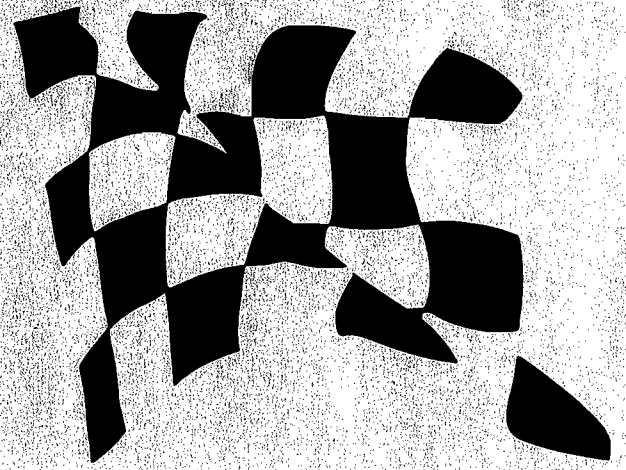
HRC
Honda Racing

04

OWNER'S MANUAL/COMPETITION HANDBOOK

NSR 50R



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 NSR50R. 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:

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

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

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

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

Damage Prevention Messages

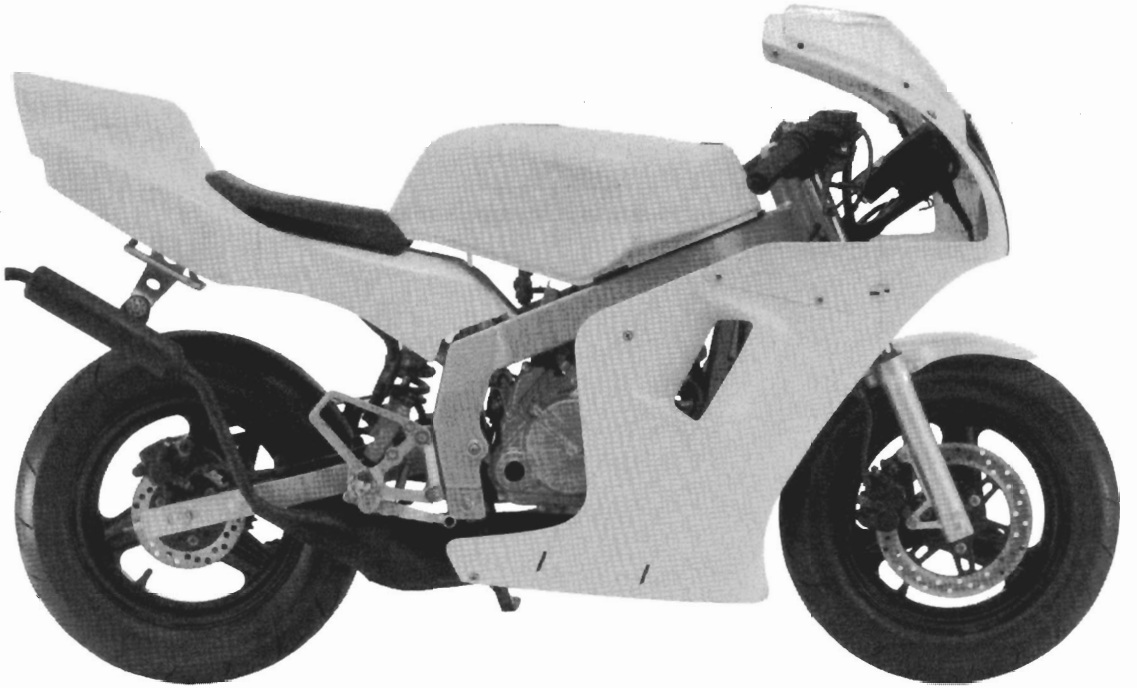
You will also see other important messages that are preceded by the word **NOTICE.**

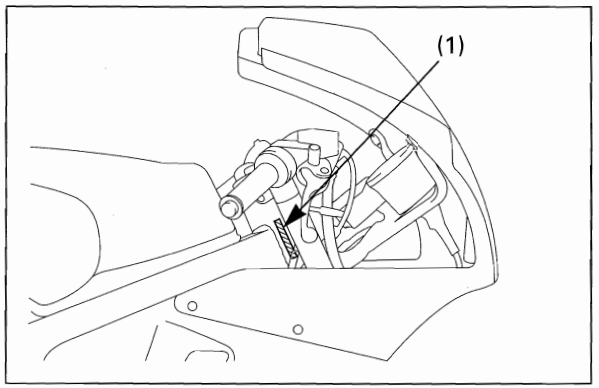
This word means:

NOTICE — Your HRC NSR50R 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 NSR50R, other property, or the environment.

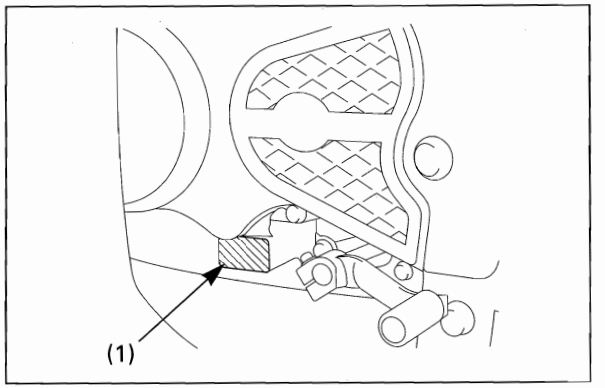
HRC NSR50R
Owner's Manual





(1) FRAME SERIAL NUMBER

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



(1) ENGINE SERIAL NUMBER

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

Contents

To The New Owner

By selecting a HRC roadracer NSR50R as your new machine, you have placed yourself in a distinguished family of owners and riders.

The NSR50R 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 NSR50R roadracer.

Importance Of Proper Preparation

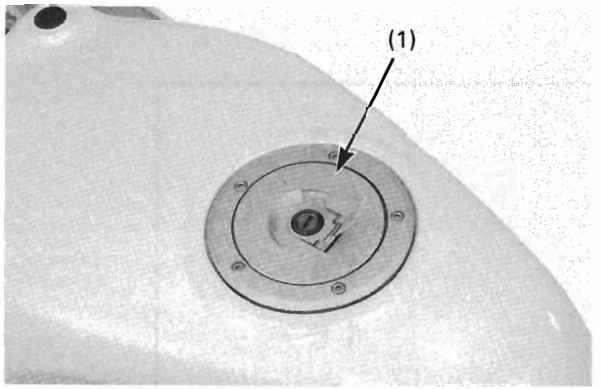
Proper pre-competition preparation and regular service is essential to rider safety and the reliability of the motorcycle. Any error or oversight made by the technician during preparation or servicing can easily result in faulty operation, damage to the machine, or injury to the rider.

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 NSR50R roadracer; satisfaction with the performance of the motorcycle, and through success in competition.

If you plan to do any service on your NSR50R, section 3 describes standard maintenance and sections 4 through 6 contain information on repair, disassembly, assembly and special tools.

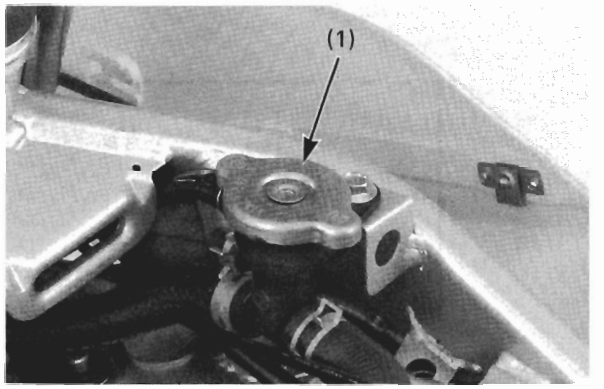
Follow the Maintenance Schedule recommendation (page 3-2) to ensure that your NSR50R is always in peak operating condition.



(1) FUEL FILL CAP

Fuel 50	Oil 1
Liters	cm^3
0.5	10
1.0	20
1.5	30
2.0	40
2.5	50
3.0	60
3.5	70
4.0	80
4.5	90
5.0	100

50 : 1 FUEL OIL MIXING CHART



(1) RADIATOR CAP

Fuel

Your NSR50R has a two stroke engine that requires a gasoline-oil mixture as described below.

Gasoline: Automobile gasoline with a pump octane number of 86 or higher
Oil: Pro Honda HP2 2-stroke Oil or equivalent motor oil
Fuel/oil mixing ratio: 40 – 50 : 1
Fuel tank capacity: 7.5 liter (1,98 US gal, 1.65 Imp gal)

To open the fuel fill cap, turn the fuel fill cap lock using a equipped key.

⚠ 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.**

- Use unleaded gasoline provided for the purpose. Unleaded gasoline with a pump octane number above 86 may be used. If "knocking" or "pinging" occurs, try a different brand of gasoline or a higher octane grade.
- Premix gasoline and oil in a ratio of 40 – 50 : 1. Prepare the fuel mixture in a clean container, and shake until thoroughly mixed before filling the fuel tank.
- Too much oil will cause excessive smoking and spark plug fouling. Too little oil will cause engine damage or premature wear.
- Do not mix vegetable and mineral based oils.
- Vegetable oils separate from gasoline more easily than mineral oils, especially in cold weather. It is advisable to use mineral oil when ambient temperatures below 0 °C (32 °F) are expected.
- If the gasoline-oil mixture is left standing in a container for a long period of time, lubricity will deteriorate. Use the mixture within 24 hours.
- Once an oil container is opened, the oil must be used within one month, since oxidation may occur.
- After running, to prevent overflow of the carburetor, open the fuel tank cap to release the pressure to the atmospheric pressure.

Install the fuel fill cap by pushing it in.

Coolant

The engine of the NSR50R 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.

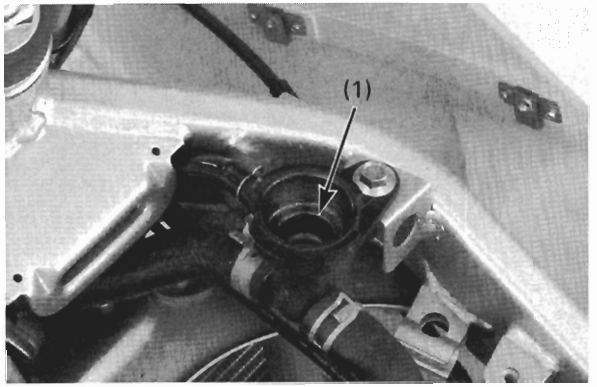
⚠ WARNING

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.

NOTICE

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



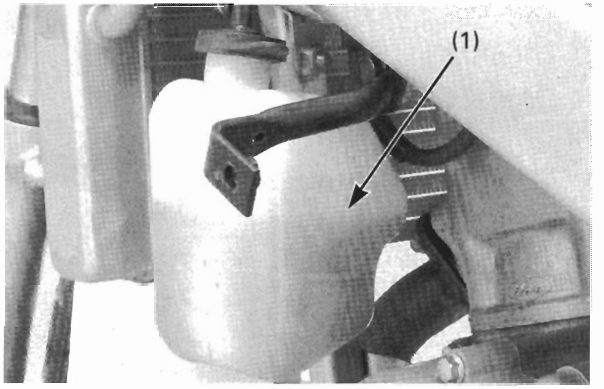
(1) FILLER NECK

When adding coolant to the cooling system, bleed the air thoroughly using the following procedure:

1. Rock the machine from left to right 2 – 3 times holding the handlebars.
2. Repeat the above procedure until the coolant level does not lower.
3. Reinstall the radiator cap.

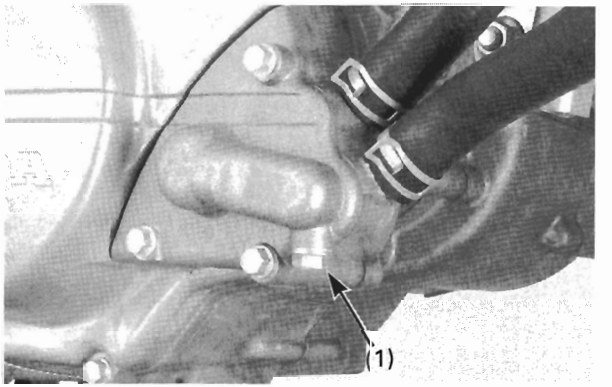
NOTICE

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



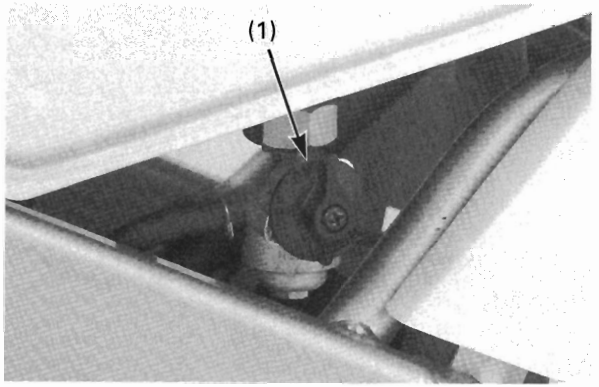
(1) UPPER LEVEL LINE

4. After starting the engine, check the coolant level reserve tank. Make sure that the coolant level near the upper level mark.
   Add coolant up to the filler neck if the level is low.

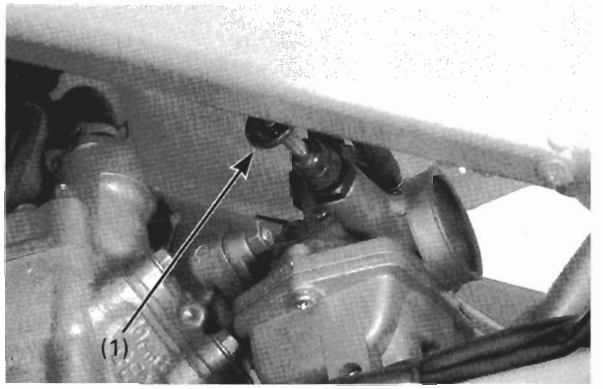


(1) DRAIN BOLT

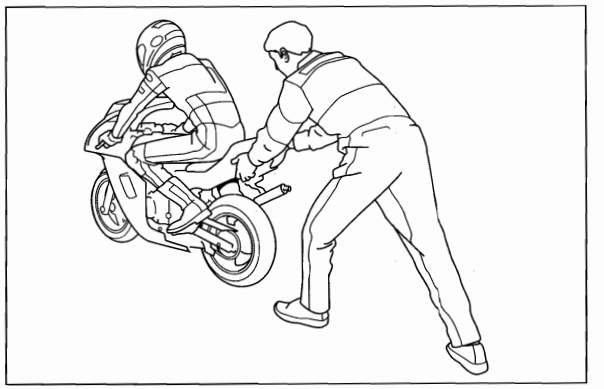
After running, check the radiator and coolant passages for rusting or clogging. Since the cooling system uses water only, it should be drained completely at the end of each race day to prevent corrosion damage.
Remove the coolant drain bolt on the water pump and drain the coolant.



(1) FUEL VALVE



(1) STARTER VALVE KNOB



Basic Operation

Starting The Engine

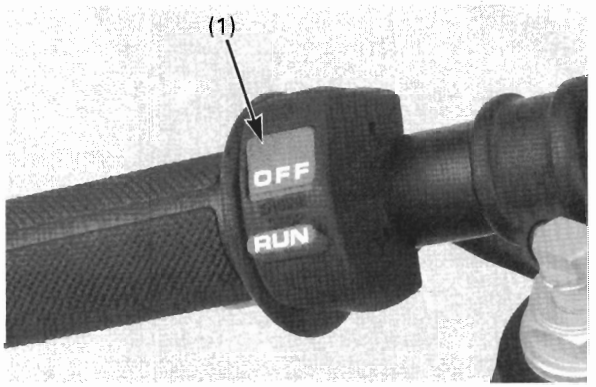
Your NSR50R exhaust contains poisonous carbon monoxide gas. High levels of carbon monoxide can collect rapidly in enclosed areas such as a garage. Do not run the engine with the garage door closed. Even with the door open, run the engine only long enough to move your NSR out of the garage.

Cold Engine Starting

1. Turn the engine stop switch to RUN.
2. Turn the fuel valve ON.
3. Shift the transmission into low gear.
4. Pull the starter valve up.
5. With the throttle closed, start the engine by pushing the machine.
6. After the engine starts, pull in the clutch lever, shift the transmission into neutral and run the engine for a few minutes, "blipping" the throttle, until it warms up enough to idle with starter valve pushed down. The knob should be pushed down, as soon as possible, to prevent spark plug fouling.

Warm Engine Starting

Follow the cold engine starting procedure without operating the starter valve knob.

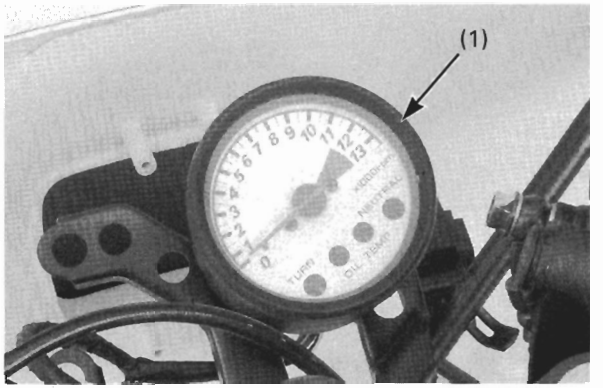


(1) ENGINE STOP SWITCH

Stopping The Engine

1. Shift the transmission into neutral.
2. Turn the fuel valve OFF.
3. Lightly open the throttle 2 – 3 times, and then close it.
4. When the engine slows down, turn the engine stop switch OFF until the engine stops completely.

If the fuel valve is not closed, the fuel could overflow through the carburetor, into the crankcase, causing hard starting.



(1) TACHOMETER

Warm Up Procedure

- Before riding your machine, allow sufficient time to warm up the engine.

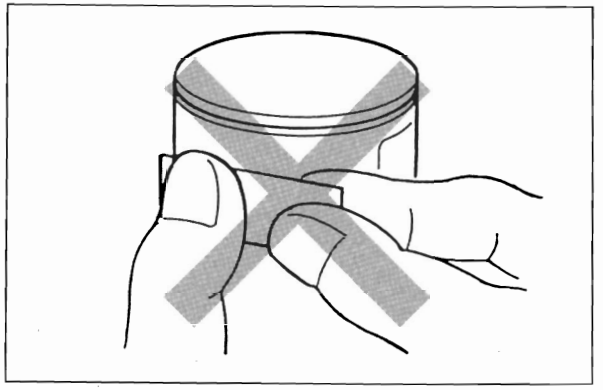
Start the engine.
Gradually increase the engine rev while blipping the throttle, warm up the engine to operating temperature.
Do not rev the engine at high rpm for a long time.

To stop the engine, close the throttle and wait. If you stop the engine with the stop switch, do not open the throttle to avoid fouling the spark plug.

Break-In Procedure

New Machine
Following the 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, operate the machine for the first 30 minutes using no more than half throttle and shifting gears so that the engine does not lug:

Below	8,000 rpm	About 30 mi (50 km) (About 30 minutes)
Below	9,000 rpm	About 9 mi (15 km)
Below	10,000 rpm	About 9 mi (15 km)
Below	11,000 rpm	About 9 mi (15 km) (About 30 minutes)
Total:		About 57 mi (95 km) (About one hour)



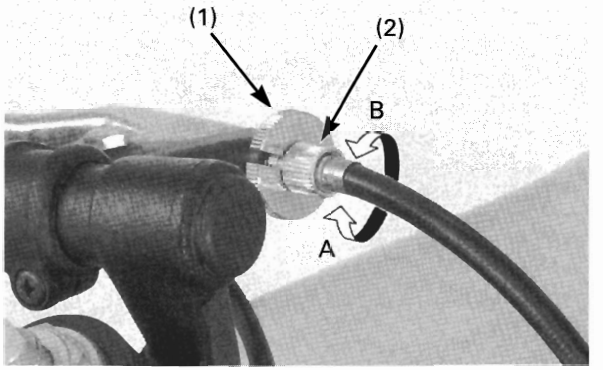
- When refueling, be sure to use a pre-mixed gasoline-oil mixture.
- Raise the main jet number by 2 ranks to enrich the mixture during breaking-in the machine.
- Do not repair the piston sliding surface. Engine damage will result if the piston is repaired.

Rebuilt Engine

- After replacing the cylinder and crankshaft, operate the machine for the first 57 mi (95 km) (about one hour) observing the same cautions as for a new machine.
- When the piston, piston ring, gears, etc. are replaced, they must be broken in for the first 30 mi (50 km) (30 minutes) using no more than half throttle and shifting gears so that the engine does not lug:

Below 8,000 rpm.....About 12 mi (20 km)
Below 9,000 rpm.....About 6 mi (10 km)
Below 10,000 rpm.....About 6 mi (10 km)
Below 11,000 rpm.....About 6 mi (10 km)

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

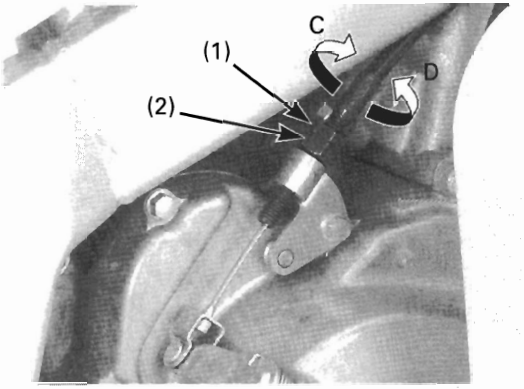


(1) LOCK NUT (2) ADJUSTER
(A) INCREASE (B) DECREASE

Controls

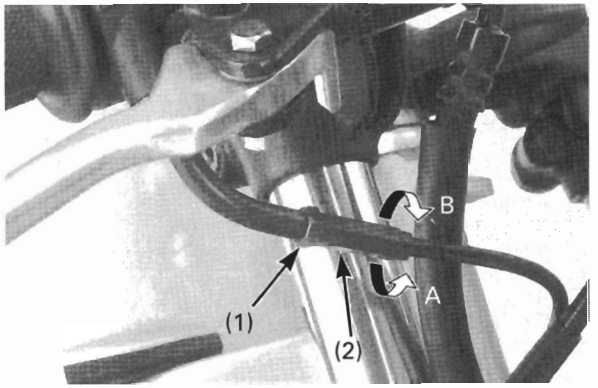
Clutch

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



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

3. Major adjustments can be made at the lower adjuster.
   Loosen the lock nut and turn the adjusting nut. Turning the adjusting nut 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.

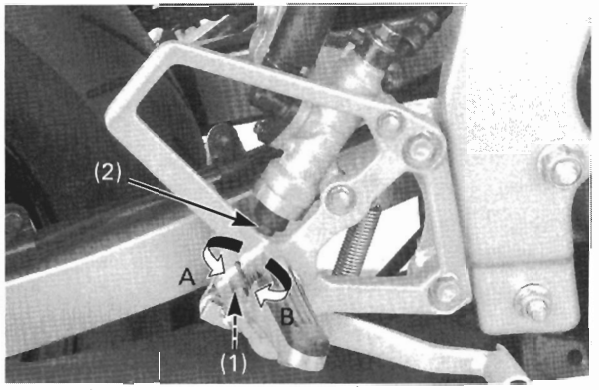


(1) LOCK NUT (2) ADJUSTER

Throttle Grip

Throttle Grip Free Play
Standard throttle grip free play is approximately 2 – 6 mm (0.08 – 0.24 in) of grip rotation.
Adjustment is made with the upper adjuster.
Loosen the lock nut.
Turning the cable adjuster in direction A will decrease free play, turning it in direction B will increase free play.
Tighten the lock nut.

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



(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.

Memo

Specifications

Item		Specification
Dimensions		
Overall length		1,580 mm (62.2 in)
Overall width		590 mm (23.2 in)
Overall height		935 mm (36.8 in)
Wheelbase		1,085 mm (42.7 in)
Ground clearance		105 mm (4.1 in)
Half dry weight		73 kg (161 lbs)
Frame		
Type		Steel, Diamond
Front suspension		Telescopic fork
Rear suspension		Swingarm
Front tire size		100/90 – 12 48J
Rear tire size		120/80 – 12 54J
Front brake, diameter		Single disc, 220 mm (8.7 in)
Rear brake, diameter		Single disc, 160 mm (6.3 in)
Fuel capacity		7.5 liter (1.98 US gal, 1.65 Imp gal)
Caster angle		24° 50′
Trail length		70 mm (2.8 in)
Engine		
Type		Liquid cooled, 2-stroke engine
Cylinder arrangement		Single cylinder
Bore and stroke		39.0 x 41.4 mm (1.53 x 1.63 in)
Displacement		49.4 cm³ (3.01 cu-in)
Drive Train		
Clutch type		Multi-plate dry
Transmission		6 speed
Primary reduction		4.117 (17/70T)
Gear ratio (STD)	1st	3.166 (12/38T)
	2nd	2.062 (16/33T)
	3rd	1.500 (20/30T)
	4th	1.173 (23/27T)
	5th	1.000 (25/25T)
	6th	0.884 (26/23T)
Final reduction		3.000 (14/42T)
Gearshift pattern		Left foot operated return system

Service Data

Unit: mm (in)

Item		Standard	Service Limit
Lubrication			
Specified engine oil		Pro Honda HP2 2-stroke oil	—
Fuel/oil mixing ratio		40 – 50 : 1	—
Transmission oil capacity			
at draining		0.8 liter (0.8 US qt, 0.7 Imp qt)	—
at disassembly		0.9 liter (1.0 US qt, 0.8 Imp qt)	—
Specified transmission oil		Pro Honda GN4 4-stroke oil API Service Classification: SF or SG Viscosity: SAE 20W–50 Other viscosities shown in the chart may be used when the average temperature in your riding area is within the indicated range.	
Fuel System			
Carburetor identification Number		PF70M	
Main jet		#110	
Slow jet		#42	
Jet needle		4046–233H	
Jet needle clip position		2nd groove from top	
Air screw initial opening		1–1/2 turns out	
Float level		13.5 (0.53)	
Throttle grip free play		2 – 6 (0.08 – 0.24)	
Cooling System			
Recommended coolant		Distilled water or drink water	
Coolant capacity		0.84 liter (0.22 US gal, 0.18 Imp gal)	
Radiator cap relief pressure		88 kPa (0.9 kgf/cm², 13 psi)	
Water pump shaft O.D.		6.972 – 6.987 (0.2745 – 0.2751)	6.90 (0.272)
Cylinder/Piston			
Cylinder I.D.	Mark A	39.010 – 39.015 (1.5358 – 1.5360)	39.045 (1.5372)
	No mark	39.005 – 39.010 (1.5356 – 1.5358)	39.045 (1.5372)
	Mark C	39.000 – 39.005 (1.5354 – 1.5356)	39.045 (1.5372)
Piston O.D.	Mark A	38.965 – 38.970 (1.5341 – 1.5342)	38.905 (1.5317)
	No mark	38.960 – 38.965 (1.5339 – 1.5341)	38.905 (1.5317)
	Mark C	38.955 – 38.960 (1.5337 – 1.5339)	38.905 (1.5317)
Cylinder-to-piston clearance		0.040 – 0.050 (0.0157 – 0.0020)	0.090 (0.0035)
Piston pin bore I.D.		12.002 – 12.008 (0.4725 – 0.4728)	12.03 (0.474)
Piston pin O.D.		11.994 – 12.000 (0.4722 – 0.4724)	11.98 (0.472)
Piston-to-piston pin clearance		0.002 – 0.014 (0.0001 – 0.0006)	0.04 (0.002)
Piston ring end gap	Top	0.10 – 0.25 (0.004 – 0.010)	0.35 (0.014)
	Second	0.10 – 0.25 (0.004 – 0.010)	0.35 (0.014)
Connecting rod small end I.D.		17.005 – 17.017 (0.6695 – 0.6700)	17.03 (0.670)
Cylinder head warpage		—	0.10 (0.004)

Unit: mm (in)

Item		Standard	Service Limit
Clutch System			
Clutch lever free play		10 – 20 (0.4 – 0.8)	
Clutch spring free length		30.2 (1.19)	28.5 (1.12)
Clutch disc thickness		2.9 – 3.0 (0.11 – 0.12)	2.5 (0.10)
Clutch plate warpage		—	0.20 (0.008)
Clutch outer I.D.		22.000 – 22.021 (0.8661 – 0.8670)	22.07 (0.869)
Clutch outer guide	I.D.	21.985 – 21.964 (0.8655 – 0.8647)	22.00 (0.866)
	O.D.	17.000 – 17.018 (0.6693 – 0.6700)	17.06 (0.672)
Balancer idle gear shaft O.D.		9.972 – 9.987 (0.3926 – 0.3932)	9.93 (0.391)
Mainshaft O.D. at outer guide		16.984 – 16.966 (0.6687 – 0.6680)	16.93 (0.667)
Crankshaft/Transmission			
Shift fork I.D.		10.000 – 10.018 (0.3937 – 0.3944)	10.05 (0.396)
Shift fork claw thickness		4.93 – 5.00 (0.194 – 0.197)	4.50 (0.177)
Shift fork shaft O.D.		9.972 – 9.987 (0.3926 – 0.3932)	9.95 (0.392)
Shift drum O.D.	Left	12.934 – 12.984 (0.5092 – 0.5112)	12.85 (0.506)
	Right	35.950 – 35.975 (0.4154 – 0.4163)	35.90 (0.413)
Gear I.D.	M5, M6	17.016 – 17.034 (0.6699 – 0.6706)	17.10 (0.673)
	C1	16.516 – 16.534 (0.6502 – 0.6509)	16.60 (0.654)
	C2	20.020 – 20.041 (0.7882 – 0.7890)	20.10 (0.788)
	C3, C4	19.020 – 19.041 (0.7488 – 0.7496)	19.91 (0.784)
Gear bushing O.D.	C2	17.016 – 17.034 (0.6699 – 0.6706)	17.10 (0.670)
Gear bushing I.D.	C2	19.995 – 19.984 (0.7872 – 0.7868)	19.90 (0.783)
Mainshaft O.D.		16.966 – 16.984 (0.6680 – 0.6687)	16.93 (0.667)
Countershaft O.D.	C1	16.466 – 16.484 (0.6483 – 0.6490)	16.44 (0.647)
	C2	16.978 – 19.989 (0.6684 – 0.6689)	16.94 (0.667)
	C3	18.959 – 18.980 (0.7464 – 0.7472)	18.93 (0.745)
Connecting rod big end:			
side clearance		0.15 – 0.55 (0.006 – 0.022)	0.85 (0.033)
radial clearance		—	0.05 (0.002)
Crankshaft runout			0.10 (0.004)

