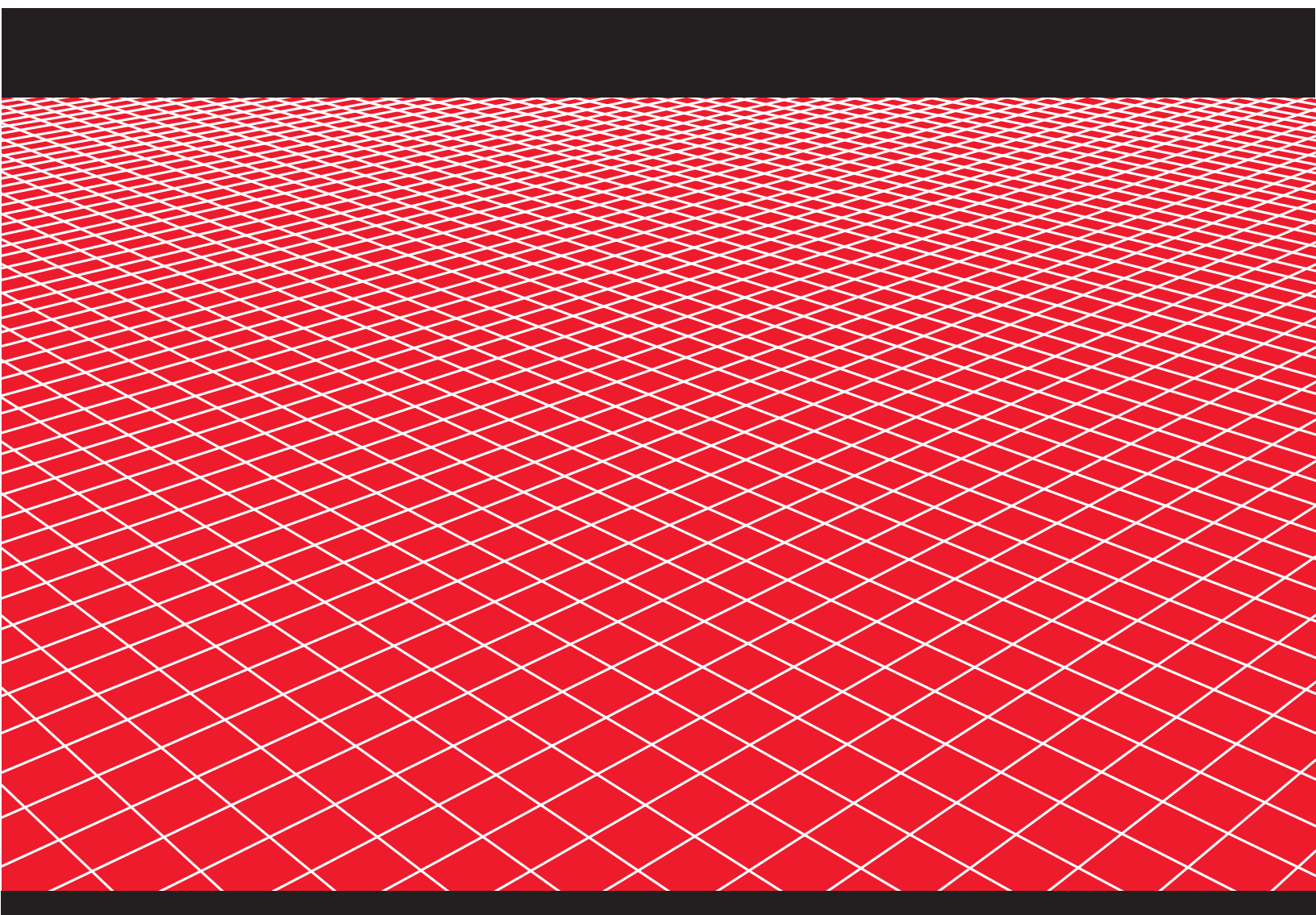




SERVICE MANUAL

LEAD 110

2009



TYPE CODE

- Throughout this manual, the following abbreviations are used to identify individual model.

CODE	AREA TYPE
HVN	Vietnam

A Few Words About Safety

Service Information

The service and repair information contained in this manual is intended for use by qualified, professional technicians. Attempting service or repairs without the proper training, tools, and equipment could cause injury to you or others. It could also damage the vehicle or create an unsafe condition.

This manual describes the proper methods and procedures for performing service, maintenance, and repairs. Some procedures require the use of specially designed tools and dedicated equipment. Any person who intends to use a replacement part, service procedure or a tool that is not recommended by Honda, must determine the risks to their personal safety and the safe operation of the vehicle.

If you need to replace a part, use genuine Honda parts with the correct part number or an equivalent part. We strongly recommend that you do not use replacement parts of inferior quality.

