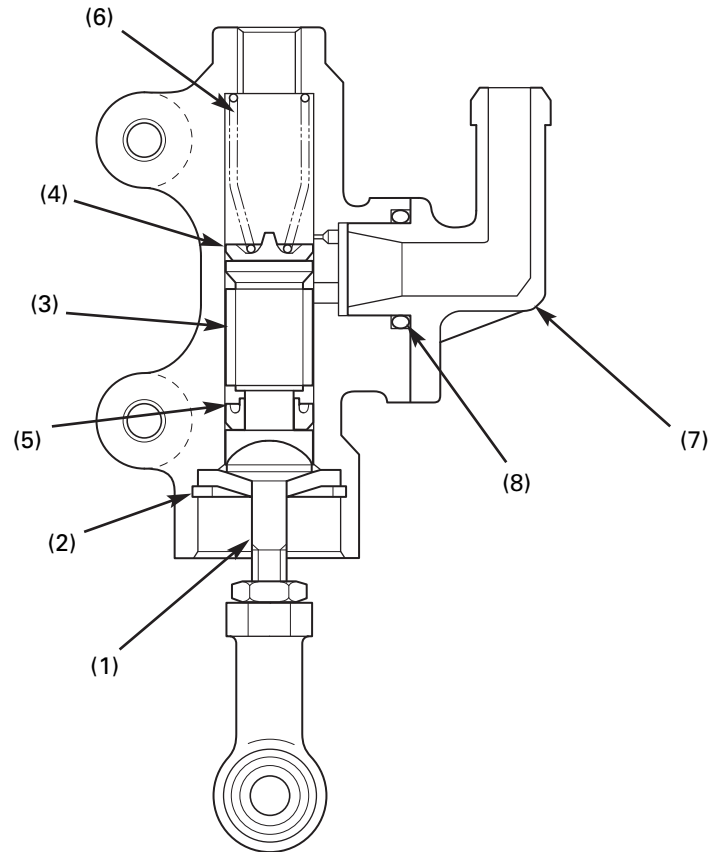
(1) OIL BOLT (2) SEALING WASHERS  
(3) BOLTS (4) MASTER CYLINDER

Remove the brake hose oil bolt and disconnect the brake hose eyelet joint.

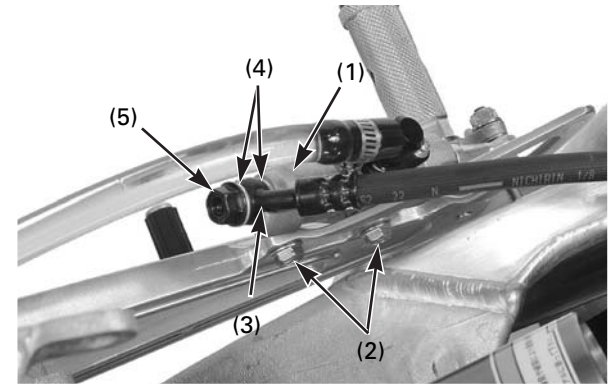
Remove the mounting bolts and master cylinder.

## Frame Servicing

### Disassembly/Assembly



- (1) PUSH ROD JOINT ASSEMBLY
- (2) SNAP RING
- (3) MASTER PISTON
- (4) PRIMARY CUP
- (5) SECONDARY CUP
- (6) SPRING
- (7) RESERVOIR JOINT
- (8) O-RING



- (1) MASTER CYLINDER
- (2) BOLTS
- (3) EYELET JOINT
- (4) NEW SEALING WASHERS
- (5) OIL BOLT

#### Installation

Install the master cylinder onto the bracket.

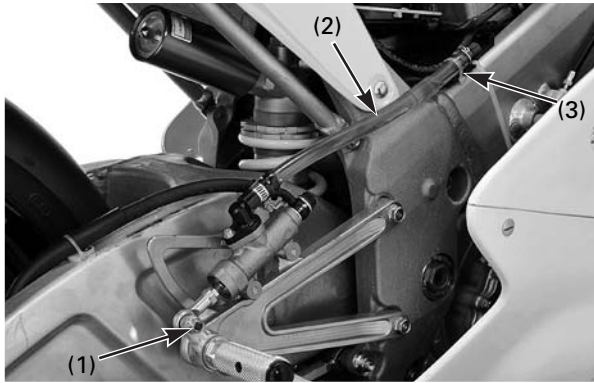
Install and tighten the mounting bolts.

Connect the brake hose eyelet joint with new sealing washers.

Install and tighten the brake hose oil bolt to the specified torque.

**Torque: 23 N·m (2.4 kgf·m, 17 lbf·ft)**





(1) JOINT BOLT/NUT (2) VINYL TUBE  
(3) TIE-WRAPS

Connect the joint with the brake pedal.  
Install the washer and joint bolt/nut, then tighten the nut.

Secure the vinyl tube with a tie wrap.

Fill the reservoir and bleed the system.

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## Memo

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## 6. Electrical Servicing



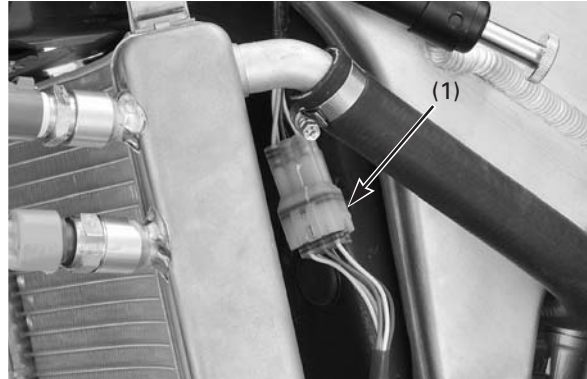
(1) 5P (BLACK) CONNECTOR

### Charging System Inspection

#### Alternator Charging Coil

Disconnect the regulator rectifier 5P (Black) connector.  
Measure the resistance between the terminals of the wire harness side.

**Connection: White – Yellow**  
**Standard: 0.7 – 3.0  $\Omega$  (20°C/68°F)**

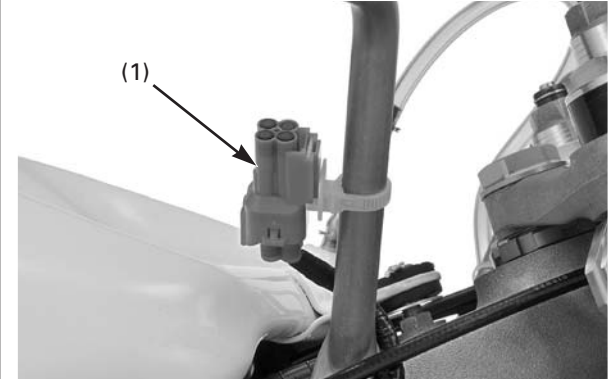


(1) 6P (NATURAL) CONNECTOR

If the resistance is out of specification, disconnect the alternator 6P (Natural) connector and measure the resistance between the terminals of the alternator side connector.

If the measured resistance at regulator/rectifier 5P (Black) connector is incorrect and the alternator 6P (Natural) connector is correct, check the wire harness.

If the resistance is still out of specification, replace the stator assembly.

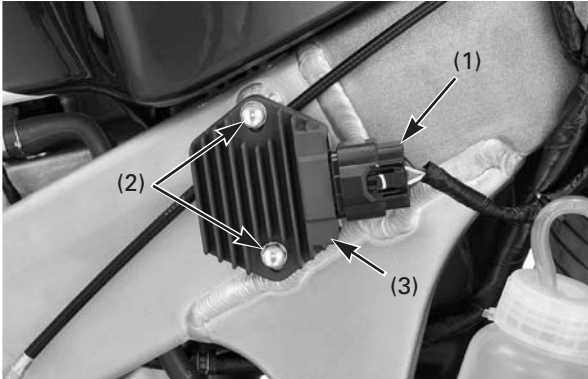


(1) 4P (RED) CONNECTOR

#### Regulated Voltage Inspection

Disconnect the service check 4P (Red) connector.  
Connect the digital voltmeter to the Black (+) and Green (-) terminals.  
Start the engine, check for regulated voltage.

**Standard: 13.5 – 14.5 V/3,000 min<sup>-1</sup> (rpm)**



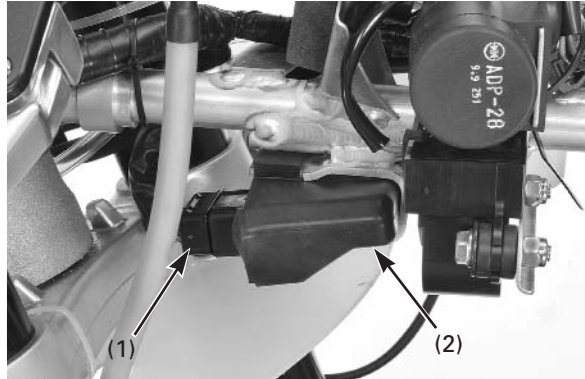
- (1) 5P (NATURAL) CONNECTOR
- (2) BOLTS
- (3) REGULATOR/RECTIFIER

### Regulator/Rectifier Removal/Installation

Disconnect the regulator/rectifier 5P (Black) connector.

Remove the bolts and regulator/rectifier unit.

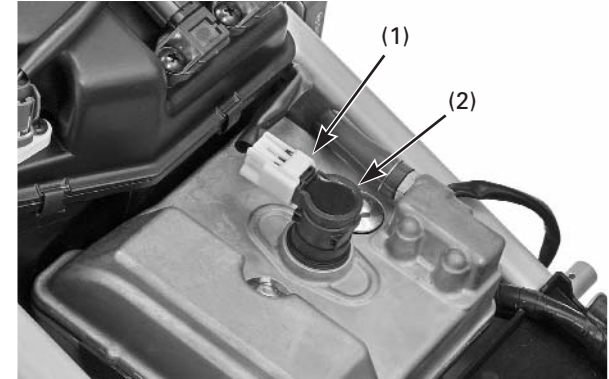
Install the regulator/rectifier in the reverse order of removal.



- (1) 33P (BLACK) CONNECTOR
- (2) PGM-FI/IGN UNIT

### Ignition System Inspection

Disconnect the PGM-FI/IGN unit 33P (Black) connector.



- (1) 2P (NATURAL) CONNECTOR
- (2) DIRECT IGNITION COIL

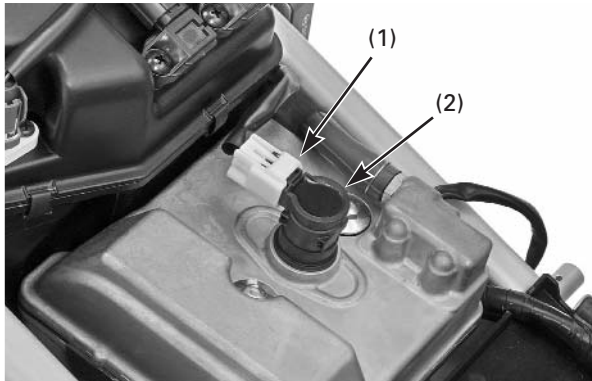
Disconnect the direct ignition coil 2P (Natural) connector.

Check for continuity between the direct ignition coil 2P (Natural) connector and PGM-FI/IGN unit 33P (Black) connector terminals.

#### Connection:

- Yellow/Blue – Yellow/Blue (primary coil)**
- Black – Black (Ignition)**

If there are no continuity, check for wire harness.



(1) 2P (NATURAL) CONNECTOR  
(2) DIRECT IGNITION COIL

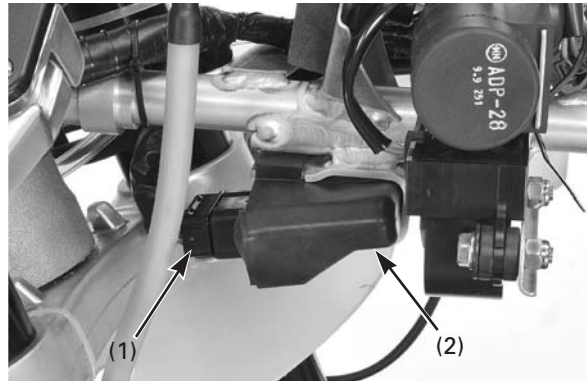
**Removal/Installation**

Remove the fuel tank.

Disconnect the direct ignition coil 2P (Natural) connector.

Remove the direct ignition coil from the cylinder head.

Installation is in the reverse order of removal.



(1) 33P (BLACK) CONNECTOR  
(2) PGM-FI/IGN UNIT

**Ignition Pulse Generator Inspection**

Check the ignition coil resistance at the ECM 33P (Black) connector (page 6-5).

**Connection:**

**Blue/yellow – Green/black**

**White/yellow – Green/black**

**Standard: 180 - 280 Ω (20°C/68°F)**



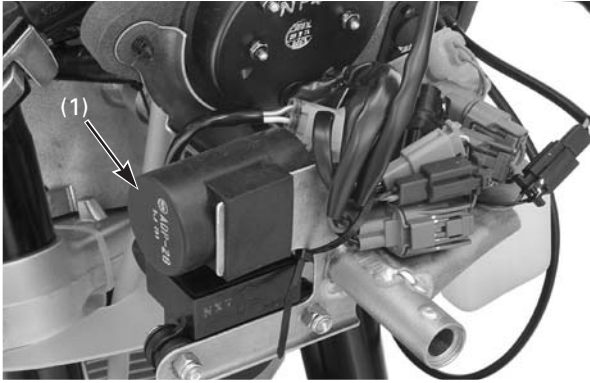
(1) 6P (NATURAL) CONNECTOR

If the resistance is out of specification, measure the resistance at the alternator 6P (Natural) connector.

If the measured resistance at ECM 33P (Black) connector is incorrect and the alternator 6P (Natural) connector is correct, check the wire harness.

If the resistance is still out of standard, replace the ignition pulse generator/stator assembly (page 4-64).





(1) CONDENSER

### Condenser Inspection

If the engine does not start, check for the items "engine does not start" in the PGM-FI Malfunction Indicator Lamp (MIL) Failure Code chart on page 6-7.

If all items are correct, replace the condenser unit with new one, and inspect again.

If the engine starts, the replaced condenser is faulty. If the engine does not start, check for wire harness.



(1) 2P (LIGHT GRAY) CONNECTOR

### Engine Stop Switch Inspection

Disconnect the engine stop switch 2P (Light gray) connector.

Check the engine stop switch for continuity.

There should be continuity.

There should be no continuity when the engine stop button is pushed.

Replace the switch if it is out of specification.



(1) 2P (BLUE) CONNECTOR

### Hand Shifter Switch Inspection

Disconnect the hand shifter switch 2P (Blue) connector.

Check the hand shifter switch for continuity.

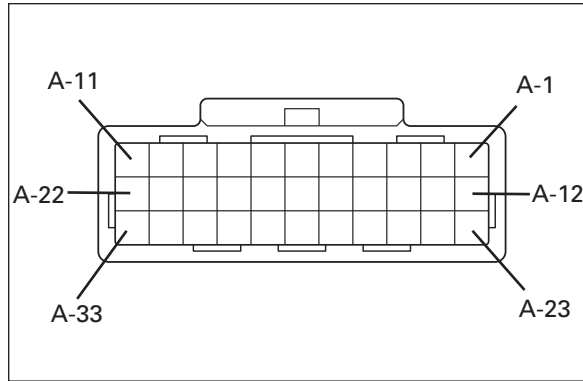
There should be continuity.

There should be no continuity when the hand shifter switch is pushed.

Replace the switch if it is out of specification.



(1) 33P (BLACK) CONNECTOR

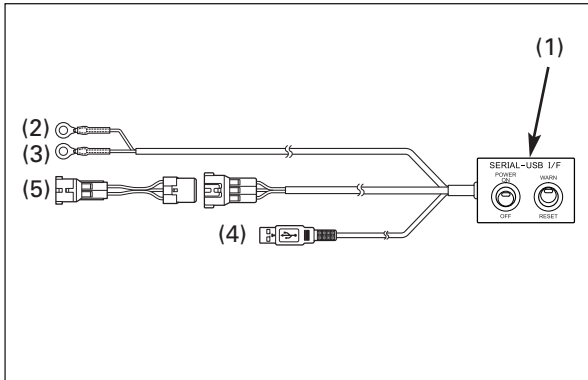


### PGM-FI System Inspection

Place the motorcycle upright position and remove the rear fender.  
 Disconnect the ECM 33P (Black) connector.  
 Check for the following at the ECM terminals of the wire harness side.

Item	No.	Terminal	Standard
Ignition pulse generator	A-11	Bu/Y – G/B	180 – 280 Ω (20°C/68°F)
	A-29	W/Y – G/B	180 – 280 Ω (20°C/68°F)
INJ (Injector)	A-5	B/W – P/Bu	11.1 – 12.3 Ω (20°C/68°F)
Engine stop switch	A-23	R – ground	Continuity is exist only when switch is pushed
ECT sensor	A-20	P/B – G/O	2.3 – 2.6 kΩ (20°C/68°F)
Logic ground	A-6	G – Ground	Continuity
Power ground	A-12	G – Ground	Continuity
Sensor ground	A-22	G/O – Ground	Continuity

## Electrical Servicing



- (1) INTERFACE UNIT ASSEMBLY  
(2) RED WIRE EYELET (3) GREEN WIRE EYELET  
(4) USB CONNECTOR (5) 4P (RED) CONNECTOR

### PGM-FI

#### Self-diagnostic Procedure

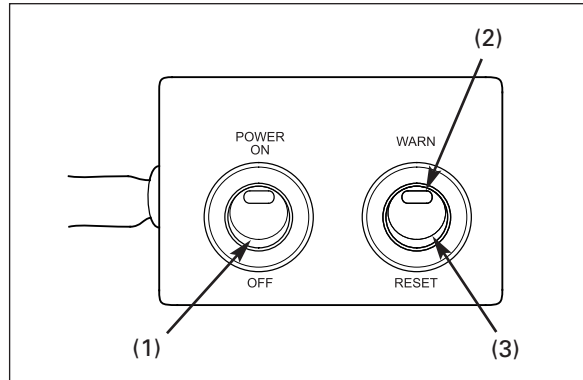
Turn the engine stop switch OFF.

Connect the interface unit 4P (Red) connector to the service check 4P (Red) connector.

#### Tool:

**Serial-USB interface unit assembly 38880-N1C-770**

Connect the fully charged 12 V battery to the warning unit terminals (red wire eyelet to the battery positive terminal and green wire eyelet to the negative terminal).



- (1) POWER SWITCH  
(2) MIL  
(3) WARNING/RESET SWITCH

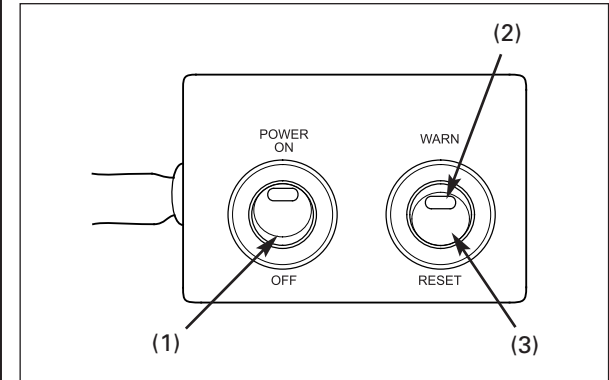
Turn the serial-USB interface unit warning/reset switch to the warning side as shown.

Turn the power switch ON, check that the MIL.

If the ECM has no self diagnosis memory data, the MIL will illuminate, when you turn the power switch ON.

If the ECM has self diagnosis memory data, the MIL will start blinking when you turn the power switch ON.

Note how many times the MIL blinks, and determine the cause of the problem (See next page).



- (1) POWER SWITCH  
(2) MIL  
(3) WARNING/RESET SWITCH

#### Self-diagnosis Reset Procedure

Connect the serial-USB interface unit assembly to the wire harness and 12 V battery same procedure as Self-diagnosis (see previous step).

Before turn ON the power switch, turn the warning/reset switch to the warning side.

Turn the power switch ON, then turn the warning/reset switch to reset side.

The MIL lights about 5 seconds.

While the MIL lights, turn the warning/reset switch to the warning side.

Self-diagnosis memory data is erased, if the MIL turns off and start blinking.

- The warning/reset switch must be switched to warning side while the indicator lights. If not, the MIL will not start blinking.
- Note that the self-diagnosis memory data cannot be erased if you disconnect the battery from the serial-USB interface unit assembly before the MIL starts blinking.

**PGM-FI Self-diagnosis Malfunction Indicator Lamp (MIL) Failure Codes**

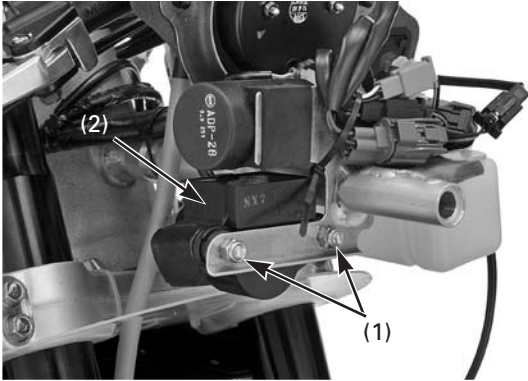
- The PGM-FI MIL denotes the failure codes (the number of blinks from 0 to 69). When the indicator lights for 1.3 seconds, it is equivalent to ten blinks. For example; a 1.2 second illumination and two blinks (0.5 second x 2) of the indicator equals 12 blinks. Follow code 12 troubleshooting.
- When more than one failure occurs, the MIL shows the blinks in the order of lowest number to highest number. For example; if the indicator blinks once, then seven times, two failures have occurred. Follow codes 1 and 7 troubleshooting.

Number of blinks		Causes	Symptoms
0	No blinks	• Faulty ECM/PGM-FI warning indicator unit (*)	• Engine does not start
	No blinks	• Faulty ECM (PGM-FI warning indicator output)	• Engine operates normally
	Stay lit	• Short circuit in service check connector • Faulty ECM (PGM-FI warning indicator output)	• Engine operates normally
1	Blink	• Open or short circuit in MAP sensor line (in the ECM) • Faulty MAP sensor	• Engine operates normally
2	Blink	• Poor MAP sensor vacuum hose connection • Faulty MAP sensor	• Engine operates normally
6	Blinks	• Open or short circuit in BARO sensor line (in the ECM) • Faulty BARO sensor	• Engine operates normally • Poor idle at high altitude
7	Blinks	• Loose or poor contact on ECT sensor • Open or short circuit in ECT sensor wire • Faulty ECT sensor	• Hard starting at a low temperature (Simulate using numerical values; 40 °C/104°F) • Cooling fan does not stop
8	Blinks	• Open or short circuit in TP sensor line (in the ECM) • Faulty TP sensor	• Poor engine response when operating the throttle quickly (Simulate using numerical values; throttle open 0°)
9	Blinks	• Open or short circuit in IAT sensor line (in the ECM)	• Engine operates normally (Simulate using numerical values; 25°C/77°F)
12	Blinks	• Loose or poor contact on injector connector • Open or short circuit in injector wire • Faulty injector	• Engine does not start
19	Blinks	• Loose or poor contact on No.1 ignition pulse generator connector • Open or short circuit in No.1 ignition pulse generator connector	• Engine does not start
69	Blinks	• Loose or poor contact on No.2 ignition pulse generator connector • Open or short circuit in No.2 ignition pulse generator connector	• Engine does not start

\* To check the faulty PGM-FI unit and PGM-FI warning unit:

1. Disconnect the injector connector.
2. Follow PGM-FI self-diagnosis procedure (page 6-6), check that the MIL indicate the injector malfunction code.
  - MIL does indicate the injector malfunction: Faulty PGM-FI unit.
  - MIL does not indicate the injector malfunction: Faulty PGM-FI warning unit (After replacing the PGM-FI warning unit, redo self-diagnosis procedure)

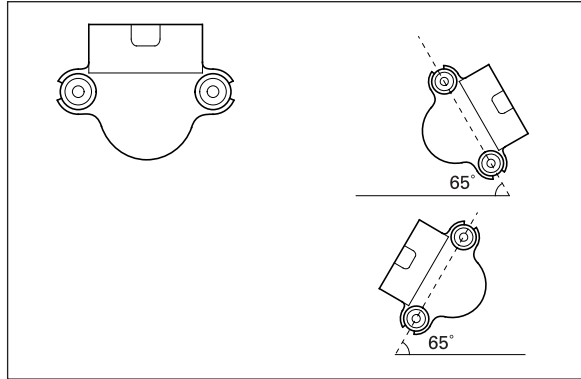
After inspection, reset PGM-FI warning unit (page 6-6).



- (1) SCREWS
- (2) BANK ANGLE SENSOR

### Bank Angle Sensor Inspection

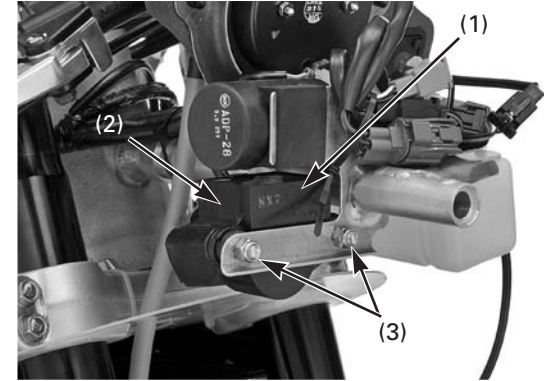
Remove the screws and bank angle sensor from the sensor bracket.  
Reinstall the removed parts in the reverse order of removal.



Connect the bank angle sensor 3P (Natural) connector.  
With the arrow mark on the bank angle sensor facing up, start the engine.

Incline the bank angle sensor approximately 65 degrees to the left or right, make sure that the engine stops after few seconds.  
If the engine stops, the bank angle sensor is normal.  
If the engine does not stop, replace the bank angle sensor.

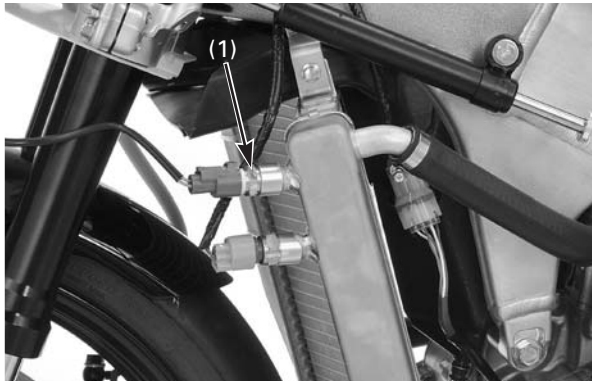
With the arrow/UP mark on the bank angle sensor facing up again, restart the engine.  
The engine starts, the bank angle sensor is normal.



- (1) ARROW/UP MARK
- (2) BANK ANGLE SENSOR

Install the bank angle sensor in the reverse order of removal.  
Install the bank angle sensor with its arrow/UP mark facing up as shown.





(1) WATER TEMPERATURE SENSOR

## Water Temperature Sensor

### Sensor Inspection

Disconnect the water temperature sensor 2P connector.

Measure the resistance between the water temperature sensor connector terminals.

**Standard: 47.02 – 53.02 k  $\Omega$  (25 ° C/77 ° F)**

Replace the water temperature sensor if the resistance is out of specification.



(1) PGM-FI 33P (BLACK) CONNECTOR

### Meter Inspection

If the water temperature meter does not display, inspect the following:

Disconnect the PGM-FI 33P (Black) connector and water temperature meter 2P (Black) connector.

Check the continuity of the green terminal between the ignition control module and water temperature meter connector.



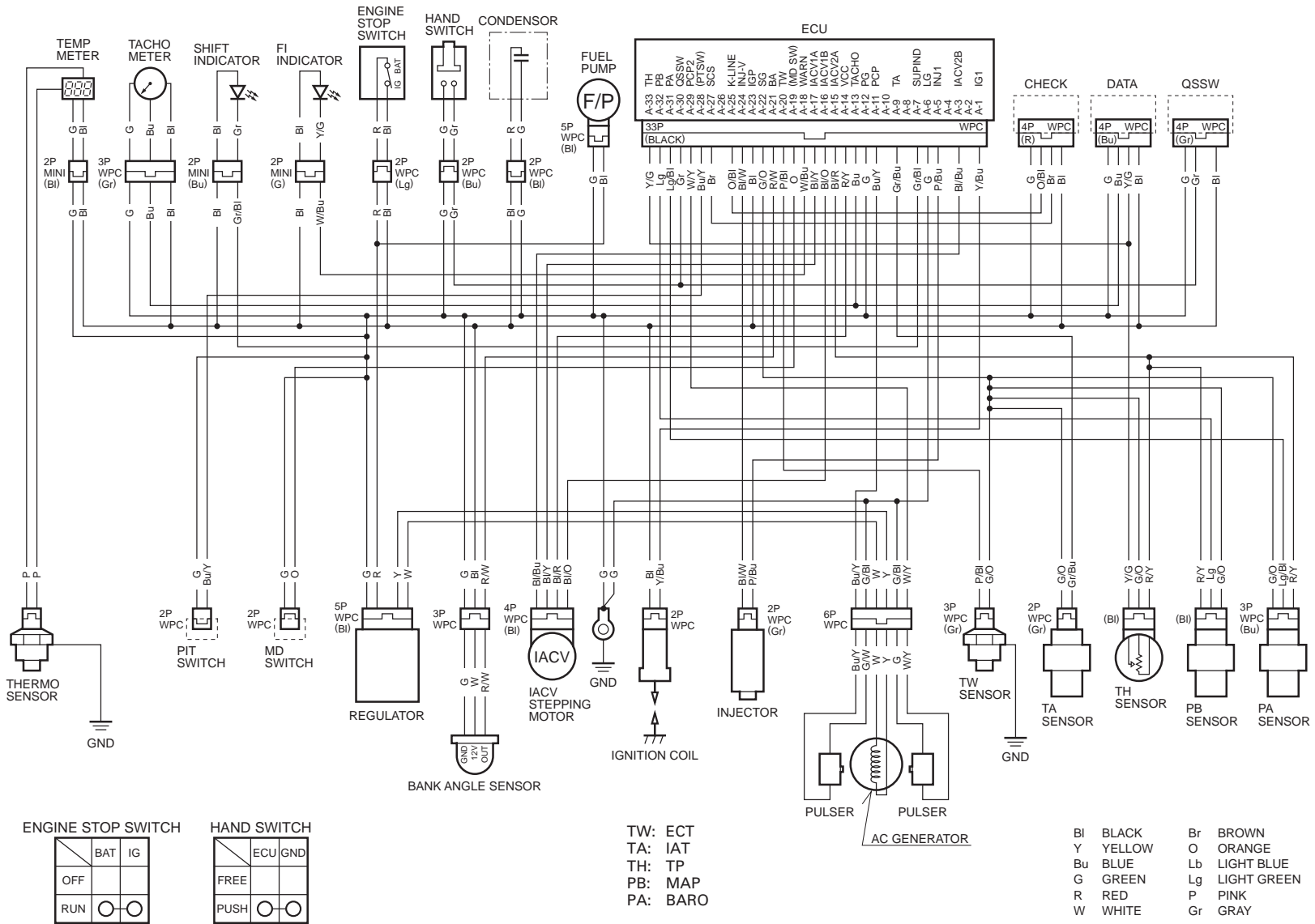
(1) 2P (BLACK) CONNECTOR

If there is no continuity, check the wire harness.  
If there is continuity, check the water temperature sensor.

If the water temperature sensor is normal, replace the meter.

# Electrical Servicing

## Wiring Diagram



0030Z-NX7-000

# 7. Machine Setting

## Optional Transmission Gears

Optional transmission gears are available for use the transmission. Care should be taken when substituting optional gears for the standard gears. The optional low gear/mainshaft has marking etched on the shaft end for identification. Identification for other gears is aided by a marking located on the side of the gear.

Gears		Marking and Parts Number				Teeth		Gear Ratio
		Main		Counter		M	C	
1st	STD	No mark	23211-NX4-000	C1	23411-NX4-000	16	30	1.875
	STD	No mark	23212-NX4-000	C1-P2	23412-NX4-000	16	31	1.937
	OP	3 grooves	23213-NX4-000	C1-P3	23413-NX4-000	16	32	2.000
	OP	4 grooves	23214-NX4-000	C1-P4	23414-NX4-000	17	30	1.764
	OP	5 grooves	23215-NX4-000	C1-P5	23415-NX4-000	16	29	1.812
2nd	STD	M2	23421-NX4-000	C2	23431-NX4-700	21	32	1.523
	OP	M2-P2	23422-NX4-000	C2-P2	23432-NX4-700	18	29	1.611
	OP	M2-P3	23423-NX4-000	C2-P3	23433-NX4-700	19	28	1.473
	OP	M2-P4	23424-NX4-000	C2-P4	23434-NX4-700	17	29	1.705
	OP	M2-P5	23425-NX4-000	C2-P5	23435-NX4-700	18	28	1.555
	OP	M2-P5	23425-NX4-000	C2-P6	23436-NX4-700	18	27	1.500
3rd/4th	STD	M3	23441-NX4-000	C3	23451-NX4-681	23	30	1.304
		M4		C4	23461-NX4-681	24	28	1.166
	OP	M3	23441-NX4-000	C3-P3	23453-NX4-681	23	29	1.260
		M4		C4	23461-NX4-681	24	28	1.166
	OP	M3	23441-NX4-000	C3-P3	23453-NX4-681	23	29	1.260
		M4		C4-P2	23462-NX4-681	24	29	1.208
	OP	M3-P2	23442-NX4-000	C3-P2	23452-NX4-681	20	27	1.350
		M4		C4	23461-NX4-681	24	28	1.166
	OP	M3-P2	23442-NX4-000	C3-P2	23452-NX4-681	20	27	1.350
		M4		C4-P2	23462-NX4-681	24	29	1.208
	OP	M3	23443-NX4-000	C3	23451-NX4-681	23	30	1.304
		M4-P3		C4-P3	23463-NX4-681	22	25	1.136
OP	M3	23443-NX4-000	C3-P3	23453-NX4-681	23	29	1.260	
	M4-P3		C4-P3	23463-NX4-681	22	25	1.136	
OP	M3-P2	23444-NX4-000	C3-P2	23452-NX4-681	20	27	1.350	
	M4-P3		C4-P3	23463-NX4-681	22	25	1.136	

## Machine Setting

Gear		Identification Mark/Parts Number				Teeth		Gear Ratio
		Main		Counter		M	C	
3rd/4th	OP	M3	23445-NX4-000	C3	23451-NX4-681	23	30	1.304
		M4-P4		C4-P4	23464-NX4-681	21	26	1.238
	OP	M3	23445-NX4-000	C3	23451-NX4-681	23	30	1.304
		M4-P4		C4-P5	23465-NX4-681	21	25	1.190
	OP	M3	23445-NX4-000	C3-P3	23453-NX4-681	23	29	1.260
		M4-P4		C4-P4	23464-NX4-681	21	26	1.238
	OP	M3	23445-NX4-000	C3-P3	23453-NX4-681	23	29	1.260
		M4-P4		C4-P5	23465-NX4-681	21	25	1.190
	OP	M3	23446-NX4-000	C3	23451-NX4-681	23	30	1.304
		M4-P6		C4-P6	23466-NX4-681	20	23	1.150
	OP	M3	23446-NX4-000	C3-P3	23453-NX4-681	23	29	1.260
		M4-P6		C4-P6	23466-NX4-681	20	23	1.150
	OP	M3-P2	23447-NX4-000	C3-P2	23452-NX4-681	20	27	1.350
		M4-P4		C4-P4	23464-NX4-681	21	26	1.238
	OP	M3-P2	23447-NX4-000	C3-P2	23452-NX4-681	20	27	1.350
		M4-P4		C4-P5	23465-NX4-681	21	25	1.190
OP	M3-P2	23448-NX4-000	C3-P2	23452-NX4-681	20	27	1.350	
	M4-P6		C4-P6	23466-NX4-681	20	23	1.150	
OP	M3-P4	23449-NX4-000	C3-P4	23454-NX4-681	22	31	1.409	
	M4		C4	23461-NX4-681	24	28	1.166	
OP	M3-P4	23449-NX4-000	C3-P4	23454-NX4-681	22	31	1.409	
	M4		C4-P2	23462-NX4-681	24	29	1.208	
OP	M3-P4	23449-NX4-000	C3-P5	23455-NX4-681	22	29	1.318	
	M4		C4	23461-NX4-681	24	28	1.166	
OP	M3-P4	23449-NX4-000	C3-P5	23455-NX4-681	22	29	1.318	
	M4		C4-P2	23462-NX4-681	24	29	1.208	
OP	M3-P4	23441-NX4-610	C3-P4	23454-NX4-681	22	31	1.409	
	M4-P3		C4-P3	23463-NX4-681	22	25	1.136	
OP	M3-P4	23441-NX4-610	C3-P5	23455-NX4-681	22	29	1.318	
	M4-P3		C4-P3	23463-NX4-681	22	25	1.136	

Gear		Identification Mark/Parts Number				Teeth		Gear Ratio
		Main		Counter		M	C	
3rd/4th	OP	M3-P4	23442-NX4-610	C3-P4	23454-NX4-681	22	31	1.409
		M4-P4		C4-P4	23464-NX4-681	21	26	1.238
	OP	M3-P4	23442-NX4-610	C3-P4	23454-NX4-681	22	31	1.409
		M4-P4		C4-P5	23465-NX4-681	21	25	1.190
	OP	M3-P4	23442-NX4-610	C3-P5	23455-NX4-681	22	29	1.318
		M4-P4		C4-P4	23464-NX4-681	21	26	1.238
	OP	M3-P4	23442-NX4-610	C3-P5	23455-NX4-681	22	29	1.318
		M4-P4		C4-P5	23465-NX4-681	21	25	1.190
	OP	M3-P4	23443-NX4-610	C3-P4	23454-NX4-681	22	31	1.409
		M4-P6		C4-P6	23466-NX4-681	20	23	1.150
	OP	M3-P4	23443-NX4-610	C3-P5	23455-NX4-681	22	29	1.318
		M4-P6		C4-P6	23466-NX4-681	20	23	1.150
OP	M3-P6	23444-NX4-610	C3-P6	23456-NX4-681	21	27	1.285	
	M4		C4	23461-NX4-681	24	28	1.166	
OP	M3-P6	23444-NX4-610	C3-P6	23456-NX4-681	21	27	1.285	
	M4		C4-P2	23462-NX4-681	24	29	1.208	
OP	M3-P6	23445-NX4-610	C3-P6	23456-NX4-681	21	27	1.285	
	M4-P3		C4-P3	23463-NX4-681	22	25	1.136	
OP	M3-P6	23446-NX4-610	C3-P6	23456-NX4-681	21	27	1.285	
	M4-P4		C4-P4	23464-NX4-681	21	26	1.238	
OP	M3-P6	23446-NX4-610	C3-P6	23456-NX4-681	21	27	1.285	
	M4-P4		C4-P5	23465-NX4-681	21	25	1.190	
OP	M3-P6	23447-NX4-610	C3-P6	23456-NX4-681	21	27	1.285	
	M4-P6		C4-P6	23466-NX4-681	20	23	1.150	
5th	STD	M5	23471-NX4-000	C5	23481-NX4-000	26	28	1.076
	OP	M5-P2	23472-NX4-000	C5-P2	23482-NX4-000	25	28	1.120
	OP	M5-P3	23473-NX4-000	C5-P3	23483-NX4-000	23	24	1.043
	OP	M5-P4	23474-NX4-000	C5-P4	23484-NX4-000	20	22	1.100
6th	STD	M6	23491-NX4-000	C6	23501-NX4-010	24	24	1.000
	OP	M6-P2	23492-NX4-000	C6-P2	23502-NX4-010	26	27	1.038
	OP	M6-P3	23493-NX4-000	C6-P3	23503-NX4-010	27	26	0.962
	OP	M6-P4	23494-NX4-000	C6	23501-NX4-010	23	24	1.043