Unit: mm (in)

Item		Standard	Service Limit
Wheels/Tires			
Cold tire air pressure:	Front:	150 kPa (1.50 kgf/cm², 21 psi)	—
	Rear:	150 kPa (1.50 kgf/cm², 21 psi)	—
Axle runout		—	0.20 (0.008)
Wheel rim runout	Radial	—	0.20 (0.008)
	Axial	—	0.20 (0.008)
Drive chain slack		10 – 20 (0.4 – 0.8)	—
Front Suspension			
Fork spring free length		249.9 (9.84)	244.9 (9.64)
Fork tube runout		—	0.20 (0.008)
Recommended fork fluid		Pro Honda Suspension Fluid SS-8 (10W)	—
Fork oil capacity (standard)		154 cm³ (5.2 US oz, 5.4 Imp oz)	—
Fork oil level (standard)		107 (4.2)	—
Preload adjuster setting		13 (0.5)/3rd groove	—
Rear Suspension			
Damper gas pressure		98 kPa (10.0 kgf/cm², 142 psi)	—
Damper rod compressed force at 10 mm compressed		197 – 256 N (20.1 – 26.1 kgf)	—
Shock absorber spring installed length		102 (4.0)	—
Rebound damping adjuster standard position		1 turn out from full hard	—
Compression damping adjuster standard position		1 turn out from full hard	—
Brakes			
Brake fluid		Pro Honda DOT 4 brake fluid	—
Front	Brake disc thickness	4.0 (0.16)	3.0 (0.12)
	Brake disc runout	—	0.3 (0.01)
	Master cylinder I.D.	12.700 – 12.743 (0.5000 – 0.5017)	12.76 (0.502)
	Master piston O.D.	12.657 – 12.684 (0.4983 – 0.4994)	12.64 (0.498)
	Caliper cylinder I.D.	25.400 – 25.405 (1.0000 – 1.0002)	25.45 (1.002)
	Caliper piston O.D.	25.318 – 25.368 (0.9968 – 0.9987)	25.30 (0.996)
Rear	Brake disc thickness	4.0 (0.16)	3.0 (0.12)
	Brake disc runout	—	0.3 (0.01)
	Master cylinder I.D.	12.700 – 12.743 (0.5000 – 0.5017)	12.76 (0.502)
	Master piston O.D.	12.657 – 12.684 (0.4983 – 0.4994)	12.64 (0.498)
	caliper cylinder I.D.	27.000 – 27.050 (1.0630 – 1.0650)	27.06 (1.065)
	caliper piston O.D.	26.918 – 26.968 (1.0598 – 1.0617)	26.91 (1.059)

Unit: mm (in)

Item	Standard	Service Limit
Charging System		
Alternator type	Single phase alternator	
Exciter coil resistance	0.2 – 1.0 Ω (20°C/68°F)	—
Ignition System		
Spark plug		
Standard (NGK)	BR9ES	—
Plug gap	0.70 – 0.80 (0.028 – 0.031)	—
Ignition timing	21°/7,000 rpm	—
Ignition coil resistance		
Primary coil	0.1 – 0.2 Ω (20°C/68°F)	—
Secondary with plug cap	7.4 – 11.0 kΩ (20°C/68°F)	—
Secondary without plug cap	3.7 – 4.5 kΩ (20°C/68°F)	—
Crankshaft position sensor resistance	50 – 200 Ω (20°C/68°F)	—

Torque Values

Standard

Item	Torque N•m (kgf•m, lbf•ft)
5 mm bolt and nut	4.9 (0.5, 3.6)
6 mm bolt and nut	9.8 (1.0, 7)
8 mm bolt and nut	22 (2.2, 16)
10 mm bolt and nut	33 (3.4, 25)
12 mm bolt and nut	53 (5.4, 40)
5 mm screw	3.9 (0.4, 2.9)
6 mm screw and flange bolt (SH type)	8.8 (0.9, 7)
6 mm flange bolt and nut	12 (1.2, 9)
8 mm flange bolt and nut	26 (2.7, 20)
10 mm flange bolt and nut	38 (3.9, 29)

Engine

Item	Q'ty	Threads Dia. (mm)	Torque N•m (kgf•m, lbf•ft)	Remarks
Reed valve stopper screw	4	3	1.0 (0.1, 0.7)	Apply locking agent
Cylinder head mounting nut	4	8	20 (2.0, 14)	
Spark plug	1	14	20 (2.0, 14)	
Cylinder stud bolt	4	8	9.8 (1.0, 7)	
Thermostat cap	1	30	20 (2.0, 14)	
Thermo sensor	1	PT 1/8	9.8 (1.0, 7)	Apply sealant
Intake manifold mounting bolt	4	6	9.8 (1.0, 7)	
Right crankcase cover bolt	8	6	9.8 (1.0, 7)	
Shift drum stopper arm bolt	1	6	13 (1.3, 9)	
Shift drum cam plate bolt	1	6	13 (1.3, 9)	Apply locking agent
Gearshift spindle return spring pin	1	8	29 (3.0, 22)	
Primary drive gear nut	1	12	49 (5.0, 36)	
Flywheel nut	1	12	54 (5.5, 36)	
Drive sprocket bolt	2	6	13 (1.3, 9)	
Crankcase bolt	11	6	9.8 (1.0, 7)	
Water pump drain bolt	1	6	9.8 (1.0, 7)	
Water pump cover bolt	3	6	9.8 (1.0, 7)	
Water pump impeller	1	6	9.8 (1.0, 7)	
Transmission oil drain bolt	1	12	25 (2.5, 18)	
Left crankcase cover bolt	4	6	9.8 (1.0, 7)	
Stator base mounting bolt	3	6	9.8 (1.0, 7)	
Clutch center lock nut	1	14	74 (7.5, 54)	

Frame

Item	Q'ty	Threads Dia. (mm)	Torque N•m (kgf•m, lbf•ft)	Remarks
Engine mounting bolt:				
Front/rear upper	2	8	32 (3.3, 24)	
Rear lower	1	10	39 (4.0, 29)	
Front axle nut	1	12	59 (6.0, 43)	U-nut
Rear axle nut	1	12	59 (6.0, 43)	U-nut
Steering stem nut	1	22	74 (7.5, 54)	
Top bridge pinch bolt	2	8	25 (2.6, 19)	
Bottom bridge pinch bolt	2	8	26 (2.7, 20)	
Steering stem top thread	1	33	2.9 (0.3, 2.2)	
Handlebar pinch bolt	2	8	25 (2.6, 19)	
Fork cap	2	27	23 (2.3, 17)	
Fork socket bolt	2	8	20 (2.0, 14)	Apply locking agent
Swingarm pivot bolt	1	12	64 (6.5, 47)	U-nut
Final driven sprocket nut	3	10	54 (5.5, 40)	U-nut
Rear shock absorber:				
Upper mounting bolt	1	10	39 (4.0, 29)	
Lower mounting bolt	1	10	39 (4.0, 29)	
Brake disc mounting bolt	6	8	42 (4.3, 31)	ALOC bolt
Master cylinder holder bolt	2	6	12 (1.2, 9)	
Master cylinder cap screw	2	4	1.5 (0.15, 1.1)	
Brake lever pivot bolt	1	6	5.9 (0.6, 4.3)	
Brake lever pivot nut	1	6	5.9 (0.6, 4.3)	
Brake caliper bleed valve	2	8	5.9 (0.6, 4.3)	
Brake hose bolt	4	10	34 (3.5, 25)	
Front caliper bracket bolt	2	10	30 (3.1, 22)	
Pad pin plug	3	10	2.5 (0.25, 1.8)	
Pad pin	3	10	18 (1.8, 13)	
Caliper pin bolt:				
Upper	1	8	23 (2.3, 17)	Apply locking agent
lower	1	8	18 (1.8, 13)	
Rear caliper pin bolt	1	12	27 (2.8, 20)	
Rear caliper bracket pin bolt	1	8	13 (1.3, 9)	
Rear master cylinder push rod lock nut	1	8	18 (1.8. 13)	
Rear master cylinder hose joint screw	1	4	1.5 (0.15, 1.1)	
Side stand pivot bolt	1	10	9.8 (1.0, 7)	
Side stand pivot nut	1	10	29 (3.0, 22)	U-nut

Tools

Special

Description	Tool number
Cooling System:	
Bearing remover set, 12 mm	07936–1660101
– Remover head, 12 mm	07936–1660110
– Remover shaft, 12 mm	07936–1660120
Remover weight	07741–0010201
U.S.A. only:	
Bearing remover, 12 mm	07936–166010A
Remover handle	07936–3710100
Remover weight	07936–371020A
Attachment, 28 x 30 mm	07946–1870100
Mechanical seal driver	07945–4150400
Clutch/Gearshift Linkage:	
Clutch center holder	07GMB–KT70101
Holder plate	07HGB–001010B (U.S.A. only)
Holder collar "A"	07HGB–001020B (U.S.A. only)
Crankcase/Crankshaft/Transmission:	
Bearing remover set, 12 mm	07936–1660101
– Bearing remover head, 12 mm	07936–1660110
– Bearing remover shaft, 12 mm	07936–1660120
Remover weight	07741–0010201
U.S.A. only:	
Bearing remover, 12 mm	07936–166010A
Remover handle	07936–3710100
Remover weight	07936–371020A
Attachment, 28 x 30 mm	07946–1870100
Crankcase assembly tool	07965–1660102
Crankcase assembly shaft	07965–1660200
Crankcase assembly collar	07965–1660302 or 07965–166030A (U.S.A. only)
Assembly collar	07965–GC70100

Description	Tool number
Front Wheel/Suspension/Steering:	
Ball race driver	07944–1150001
Steering stem driver	07946–GC40000 or 07946–MB00000 and 07946–GC4000A (U.S.A. only)
Rear Wheel/Suspension:	
Bearing remover set, 20 mm	07936–3710600
Remover handle	07936–3710100
Remover weight	07741–0010201
	07936–371020A (U.S.A. only)
Hydraulic Brake:	
Snap ring pliers	07914–SA50000 or 07914–3230001

Common

Description	Tool number
Fuel System:	
Float level gauge	07401–0010000
Cooling System:	
Pilot, 12 mm	07746–0040200
Driver	07749–0010000
Cylinder Head/Cylinder/Piston:	
Compression gauge	07410–0020000
Clutch/Gearshift Linkage:	
Gear holder, 2.5	07724– 0010100 or 07724–001A100 (U.S.A. only)
Lock nut wrench, 20 x 24 mm	07716–0020100
Extension bar	07716–0020500
Crankcase/Crankshaft:	
Universal bearing puller	07631–0010000 or equivalent commercially available in U.S.A.
Driver	07749-0010000
Attachment, 42 x 47 mm	07746–0010300
Attachment, 52 x 55 mm	07746–0010400
Pilot, 12 mm	07746–0040200
Pilot, 15 mm	07746–0040300
Pilot, 17 mm	07746–0040400
Pilot, 25 mm	07746–0040600
Front Wheel/Suspension/Steering:	
Steering stem socket	07916–3710101 or 07916–3710100 (U.S.A. only)
Driver	07749–0010000
Attachment, 32 x 35 mm	07746–0010100
Attachment, 37 x 40 mm	07746–0010200
Pilot, 12 mm	07746–0040200
Fork seal driver body	07747–0010100
Fork seal driver attachment	07747–0010400
Bearing remover shaft	07746–0050100
Remover head, 12 mm	07746–0050300

Description	Tool number
Rear Wheel/Suspension:	
Driver	07749–0010000
Attachment, 24 x 26 mm	07746–0010700
Attachment, 32 x 35 mm	07746–0010100
Attachment, 37 x 40 mm	07746–0010200
Pilot, 12 mm	07746–0040200
Pilot, 20 mm	07746–0040500
Electrical:	
Universal holder	07725–0030000
Flywheel puller	07733–0010000 or 07933–001000B (U.S.A. only)
Machine Setting:	
Pin spanner	07702–0020001

Lubrication & Seal Points

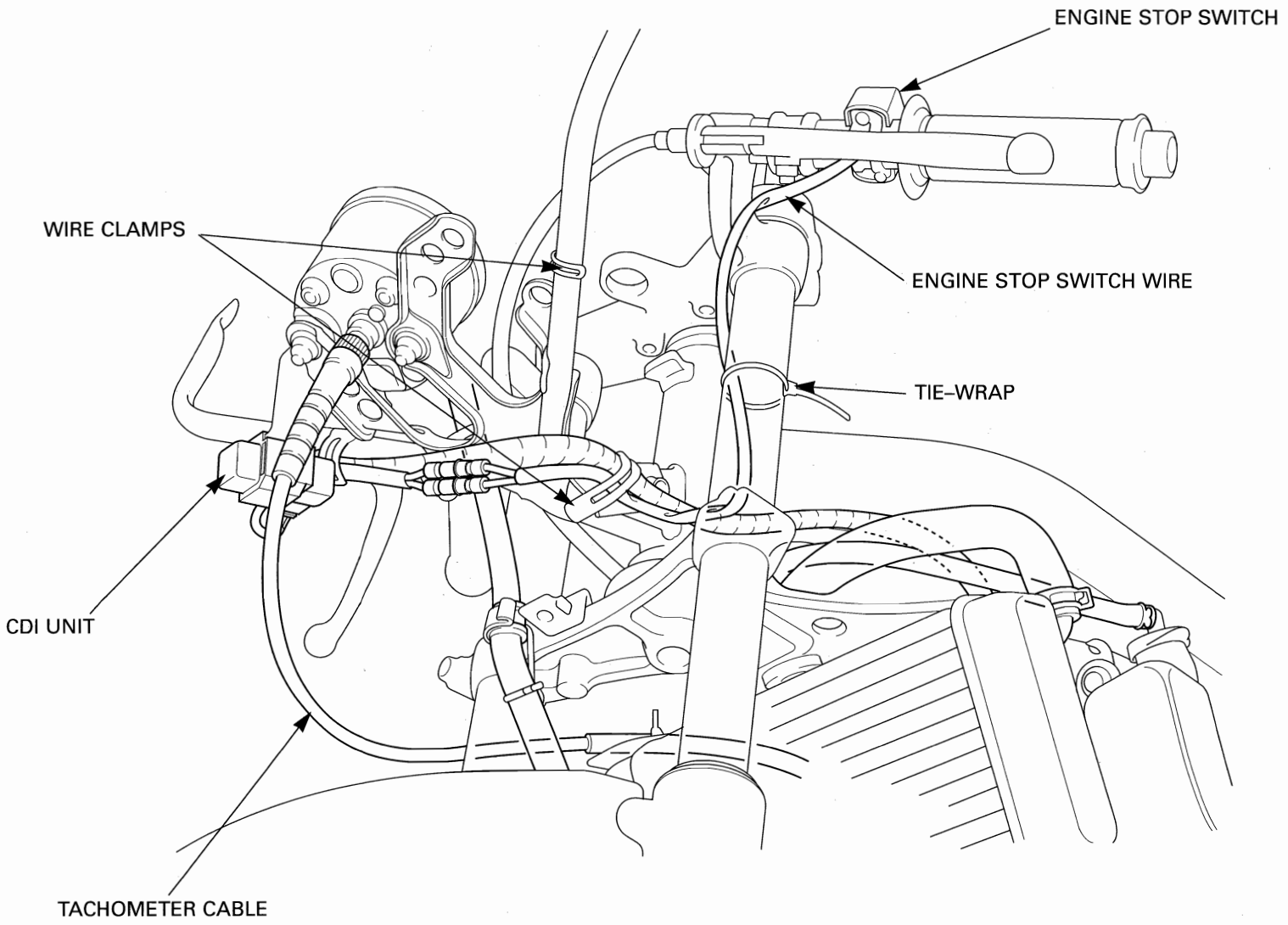
Engine

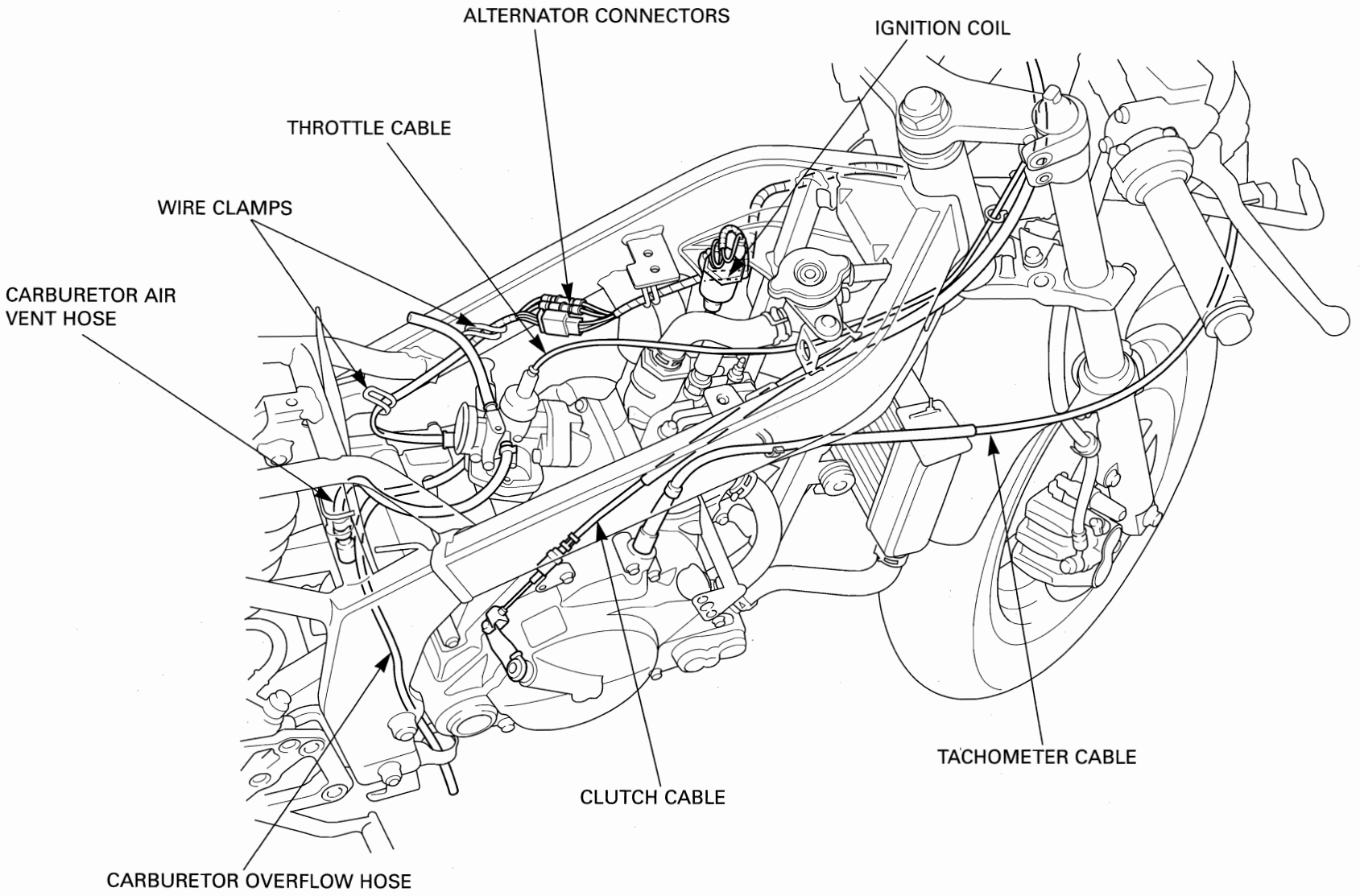
Item	Material	Remarks
Piston outer surface Piston ring whole surface Each rolling and sliding portion of the inside the crankcase Cylinder inner surface Piston pin bore and outer surface Piston pin surface Connecting rod small end bearing	Pro Honda HP2 2-stroke engine oil or equivalent motor oil	
Transmission gear teeth, inner surface and shift fork grooves Each bearing (except crankshaft bearing) Each sliding surface	Pro Honda GN4 4-stroke oil or equivalent motor oil	
Each oil seal lips Each O-ring	Multi-purpose grease	

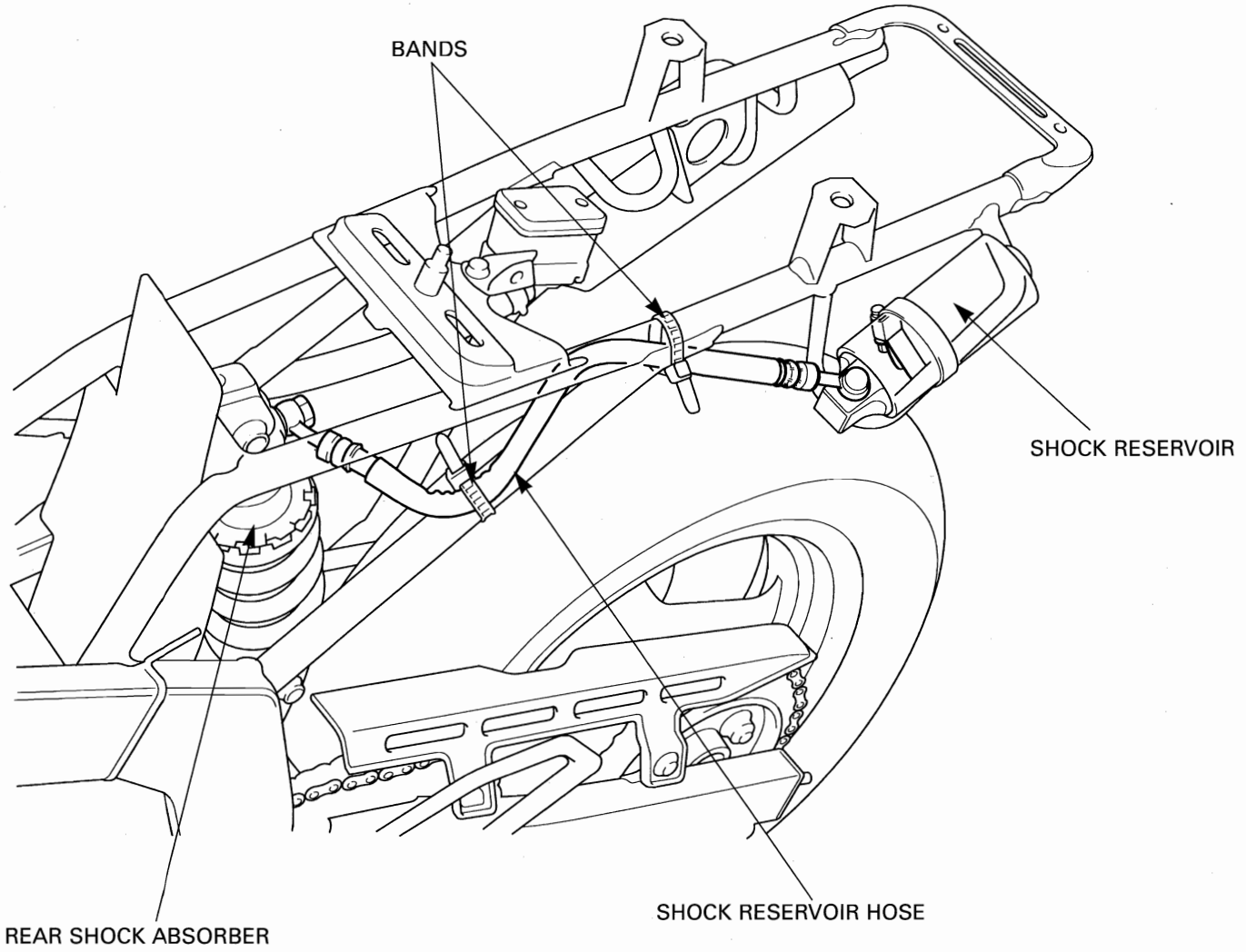
Frame

Item	Material	Remarks
Front axle shaft surface Rear axle shaft surface Wheel bearing Wheel bearing dust seal lips Swingarm pivot dust seal lips Clutch lever pivot sliding surface	Multi-purpose grease	
Handlebar grip	Cemedine #540 or Pro Honda Hand Grip Cement	
Steering stem top thread Throttle cable inside Tachometer cable inside Clutch cable inside	4-stroke engine oil	
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 caliper pin bolt	Silicone grease	

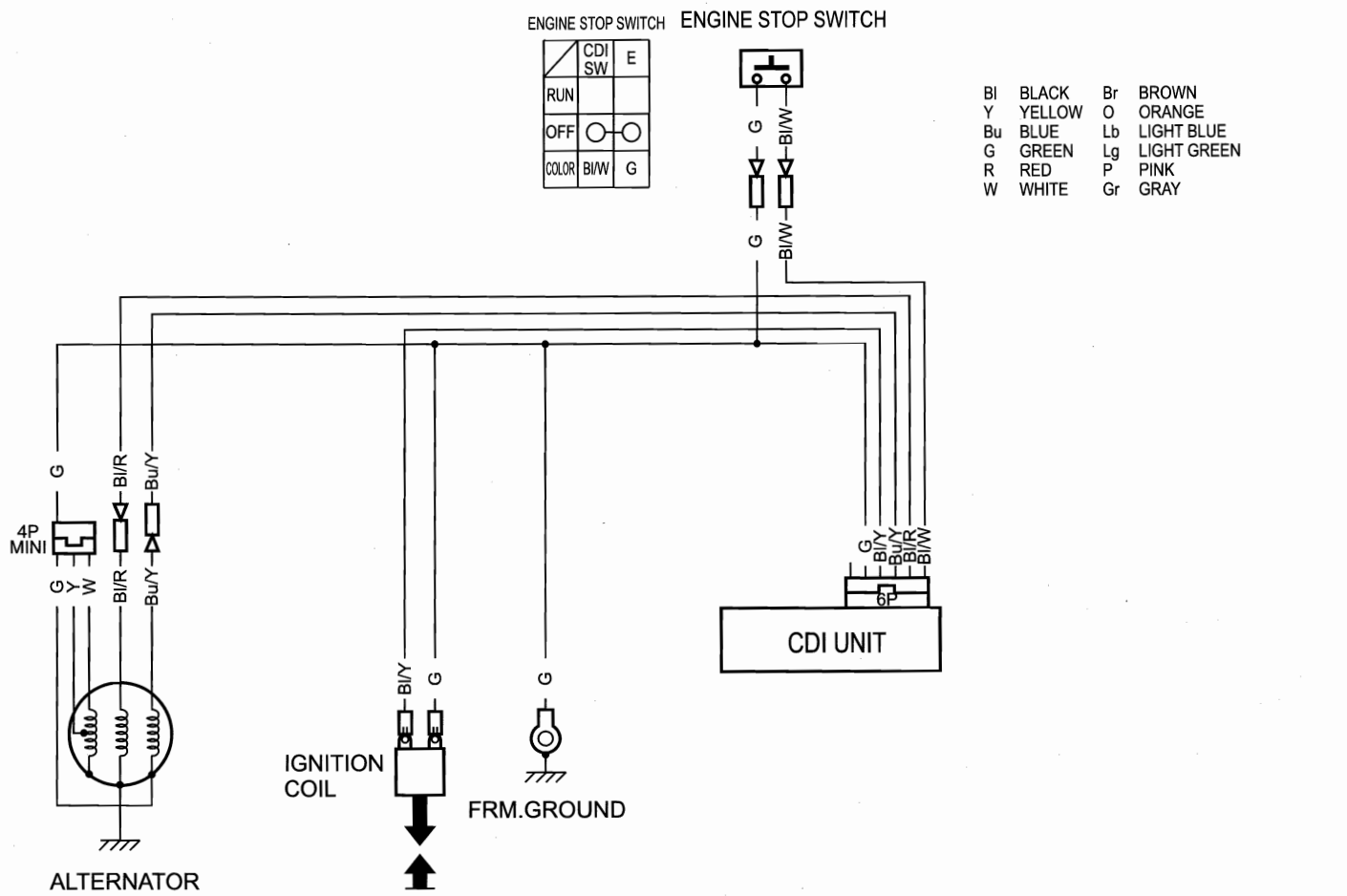
Cable & Harness Routing




ALTERNATOR CONNECTORS
IGNITION COIL
THROTTLE CABLE
WIRE CLAMPS
CARBURETOR AIR VENT HOSE
TACHOMETER CABLE
CLUTCH CABLE
CARBURETOR OVERFLOW HOSE


BANDS
SHOCK RESERVOIR
REAR SHOCK ABSORBER
SHOCK RESERVOIR HOSE

Wiring Diagram



0030Z–NLA–700

Maintenance Schedule

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

Item \ Frequency	Each race	Remarks
Throttle Operation	I	
Spark Plug/Cap	I	
Transmission Oil	I	R: First 60 mi (100 km) Every 600 mi (1,000 km)
Cooling System	I	
Cylinder Head Decarbonizing	C	
Pistons And Piston Rings	I	R: every 600 mi (1,000 km)
Piston Pin And Connecting Rod Small End Bearing	I	R: every 600 mi (1,000 km)
Reed Valve	I	
Drive Chain	I, L	R: every 600 mi (1,000 km)
Drive Sprocket	I	
Driven Sprocket	I	
Brake Pad Wear	I	
Brake Fluid	I	R: Every 3 races (after riding in rain)
Brake System	I	
Clutch System	I	
Control Cables	I, L	
Expansion Chamber/Silencer	I	
Swingarm	C	
Suspension	I	R: First 60 mi (100 km) Every 600 mi (1,000 km)
Wheels/Tires	I	
Nuts, Bolts, Fasteners	I	

Pre-ride Inspection

For your safety, it is very important to take a few moments before each ride to walk around your NSR50R and check its condition.

⚠ WARNING

Improperly maintaining this NSR50R 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 NSR50R:

- Fuel, oil and water leaks
- Coolant for proper level
- Spark plugs 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 or improper inflation pressure
- Front and rear suspension for proper operation
- Front and rear brakes, for proper operation
- Drive chain for correct slack and adequate lubrication
- Loose bolts, screws and other fasteners (particularly drain bolt lock wire)

Warming-up Inspection

When warming-up the engine, check the following:
- Do not rev the engine more than necessary or engine damage may result.
- Avoid overheating the engine by observing the water temperature gauge.
- Check for fuel, oil and water leaks
- Warm up the engine for a few minutes until it is heated to the operating temperature and the engine responds to the throttle smoothly [water temperature 60 - 70 °C (140 - 158 °F)].