For Your Customer's Safety

Proper service and maintenance are essential to the customer's safety and the reliability of the vehicle. Any error or oversight while servicing a vehicle can result in faulty operation, damage to the vehicle, or injury to others.

For Your Safety

Because this manual is intended for the professional service technician, we do not provide warnings about many basic shop safety practices (e.g., Hot parts—wear gloves). If you have not received shop safety training or do not feel confident about your knowledge of safe servicing practice, we recommend that you do not attempt to perform the procedures described in this manual.

Some of the most important general service safety precautions are given below. However, we cannot warn you of every conceivable hazard that can arise in performing service and repair procedures. Only you can decide whether or not you should perform a given task.

Important Safety Precautions

Make sure you have a clear understanding of all basic shop safety practices and that you are wearing appropriate clothing and using safety equipment. When performing any service task, be especially careful of the following:

- Read all of the instructions before you begin, and make sure you have the tools, the replacement or repair parts, and the skills required to perform the tasks safely and completely.
- Protect your eyes by using proper safety glasses, goggles or face shields any time you hammer, drill, grind, pry or work around pressurized air or liquids, and springs or other stored-energy components. If there is any doubt, put on eye protection.
- Use other protective wear when necessary, for example gloves or safety shoes. Handling hot or sharp parts can cause severe burns or cuts. Before you grab something that looks like it can hurt you, stop and put on gloves.
- Protect yourself and others whenever you have the vehicle up in the air. Any time you lift the vehicle, either with a hoist or a jack, make sure that it is always securely supported. Use jack stands.

Make sure the engine is off before you begin any servicing procedures, unless the instruction tells you to do otherwise. This will help eliminate several potential hazards:

- Carbon monoxide poisoning from engine exhaust. Be sure there is adequate ventilation whenever you run the engine.
- Burns from hot parts or coolant. Let the engine and exhaust system cool before working in those areas.
- Injury from moving parts. If the instruction tells you to run the engine, be sure your hands, fingers and clothing are out of the way.

Gasoline vapors and hydrogen gases from batteries are explosive. To reduce the possibility of a fire or explosion, be careful when working around gasoline or batteries.

- Use only a nonflammable solvent, not gasoline, to clean parts.
- Never drain or store gasoline in an open container.
- Keep all cigarettes, sparks and flames away from the battery and all fuel-related parts.

⚠ WARNING

Improper service or repairs can create an unsafe condition that can cause your customer or others to be seriously hurt or killed.

Follow the procedures and precautions in this manual and other service materials carefully.

⚠ WARNING

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

Follow the procedures and precautions in this manual carefully.

HOW TO USE THIS MANUAL

This service manual describes the service procedures for the NHX110-9.

Follow the Maintenance Schedule (Section 4) recommendations to ensure that the vehicle is in peak operating condition.

Performing the first scheduled maintenance is very important. It compensates for the initial wear that occurs during the break-in period.

Sections 1 and 4 apply to the whole scooter. Section 3 illustrates procedures for removal/installation of components that may be required to perform service described in the following sections.

Section 5 through 21 describe parts of the scooter, grouped according to location.

Find the section you want on this page, then turn to the table of contents on the first page of the section.

Most sections start with an assembly or system illustration, service information and troubleshooting for the section. The subsequent pages give detailed procedure.


If you are not familiar with this scooter, read Technical Feature in Section 2.

If you don't know the source of the trouble, go to section 23 Troubleshooting.

Your safety, and the safety of others, is very important. To help you make informed decisions we have provided safety messages and other information throughout this manual. Of course, it is not practical or possible to warn you about all the hazards associated with servicing this vehicle.

You must use your own good judgement.

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

- Safety Labels – on the vehicle
- Safety Messages – preceded by a safety alert symbol  and one of three signal words, DANGER, WARNING, or CAUTION.

These signal words mean:

DANGER

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

WARNING

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

CAUTION

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

- Instructions – how to service this vehicle correctly and safely.

As you read this manual, you will find information that is preceded by a **NOTICE** symbol. The purpose of this message is to help prevent damage to your vehicle, other property, or the environment.

ALL INFORMATION, ILLUSTRATIONS, DIRECTIONS AND SPECIFICATIONS INCLUDED IN THIS PUBLICATION ARE BASED ON THE LATEST PRODUCT INFORMATION AVAILABLE AT THE TIME OF APPROVAL FOR PRINTING. Honda Motor Co., Ltd. RESERVES THE RIGHT TO MAKE CHANGES AT ANY TIME WITHOUT NOTICE AND WITHOUT INCURRING ANY OBLIGATION WHATSOEVER. NO PART OF THIS PUBLICATION MAY BE REPRODUCED WITHOUT WRITTEN PERMISSION. THIS MANUAL IS WRITTEN FOR PERSONS WHO HAVE ACQUIRED BASIC KNOWLEDGE OF MAINTENANCE ON Honda MOTORCYCLES, MOTOR SCOOTERS OR ATVS.