# Machine Setting

Speed List (13,500 rpm) Primary reduction: 21/62 Tire: R= 299 mm

Gear	Teeth		Gear Ratio	15	15	15	16	15	16	17	16	Drive	
	M	C		40	39	38	40	37	39	41	38	Driven	
1st	16	32	2.000	96	99	101	103	104	105	107	108		
	16	31	1.937	99	102	105	106	107	109	110	112		
	16	30	1.875	103	105	108	110	111	112	114	115		
	16	29	1.812	106	109	112	113	115	116	118	119		
	17	30	1.764	109	112	115	116	118	119	121	123		
2nd	17	29	1.705	113	116	119	120	122	124	125	127		
	18	29	1.611	120	123	126	128	129	131	133	134		
	18	28	1.555	124	127	130	132	134	136	138	139		
	21	32	1.523	126	130	133	135	137	138	141	142		
	18	27	1.500	128	132	135	137	139	141	143	144		
	19	28	1.473	131	134	138	139	141	143	145	147		
3rd	22	31	1.409	137	140	144	146	148	150	152	154		
	20	27	1.350	143	146	150	152	154	156	159	160		
	22	29	1.318	146	150	154	156	158	160	163	164		
	23	30	1.304	148	152	156	158	160	162	164	166		
	21	27	1.285	150	154	158	160	162	164	167	168		
	23	29	1.260	153	157	161	163	165	167	170	172		
	21	26	1.238	156	160	164	166	168	170	173	175		
4th	24	29	1.208	160	164	168	170	173	175	177	179		
	21	25	1.190	162	166	171	173	175	177	180	182		
	24	28	1.166	165	170	174	176	179	181	184	186		
	20	23	1.150	168	172	177	179	181	183	186	188		
	22	25	1.136	170	174	179	181	184	186	189	191		
	25	28	1.120	172	177	181	184	186	188	191	193		
	20	22	1.100	175	180	185	187	190	192	195	197		
5th	26	28	1.076	179	184	189	191	194	196	199	201		
	23	24	1.043	185	190	195	197	200	202	205	208		
	23	24	1.043	185	190	195	197	200	202	205	208		
	26	27	1.038	186	191	196	198	201	203	206	209		
6th	24	24	1.000	193	198	203	206	209	211	214	217		
	27	26	0.962	200	206	211	214	217	219	223	225		
				2.666	2.600	2.533	2.500	2.466	2.437	2.400	2.375		Final Ratio

Speed List (13,500 rpm) Primary reduction: 21/62 Tire: R= 299 mm

Gear	Teeth		Gear Ratio	17	15	16	17	15	16	17	15	16	17	Drive
	M	C		40	35	37	39	34	36	38	33	35	37	Driven
1st	16	32	2.000	109	110	111	112	113	114	115	117	117	118	
	16	31	1.937	113	114	115	116	117	118	119	121	121	122	
	16	30	1.875	116	117	118	119	121	122	123	125	125	126	
	16	29	1.812	120	121	123	124	125	126	127	129	130	130	
	17	30	1.764	124	125	126	127	128	129	130	132	133	134	
2nd	17	29	1.705	128	129	130	131	133	134	135	137	138	138	
	18	29	1.611	136	137	138	139	141	142	143	145	146	147	
	18	28	1.555	140	142	143	144	146	147	148	150	151	152	
	21	32	1.523	143	145	146	147	149	150	151	153	154	155	
	18	27	1.500	146	147	148	149	151	152	153	156	157	157	
	19	28	1.473	148	149	151	152	154	155	156	159	159	160	
3rd	22	31	1.409	155	156	158	159	161	162	163	166	167	168	
	20	27	1.350	162	163	165	166	168	169	170	173	174	175	
	22	29	1.318	166	167	169	170	172	173	175	177	178	179	
	23	30	1.304	168	169	170	172	174	175	176	179	180	181	
	21	27	1.285	170	171	173	174	176	178	179	182	183	184	
	23	29	1.260	173	175	176	178	180	181	182	185	186	187	
4th	21	26	1.238	177	178	180	181	183	185	186	189	190	191	
	24	29	1.208	181	182	184	186	188	189	190	194	195	196	
	21	25	1.190	184	185	187	188	191	192	193	196	198	199	
	24	28	1.166	187	189	191	192	195	196	197	200	202	203	
	20	23	1.150	190	192	193	195	197	199	200	203	205	206	
	22	25	1.136	192	194	196	197	200	201	203	206	207	208	
5th	25	28	1.120	195	197	199	200	203	204	206	209	210	211	
	20	22	1.100	199	200	202	204	206	208	209	213	214	215	
	26	28	1.076	203	205	207	208	211	212	214	217	218	220	
	23	24	1.043	210	211	213	215	218	219	221	224	225	227	
6th	23	24	1.043	210	211	213	215	218	219	221	224	225	227	
	26	27	1.038	211	212	214	216	219	220	222	225	227	228	
	24	24	1.000	219	221	223	224	227	229	230	234	235	236	
	27	26	0.962	227	229	231	233	236	238	239	243	244	246	
				2.352	2.333	2.312	2.294	2.266	2.250	2.235	2.200	2.187	2.176	Final Ratio

## Machine Setting

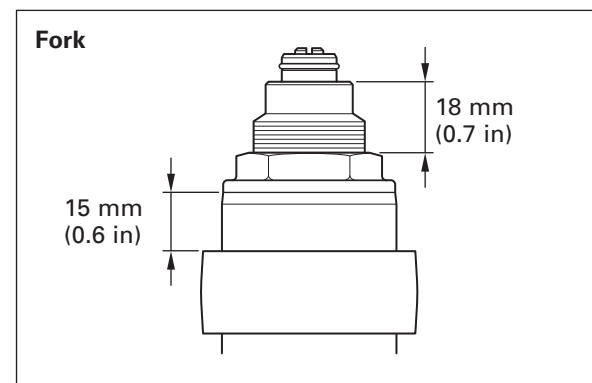
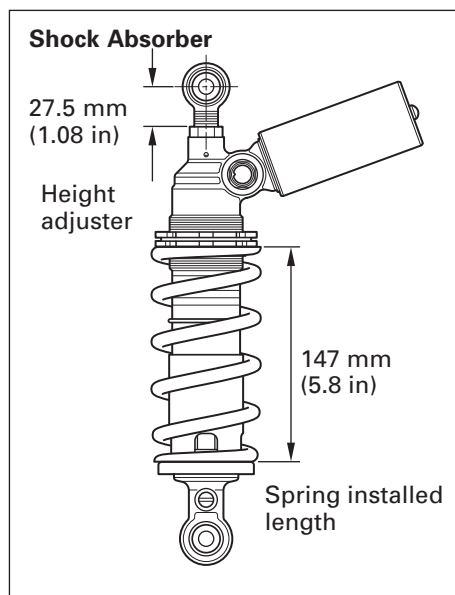
Speed List (13,500 rpm) Primary reduction: 21/62 Tire: R= 299 mm

Gear	Teeth		Gear Ratio	15	16	17	16	17	16	17	17	17	Drive
	M	C		32	34	36	33	35	32	34	33	32	Driven
1st	16	32	2.000	120	121	121	125	125	128	128	132	137	
	16	31	1.937	124	125	125	129	129	133	133	137	141	
	16	30	1.875	128	129	129	133	133	137	137	141	146	
	16	29	1.812	133	133	134	137	138	142	142	146	151	
	17	30	1.764	137	137	138	141	141	146	146	150	155	
2nd	17	29	1.705	141	142	142	146	146	151	151	155	160	
	18	29	1.611	150	150	151	155	155	160	160	162	170	
	18	28	1.555	155	156	156	160	161	165	165	170	176	
	21	32	1.523	158	159	159	164	164	169	169	174	179	
	18	27	1.500	161	161	162	166	167	171	171	177	182	
	19	28	1.473	164	164	165	169	169	174	174	180	185	
3rd	22	31	1.409	171	172	172	177	177	183	183	188	194	
	20	27	1.350	179	179	180	185	185	191	191	196	202	
	22	29	1.318	183	184	184	189	190	195	195	201	207	
	23	30	1.304	185	186	186	191	192	197	197	203	210	
	21	27	1.285	188	188	189	194	194	200	200	206	213	
	23	29	1.260	191	192	193	198	198	204	204	210	217	
4th	21	26	1.238	195	196	196	201	202	208	208	214	221	
	24	29	1.208	200	200	201	206	207	213	213	219	226	
	21	25	1.190	203	203	204	210	210	216	216	223	230	
	24	28	1.166	207	208	208	214	214	221	221	227	234	
	20	23	1.150	210	211	211	217	217	224	224	231	238	
	22	25	1.136	212	213	214	220	220	226	226	233	241	
5th	25	28	1.120	215	216	217	223	223	230	230	237	244	
	20	22	1.100	219	220	221	227	227	234	234	241	249	
	26	28	1.076	224	225	226	232	232	239	239	246	254	
	23	24	1.043	231	232	233	239	240	247	247	254	262	
6th	23	24	1.043	231	232	233	239	240	247	247	254	262	
	26	27	1.038	232	233	234	240	241	248	248	255	263	
	24	24	1.000	241	242	243	250	250	257	257	265	274	
	27	26	0.962	251	252	252	259	260	267	267	275	284	
			2.133	2.125	2.117	2.062	2.058	2.000	2.000	1.941	1.882	Final Ratio	

## Suspension Adjustment

### Standard Setting

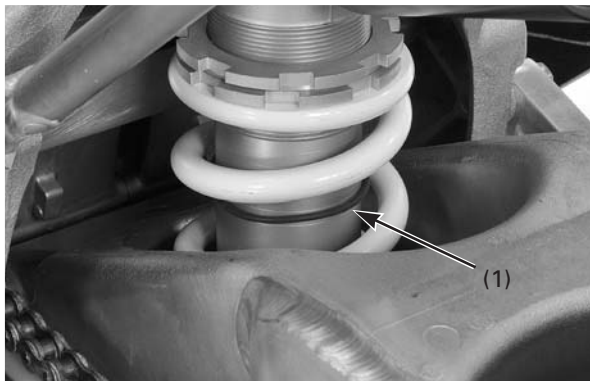
Always start from standard setting when adjusting the suspension.  
If you become confused about adjustment settings, return to the standard setting and start over.



## Machine Setting



(1) TY-RAP

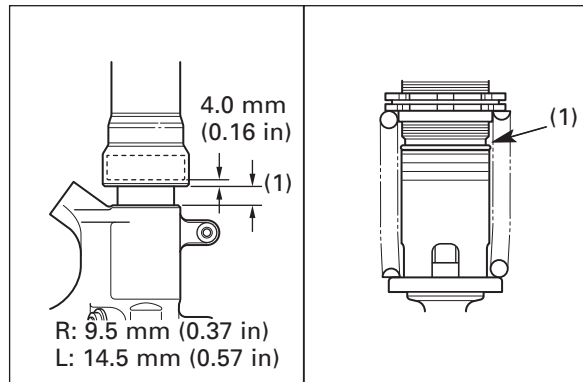


(1) O-RING

### How To Obtain The Correct Suspension Stroke

As the first step in setting the suspension, be sure to know the range of the suspension stroke. For the front suspension, a TY-Rap should be wrapped around the fork pipe.

On the rear suspension use, the installed O-ring.



(1) SUSPENSION STOPS POSITION  
(2) TY-RAP (3) O-RING

Suspension stroke is affected by lap times, tire grip, temperature, and many other factors. Test ride your machine as close to your racing speed and pattern as possible.

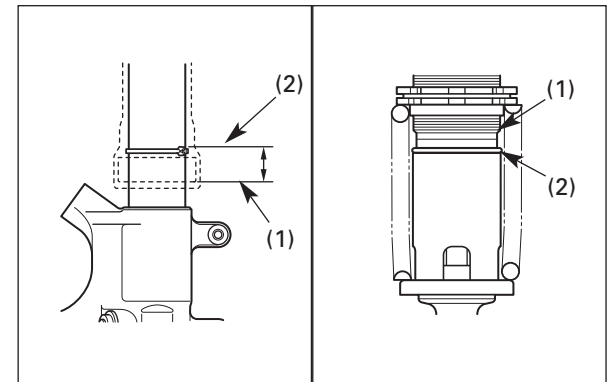
To get the correct stroke, measure the distance from the suspension stops to the full stroke position with your test ride. Suspension stops are shown in the illustration above.

**Front: from top surface of the axle holder**

**Right: 9.5 mm (0.37 in)**

**Left: 14.5 mm (0.57 in)**

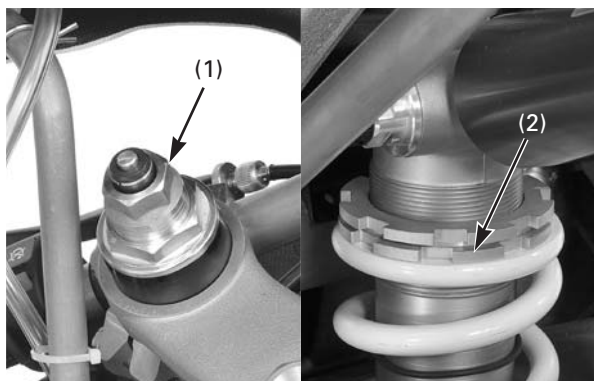
**Rear: Top indicator groove of the damper case**



(1) SUSPENSION STOPS POSITION  
(2) FULLY STROKE POSITION

Inspect the stroke from stop position. Set the full stroke position depending upon test runs so that it is near but not at the stop position.





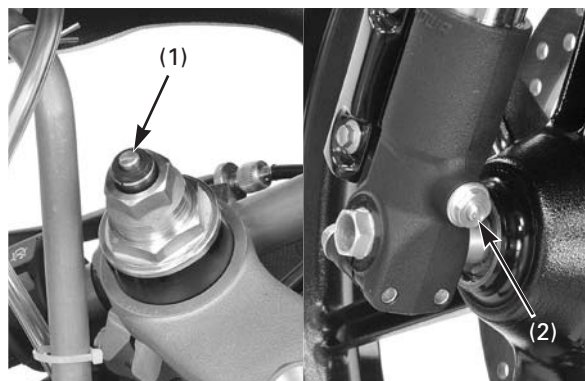
(1) FORK PRELOAD ADJUSTER  
(2) REAR SHOCK ABSORBER PRELOAD ADJUSTER

Adjust the suspension stroke using the spring preload adjuster.

If the stroke is shorter than the standard, increase spring preload.

If the stroke is longer than the standard, decrease spring preload.

Adjust the fork preload adjuster in one-groove increments and the rear spring adjuster in one-turn increment.



(1) REBOUND ADJUSTER  
(2) COMPRESSION ADJUSTER

### Front Suspension Adjustment

#### Rebound Damping Adjustment

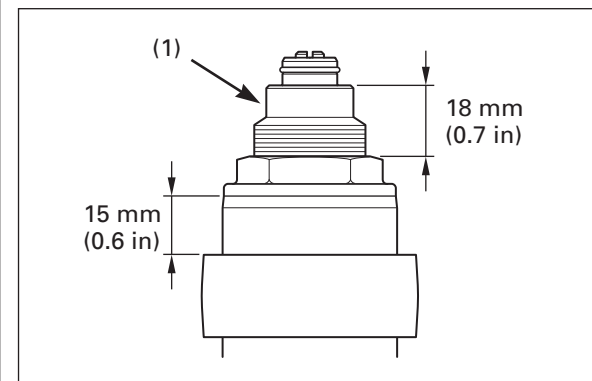
The adjuster is located at the center of the fork bolt. Using a flathead screwdriver, turn the adjuster clockwise to increase damping, counterclockwise to decrease damping. There are 12 – 16 clicks between minimum and maximum. Do not force the adjuster past its limits.

**Standard setting: 7 clicks back from maximum**

#### Compression Damping Adjustment

The adjuster is located at the bottom of the axle holder. Using a flathead screwdriver, turn the adjuster clockwise to increase damping, counterclockwise to decrease damping. There are 12 – 16 clicks between minimum and maximum. Do not force the adjuster past its limits.

**Standard setting: 9 clicks back from maximum**



(1) PRELOAD ADJUSTER

#### Spring Preload Adjustment

Turn the Preload adjuster clockwise to increase preload and counterclockwise to decrease preload. One complete turn of the preload adjuster corresponds to 1 mm variation in preload.

**Adjustment range: 10 – 25 mm (0.4 – 1.0 in)**  
**Standard setting: 18 mm (0.7 in)**

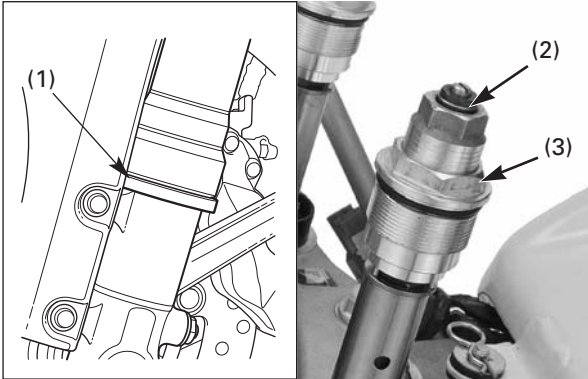
The height of the machine will change when spring preload is changed. You can maintain the correct ride height with a fork tube adjustment.

#### Fork Tube Height Adjustment

The fork tubes can be adjusted to maintain correct ride height when spring preload is changed.

**Adjustment range: 0 – 25 mm (0 – 1.0 in)**  
**Standard setting: 15 mm (0.6 in)**

## Machine Setting



(1) FORK SET COLLAR (2) STOPPER RING  
(3) FORK BOLT

### Fork Spring Replacement

Support the machine using the maintenance stand.  
Remove the bolts and front fender.

Remove the lower radiator mounting bolt to avoid damaging the radiator, the front tire will interfere with the radiator.

Remove the stop rings.

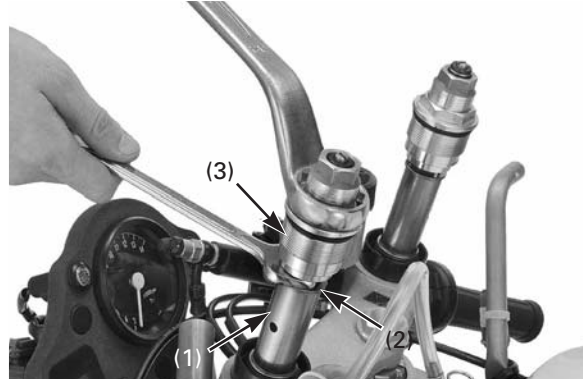
Avoid damaging the fork cap threads, loosen the top bridge pinch bolts.

If the fork bolts in both right and left forks are removed from the outer tube, the fork will bottom suddenly. Hold the machine and loosen the fork bolt, lower the machine slowly until the bottom bridge contacts the tire.

Installing the Fork Set Collar (51481-NX4-610) onto the axle holder.

Record the fork tube height.

Loosen the bottom bridge pinch bolts and pull the outer tube down onto the fork set collar.



(1) SPRING COLLAR (2) SPRING SEAT STOPPER  
(3) FORK BOLT

Push down on the spring collar and spring seat stopper and hook them under lock nut.

Hold the cut-out of the rebound adjuster with a 17 mm spanner, then loosen the fork bolt.

Be careful not to lose the rebound adjuster lock nut.



(1) SPRING SEAT STOPPER  
(2) SPRING COLLAR (3) JOINT PLATE  
(4) FORK SPRING

Remove the following:

- spring seat stopper
- spring collar
- spring joint plate
- fork spring

Install the spring with its identification mark (number of coils) facing up.

Install the parts in the reverse order of removal.

Pull the outer tube up as much as the fork tube height recorded during removal and tighten the bottom bridge pinch bolts.

### Torque:

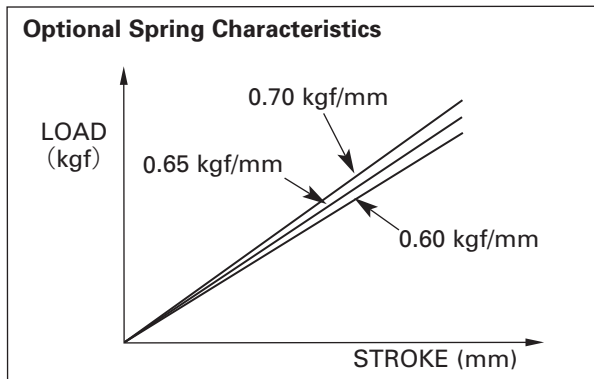
#### Bottom bridge pinch bolt:

22 N•m (2.2 kgf•m, 16 lbf•ft)

Fork bolt: 34 N•m (3.5 kgf•m, 25 lbf•ft)

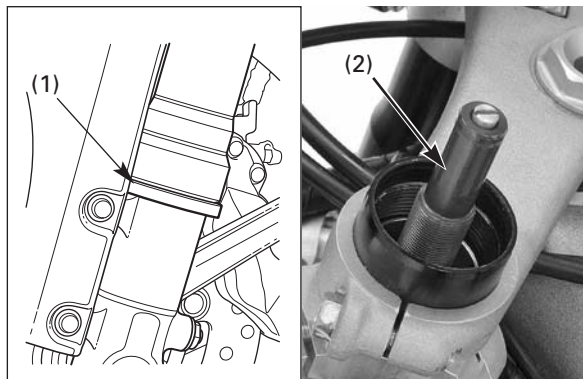
#### Top bridge pinch bolt:

22 N•m (2.2 kgf•m, 16 lbf•ft)



Spring Identification

Spring rate	Identification Color	Pre-load
0.60 kg/mm	1 coil	19 mm
0.65 kg/mm (STD)	3 coil	20.5 mm
0.70 kg/mm	-	22 mm



(1) FORK SET COLLAR (2) DAMPER ROD

**Fluid Level Adjustment**

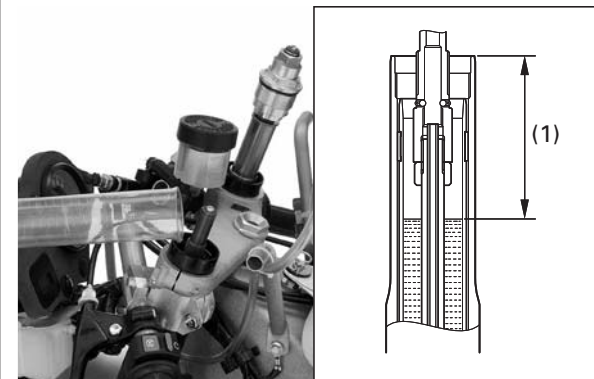
Fork fluid level should be checked with the Fork Set Collar installed.

Remove the fork bolt, spring seat stopper, spring collar, spring joint plate and spring from the fork (see fork spring replacement).

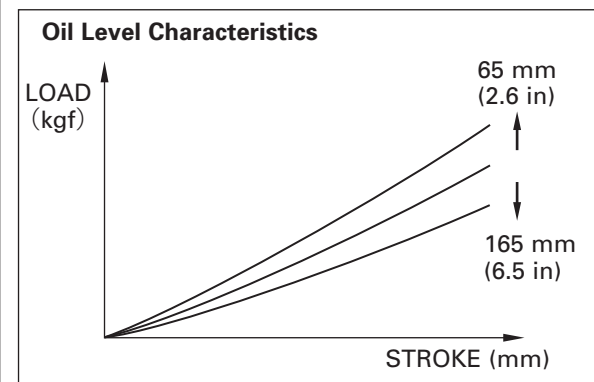
Temporarily extend the fork 118 mm (4.6 in) from the axle holder for the correct oil level adjustment (page 5-10)

Down the outer tube onto the Fork Set Collar and leave it few minutes.

Press the damper rod down until it comes into contact with the bottom of the fork tube.



(1) OIL LEVEL



Measure the distance between the top of the fluid and the top of the fork tube.

**Standard fluid level:**

**Right: 106 mm (236 cm<sup>3</sup>)**

**Left: 101 mm (236 cm<sup>3</sup>)**

**Recommended fork fluid:**

**Honda Ultra Cushion Oil Special (SAE5W)**

**Showa SS05 Operation Oil or equivalent**

Fork fluid replacement is required for fork removal and installation. See section 5 for detail.

## Machine Setting



(1) COMPRESSION ADJUSTER

### Rear Suspension Adjustment

Make sure the rear shock reservoir is facing rearward and does not interfere with other parts of the machine (frame, seat rails, chain, etc.) throughout its full stroke.

#### Compression Damping Adjustment

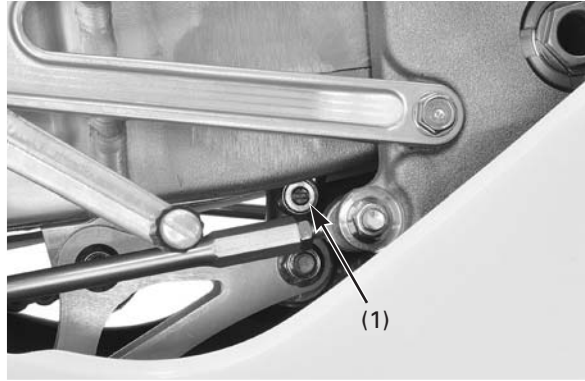
The compression damping adjuster is on the left side of the reservoir.

Turn the knob toward the H mark to increase damping.

Turn the knob toward the S mark to decrease damping.

The knob has 24 – 26 notches with 10 notches for one full turn.

**Standard position: 8th notch back from full hard**



(1) REBOUND ADJUSTER

#### Rebound Damping Adjustment

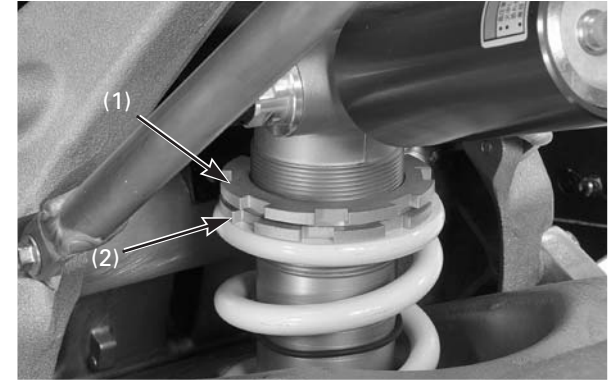
The rebound damping adjuster is at the base of the shock absorber.

Turn the dial toward the H mark to increase damping.

Turn the dial toward the S mark to decrease damping.

The dial has 12 – 16 notches with a detent every 60 degree.

**Standard position: 5th notch back from full hard**



(1) LOCK NUT (2) ADJUSTER

#### Spring Preload Adjustment

Loosen the lock nut and turn the spring preload adjuster. One full turn changes the length of the spring by 1.5 mm and ride height changes 3 mm.

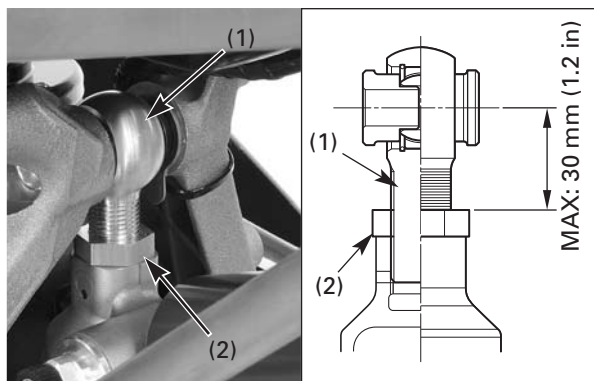
To prevent damage to the shock mounts and to assure the lock nut is properly tightened, use two wrenches to tighten the lock nut.

**Standard preload length: 147 mm (5.8 in)**

#### **Tools:**

**Pin spanner**

**07702-002001  
(two required)**



(1) UPPER JOINT (2) LOCK NUT

**Ride Height Adjustment**

Make sure the suspension is not loaded when checking the ride height.

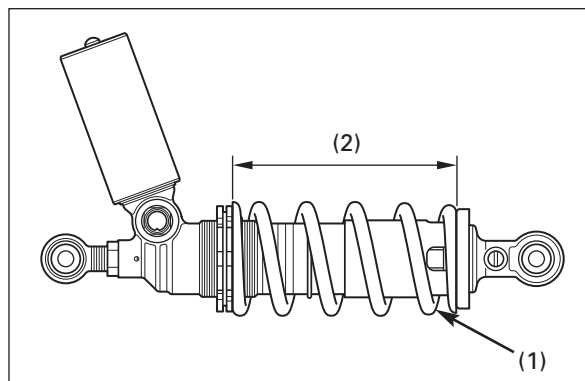
Always adjust the ride height from the standard setting (page 7-7).

To adjust ride height, loosen the lock nut at the rear shock absorber upper joint and turn the upper joint to the desired position. Each complete turn is 1.5 mm and change the ride height 3 mm.

**Standard length:** 27.5 mm (1.08 in)  
**Adjustment range:** +2.5 – -7.5 mm (+0.10 – -0.30 in) from standard length

The limit on the + side is 30 mm (1.2 in). If extended any further, the upper joint may slip out while riding.

After adjustment, tighten the lock nut to 64 N m (6.5 kgf•m, 47 lbf•ft).



(1) PRELOAD LENGTH

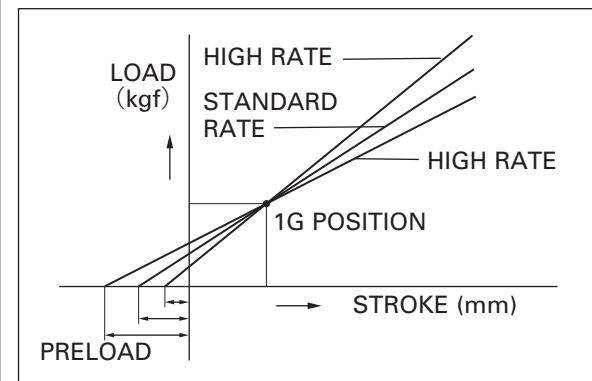
**Spring Replacement**

Remove the rear shock absorber, then remove the spring (page 5-20).

**Spring specifications**

Spring rate	Identification Color	Pre-load
6.5 kg/mm	Black	8.5 mm
7.0 kg/mm	Green	7.9 mm
7.5 kg/mm	Blue	7.4 mm
8.0 kg/mm (STD)	Yellow	6.9 mm (L=147 mm)
8.5 kg/mm	Red	6.5 mm

The ride height will be same when you adjust the spring pre-load as above.



Install the rear shock absorber spring (page 5-23). Adjust the ride height.

## Machine Setting

### Troubleshooting Suspension Set-up

Symptom	Suspected Causes	Countermeasures
Bottoming (a solid feeling)	Poor performance	<ul style="list-style-type: none"> <li>• Check fork and rear shock absorber assembly performance. Confirm that the fork pipe and rod are not bent, If there is such trouble, modify or exchange the defective part.</li> <li>• Check to see if the center shifted during tightening of the front axle shaft and whether the fork has been twisted.</li> </ul>
	Excessive preload on the spring set	<ul style="list-style-type: none"> <li>• Lower preload</li> <li>• Change to a softer spring</li> <li>• Reduce the amount of oil (front suspension only)</li> </ul>
	Hitting bottom (full stroke)	<ul style="list-style-type: none"> <li>• Increase preload</li> <li>• Change to stiffer spring</li> <li>• Increase the amount of oil (front suspension only)</li> </ul>
	Excessive damping force	<ul style="list-style-type: none"> <li>• Reduce the damping force (front: adjuster or oil viscosity. Rear: adjuster)</li> </ul>
Chattering	Excessive tire rigidity Poor matching between body, suspension and tires	<ul style="list-style-type: none"> <li>• Review the selection, and reduce air pressure</li> <li>• Shift the resonance point by either increasing or reducing the preload (be sure to confirm the stroke when doing so).</li> <li>• Shift resonance point by increasing or decreasing damping force.</li> </ul>
	Others 1. Loosening of area adjacent to head pipe and others. 2. Loss of balance or deformation of tire rim. 3. Misselected tire or misadjusted air pressure.	<ul style="list-style-type: none"> <li>• Check the bolts and bearings to see if they are tight and properly secured.</li> <li>• Rebalance and confirm whether or not the rim is deformed.</li> <li>• Raise or lower the air pressure.</li> </ul>
Excessive movement of the steering	In cases experienced when the throttle is ON: Lack of rebound stroke (From 1G) of the front fork.	<ul style="list-style-type: none"> <li>• Lower preload.</li> <li>• Increase front distribution load (either increase the rear ride height or front fork projected length).</li> </ul>
	In cases experienced when the throttle is OFF. 1. Insufficient stroke due to excessively stiff properties of front spring. 2. Excessive stroke due to overly soft spring properties.	<ul style="list-style-type: none"> <li>• Lower preload.</li> <li>• Change to a softer spring.</li> <li>• Increase preload.</li> <li>• Change to a stiffer spring.</li> </ul>
Does not turn-in easily at corners	Caster angle is too large	<ul style="list-style-type: none"> <li>• Raise rear ride height (with ride height adjuster).</li> <li>• Increase preload of rear spring.</li> <li>• Lower preload of front.</li> <li>• Increase front fork projected length.</li> <li>• Reduce rear damping force (rebound).</li> </ul>
Floating feeling	Lack of damping force	<ul style="list-style-type: none"> <li>• Increase damping force.</li> </ul>
Hopping (rear)	Resonance under spring due to inadequate damping force.	<ul style="list-style-type: none"> <li>• Either increase or reduce damping force (rebound) to shift resonance point. Lower preload.</li> </ul>



# 2012-NSF250R PARTS LIST

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## Instructions for Use of Parts List

This parts list is to be used when ordering replacement parts; it contains all parts for model 2012 NSF250R.

### I. How to order parts

#### ● Information required

Replacement parts orders must contain both the part number and the stamped number(s) as described below. This is necessary because any changes and modifications are registered at Honda with the pertinent parts and stamped numbers.

- If quantities are shown in ( ), the parts are optional.
- If "N" is indicated in the quantity column, the parts quantity is to be determined as required.

### II. How to read this parts list

#### ● Make-up of the part number

(Example) General parts

○○○○○ — ○○○ — ○○○

Function and Model  
component No. code No.

Subcontractor designation  
Modification designation

(Example) Bolts, nuts and other standard parts

○○○○○ — ○○○○○ — ○○

Function and Dimension  
component No.

Chemical surface treatment  
ISO

#### ● Abbreviations

The following abbreviations are used in this parts list.

ASSY. ....	Assembly
ADJ. ....	Adjuster
BRG. ....	Bearing
COMP. ....	Complete
EXH. ....	Exhaust
FR. ....	Front
L. ....	Left
mm ....	Millimeter
R. ....	Right
RR. ....	Rear
SPG. ....	Spring
STD. ....	Standard
STRG. ....	Steering
SW. ....	Switch
T(22T) ....	Tooth (22 Teeth)
J ....	Japan
ED ....	Europe
AC ....	North America

### Important Information

- The parts that have a dot "." on the left side of the "Ref. No." are exclusive for HRC products. To purchase these parts, consult your Honda dealer.
- The parts that have no dot are Honda products and can be purchased from your nearest Honda motorcycle dealer, or from HRC-JAPAN/EUROPE if you can't obtain the parts locally.

## Fuel Hose, general purpose hoses and vinyl hose

- The standard part fuel hose, general purpose hose and vinyl hose may be substituted by the coiled bulk part.
- When ordering the standard part fuel hose, general purpose hose and vinyl hose use the bulk part number written in the parts catalogue in brackets ( ) underneath the part name, or use the catalogue below.  
(The bulk part standard length is 1 m, however, those displayed in the catalogue < > are available in 3 m and 8 m lengths.)
- When exchanging the hose, cut and use at the specified length as mentioned in the part name.  
(For the method of cutting the bulk part, and method of filling out orders etc., please refer to the service manual and the instructions issued with the bulk part.)
- The list below is a catalogue of the standard part numbers and bulk part numbers. Note that those numbers are applicable to the listed replacement parts only.