Ride Inspection

When running the NSR, check the following:
- Water temperature and engine speed on gauges
- Carburetor setting
- Control system
- Brake stopping power

After Ride Inspection

After riding the NSR, check the following:
- Color condition of piston head and spark plug
- Signs of detonation
- Fuel, oil and water leaks
- Loose or missing bolts and nuts
- Conformity between piston, piston ring and cylinder

NOTICE

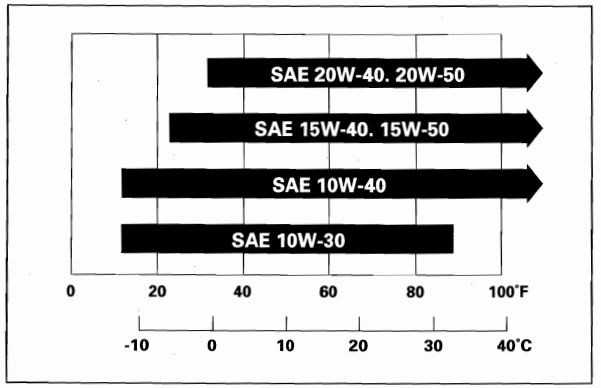
All replacement parts shown in the right table should be checked after every running and replaced, if necessary.

Replacement Parts

Parts Requiring Periodic Replacement

Item	Replacement Interval	Cause
Engine		
Piston	Every 600 mi (1,000 km)	Damage or wear at skirt
Piston ring	Every 600 mi (1,000 km)	Damage at ends or wear
Piston pin	Every 600 mi (1,000 km)	Burning, damage or wear
Piston pin clip	Every 600 mi (1,000 km) (every reassembling)	
Connecting rod small end bearing	Every 600 mi (1,000 km)	Burning, damage or wear
Transmission oil	First 60 mi (100 km); thereafter, every 600 mi (1,000 km)	Contamination or emulsification
Frame		
Drive chain	Every 600 mi (1,000 km)	Elongation or wear
Fork fluid	First 60 mi (100 km); thereafter, every 600 mi (1,000 km)	
Brake fluid	Every 3 races (after riding in rain)	Contamination

- Intervals shown above are for sprint racing.
- The repair or replacement of any components that are worn or damaged before the above intervals is not covered by the Warranty.



Transmission Oil

Recommended Transmission Oil:
Use Pro Honda GN4 4-stroke oil or equivalent motor oil

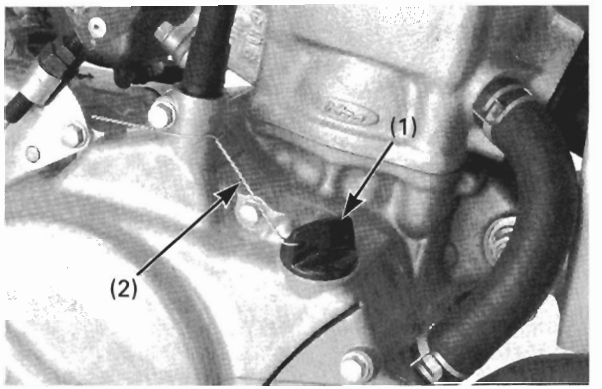
Use only high detergent, premium quality motor oil certified to meet or exceed US automobile manufacturer's requirement for Service Classification SF or SG.
Motor oil intended for Service SF or SG will show this designation on the container. The use of special oil additives is unnecessary and will only increase operating expenses.

NOTICE

Using the wrong oil can damage the transmission.

Oil is a major factor effecting the performance and service life of the transmission. Non-detergent, vegetable, or castor based racing oils are not recommended.

Recommended oil viscosity: SAE 10W–40

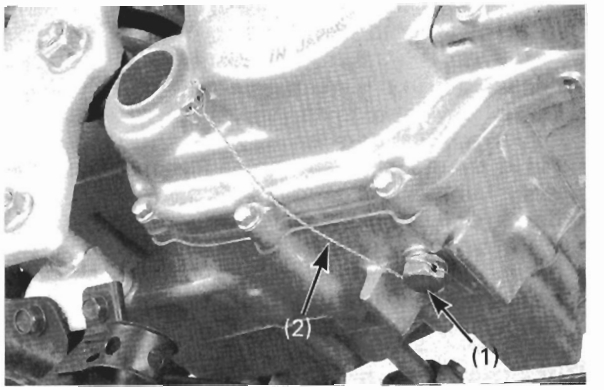


(1) OIL FILLER CAP (2) LOCK WIRE

Oil Change

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

1. Cut and remove the lock wire.
   Remove the oil filler cap.



(1) DRAIN BOLT (2) LOCK WIRE

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

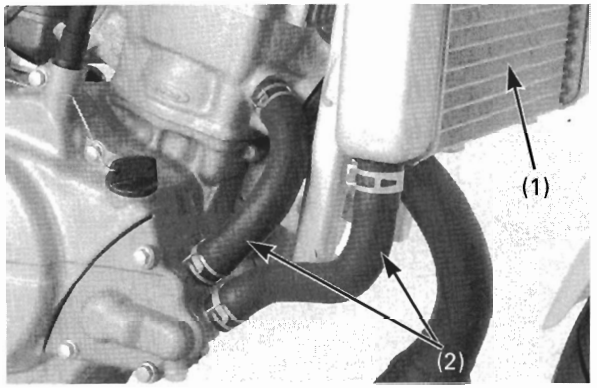
   Torque: 25 N•m (2.5 kgf•m, 18 lbf•ft)

   Secure the bolt with lock wire.

4. Pour the recommended oil slowly through the oil filler hole.

   Capacity:
   0.8 liter (0.8 US qt, 0.7 Imp qt) at draining
   0.9 liter (1.0 US qt, 0.8 Imp qt) at disassembly

Install the oil filler cap.
Secure the cap with lock wire.

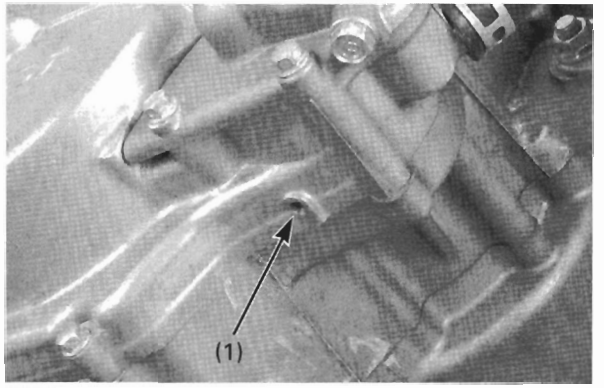


(1) RADIATOR
(2) RADIATOR HOSES

Coolant

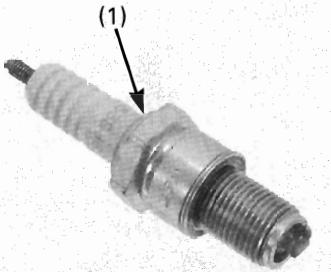
Cooling System Inspection

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 hose is connected and not clogged.
5. Check radiator fins for obstructions or damage.



(1) INSPECTION HOLE

6. Check the water pump inspection hole below 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 4-4).



(1) SPARK PLUG

Spark Plug

Standard plug: NGK BR9ES

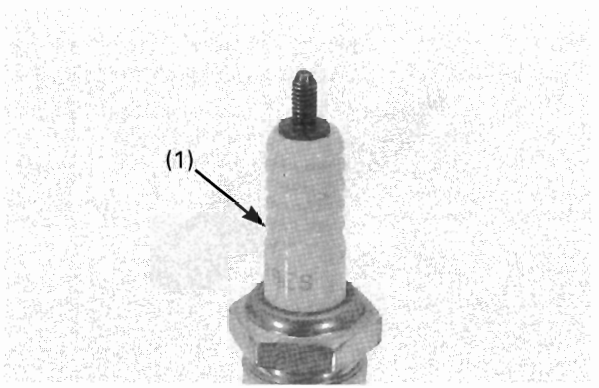
Using a spark plug with the wrong heat range can damage the engine or cause the plug to foul. Be careful to select the correct spark plug for the conditions.

Plug Gap

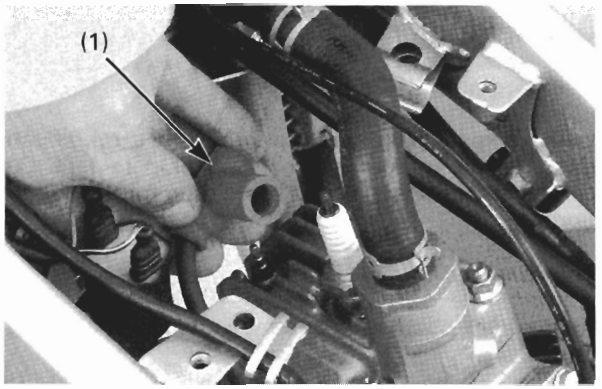
Remove the spark plug and measure the spark plug gap.

Standard: 0.70 - 0.80 mm (0.028 – 0.031 in)

Adjust the spark plug gap if the spark plug gap is out of specification.



(1) SPARK PLUG



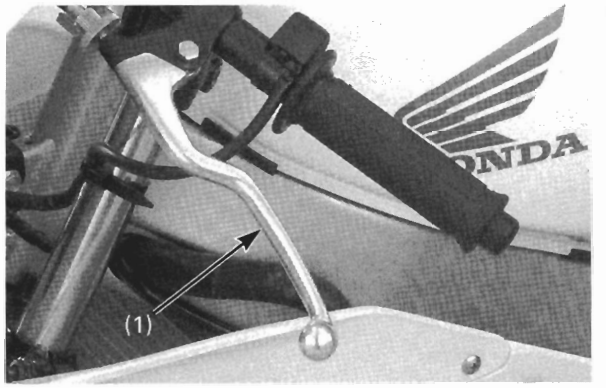
(1) SPARK PLUG CAP

Flash Over (leaking of electricity between plug cap and plug)

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

Spark Plug Caps

Remove the spark plug cap from the spark plug. Clean the inside of the plug cap with electrical contact cleaner to prevent misfire.

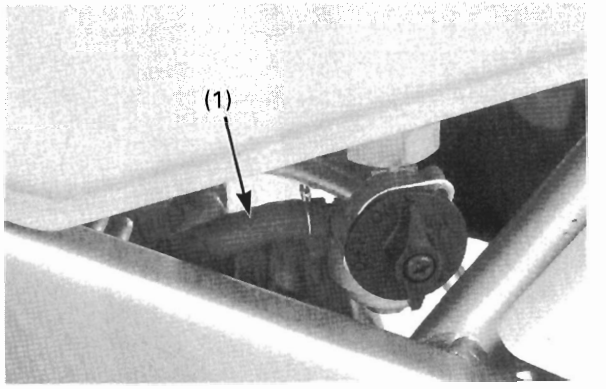


(1) CLUTCH LEVER

Clutch

Operation

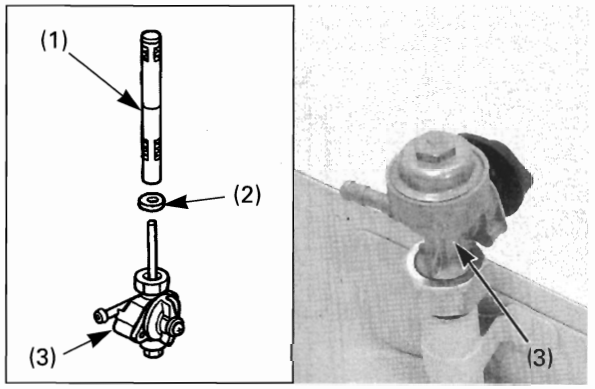
1. Check for smooth clutch lever operation. Lubricate the clutch lever pivot or clutch cable if operation is not smooth.
2. Check the clutch cable for deterioration, kinks or damage.



(1) FUEL TUBES

Fuel Tank/Fuel Filter

1. Check the fuel valve and fuel filter for contamination.
2. Check for leaks.
3. Check the fuel line for cracks, deterioration or leakage.



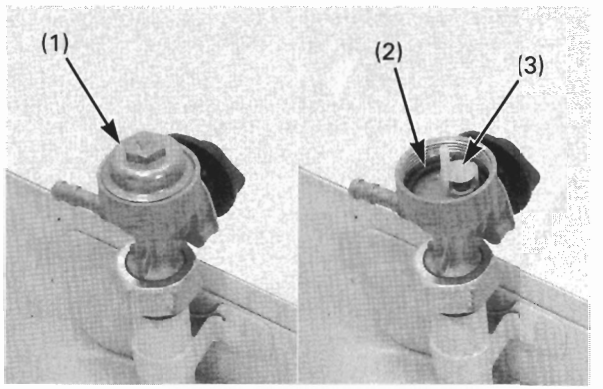
(1) FUEL STRAINER SCREEN (2) O-RING
(3) FUEL VALVE

Fuel Strainer Screen/Fuel Filter

The fuel strainer screen and filter are incorporated in the fuel valve which is mounted on the bottom of the fuel tank.
Accumulation of dirt in the filter will restrict the flow of the fuel to the carburetor.

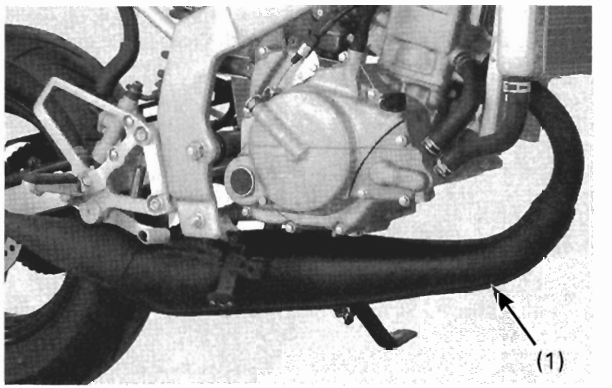
1. Drain the fuel from the fuel tank into an approved gasoline container. Disconnect the fuel line.
2. Remove the fuel valve by loosening the fuel valve nut. Wash the fuel filter in high flash-point cleaning solvent.
3. Reassemble the fuel valve in the reverse order of removal.

Make sure the O-ring is in place.
Install the fuel valve in the fuel tank.
Reinstall the fuel valve as shown.



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

Remove the fuel filter cup and O-ring.
Remove the fuel filter from the fuel valve.
Wash the fuel filter in high flash-point cleaning solvent.
Reassemble the fuel valve in the reverse order of removal.



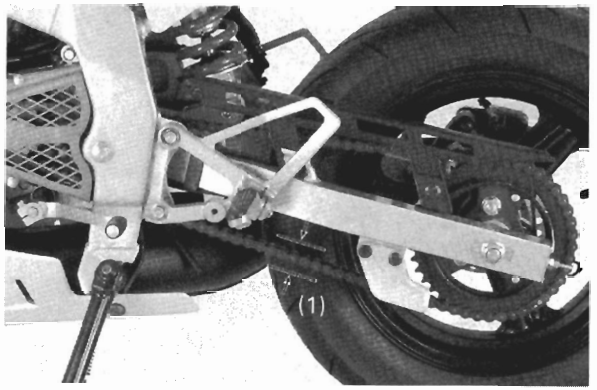
(1) EXPANSION CHAMBER

Expansion Chamber

Inspection

Check the expansion chamber for clogging.
Check for loose or missing bolts and nuts.
Check the expansion chamber for cracks or deformation.

Loss of power will result if the expansion chamber is broken.



(1) DRIVE CHAIN SLACK

Drive Chain

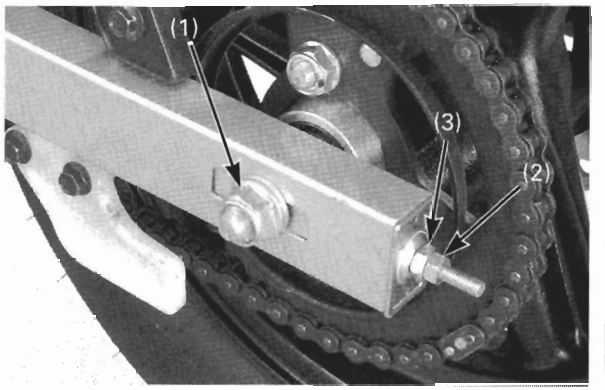
Drive Chain Slack Inspection

During the break-in period, drive chain slack should be checked and adjusted often. Also check the drive chain slack after the 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.
With the transmission in neutral, measure chain slack at the lower section midway between the sprocket.

Drive chain slack: 10 – 20 mm (0.4 – 0.8 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) AXLE NUT (2) LOCK NUT
(3) ADJUSTING NUT

Drive Chain Slack Adjustment

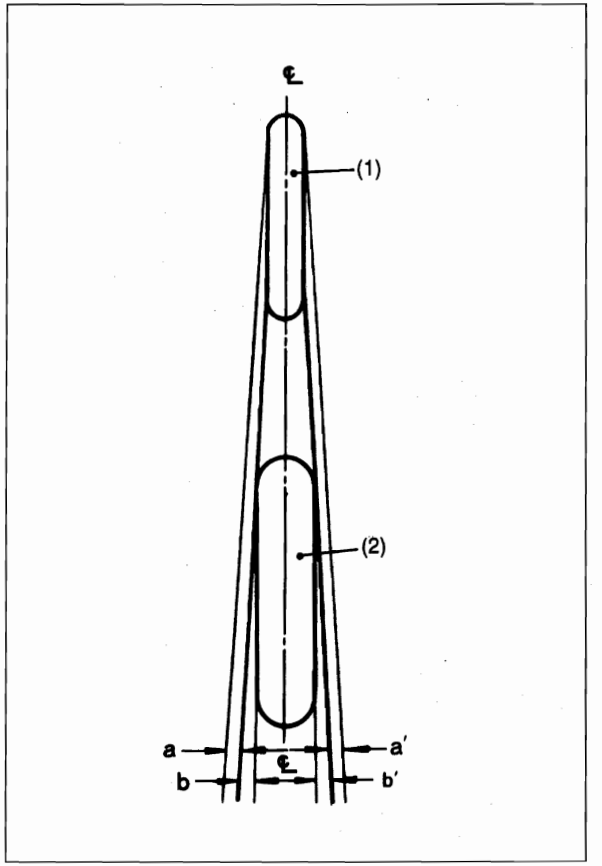
Loosen the rear axle nut.
Loosen the lock nuts and turn the drive chain adjusting nuts until the correct drive chain slack obtained. Improper chain adjustment can affect performance. Be sure it is adjusted properly.

Tighten the rear axle nut to the specified torque.

Torque: 59 N•m (6.0 kgf•m, 43 lbf•ft)

Recheck the drive chain slack and free wheel rotation.
Tighten the drive chain adjusting nuts and lock nuts securely.

Lubricate the drive chain.



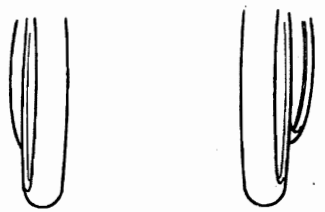
(1) FRONT TIRE (2) REAR TIRE

Wheel Alignment

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

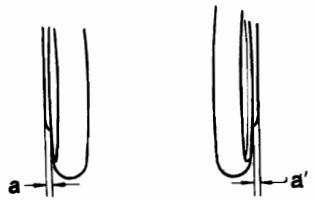
1. Place the machine upright on firm, level ground.
2. Stand at a position 1 – 2 m from the rear end of the machine on either side; squat down.

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



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

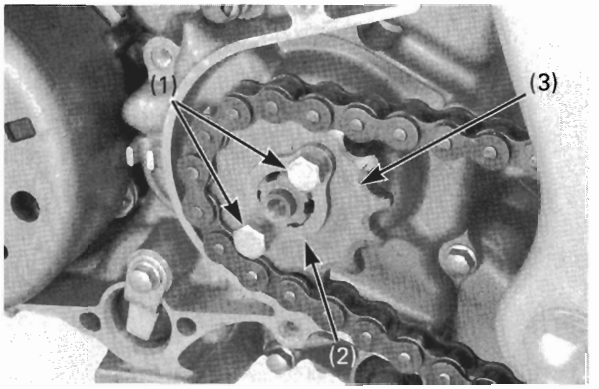
Distance "aa'" is equal on both side



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 and turning the drive chain adjusting bolt.



(1) BOLTS
(2) FIXING PLATE
(3) SPROCKET

Drive/Driven Sprockets

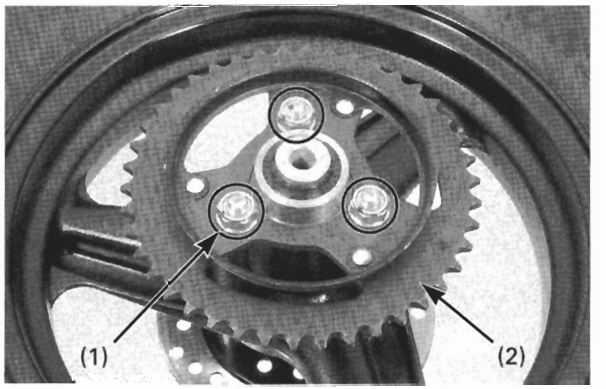
Drive Sprocket Replacement

Remove the left crankcase cover.
Loosen the drive chain (page 3-8).

Remove the drive sprocket fixing plate bolts, fixing plate and drive sprocket.

Shift the transmission into low gear, tighten the fixing plate bolts.

Torque: 13 N•m (1.3 kgf•m, 9 lbf•ft)



(1) NUTS
(2) DRIVEN SPROCKET

Driven Sprocket Replacement

Remove the rear wheel (page 5-7).

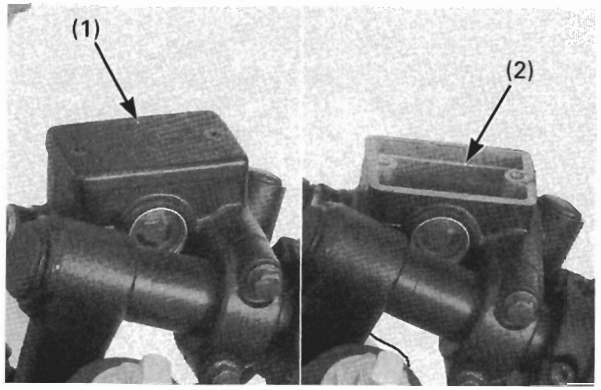
Remove the nuts and driven sprocket from the wheel hub.

Install the driven sprocket in the reverse order of removal.

Torque: 54 N•m (5.5 kgf•m, 40 lbf•ft)

Always torque the driven sprocket nuts.

Adjust the drive chain slack (page 3-8).



(1) MASTER CYLINDER CAP (2) FLUID LEVEL

Brake Fluid

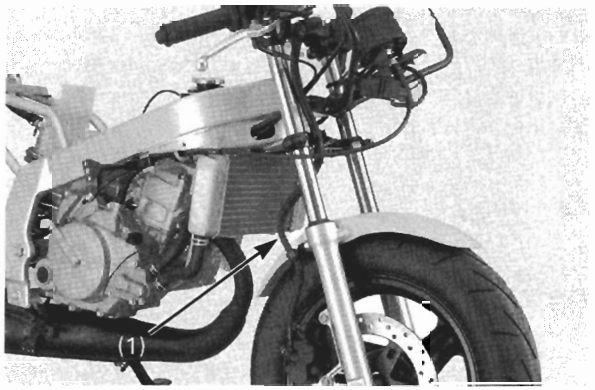
Front Brake Master Cylinder

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

Remove the screws, master cylinder cap, set plate and diaphragm.

If the fluid level is below the lower level, check for the brake pad wear (page 3-11).
Replace the brake pad if necessary.

Also check the brake system for leaks.

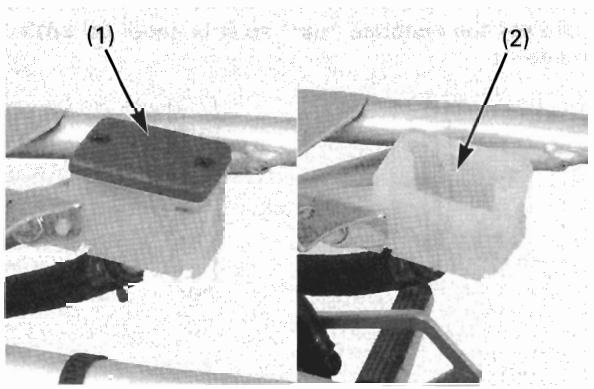


(1) BRAKE HOSE

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

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

Brake fluid: Pro Honda DOT 4 Brake Fluid



(1) MASTER CYLINDER CAP
(2) FLUID LEVEL

Rear Master Cylinder

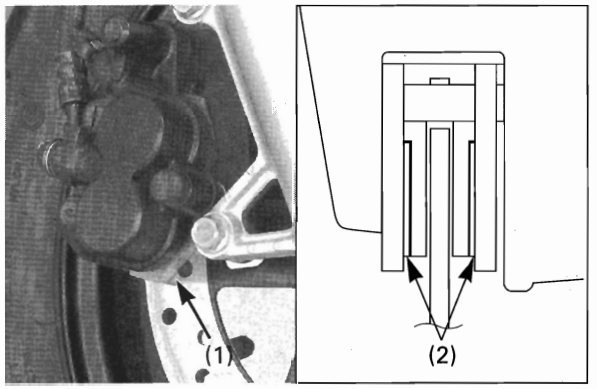
Always inspect the brake fluid level, and relieve the vacuum pressure in the reservoir.

Remove the screws, master cylinder cap, set plate and diaphragm.

If the fluid level is low, check the brake pad for wear (see next step).
Replace the brake pads if necessary.

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

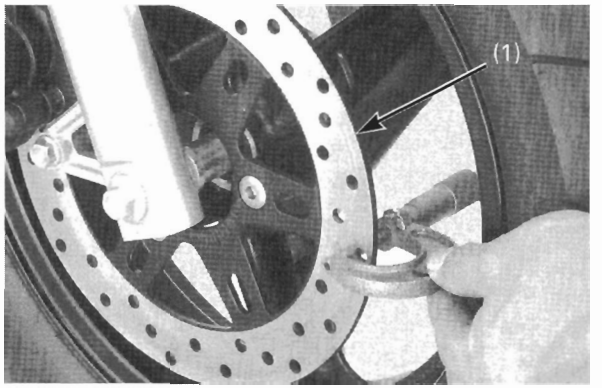
Brake fluid: Pro Honda DOT 4 Brake Fluid



(1) BRAKE PADS (2) WEAR LIMIT

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.



(1) BRAKE DISC

Brake System

Refer to page 1-7 for Brake Pedal Height Adjustment.

Brake Discs

Measure the runout with a dial gauge.

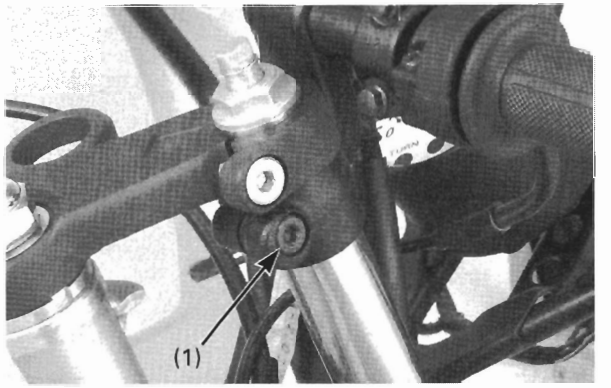
Service Limit: Rear: 0.3 mm (0.01 in)

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

Measure the brake disc thickness.

Service Limit: Front: 3.0 mm (0.12 in)
Rear: 3.0 mm (0.12 in)

Replace the brake disc if necessary.
Refer to pages 5-3 and 5-7 for removal.



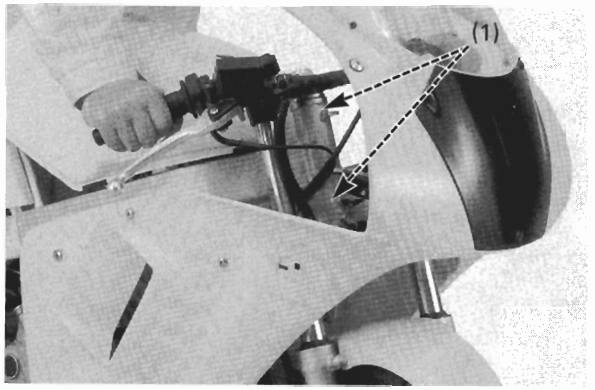
(1) PINCH BOLT

Handlebar And Steering Head Bearings

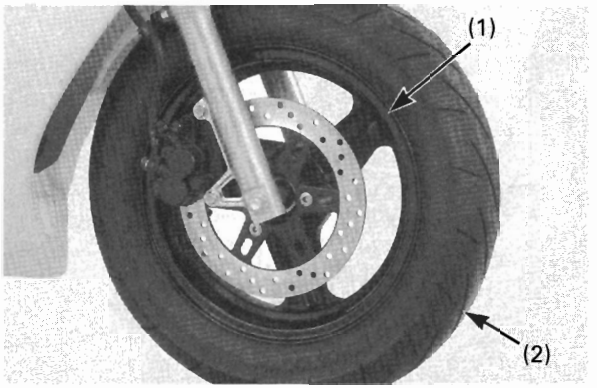
Handlebar

Check the handlebar for bends or cracks.

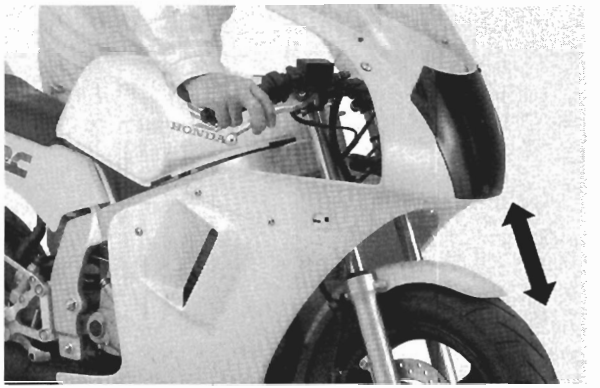
Check that the handlebar pinch bolts are torqued to 25 N•m (2.6 kgf•m, 19 lbf•ft).



(1) STEERING HEAD BEARINGS



(1) WHEEL (2) TIRE



Steering Head Bearings

Support the motorcycle with its front wheel off the ground.
Turn the handlebars 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.

Wheels And Tires

Proper air pressure will provided 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: 150 kPa (1.50 kgf/cm², 21 psi)
Rear: 150 kPa (1.50 kgf/cm², 21 psi)

Inspect the wheel for damage.