Fuel Hoses/Tubes			
Standard Part No.	Bulk Part No.	Bulk Part	
		Inner Diameter (mm)	Length (m)
95001-30xxx-2x	95001-30001-20M	3.0	1
95001-30xxx-3x	95001-30001-30M	3.0	1
95001-30xxx-4x	95001-30001-40M	3.0	1
95001-35xxx-2x	95001-35001-50M	3.5	1
	<95001-35003-50M>		3
95001-35xxx-3x	95001-35001-60M	3.5	1
	<95001-35003-60M>		3
95001-35xxx-4x	95001-35001-60M	3.5	1
	<95001-35003-60M>		3
95001-35xxx-5x	95001-35001-50M	3.5	1
	<95001-35003-50M>		3
95001-35xxx-6x	95001-35001-60M	3.5	1
	<95001-35003-60M>		3
95001-45xxx-2x	95001-45001-50M	4.5	1
	<95001-45003-50M>		3
95001-45xxx-3x	95001-45001-60M	4.5	1
	<95001-45003-60M>		3
	<95001-45008-60M>		8
95001-45xxx-4x	95001-45001-60M	4.5	1
	<95001-45003-60M>		3
	<95001-45008-60M>		8
95001-45xxx-5x	95001-45001-50M	4.5	1
	<95001-45003-50M>		3
95001-45xxx-6x	95001-45001-60M	4.5	1
	<95001-45003-60M>		3
	<95001-45008-60M>		8
95001-55xxx-2x	95001-55001-50M	5.5	1
	<95001-55003-50M>		3
	<95001-55008-50M>		8

Fuel Hoses/Tubes			
Standard Part No.	Bulk Part No.	Bulk Part	
		Inner Diameter (mm)	Length (m)
95001-55xxx-3x	95001-55001-60M	5.5	1
	<95001-55003-60M>		3
	<95001-55008-60M>		8
95001-55xxx-4x	95001-55001-60M	5.5	1
	<95001-55003-60M>		3
	<95001-55008-60M>		8
95001-55xxx-5x	95001-55001-50M	5.5	1
	<95001-55003-50M>		3
	<95001-55008-50M>		8
95001-55xxx-6x	95001-55001-60M	5.5	1
	<95001-55003-60M>		3
	<95001-55008-60M>		8
95001-75xxx-2x	95001-75001-50M	7.5	1
	<95001-75003-50M>		3
95001-75xxx-3x	95001-75001-60M	7.5	1
	<95001-75003-60M>		3
	<95001-75008-60M>		8
95001-75xxx-4x	95001-75001-60M	7.5	1
	<95001-75003-60M>		3
	<95001-75008-60M>		8
95001-75xxx-5x	95001-75001-50M	7.5	1
	<95001-75003-50M>		3
95001-75xxx-6x	95001-75001-60M	7.5	1
	<95001-75003-60M>		3
	<95001-75008-60M>		8
95001-80xxx-2x	95001-80001-50M	8.0	1
95001-80xxx-3x	95001-80001-60M	8.0	1
95001-80xxx-4x	95001-80001-60M	8.0	1
95001-80xxx-5x	95001-80001-50M	8.0	1
95001-80xxx-6x	95001-80001-60M	8.0	1

Vinyl Tube				
Standard Part No.	Bulk Part No.	Bulk Part		
		Inner Diameter (mm)	Outer Diameter (mm)	Length (m)
95003-01xxx-3x	95003-01001-60M <95003-01003-60M>	2.9	6.8	1 3
95003-01xxx-60	95003-01001-60M <95003-01003-60M>	2.9	6.8	1 3
95003-03xxx-3x	95003-03001-60M <95003-03003-60M>	3.0	6.0	1 3
95003-03xxx-60	95003-03001-60M <95003-03003-60M>	3.0	6.0	1 3
95003-05xxx-3x	95003-05001-60M <95003-05003-60M> <95003-05008-60M>	3.5	6.5	1 3 8
95003-05xxx-60	95003-05001-60M <95003-05003-60M> <95003-05008-60M>	3.5	6.5	1 3 8
95003-07xxx-1x	95003-07001-10M <95003-07003-10M> <95003-07008-10M>	4.0	7.0	1 3 8
95003-07xxx-20	95003-07001-10M <95003-07003-10M> <95003-07008-10M>	4.0	7.0	1 3 8
95003-07xxx-3x	95003-07001-60M <95003-07003-60M> <95003-07008-60M>	4.0	7.0	1 3 8
95003-07xxx-60	95003-07001-60M <95003-07003-60M> <95003-07008-60M>	4.0	7.0	1 3 8
95003-07xxx-7x	95003-07001-70M <95003-07003-70M> <95003-07008-70M>	4.0	7.0	1 3 8
95003-08xxx-1x	95003-08001-10M <95003-08003-10M> <95003-08008-10M>	4.5	6.5	1 3 8
95003-09xxx-3x	95003-09001-60M <95003-09003-60M>	4.5	8.0	1 3
95003-09xxx-60	95003-09001-60M <95003-09003-60M>	4.5	8.0	1 3
95003-10xxx-1x	95003-10001-10M <95003-10003-10M>	5.0	8.0	1 3
95003-10xxx-20	95003-10001-10M <95003-10003-10M>	5.0	8.0	1 3
95003-10xxx-3x	95003-10001-60M <95003-10003-60M>	5.0	8.0	1 3
95003-10xxx-60	95003-10001-60M <95003-10003-60M>	5.0	8.0	1 3
95003-11xxx-3x	95003-11001-60M <95003-11003-60M> <95003-11008-60M>	5.0	9.0	1 3 8
95003-11xxx-60	95003-11001-60M <95003-11003-60M> <95003-11008-60M>	5.0	9.0	1 3 8
95003-12xxx-1x	95003-12001-10M <95003-12003-10M> <95003-12008-10M>	5.0	7.0	1 3 8
95003-12xxx-20	95003-12001-10M <95003-12003-10M> <95003-12008-10M>	5.0	7.0	1 3 8

Vinyl Tube				
Standard Part No.	Bulk Part No.	Bulk Part		
		Inner Diameter (mm)	Outer Diameter (mm)	Length (m)
95003-14xxx-1x	95003-14001-10M <95003-14003-10M>	6.0	9.0	1 3
95003-14xxx-20	95003-14001-10M <95003-14003-10M>	6.0	9.0	1 3
95003-14xxx-3x	95003-14001-60M <95003-14003-60M>	6.0	9.0	1 3
95003-17xxx-1x	95003-17001-10M <95003-17003-10M>	7.0	9.0	1 3
95003-19xxx-1x	95003-19001-10M <95003-19003-10M> <95003-19008-10M>	7.0	11.0	1 3 8
95003-19xxx-20	95003-19001-10M <95003-19003-10M> <95003-19008-10M>	7.0	11.0	1 3 8
95003-19xxx-3x	95003-19001-60M <95003-19003-60M> <95003-19008-60M>	7.0	11.0	1 3 8
95003-19xxx-60	95003-19001-60M <95003-19003-60M> <95003-19008-60M>	7.0	11.0	1 3 8
95003-21xxx-1x	95003-21001-10M <95003-21003-10M>	8.0	9.0	1 3
95003-21xxx-20	95003-21001-10M <95003-21003-10M>	8.0	9.0	1 3
95003-23xxx-1x	95003-23001-10M <95003-23003-10M>	8.0	12.0	1 3
95003-23xxx-20	95003-23001-10M <95003-23003-10M>	8.0	12.0	1 3
95003-23xxx-3x	95003-23001-60M <95003-23003-60M> <95003-23008-60M>	8.0	12.0	1 3 8
95003-23xxx-60	95003-23001-60M <95003-23003-60M> <95003-23008-60M>	8.0	12.0	1 3 8
95003-25xxx-1x	95003-25001-10M <95003-25003-10M>	9.0	11.0	1 3
95003-25xxx-20	95003-25001-10M <95003-25003-10M>	9.0	11.0	1 3
95003-25xxx-3x	95003-25001-60M <95003-25003-60M>	9.0	11.0	1 3
95003-25xxx-7x	95003-25001-70M <95003-25003-70M>	9.0	11.0	1 3
95003-27xxx-1x	95003-27001-10M <95003-27003-10M>	9.0	13.0	1 3
95003-27xxx-20	95003-27001-10M <95003-27003-10M>	9.0	13.0	1 3
95003-27xxx-3x	95003-27001-60M <95003-27003-60M>	9.0	13.0	1 3
95003-27xxx-60	95003-27001-60M <95003-27003-60M>	9.0	13.0	1 3
95003-33xxx-1x	95003-33001-10M <95003-33003-10M>	10.0	14.0	1 3
95003-33xxx-20	95003-33001-10M <95003-33003-10M>	10.0	14.0	1 3

Vinyl Tube				
Standard Part No.	Bulk Part No.	Bulk Part		
		Inner Diameter (mm)	Outer Diameter (mm)	Length (m)
95003-36xxx-1x	95003-36001-10M <95003-36003-10M> <95003-36008-10M>	11.0	13.0	1 3 8
95003-36xxx-20	95003-36001-10M <95003-36003-10M> <95003-36008-10M>	11.0	13.0	1 3 8
95003-37xxx-3x	95003-37001-60M <95003-37003-60M>	11.0	15.0	1 3
95003-37xxx-60	95003-37001-60M <95003-37003-60M>	11.0	15.0	1 3
95003-38xxx-1x	95003-38001-10M <95003-38003-10M>	12.0	13.0	1 3
95003-38xxx-20	95003-38001-10M <95003-38003-10M>	12.0	13.0	1 3
95003-39xxx-1x	95003-39001-10M <95003-39003-10M>	12.0	14.0	1 3
95003-39xxx-20	95003-39001-10M <95003-39003-10M>	12.0	14.0	1 3
95003-40xxx-20	95003-40001-10M <95003-40003-10M>	12.0	16.0	1 3
95003-40xxx-3x	95003-40001-60M <95003-40003-60M>	12.0	16.0	1 3
95003-40xxx-60	95003-40001-60M <95003-40003-60M>	12.0	16.0	1 3
95003-43xxx-1x	95003-43001-10M <95003-43003-10M> <95003-43008-10M>	13.0	15.0	1 3 8
95003-43xxx-20	95003-43001-10M <95003-43003-10M> <95003-43008-10M>	13.0	15.0	1 3 8
95003-45xxx-1x	95003-45001-10M <95003-45003-10M> <95003-45008-10M>	14.0	18.0	1 3 8
95003-45xxx-20	95003-45001-10M <95003-45003-10M> <95003-45008-10M>	14.0	18.0	1 3 8
95003-50xxx-1x	95003-50001-10M <95003-50003-10M>	16.0	19.0	1 3
95003-50xxx-20	95003-50001-10M <95003-50003-10M>	16.0	19.0	1 3
95003-50xxx-3x	95003-50001-60M <95003-50003-60M>	16.0	19.0	1 3
95003-55xxx-1x	95003-55001-10M <95003-55003-10M>	17.5	20.5	1 3
95003-55xxx-20	95003-55001-10M <95003-55003-10M>	17.5	20.5	1 3
95003-60xxx-1x	95003-60001-10M <95003-60003-10M>	22.0	27.0	1 3
95003-60xxx-20	95003-60001-10M <95003-60003-10M>	22.0	27.0	1 3
95003-60xxx-3x	95003-60001-60M <95003-60003-60M>	22.0	27.0	1 3
95003-60xxx-60	95003-60001-60M <95003-60003-60M>	22.0	27.0	1 3

General Purpose Hoses			
Standard Part No.	Bulk Part No.	Bulk Part	
		Inner Diameter (mm)	Length (m)
95005-11xxx-3x	95005-11001-30M	11.0	1
95005-11xxx-5x	95005-11001-50M	11.0	1
95005-12xxx-1x	95005-12001-10M	12.0	1
	<95005-12003-10M>		3
95005-12xxx-2x	95005-12001-20M	12.0	1
95005-12xxx-3x	95005-12001-30M	12.0	1
95005-12xxx-5x	95005-12001-50M	12.0	1
95005-14xxx-1x	95005-14001-10M	14.0	1
95005-14xxx-2x	95005-14001-20M	14.0	1
	<95005-14003-20M>		3
95005-14xxx-3x	95005-14001-30M	14.0	1
95005-14xxx-5x	95005-14001-50M	14.0	1
95005-17xxx-1x	95005-17001-10M	17.0	1
95005-17xxx-2x	95005-17001-20M	17.0	1
95005-17xxx-3x	95005-17001-30M	17.0	1
95005-17xxx-5x	95005-17001-50M	17.0	1
95005-30xxx-3x	95005-30001-30M	3.0	1
95005-30xxx-5x	95005-30001-50M	3.0	1
95005-35xxx-1x	95005-35001-10M	3.5	1
	<95005-35003-10M>		3
	<95005-35008-10M>		8
95005-35xxx-2x	95005-35001-20M	3.5	1
95005-35xxx-3x	95005-35001-30M	3.5	1
95005-35xxx-4x	95005-35001-10M	3.5	1
	<95005-35003-10M>		3
	<95005-35008-10M>		8
95005-35xxx-5x	95005-35001-50M	3.5	1
95005-45xxx-1x	95005-45001-10M	4.5	1
	<95005-45003-10M>		3
	<95005-45008-10M>		8
95005-45xxx-2x	95005-45001-20M	4.5	1
95005-45xxx-3x	95005-45001-30M	4.5	1

General Purpose Hoses			
Standard Part No.	Bulk Part No.	Bulk Part	
		Inner Diameter (mm)	Length (m)
95005-45xxx-4x	95005-45001-10M	4.5	1
	<95005-45003-10M>		3
	<95005-45008-10M>		8
95005-45xxx-5x	95005-45001-50M	4.5	1
95005-50xxx-3x	95005-50001-30M	5.0	1
	<95005-50003-30M>		3
95005-50xxx-5x	95005-50001-50M	5.0	1
95005-55xxx-1x	95005-55001-10M	5.3	1
	<95005-55003-10M>		3
	<95005-55008-10M>		8
95005-55xxx-2x	95005-55001-20M	5.3	1
	<95005-55003-20M>		3
95005-55xxx-4x	95005-55001-10M	5.3	1
	<95005-55003-10M>		3
	<95005-55008-10M>		8
95005-65xxx-1x	95005-65001-10M	6.5	1
	<95005-65003-10M>		3
95005-65xxx-2x	95005-65001-20M	6.5	1
95005-70xxx-3x	95005-70001-30M	7.0	1
	<95005-70003-30M>		3
95005-70xxx-5x	95005-70001-50M	7.0	1
95005-75xxx-1x	95005-75001-10M	7.3	1
	<95005-75003-10M>		3
95005-75xxx-2x	95005-75001-20M	7.3	1
95005-80xxx-1x	95005-80001-10M	8.0	1
	<95005-80003-10M>		3
95005-80xxx-2x	95005-80001-20M	8.0	1
95005-80xxx-3x	95005-80001-30M	8.0	1
95005-80xxx-5x	95005-80001-50M	8.0	1
95005-91xxx-3x	95005-91001-30M	12.0	1
95005-91xxx-5x	95005-91001-50M	12.0	1
95005-92xxx-3x	95005-92001-30M	12.0	1
95005-92xxx-5x	95005-92001-50M	12.0	1

NOTE: X is displayed to represent the omitted numerals and letters of the roman alphabet.

**CAUTION: It is DANGEROUS to confuse the fuel hose with the general purpose hose or vinyl hose.**

Never use a general purpose hose or vinyl hose in place of a fuel hose or vice versa. Always use the correct bulk part in the parts list, according to the service manual or the instructions issued with the bulk part.

• Bulk part number of fuel hose, general purpose hose and vinyl hose.

(Example)

95001 - 75001 - 50M

Bulk part number: Refers to the bulk part.

Marking code (hose type): (fuel hose and general purpose hose)

Change code (for added hose): (Vinyl hose)

- Indicates number mark or change sequence, however, the code for the bulk part must be strictly 0 (zero).

Types of code:

- Fuel hose
  - 2: Red outside braid (3 mm inside dia. only)
  - 5: Black inside braid
  - 3: Red (3 mm inside dia. only)
  - 4: Ash gray with red stripe (3 mm inside dia. only)
  - 6: Black

- Vinyl hose
  - 1: Clear
  - 2: Black
  - 3: Light red
  - 6: Light red
  - 7: Pale black

- General hose
  - 1: Ash gray
  - 2: Ash gray
  - 3: Black
  - 5: Black

Lengths: 001: 1 m (standard)  
003: 3 m  
008: 8 m

I.D code: (fuel hose and general purpose hose)

30: 3.0 mm	11: 11 mm
35: 3.5 mm	91: 12 mm (outside dia. 15) mm
45: 4.5 mm	92: 12 mm (outside dia. 16) mm
50: 5.0 mm	12: 12 mm (outside dia. 17) mm
55: 5.3 mm, 5.5 mm	14: 14 mm
65: 6.5 mm	17: 17 mm
70: 7.0 mm	
75: 7.3 mm, 7.5 mm	
80: 8.0 mm	

ID./OD. code: (vinyl hose)

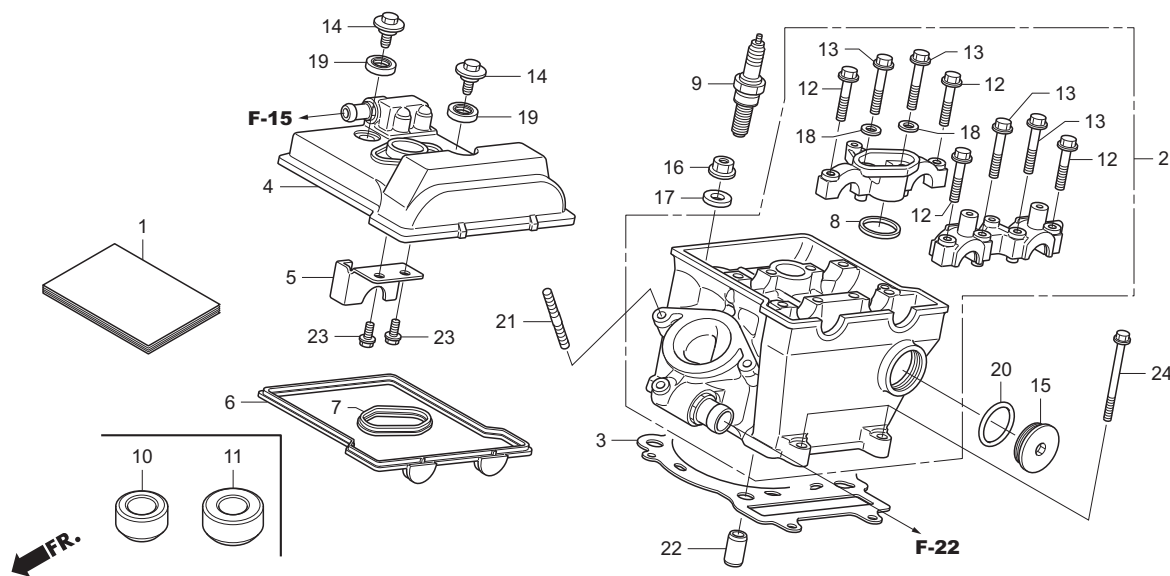
01: ID. 2.9, OD. 6.8 mm	14: ID. 6.0, OD. 9.0 mm	37: ID. 11.0, OD. 15.0 mm
03: ID. 3.0, OD. 6.0 mm	17: ID. 7.0, OD. 9.0 mm	38: ID. 12.0, OD. 13.0 mm
05: ID. 3.5, OD. 6.5 mm	19: ID. 7.0, OD. 11.0 mm	39: ID. 12.0, OD. 14.0 mm
07: ID. 4.0, OD. 7.0 mm	21: ID. 8.0, OD. 9.0 mm	40: ID. 12.0, OD. 16.0 mm
08: ID. 4.5, OD. 6.5 mm	23: ID. 8.0, OD. 12.0 mm	43: ID. 13.0, OD. 15.0 mm
09: ID. 4.5, OD. 8.0 mm	25: ID. 9.0, OD. 11.0 mm	45: ID. 14.0, OD. 18.0 mm
12: ID. 5.0, OD. 7.0 mm	27: ID. 9.0, OD. 13.0 mm	50: ID. 16.0, OD. 19.0 mm
10: ID. 5.0, OD. 8.0 mm	33: ID. 10.0, OD. 14.0 mm	55: ID. 17.5, OD. 20.5 mm
11: ID. 5.0, OD. 9.0 mm	36: ID. 11.0, OD. 13.0 mm	60: ID. 22.0, OD. 27.0 mm

Hose type: 1: Fuel hose  
3: Vinyl hose  
5: General hose



Block No.  
**E-1**  
**CYLINDER HEAD**

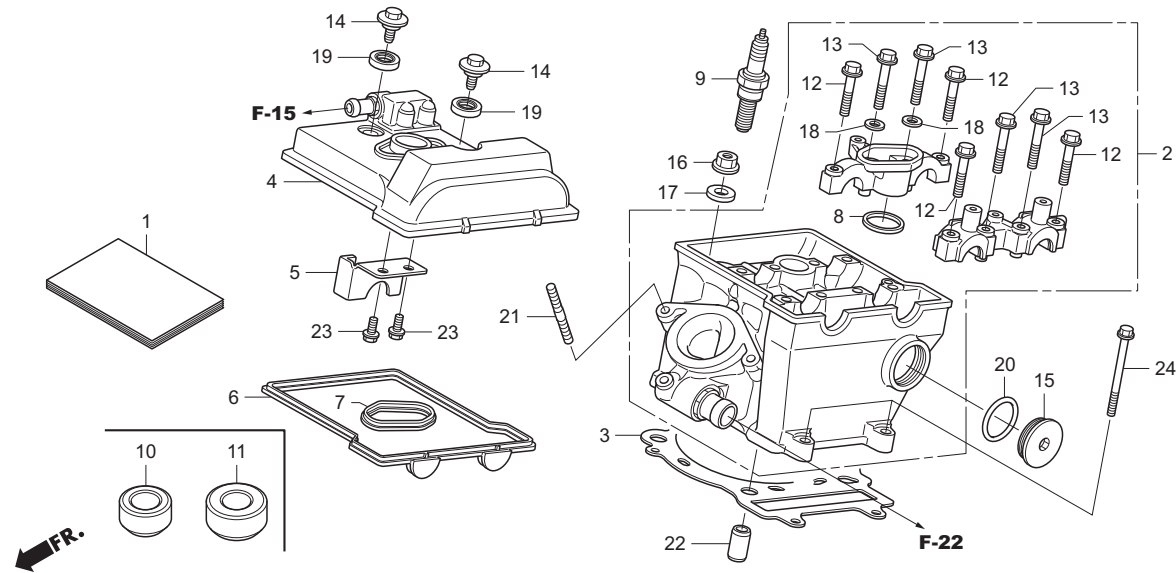
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	00X30-NX7-000	SET UP MANUAL PARTS LIST .....	1	J
•	00X31-NX7-670	SET UP MANUAL PARTS LIST .....	1	AC
•	00X32-NX7-650	SET UP MANUAL PARTS LIST .....	1	ED
• 2	12010-NX7-000	HEAD ASSY., CYLINDER .....	1	
• 3	12251-NX7-003	GASKET, CYLINDER HEAD .....	1	
• 4	12310-NX7-000	COVER COMP., CYLINDER HEAD .....	1	
• 5	12316-NX7-000	PLATE, BREATHER .....	1	
• 6	12391-NX7-000	GASKET COMP., A, HEAD COVER .....	1	
• 7	12394-NX7-000	GASKET, B, HEAD COVER .....	1	
• 8	12395-KSE-670	GASKET, PLUG HOLE .....	1	
• 9	31910-NX7-003	SPARK PLUG R0452A-10 .....	1	
• 10	89005-NX7-000	FLAT CUTTER (IN. SEAT) .....	(1)	
• 11	89006-NX7-000	FLAT CUTTER (EXH. SEAT) .....	(1)	
• 12	90011-NX7-000	BOLT, FLANGE, 6X35 .....	4	
• 13	90012-NX7-000	BOLT, FLANGE, 6X40 .....	4	
• 14	90017-MY9-790	BOLT, HEAD COVER .....	2	
• 15	90087-NX7-000	CAP, 30mm .....	1	
• 16	90202-NX7-000	NUT, FLANGE, 9mm .....	4	
• 17	90405-MFL-000	WASHER, PLAIN, 9mm .....	4	
• 18	90463-ML7-000	WASHER, SEALING (6.5mm) .....	2	

Block No.  
**E-1**  
**CYLINDER HEAD**

**2012 NSF250R**



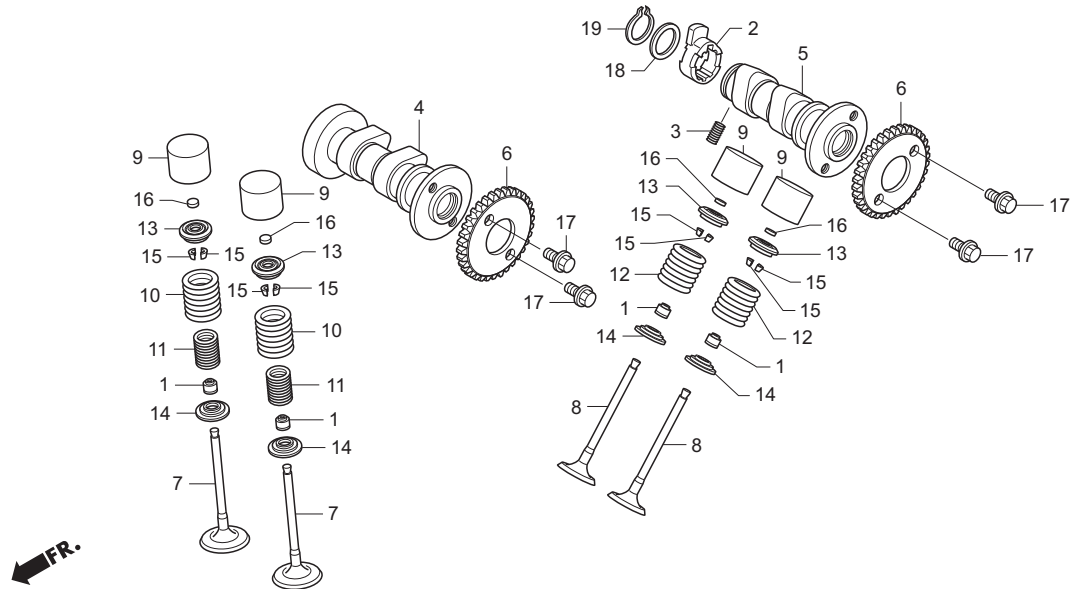
Ref. No.	Part No.	Description	Reqd. No.	Remarks
19	90543-MV9-670	RUBBER, MOUNT .....	2	
20	91356-425-005	O-RING, 29.7X2.4 .....	1	
21	92900-06018-0E	BOLT, STUD, 6X18 .....	3	
22	94301-12200	PIN, DOWEL, 12X20 .....	2	
23	96001-06012-00	BOLT, FLANGE, SH, 6X12 .....	2	
24	96001-06065-00	BOLT, FLANGE, SH 6X65 .....	2	

Block No.

**E-2**

**CAMSHAFT / VALVE**

**2012 NSF250R**



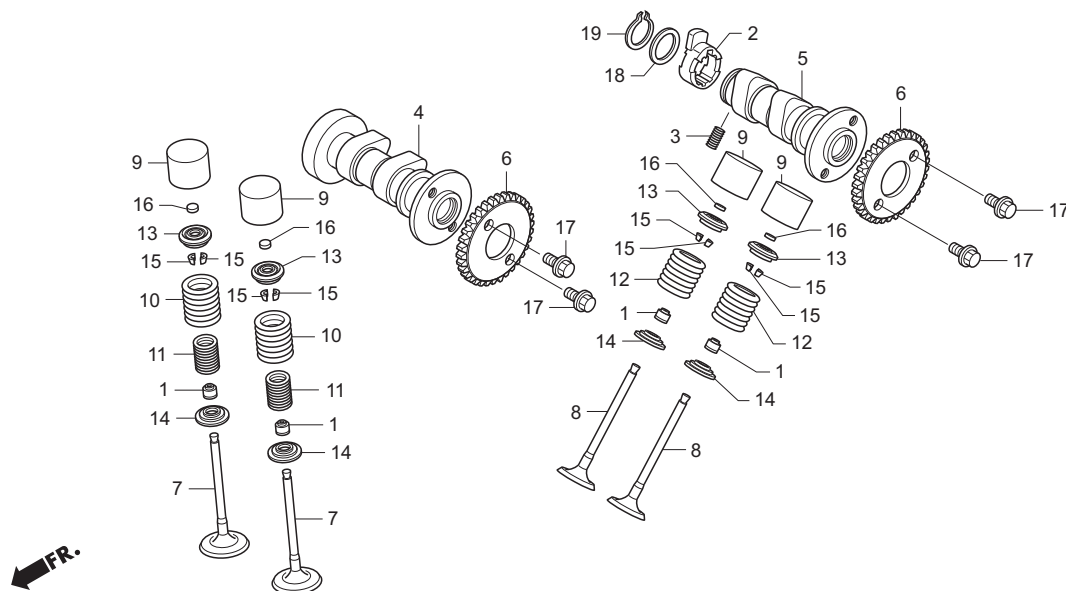
Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	12208-NX7-003	SEAL, VALVE STEM .....	4	Dark green / Black paint
• 2	14105-NX7-000	PLATE, DECOMP CAM .....	1	
• 3	14106-MBN-670	SPG, DECOMP .....	1	
• 4	14110-NX7-000	CAM SHAFT COMP., IN. ....	1	
• 5	14210-NX7-000	CAM SHAFT COMP., EXH. ....	1	
• 6	14321-NX7-010	SPROCKET, CAM .....	2	
• 7	14711-NX7-000	VALVE, IN. ....	2	
• 8	14721-NX7-000	VALVE, EXH. ....	2	
• 9	14731-NX7-000	LIFTER, VALVE .....	4	
• 10	14751-NX7-000	SPG, IN. VALVE OUTER .....	2	Blue paint
• 11	14752-NX7-000	SPG, IN. VALVE INNER .....	2	Blue paint
• 12	14761-NX7-000	SPG, EXH. VALVE .....	2	Red paint
• 13	14771-NX7-000	RETAINER, VALVE SPG. ....	4	
• 14	14775-NX7-000	SEAT, VALVE SPG. ....	4	
• 15	14781-ML0-720	COTTER, VALVE .....	8	
• 16	14901-KT7-013	SHIM, TAPPET 1.20 .....	4	
	14902-KT7-013	SHIM, TAPPET 1.225 .....	4	
	14903-KT7-013	SHIM, TAPPET 1.25 .....	4	
	14904-KT7-013	SHIM, TAPPET 1.275 .....	4	
	14905-KT7-013	SHIM, TAPPET 1.30 .....	4	

Block No.

**E-2**

**CAMSHAFT / VALVE**

**2012 NSF250R**



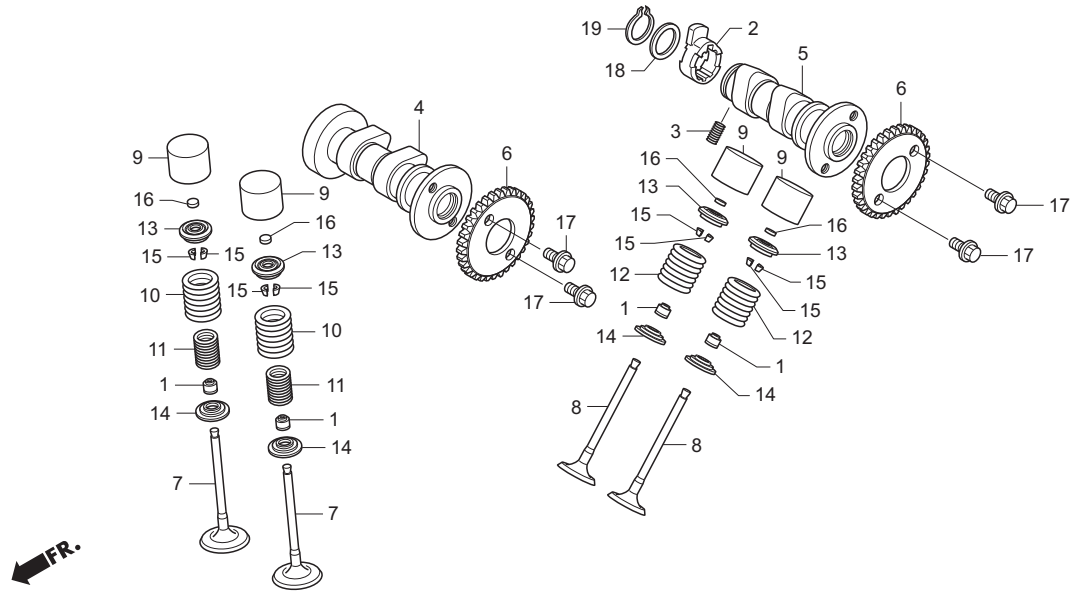
Ref. No.	Part No.	Description	Reqd. No.	Remarks
16)	14906-KT7-013	SHIM, TAPPET 1.325 .....	4	
	14907-KT7-013	SHIM, TAPPET 1.35 .....	4	
	14908-KT7-013	SHIM, TAPPET 1.375 .....	4	
	14909-KT7-013	SHIM, TAPPET 1.40 .....	4	
	14910-KT7-013	SHIM, TAPPET 1.425 .....	4	
	14911-KT7-013	SHIM, TAPPET 1.45 .....	4	
	14912-KT7-013	SHIM, TAPPET 1.475 .....	4	
	14913-KT7-013	SHIM, TAPPET 1.50 .....	4	
	14914-KT7-013	SHIM, TAPPET 1.525 .....	4	
	14915-KT7-013	SHIM, TAPPET 1.55 .....	4	
	14916-KT7-013	SHIM, TAPPET 1.575 .....	4	
	14917-KT7-013	SHIM, TAPPET 1.60 .....	4	
	14918-KT7-013	SHIM, TAPPET 1.625 .....	4	
	14919-KT7-013	SHIM, TAPPET 1.65 .....	4	
	14920-KT7-013	SHIM, TAPPET 1.675 .....	4	
	14921-KT7-013	SHIM, TAPPET 1.70 .....	4	
	14922-KT7-013	SHIM, TAPPET 1.725 .....	4	
	14923-KT7-013	SHIM, TAPPET 1.75 .....	4	
	14924-KT7-013	SHIM, TAPPET 1.775 .....	4	
	14925-KT7-013	SHIM, TAPPET 1.80 .....	4	
	14926-KT7-013	SHIM, TAPPET 1.825 .....	4	
	14927-KT7-013	SHIM, TAPPET 1.85 .....	4	
	14928-KT7-013	SHIM, TAPPET 1.875 .....	4	

Block No.

**E-2**

**CAMSHAFT / VALVE**

**2012 NSF250R**



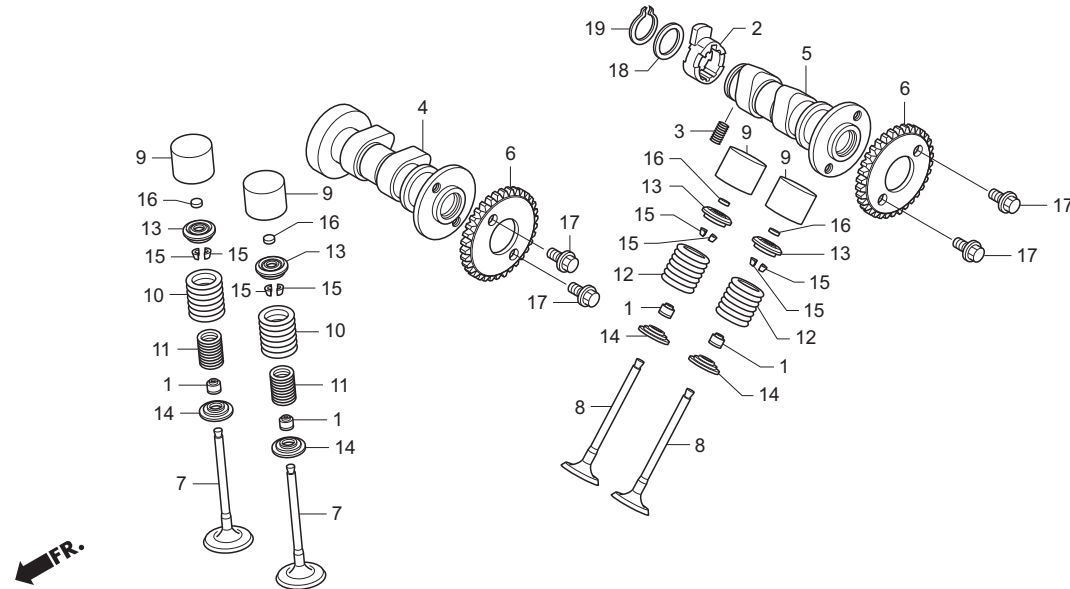
Ref. No.	Part No.	Description	Reqd. No.	Remarks
16)	14929-KT7-013	SHIM, TAPPET 1.90 .....	4	
	14930-KT7-013	SHIM, TAPPET 1.925 .....	4	
	14931-KT7-013	SHIM, TAPPET 1.95 .....	4	
	14932-KT7-013	SHIM, TAPPET 1.975 .....	4	
	14933-KT7-013	SHIM, TAPPET 2.00 .....	4	
	14934-KT7-013	SHIM, TAPPET 2.025 .....	4	
	14935-KT7-013	SHIM, TAPPET 2.05 .....	4	
	14936-KT7-013	SHIM, TAPPET 2.075 .....	4	
	14937-KT7-013	SHIM, TAPPET 2.10 .....	4	
	14938-KT7-013	SHIM, TAPPET 2.125 .....	4	
	14939-KT7-013	SHIM, TAPPET 2.15 .....	4	
	14940-KT7-013	SHIM, TAPPET 2.175 .....	4	
	14941-KT7-013	SHIM, TAPPET 2.20 .....	4	
	14942-KT7-013	SHIM, TAPPET 2.225 .....	4	
	14943-KT7-013	SHIM, TAPPET 2.25 .....	4	
	14944-KT7-013	SHIM, TAPPET 2.275 .....	4	
	14945-KT7-013	SHIM, TAPPET 2.30 .....	4	
	14946-KT7-013	SHIM, TAPPET 2.325 .....	4	
	14947-KT7-013	SHIM, TAPPET 2.35 .....	4	
	14948-KT7-013	SHIM, TAPPET 2.375 .....	4	
	14949-KT7-013	SHIM, TAPPET 2.40 .....	4	
	14950-KT7-013	SHIM, TAPPET 2.425 .....	4	
	14951-KT7-013	SHIM, TAPPET 2.45 .....	4	

Block No.

**E-2**

**CAMSHAFT / VALVE**

**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
16)	14952-KT7-013	SHIM, TAPPET 2.475 .....	4	
	14953-KT7-013	SHIM, TAPPET 2.50 .....	4	
	14954-KT7-013	SHIM, TAPPET 2.525 .....	4	
	14955-KT7-013	SHIM, TAPPET 2.55 .....	4	
	14956-KT7-013	SHIM, TAPPET 2.575 .....	4	
	14957-KT7-013	SHIM, TAPPET 2.60 .....	4	
	14958-KT7-013	SHIM, TAPPET 2.625 .....	4	
	14959-KT7-013	SHIM, TAPPET 2.65 .....	4	
	14960-KT7-013	SHIM, TAPPET 2.675 .....	4	
	14961-KT7-013	SHIM, TAPPET 2.70 .....	4	
	14962-KT7-013	SHIM, TAPPET 2.725 .....	4	
	14963-KT7-013	SHIM, TAPPET 2.75 .....	4	
	14964-KT7-013	SHIM, TAPPET 2.775 .....	4	
	14965-KT7-013	SHIM, TAPPET 2.80 .....	4	
	14966-KT7-013	SHIM, TAPPET 2.825 .....	4	
	14967-KT7-013	SHIM, TAPPET 2.85 .....	4	
	14968-KT7-013	SHIM, TAPPET 2.875 .....	4	
	14969-KT7-013	SHIM, TAPPET 2.90 .....	4	
• 17	90082-NX7-000	BOLT, FLANGE, KNOCK, 7X9 .....	4	
• 18	90404-NX7-000	WASHER, 18X23 .....	1	
19	90601-030-000	CIRCLIP, 18mm .....	1	

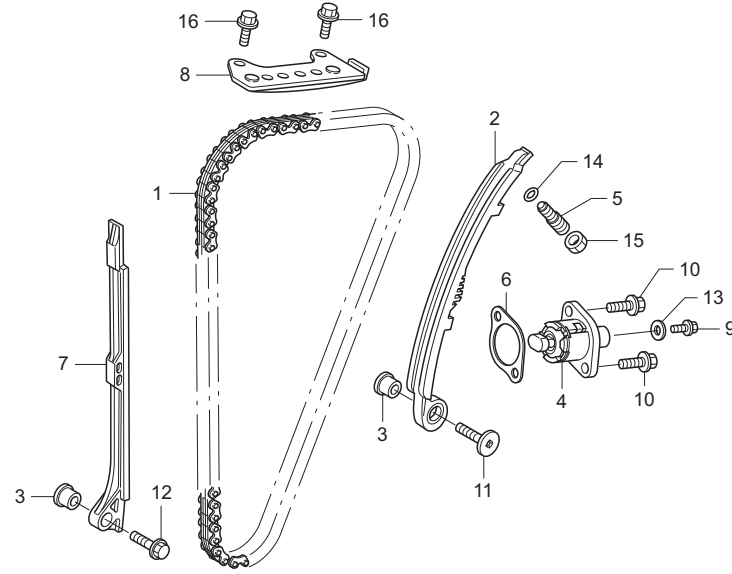


Block No.

**E-3**

**CAM CHAIN / TENSIONER**

**2012 NSF250R**

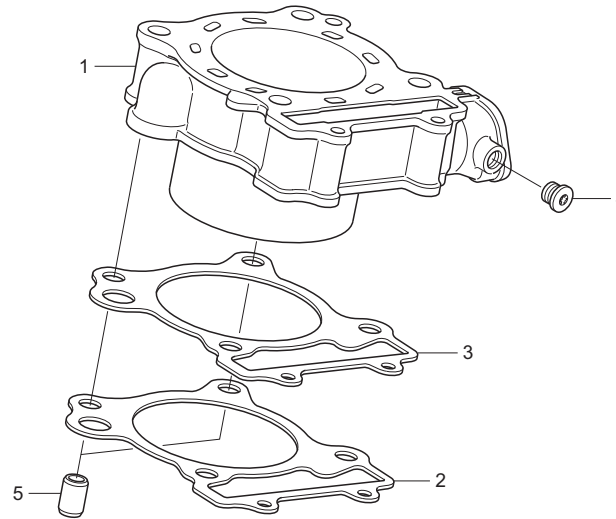


Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	14401-NX7-003	CHAIN, CAM . . . . .	1	
• 2	14510-NX7-010	TENSIONER COMP., CAM CHAIN . . . . .	1	
• 3	14518-NX7-000	COLLAR, TENSIONER & GUIDE . . . . .	2	
• 4	14520-NX7-003	LIFTER ASSY., TENSIONER . . . . .	1	
• 5	14526-NX7-000	BOLT, TENSIONER ADJUSTING . . . . .	1	
6	14560-MEN-671	GASKET, TENSIONER LIFTER . . . . .	1	
• 7	14621-NX7-010	GUIDE A, CAM CHAIN . . . . .	1	
• 8	14630-NX7-000	GUIDE COMP., B, CAM CHAIN . . . . .	1	
9	90004-GHB-600	BOLT, FLANGE, NSHF, 6X10 . . . . .	1	
10	90004-GHB-630	BOLT, FLANGE, NSHF, 6X16 . . . . .	2	
• 11	90041-NX7-000	BOLT, TENSIONER TORX, 6X25 . . . . .	1	
12	90088-MEB-670	BOLT, FLANGE, 6X25 . . . . .	1	
13	90442-397-000	WASHER, SEALING, 6mm . . . . .	1	
14	91301-216-000	O-RING, 5.5X1.5 . . . . .	1	
15	94002-08000-0S	NUT, HEX., 8mm . . . . .	1	
16	95701-06014-00	BOLT, FLANGE, 6X14 . . . . .	2	

Block No.

**E-4  
CYLINDER**

**2012 NSF250R**



**FR.**

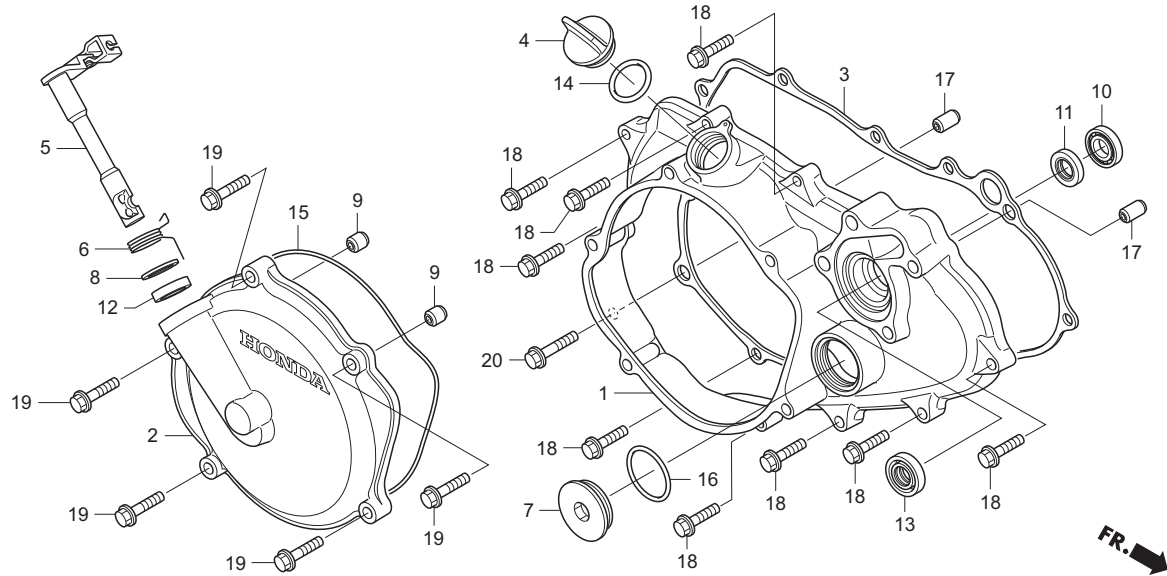
Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	12101-NX7-000	CYLINDER .....	1	
• 2	12191-NX7-003	GASKET 0.20, CYLINDER .....	1	
• 3	12192-NX7-003	PLATE 0.20, SPACER .....	1	
• 4	90023-NX7-000	BOLT, SEALING, 10X8 .....	1	
5	94301-12200	PIN, DOWEL, 12X20 .....	2	

Block No.

**E-5**

**RIGHT CRANKCASE COVER**

**2012 NSF250R**

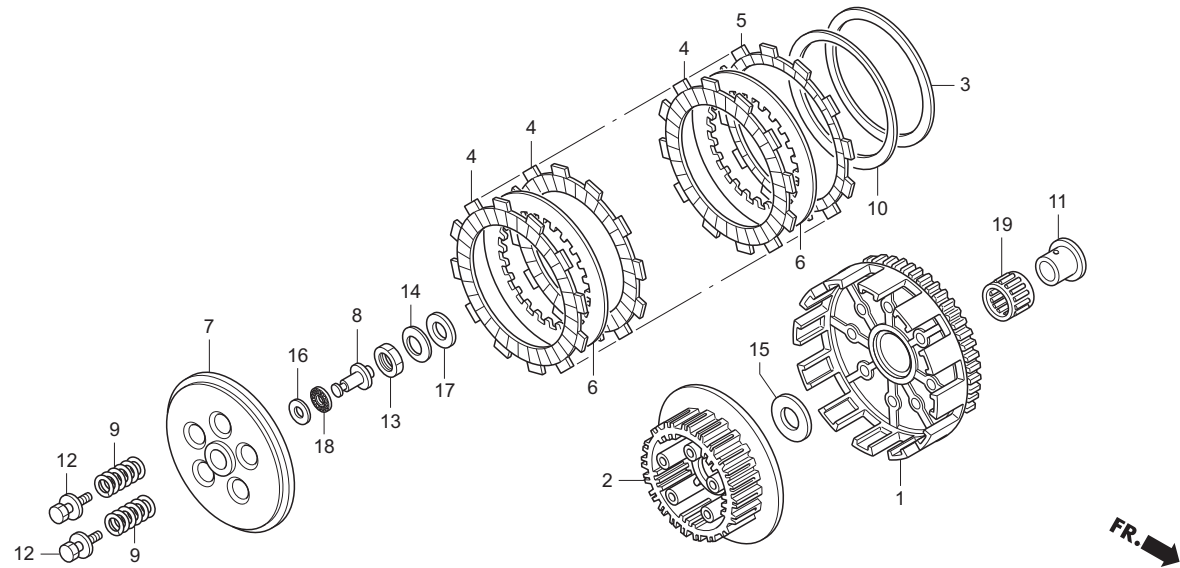


Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	11331-NX7-000	COVER, R. CRANKCASE .....	1	
• 2	11350-NX7-000	COVER COMP., CLUTCH .....	1	
• 3	11391-NX7-000	GASKET, R. COVER .....	1	
• 4	15611-NF4-900	CAP, OIL FILLER .....	1	
• 5	22810-NX7-000	LIFER COMP., CLUTCH .....	1	
• 6	22816-NX7-000	SPG., CLUTCH LEVER .....	1	
• 7	90087-NX7-000	CAP, 30mm .....	1	
8	90525-GC4-700	WASHER, BRAKE ARM .....	1	
9	90702-MB0-000	PIN, DOWEL, 8X8 .....	2	
10	91007-KA3-740	BRG., BALL, 12X24X6 .....	1	
11	91201-965-000	OIL SEAL, 12X22X5 .....	1	
12	91204-KK0-003	OIL SEAL, 12X18X5 .....	1	
13	91211-KSE-671	SEAL, WATER PUMP .....	1	
14	91307-035-000	O-RING, 18X3 .....	1	
15	91311-KS6-700	O-RING, SPECIAL .....	1	
16	91356-425-005	O-RING, 29.7X2.4 .....	1	
17	94301-08140	PIN, DOWEL, 8X14 .....	2	
18	96001-06025-00	BOLT, FLANGE, SH, 6X25 .....	9	
19	96001-06028-00	BOLT, FLANGE, SH, 6X28 .....	5	
20	96001-06032-00	BOLT, FLANGE, SH, 6X32 .....	1	

Block No.

**E-6  
CLUTCH**

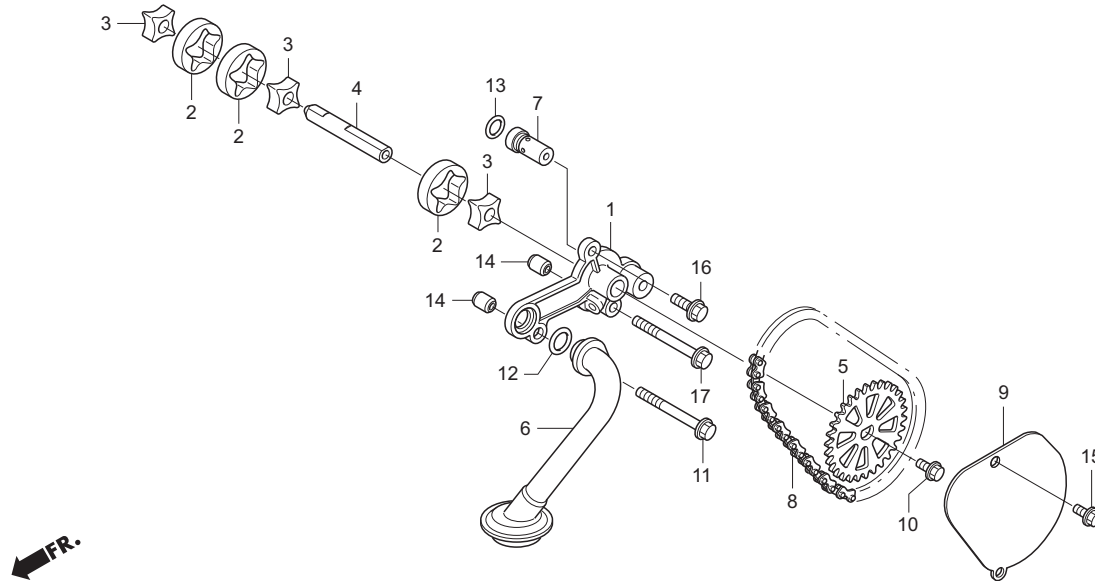
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	22100-NX7-000	OUTER COMP., CLUTCH .....	1	
• 2	22120-NX4-010	CENTER, CLUTCH .....	1	22120-NX4-000 Cannot be used.
3	22125-435-000	SEAT, JUDDER SPG. ....	1	
4	22201-KRN-670	DISK, CLUTCH FRICTION .....	6	
5	22202-KSC-670	DISK, B, CLUTCH FRICTION .....	1	
6	22321-KF0-770	PLATE, CLUTCH .....	6	
• 7	22351-NF4-760	PLATE, CLUTCH PRESSURE .....	1	
• 8	22352-NX7-000	PIECE, CLUTCH LIFTER .....	1	
9	22401-KSC-670	SPG., CLUTCH .....	5	Yellow paint
10	22402-435-000	SPG., JUDDER .....	1	
• 11	28237-NX4-000	COLLAR, DISTANCE, 20X26X26 .....	1	
12	90047-PH7-000	BOLT-WASHER, 6X22 .....	5	
13	90235-KA4-000	NUT, 18mm .....	1	
14	90432-428-000	WASHER, LOCK .....	1	
• 15	90451-NX4-000	WASHER, THRUST, 20mm .....	1	
16	90452-147-003	WASHER, THRUST, 12mm .....	1	
17	90456-KA4-000	WASHER, THRUST, 18X32 .....	1	
18	91001-147-006	BRG., NEEDLE, 12mm .....	1	
19	91104-PL9-008	BRG., NEEDLE, 26X31X22 .....	1	

Block No.  
**E-7**  
**OIL PUMP**

**2012 NSF250R**



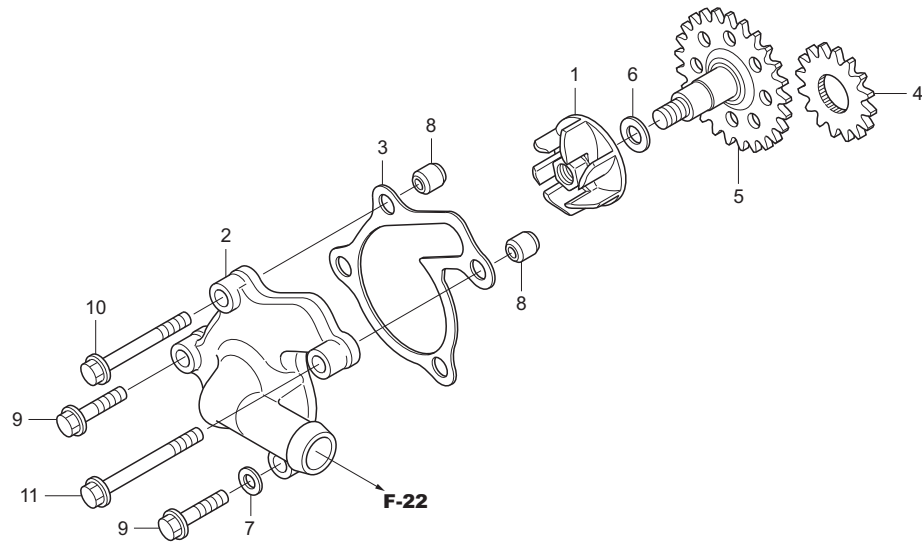
Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	15110-NX7-000	COVER COMP., OIL PUMP .....	1	
2	15122-KK0-000	ROTOR, OIL PUMP OUTER .....	3	
3	15123-KK0-000	ROTOR, OIL PUMP INNER .....	3	
• 4	15132-NX7-000	SHAFT, OIL PUMP .....	1	
• 5	15133-NX7-000	SPROCKET, OIL PUMP DRIVEN .....	1	
• 6	15150-NX7-000	STRAINER COMP., OIL .....	1	
• 7	15220-NX7-000	VALVE ASSY., RELIEF .....	1	Blue paint
8	15401-HN8-A61	CHAIN, OIL PUMP DRIVE .....	1	
• 9	15661-NX7-000	PLATE, OIL SEPARATER .....	1	
• 10	90013-NX7-000	BOLT, FLANGE, 5X10 .....	1	
• 11	90018-NX7-000	BOLT, FLANGE, 6X55 .....	1	Black paint
12	91302-ZE9-003	O-RING, 11.8X2.4 .....	1	
13	91308-PH9-000	O-RING, 8.8X1.9 .....	1	
14	94301-08100	PIN, DOWEL, 8X10 .....	2	
15	96001-06012-00	BOLT, FLANGE, SH, 6X12 .....	1	
16	96001-06016-00	BOLT, FLANGE, SH, 6X16 .....	1	
17	96001-06050-00	BOLT, FLANGE, SH, 6X50 .....	1	

Block No.

**E-8**

**WATER PUMP**

**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	19215-NX7-000	IMPELLER, WATER PUMP .....	1	Left-hand thread
• 2	19221-NX7-000	COVER, WATER PUMP .....	1	
• 3	19229-NX7-000	GASKET, WATER PUMP COVER .....	1	
• 4	19231-NX7-000	GEAR, WATER PUMP DRIVE .....	1	16T
• 5	19240-NX7-000	GEAR COMP., WATER PUMP DN. ....	1	25T
6	90447-KE1-000	WASHER, SEALING, 7mm .....	1	
7	90463-ML7-000	WASHER, SEALING, 6.5mm .....	1	
8	90702-MB0-000	PIN, DOWEL, 8X8 .....	2	
9	96001-06028-00	BOLT, FLANGE, SH, 6X28 .....	2	
10	96001-06055-00	BOLT, FLANGE, SH, 6X55 .....	1	
11	96001-06060-00	BOLT, FLANGE, SH, 6X60 .....	1	

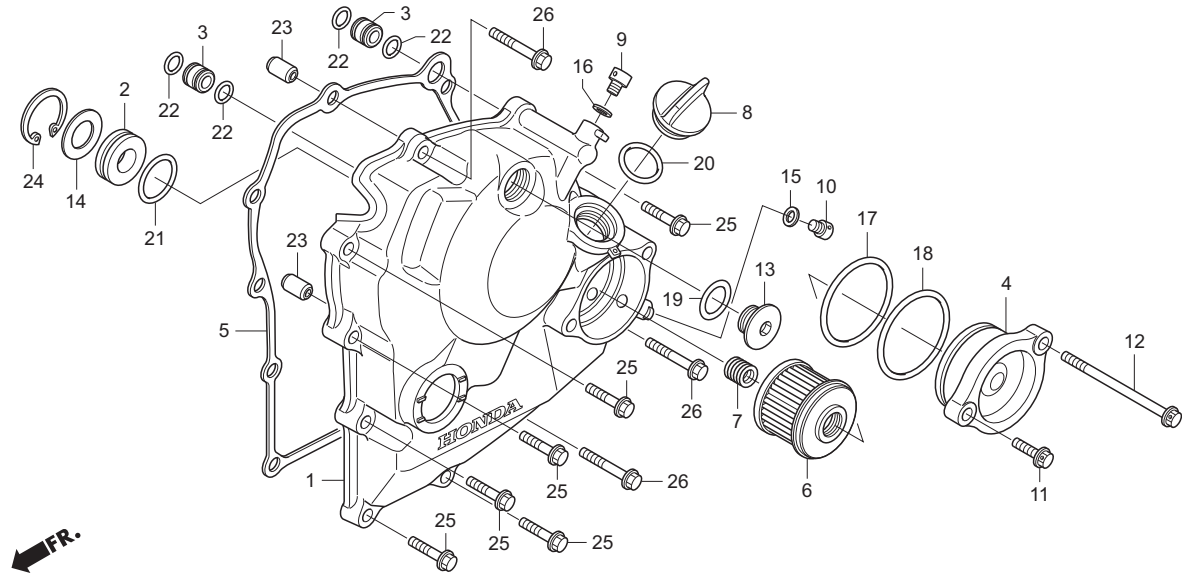


Block No.

**E-9**

**LEFT CRANKCASE COVER**

**2012 NSF250R**



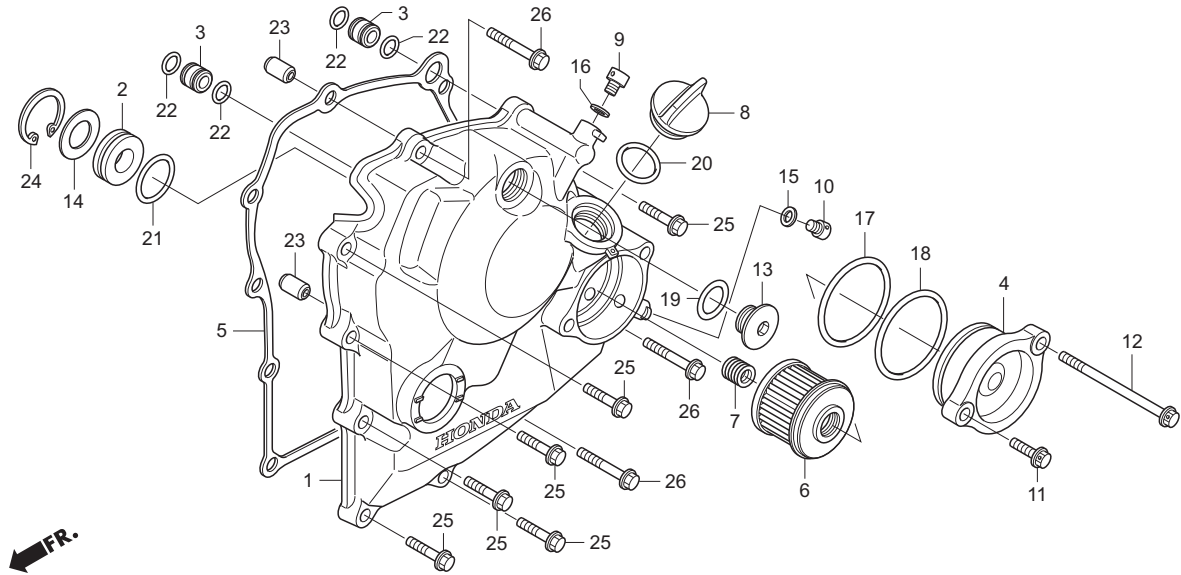
Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	11340-NX7-000	COVER COMP., L. CRANKCASE .....	1	
• 2	11342-NX7-000	BUSH, 10X25X7 .....	1	
• 3	11343-NX7-000	COLLAR, 11X10 .....	2	
• 4	11346-NX7-000	COVER, OIL FILTER .....	1	
• 5	11396-NX7-000	GASKET, L. COVER .....	1	
• 6	15410-NX7-003	ELEMENT COMP., OIL FILTER .....	1	
• 7	15414-NX7-000	SPG., OIL FILTER .....	1	
• 8	15611-NF4-900	CAP, OIL FILLER .....	1	
• 9	90021-NX7-000	BOLT, SEALING, 6X8 .....	1	
• 10	90022-NX7-000	BOLT, SEALING, 8X9.5 .....	1	
• 11	90024-NX7-000	BOLT, FLANGE, SH, 6X16 .....	1	
• 12	90025-NX7-000	BOLT, FLANGE, SH, 6X75 .....	1	
13	90084-MEN-670	CAP, 14mm .....	1	
• 14	90405-NX7-000	WASHER, 15X26 .....	1	
15	90475-703-000	WASHER, C, 8mm .....	1	
16	90543-273-000	PACKING, FR. FORK DRAIN COCK .....	1	
17	91302-PA9-003	O-RING, 39.8X2.2 .....	1	
18	91302-PL4-003	O-RING, 41.8X2.2 .....	1	
19	91303-377-000	O-RING, 13.8X2.5 .....	1	
20	91307-035-000	O-RING, 18X3 .....	1	

Block No.

**E-9**

**LEFT CRANKCASE COVER**

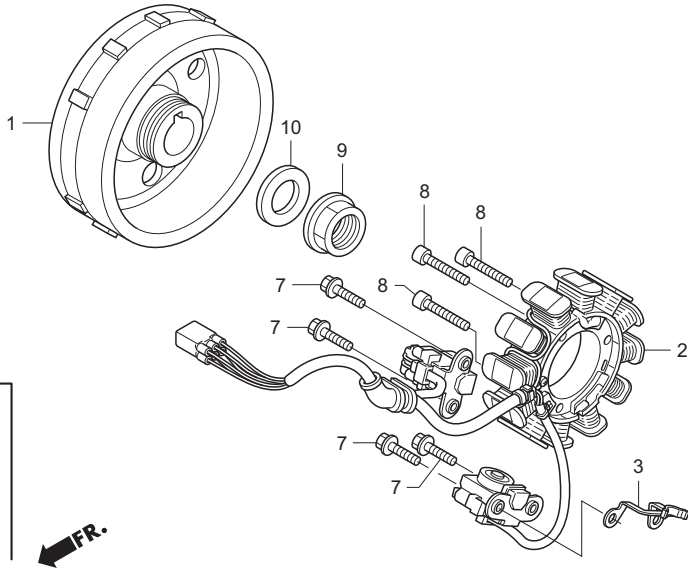
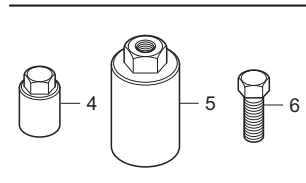
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
21	91308-PW4-003	O-RING, 21.8X1.9 .....	1	
22	91313-MN5-004	O-RING, 7.8X1.9 .....	4	
23	94301-08140	PIN, DOWEL, 8X14 .....	2	
24	94520-26000	CIRCLIP, IN. 26 .....	1	
25	96001-06025-00	BOLT, FLANGE, SH, 6X25 .....	6	
26	96001-06032-00	BOLT, FLANGE, SH, 6X32 .....	3	

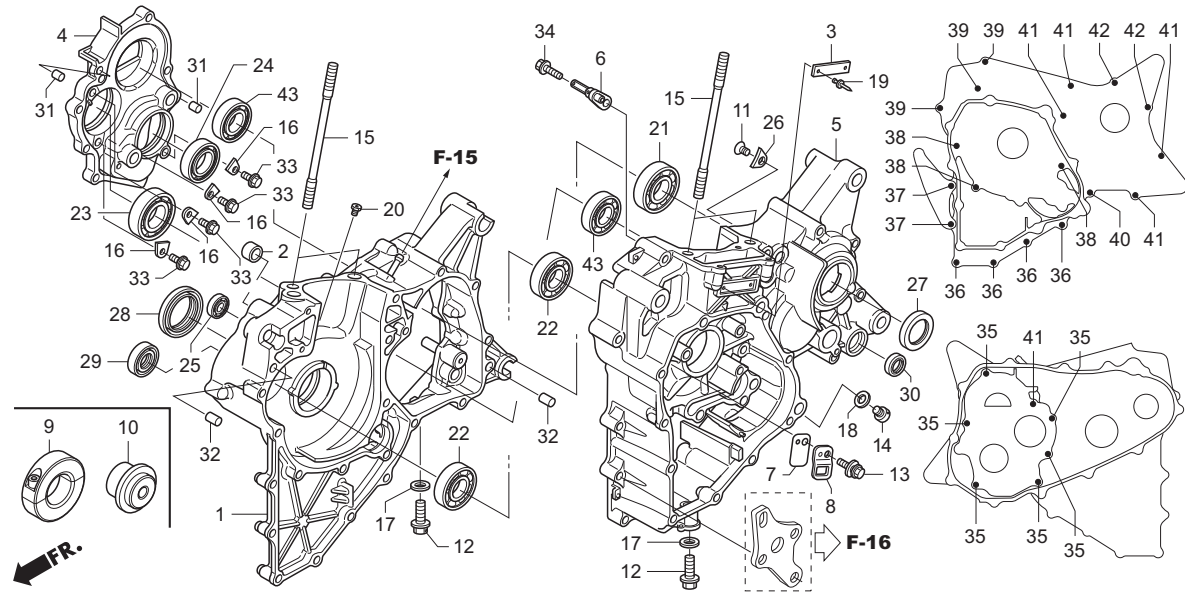
Block No.  
**E-10**  
**GENERATOR**

**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	31110-NX7-003	FLYWHEEL COMP. ....	1	
• 2	31120-NX7-003	STATOR COMP. ....	1	
3	32112-MEN-A30	CLAMPER, CORD ....	1	
• 4	89009-NX7-000	ADAPTER, FLYWHEEL PULLER ....	(1)	
• 5	89010-NX7-000	HOLDER, FLYWHEEL PULLER ....	(1)	
• 6	89011-NX7-000	BOLT, FLYWHEEL PULLER ....	(1)	
7	90005-896-000	BOLT, FLANGE, 5X16 ....	4	
8	90102-V02-000	BOLT, SOCKET, 5X25 ....	3	
• 9	90201-NX7-000	NUT, FLANGE, 14mm ....	1	
10	90432-KR8-750	WASHER, 14mm ....	1	

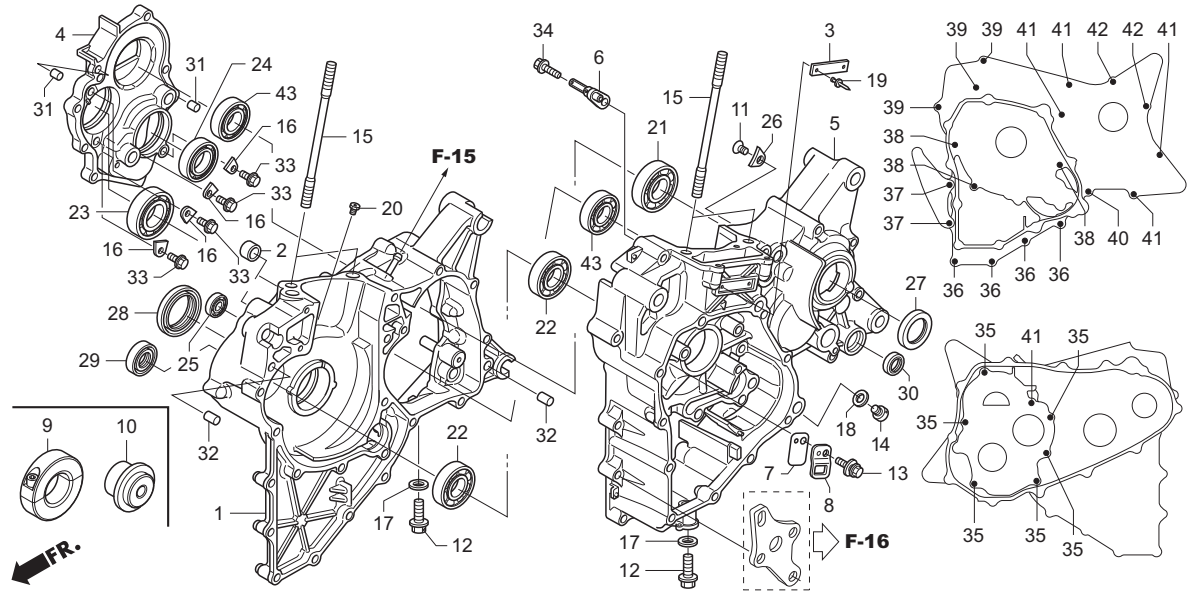
Block No.  
**E-11**  
**CRANKCASE**  
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	11100-NX7-000	CRANKCASE COMP., R. ....	1	
2	11102-KRN-670	COLLAR, WATER PASS 16mm ....	1	
3	11103-444-000	PLATE, ENG. NUMBER ....	1	No sale by HRC
• 4	11121-NX7-000	HOLDER, TRANSMISSION ....	1	
• 5	11200-NX7-000	CRANKCASE, LEFT ....	1	
• 6	11210-NX7-000	JET COMP., PISTON ....	1	
• 7	11221-NX7-003	REED VALVE ....	1	
• 8	11230-NX7-000	STOPPER COMP., REED VALVE ....	1	
• 9	89020-NX7-000	BRG., HOLDER ASSY ....	(1)	
• 10	89023-NX7-000	SPINDLE, BRG., FIT ....	(1)	
11	90003-KRN-670	SCREW, FLAT SPECIAL, 6X12 ....	1	
• 12	90017-NX7-000	BOLT, FLANGE, DR, 8X25 ....	2	
• 13	90019-NX7-000	BOLT-WASHER, 6X14 ....	1	
• 14	90022-NX7-000	BOLT, SEALING, 8X9.5 ....	1	
• 15	90031-NX7-000	BOLT, STUD, 10X118 ....	4	
• 16	90441-NX7-000	PLATE, BRG., SET ....	4	
17	90474-333-000	WASHER, 8mm ....	2	
18	90475-703-000	WASHER, C, 8mm ....	1	
19	90841-444-000	SCREW, RIVET 3.3X5 ....	2	
• 20	90901-NX7-000	JET, OIL ....	1	

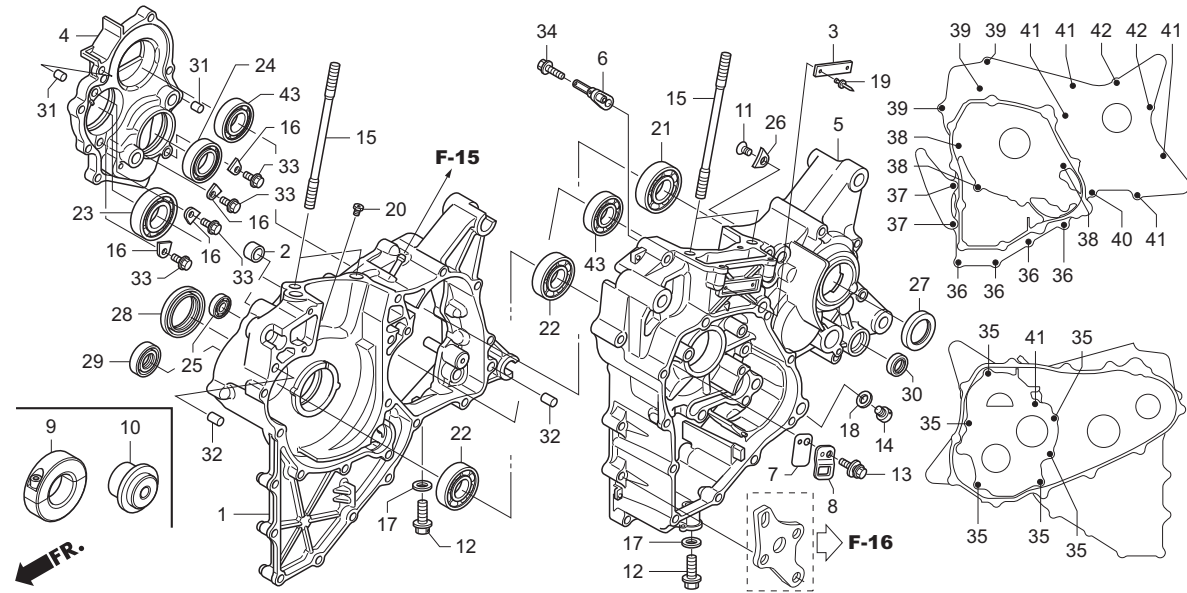
Block No.  
**E-11**  
**CRANKCASE**

**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
21	91001-KA3-711	BRG., BALL, 6204	1	
• 22	91001-NX4-711	BRG., BALL RADIAL, 15X42X11.5	2	
• 23	91003-NX7-003	BRG., BALL RADIAL, 20X47X14	1	
24	91004-KY4-900	BRG., BALL RADIAL, 6905U	1	
• 25	91005-NX7-003	BRG., BALL RADIAL, 10X22X6	1	
26	91012-KA3-710	PLATE, C-SHAFT, BRG.	1	
27	91201-KS6-004	OIL SEAL, 26X37X7	1	
28	91201-KSE-671	OIL SEAL, 32X48X7.5	1	
29	91203-HP1-601	OIL SEAL, 20X33X7.5	1	
30	91203-KK3-830	OIL SEAL, 14X22X5	1	
31	94303-08100	DOWEL PIN, 8X10	2	
32	94303-08140	DOWEL PIN, 8X14	2	
33	96001-06012-00	BOLT, FLANGE, SH, 6X12	4	
34	96001-06016-00	BOLT, FLANGE, SH, 6X16	1	
35	96001-06025-00	BOLT, FLANGE, SH, 6X25	6	
36	96001-06032-00	BOLT, FLANGE, SH 6X32	4	
37	96001-06035-00	BOLT, FLANGE, SH, 6X35	2	
38	96001-06045-00	BOLT, FLANGE, SH, 6X45	3	
39	96001-06050-00	BOLT, FLANGE, SH, 6X50	3	
40	96001-06055-00	BOLT, FLANGE, SH, 6X55	1	

Block No.  
**E-11**  
**CRANKCASE**  
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
41	96001-06065-00	BOLT, FLANGE, SH, 6X65	5	
42	96001-06075-00	BOLT, FLANGE, SH, 6X75	2	
43	96120-62030-00	BRG., BALL RADIAL, 6203	2	

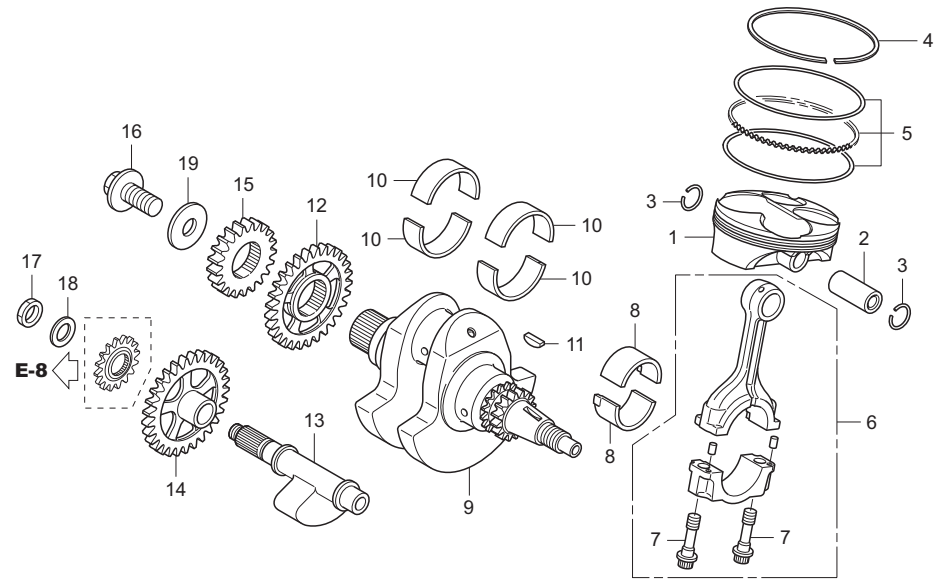


Block No.

**E-12**

**CRANKSHAFT / PISTON**

**2012 NSF250R**



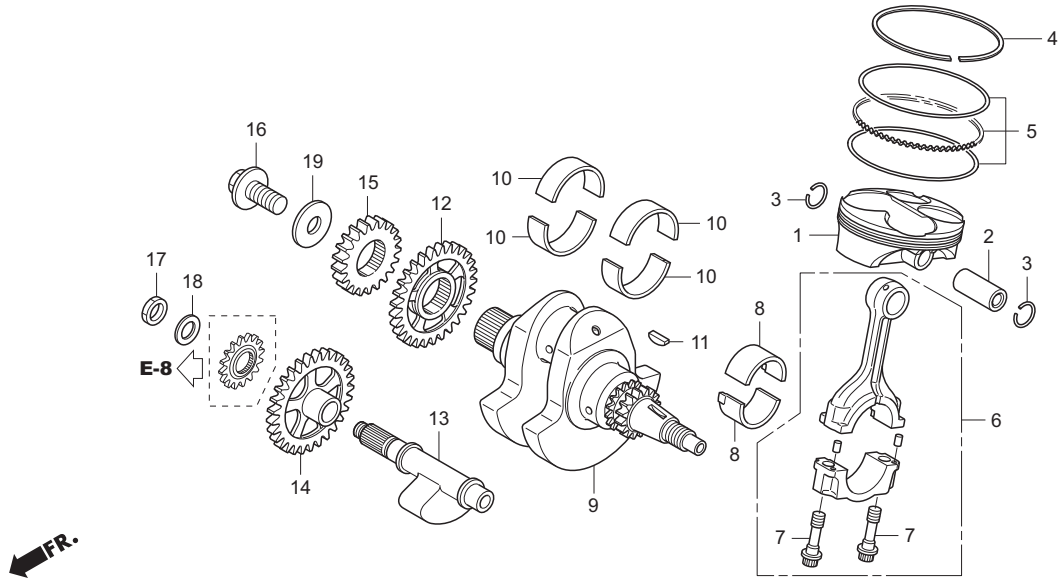
Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	13101-NX7-010	PISTON .....	1	
• 2	13111-NX7-010	PIN, PISTON .....	1	
3	13112-MEE-000	CLIP, PISTON PIN 16mm .....	2	
• 4	13121-NX7-003	RING, PISTON TOP, 78X0.9X2.3 .....	1	
• 5	13141-NX7-003	RING, PISTON OIL, 78X1.5X1.95 .....	1	
• 6	13210-NX7-000	ROD ASSY., CONNECTING .....	1	
7	13213-MFL-003	BOLT, CONNCTING ROD .....	2	
• 8	13214-NX7-003	BRG., A, CONNECTING ROD .....	2	
•	13215-NX7-003	BRG., B, CONNECTING ROD .....	2	
•	13216-NX7-003	BRG., C, CONNECTING ROD .....	2	
•	13217-NX7-003	BRG., D, CONNECTING ROD .....	2	
•	13218-NX7-003	BRG., E, CONNECTING ROD .....	2	
• 9	13310-NX7-010	CRANKSHAFT COMP. ....	1	
• 10	13312-NX7-003	BRG., A, CRANKSHAFT .....	4	
•	13313-NX7-003	BRG., B, CRANKSHAFT .....	4	
•	13314-NX7-003	BRG., C, CRANKSHAFT .....	4	
•	13315-NX7-003	BRG., D, CRANKSHAFT .....	4	
11	13331-360-000	KEY, SPECIAL WOODRUFF, 25X14 .....	1	
• 12	13411-NX7-000	GEAR, BALANCER DRIVE .....	1	29T
• 13	13421-NX7-000	SHAFT, BALANCER .....	1	
• 14	13431-NX7-000	GEAR, BALANCER DRIVEN .....	1	29T

Block No.