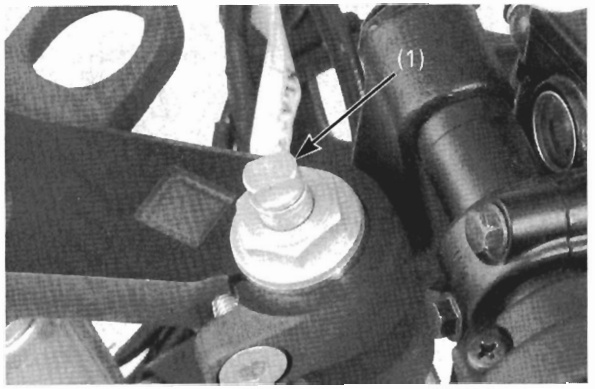
Check the wheel runout. If runout is noticeable, replace the wheel with a new one.
Check the axle for runout.
Check the condition of the front wheel bearings.

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 NSR is new, break in your NSR to ensure that the suspension has worked in.
- After break-in, test ride your NSR with the front suspension at the standard setting before attempting any adjustments.



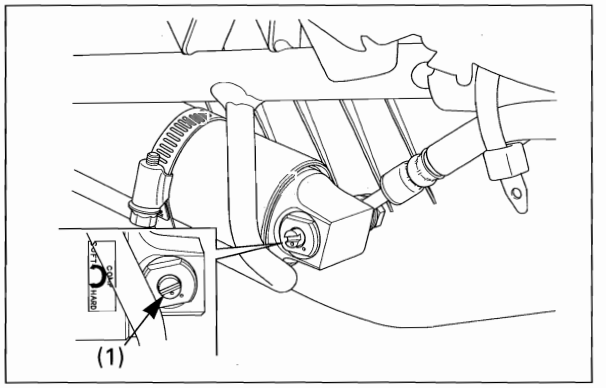
(1) PRELOAD ADJUSTER

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:

- 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
  An optional stiffer spring is available.
- Replace the fork fluid every three races. See page 6-4 for oil level adjustment after changing the fork fluid.
- Use Pro Honda Suspension Fluid SS-8 or equivalent with additives to assure maximum performance of your NSR'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.
- If you become confused about adjustment settings, return to the standard position and start over.

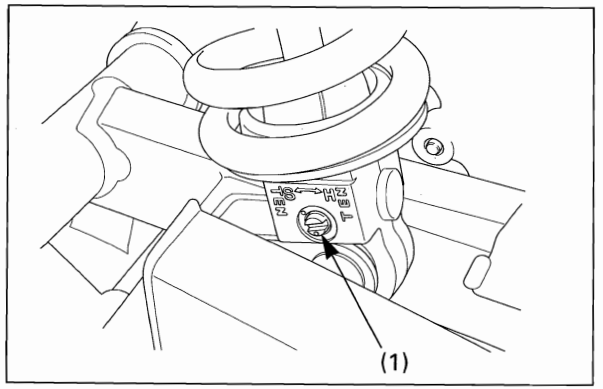


(1) COMPRESSION ADJUSTER

Rear Suspension

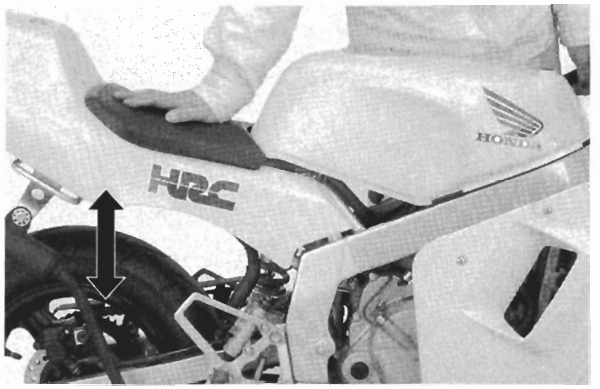
The swingarm is controlled by a hydraulic shock absorber with an aluminum reservoir for oil and nitrogen gas pressure. The gas pressure in the reservoir is contained within a rubber bladder.
The rear shock absorber should always be adjusted for the rider's weight and race track conditions by using one or more of the following methods.

- Rebound damping
  Turning the rebound damping screw adjusts how quickly the shock absorber extended.
- Compression damping
  Turning the compression damping screw adjusts how quickly the shock absorber compression.
- Spring preload
  Turning the spring preload adjuster adjusts the spring initial preload length.
- Shock absorber spring
  Optional stiffer and softer springs are available.



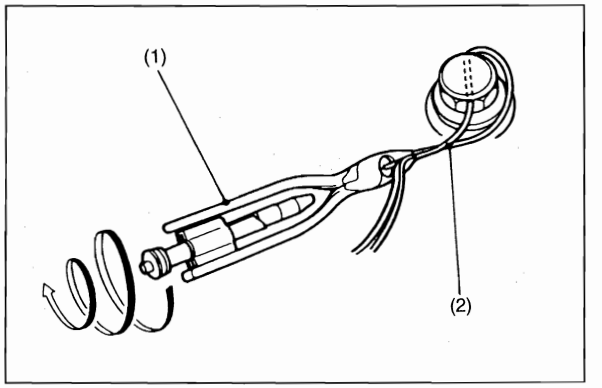
(1) REBOUND ADJUSTER

- When your NSR is new, break-in your NSR to ensure that the suspension has worked in.
- After break-in, test ride your NSR with the rear suspension at the standard setting before attempting any adjustments.
- Refer to page 6-5 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 5-9).

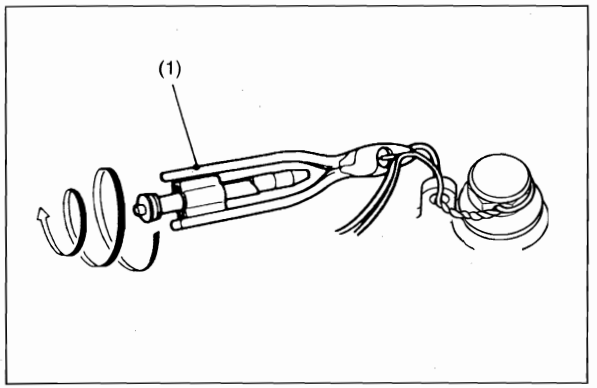


(1) WIRE TWISTING TOOL
(2) LOCK WIRE

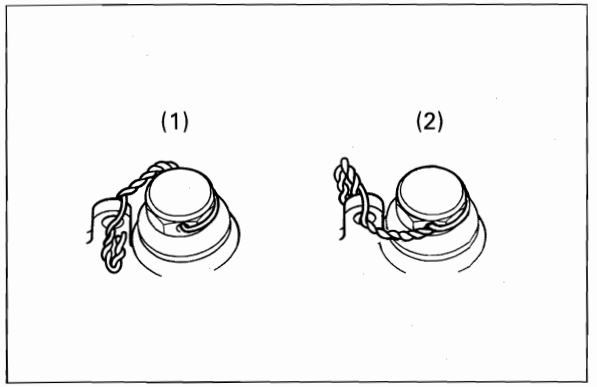
Nuts, Bolts, Fasteners

Wire Locking

Before starting the engine, secure the following bolts and nuts with lock wire.
– Engine oil drain plug
– Oil filler cap

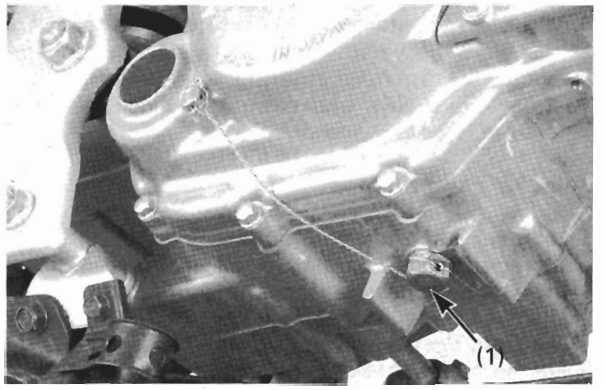


(1) WIRE TWISTING TOOL

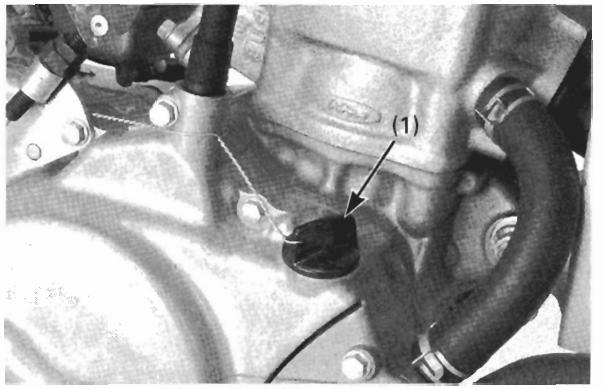


(1) INCORRECT (2) CORRECT

Example (oil drain plug):
Insert the proper length lock wire to the bolt.
Make sure the lock wire pulls the fastener in the "tightening" direction as shown.
Twist the wire using a commercially available wire twisting tool.
Insert the wire in the oil pan hole.
Twist the wire and cut off any excess.



(1) OIL DRAIN BOLT



(1) OIL FILLER CAP

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

Make a hole to the transmission oil check bolt with a drill for securing the oil filler cap.

Cleaning

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

NOTICE

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

Carburetor
Wheel hubs
Engine stop switch
Expansion chamber outlet
Electrical components
Drive chain
Brake master cylinder

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

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 NSR: otherwise, these repairs may be forgotten by the time your NSR is removed from storage.

Preparing The Machine For Storage

1. Completely clean all parts of your NSR. Wash with fresh water and wipe dry.
2. Drain the fuel tank and carburetor into an approved gasoline container.
   Turn the fuel valve OFF and remove the carburetor drain bolt. Drain gasoline into an approved container. Reinstall the drain bolts.

⚠ WARNING

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

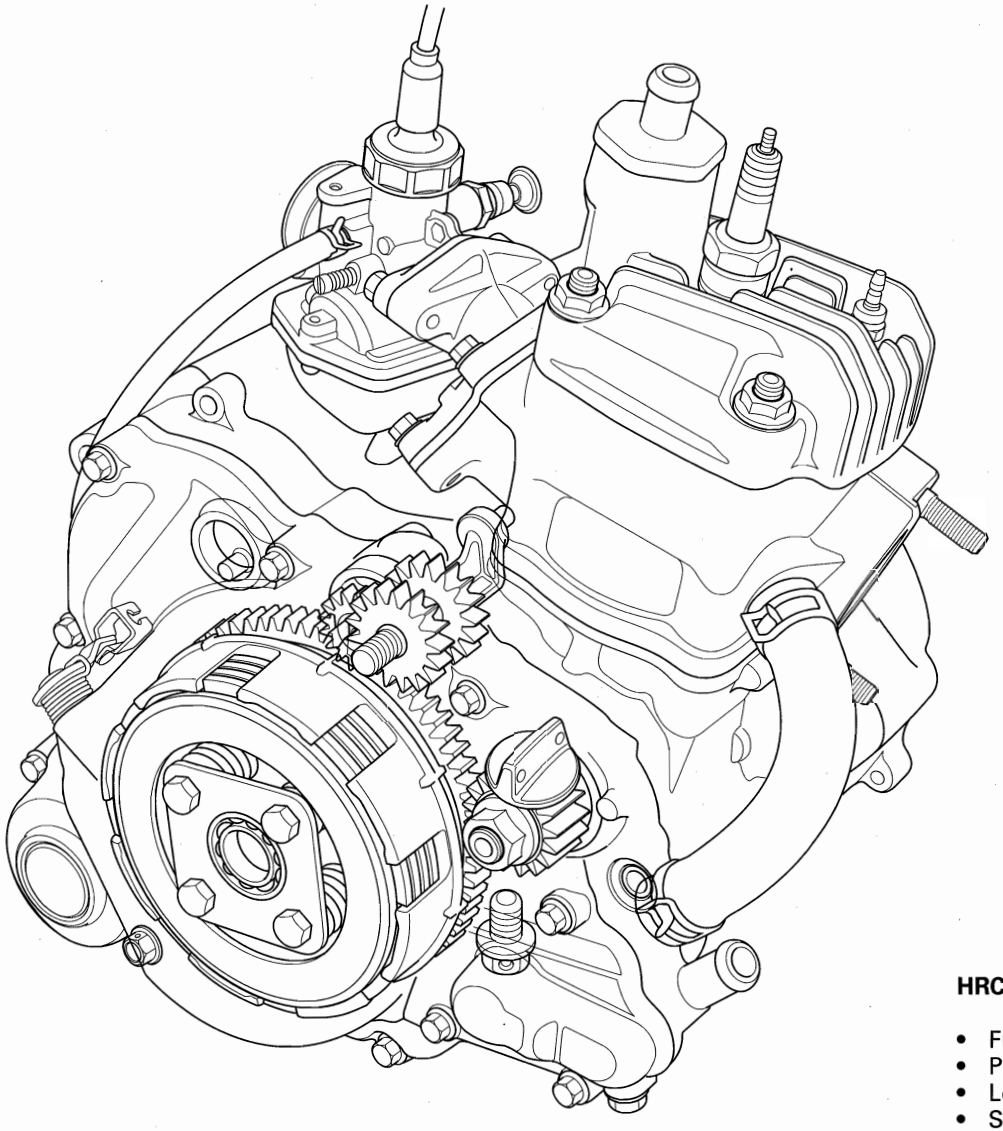
- **Stop engine and keep heat, sparks, and flame away.**
- **Drain or refuel only outdoors.**
- **Wipe up spills immediately.**

3. Remove the drain bolt and drain coolant (page 1-3).
4. Lubricate the drive chain.
5. Remove the spark plug and pour a table spoon (15 - 20 cm^3) of clean engine oil into the cylinder.
   With the spark plug grounded or the engine stop switch OFF, crank the engine several times to distribute the oil, then reinstall the spark plug.
6. Seal the carburetor intake port using piece of tape or equivalent.
7. Inflate the tires to their recommended pressure.
8. Place your NSR on the maintenance stand or equivalent to raise both tires off the ground.
9. Stuff a rag into the silencer outlet. Then tie a plastic bag over the end of the silencer to prevent moisture from entering.
10. Cover your NSR and store in a place which is free of humidity and dust.

Removal From Storage

1. Uncover and clean your NSR.
   Change the transmission oil if more than 4 months have passed since the start of storage.
2. Uncover the end of the silencer and remove the rag from the silencer outlet.
3. Fill the fuel tank with pre-mixed fuel (page 1-2).
4. Pour the recommended coolant slowly into the radiator filler hole up to the filler neck.
   Bleed the air in the cooling system and install the radiator cap securely (page 1-2).
5. Perform the maintenance check (page 3-2).

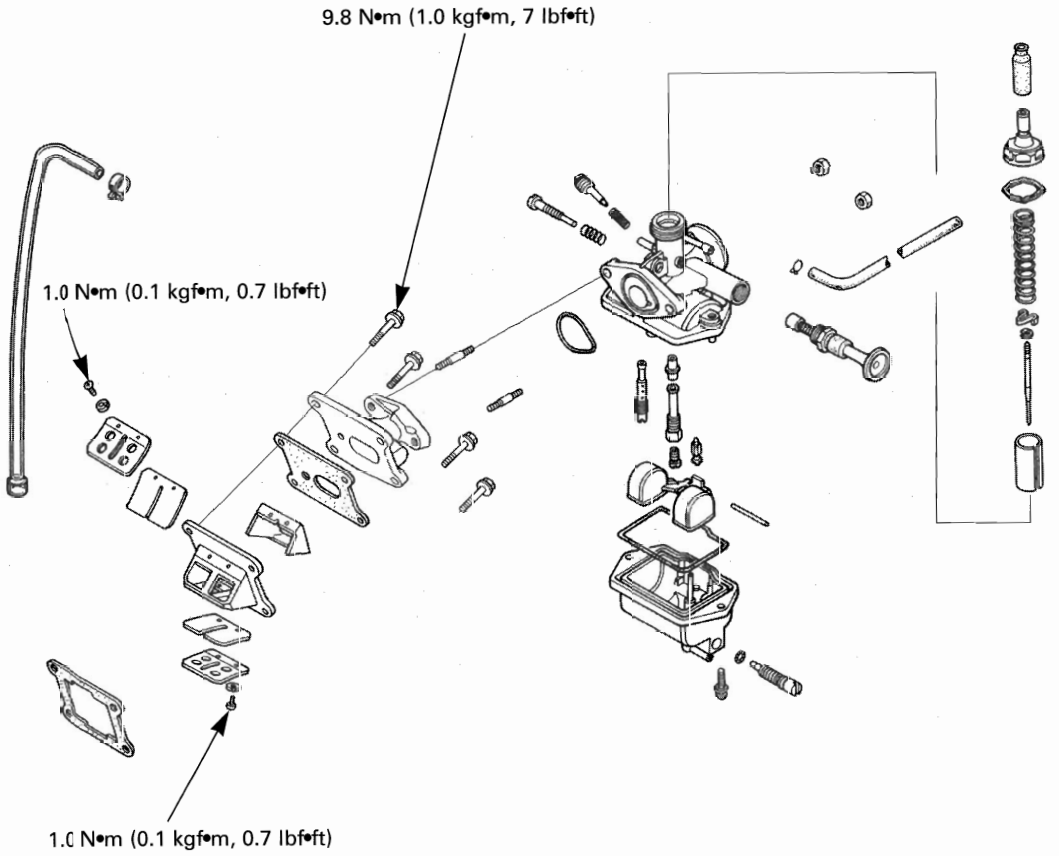
Engine Assembly

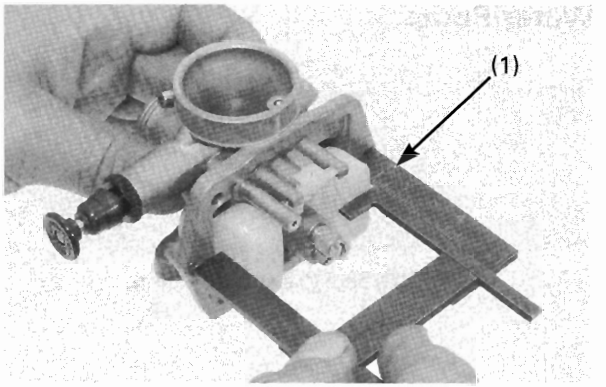


HRC NSR50R Engine

- Fuel/Oil pre-mix type (no oil pump)
- Push start only
- Low friction balancer idle gear
- Special carburetor setting
- Lock wire hole equipped oil filler cap and drain plug

Carburetor And Reed Valve





(1) FLOAT LEVEL GAUGE

Float level Inspection

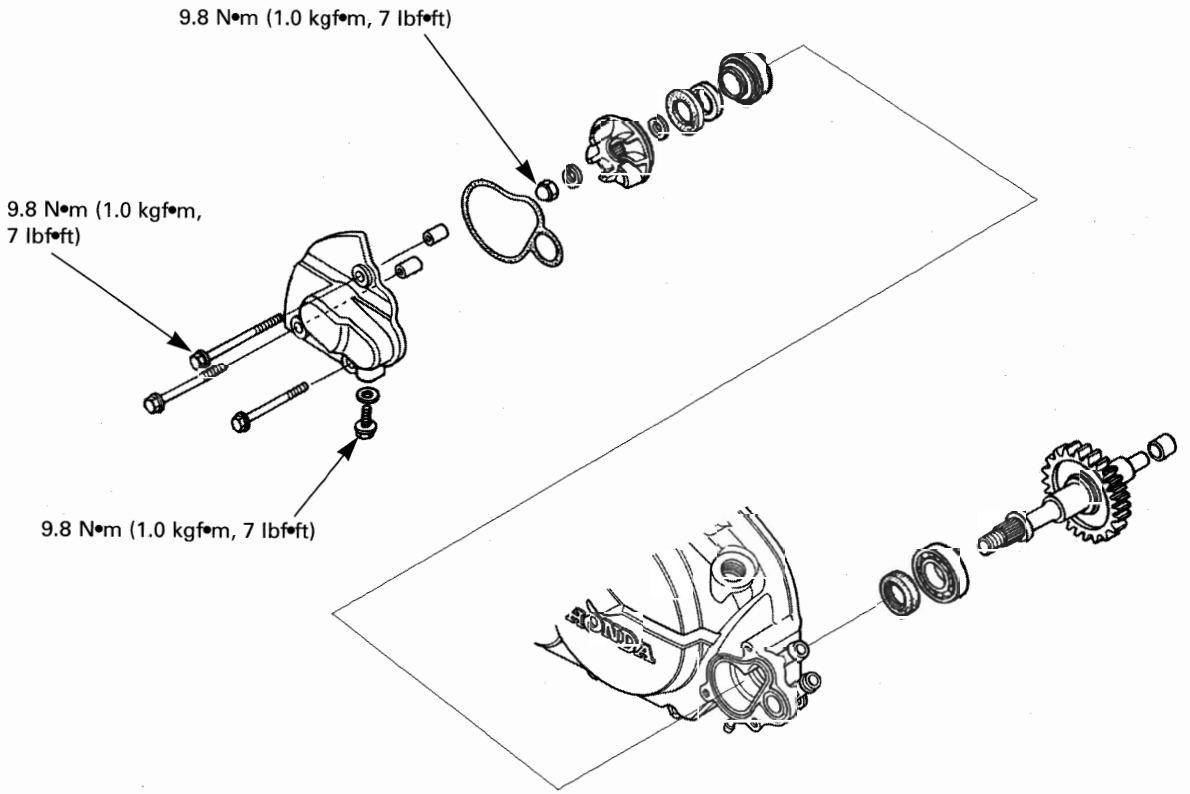
Measure the float level so that the float tip just contacts the float valve.

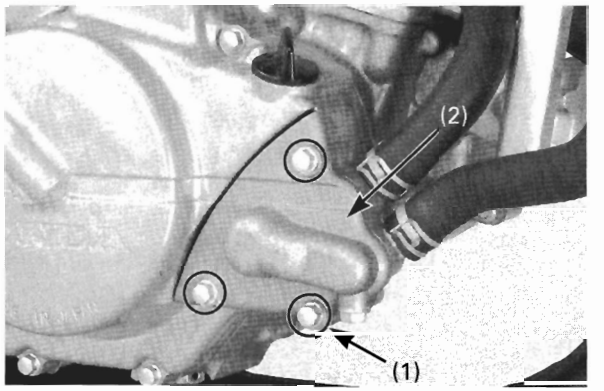
Tool:
Float level gauge **07401–0010000**

Float level: 13.5 mm (0.53 in)

If the float level is out of specification, replace the float valve.

Water Pump





(1) BOLTS (2) WATER PUMP COVER

Water Pump Disassembly

Drain the coolant (page 1-3).

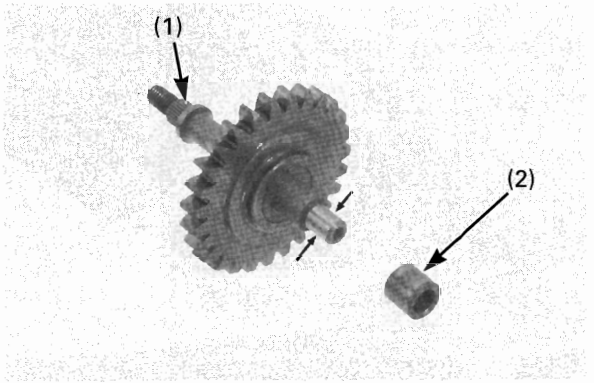
Remove the three bolts and water pump cover.

Remove the dowel pins and O-ring.

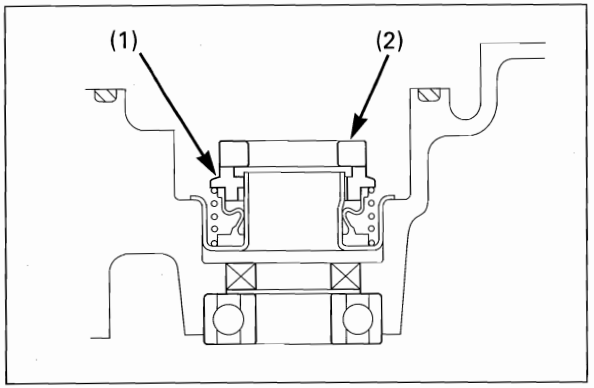
Remove the water pump impeller and copper washer.

Disconnect the radiator hoses from the right crankcase cover.
Remove the right crankcase cover.

Remove the water pump drive shaft.



(1) WATER PUMP SHAFT
(2) BUSHING



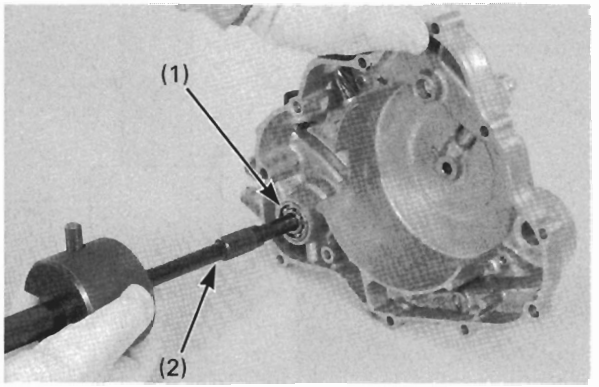
(1) MECHANICAL SEAL
(2) SEAL PLATE

Water Pump Inspection

Check the water pump shaft for bends or other damage.
Measure the water pump shaft O.D.

Service limit: 6.90 mm (0.272 in)

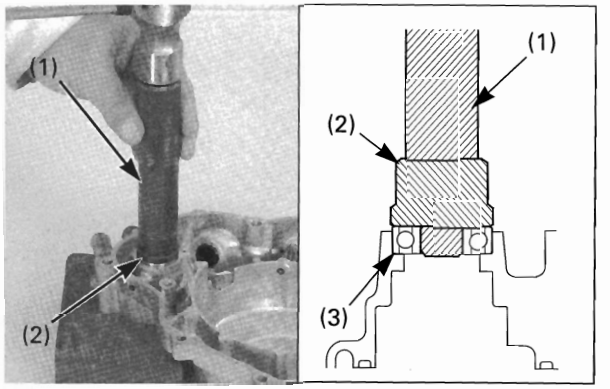
Check the mechanical seal and seal plate for wear or damage.



(1) WATER PUMP BEARING
(2) BEARING REMOVER

Mechanical Seal Replacement
Remove the water pump shaft bearing using the special tools.

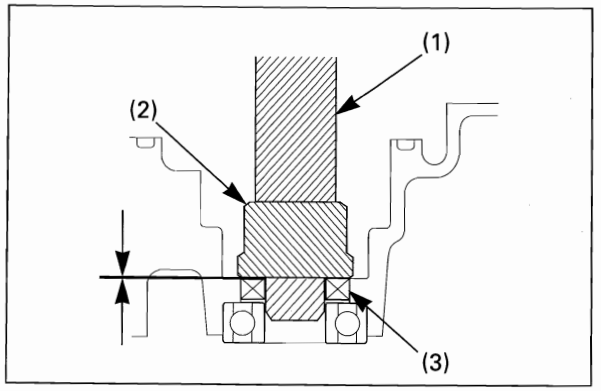
Tools:	
Bearing remover set, 12 mm	**07936–1660101**
– Remover head, 12 mm	**07936–1660110**
– Remove shaft , 12 mm	**07936–1660120 or**
U.S.A. only:	
Bearing remover, 12 mm	**07936–166010A**
Remover handle	**07936–3710100**
Remove weight	**07936–371020A**



(1) DRIVER (2) ATTACHMENT/PILOT
(3) BEARING

Install the water pump shaft bearing using the special tools.

Tools:	
Driver	**07749–0010000**
Attachment, 28 x 30 mm	**07746–1870100**
Pilot, 12 mm	**07746–0040200**

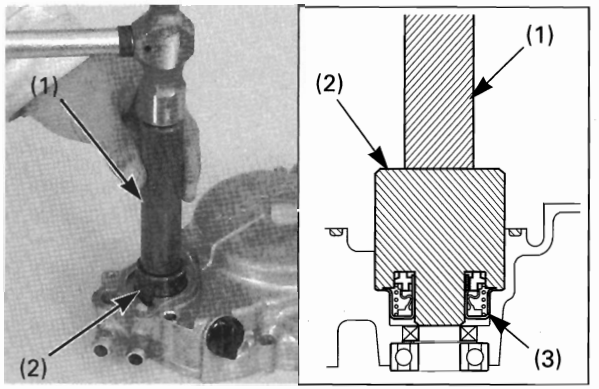


(1) DRIVER (2) ATTACHMENT/PILOT
(3) OIL SEAL

Apply grease to the oil seal lips.
Install the oil seal from the outside of the right crankcase cover until it flush with the crankcase cover as shown.

Tools:

Driver	**07749–0010000**
Attachment, 22 x 24 mm	**07746–0010800**
Pilot, 12 mm	**07746–0040200**

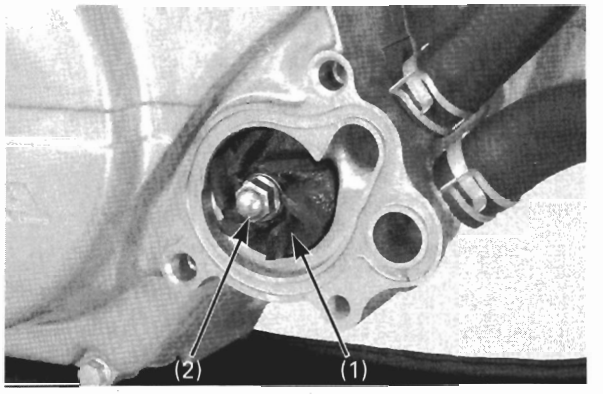


(1) DRIVER (2) MECHANICAL SEAL DRIVER
(3) MECHANICAL SEAL

Install the new mechanical seal from the outside of the right crankcase cover using the special tools.

Tools:

Mechanical seal driver	**07945–4150400**
Driver	**07749–0010000**



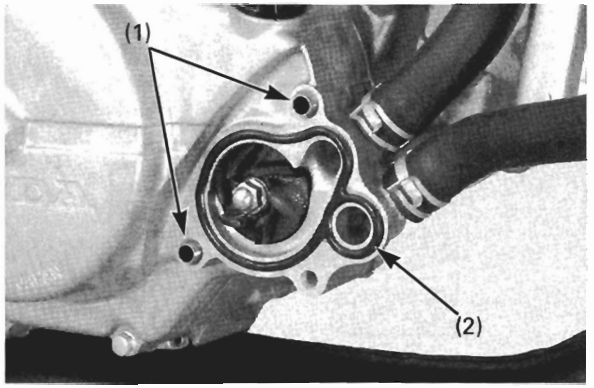
(1) IMPELLER (2) CAP NUT

Install the water pump shaft into the right crankcase cover.
Install the water, impeller, copper washer and cap nut.

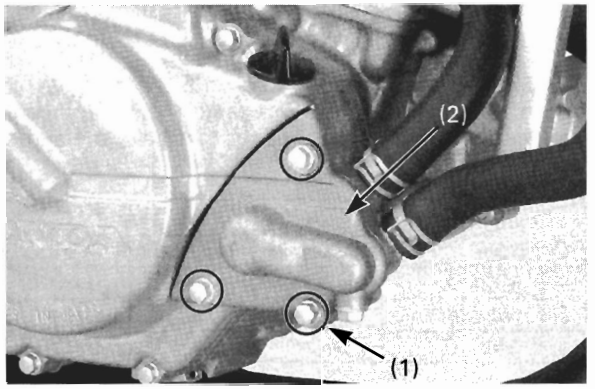
Install the right crankcase cover.
Connect the radiator hoses.

Tighten the cap nut to the specified torque.

Torque: 9.8 N•m (1.0 kgf•m, 7 lbf•ft)



(1) DOWEL PINS (2) NEW O-RING



(1) BOLTS (2) WATER PUMP COVER

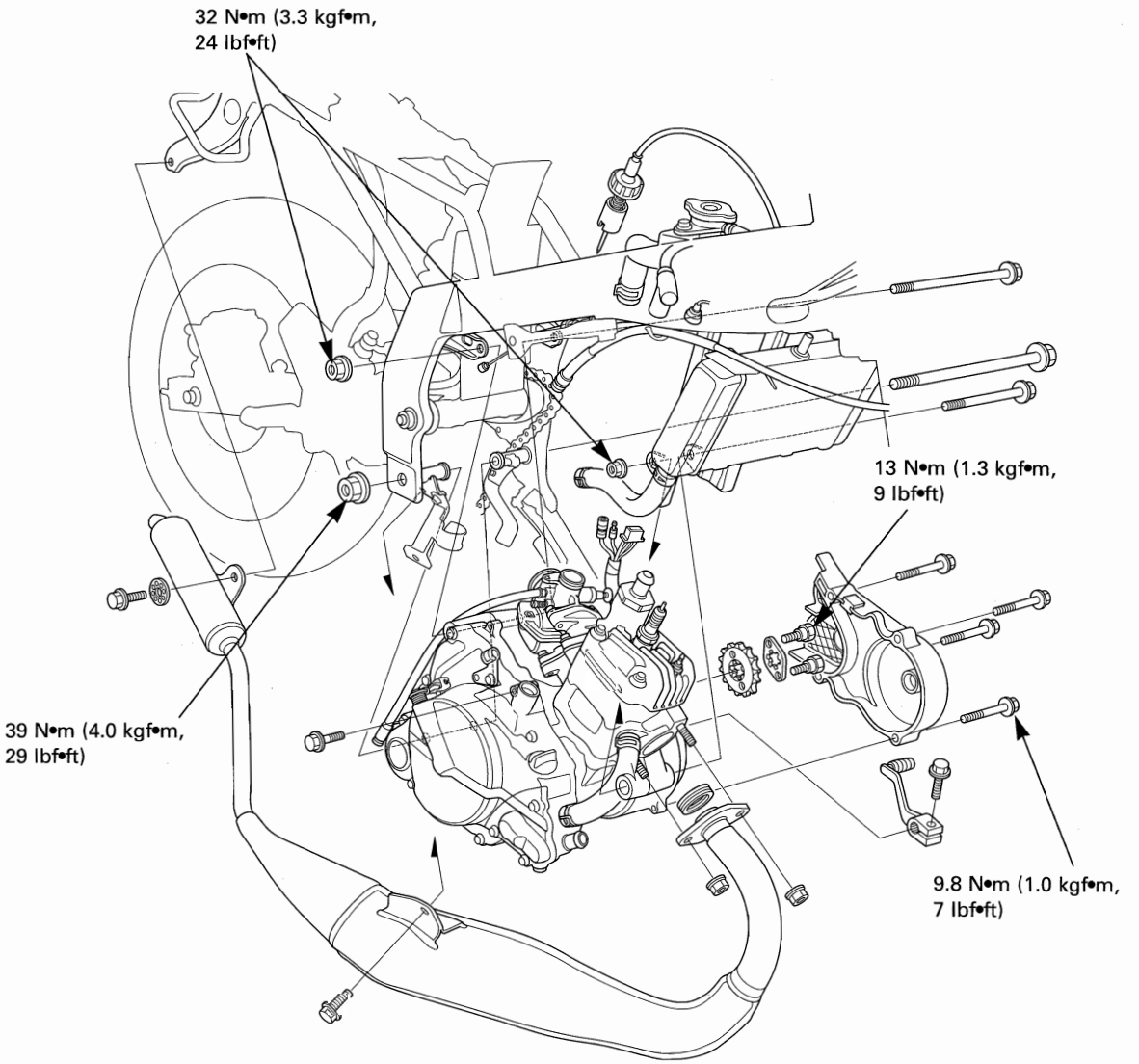
Install the dowel pins and new O-ring.

Install the water pump cover and tighten the three bolts to the specified torque.

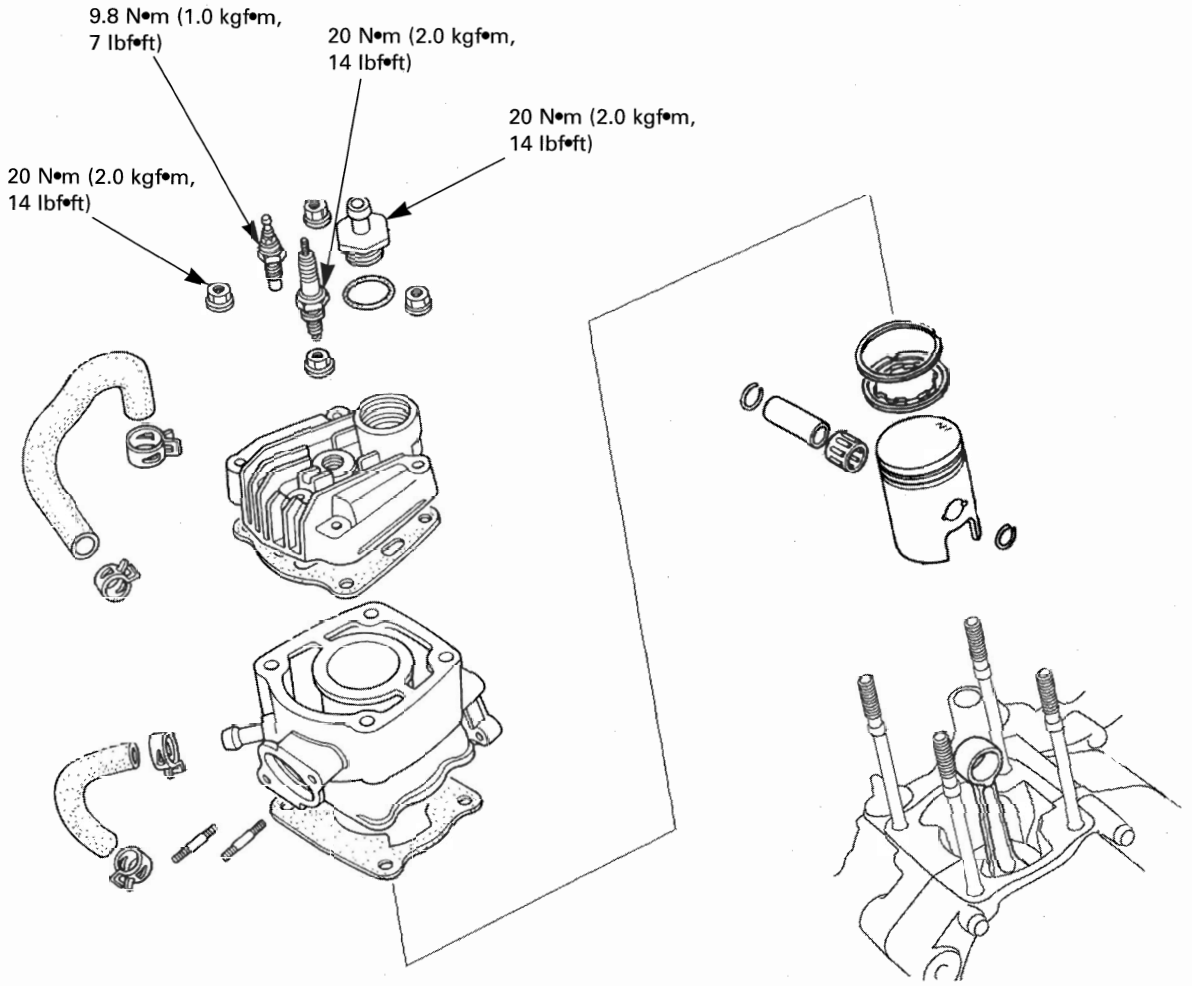
Torque: 9.8 N•m (1.0 kgf•m, 7 lbf•ft)

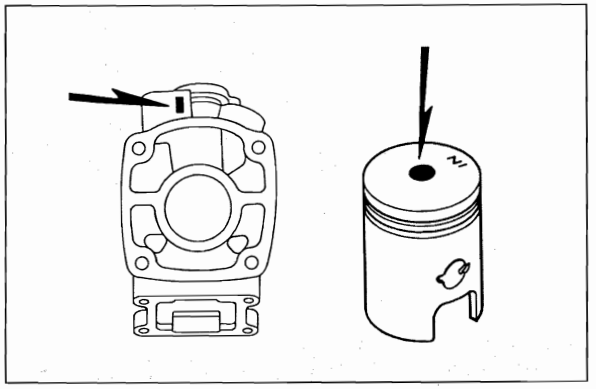
Pour recommended coolant up to the proper level and check for coolant leaks.

Engine Removal/Installation



Cylinder Head/Cylinder/Piston

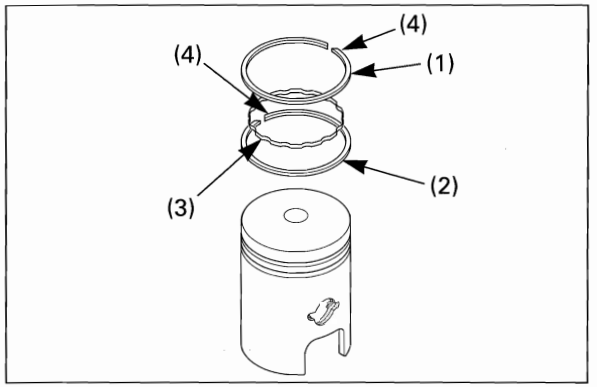




Piston/Cylinder Selection

The cylinder and piston are select fitted.
When the cylinder and/or piston are replaced, replace them with components that have the same marks.

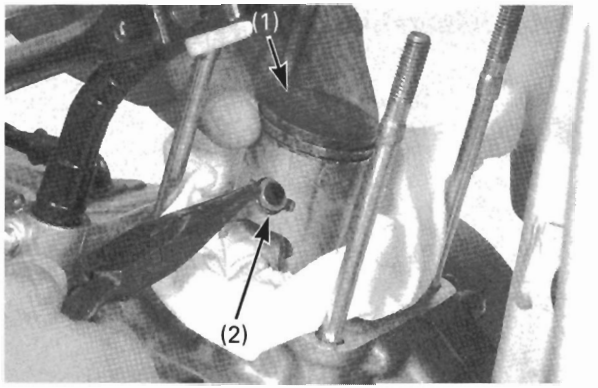
Cylinder \ Piston		A	B	C
		Mark A	No mark	Mark C
A	Mark A	O		
B	No mark		O	
C	Mark C			O



(1) TOP RING (2) SECOND RING
(3) EXPANDER (4) RING MARK

Piston/Cylinder Installation
Install the expander and piston rings into the piston grooves.

- Install the top and second ring with their ring mark facing up.
- Do not interchange the top and second ring.
- Replace the piston rings as a set.

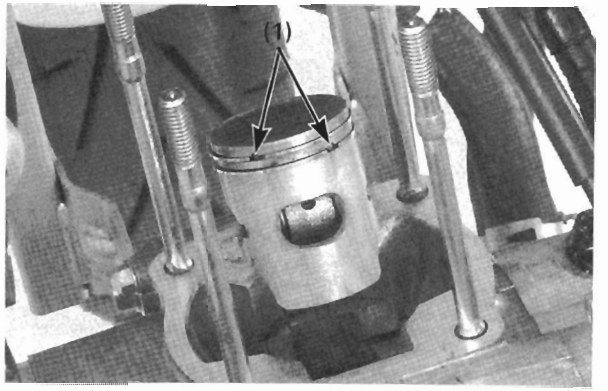


(1) "IN" MARK (2) NEW PISTON PIN CLIP

Apply the recommended engine oil to the piston and connecting rod small end.
Install the small end bearing into the connecting rod.

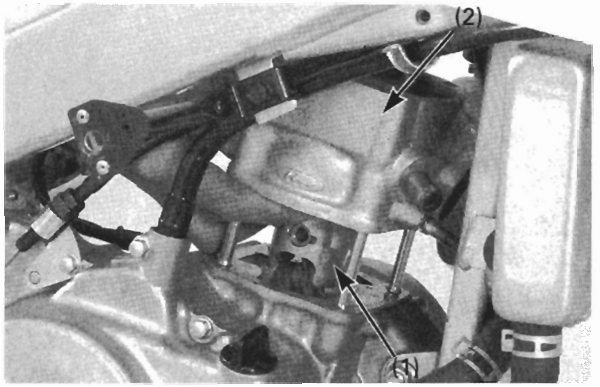
Install the piston with its "IN" mark facing the intake side.
Install the piston pin and secure it with new piston pin clips.
Be careful not to drop the pin clips into the crankcase.

Align the piston ring end gaps with the stopper pins in the piston ring grooves.



(1) PISTON RING STOPPERS

Align the piston ring end gaps with the stopper pins in the piston ring grooves.



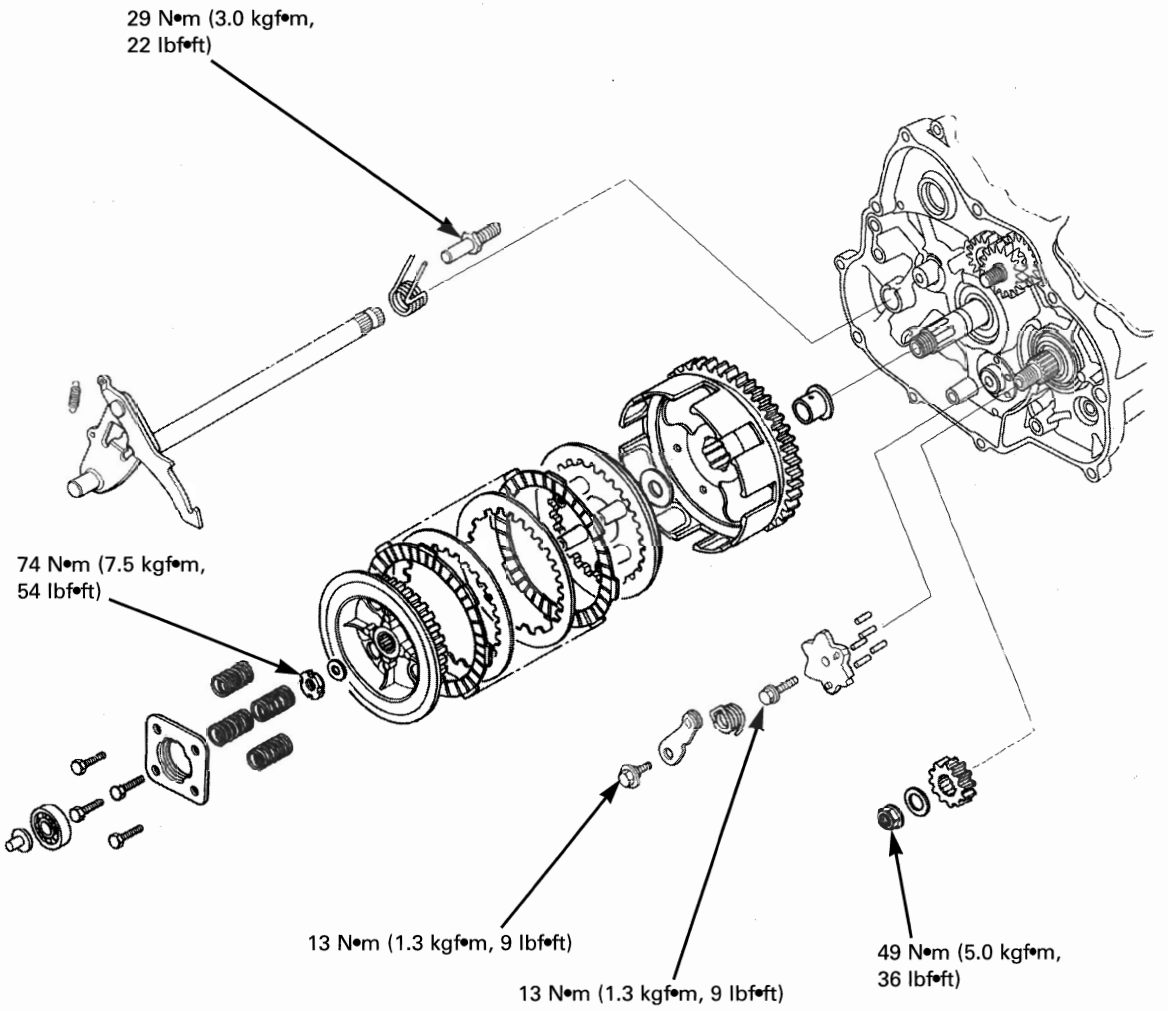
(1) PISTON
(2) CYLINDER

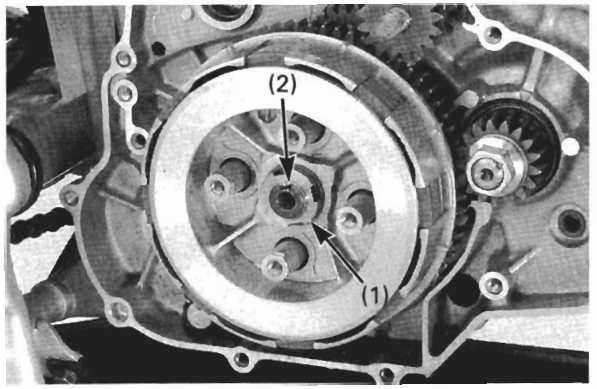
Apply the recommended engine oil to the piston and cylinder bore.
Install the cylinder over the piston while compressing the piston rings.

Install the new gasket onto the cylinder.
Install the cylinder head, tighten the cylinder head nuts in crisscross pattern in 2 – 3 steps.

Torque: 20 N•m (2.0 kgf•m, 14 lbf•ft)

Clutch/Gearshift Linkage



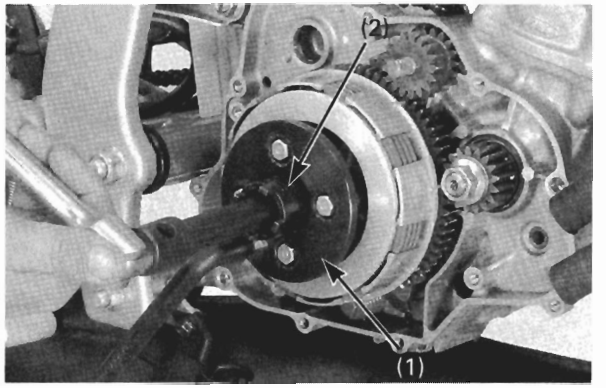


(1) LOCK NUT
(2) UNSTAKE

Clutch Removal

Remove the right crankcase cover.

Remove the clutch spring bolt, lifter plate and clutch springs.
Unstake the clutch center lock nut.



(1) CLUTCH CENTER HOLDER
(2) LOCK NUT WRENCH

Hold the clutch center with the special tool, loosen and remove the clutch center lock nut.

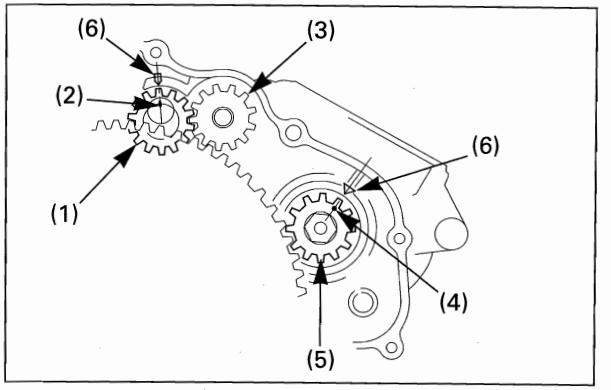
Tools:

Clutch center holder	**07GMB–KT70101**
Lock nut wrench, 20 x 24 mm	**07716–0020100**
Extension bar	**07716–0020500**

U.S.A. only:

Holder plate	**07HGB–001010B**
Holder collar "A"	**07HGB–001020B**

Remove the tools and remove the following:
- Washer
- Clutch center
- Clutch discs/plates
- Pressure plate
- Plain washer
- Clutch outer



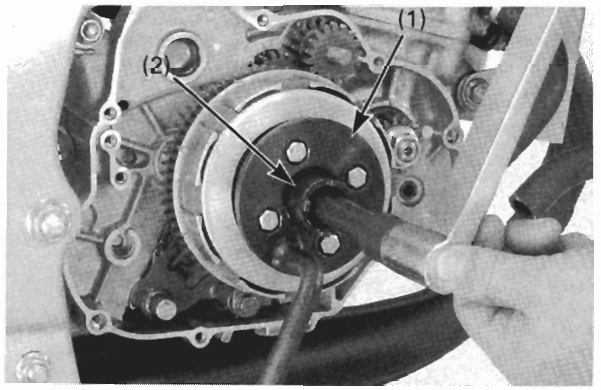
(1) BALANCER GEAR (2) INDEX LINE
(3) BALANCER IDLE GEAR (4) PUNCH MARK
(5) PRIMARY DRIVE GEAR (6) INDEX MARKS

Clutch Installation

Balancer Timing
Turn the crankshaft and align the punch mark on the primary drive gear with the index mark on the crankcase as shown.
Align the balancer gear index line with the index mark on the crankcase as shown.

After aligning the balancer timing, install the clutch outer.
Recheck the balancer timing after installing the clutch outer.

Install the following:
- Plain washer
- Pressure plate
- Clutch discs/plates
- Clutch center
- Washer



(1) CLUTCH CENTER HOLDER
(2) LOCK NUT WRENCH

Hold the clutch center with the special tool, tighten the clutch center lock nut to the specified torque.

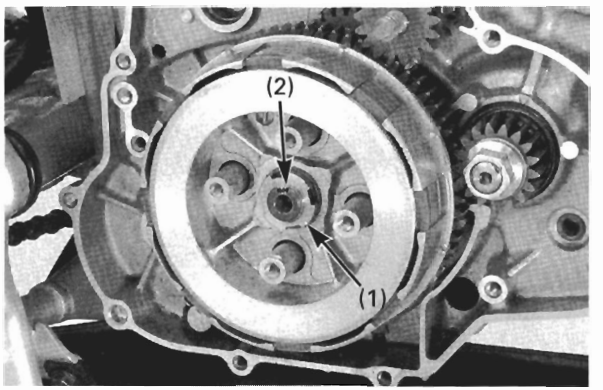
Tools:

Clutch center holder	**07GMB–KT70101**
Lock nut wrench, 20 x 24 mm	**07716–0020100**
Extension bar	**07716–0020500**

U.S.A. only:

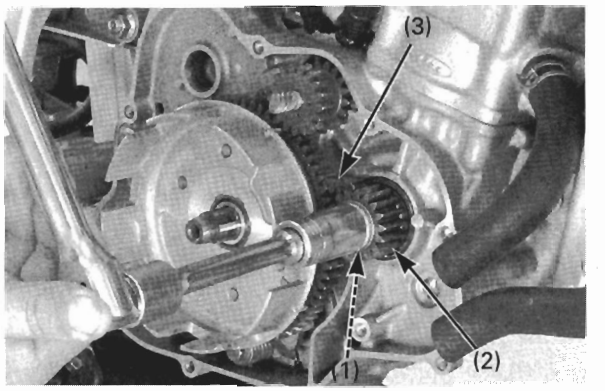
Holder plate	**07HGB–001010B**
Holder collar "A"	**07HGB–001020B**

Torque: 74 N•m (7.5 kgf•m, 54 lbf•ft)



(1) LOCK NUT
(2) STAKE

Stake the lock nut against the mainshaft groove.



(1) NUT/WASHER
(2) PRIMARY DRIVE GEAR
(3) GEAR HOLDER

Primary Drive Gear Removal/Installation

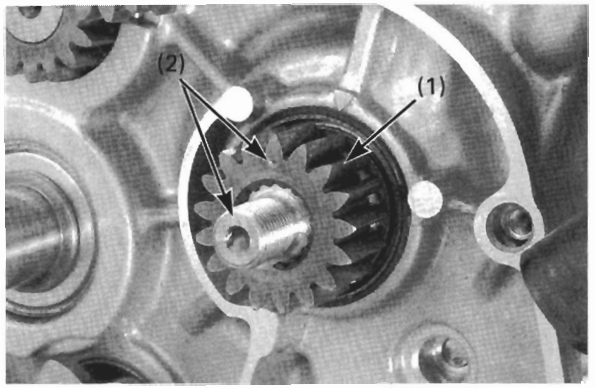
Remove the clutch assembly (page 5-10).

Temporarily install the clutch outer onto the mainshaft.
Hold the primary drive and driven gear with a gear holder, loosen the primary drive gear nut.

Tool:

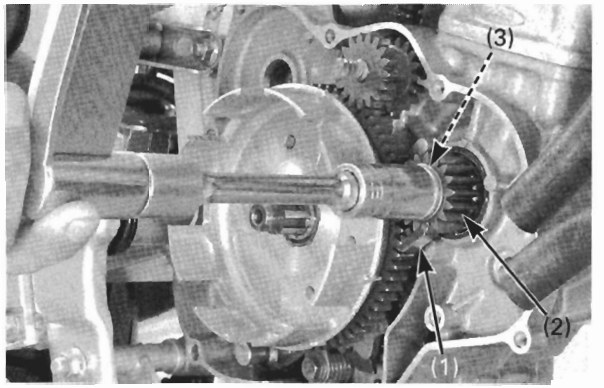
Gear holder, 2.5	**07724–0010100 or 07724–001A100 (U.S.A. only)**

Remove the primary drive gear nut, washer and primary drive gear.



(1) PRIMARY DRIVE GEAR
(2) PUNCH MARKS

Install the primary drive gear aligning the punch marks on the crankshaft and primary drive gear.



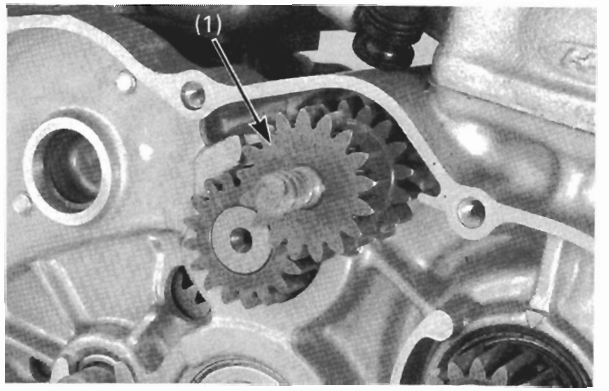
(1) GEAR HOLDER
(2) PRIMARY DRIVE GEAR
(3) NUT/WASHER

Install the washer and primary drive gear nut.
Temporarily install the clutch outer onto the mainshaft.
Hold the primary drive and driven gear with the gear holder, tighten the primary drive gear nut to the specified torque.

Tool:
Gear holder, 2.5 — **07724–0010100 or 07724–001A100 (U.S.A. only)**

Torque: 49 N•m (5.0 kgf•m, 36 lbf•ft)

Install the clutch assembly (page 4-11).

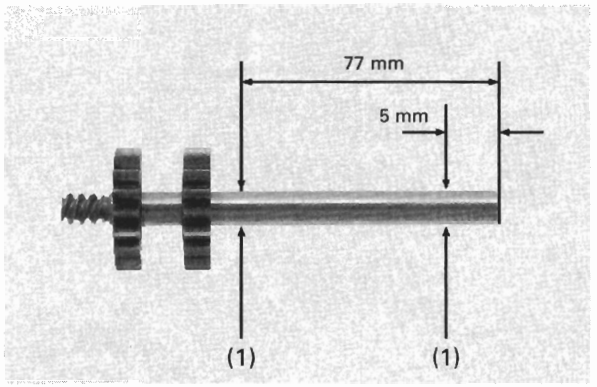


(1) BALANCER IDLE GEAR

Balancer Idle Gear Inspection

Remove the clutch assembly (page 4-11).

Remove the balancer idle gear from the crankcase.