**E-12**

**CRANKSHAFT / PISTON**

**2012 NSF250R**



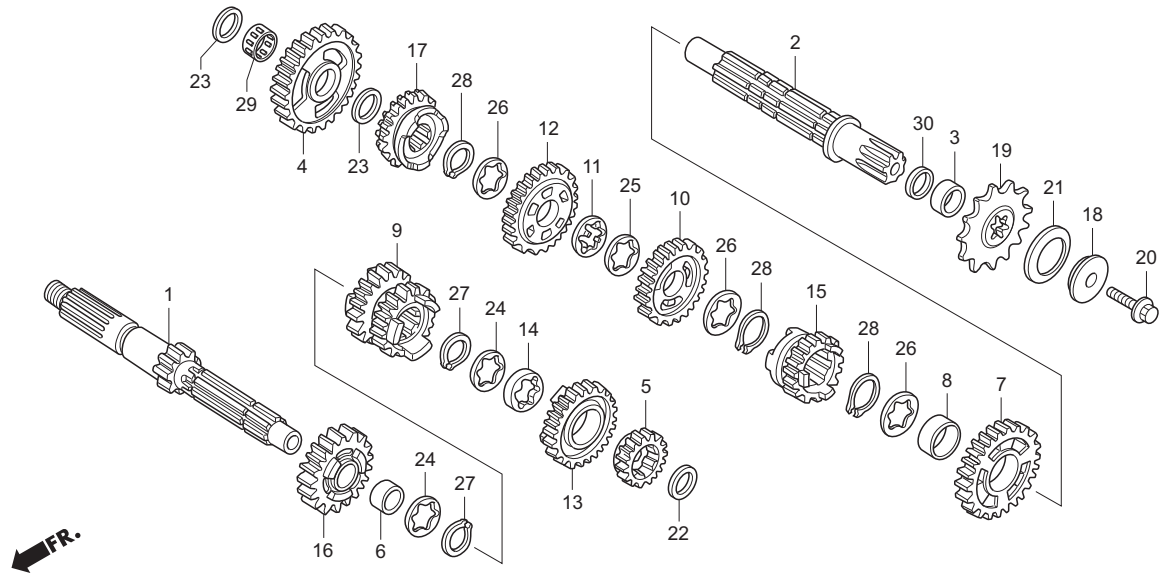
Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 15	13615-NX7-000	GEAR, PRIM., DRIVE .....	1	21T
• 16	90013-NN4-000	BOLT, SPECIAL, 12X27 .....	1	
• 17	90301-KSE-670	NUT, HEX., 12mm .....	1	
• 18	90401-NX7-000	WASHER, 12X20 .....	1	
• 19	90402-KY4-900	WASHER, PLAIN, 12mm .....	1	

Block No.

**E-13**

**TRANSMISSION**

**2012 NSF250R**



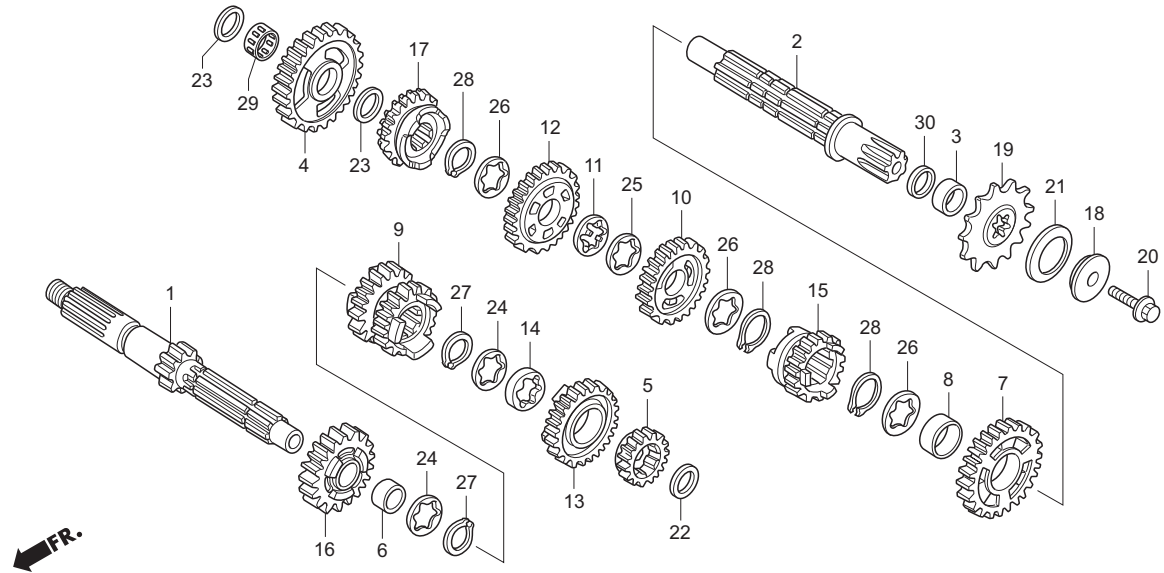
Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	23211-NX4-000	SHAFT COMP., MAIN .....	1	16T
•	23213-NX4-000	SHAFT COMP., MAIN PLAN-3 .....	(1)	16T / Groove3
•	23214-NX4-000	SHAFT COMP., MAIN PLAN-4 .....	(1)	17T / Groove4
•	23215-NX4-000	SHAFT COMP., MAIN PLAN-5 .....	(1)	16T / Groove5
• 2	23221-NX4-010	SHAFT, COUNTER .....	1	23221-NX4-000 Cannot be used.
• 3	23225-NX4-000	COLLAR, C-SHAFT .....	1	
• 4	23411-NX4-000	GEAR, C-1ST .....	1	30T
•	23412-NX4-000	GEAR, C-1ST PLAN-2 .....	(1)	31T
•	23413-NX4-000	GEAR, C-1ST PLAN-3 .....	(1)	32T
•	23414-NX4-000	GEAR, C-1ST PLAN-4 .....	(1)	30T
•	23415-NX4-000	GEAR, C-1ST PLAN-5 .....	(1)	29T
• 5	23421-NX4-000	GEAR, M-2ND .....	1	21T
•	23422-NX4-000	GEAR, M-2ND PLAN-2 .....	(1)	18T
•	23423-NX4-000	GEAR, M-2ND PLAN-3 .....	(1)	19T
•	23424-NX4-000	GEAR, M-2ND PLAN-4 .....	(1)	17T
•	23425-NX4-000	GEAR, M-2ND PLAN-5 .....	(1)	18T
6	23422-GB4-770	BUSH, 20X9 .....	1	
• 7	23431-NX4-700	GEAR, C-2ND .....	1	32T
•	23432-NX4-700	GEAR, C-2ND PLAN-2 .....	(1)	29T
•	23433-NX4-700	GEAR, C-2ND PLAN-3 .....	(1)	28T
•	23434-NX4-700	GEAR, C-2ND PLAN-4 .....	(1)	29T
•	23435-NX4-700	GEAR, C-2ND PLAN-5 .....	(1)	28T

Block No.

**E-13**

**TRANSMISSION**

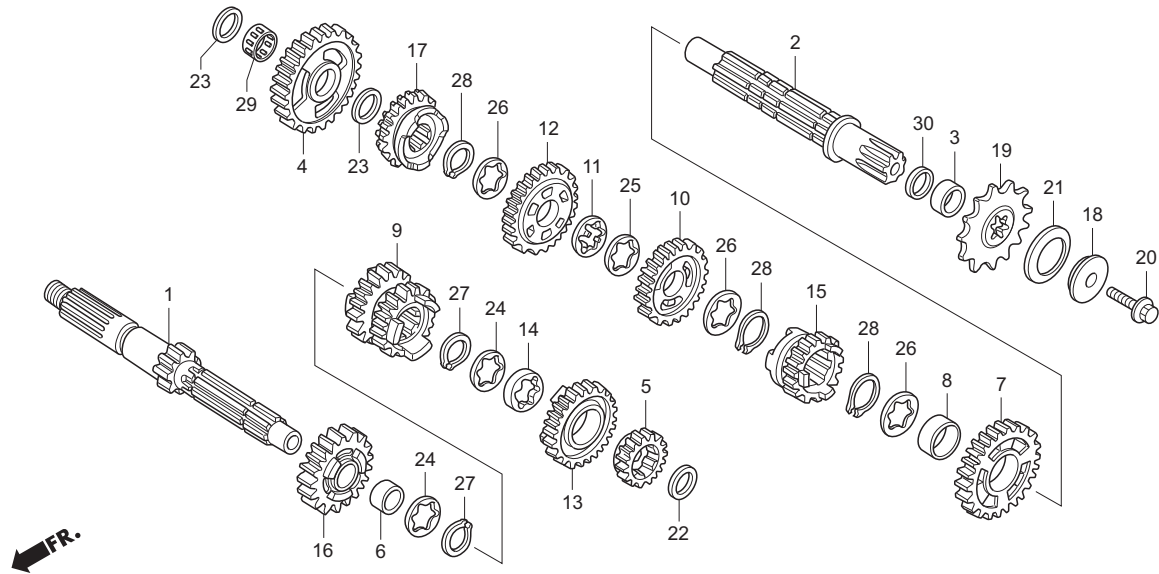
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 7)	23436-NX4-700	GEAR, C-2ND PLAN-6 .....	(1)	27T
• 8	23432-NF4-750	COLLAR, 22X25X9 .....	1	
• 9	23441-NX4-000	GEAR, M-3RD-4TH .....	1	23T/24T
•	23441-NX4-610	GEAR, M-3RD(P-4), 4TH(P-3) .....	(1)	22T/22T
•	23442-NX4-000	GEAR, M-3RD(P-2), 4TH .....	(1)	20T/24T
•	23442-NX4-610	GEAR, M-3RD(P-4), 4TH(P-4) .....	(1)	22T/21T
•	23443-NX4-000	GEAR, M-3RD, 4TH(P-3) .....	(1)	23T/22T
•	23443-NX4-610	GEAR, M-3RD(P-4), 4TH(P-6) .....	(1)	22T/20T
•	23444-NX4-000	GEAR, M-3RD(P-2), 4TH(P-3) .....	(1)	20T/22T
•	23444-NX4-610	GEAR, M-3RD(P-6), 4TH .....	(1)	21T/24T
•	23445-NX4-000	GEAR, M-3RD, 4TH(P-4) .....	(1)	23T/21T
•	23445-NX4-610	GEAR, M-3RD(P-6), 4TH(P-3) .....	(1)	21T/22T
•	23446-NX4-000	GEAR, M-3RD, 4TH(P-6) .....	(1)	23T/20T
•	23446-NX4-610	GEAR, M-3RD(P-6), 4TH(P-4) .....	(1)	21T/21T
•	23447-NX4-000	GEAR, M-3RD(P-2), 4TH(P-4) .....	(1)	20T/21T
•	23447-NX4-610	GEAR, M-3RD(P-6), 4TH(P-6) .....	(1)	21T/20T
•	23448-NX4-000	GEAR, M-3RD(P-2), 4TH(P-6) .....	(1)	20T/20T
•	23449-NX4-000	GEAR, M-3RD(P-4), 4TH .....	(1)	22T/24T
• 10	23451-NX4-681	GEAR, C-3RD .....	1	30T / 23451-NX4-680 Cannot be used.
•	23452-NX4-681	GEAR, C-3RD PLAN-2 .....	(1)	27T / 23452-NX4-680 Cannot be used.
•	23453-NX4-681	GEAR, C-3RD PLAN-3 .....	(1)	29T / 23453-NX4-680 Cannot be used.
•	23454-NX4-681	GEAR, C-3RD PLAN-4 .....	(1)	31T / 23454-NX4-680 Cannot be used.
•	23455-NX4-681	GEAR, C-3RD PLAN-5 .....	(1)	29T / 23455-NX4-680 Cannot be used.

Block No.  
**E-13**  
**TRANSMISSION**

**2012 NSF250R**



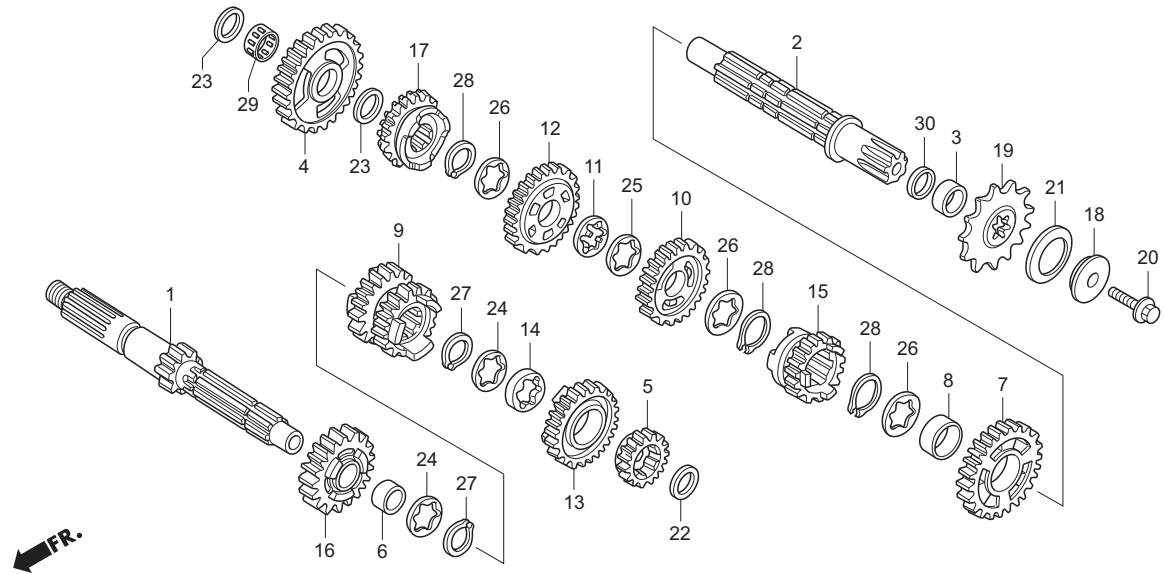
Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 10)	23456-NX4-681	GEAR, C-3RD PLAN-6 .....	(1)	27T / 23456-NX4-680 Cannot be used.
11	23456-KA3-000	WASHER, LOCK .....	1	
• 12	23461-NX4-681	GEAR, C-4TH .....	1	28T / 23461-NX4-680 Cannot be used.
•	23462-NX4-681	GEAR, C-4TH PLAN-2 .....	(1)	29T / 23462-NX4-680 Cannot be used.
•	23463-NX4-681	GEAR, C-4TH PLAN-3 .....	(1)	25T / 23463-NX4-680 Cannot be used.
•	23464-NX4-681	GEAR, C-4TH PLAN-4 .....	(1)	26T / 23464-NX4-680 Cannot be used.
•	23465-NX4-681	GEAR, C-4TH PLAN-5 .....	(1)	25T / 23465-NX4-680 Cannot be used.
•	23466-NX4-681	GEAR, C-4TH PLAN-6 .....	(1)	23T / 23466-NX4-680 Cannot be used.
• 13	23471-NX4-000	GEAR, M-5TH .....	1	26T
•	23472-NX4-000	GEAR, M-5TH PLAN-2 .....	(1)	25T
•	23473-NX4-000	GEAR, M-5TH PLAN-3 .....	(1)	23T
•	23474-NX4-000	GEAR, M-5TH PLAN-4 .....	(1)	20T
• 14	23478-NX4-770	COLLAR, M-5TH GEAR .....	1	
• 15	23481-NX4-000	GEAR, C-5TH .....	1	28T
•	23482-NX4-000	GEAR, C-5TH PLAN-2 .....	(1)	28T
•	23483-NX4-000	GEAR, C-5TH PLAN-3 .....	(1)	24T
•	23484-NX4-000	GEAR, C-5TH PLAN-4 .....	(1)	22T
• 16	23491-NX4-000	GEAR, M-6TH .....	1	24T
•	23492-NX4-000	GEAR, M-6TH PLAN-2 .....	(1)	26T
•	23493-NX4-000	GEAR, M-6TH PLAN-3 .....	(1)	27T
•	23494-NX4-000	GEAR, M-6TH PLAN-4 .....	(1)	23T

Block No.

**E-13**

**TRANSMISSION**

**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 17	23501-NX4-010	GEAR, C-6TH .....	1	24T / 23501-NX4-000 Cannot be used.
•	23502-NX4-010	GEAR, C-6TH PLAN-2 .....	(1)	27T / 23502-NX4-000 Cannot be used.
•	23503-NX4-010	GEAR, C-6TH PLAN-3 .....	(1)	26T / 23503-NX4-000 Cannot be used.
18	23802-KSC-670	COLLAR, DRIVE SPRKT .....	1	
• 19	23802-NX4-780	SPROCKET, DRIVE, 15T .....	1	15T
•	23803-NX4-780	SPROCKET, DRIVE, 16T .....	(1)	16T
•	23804-NX4-780	SPROCKET, DRIVE, 17T .....	(1)	17T
• 20	90020-NX7-000	BOLT, UBS, 8X22 .....	1	
• 21	90402-NX7-000	WASHER, SPRING, 24X40 .....	1	
• 22	90403-NX7-000	WASHER, THRUST, 17mm .....	1	
23	90452-115-000	WASHER, 17mm .....	2	
24	90461-444-000	WASHER, SPLINE, 20mm .....	2	
25	90464-444-000	WASHER, SPLINE, 22mm .....	1	
26	90464-KZ4-730	WASHER, SPLINE, 22mm .....	3	
27	90601-360-000	SET RING, 20mm .....	2	
28	90602-360-000	SET RING, 22mm .....	3	
• 29	91021-NX4-771	BRG., NEEDLE, 17X20X9 .....	1	
30	91351-KA3-711	O-RING, 20mm .....	1	

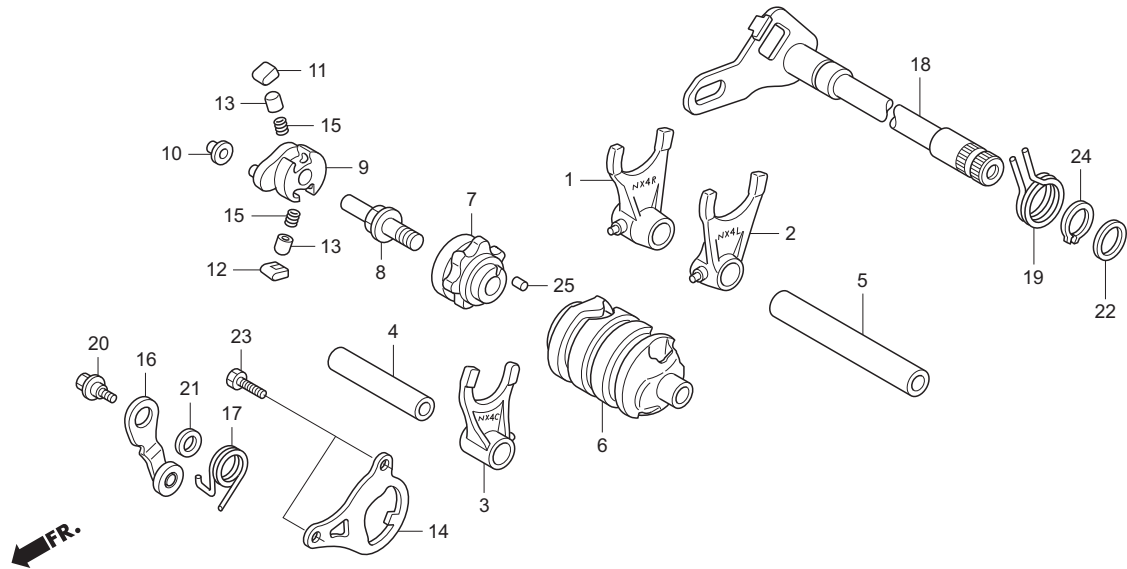


Block No.

**E-14**

**GEARSHIFT DRUM**

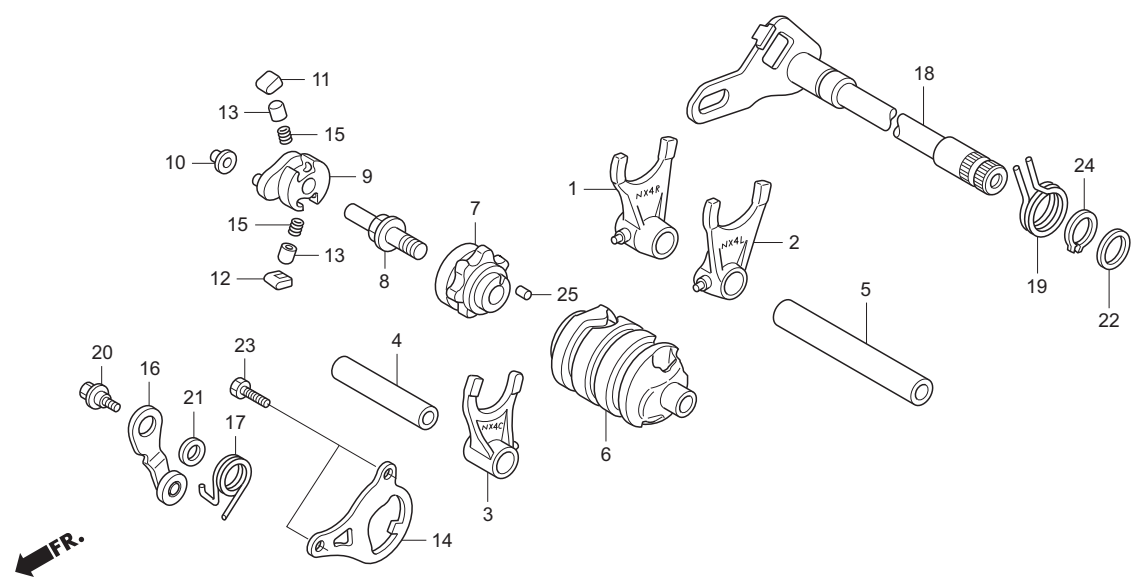
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	24211-NX4-000	FORK R., GEAR SHIFT .....	1	NX4R
• 2	24221-NX4-000	FORK L., GEAR SHIFT .....	1	NX4L
• 3	24231-NX4-000	FORK C., GEAR SHIFT .....	1	NX4C
• 4	24265-NX4-000	SHAFT, SHIFT FORK M .....	1	L=60.8
• 5	24266-NX4-000	SHAFT, SHIFT FORK C .....	1	L=93.8
• 6	24311-NX4-000	DRUM, GEAR SHIFT .....	1	
7	24312-KA3-741	CENTER, SHIFT DRUM .....	1	
8	24315-HA0-000	PIN, SHIFTER .....	1	
9	24321-KZ4-620	SHIFTER, DRUM .....	1	
10	24322-HA0-000	COLLAR, SHIFTER .....	1	
11	24324-KA3-711	PAWL A, RATCHET .....	1	
12	24325-KA3-711	PAWL B, RATCHET .....	1	
13	24326-KBH-901	PLUNGER, PAWL .....	2	
• 14	24328-NX4-000	PLATE, GUIDE .....	1	
15	24329-KA3-740	SPG., PAWL PLUNGER .....	2	
16	24430-KA3-740	STOPPER COMP., DRUM .....	1	
• 17	24435-NF4-760	SPG., DRUM STOPPER .....	1	
• 18	24610-NX4-000	SPINDLE, COMP., SHIFT .....	1	
• 19	24651-NX4-710	SPG., SHIFT RETURN .....	1	
20	90022-MG8-000	PIVOT, SHIFT DRUM STOPPER ARM .....	1	

Block No.  
**E-14**  
**GEARSHIFT DRUM**

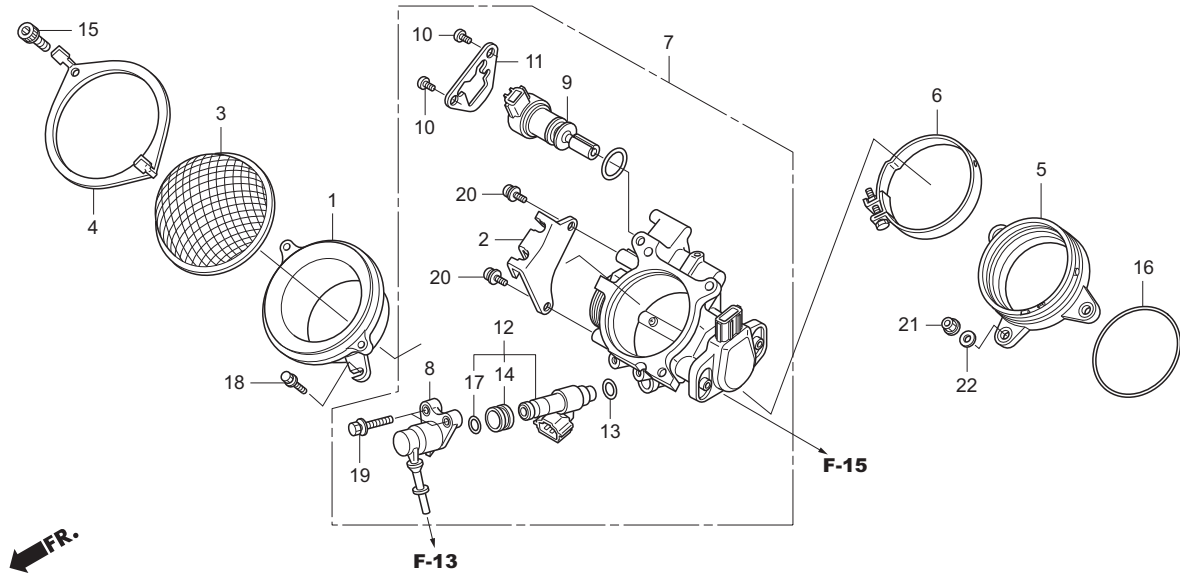
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
21	90435-HB3-000	WASHER, 6.1mm .....	1	
22	90451-155-000	WASHER, 14mm .....	1	
23	93301-06012-0A	BOLT, HEX., 6X12 .....	2	
24	94510-14000	CIRCLIP, EX., 14 .....	1	
25	96220-40080	ROLLER, 4X8 .....	1	

Block No.  
**E-15**  
**THROTTLE BODY**

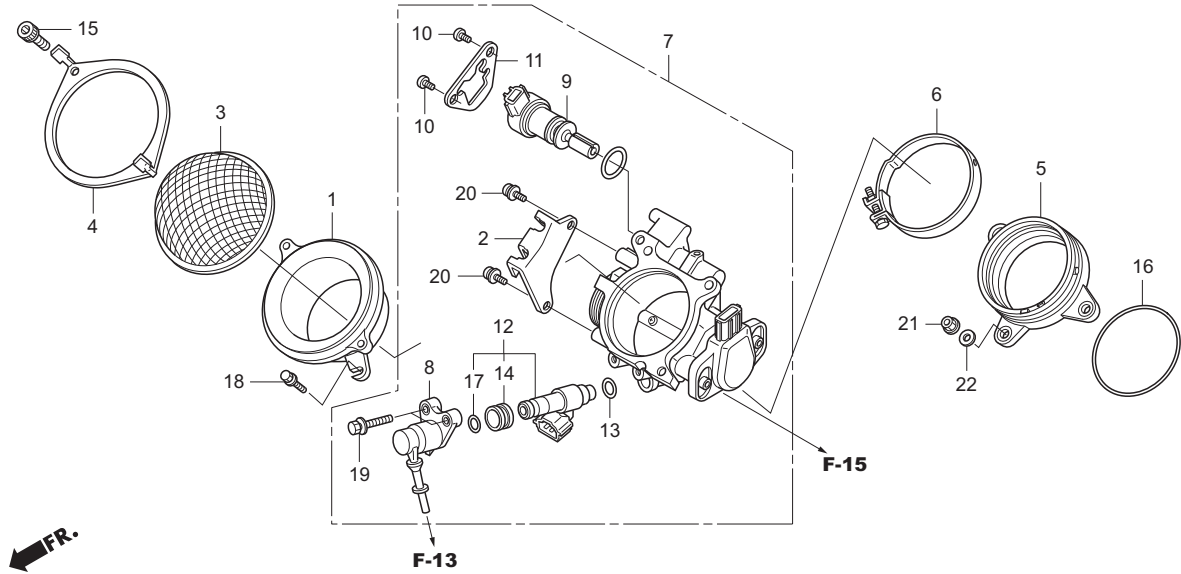
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	16141-NX7-000	FUNNEL .....	1	
• 2	16169-NX7-003	STAY, WIRE .....	1	
• 3	16190-NX7-000	TRAP COMP., FLAME .....	1	
• 4	16193-NX7-000	PLATE, FLAME TRAP SET .....	1	
• 5	16210-NX7-000	INSULATOR COMP., THROTTLEBODY .....	1	
• 6	16218-NX7-000	BAND, INSULATOR .....	1	
• 7	16400-NX7-003	THROTTLEBODY ASSY. ....	1	
8	16422-MEN-A31	JOINT, INJECTOR .....	1	
• 9	16430-NX7-003	MOTOR ASSY. ....	1	
10	16433-HN8-A61	SCREW, TORX .....	2	
11	16433-MEW-921	PLATE, IACV .....	1	
12	16450-HN8-A61	INJECTOR ASSY., FUEL .....	1	
13	16472-MCW-000	SEAL RING, INJECTOR .....	1	
14	16473-P7A -004	GROMMET .....	1	
• 15	90089-NX7-000	BOLT, SOCKET, 5X10 .....	2	
• 16	91301-NX7-000	O-RING, 47X2.5 .....	1	
17	91301-P7A-004	O-RING .....	1	
18	93401-05014-08	BOLT-WASHER, 5X14 .....	2	
19	93401-05020-00	BOLT-WASHER, 5X20 .....	2	
20	93892-05012-10	SCREW-WASHER, 5X12 .....	2	

Block No.  
**E-15**  
**THROTTLE BODY**

**2012 NSF250R**

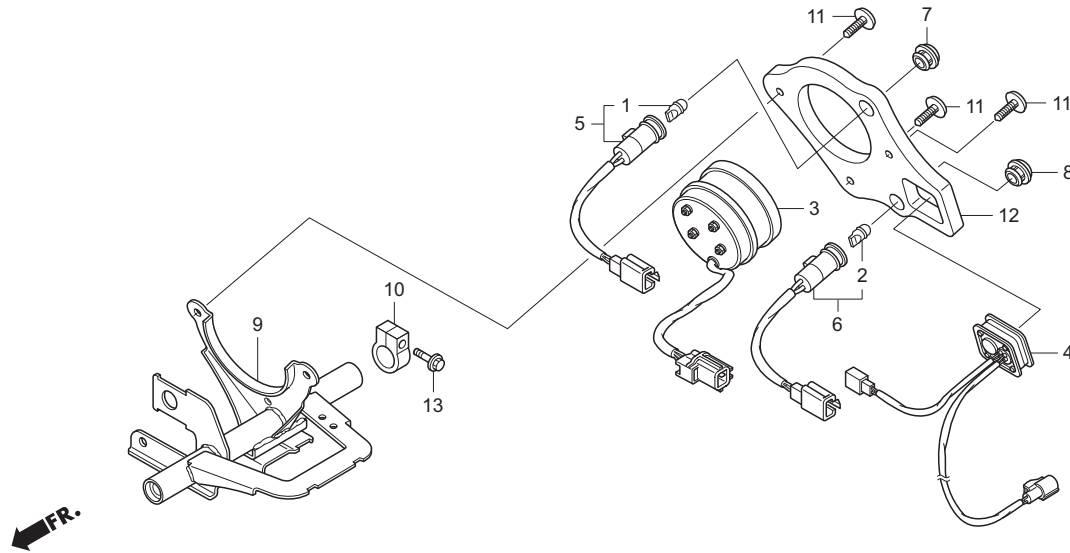


Ref. No.	Part No.	Description	Reqd. No.	Remarks
21	94050-06000	NUT, FLANGE, 6mm	3	
22	94101-06800	WASHER, PLAIN 6mm	3	

Block No.

**F-1  
METER**

**2012 NSF250R**



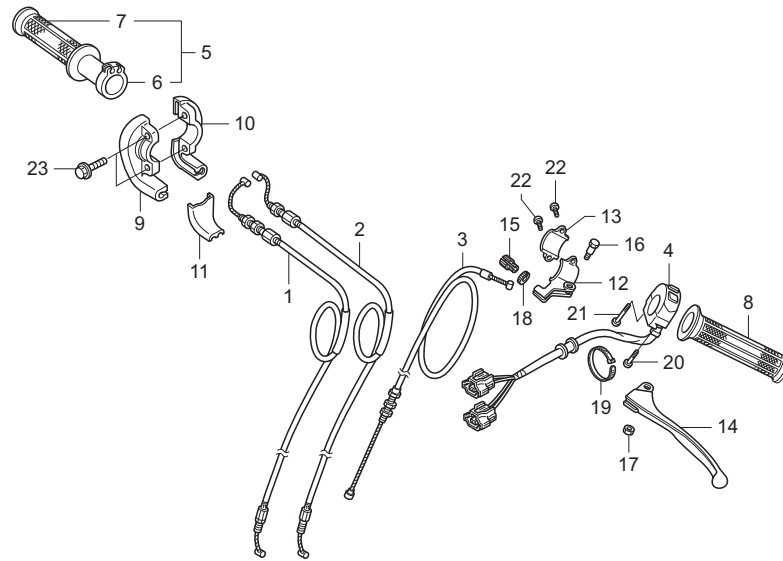
Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	34908-NX7-003	LED LAMP (BLUE) .....	1	
• 2	34909-NX7-003	LED LAMP (WHITE) .....	1	
• 3	37250-NF4-771	METER ASSY., TACHO .....	1	
• 4	37460-NX4-701	METER ASSY., WATER TEMP .....	1	
• 5	37564-NX7-003	INDICATOR, SHIFT UP .....	1	
• 6	37565-NX7-003	INDICATOR, FI WARNING .....	1	
• 7	37569-NX7-003	LENS COMP., SHIFT UP .....	1	
• 8	37604-HN1-A70	LENS COMP., REVERSE INDICATOR .....	1	
• 9	50810-NX7-000	STAY COMP., FR. CTR. COWL .....	1	
• 10	50811-NX7-000	CLAMP, CTR. COWL STAY .....	1	
• 11	50816-NX4-000	CLIP, XMAS TREE .....	3	
• 12	50819-NX7-000	PANEL, METER .....	1	
13	90004-GHB-670	BOLT, FLANGE, NSHF, 6X25 .....	1	

Block No.

**F-2**

**HANDLE LEVER / SWITCH /  
CABLE**

**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	17910-NX7-000	CABLE COMP., A, THROTTLE .....	1	
• 2	17920-NX7-000	CABLE COMP., B, THROTTLE .....	1	
• 3	22870-NX7-000	CABLE COMP., CLUTCH .....	1	
• 4	35130-NX7-003	SW ASSY., ENG. STOP & QS .....	1	
• 5	53140-NX7-000	GRIP COMP., THROTTLE .....	1	
• 6	53141-NX7-000	PIPE, THROTTLE GRIP .....	1	
7	53165-GM9-741	GRIP, R. HANDLE .....	1	
8	53166-KT8-710	GRIP, L. HANDLE .....	1	
9	53167-MEB-672	HOUSING, UP. THROTTLE .....	1	
10	53168-MEB-671	HOUSING, UND. THROTTLE .....	1	
11	53169-MEB-670	SLIDER, THROTTLE CABLE .....	1	
12	53172-430-003	BRKT., L. HANDLE. LEVER .....	1	
13	53173-376-000	HOLDER, LEVER BRKT. ....	1	
14	53178-399-700	LEVER, L. STRG. HANDLE .....	1	
15	53192-KA3-700	BOLT, WIRE ADJUST .....	1	
16	90114-310-000	BOLT, HANDLE LEVER PIVOT .....	1	
• 17	90302-NX5-000	U-NUT, HEX. 6mm .....	1	
18	90321-KF0-000	NUT, FIXING .....	1	
• 19	90651-NC8-000	TY-LAP, 3.6X281 .....	1	
20	93500-04032-0G	SCREW., PAN, 4X32 .....	1	

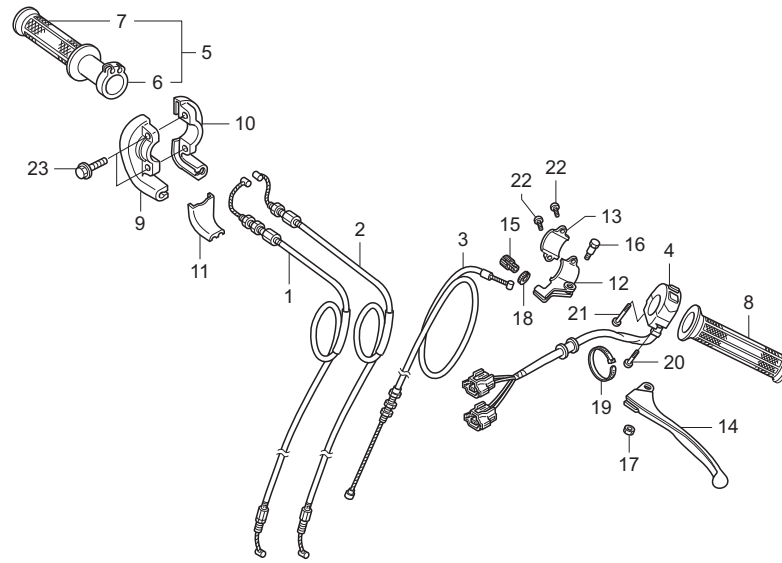


Block No.