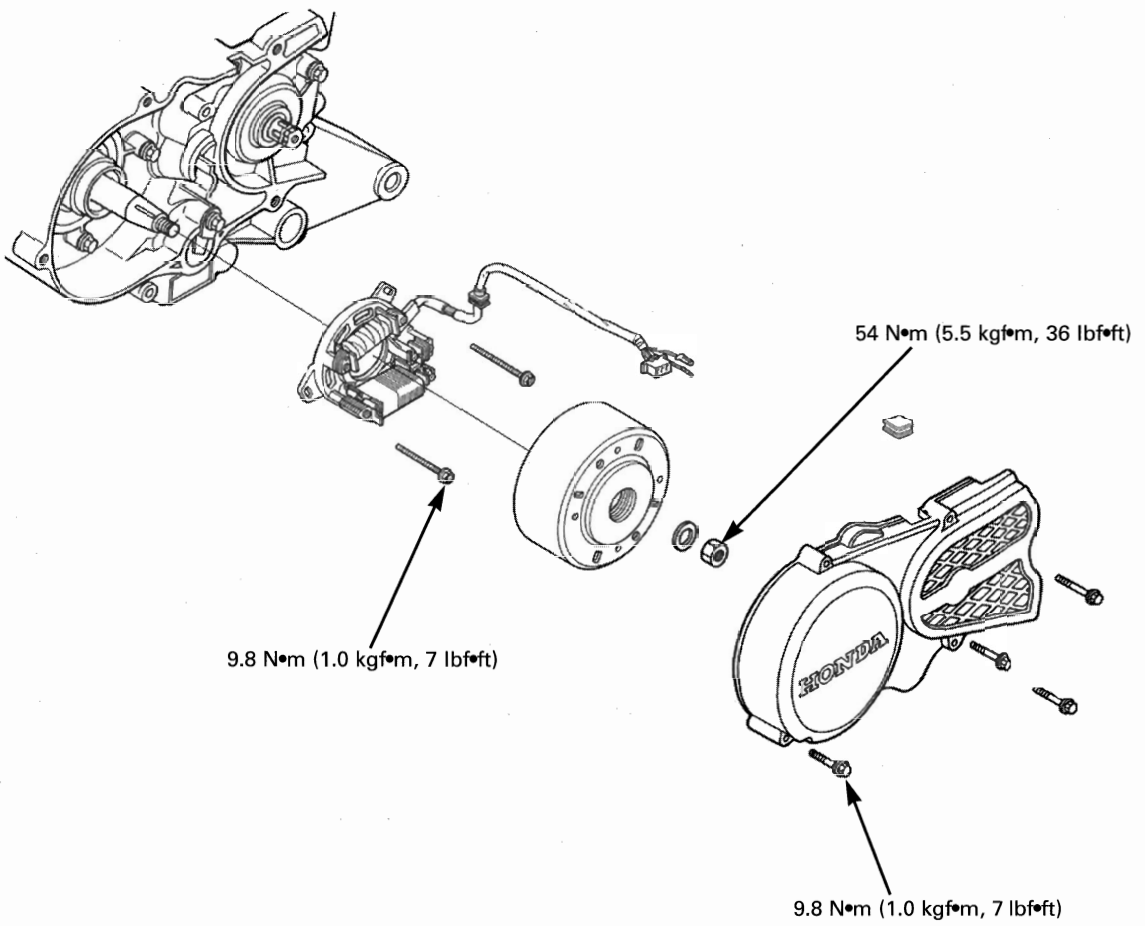
(1) MEASURE POINTS

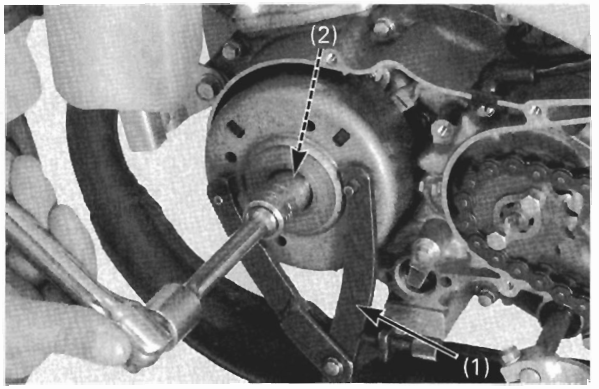
Check the balancer idle gear for wear or damage.
Check the balancer idle gear shaft for bends, wear or damage.
Measure the idle gear shaft O.D. at two points.

Service limit: 9.93 mm (0.391 in)

Install the balancer idle gear in the reverse order of removal.

Alternator





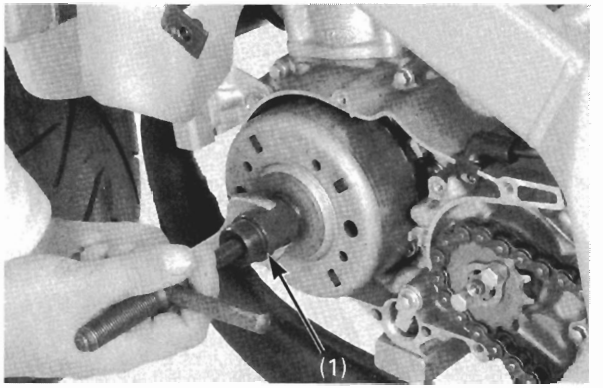
(1) UNIVERSAL HOLDER
(2) FLYWHEEL NUT

Flywheel Removal

Hold the flywheel with the universal holder and loosen the flywheel nut.

Tool:
Universal holder **07725–0030000**

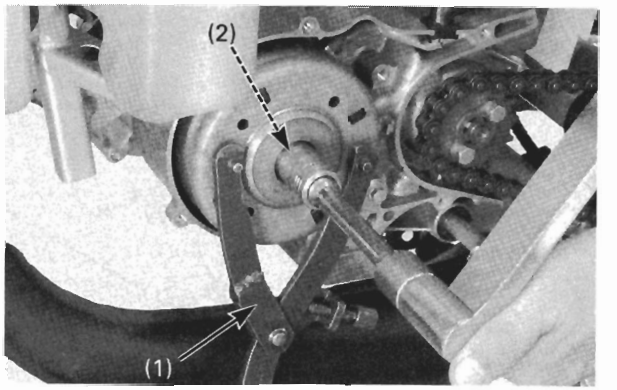
Remove the nut and washer.



(1) FLYWHEEL PULLER

Remove the flywheel using the special tool.

Tool:
Flywheel puller **07733–0010000 or 07933–001000B (U.S.A. only)**



(1) UNIVERSAL HOLDER
(2) FLYWHEEL NUT

Flywheel Installation

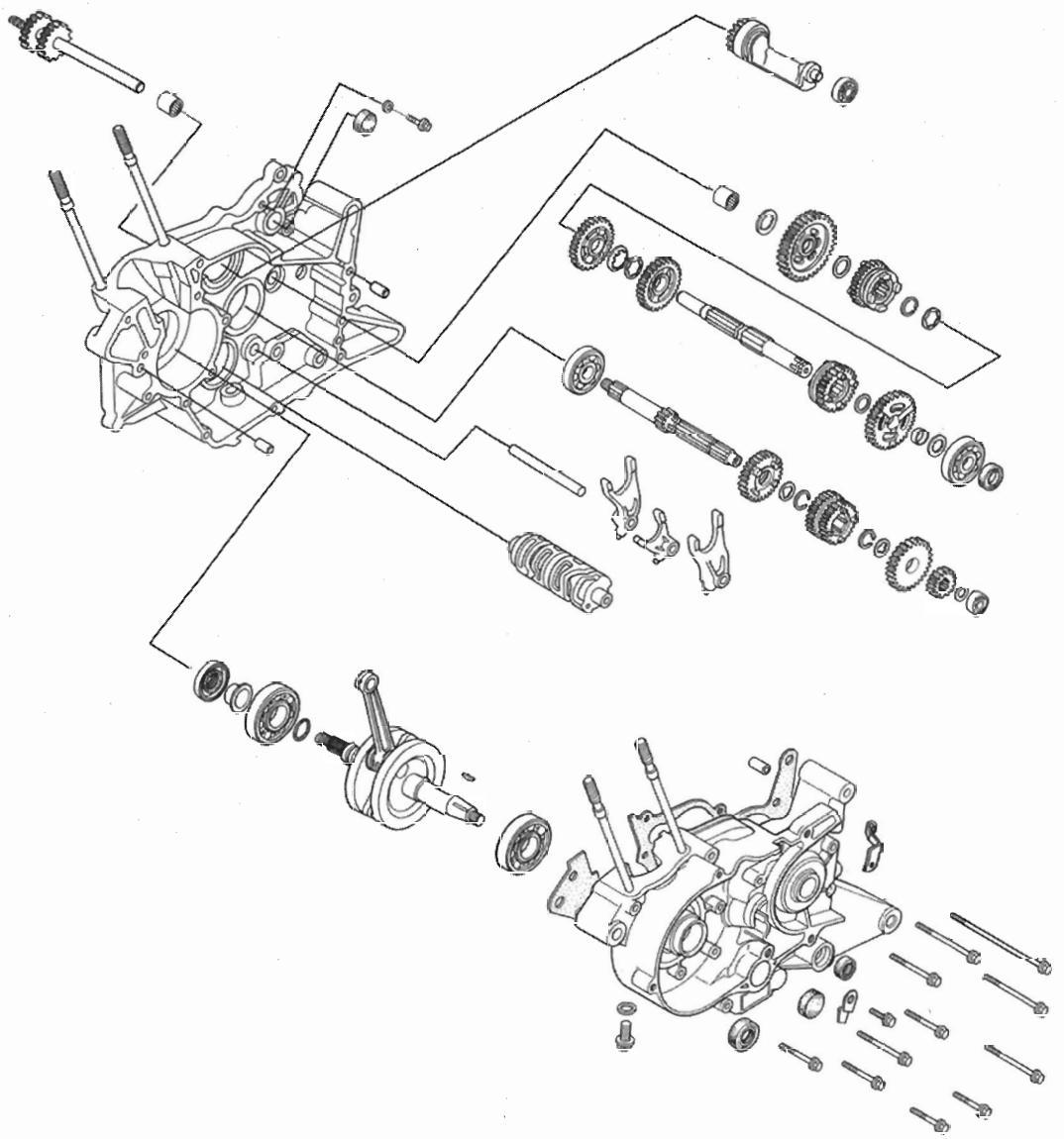
Clean any oil off from the crankshaft taper.
Install the flywheel while aligning its keyway with the woodruff key on the crankshaft.

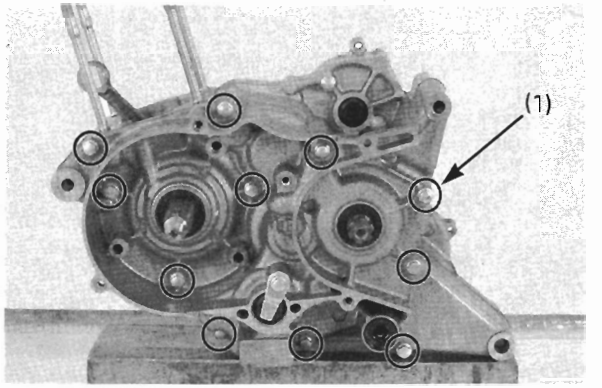
Install the washer and flywheel nut.
Hold the flywheel with the universal holder and tighten the flywheel nut to the specified torque.

Tool:
Universal holder **07725–0030000**

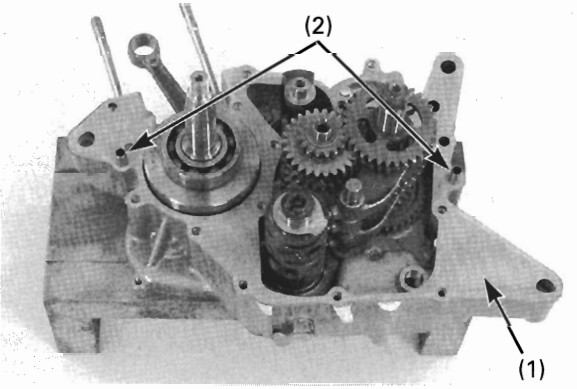
Torque: 54 N•m (5.5 kgf•m, 36 lbf•ft)

Crankshaft/Transmission





(1) BOLTS



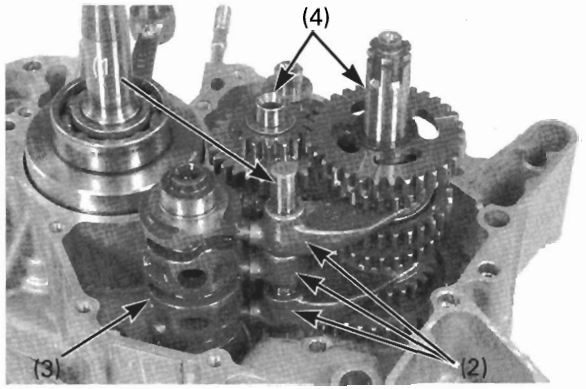
(1) GASKET (2) DOWEL PINS

Crankcase Separation

Remove the crankcase assembly bolts.

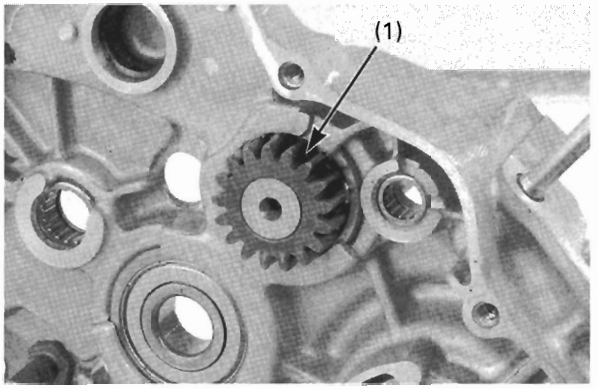
Place the right crankcase face down on an engine block, and remove the left crankcase.

Remove the gasket and dowel pins.

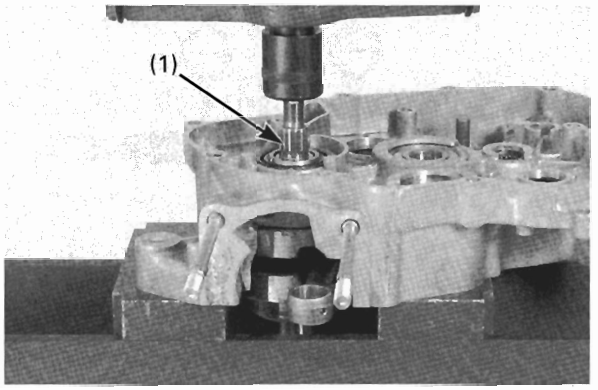


(1) SHIFT FORK SHAFT (2) SHIFT FORKS
(3) SHIFT DRUM
(4) MAINSHAFT/COUNTERSHAFT ASSEMBLY

Remove the shift fork shaft, shift forks and shift drum.
Remove the mainshaft and countershaft as an assembly.



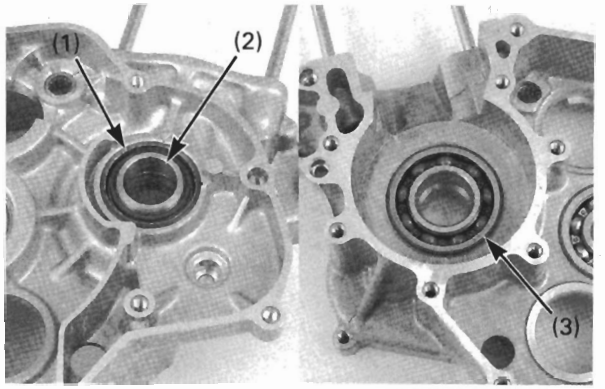
(1) BALANCER WEIGHT ASSEMBLY



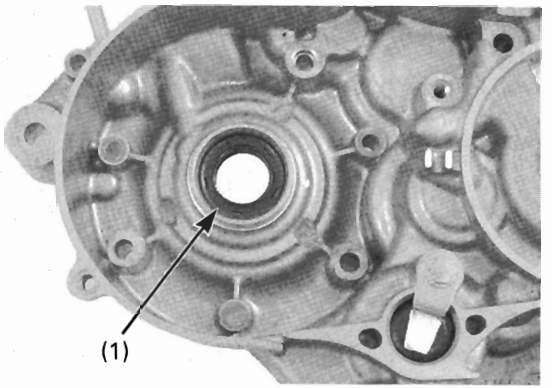
(1) CRANKSHAFT

Remove the balancer weight assembly from the inside of the right crankcase.

Press out the crankshaft from the right crankcase.



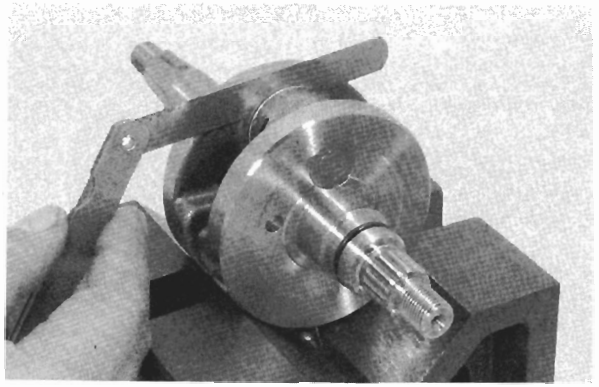
(1) OIL SEAL
(2) COLLAR
(3) RIGHT CRANKSHAFT BEARING



(1) OIL SEAL

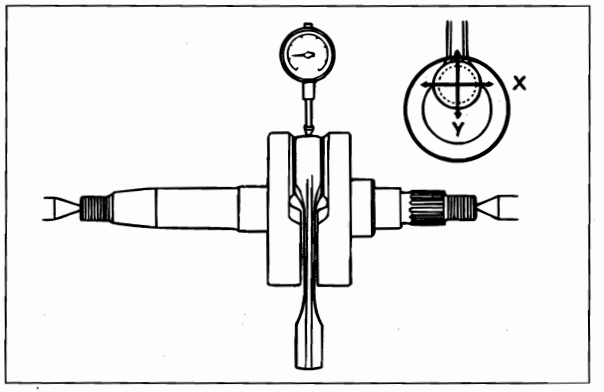
Remove the oil seal and drive the right crankshaft bearing out of the right crankcase.

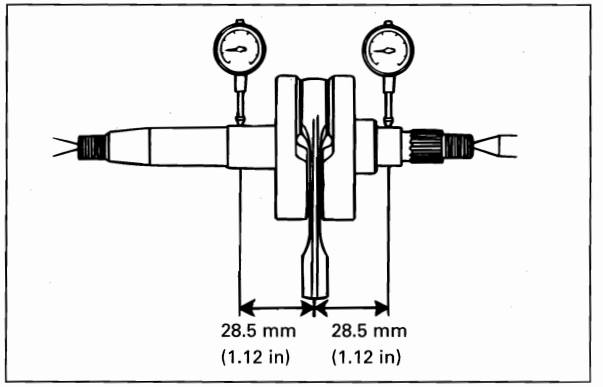
Remove the oil seal from the left crankcase.



Crankshaft Inspection
Check the connecting rod big end side clearance with a feeler gauge.

Service limit: 0.85 mm (0.033 in)



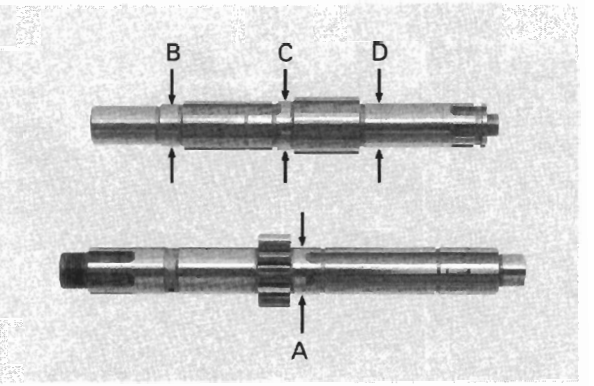


Check the connecting rod big end radial clearance in the X and Y axis.

Service limit: 0.05 mm (0.002 in)

Check the crankshaft runout.

Service limit: 0.10 mm (0.004 in)



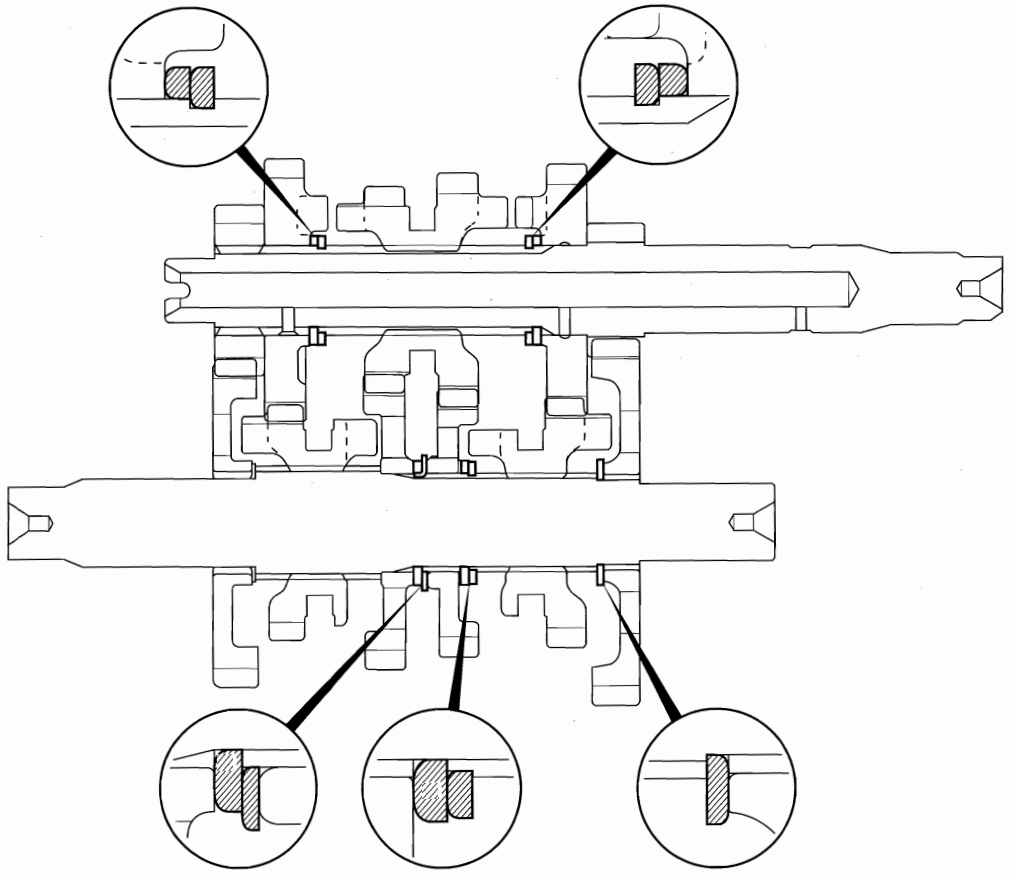
Transmission Inspection
Check each gear for wear or damage.
Measure the each gear I.D. and gear busing I.D. and O.D. (Specification on page 2-3).

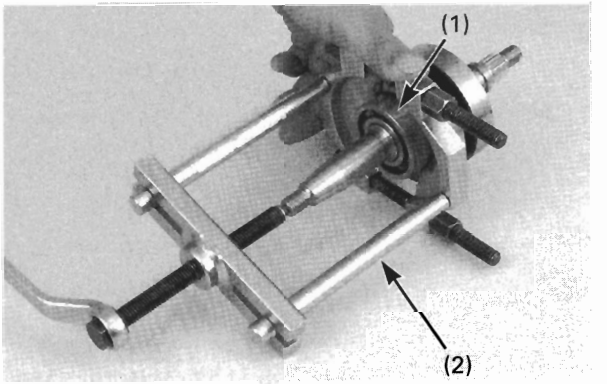
Measure the O.D. of the mainshaft and countershaft.

Service limit:
A: 16.93 mm (0.667 in)
B: 16.44 mm (0.647 in)
C: 18.93 mm (0.745 in)
D: 16.94 mm (0.667 in)

Transmission Assembly

- Apply engine oil to the spinning portion and sliding surface of each gear.





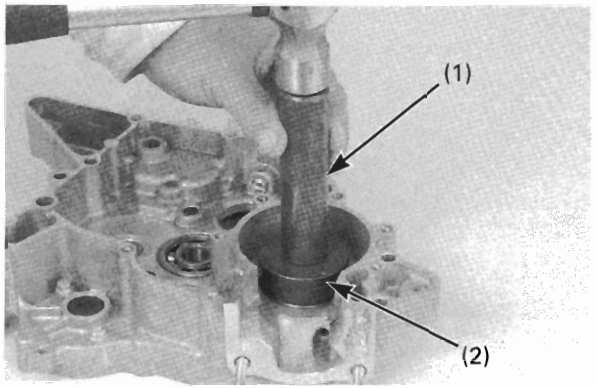
(1) LEFT CRANKSHAFT BEARING
(2) UNIVERSAL BEARING PULLER

Crankshaft Bearing Replacement

Remove the left crankcase bearing from the crankshaft using the universal bearing puller.

Tool:

Universal bearing puller	**07631–0010000 or equivalent commercially available in U.S.A.**

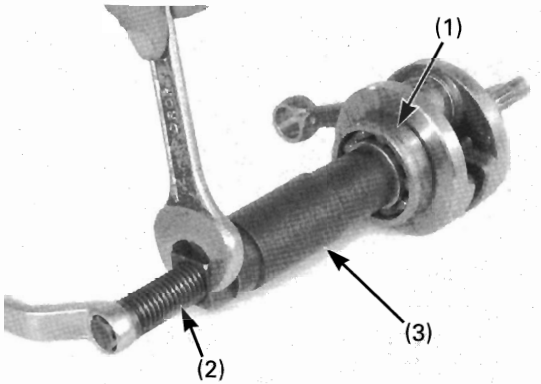


(1) DRIVER
(2) ATTACHMENT/PILOT

Install the new right crankshaft bearing into the right crankcase using the special tools.

Tools:

Driver	**07749–0010000**
Attachment, 52 x 55 mm	**07746–0010400**
Pilot, 25 mm	**07746–0040600**

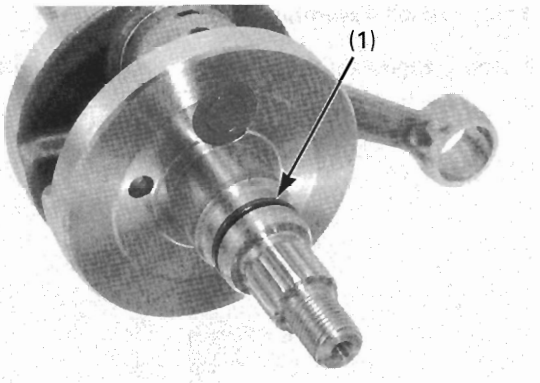


(1) LEFT CRANKSHAFT BEARING
(2) ASSEMBLY SHAFT
(3) ASSEMBLY COLLAR

Install the new left crankshaft bearing onto the crankshaft using the special tools.

Tools:

Assembly shaft	**07965–1660200**
Assembly collar	**07965–GC70100**



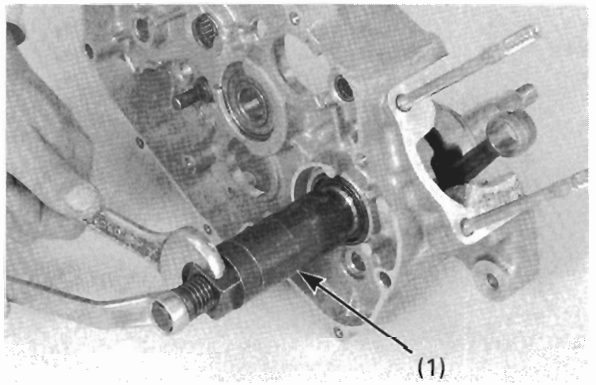
(1) NEW O-RING

Crankshaft Installation

Clean the crankcase thoroughly with a solvent and wipe them dry.
Check the crankcase for damage.

Apply clean transmission oil to each of the transmission and balancer bearings (except the crankshaft bearing).

Install a new O-ring into the right crankshaft groove as shown.

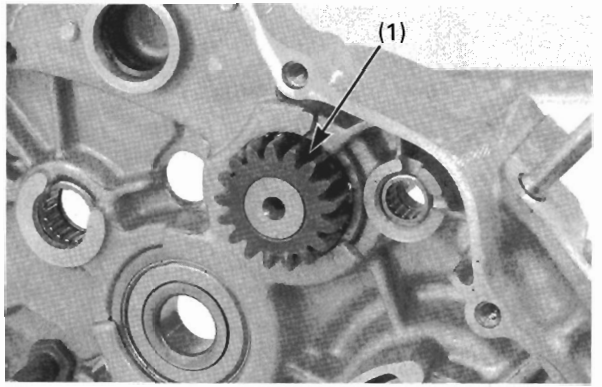


(1) CRANKCASE ASSEMBLY TOOL SET

Draw the crankshaft into the right crankshaft bearing using the special tools.

Tools:

Crankcase assembly tool set	**07965–1660100 not available in U.S.A.**
–Assembly shaft	**07965–1660200**
–Assembly collar	**07965–1660302 or 07965–166030A (U.S.A. only)**



(1) BALANCER
(2) BALANCER BEARING DRIVER

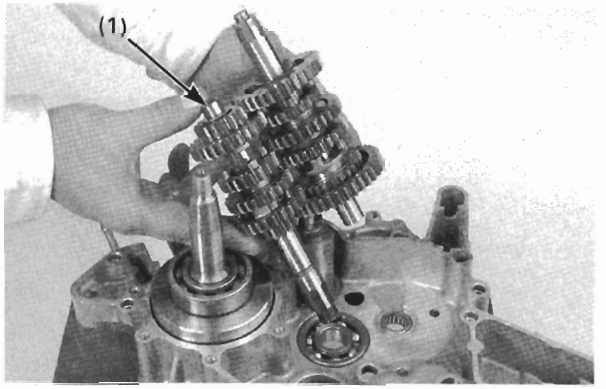
Balancer/Transmission Installation
Chill the balancer/bearing in the freezer section of the refrigerator for about an hour.
Heat the crankcase to 100 – 150° (212 – 300°F) with a hot plate or oven.
To avoid burns, wear heavy gloves when handling the heated crankcase.

NOTICE

Do not use a torch to heat the crankcase; it may cause warping.

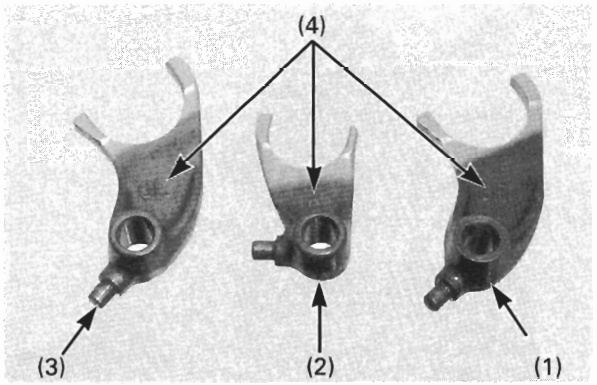
Install the balancer/bearing into the right crankcase.

let the crankcase cool to room temperature.

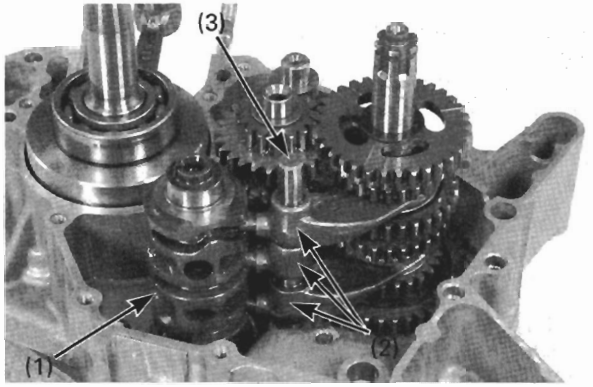


(1) MAINSHAFT/COUNTERSHAFT ASSEMBLY

Install the mainshaft and countershaft as an assembly.
Be careful not to drop the washers.
Apply some grease to the washer to help prevent dropping it.