**F-2**

**HANDLE LEVER / SWITCH /  
CABLE**

**2012 NSF250R**



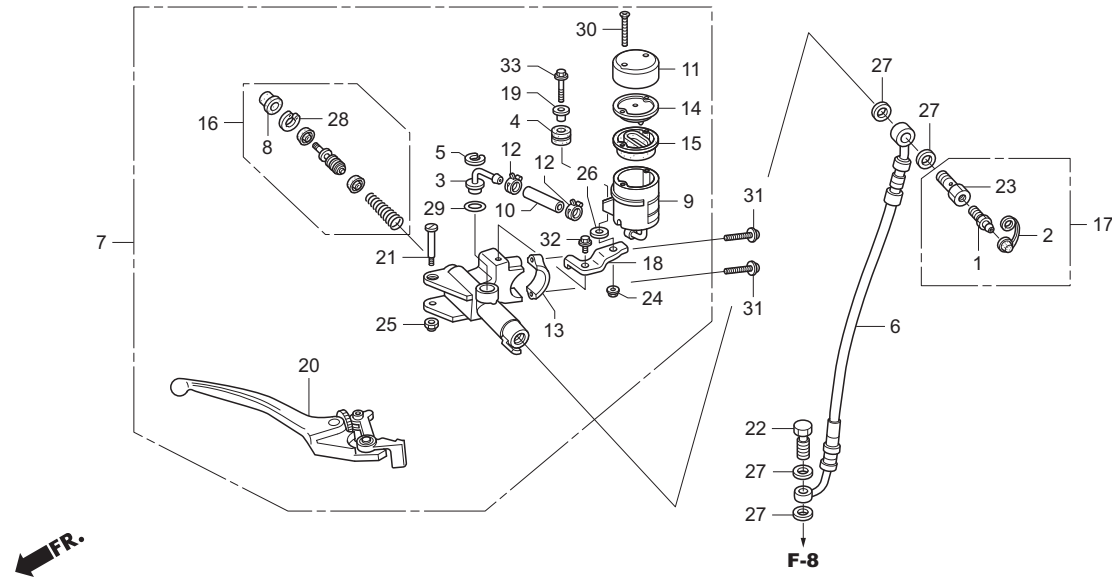
Ref. No.	Part No.	Description	Reqd. No.	Remarks
21	93500-04045-0G	SCREW, PAN, 4X45	1	
22	93500-05016-0A	SCREW, PAN, 5X16	2	
23	96001-06018-07	BOLT, FLANGE, SH, 6X18	2	

Block No.

**F-3**

**FRONT BRAKE MASTER  
CYLINDER**

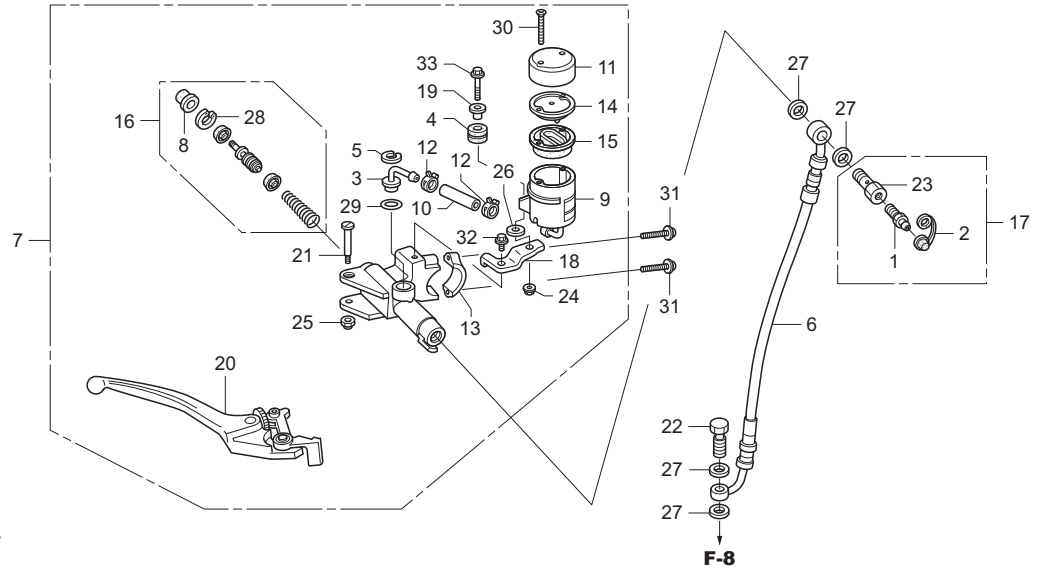
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
1	43352-568-003	SCREW, BLEEDER .....	1	
2	43353-461-771	CAP, BLEEDER .....	1	
3	43503-KS6-701	CONNECTOR .....	1	
4	43516-HA2-000	RUBBER, OIL CUP MT. ....	1	
5	43517-KS6-701	CIRCLIP, RR. M/C .....	1	
• 6	45125-NX4-861	HOSE, FR. BRAKE .....	1	
• 7	45500-NX4-861	M/C ASSY., FR. ....	1	
8	45504-410-003	BOOT COMP. ....	1	
9	45511-KV3-016	OIL CUP COMP. ....	1	
• 10	45512-NX4-861	HOSE, M/C OIL CUP .....	1	
11	45513-KV3-006	CAP, OIL CUP .....	1	
12	45514-KV3-006	CLAMP, M/C OIL HOSE .....	2	
13	45517-166-006	HOLDER, M/C .....	1	
14	45518-KV3-006	PLATE, DIAPHRAGM .....	1	
15	45520-KV3-006	DIAPHRAGM .....	1	
16	45530-471-831	CYLINDER SET, MASTER .....	1	
• 17	45530-NF4-650	BOLT ASSY., OIL BLEEDER .....	1	
• 18	45550-NX4-861	STAY, M/C CUP .....	1	
19	50324-425-010	COLLAR, 6.3X13 .....	1	
20	53170-MW0-006	LEVER ASSY., R. HANDLE .....	1	

Block No.  
**F-3**  
**FRONT BRAKE MASTER**  
**CYLINDER**

**2012 NSF250R**



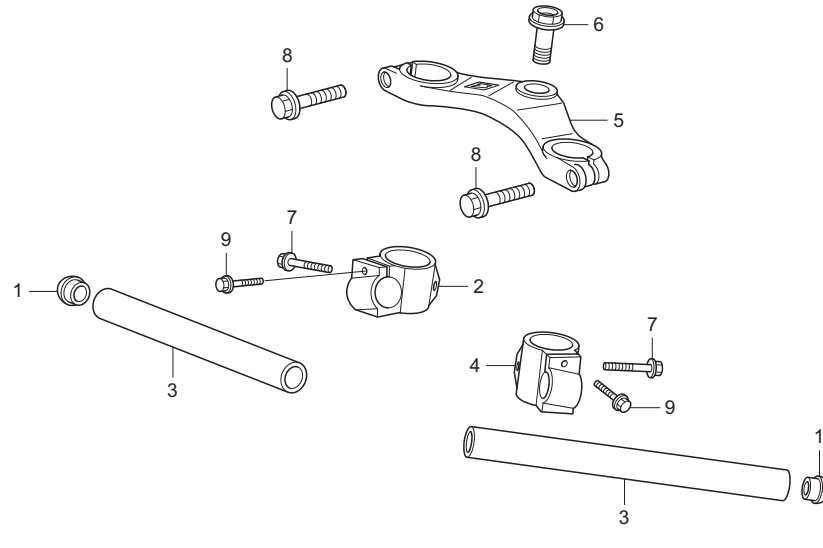
Ref. No.	Part No.	Description	Reqd. No.	Remarks
21	90114-MA5-671	BOLT, HANDLE LEVER .....	1	
22	90145-MS9-612	OIL BOLT, 10X22 .....	1	
• 23	90145-NF4-650	BOLT, OIL BLEEDER .....	1	
24	90301-MG3-000	NUT, U, 6mm .....	1	
• 25	90302-NX5-000	U-NUT, HEX., 6mm .....	1	
26	90473-147-000	WASHER, 6X16 .....	1	
27	90601-ZE1-000	WASHER, PLUG DRAIN, 10mm .....	4	
28	90651-MA5-671	CIRCLIP .....	1	
29	91212-422-006	O-RING, 14.8X2.4 .....	1	
30	93600-04050-1G	SCREW, FLAT, 4X50 .....	2	
31	96001-06025-00	BOLT, FLANGE, SH, 6X25 .....	2	
32	96300-06012-07	BOLT, FLANGE, DR, 6X12 .....	1	
33	96300-06028-07	BOLT, FLANGE, DR, 6X28 .....	1	

Block No.

**F-4**

**HANDLE PIPE / TOP BRIDGE**

**2012 NSF250R**



FR.

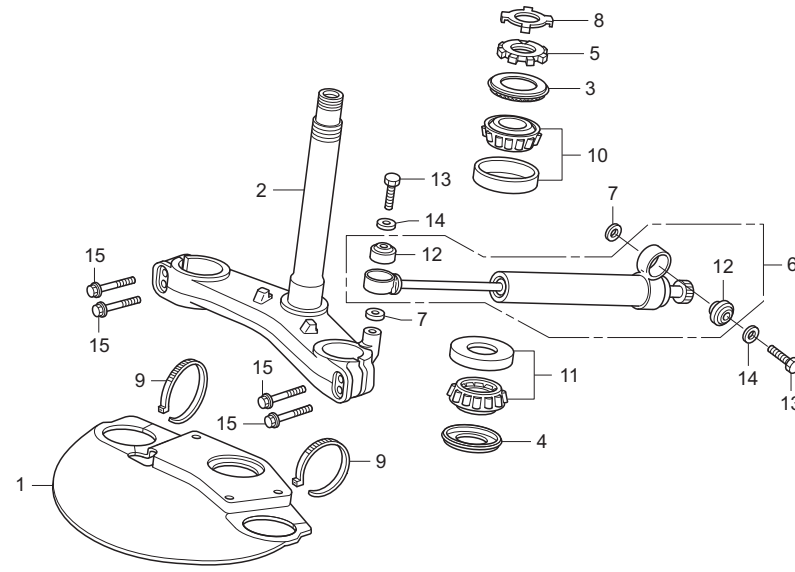
Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	53105-NF4-770	CAP, HANDLE PIPE .....	2	
• 2	53110-NX4-000	HOLDER, R. HANDLE .....	1	
• 3	53111-NX4-000	PIPE, HANDLE .....	2	
• 4	53120-NX4-000	HOLDER, L. HANDLE .....	1	
• 5	53300-NX7-000	BRIDGE, FORK TOP 32.5 .....	1	
•	53300-NX7-610	BRIDGE, FORK TOP 30 .....	(1)	
• 6	90303-NX4-000	BOLT, STRG. STEM .....	1	
7	95801-08030-00	BOLT, FLANGE, 8X30 .....	2	
8	95801-08032-00	BOLT, FLANGE, 8X32 .....	2	
9	96001-06022-00	BOLT, FLANGE, SH, 6X22 .....	2	

Block No.

**F-5**

**STEERING STEM / STEERING DAMPER**

**2012 NSF250R**

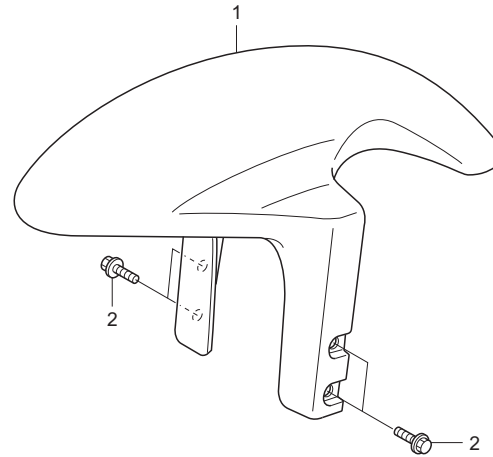


Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	50820-NX7-000	COVER, STRG. UNDER .....	1	
• 2	53200-NX4-000	STEM COMP., STRG. 32.5 .....	1	
•	53200-NX4-610	STEM COMP., STRG. 30 .....	(1)	
3	53214-430-003	DUST SEAL (STRG. HD.) .....	1	
4	53214-KZ4-701	DUST SEAL (STRG. HD.) .....	1	
• 5	53229-NX4-000	THREAD, STRG. ....	1	
• 6	53700-NF4-900	DAMPER ASSY., STRG. ....	1	
7	90465-MC4-000	WASHER, 8mm .....	2	
• 8	90506-NX4-000	STOPPER, STRG. THREAD .....	1	
• 9	90651-NC8-000	TY-LAP, 3.6X281 .....	2	
10	91015-425-831	BRG., HEAD PIPE UP .....	1	
11	91015-KZ4-701	BRG., HEAD PIPE .....	1	
• 12	91060-NL0-003	BRG., SPHERICAL, 8mm .....	2	
13	92201-08032-0A	BOLT, HEX., 8X32 .....	2	
14	94102-08000	WASHER, PLAIN, 8mm .....	2	
15	95801-08028-00	BOLT, FLANGE, 8X28 .....	4	

Block No.

**F-6  
FRONT FENDER**

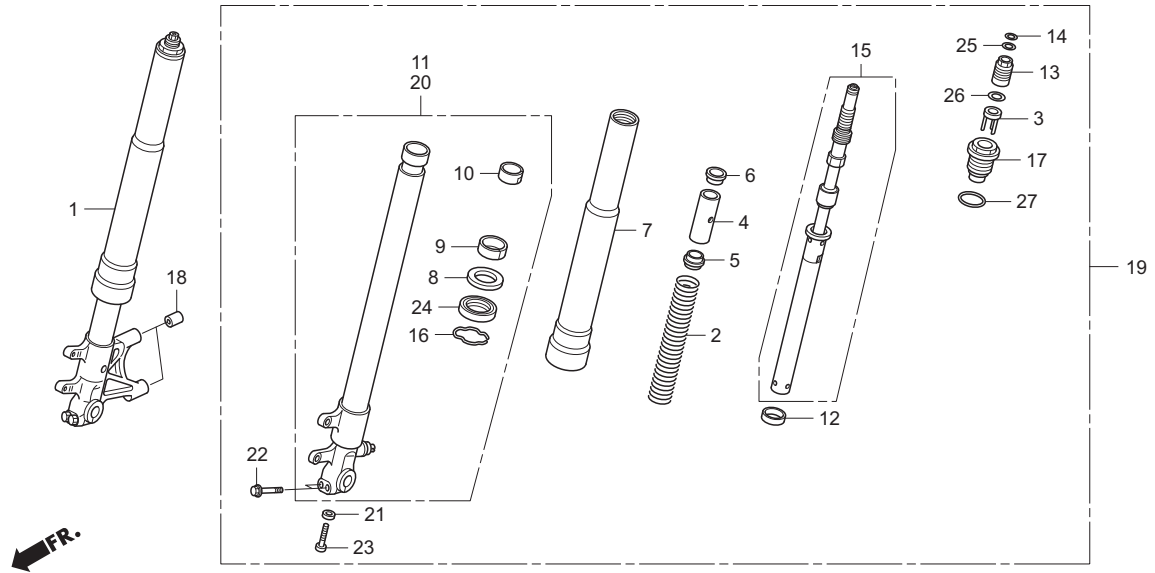
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	61100-NX4-860	FENDER, FR. ....	1	
2	90108-GK1-000	BOLT, FLANGE, SH, 6X12 .....	4	



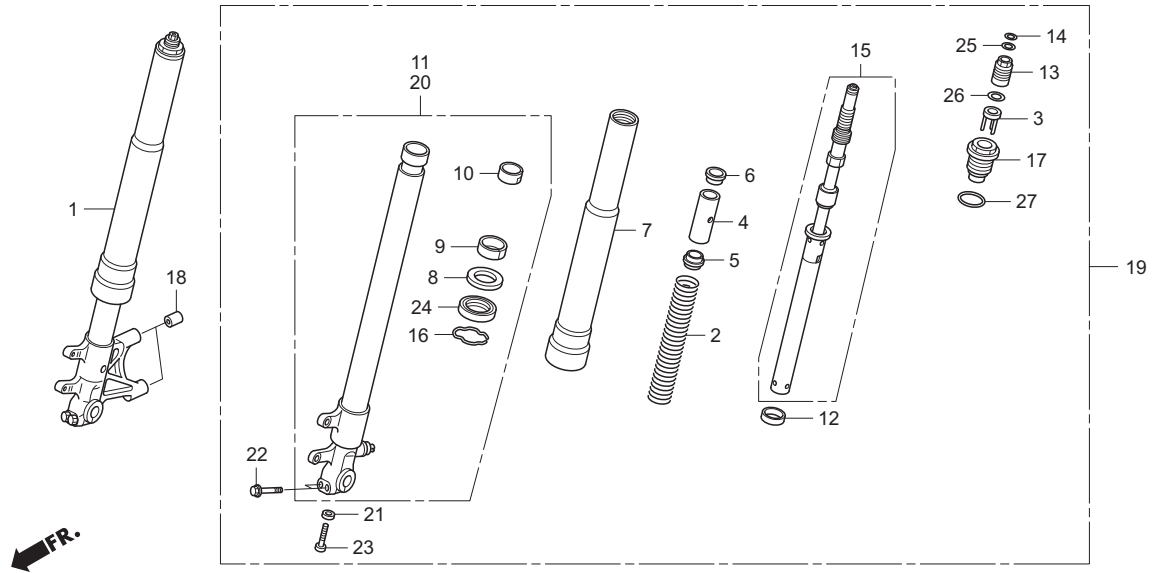
Block No.  
**F-7**  
**FRONT FORK**  
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	51400-NX7-003	FORK ASSY., R. FR. ....	1	
• 2	51401-NX4-003	SPG., FR. FORK ....	(2)	K=0.6
•	51402-NX4-003	SPG., FR. FORK H ....	2	K=0.65
•	51402-NX7-003	SPG., FR. FORK H ....	(2)	K=0.7
• 3	51404-NF5-611	PLATE COMP., SPG. ADJ. ....	2	
• 4	51404-NX4-003	COLLAR, SPG. ....	2	
• 5	51405-NX4-003	PLATE, SPG. JOINT ....	2	
• 6	51406-NX4-003	STOPPER, SPG. SEAT ....	2	
• 7	51410-NX4-861	TUBE, OUTER ....	2	
• 8	51412-422-003	RING, BACK UP ....	2	
• 9	51414-NX4-702	BUSH, GUIDE ....	2	
• 10	51415-NX4-702	BUSH, SLIDE ....	2	
• 11	51420-NX7-003	PIPE COMP., R. SLIDE ....	1	
• 12	51421-MW4-003	PLATE, CENTERING ....	2	
• 13	51422-NF5-611	ADJUSTER, SPG. ....	2	
• 14	51423-NF5-611	RING, B, STOPPER ....	2	
• 15	51430-NX7-003	DAMPER COMP., FR. ....	2	
• 16	51447-KL4-951	RING, OIL SEAL, STOPPER ....	2	
• 17	51454-NX4-003	BOLT, FR. FORK ....	2	
• 18	51497-MEL-000	SPACER, FR. FORK ....	2	

Block No.  
**F-7**  
**FRONT FORK**

**2012 NSF250R**

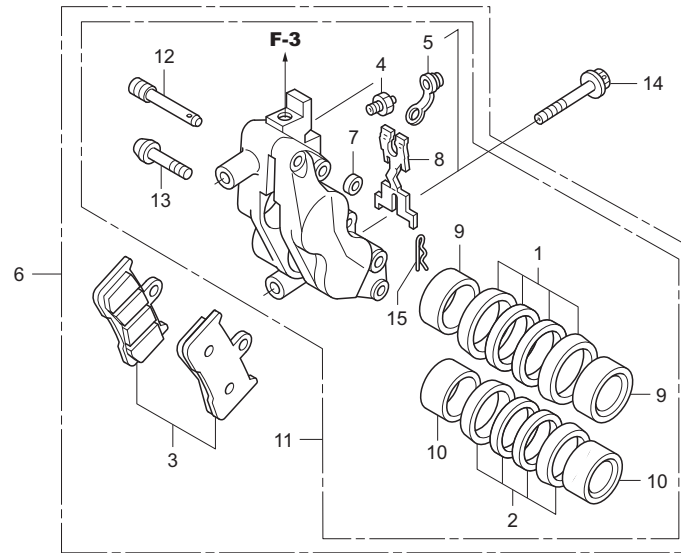


Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 19	51500-NX7-003	FORK ASSY., L. FR. ....	1	
• 20	51520-NX7-003	PIPE COMP., L. SLIDE ....	1	
21	52442-KA3-711	WASHER, SPECIAL, 10mm ....	2	
22	90107-KF0-000	BOLT, FLANGE, 8X40 ....	4	
23	90126-MR7-003	BOLT, SOCKET, 10X35 ....	2	
• 24	91255-NX4-771	OIL SEAL, 35X48X11 ....	2	
25	91311-MR7-003	O-RING, 13.8X2.4 ....	2	
• 26	91351-NF5-611	O-RING, 23.7X2.4 ....	2	
27	91356-KA4-711	O-RING, 35.2X2.4 ....	2	

Block No.

**F-8**  
**FRONT BRAKE CALIPER**

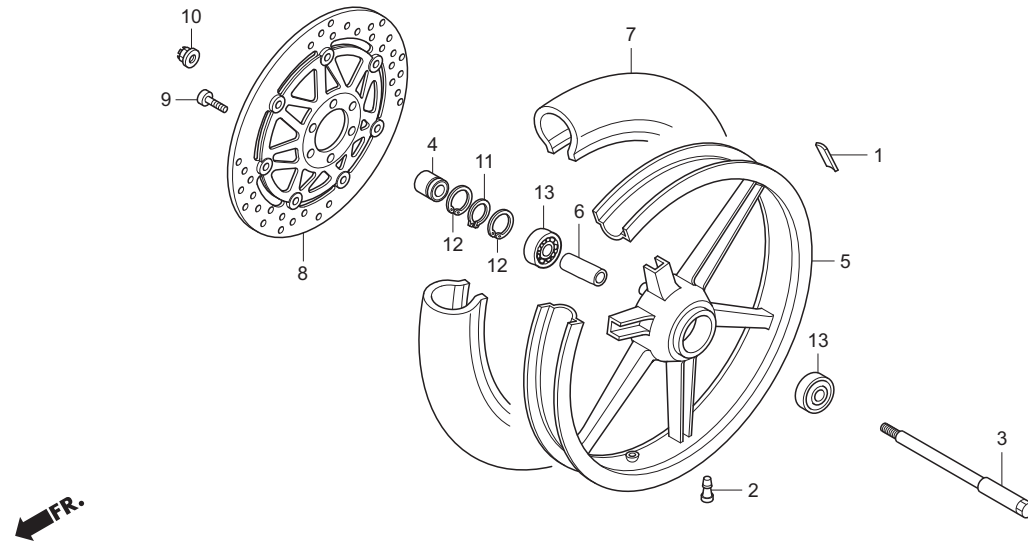
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	06451-NX4-860	SEAL SET, PISTON, 34 .....	(1)	
• 2	06452-NX4-860	SEAL SET, PISTON, 30 .....	(1)	
• 3	06455-NX7-006	PAD SET, FR. ....	(1)	
4	43352-568-003	SCREW, BLEEDER .....	1	
5	43353-461-771	CAP, BLEEDER .....	1	
• 6	45100-NX7-006	CALIPER ASSY., R. FR. ....	1	
7	45103-MR7-006	SEAL, JOINT .....	1	
• 8	45106-NX4-860	SPG., PAD .....	1	
• 9	45107-NX4-860	PISTON, B .....	2	
10	45117-MR7-006	PISTON, A .....	2	
• 11	45150-NX4-860	CALIPER SUB ASSY., R. FR. ....	(1)	
• 12	45215-NX4-860	PIN, HANGER .....	1	
• 13	90107-NX4-860	BOLT, TORX, 8X38 .....	4	
• 14	90131-NX4-860	BOLT, FLANGE, 10X75 .....	2	
• 15	90701-NX4-860	PIN, LOCK .....	1	

Block No.  
**F-9**  
**FRONT WHEEL**

**2012 NSF250R**



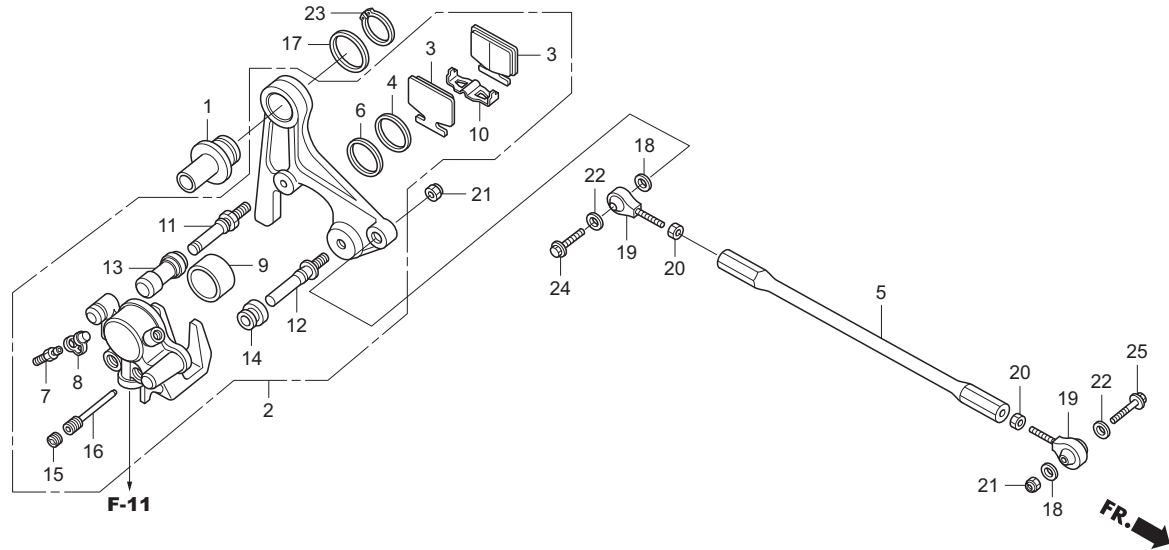
Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	42721-NX4-860	WT., BALANCER, 1.25G .....	N	No sale by HRC
•	42722-NX4-860	WT., BALANCER, 2.5G .....	N	No sale by HRC
•	42723-NX4-860	WT., BALANCER, 5G .....	N	No sale by HRC
2	42753-ML7-003	VALVE, RIM (BS) .....	1	
• 3	44301-NX4-000	AXLE, FR. WHEEL .....	1	
• 4	44303-NF4-000	COLLAR, FR. WHEEL SIDE .....	1	
• 5	44601-NX4-811	WHEEL, FR. (2.50X17) .....	1	
• 6	44620-NF4-000	COLLAR, FR. AXLE DISTANCE .....	1	
• 7	44711-NX7-003	TIRE, ASSY., FR. (BS) .....	1	No sale by HRC
• 8	45120-NX7-003	DISK COMP., R. FR. BRK. ....	1	
• 9	90103-NX7-000	BOLT, BRK. DISK 6X17 .....	6	
10	90305-GE8-003	NUT, U, 14mm .....	1	
• 11	90651-NF4-000	CIRCLIP, EX. 26mm .....	1	
• 12	90652-NF4-000	CIRCLIP, IN. 35mm .....	2	
13	96140-62020-10	BRG., BALL RADIAL, 6202 (U) .....	2	

Block No.

**F-10**

**REAR BRAKE CALIPER**

**2012 NSF250R**



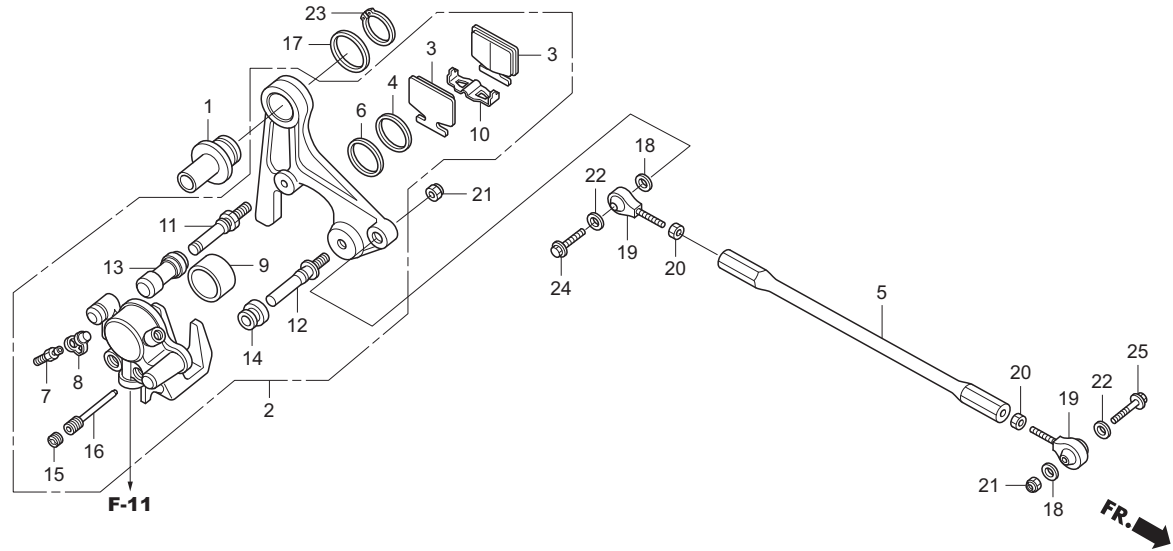
Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	42305-NX4-000	COLLAR, CALIPER BRKT. ....	1	
• 2	43100-NF5-612	CALIPER ASSY., REAR ....	1	
• 3	43105-NF5-612	PAD COMP. ....	2	
4	43109-MA3-006	SEAL, DUST ....	1	
• 5	43111-NX4-000	ROD, RR. BRAKE TORQUE ....	1	
6	43209-MA3-006	SEAL, PISTON ....	1	
7	43352-568-003	SCREW, BLEEDER ....	1	
8	43353-461-771	CAP, BLEEDER ....	1	
9	45107-GM9-711	PISTON ....	1	
10	45108-GM9-741	SPG., PAD ....	1	
11	45131-166-016	PIN, BOLT ....	1	
12	45131-HA5-672	PIN, BOLT A ....	1	
13	45132-166-016	PIN, BUSH ....	1	
14	45133-MA3-006	BOOT, B ....	1	
15	45203-MG3-016	PIN, PLUG ....	2	
16	45215-GE2-016	PIN, HANGER ....	2	
17	90475-425-000	WASHER, THRUST, 30mm ....	1	
18	90485-GB4-790	WASHER, 8mm ....	2	
• 19	91048-NX4-710	ROD END, 8mm ....	2	
20	94002-08000-0S	NUT, HEX., 8mm ....	2	

Block No.

**F-10**

**REAR BRAKE CALIPER**

**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
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21	94050-08000	NUT, FLANGE, 8mm	2	
22	94102-08000	WASHER, PLAIN, 8mm	2	
23	94510-30000	CIRCLIP, EX., 30mm	1	
24	95801-08035-00	BOLT, FLANGE, 8X35	1	
25	95801-08045-00	BOLT, FLANGE, 8X45	1	

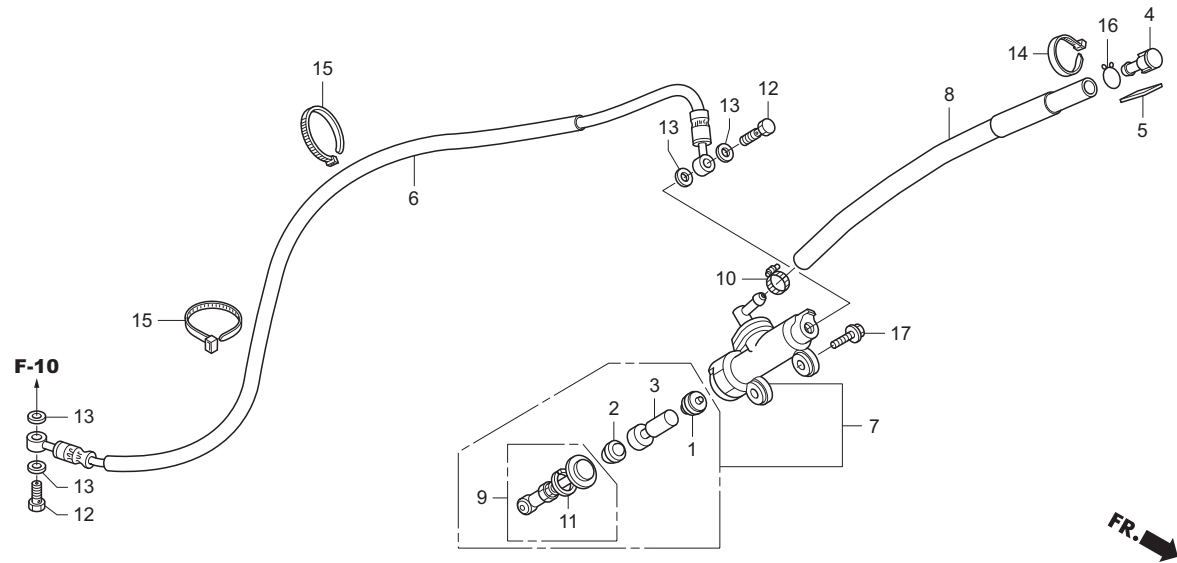


Block No.

**F-11**

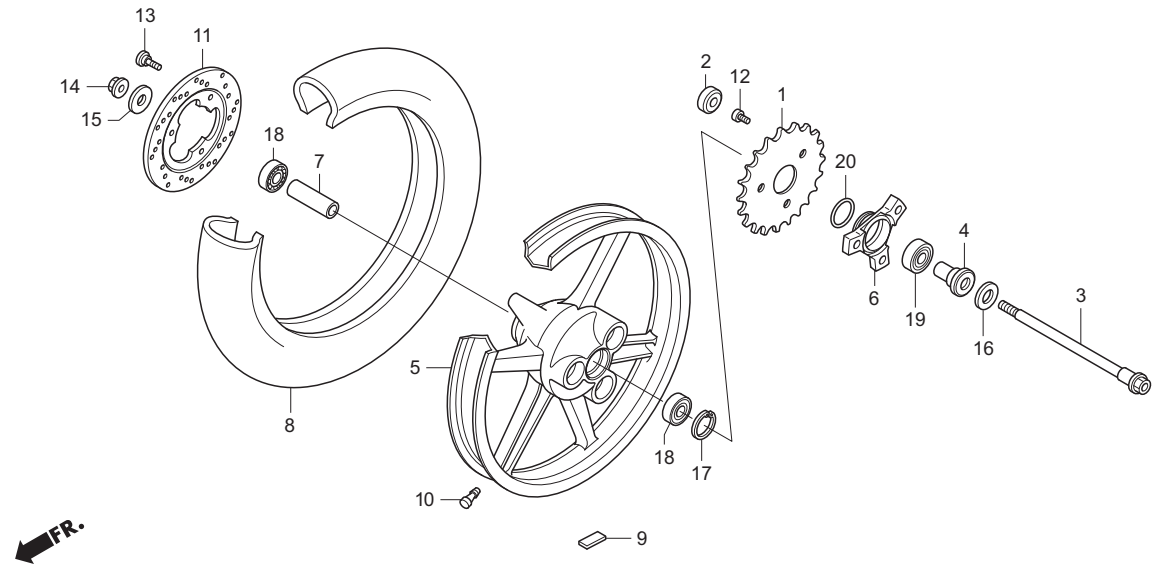
**REAR BRAKE MASTER CYLINDER**

**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	04601-ND5-760	CUP, PRIMARY .....	(1)	
• 2	04602-ND5-760	CUP, SECONDARY .....	(1)	
• 3	04603-NF4-770	PISTON, RR. ....	(1)	
4	17370-419-700	PLUG, BREATHER TUBE .....	1	
5	19105-MR8-300	CUSH, TANK RESERVE .....	1	
• 6	43310-NX4-003	HOSE, RR. BRAKE .....	1	
• 7	43500-NF4-771	M/C ASSY., RR. ....	1	
• 8	43503-NX4-000	V-TUBE, 9X13X275 .....	1	
• 9	43504-NF4-770	ROD ASSY. ....	(1)	
• 10	43541-ND5-750	CLAMP .....	1	
11	46182-MEL-D21	CIRCLIP, M/C .....	1	
12	90145-MS9-612	OIL BOLT, 10X22 .....	2	
13	90601-ZE1-000	WASHER, PLUG DRAIN, 10mm .....	4	
• 14	90651-NC8-000	TY-LAP, 3.6X281 .....	1	
15	91058-MG9-681	BAND, SELF LOCK .....	2	
16	95002-02120	CLIP, TUBE B12 .....	1	
17	95801-06020-00	BOLT, FLANGE, 6X20 .....	2	

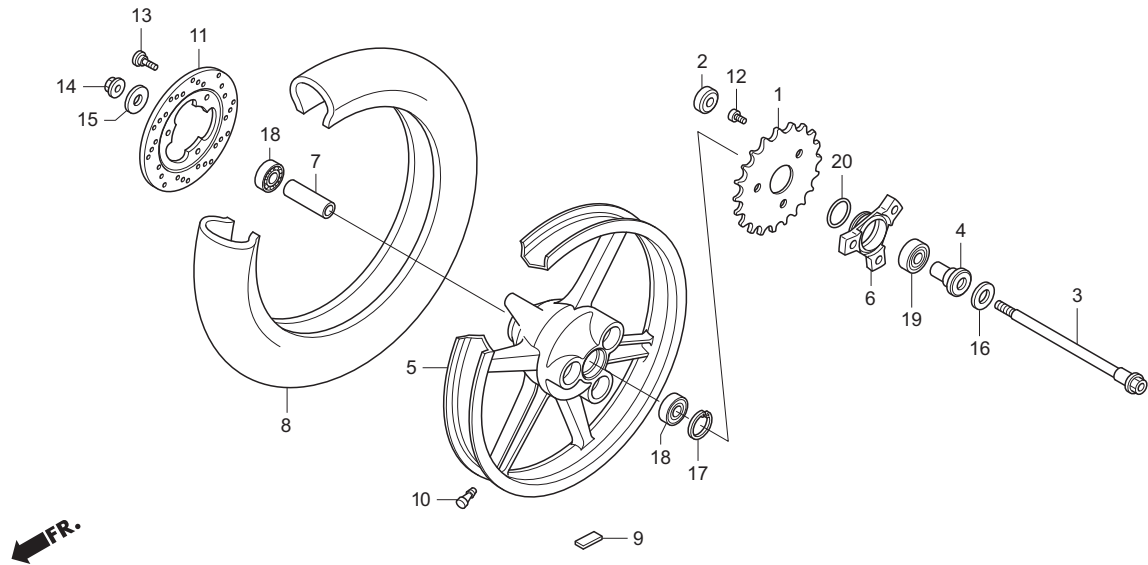
Block No.  
**F-12**  
**REAR WHEEL**  
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	41202-NX7-000	SPROCKET, FINAL DRIVEN 32T .....	(1)	
•	41203-NX7-000	SPROCKET, FINAL DRIVEN 33T .....	(1)	
•	41204-NX7-000	SPROCKET, FINAL DRIVEN 34T .....	(1)	
•	41205-NX7-000	SPROCKET, FINAL DRIVEN 35T .....	1	
•	41206-NX7-000	SPROCKET, FINAL DRIVEN 36T .....	(1)	
•	41207-NX7-000	SPROCKET, FINAL DRIVEN 37T .....	(1)	
•	41208-NX7-000	SPROCKET, FINAL DRIVEN 38T .....	(1)	
•	41209-NX7-000	SPROCKET, FINAL DRIVEN 39T .....	(1)	
•	41210-NX7-000	SPROCKET, FINAL DRIVEN 40T .....	(1)	
• 2	41241-NX7-000	DAMPER, RR. WHEEL .....	3	
• 3	42301-NX4-000	AXLE, RR. WHEEL .....	1	
• 4	42304-NX7-000	COLLAR, RR. WHEEL SIDE .....	1	
• 5	42601-NX4-811	WHEEL, RR. (3.50X17) .....	1	
• 6	42611-NX7-000	FLANGE, FINAL DRIVEN .....	1	
• 7	42620-NX4-000	COLLAR, RR. WHEEL DISTANCE .....	1	
• 8	42711-NX7-003	TIRE, ASSY., RR. (BS) .....	1	No sale by HRC
• 9	42721-NX4-860	WT., BALANCER, 1.25G .....	N	No sale by HRC
•	42722-NX4-860	WT., BALANCER, 2.5G .....	N	No sale by HRC
•	42723-NX4-860	WT., BALANCER, 5G .....	N	No sale by HRC
10	42753-ML7-003	VALVE, RIM (BS) .....	1	
• 11	43122-NF5-760	DISK, BRAKE .....	1	

Block No.  
**F-12**  
**REAR WHEEL**

**2012 NSF250R**



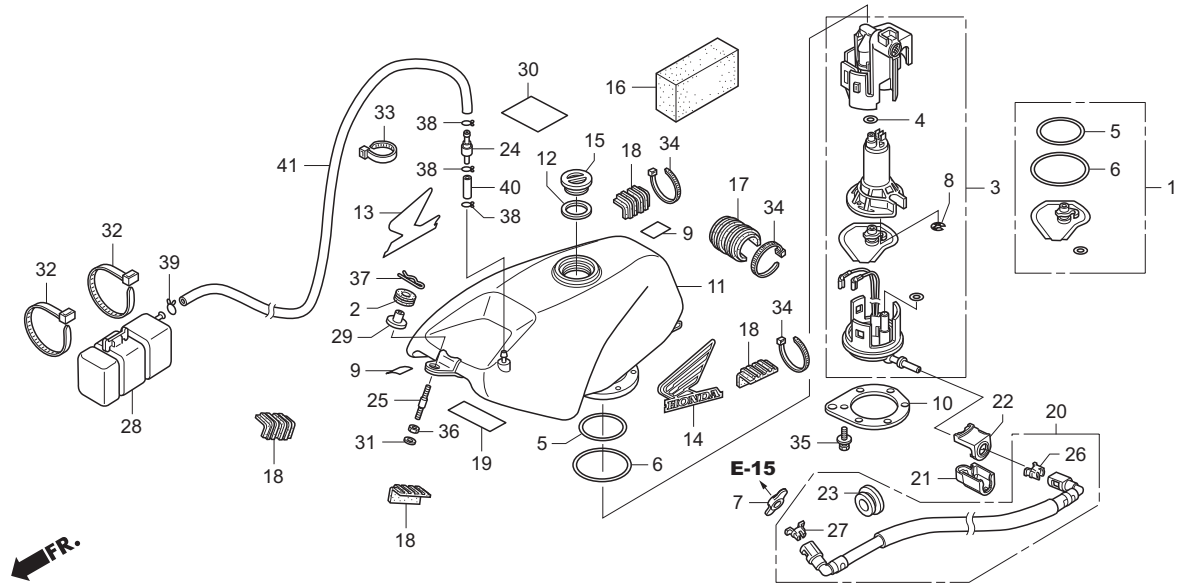
Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 12	90102-NX7-000	BOLT, SOCKET, 10X16 .....	3	
13	90105-KR3-000	BOLT, FR. DISK, 8X24 .....	3	
14	90305-GE8-003	NUT, U, 14mm .....	1	
• 15	90411-NX4-000	WASHER, 14X32X1 .....	1	
• 16	90456-NX4-000	WASHER, 18X32X1 .....	1	
• 17	90652-NF4-000	CIRCLIP, IN., 35 .....	1	
• 18	91051-NX7-003	BRG., BALL RADIAL, 620UU .....	2	
• 19	91052-NF4-000	BRG., BALL RADIAL, 6904UU .....	1	
20	91357-964-006	O-RING, 31 .....	1	

Block No.