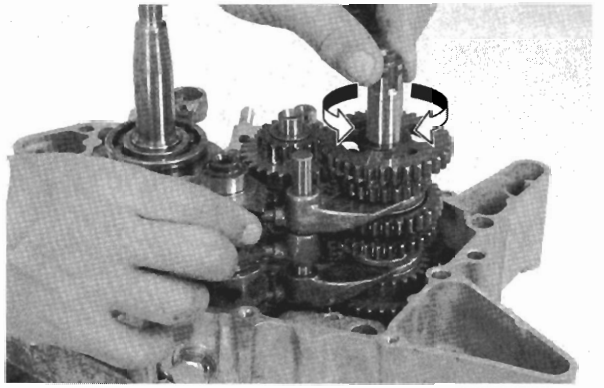
(1) RIGHT SHIFT FORK (2) CENTER SHIFT FORK
(3) LEFT SHIFT FORK
(4) IDENTIFICATION MARKS



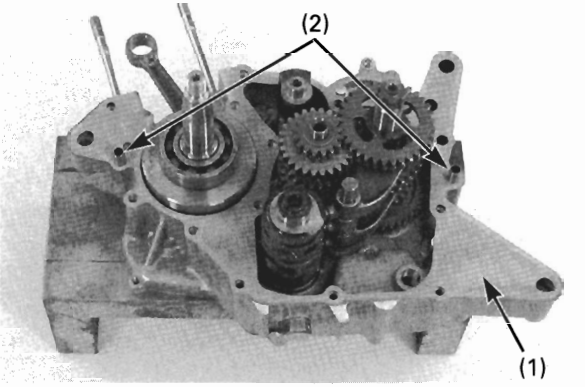
(1) SHIFT DRUM
(2) SHIFT FORKS
(3) SHIFT FORK SHAFT

Each shift fork has an identification mark.
R: Right shift fork
C: Center shift fork
L: Left shift fork

Install the shift drum.
Install each shift fork with its identification mark facing to right crankcase.
Install the shift fork shaft.



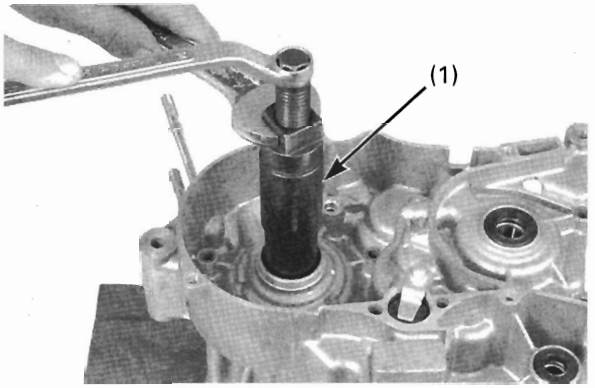
Place the shift drum in the neutral position.
Make sure each gear turns smoothly by turning the mainshaft.
Shift the transmission by turning the shift drum and check the transmission operation.



(1) DOWEL PINS
(2) NEW GASKET

Crankcase Assembly
Clean the mating surface of the crankcase.
Install the dowel pins and a new gasket.

Install the left crankcase over the right crankcase.
Make sure the crankcase halves are assembled properly.

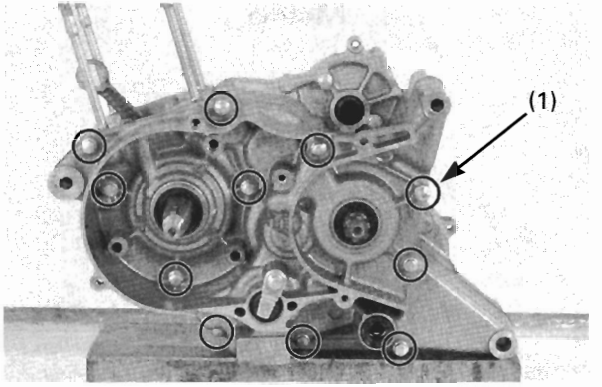


(1) CRANKCASE ASSEMBLY TOOL

Install the left crankshaft oil seal using the special tool.

Tools:

Crankcase assembly tool set	**07965–1660100 not available in U.S.A.**
–Assembly shaft	**07965–1660200**
–Assembly collar	**07965–1660301 07965–166030A (U.S.A. only)**



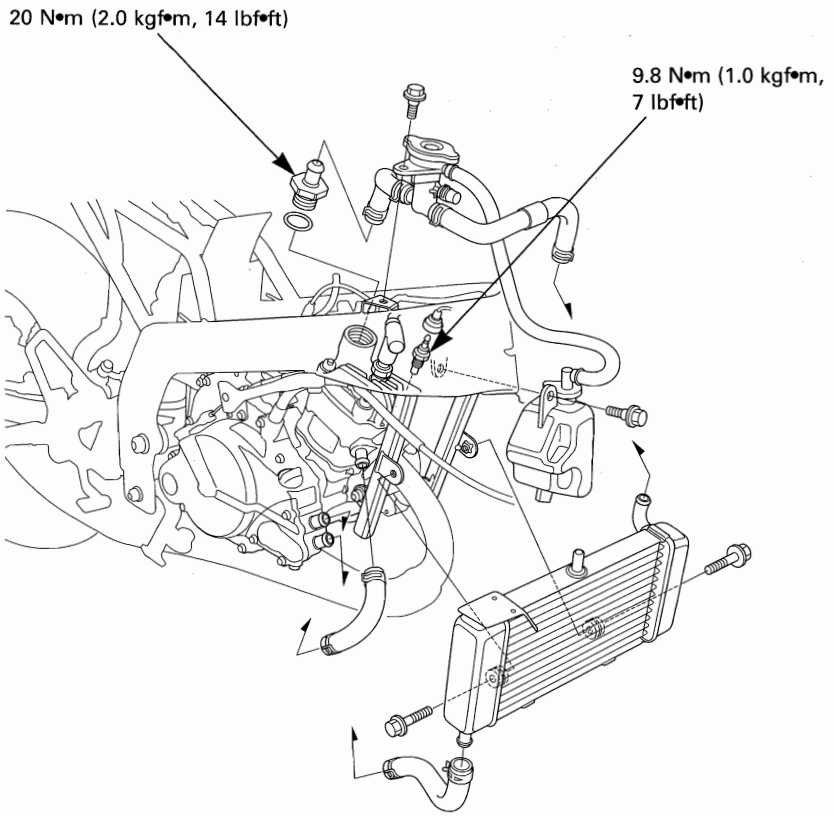
(1) BOLTS

Install and tighten the crankcase bolts in a crisscross pattern in 2 – 3 steps.

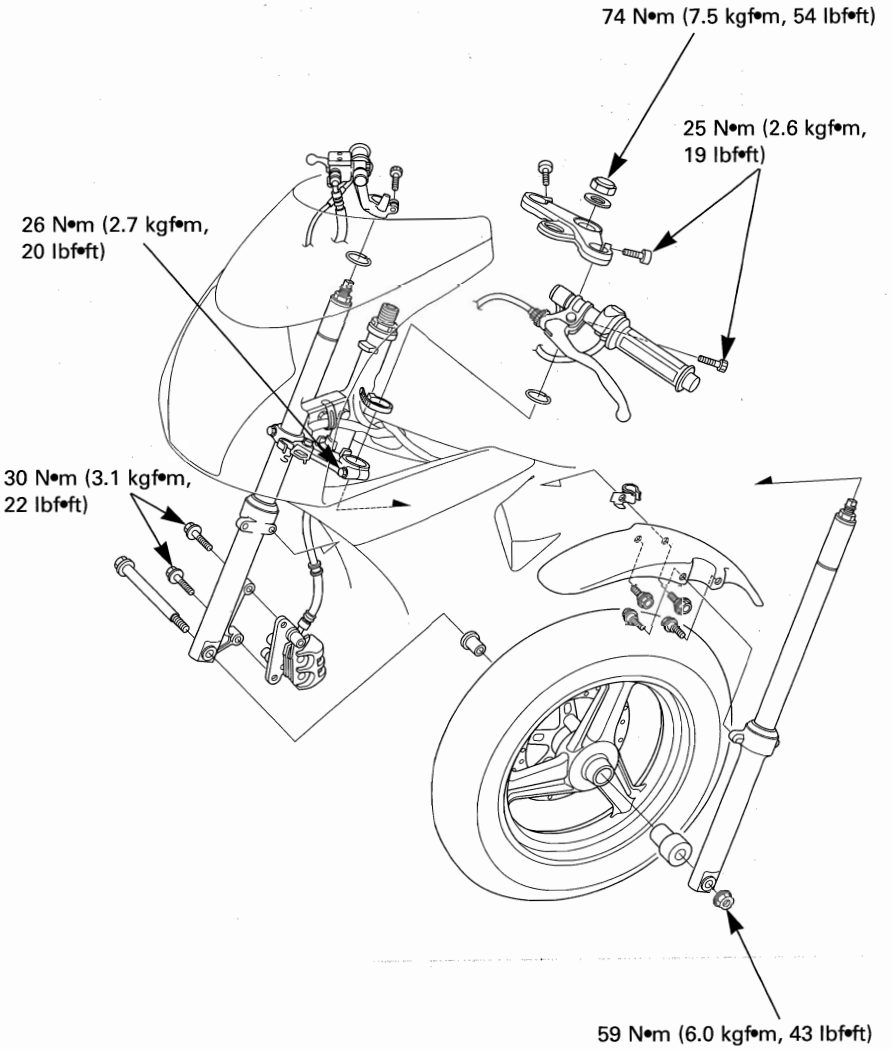
Torque: 9.8 N•m (1.0 kgf•m, 7 lbf•ft)

Memo

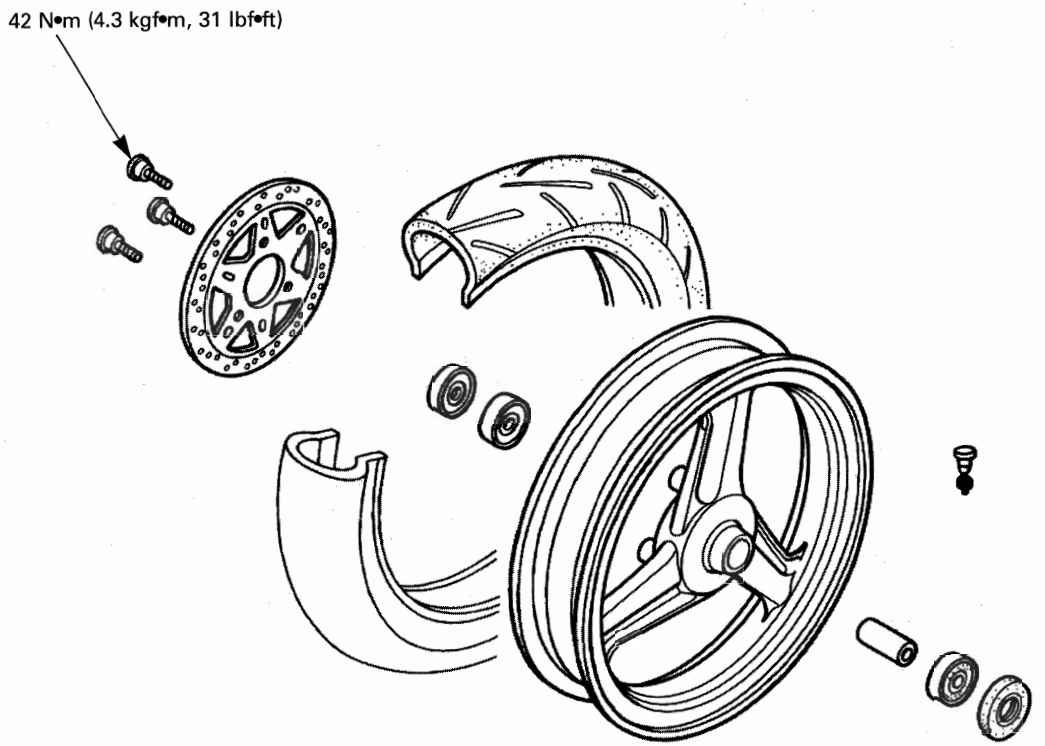
Radiator Removal/Installation

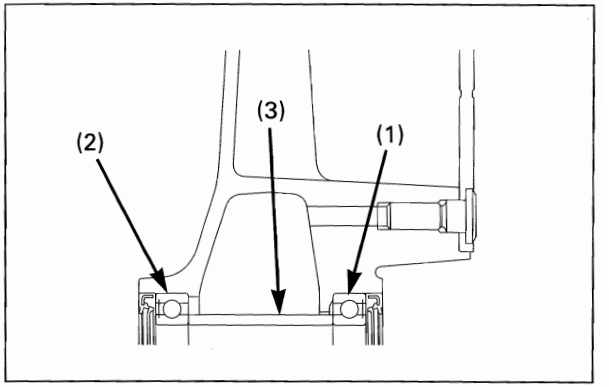


Front Wheel/Suspension/Steering



Front Wheel Assembly





(1) RIGHT WHEEL BEARING
(2) LEFT WHEEL BEARING
(3) DISTANCE COLLAR

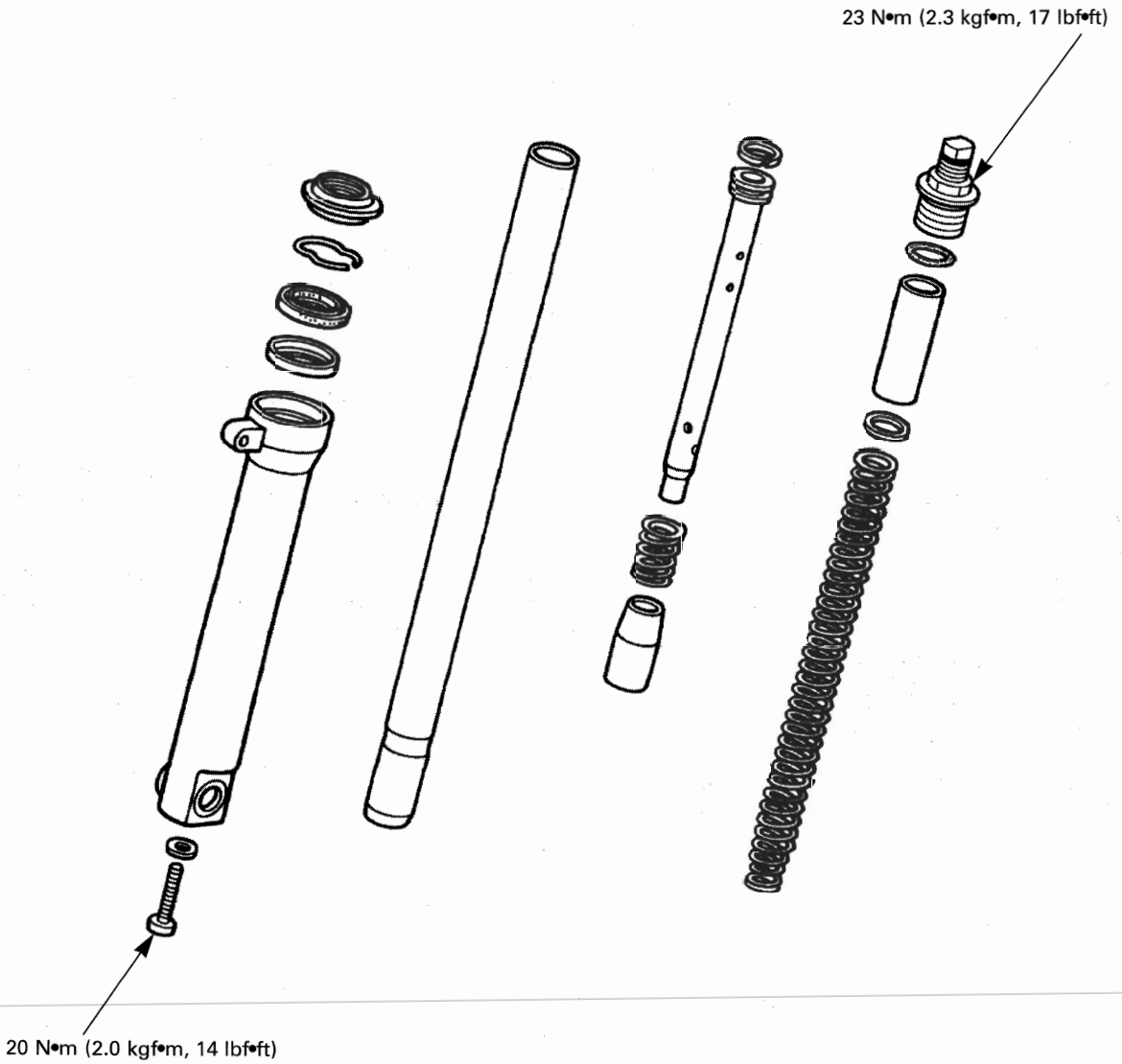
Install the right bearing first, until it seats in the wheel hub using the special tools.

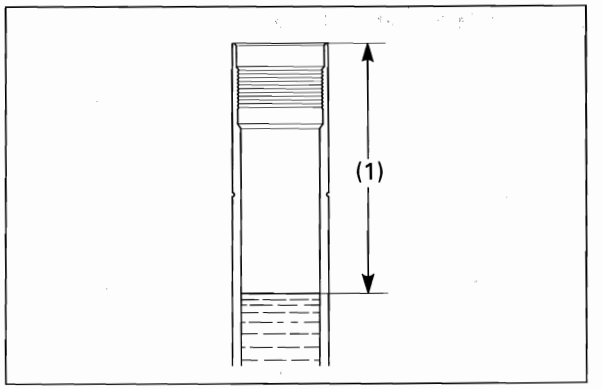
Tools:

Driver	**07749–0010000**
Attachment, 32 x 35 mm	**07746–0010100**
Pilot, 12 mm	**07746–0040200**

Install the distance collar into the hub, then install the left wheel bearing until it seat on the distance collar using the same tools.

Fork Assembly





(1) 107 mm (4.2 in)

Fork Oil Level Adjustment

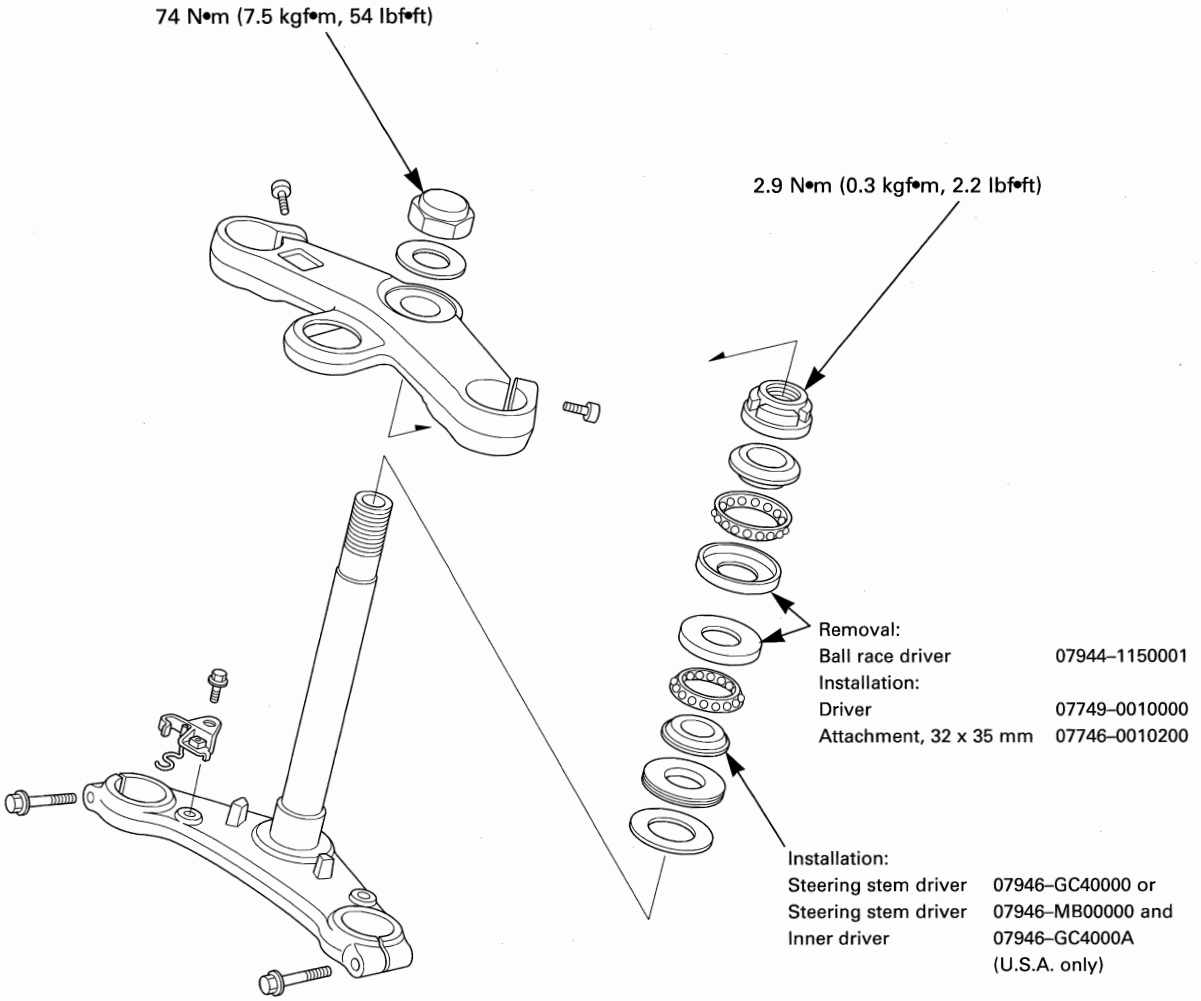
Pour the recommended fork fluid into the fork tube.

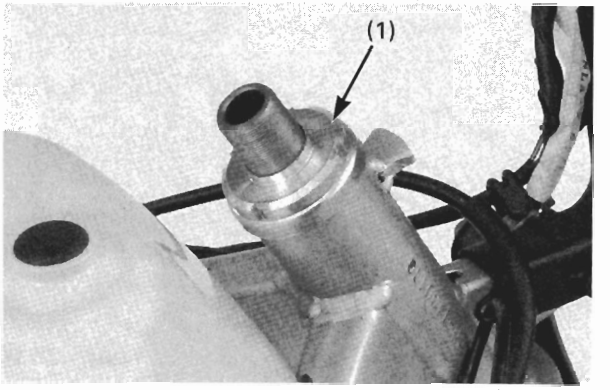
Recommended fork fluid:
Pro Honda Suspension Fluid SS-8 (10W)

With the spring removed, pump the fork tube several times to stabilize the fork fluid level.
Compress the fork all the way and measure the oil level from top of the tube.
Be sure the oil level is in the same in both fork tubes.

Oil level: 107 mm (4.2 in)

Steering Stem Installation





(1) BEARING ADJUSTING NUT

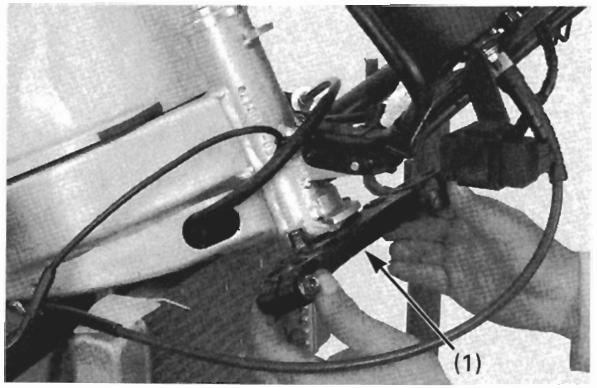
Stem Nut Tightening

Install the bearing and bearing race and steering stem into the head pipe.

Tighten the steering stem bearing adjusting nut to the initial torque.

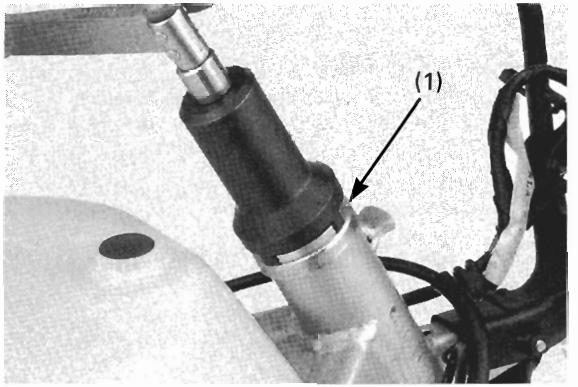
Tool:
Steering stem socket **07916–3710101 or 07916–3710100 (U.S.A. only)**

Torque: 25 N•m (2.5 kgf•m, 18 lbf•ft)



(1) STEERING STEM

Move the steering stem left and right several times to seat the bearing, then loosen the adjusting nut.

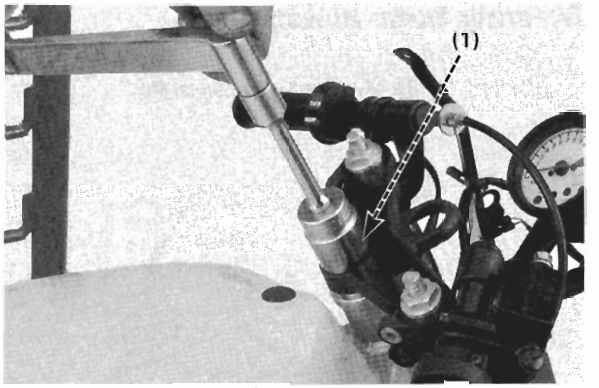


(1) BEARING ADJUSTING NUT

Retighten the adjusting nut to the specified torque.

Tool:
Steering stem socket **07916–3710101 or 07916–3710100 (U.S.A. only)**

Torque: 2.9 N•m (0.3 kgf•m, 2.2 lbf•ft)



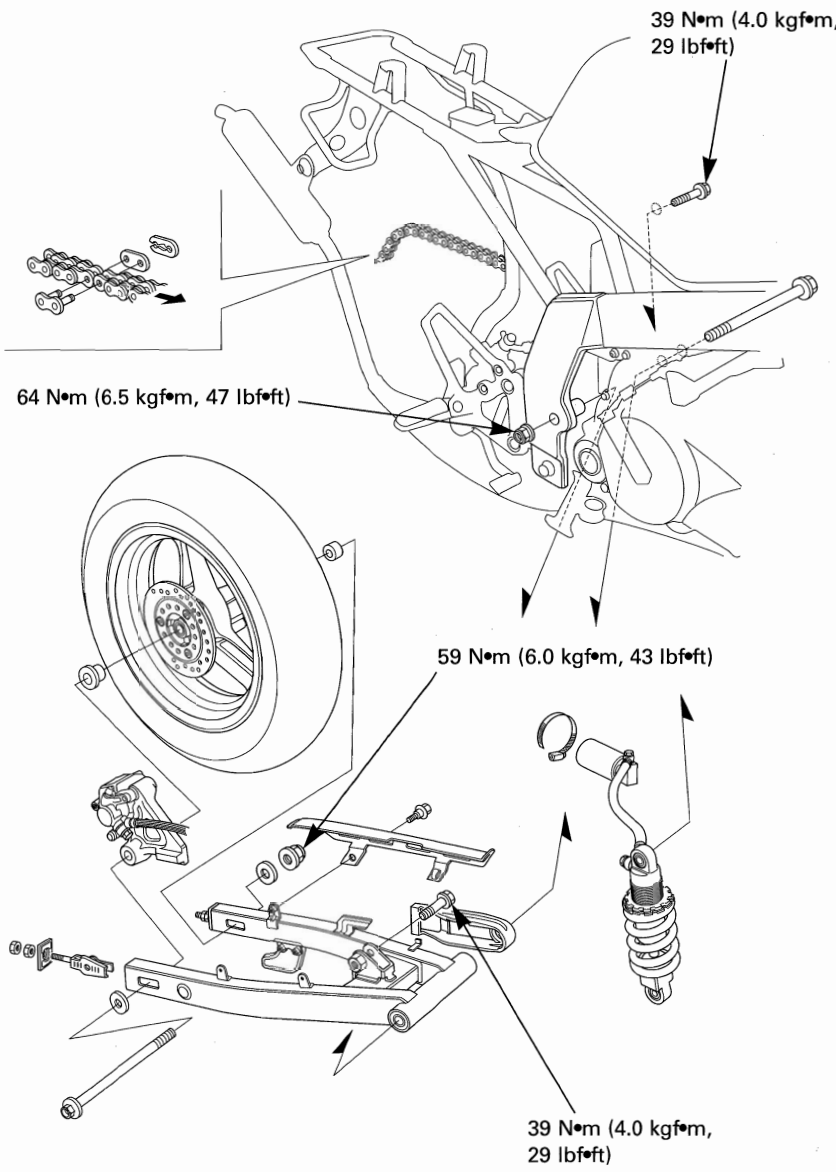
(1) STEM NUT

Install the following:
– Fork legs
– Top bridge
– Washer
– Steering stem nut

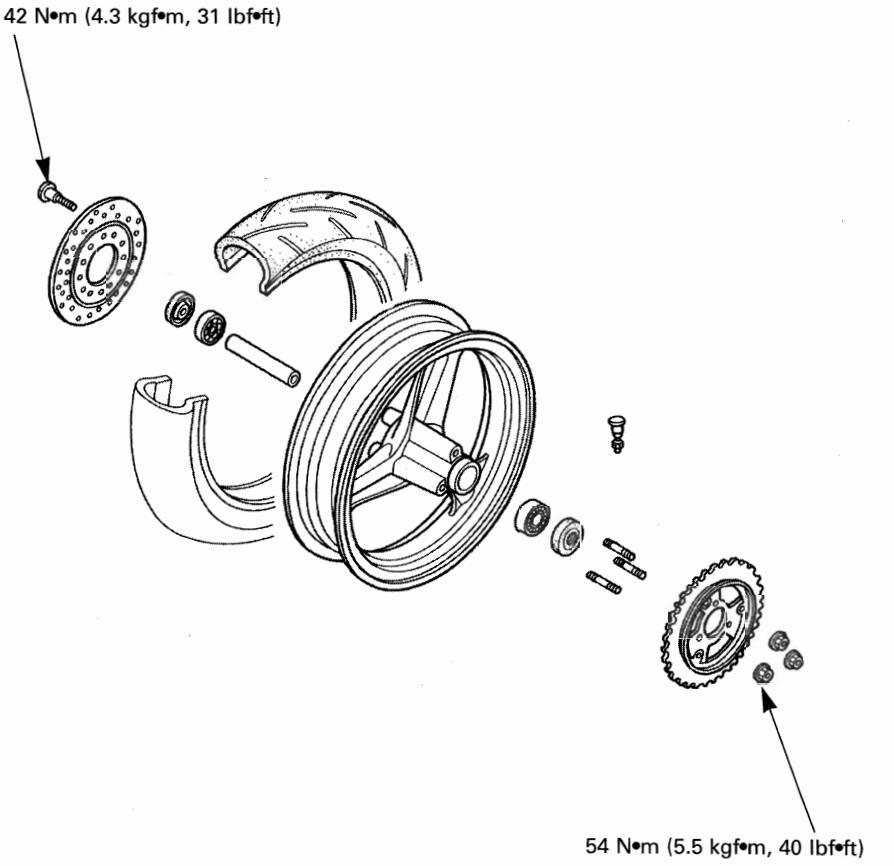
Tighten the steering stem nut to the specified torque.