**F-13**

**FUEL TANK / FUEL PUMP**

**2012 NSF250R**



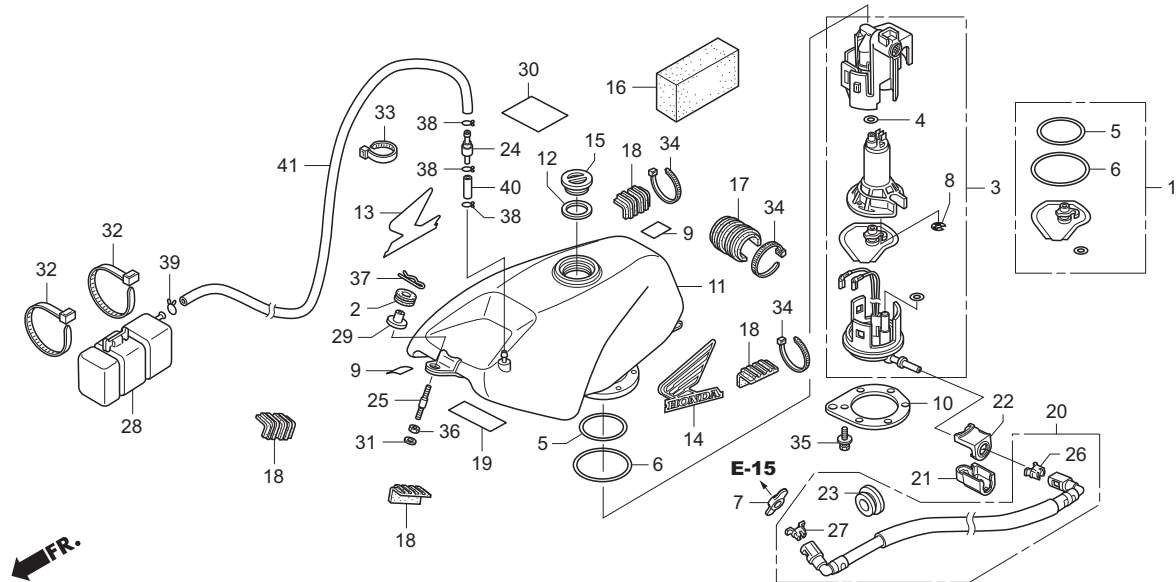
Ref. No.	Part No.	Description	Reqd. No.	Remarks
1	06160-MEN-A31	KIT, FUEL FILTER	1	
2	15604-MG7-000	GROMMET, OIL COOLER	1	
• 3	16700-NX7-003	UNIT ASSY., FUEL PUMP	1	
4	16702-KPC-D50	O-RING, 8.6X1.9	1	
5	16711-MEN-A30	O-RING, 3.7X73.9	1	
6	16712-MEN-A30	O-RING, 2.4X88.4	1	
7	16719-HN8-A61	RUBBER, FUEL JOINT	1	
8	16920-SE0-931	CLIP, FUEL PUMP	1	
9	17503-MBT-D50	FILM, PROTECTOR	2	
• 10	17507-NX7-000	PLATE, SETTING	1	
• 11	17510-NX7-000	TANK COMP., FUEL	1	
• 12	17515-NX5-770	PKG., FUEL CAP	1	
• 13	17516-NX4-860	MARK, R. WING	1	
• 14	17517-NX4-860	MARK, L. WING	1	
• 15	17521-NX4-680	CAP, FUEL TANK	1	
• 16	17522-NF5-690	SPONGE, BUFFLE	3	
• 17	17528-NC8-000	RUBBER, FUEL TANK MT. RR.	1	
• 18	17528-NF4-000	RUBBER, FUEL TANK MT. B	4	
• 19	17556-MEE-300	FILM A, PROTECTOR	1	
• 20	17570-NX7-000	HOSE COMP., FUEL FEED	1	

Block No.

**F-13**

**FUEL TANK / FUEL PUMP**

**2012 NSF250R**



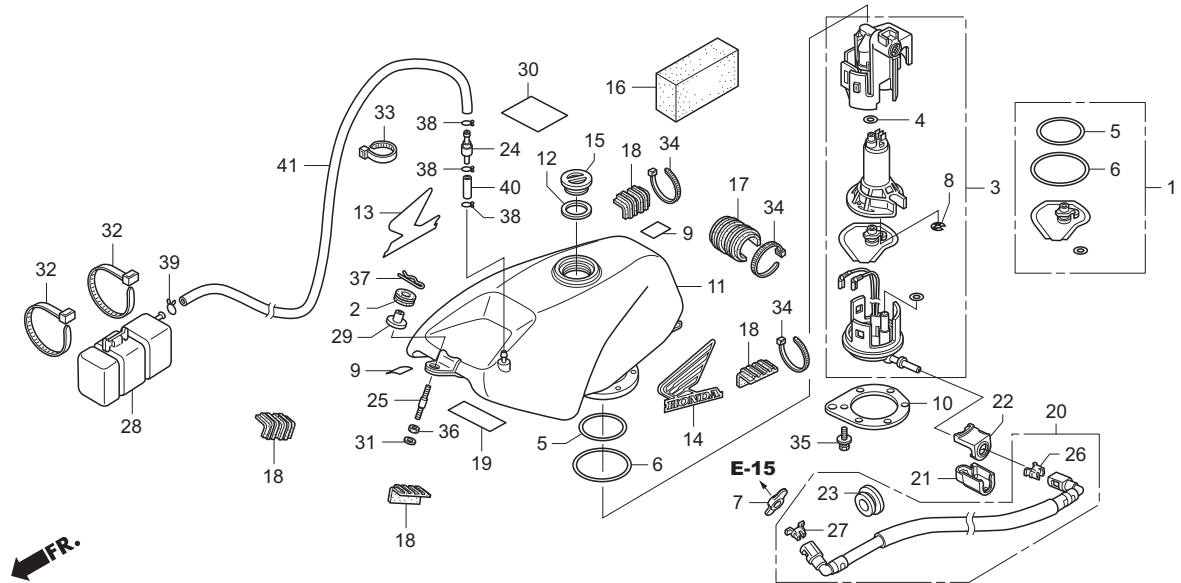
Ref. No.	Part No.	Description	Reqd. No.	Remarks
21	17575-MEN-A30	COVER, FUEL CONNECTOR .....	1	
22	17576-MEN-A30	RUBBER, FUEL CONNECTOR .....	1	
• 23	17580-NX7-000	GROMMET, FUEL FEED HOSE .....	1	
• 24	17625-NF4-003	VALVE COMP., CHECK .....	1	
• 25	17629-NX4-000	PIN, TANK MT. ....	1	
26	17711-S0X-931	RETAINER .....	1	
27	17711-S0X-A31	RETAINER .....	1	
• 28	19130-NX5-770	TANK, CATCH .....	1	
29	80115-GS3-000	SIDE COLLAR, RR. FENDER .....	1	
• 30	87208-ND4-000	MARK, CAUTION .....	1	J
•	57270-NX4-910	LABEL, CAUTION .....	1	ED
	87560-GBF-B60	LABEL, CAUTION .....	1	AC
31	90443-GC8-000	WASHER, SPECIAL, 8mm .....	1	
• 32	90651-NC8-000	TY-LAP, 3.6X281 .....	2	
• 33	90652-ND5-000	TY-LAP, 2.4X92 .....	1	
34	91058-MG9-681	BAND, SELF LOCK .....	3	
35	93401-05014-08	BOLT-WASHER, 5X14 .....	6	
36	94002-08000-0S	NUT, HEX., 8mm .....	1	
37	94252-10100	PIN, LOCK, 10mm .....	1	
38	95002-45000	CLIP, C8, TUBE .....	3	

Block No.

**F-13**

**FUEL TANK / FUEL PUMP**

**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
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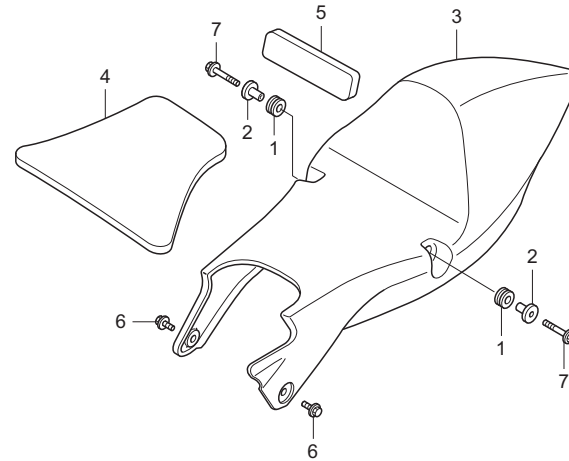
39	95002-50000	CLIP, C9, TUBE .....	1	
40	95003-10003-31	V-TUBE, 5X8X30 .....	1	No sale by HRC
41	95003-10047-31	V-TUBE, 5X8X470 .....	1	No sale by HRC



Block No.

**F-14**  
**SEAT / SEAT COWL**

**2012 NSF250R**



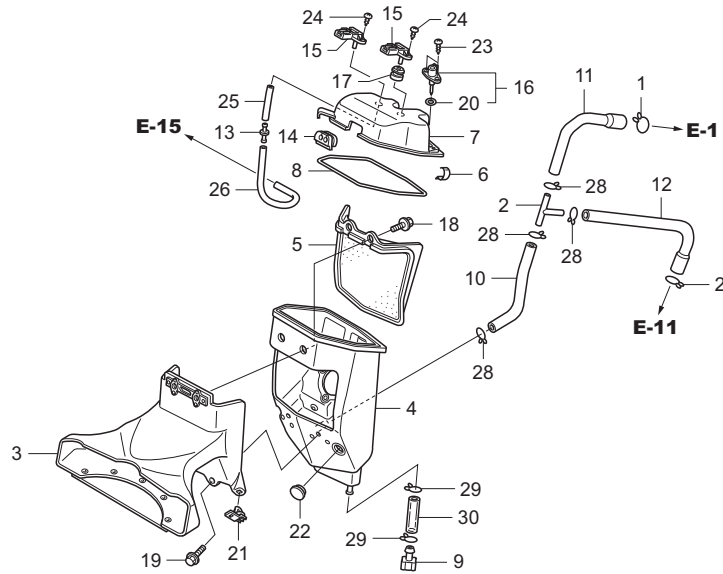
Ref. No.	Part No.	Description	Reqd. No.	Remarks
1	33712-KC5-003	GROMMET, T/L MT. ....	2	
2	61104-KA4-700	COLLAR, FENDER MT. ....	2	
• 3	77210-NX7-000	COWL, SEAT ....	1	
• 4	77220-NX4-000	RUBBER, SEAT ....	1	
• 5	77221-NF5-760	RUBBER, SEAT BACK ....	1	
6	90108-GK1-000	BOLT, FLANGE, SH, 6X12 ....	2	
7	96001-06020-00	BOLT, FLANGE, SH, 6X20 ....	2	

Block No.

**F-15**

**AIR BOX**

**2012 NSF250R**

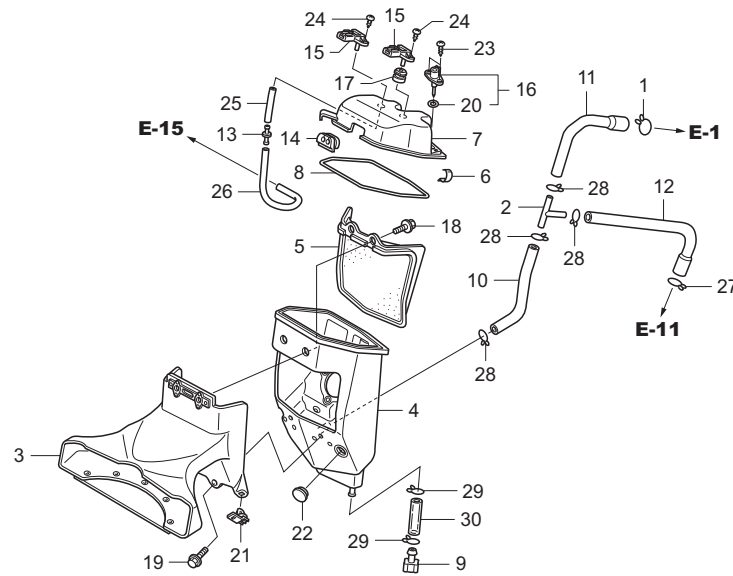


Ref. No.	Part No.	Description	Reqd. No.	Remarks
1	15772-292-010	CLIP, TUBE .....	1	
2	16958-MB0-000	JOINT, FUEL TUBE .....	1	
• 3	17210-NX7-000	DUCT, COMP., AIR .....	1	
• 4	17220-NX7-000	BOX COMP., AIR .....	1	
• 5	17230-NX7-000	FILTER, AIR BOX .....	1	
6	17235-MEE-D00	C CLIP .....	7	
• 7	17240-NX7-000	COVER, AIR BOX .....	1	
• 8	17250-NX7-000	SEAL, AIR BOX .....	1	
9	17370-419-700	PLUG, BREATHER TUBE .....	1	
• 10	17371-NX7-000	TUBE LWR., ENG. BREATHER .....	1	
• 11	17372-NX7-000	TUBE UP., ENG. BREATHER .....	1	
• 12	17373-NX7-000	TUBE, MISSION BREATHER .....	1	
13	17414-PC6-660	JOINT, 2WAY .....	1	
• 14	17930-NX7-000	GROMMET, THROTTLE CABLE .....	1	
15	37830-MEL-003	SENSOR ASSY., MAP .....	2	
16	37880-P05-A00	SENSOR ASSY., TA. ....	1	
17	80101-166-000	GROMMET, WIRE CORD .....	1	
18	90002-GC3-000	BOLT, FLANGE, 5X10 .....	2	
19	90122-752-000	BOLT, SPECIAL, 6mm .....	2	
20	91303-PK2-005	O-RING, 7.5X1.5 .....	1	

Block No.

**F-15  
AIR BOX**

**2012 NSF250R**



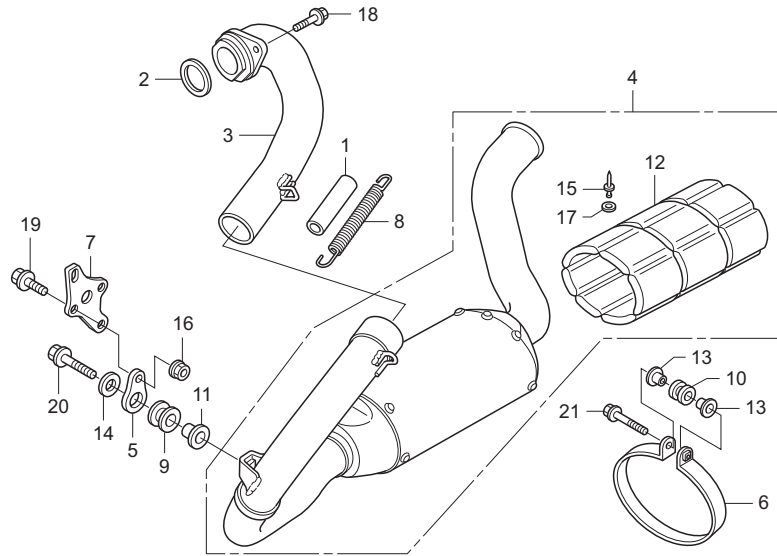
Ref. No.	Part No.	Description	Reqd. No.	Remarks
21	91565-SEL-003	CLIP, WPC COUPLER .....	1	
22	91611-SE3-000	GROMMET, RR. DOOR .....	1	
23	93911-25480	SCREW, TAPPING, (PO) 5X16 .....	2	
24	93911-25580	SCREW, TAPPING, (PO) 5X20 .....	2	
25	95001-35080-40	TUBE, FUEL, 3.5X80 .....	1	
26	95001-35160-40	TUBE, FUEL, 3.5X160 .....	1	
27	95002-02100	CLIP, B10, TUBE .....	1	
28	95002-02120	CLIP, B12, TUBE .....	4	
29	95002-80000	CLIP, C12, TUBE .....	2	
30	95003-23004-31	V-TUBE, 8X12X40 .....	1	No sale by HRC

Block No.

**F-16**

**EXHAUST MUFFLER**

**2012 NSF250R**

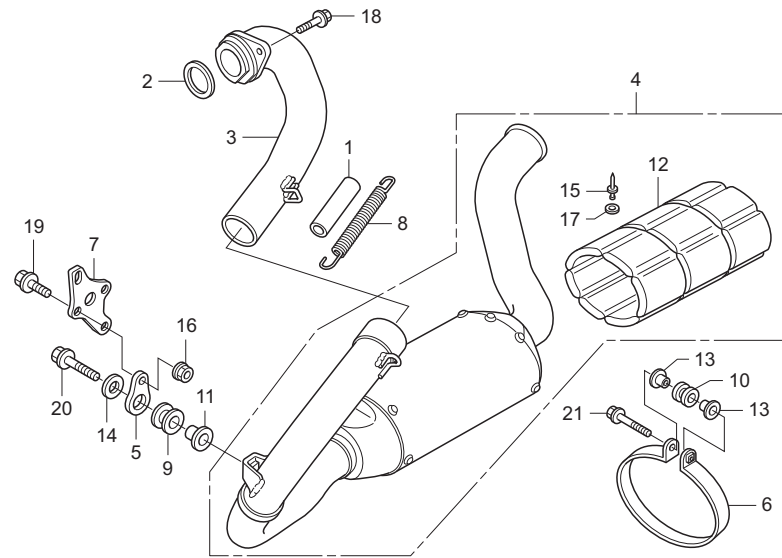


FR.

Ref. No.	Part No.	Description	Reqd. No.	Remarks
1	14539-KCZ-300	TUBE, TENSIONER SPG. ....	1	
2	18291-MM5-860	GASKET, EXH. PIPE ....	1	
• 3	18310-NX7-000	PIPE COMP., FR. EXH. ....	1	
• 4	18320-NX7-000	MUFFLER COMP. ....	1	
5	18325-KS6-000	STAY, CHAMBER RR. ....	1	
• 6	18325-NX7-000	BAND, MUFFLER ....	1	
• 7	18326-NX7-000	STAY, EXH. ....	1	
8	18332-KS6-000	SPG., EXH. PIPE ....	1	
9	18334-KA3-830	RUBBER, SILENCER ....	1	
10	18334-ML3-680	RUBBER, SILENCER ....	1	
11	18336-KS6-700	COLLAR, SILENCER MT. ....	1	
• 12	18336-NX7-300	PACK., GLASS WOOL ....	1	
13	19052-MB4-880	COLLAR, CANISTER MT. ....	2	
14	90506-430-000	WASHER, FENDER MT. ....	1	
• 15	91080-NX7-300	RIVET, 4.8X9.6 ....	14	
16	94050-06000	NUT, FLANGE, 6mm ....	1	
17	94101-05000	WASHER, PLAIN, 5mm ....	14	
18	95701-08020-00	BOLT, FLANGE, 8X20 ....	2	
19	96001-06016-00	BOLT, FLANGE, SH, 6X16 ....	1	
20	96001-06025-00	BOLT, FLANGE, SH, 6X25 ....	1	

Block No.  
**F-16**  
**EXHAUST MUFFLER**

**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
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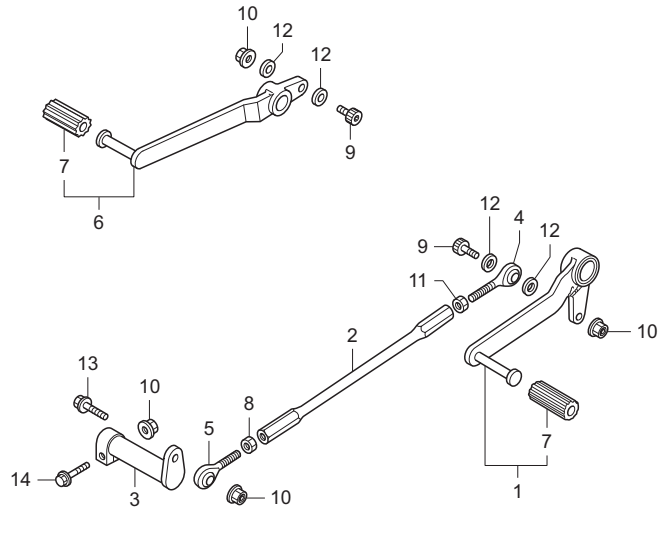
21	96001-06032-00	BOLT, FLANGE, SH, 6X32 .....	1	
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Block No.

**F-17**

**PEDAL**

**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	24700-NF4-780	PEDAL COMP., CHANGE .....	1	
• 2	24706-NX4-000	ROD, CHANGE .....	1	
• 3	24710-NX4-000	ARM, GEAR CHANGE .....	1	
• 4	24711-NX4-710	ROD END, 6mm A .....	1	
• 5	24712-NX4-710	ROD END, 6mm B .....	1	
• 6	46500-NF4-780	PEDAL COMP., BRK. ....	1	
• 7	46501-ND4-750	RUBBER, PEDAL .....	2	
• 8	90201-KV3-700	NUT, TIE-ROD B .....	1	
• 9	90211-NX4-771	BOLT, SOCKET, 6X25 .....	2	
• 10	90301-473-003	NUT, U, 6mm .....	4	
• 11	94001-06200-0S	NUT, HEX., 6mm .....	1	
• 12	94101-06000	WASHER, PLAIN, 6mm .....	4	
• 13	96001-06022-00	BOLT, FLANGE, SH, 6X22 .....	1	
• 14	96001-06028-00	BOLT, FLANGE, SH, 6X28 .....	1	

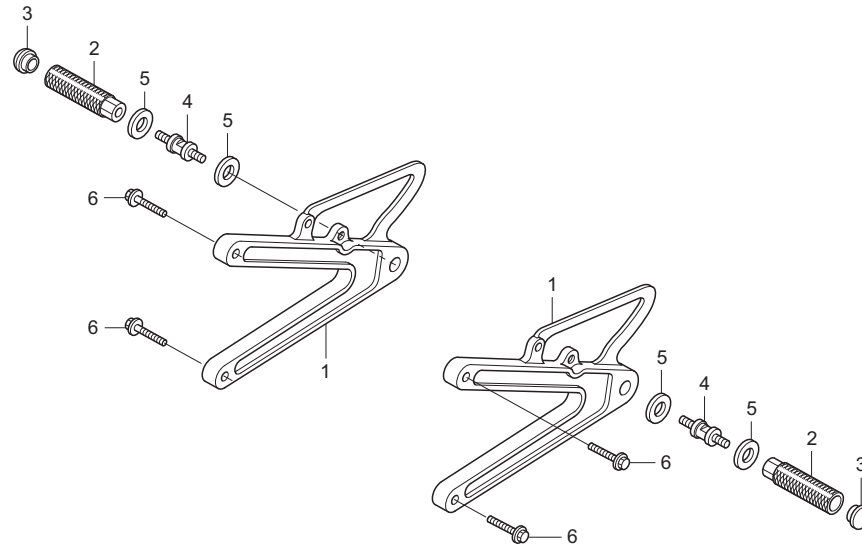


Block No.

**F-18**

**STEP**

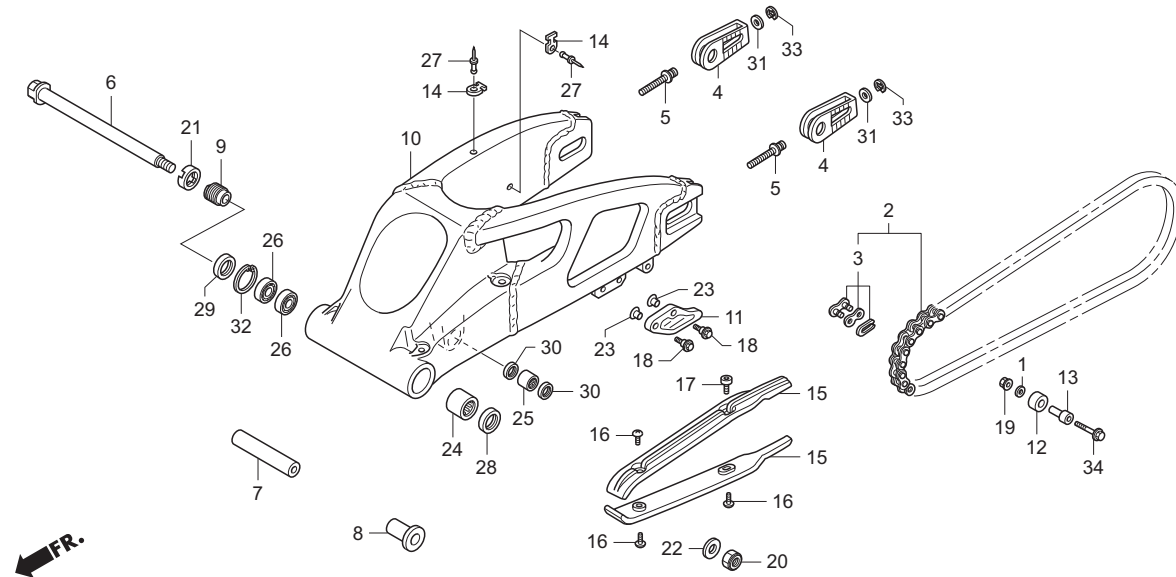
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	50600-NX4-770	HOLDER, STEP .....	2	
• 2	50610-NL5-760	ARM, STEP .....	2	
• 3	50612-NL5-760	END, STEP ARM .....	2	
• 4	50643-NX4-770	BOSS, PEDAL PIVOT .....	2	
5	90504-MA6-000	WASHER, 8.5X26 .....	4	
6	95701-08030-00	BOLT, FLANGE, 8X30 .....	4	

Block No.  
**F-19**  
**SWINGARM**

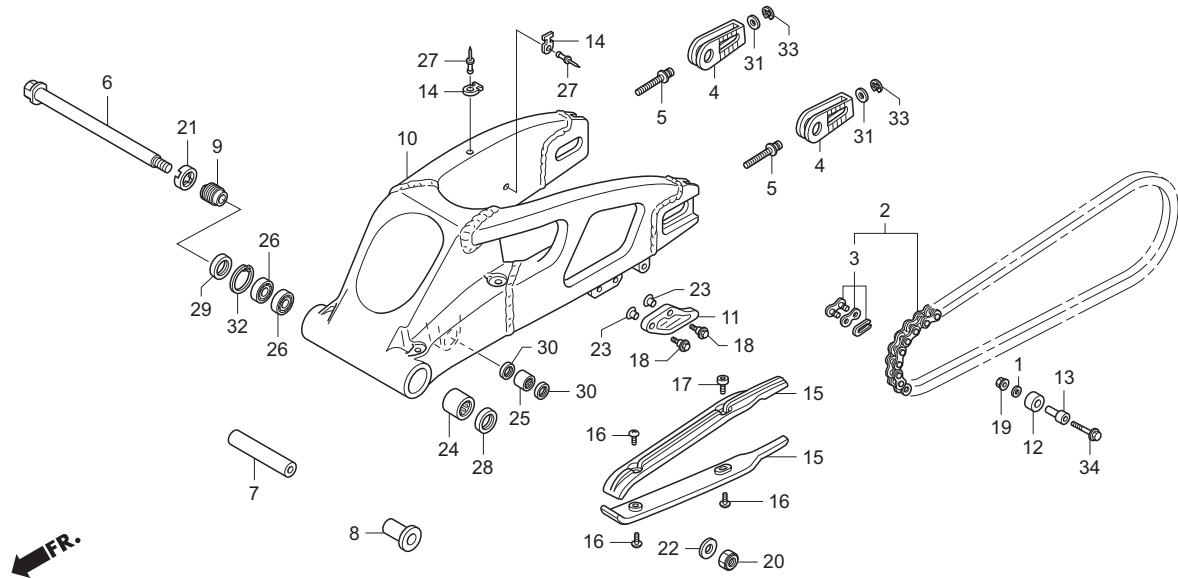
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
1	17936-921-000	WASHER, PIVOT	1	
• 2	40530-NX4-811	CHAIN, DRIVE (RK415HRU-120RJ)	1	
• 3	40531-NX4-811	JOINT, DRIVE CHAIN	1	
• 4	40543-NX4-000	ADJUSTER, CHAIN	2	
• 5	40545-NX4-000	BOLT, CHAIN ADJUSTER	2	
• 6	52101-NX4-680	BOLT, SWINGARM PIVOT	1	
• 7	52102-NX4-000	COLLAR, DIST. SWINGARM	1	
• 8	52106-NX4-000	COLLAR B, PIVOT	1	
• 9	52109-NX4-000	BOLT, ADJUSTER PIVOT	1	
• 10	52110-NX7-000	SWINGARM COMP., RR.	1	
11	52156-GAN-670	GUARD, CHAIN	1	
12	52158-HB5-003	ROLLER, CHAIN	1	
• 13	52159-NX7-000	COLLAR, CHAIN ROLLER	1	
• 14	52161-NF5-710	HOSE BASE, SADDLE	2	
• 15	52170-NX4-000	SLIDER, CHAIN	2	
16	90101-692-000	SCREW, TRUSS G. BOX	3	
• 17	90101-NX7-000	SCREW, SPECIAL, 4X10	1	
18	90110-GE0-710	BOLT, FLANGE, 6mm	2	
19	90301-473-003	NUT, U, 6mm	1	
20	90305-KZ4-891	NUT, U, 18mm	1	

Block No.  
**F-19**  
**SWINGARM**

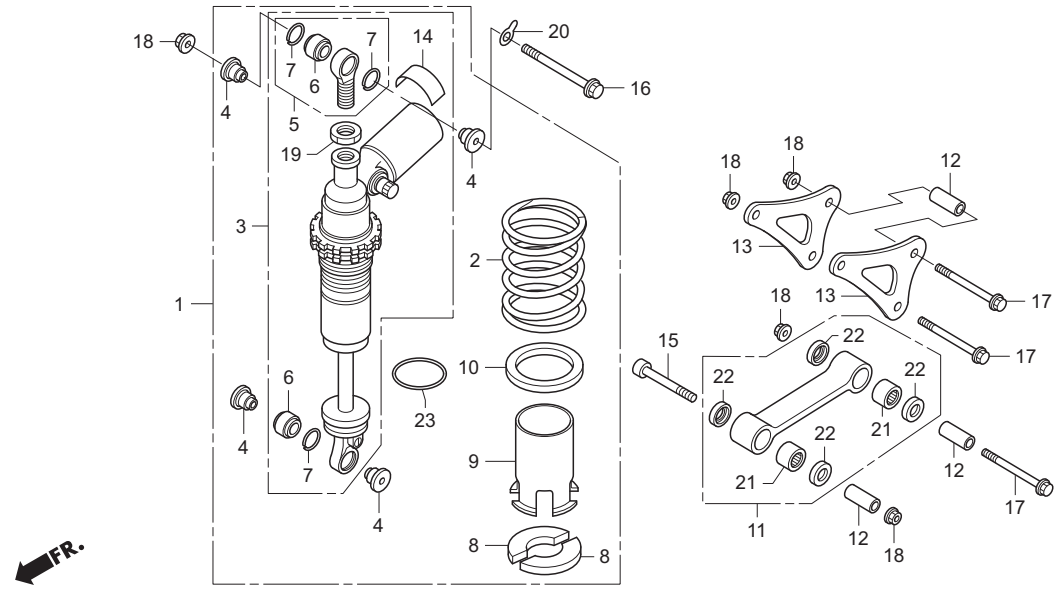
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 21	90355-NX4-000	NUT, SWINGARM PIVOT .....	1	
22	90401-KZ4-890	WASHER, 18X32X2 .....	1	
23	90522-028-000	WASHER, CHAIN CASE SETTING .....	2	
24	91071-MR7-003	BRG., NEEDLE .....	1	
25	91071-MY1-005	BRG., NEEDLE, 17X24X17 .....	1	
26	91072-MR7-003	BRG., BALL RADIAL, 20X37X9 .....	2	
• 27	91080-NF5-710	RIVET, 4.0X8.6 .....	2	
28	91202-MR7-003	DUST SEAL, 28X37X4 .....	1	
29	91214-MR7-003	DUST SEAL, 26X37X5 .....	1	
30	91262-KV3-831	DUST SEAL, 17X24X5 .....	2	
31	94102-08000	WASHER, PLAIN, 8mm .....	2	
32	94520-37000	CIRCLIP, IN., 37mm .....	1	
33	94540-07029	E RING, 7mm .....	2	
34	95801-06050-00	BOLT, FLANGE, 6X50 .....	1	

Block No.  
**F-20**  
**REAR CUSHION**

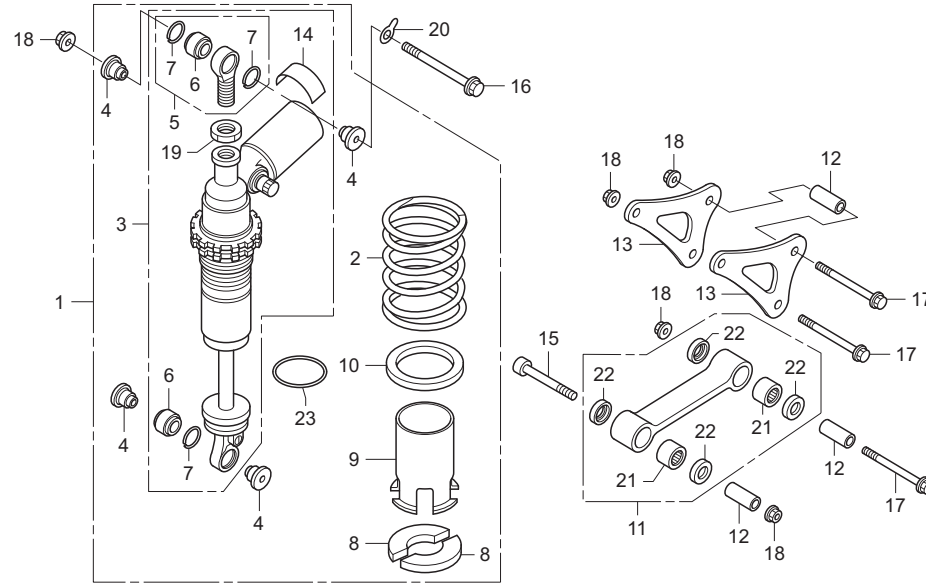
**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	52400-NX7-003	CUSHION ASSY., RR. ....	1	J
•	52400-NX7-651	CUSHION ASSY., RR. ....	1	ED
•	52400-NX7-671	CUSHION ASSY., RR. ....	1	AC
• 2	52401-NX4-003	SPRING, RR. CUSHION ....	1	K=8.0 Yellow paint
•	52402-NX4-003	SPRING, RR. CUSHION H ....	(1)	H=8.5 Red paint
•	52403-NX4-003	SPRING, RR. CUSHION S ....	(1)	K=7.5 Blue paint
•	52404-NX4-701	SPRING, RR. CUSHION 7.0 ....	(1)	K=7.0 Green paint
•	52405-NX4-701	SPRING, RR. CUSHION 6.5 ....	(1)	K=6.5 Black paint
• 3	52410-NX7-003	DAMPER COMP., RR. ....	1	J
•	52410-NX7-651	DAMPER COMP., RR. ....	1	ED
•	52410-NX7-671	DAMPER COMP., RR. ....	1	AC
• 4	52411-NX7-003	COLLAR, DAMPER ....	4	
• 5	52420-NX4-013	JOINT COMP., UPPER ....	1	
• 6	52422-NX4-862	BRG., SPHERICAL ....	2	
• 7	52424-GC4-831	RING, STOPPER ....	3	
• 8	52455-NF4-781	STOPPER, SPRING SEAT ....	2	
• 9	52458-NX4-003	GUIDE, SPRING ....	1	
• 10	52459-NX4-003	SEAT, SPRING ....	1	
• 11	52460-NX4-000	ROD ASSY., CUSHION ....	1	
• 12	52465-NX4-000	COLLAR, CUSHION ARM ....	3	
• 13	52471-NX4-000	PLATE, CUSHION ARM ....	2	

Block No.  
**F-20**  
**REAR CUSHION**  
**2012 NSF250R**

FR.



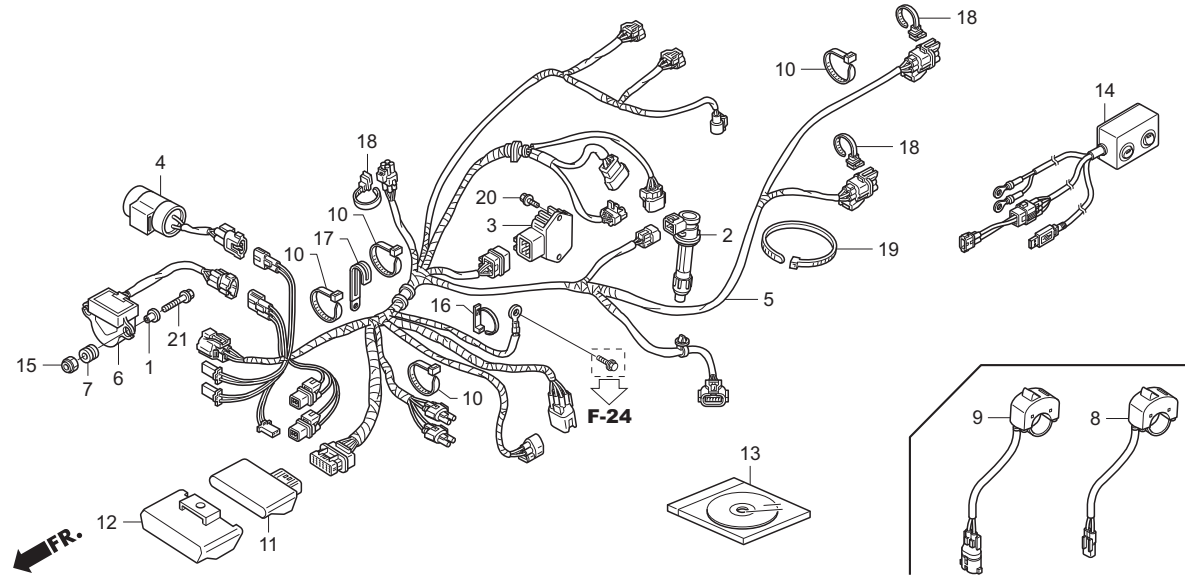
Ref. No.	Part No.	Description	Reqd. No.	Remarks
14	87516-KS7-832	LABEL, RR. DAMPER WARNING	1	J
	87516-MCA-G60	LABEL, RR. DAMPER WARNING	1	ED
	87516-MBL-610	LABEL, RR. DAMPER WARNING	1	AC
15	90110-MR8-000	BOLT, SOCKET, 10X52	1	
16	90128-GN1-000	BOLT, FLANGE, DR, 10X61	1	
17	90154-HA8-000	BOLT, FLANGE, 10X52	3	
18	90304-GA6-003	NUT, FR. AXLE	5	
• 19	90306-NF5-951	NUT, LOCK	1	
• 20	90510-NX4-000	SHIM, ENG. MT. 0.2	N	
•	90511-NX4-000	SHIM, ENG. MT. 0.6	N	
•	90512-NX4-000	SHIM, ENG. MT. 1.0	N	
•	90513-NX4-000	SHIM, ENG. MT. 1.5	N	
21	91071-MY1-005	BEARING, NEEDLE, 17X24X17	2	
22	91262-KV3-831	DUST SEAL, 17X24X5	4	
23	91356-KZ3-003	O-RING, 44.7X2.4	1	

Block No.

**F-21**

**WIRE HARNESS**

**2012 NSF250R**

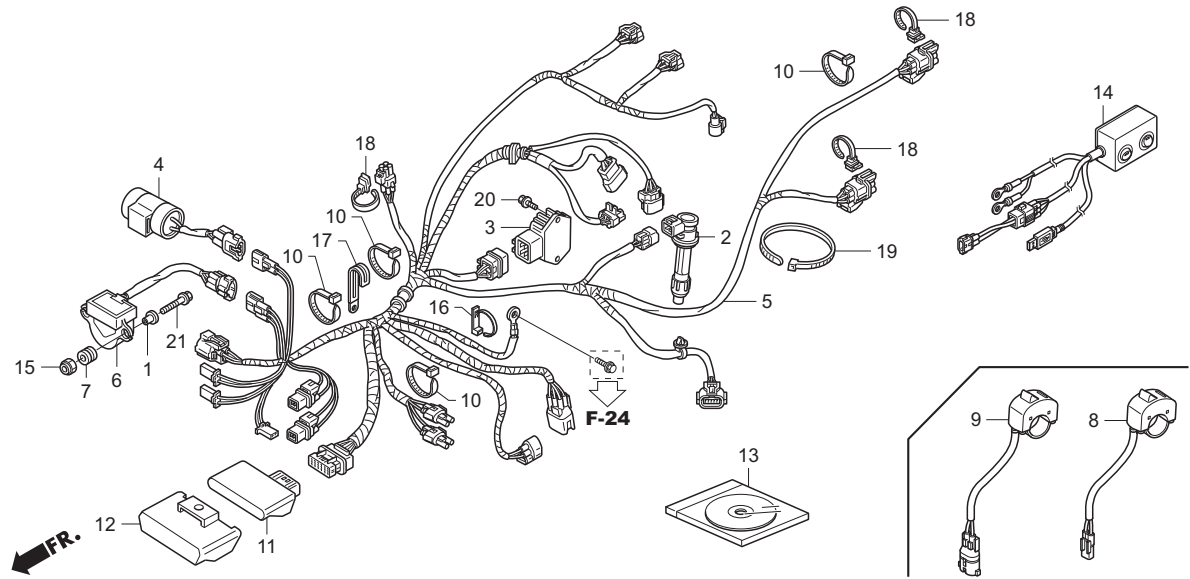


Ref. No.	Part No.	Description	Reqd. No.	Remarks
1	19052-MFF-D00	COLLAR, RAD MT. ....	2	
• 2	30700-NX7-003	CAP & COIL, IGN. ....	1	
3	31600-MEN-A31	REG. RECT. ASSY. ....	1	
• 4	31700-NN4-003	UNIT ASSY., CONDENSER ....	1	
• 5	32100-NX7-010	HARNESS, WIRE ....	1	
• 6	35161-NX7-000	SENSOR COMP., BANK ANGLE ....	1	
7	35163-MGC-003	GROMMET ....	2	
• 8	35170-NX7-000	SW. ASSY., PIT ....	(1)	
• 9	35400-NX7-000	SW., MODE ....	(1)	
10	35701-MG9-950	BAND, TY-RAP ....	4	
• 11	38770-NX7-033	UNIT COMP., PGM-FI/IGN ....	1	
12	38771-MEN-A30	SUSPENSION, UNIT COMP., PGM-FI ....	1	
• 13	38771-NX7-000	CD-ROM, HRC DATA SETTING TOOL ....	(1)	
• 14	38880-N1C-770	UNIT ASSY., SERIAL-USB I/F ....	(1)	
15	90303-HW1-671	NUT, SELF LOCK, 6mm ....	2	
16	90672-MCW-000	CABLE, STRAP ....	1	
17	91405-943-000	CLIP, CORD ....	1	
18	91531-SR3-003	HOLDER CP (BAND) ....	3	
19	91560-MS8-600	TY-RAP, CABLE TIE ....	1	
20	93401-06020-00	BOLT-WASHER, 6X20 ....	2	



Block No.  
**F-21**  
**WIRE HARNESS**

**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
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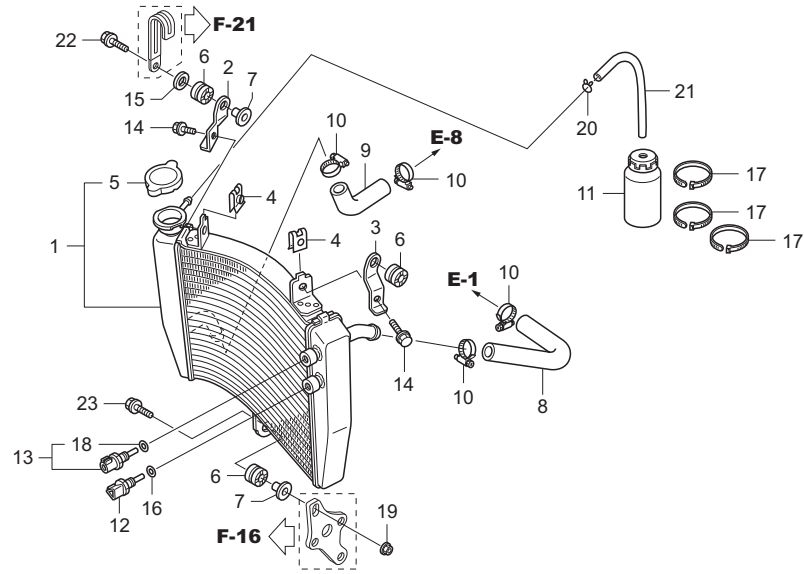
21	95701-06025-08	BOLT, FLANGE, 6X25 .....	2	
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Block No.

**F-22**

**RADIATOR**

**2012 NSF250R**

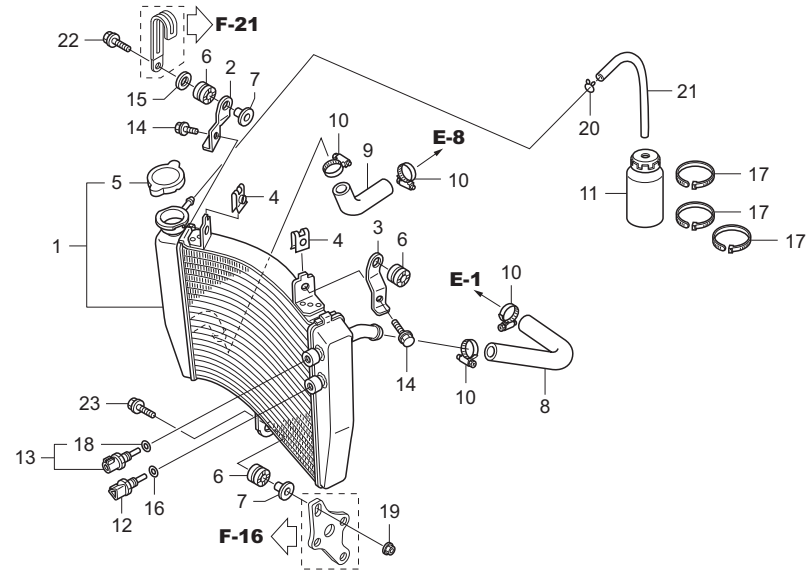


Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	19010-NX7-000	RADIATOR COMP. ....	1	J, AC
• 1	19010-NX7-650	RADIATOR COMP. ....	1	ED
• 2	19011-NX7-000	STAY, R. RADIATOR UPPER ....	1	
• 3	19012-NX7-000	STAY, L. RADIATOR UPPER ....	1	
4	19014-KEA-003	SET, NUT ....	2	
5	19037-GEE-710	CAP COMP., RADIATOR ....	1	J, AC
	19037-MCA-G61	CAP COMP., RADIATOR ....	1	ED
6	19051-KA3-830	RUBBER, RADIATOR MT. ....	3	
7	19052-KA3-830	COLLAR, RADIATOR MT. ....	2	
• 8	19502-NX7-000	HOSE A, WATER ....	1	
• 9	19503-NX7-000	HOSE B, WATER ....	1	
10	19504-KY1-003	CLAMP, WATER HOSE D25 ....	4	
• 11	19602-NF4-810	TANK, CATCH 250 ....	1	
12	37870-MBG-003	SENSOR ASSY., TW. ....	1	
• 13	37870-NF4-611	SENSOR ASSY., TW. ....	1	
14	90004-GHB-630	BOLT, FLANGE, NSHF, 6X16 ....	2	
15	90403-KA3-830	WASHER, RADIATOR MT. ....	1	
16	90454-MC7-000	WASHER, SPECIAL, 12mm ....	1	
• 17	90651-NC8-000	TY-LAP, 3.6X281 ....	3	
18	91307-RK2-005	O-RING, 9.5X1.5 ....	1	

Block No.

**F-22  
RADIATOR**

**2012 NSF250R**



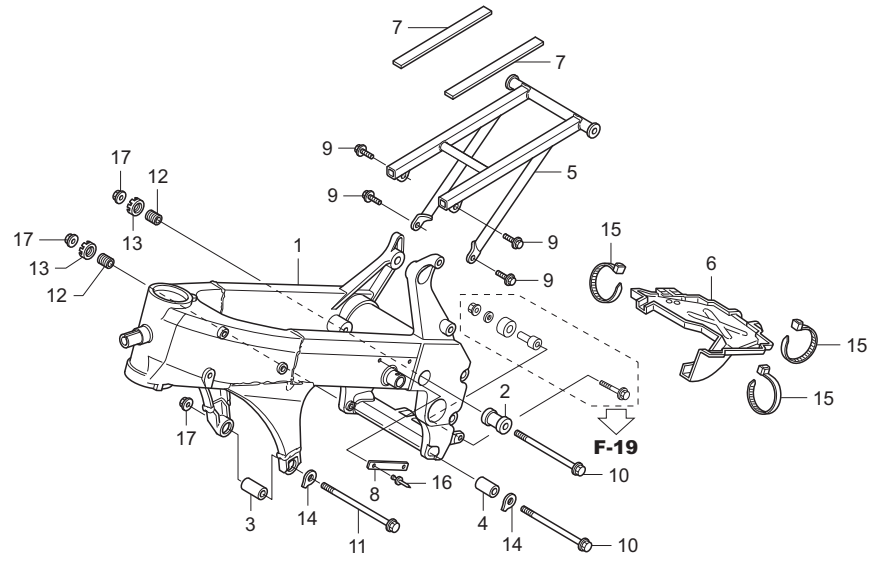
Ref. No.	Part No.	Description	Reqd. No.	Remarks
19	94050-06000	NUT, FLANGE, 6mm	1	
20	95002-45000	CLIP, C8, TUBE	1	
21	95003-10023-31	V-TUBE, 5X8X230	1	No sale by HRC
22	96001-06025-00	BOLT, FLANGE, SH, 6X25	1	
23	96001-06028-00	BOLT, FLANGE, SH, 6X28	1	

Block No.

**F-23**

**FRAME BODY**

**2012 NSF250R**



Ref. No.	Part No.	Description	Reqd. No.	Remarks
• 1	50100-NX7-000	FRAME BODY COMP. ....	1	
• 2	50180-NX4-000	COLLAR, ENG. MT. ....	1	
• 3	50180-NX7-000	COLLAR, ENG. MT. A ....	1	
• 4	50182-NX7-000	COLLAR, ENG. MT. D ....	1	
• 5	50240-NX4-000	RAIL COMP., SEAT ....	1	
• 6	50310-NX7-000	GUARD ASSY., EXH. ....	1	
• 7	77105-NX4-000	RUBBER, SEAT RAIL ....	2	
• 8	87131-NX7-000	PLATE, FRAME NO. ....	1	No sale by HRC
• 9	90004-GHB-620	BOLT, FLANGE, NSHF, 6X14 ....	4	
• 10	90102-GW2-000	BOLT, FLANGE, 10X183 ....	2	
• 11	90105-KJ9-000	BOLT, FLANGE, 10X210 ....	1	
• 12	90124-NX4-000	BOLT, ENG. MT. ADJ., 18X34.5 ....	2	
• 13	90301-NX4-000	NUT, LOCK, M18X1.4 ....	2	
• 14	90510-NX4-000	SHIM, ENG. MT. 0.2 ....	N	
•	90511-NX4-000	SHIM, ENG. MT. 0.6 ....	N	
•	90512-NX4-000	SHIM, ENG. MT. 1.0 ....	N	
•	90513-NX4-000	SHIM, ENG. MT. 1.5 ....	N	
• 15	90651-NC8-000	TY-LAP, 3.6X281 ....	3	
• 16	91080-NC8-300	RIVET, 3.2X6.4 ....	2	
• 17	94050-10000	NUT, FLANGE, 10mm ....	3	

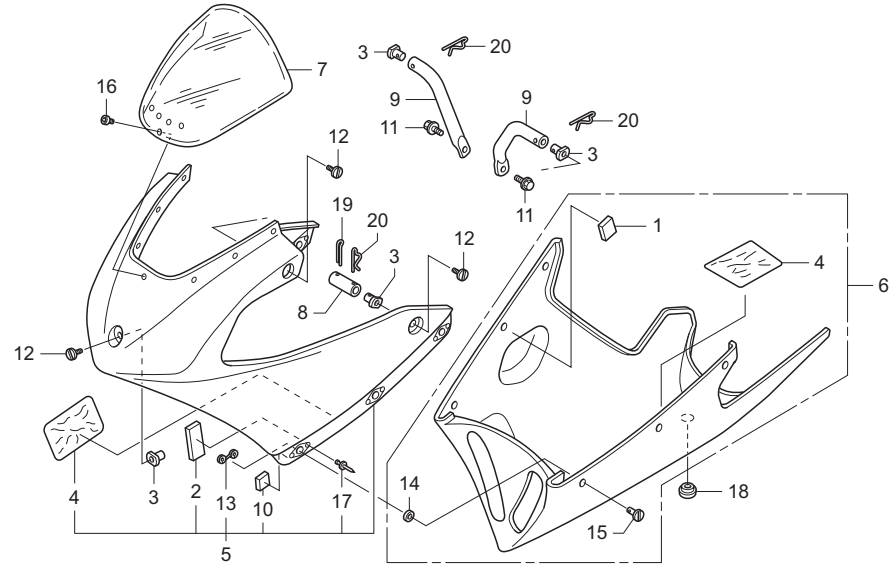
Block No.

**F-24**

**COWL**

**2012 NSF250R**

FR.



Ref. No.	Part No.	Description	Reqd. No.	Remarks
1	17413-MBG-770	MAT, CANISTER PROTECTOR .....	3	
• 2	31517-NX7-000	SPONGE, MT. 5mm .....	2	
• 3	50803-NF4-610	NUT, COWL STAY .....	5	
• 4	64109-NF5-750	SHEET, HEAT PROOF .....	2	
• 5	64110-NX7-000	COWL, UPPER .....	1	
• 6	64120-NX7-000	COWL, LOWER .....	1	
• 7	64200-NX4-860	SCREEN, FR. ....	1	
• 8	64210-NX4-000	STAY, FR. COWL SIDE .....	2	
• 9	64240-NX4-860	STAY, FR. COWL UP. ....	2	
10	77103-MFL-300	CUSION, SEAT SINGLE .....	2	
11	90004-GHB-620	BOLT, FLANGE, NSHF, 6X14 .....	2	
• 12	90106-NF4-770	BOLT, COWL SET, 6X13 .....	5	
• 13	90653-NC8-000	SPG., FASTNER, 35 .....	6	
• 14	90654-NC8-000	GROMMET, FASTNER .....	6	
• 15	90655-NC8-000	STUD, FASTENER 35 .....	6	
• 16	90656-NX4-000	RIVET, 4X7 .....	7	
• 17	91080-NC8-300	RIVET, 3.2X6.4 .....	12	
18	91615-SA5-000	GROMMET, COATTING HOLE .....	1	
19	94201-25300	PIN, SPLIT, 2.5 .....	2	
20	94252-16100	PIN, LOCK, 16mm .....	4	

## 2012-NSF250R Part No. Index

Part No.	Block	Part No.	Block	Part No.	Block	Part No.	Block
00X30-NX7-000	E- 1	11346-NX7-000	E- 9	13217-NX7-003	E-12	14731-NX7-000	E- 2
00X31-NX7-670	E- 1	11350-NX7-000	E- 5	13218-NX7-003	E-12	14751-NX7-000	E- 2
00X32-NX7-650	E- 1	11391-NX7-000	E- 5	13310-NX7-010	E-12	14752-NX7-000	E- 2
		11396-NX7-000	E- 9	13312-NX7-003	E-12	14761-NX7-000	E- 2
				13313-NX7-003	E-12	14771-NX7-000	E- 2
				13314-NX7-003	E-12	14775-NX7-000	E- 2
04601-ND5-760	F-11			13315-NX7-003	E-12	14781-ML0-720	E- 2
04602-ND5-760	F-11	12010-NX7-000	E- 1	13331-360-000	E-12	14901-KT7-013	E- 2
04603-NF4-770	F-11	12101-NX7-000	E- 4	13411-NX7-000	E-12	14902-KT7-013	E- 2
		12191-NX7-003	E- 4	13421-NX7-000	E-12	14903-KT7-013	E- 2
		12192-NX7-003	E- 4	13431-NX7-000	E-12	14904-KT7-013	E- 2
		12208-NX7-003	E- 2	13615-NX7-000	E-12	14905-KT7-013	E- 2
06160-MEN-A31	F-13	12251-NX7-003	E- 1			14906-KT7-013	E- 2
06451-NX4-860	F- 8	12310-NX7-000	E- 1			14907-KT7-013	E- 2
06452-NX4-860	F- 8	12316-NX7-000	E- 1			14908-KT7-013	E- 2
06455-NX7-006	F- 8	12391-NX7-000	E- 1	14105-NX7-000	E- 2	14909-KT7-013	E- 2
		12394-NX7-000	E- 1	14106-MBN-670	E- 2	14910-KT7-013	E- 2
		12395-KSE-670	E- 1	14110-NX7-000	E- 2	14911-KT7-013	E- 2
				14210-NX7-000	E- 2	14912-KT7-013	E- 2
11100-NX7-000	E-11			14321-NX7-010	E- 2	14913-KT7-013	E- 2
11102-KRN-670	E-11			14401-NX7-003	E- 3	14914-KT7-013	E- 2
11103-444-000	E-11	13101-NX7-010	E-12	14510-NX7-010	E- 3	14915-KT7-013	E- 2
11121-NX7-000	E-11	13111-NX7-010	E-12	14518-NX7-000	E- 3	14916-KT7-013	E- 2
11200-NX7-000	E-11	13112-MEE-000	E-12	14520-NX7-003	E- 3	14917-KT7-013	E- 2
11210-NX7-000	E-11	13121-NX7-003	E-12	14526-NX7-000	E- 3	14918-KT7-013	E- 2
11221-NX7-003	E-11	13141-NX7-003	E-12	14539-KCZ-300	F-16	14919-KT7-013	E- 2
11230-NX7-000	E-11	13210-NX7-000	E-12	14560-MEN-671	E- 3	14920-KT7-013	E- 2
11331-NX7-000	E- 5	13213-MFL-003	E-12	14621-NX7-010	E- 3	14921-KT7-013	E- 2
11340-NX7-000	E- 9	13214-NX7-003	E-12	14630-NX7-000	E- 3	14922-KT7-013	E- 2
11342-NX7-000	E- 9	13215-NX7-003	E-12	14711-NX7-000	E- 2	14923-KT7-013	E- 2
11343-NX7-000	E- 9	13216-NX7-003	E-12	14721-NX7-000	E- 2	14924-KT7-013	E- 2



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14926-KT7-013	E- 2	14957-KT7-013	E- 2			17240-NX7-000	F-15
14927-KT7-013	E- 2	14958-KT7-013	E- 2			17250-NX7-000	F-15
14928-KT7-013	E- 2	14959-KT7-013	E- 2			17370-419-700	F-11
14929-KT7-013	E- 2	14960-KT7-013	E- 2	16141-NX7-000	E-15		F-15
14930-KT7-013	E- 2	14961-KT7-013	E- 2	16169-NX7-003	E-15	17371-NX7-000	F-15
14931-KT7-013	E- 2	14962-KT7-013	E- 2	16190-NX7-000	E-15	17372-NX7-000	F-15
14932-KT7-013	E- 2	14963-KT7-013	E- 2	16193-NX7-000	E-15	17373-NX7-000	F-15
14933-KT7-013	E- 2	14964-KT7-013	E- 2	16210-NX7-000	E-15	17413-MBG-770	F-24
14934-KT7-013	E- 2	14965-KT7-013	E- 2	16218-NX7-000	E-15	17414-PC6-660	F-15
14935-KT7-013	E- 2	14966-KT7-013	E- 2	16400-NX7-003	E-15	17503-MBT-D50	F-13
14936-KT7-013	E- 2	14967-KT7-013	E- 2	16422-MEN-A31	E-15	17507-NX7-000	F-13
14937-KT7-013	E- 2	14968-KT7-013	E- 2	16430-NX7-003	E-15	17510-NX7-000	F-13
14938-KT7-013	E- 2	14969-KT7-013	E- 2	16433-HN8-A61	E-15	17515-NX5-770	F-13
14939-KT7-013	E- 2			16433-MEW-921	E-15	17516-NX4-860	F-13
14940-KT7-013	E- 2			16450-HN8-A61	E-15	17517-NX4-860	F-13
14941-KT7-013	E- 2			16472-MCW-000	E-15	17521-NX4-680	F-13
14942-KT7-013	E- 2	15110-NX7-000	E- 7	16473-P7A -004	E-15	17522-NF5-690	F-13
14943-KT7-013	E- 2	15122-KK0-000	E- 7	16700-NX7-003	F-13	17528-NC8-000	F-13
14944-KT7-013	E- 2	15123-KK0-000	E- 7	16702-KPC-D50	F-13	17528-NF4-000	F-13
14945-KT7-013	E- 2	15132-NX7-000	E- 7	16711-MEN-A30	F-13	17556-MEE-300	F-13
14946-KT7-013	E- 2	15133-NX7-000	E- 7	16712-MEN-A30	F-13	17570-NX7-000	F-13
14947-KT7-013	E- 2	15150-NX7-000	E- 7	16719-HN8-A61	F-13	17575-MEN-A30	F-13
14948-KT7-013	E- 2	15220-NX7-000	E- 7	16920-SE0-931	F-13	17576-MEN-A30	F-13
14949-KT7-013	E- 2	15401-HN8-A61	E- 7	16958-MB0-000	F-15	17580-NX7-000	F-13
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14951-KT7-013	E- 2	15414-NX7-000	E- 9			17629-NX4-000	F-13
14952-KT7-013	E- 2	15604-MG7-000	F-13			17711-S0X-931	F-13
14953-KT7-013	E- 2	15611-NF4-900	E- 5	17210-NX7-000	F-15	17711-S0X-A31	F-13
14954-KT7-013	E- 2		E- 9	17220-NX7-000	F-15	17910-NX7-000	F- 2
14955-KT7-013	E- 2	15661-NX7-000	E- 7	17230-NX7-000	F-15	17920-NX7-000	F- 2

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17936-921-000	F-19	19215-NX7-000	E- 8	23215-NX4-000	E-13	23446-NX4-000	E-13
		19221-NX7-000	E- 8	23221-NX4-010	E-13	23446-NX4-610	E-13
		19229-NX7-000	E- 8	23225-NX4-000	E-13	23447-NX4-000	E-13
		19231-NX7-000	E- 8	23411-NX4-000	E-13	23447-NX4-610	E-13
18291-MM5-860	F-16	19240-NX7-000	E- 8	23412-NX4-000	E-13	23448-NX4-000	E-13
18310-NX7-000	F-16	19502-NX7-000	F-22	23413-NX4-000	E-13	23449-NX4-000	E-13
18320-NX7-000	F-16	19503-NX7-000	F-22	23414-NX4-000	E-13	23451-NX4-681	E-13
18325-KS6-000	F-16	19504-KY1-003	F-22	23415-NX4-000	E-13	23452-NX4-681	E-13
18325-NX7-000	F-16	19602-NF4-810	F-22	23421-NX4-000	E-13	23453-NX4-681	E-13
18326-NX7-000	F-16			23422-GB4-770	E-13	23454-NX4-681	E-13
18332-KS6-000	F-16			23422-NX4-000	E-13	23455-NX4-681	E-13
18334-KA3-830	F-16			23423-NX4-000	E-13	23456-KA3-000	E-13
18334-ML3-680	F-16	22100-NX7-000	E- 6	23424-NX4-000	E-13	23456-NX4-681	E-13
18336-KS6-700	F-16	22120-NX4-010	E- 6	23425-NX4-000	E-13	23461-NX4-681	E-13
18336-NX7-300	F-16	22125-435-000	E- 6	23431-NX4-700	E-13	23462-NX4-681	E-13
		22201-KRN-670	E- 6	23432-NF4-750	E-13	23463-NX4-681	E-13
		22202-KSC-670	E- 6	23432-NX4-700	E-13	23464-NX4-681	E-13
		22321-KF0-770	E- 6	23433-NX4-700	E-13	23465-NX4-681	E-13
19010-NX7-000	F-22	22351-NF4-760	E- 6	23434-NX4-700	E-13	23466-NX4-681	E-13
19010-NX7-650	F-22	22352-NX7-000	E- 6	23435-NX4-700	E-13	23471-NX4-000	E-13
19011-NX7-000	F-22	22401-KSC-670	E- 6	23436-NX4-700	E-13	23472-NX4-000	E-13
19012-NX7-000	F-22	22402-435-000	E- 6	23441-NX4-000	E-13	23473-NX4-000	E-13
19014-KEA-003	F-22	22810-NX7-000	E- 5	23441-NX4-610	E-13	23474-NX4-000	E-13
19037-GEE-710	F-22	22816-NX7-000	E- 5	23442-NX4-000	E-13	23478-NX4-770	E-13
19037-MCA-G61	F-22	22870-NX7-000	F- 2	23442-NX4-610	E-13	23481-NX4-000	E-13
19051-KA3-830	F-22			23443-NX4-000	E-13	23482-NX4-000	E-13
19052-KA3-830	F-22			23443-NX4-610	E-13	23483-NX4-000	E-13
19052-MB4-880	F-16			23444-NX4-000	E-13	23484-NX4-000	E-13
19052-MFF-D00	F-21	23211-NX4-000	E-13	23444-NX4-610	E-13	23491-NX4-000	E-13
19105-MR8-300	F-11	23213-NX4-000	E-13	23445-NX4-000	E-13	23492-NX4-000	E-13

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23494-NX4-000	E-13	24706-NX4-000	F-17			38771-NX7-000	F-21
23501-NX4-010	E-13	24710-NX4-000	F-17			38880-N1C-770	F-21
23502-NX4-010	E-13	24711-NX4-710	F-17	34908-NX7-003	F- 1		
23503-NX4-010	E-13	24712-NX4-710	F-17	34909-NX7-003	F- 1		
23802-KSC-670	E-13						
23802-NX4-780	E-13					40530-NX4-811	F-19
23803-NX4-780	E-13					40531-NX4-811	F-19
23804-NX4-780	E-13	28237-NX4-000	E- 6	35130-NX7-003	F- 2	40543-NX4-000	F-19
				35161-NX7-000	F-21	40545-NX4-000	F-19
				35163-MGC-003	F-21		
				35170-NX7-000	F-21		
24211-NX4-000	E-14	30700-NX7-003	F-21	35400-NX7-000	F-21		
24221-NX4-000	E-14			35701-MG9-950	F-21	41202-NX7-000	F-12
24231-NX4-000	E-14					41203-NX7-000	F-12
24265-NX4-000	E-14					41204-NX7-000	F-12
24266-NX4-000	E-14	31110-NX7-003	E-10			41205-NX7-000	F-12
24311-NX4-000	E-14	31120-NX7-003	E-10	37250-NF4-771	F- 1	41206-NX7-000	F-12
24312-KA3-741	E-14	31517-NX7-000	F-24	37460-NX4-701	F- 1	41207-NX7-000	F-12
24315-HA0-000	E-14	31600-MEN-A31	F-21	37564-NX7-003	F- 1	41208-NX7-000	F-12
24321-KZ4-620	E-14	31700-NN4-003	F-21	37565-NX7-003	F- 1	41209-NX7-000	F-12
24322-HA0-000	E-14	31910-NX7-003	E- 1	37569-NX7-003	F- 1	41210-NX7-000	F-12
24324-KA3-711	E-14			37604-HN1-A70	F- 1	41241-NX7-000	F-12
24325-KA3-711	E-14			37830-MEL-003	F-15		
24326-KBH-901	E-14			37870-MBG-003	F-22		
24328-NX4-000	E-14	32100-NX7-010	F-21	37870-NF4-611	F-22		
24329-KA3-740	E-14	32112-MEN-A30	E-10	37880-P05-A00	F-15	42301-NX4-000	F-12
24430-KA3-740	E-14					42304-NX7-000	F-12
24435-NF4-760	E-14					42305-NX4-000	F-10
24610-NX4-000	E-14					42601-NX4-811	F-12
24651-NX4-710	E-14	33712-KC5-003	F-14	38770-NX7-033	F-21	42611-NX7-000	F-12

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42711-NX7-003	F-12	43541-ND5-750	F-11	45511-KV3-016	F- 3	50810-NX7-000	F- 1
42721-NX4-860	F- 9			45512-NX4-861	F- 3	50811-NX7-000	F- 1
	F-12			45513-KV3-006	F- 3	50816-NX4-000	F- 1
42722-NX4-860	F- 9			45514-KV3-006	F- 3	50819-NX7-000	F- 1
	F-12	44301-NX4-000	F- 9	45517-166-006	F- 3	50820-NX7-000	F- 5
42723-NX4-860	F- 9	44303-NF4-000	F- 9	45518-KV3-006	F- 3		
	F-12	44601-NX4-811	F- 9	45520-KV3-006	F- 3		
42753-ML7-003	F- 9	44620-NF4-000	F- 9	45530-471-831	F- 3		
	F-12	44711-NX7-003	F- 9	45530-NF4-650	F- 3	51400-NX7-003	F- 7
				45550-NX4-861	F- 3	51401-NX4-003	F- 7
						51402-NX4-003	F- 7
						51402-NX7-003	F- 7
43100-NF5-612	F-10	45100-NX7-006	F- 8			51404-NF5-611	F- 7
43105-NF5-612	F-10	45103-MR7-006	F- 8	46182-MEL-D21	F-11	51404-NX4-003	F- 7
43109-MA3-006	F-10	45106-NX4-860	F- 8	46500-NF4-780	F-17	51405-NX4-003	F- 7
43111-NX4-000	F-10	45107-GM9-711	F-10	46501-ND4-750	F-17	51406-NX4-003	F- 7
43122-NF5-760	F-12	45107-NX4-860	F- 8			51410-NX4-861	F- 7
43209-MA3-006	F-10	45108-GM9-741	F-10			51412-422-003	F- 7
43310-NX4-003	F-11	45117-MR7-006	F- 8			51414-NX4-702	F- 7
43352-568-003	F- 3	45120-NX7-003	F- 9	50100-NX7-000	F-23	51415-NX4-702	F- 7
	F- 8	45125-NX4-861	F- 3	50180-NX4-000	F-23	51420-NX7-003	F- 7
	F-10	45131-166-016	F-10	50180-NX7-000	F-23	51421-MW4-003	F- 7
43353-461-771	F- 3	45131-HA5-672	F-10	50182-NX7-000	F-23	51422-NF5-611	F- 7
	F- 8	45132-166-016	F-10	50240-NX4-000	F-23	51423-NF5-611	F- 7
	F-10	45133-MA3-006	F-10	50310-NX7-000	F-23	51430-NX7-003	F- 7
43500-NF4-771	F-11	45150-NX4-860	F- 8	50324-425-010	F- 3	51447-KL4-951	F- 7
43503-KS6-701	F- 3	45203-MG3-016	F-10	50600-NX4-770	F-18	51454-NX4-003	F- 7
43503-NX4-000	F-11	45215-GE2-016	F-10	50610-NL5-760	F-18	51497-MEL-000	F- 7
43504-NF4-770	F-11	45215-NX4-860	F- 8	50612-NL5-760	F-18	51500-NX7-003	F- 7
43516-HA2-000	F- 3	45500-NX4-861	F- 3	50643-NX4-770	F-18	51520-NX7-003	F- 7

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		52460-NX4-000	F-20				
		52465-NX4-000	F-20				
52101-NX4-680	F-19	52471-NX4-000	F-20	57270-NX4-910	F-13	87131-NX7-000	F-23
52102-NX4-000	F-19					87208-ND4-000	F-13
52106-NX4-000	F-19					87516-KS7-832	F-20
52109-NX4-000	F-19					87516-MBL-610	F-20
52110-NX7-000	F-19	53105-NF4-770	F- 4	61100-NX4-860	F- 6	87516-MCA-G60	F-20
52156-GAN-670	F-19	53110-NX4-000	F- 4	61104-KA4-700	F-14	87560-GBF-B60	F-13
52158-HB5-003	F-19	53111-NX4-000	F- 4				
52159-NX7-000	F-19	53120-NX4-000	F- 4				
52161-NF5-710	F-19	53140-NX7-000	F- 2				
52170-NX4-000	F-19	53141-NX7-000	F- 2	64109-NF5-750	F-24	89005-NX7-000	E- 1
52400-NX7-003	F-20	53165-GM9-741	F- 2	64110-NX7-000	F-24	89006-NX7-000	E- 1
52400-NX7-651	F-20	53166-KT8-710	F- 2	64120-NX7-000	F-24	89009-NX7-000	E-10
52400-NX7-671	F-20	53167-MEB-672	F- 2	64200-NX4-860	F-24	89010-NX7-000	E-10
52401-NX4-003	F-20	53168-MEB-671	F- 2	64210-NX4-000	F-24	89011-NX7-000	E-10
52402-NX4-003	F-20	53169-MEB-670	F- 2	64240-NX4-860	F-24	89020-NX7-000	E-11
52403-NX4-003	F-20	53170-MW0-006	F- 3			89023-NX7-000	E-11
52404-NX4-701	F-20	53172-430-003	F- 2				
52405-NX4-701	F-20	53173-376-000	F- 2				
52410-NX7-003	F-20	53178-399-700	F- 2	77103-MFL-300	F-24		
52410-NX7-651	F-20	53192-KA3-700	F- 2	77105-NX4-000	F-23	90002-GC3-000	F-15
52410-NX7-671	F-20	53200-NX4-000	F- 5	77210-NX7-000	F-14	90003-KRN-670	E-11
52411-NX7-003	F-20	53200-NX4-610	F- 5	77220-NX4-000	F-14	90004-GHB-600	E- 3
52420-NX4-013	F-20	53214-430-003	F- 5	77221-NF5-760	F-14	90004-GHB-620	F-23
52422-NX4-862	F-20	53214-KZ4-701	F- 5				F-24
52424-GC4-831	F-20	53229-NX4-000	F- 5			90004-GHB-630	E- 3
52442-KA3-711	F- 7	53300-NX7-000	F- 4			90004-GHB-630	F-22
52455-NF4-781	F-20	53300-NX7-610	F- 4	80101-166-000	F-15	90004-GHB-670	F- 1
52458-NX4-003	F-20	53700-NF4-900	F- 5	80115-GS3-000	F-13	90005-896-000	E-10

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