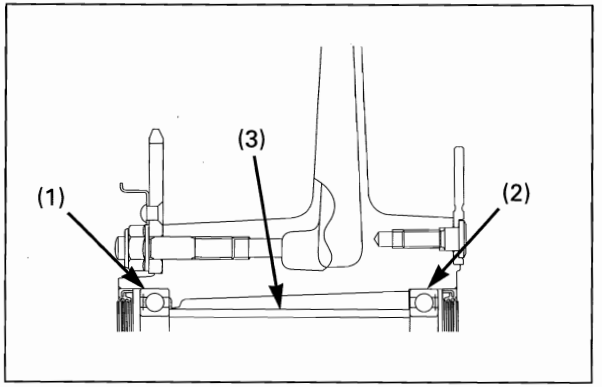
Torque: 74 N•m (7.5 kgf•m, 54 lbf•ft)

Rear Wheel/Suspension



Rear Wheel Assembly





(1) LEFT WHEEL BEARING
(2) RIGHT WHEEL BEARING
(3) DISTANCE COLLAR

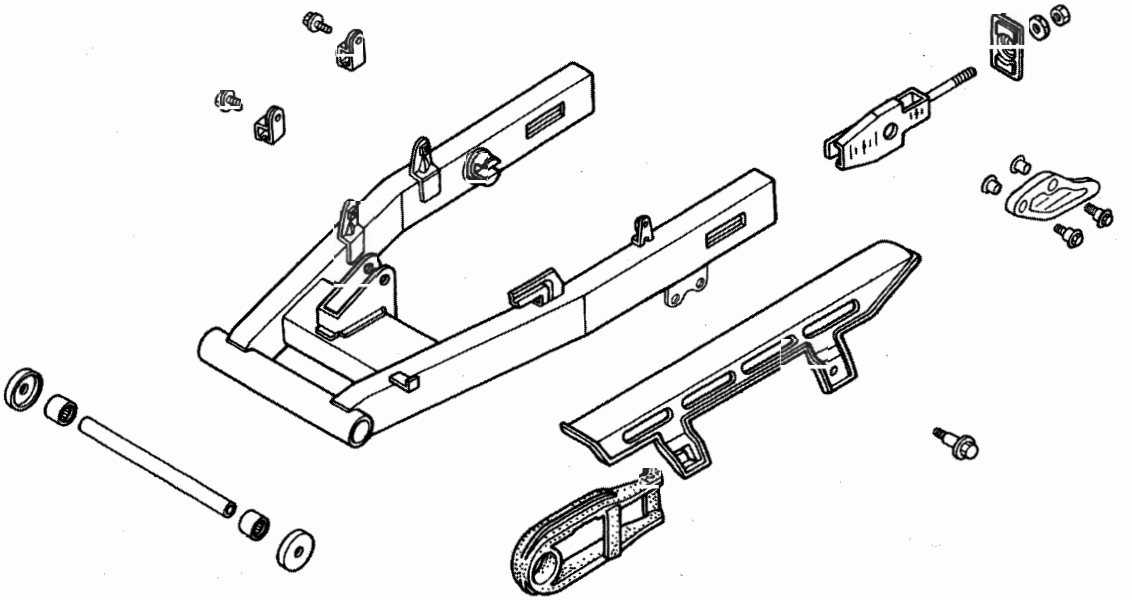
Install the left bearing first, until it seats in the wheel hub using the special tools.

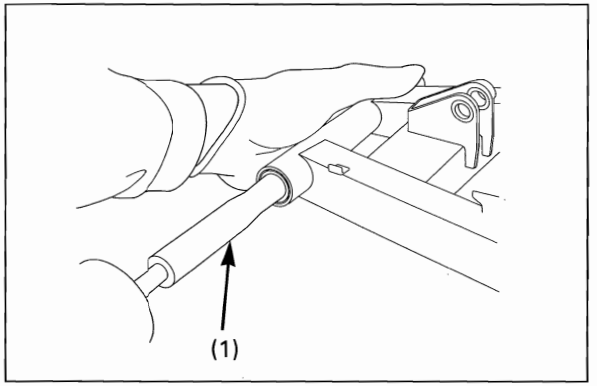
Tools:

Driver	**07749–0010000**
Attachment, 32 x 35 mm	**07746–0010100**
Pilot, 12 mm	**07746–0040200**

Install the distance collar into the hub, then install the right wheel bearing until it seat on the distance collar using the same tools.

Swingarm Assembly



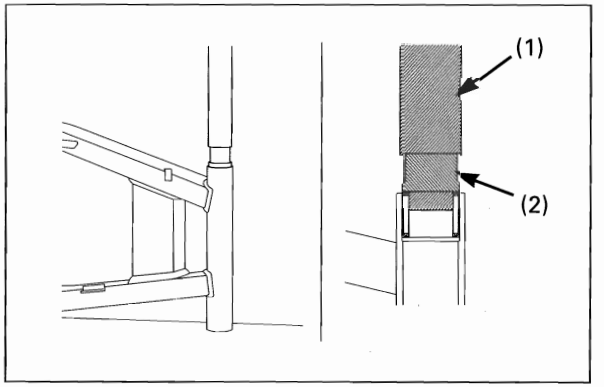


(1) BEARING REMOVER

Swingarm Pivot Bearing Replacement
Remove the swingarm pivot needle bearing using the special tool.

Tools:

Bearing remover set, 20 mm	**07936–3710600**
Remover handle	**07936–3710100**
Remover weight	**07741–0010201 or 07936–371020A (U.S.A. only)**



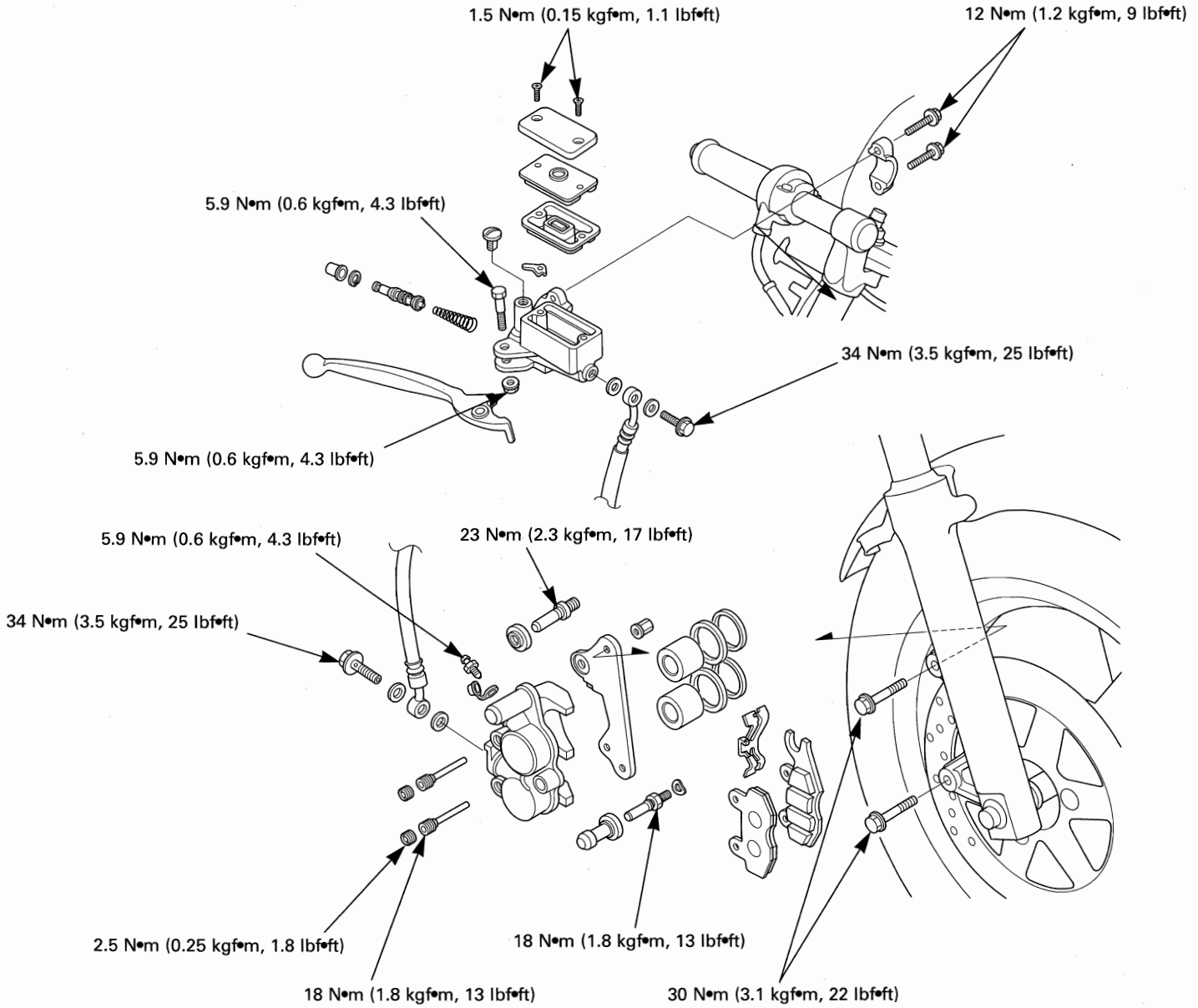
(1) DRIVER
(2) ATTACHMENT/PILOT

Press the swingarm pivot needle bearing using the special tools and a hydraulic press until the bearing end aligns with the swingarm pivot surface.

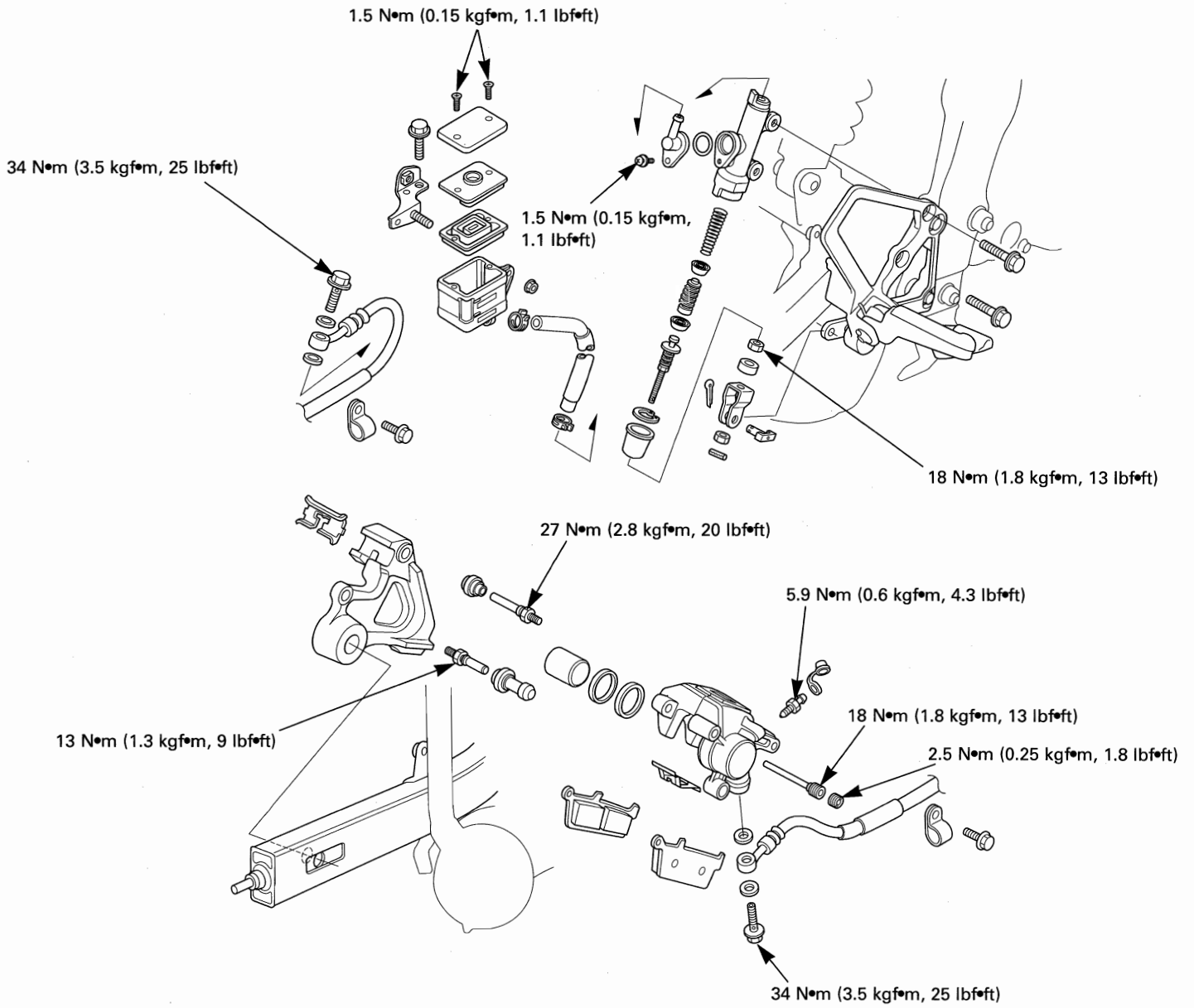
Tools:

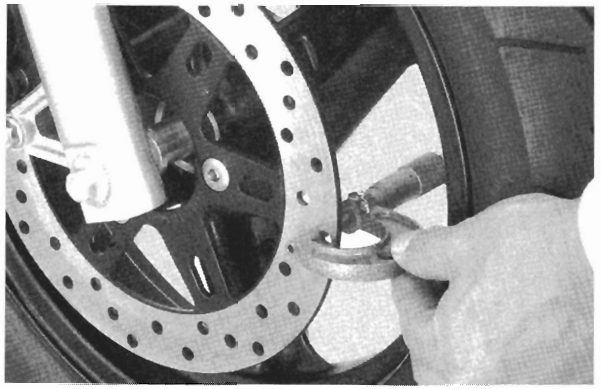
Driver	**07749–0010000**
Attachment, 24 x 26 mm	**07746–0010700**
Pilot, 20 mm	**07746–0040600**

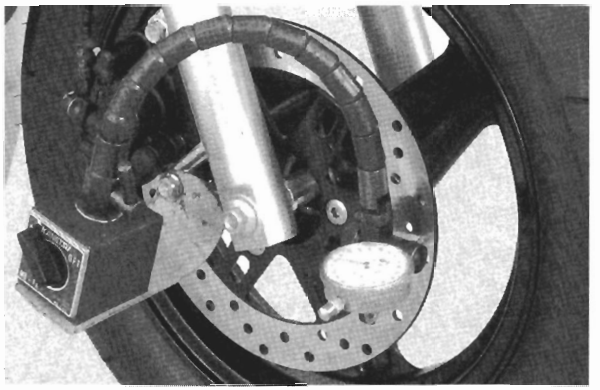
Front Brake System



Rear Brake System







Brake Disc Inspection

Inspect the brake disc for damage or cracks.
Measure the brake disc thickness with a micrometer.

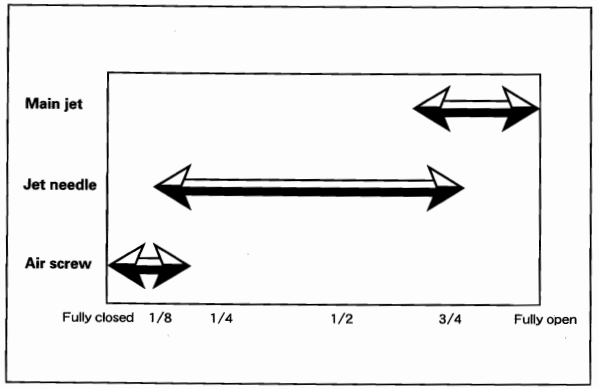
Service limit: Front/rear: 3.0 mm (0.12 in)

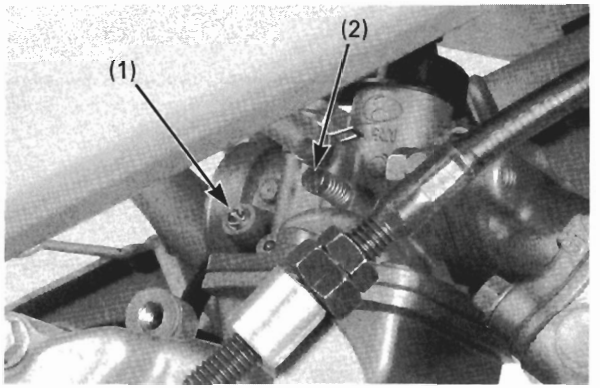
Replace the brake disc if the smallest measurement is less than the service limit.

Measure the brake disc warpage with a dial indicator.

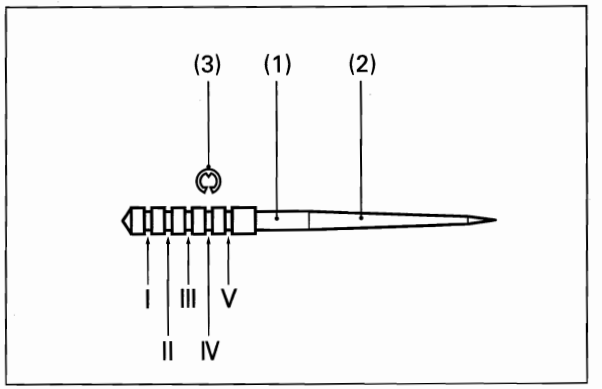
Service limit: 0.3 mm (0.01 in)

If the warpage exceeds the service limit, check the wheel bearings for excessive play.
If the wheel bearing are normal, replace the brake disc.





(1) AIR SCREW
(2) THROTTLE STOP SCREW



(1) STRAIGHT (2) TAPER (3) CLIP

Carburetor Setting

Before changing the carburetor setting, check for the following:
- Secondary air leaks
- Ignition timing
- Carburetor float level
- Blocked or restricted fuel and air passage
- Spark plug condition, plug gap and heat range
- Fuel condition

Start the engine and warm it up to operating temperature.
Ride 2 - 3 laps, recording throttle openings in relation to engine speeds particularly at points where the carburetor needs refinement.
Check the spark plug burn condition.

Carburetor operation is broken into three segments. Each of the metering units is responsible for one segment. There is always overlap from one segment to the next, so any change will always affect the next segment up or down the throttle range. Because of this, making carburetor adjustments for altitude or temperature should be done very methodically.
The illustration shows the relationship of the main jet and jet needle, and the slow jet and air screw.

Slow jet

The slow jet is controls fuel in the slow range (1/8 to 1/4).
The mixture delivered by the slow circuit is changed by adjusting the air screw.

Standard slow jet: #42

Air screw

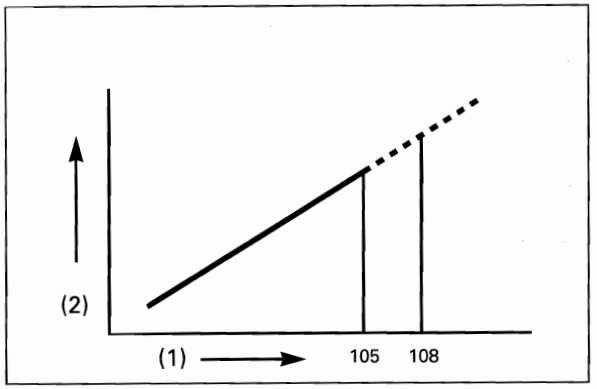
The air screw meters air that is mixed with fuel metered by the slow jet.
Turning the air screw clockwise enriches the mixture; counterclockwise leans the mixture.

After warming up the engine, turn the air screw in until it lightly seats, then back it out to specs.
Further adjustments may be necessary to obtain on optimum air-fuel ratio.

Standard setting: 1 – 1/2 turns out

The jet needle affects the mixture through the first 1/8 to 3/4 of the throttle range.
The straight portion of the needle affects acceleration from low rpm, and the tapered portion affects the medium and high speed ranges.
The position of the clip on the needle affects fuel metering at medium throttle range.

Standard clip position: 2nd groove from the top



(1) MAIN JET SIZE (2) FUEL FLOW

Main jet

The main jet affects the mixture from 3/4 to the full throttle range.

Standard main jet: #110 (optional: #100 – #130)

Turning the carburetor

1. Start the engine and warm it up to operating temperature. Ride 2 laps.
2. Record throttle openings in relation to engine speeds particularly at points where the carburetor needs refinement. For better results, also record which gear the machine was in.
3. After running, check the spark plug burn condition.

Weather VS. Carburetor Setting

Condition	Mixture	Setting
Cold weather	Leaned	Enrich
Hot weather	Enriched	Lean
Dry	Leaned	Enrich
In high humidity	Enriched	Lean
High altitude	Enriched	Lean

The above settings should be done with the main jet and jet needle clip position.

Carburetor settings and trouble diagnosis

Symptom	Remedy	Remarks
Mixture lean at full throttle: • Rpm rising and falling • Detonation • White spark plug insulator • Poor acceleration	• Try a higher number main jet. • Adjustment is normal if there are rust brown to grayish-tan powder deposits on the spark plug electrodes and insulator.	• Check for air leak.
Mixture rich at full throttle: • Poor acceleration • Lack of power • Sooty deposits on spark plug electrodes and insulator	• Replace with a lower number main jet. • Adjustment is normal if there are rust brown to grayish-tan powder deposits on the spark plug electrodes and insulator.	• Check for carburetor flooding. • Check that choke valve lever is set properly.
Hesitation or stalling at 1/4 – 1/2 throttle: • Lack power	• Lower jet needle clip position by 1 groove (enrich mixture).	• See page 6-2.
Hesitation or poor acceleration at 1/4 – 1/2 throttle:	• Raise jet needle clip position by 1 groove (lean mixture).	• See page 6-2.
Hesitation or poor acceleration at 0 – 1/4 throttle:	• Turn air screw in as necessary (enrich mixture).	
Poor engine response to throttle, or sudden response to throttle at 0 – 1/4 throttle	• Turn air screw out (lean mixture). • (If symptom still persists, replace with smaller slow jet.)	• This symptom is likely to occur in rainy weather.
Poor engine performance at lower speed • Detonation • Poor engine response to throttle	• Turn air screw in (enrich mixture).	• Check carburetor insulator for air leak.
Engine does not react to sudden throttle opening	• Turn air screw out (lean mixture). • Confirm overall carburetor setting. • Lower jet needle clip position by 1 groove (enrich mixture)	• Check carburetor insulator for air leak.

Suspension Setting

Front Suspension Adjustment

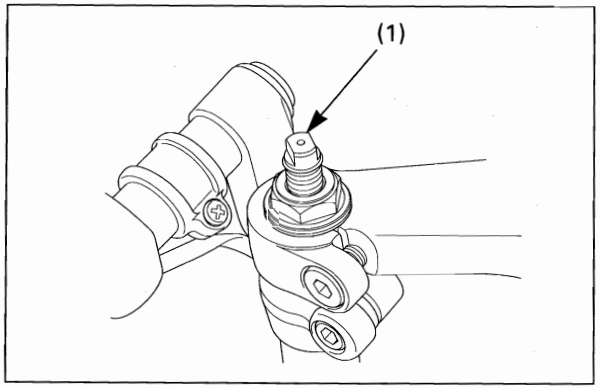
The NSR50R's fork is equipped with a preload adjuster.
An optional stiff fork spring is available.
Install the fork spring with its tapered end facing in.

	NSR50R standard	Optional	Remarks
Spring rate	0.5 kgf/mm	0.55 kgf/mm	
Oil level	107 mm (4.21 in)	106 mm (4.17 in)	Pro Honda Suspension Fluid SS-8 (10W)
Fork height	3 mm (0.1 in)	3 mm (0.1 in)	From upper surface of top bridge to fork tube end
Preload adjuster setting	13 mm (0.5 in)/3rd groove	13 mm (0.5 in)/3rd groove	Adjusting range: 7 – 17 mm (0.3 – 0.7 in)
Spring identification mark	No mark	1 slit	

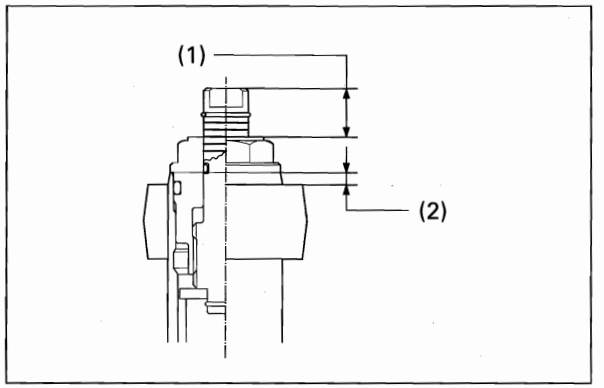
When measuring the fork oil level, remove the fork spring collar, spring and spring seat, then compress the fork all the way and measure the fork oil level from the top of the tube.

Spring Preload Adjuster

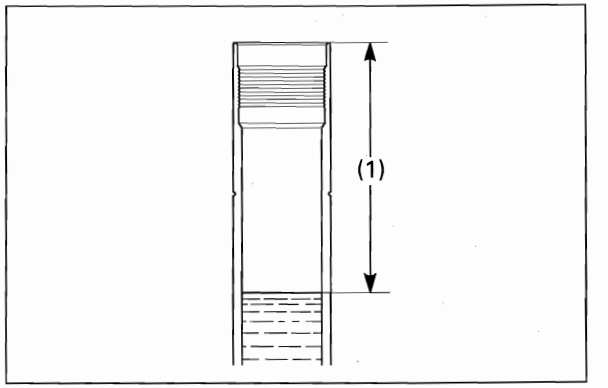
- The spring preload can be adjusted by turning the hexagonal portion of the preload adjuster. Turning the preload adjuster clockwise increases the spring preload.
- One complete turn of the preload adjuster corresponds to a 1.0 mm (0.04 in) variation in preload.



(1) PRELOAD ADJUSTER



(1) PRELOAD ADJUSTER HEIGHT
(2) FORK HEIGHT



(1) OIL LEVEL

Rear Suspension Adjustment

The NSR50R's rear shock absorber is equipped with a preload adjuster and compression/rebound damping adjusters. Optional stiff or soft shock absorber springs are available.

	NSR50R standard	Optional (Soft)	Optional (Stiff)
Spring rate	18.5 kgf/mm	18.0 kgf/mm	19.0 kgf/mm
Preload setting	102 mm (4.0 in)	100 mm (3.9 in)	103 mm (4.1 in)
Spring identification color	Red	Blue	Yellow

Compression Damping Adjuster
- The compression damping adjuster is located on the reservoir.
- To increase compression damping, turn the compression adjuster toward HARD.

Standard: 1 turn out from full hard

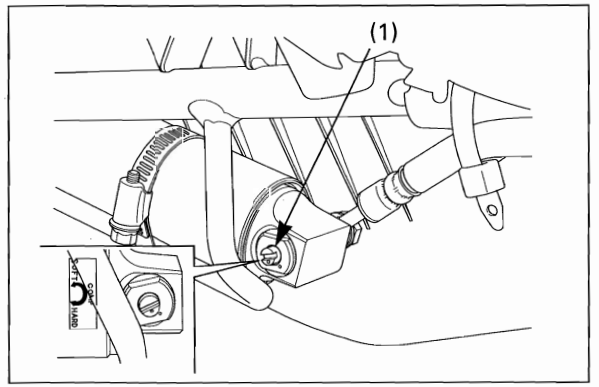
Rebound Damping Adjuster
- The rebound damping adjuster is located on the shock mount.
- To increase rebound damping, turn the rebound adjuster toward HARD.

Standard: 1/2 turn out from full hard

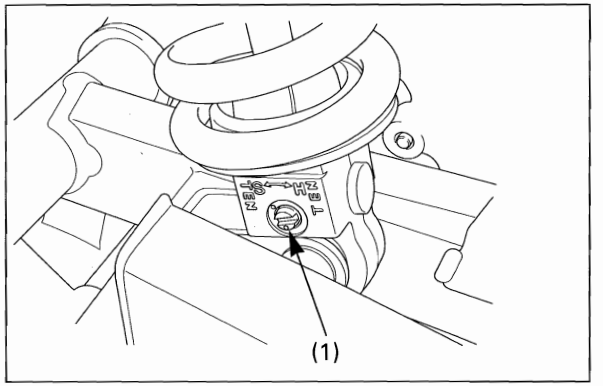
Spring Preload Adjuster
- The spring preload can be adjusted by loosening the lock nut and turning the preload adjuster.
- One complete turn of the preload adjuster corresponds to a 1.25 mm (0.05 in) variation in preload.

Standard: 102 mm (4.0 in) spring installed length

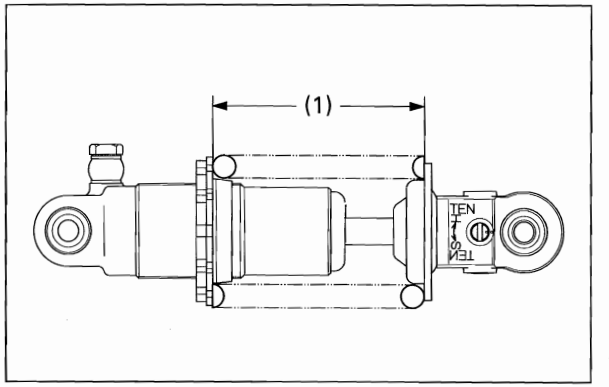
Tool: Pin spanner (07702–0020001)



(1) COMPRESSION ADJUSTER



(1) REBOUND ADJUSTER



(1) SPRING INSTALLED LENGTH

Memo

Honda Racing Corporation

Head Office/3-15-1 Senzui, Asaka-shi, Saitama-pref., 351-0024 Japan
TEL.048-461-9511 TELFAX.048-469-0068

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