Honda Motor Co., Ltd.
SERVICE PUBLICATION OFFICE

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SYMBOLS

The symbols used throughout this manual show specific service procedures. If supplementary information is required pertaining to these symbols, it would be explained specifically in the text without the use of the symbols.

	<p>Replace the part(s) with new one(s) before assembly.</p>
	<p>Use recommended engine oil, unless otherwise specified.</p>
	<p>Use molybdenum oil solution (mixture of the engine oil and molybdenum grease in a ratio of 1: 1).</p>
	<p>Use multi-purpose grease (Lithium based multi-purpose grease NLGI #2 or equivalent).</p>
	<p>Use molybdenum disulfide grease (containing more than 3% molybdenum disulfide, NLGI #2 or equivalent). Example: Molykote® BR-2 plus manufactured by Dow Corning U.S.A. Multi-purpose M-2 manufactured by Mitsubishi Oil, Japan</p>
	<p>Use molybdenum disulfide paste (containing more than 40% molybdenum disulfide, NLGI #2 or equivalent). Example: Molykote® G-n Paste manufactured by Dow Corning U.S.A. Honda Moly 60 (U.S.A. only) Rocol ASP manufactured by Rocol Limited, U.K. Rocol Paste manufactured by Sumico Lubricant, Japan</p>
	<p>Use silicone grease.</p>
	<p>Apply a locking agent. Use a middle strength locking agent unless otherwise specified.</p>
	<p>Apply sealant.</p>
	<p>Use DOT 3 or DOT 4 brake fluid. Use the recommended brake fluid unless otherwise specified.</p>
	<p>Use Fork or Suspension Fluid.</p>

1. GENERAL INFORMATION

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GENERAL INFORMATION

SERVICE RULES

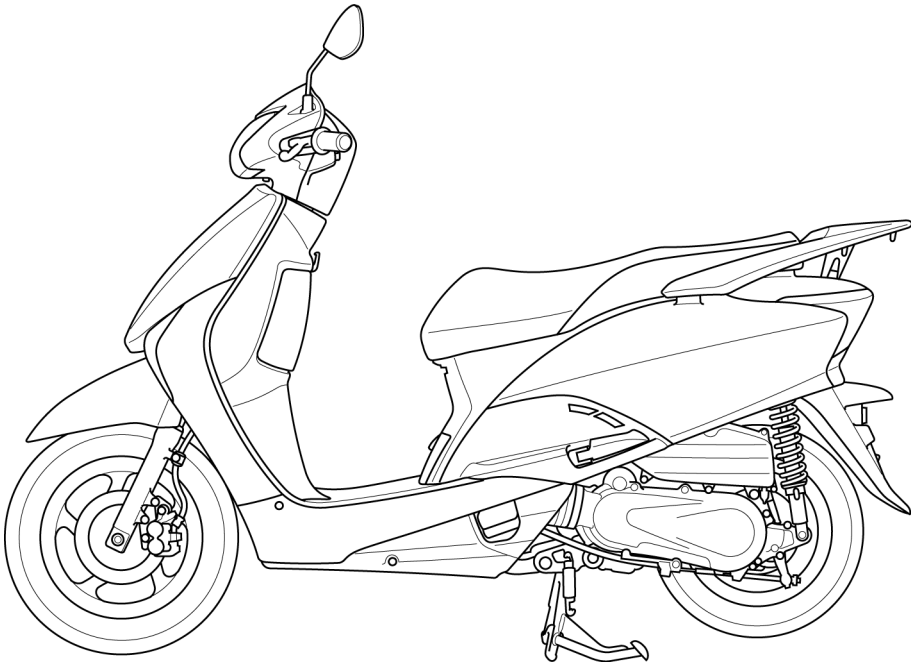
1. Use genuine Honda or Honda-recommended parts and lubricants or their equivalents. Parts that do not meet Honda's design specifications may cause damage to the scooter.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing the scooter. Metric bolts, nuts and screws are not interchangeable with English fasteners.
4. Install new gaskets, O-rings, cotter pins, and lock plates when reassembling.
5. When tightening bolts or nuts, begin with the larger diameter or inner bolt first. Then tighten to the specified torque diagonally in incremental steps unless a particular sequence is specified.
6. Clean parts in cleaning solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
7. After reassembly, check all parts for proper installation and operation.
8. Route all electrical wires as shown in the Cable and Harness Routing (page 1-17).

ABBREVIATION

Throughout this manual, the following abbreviations are used to identify the respective parts or systems.

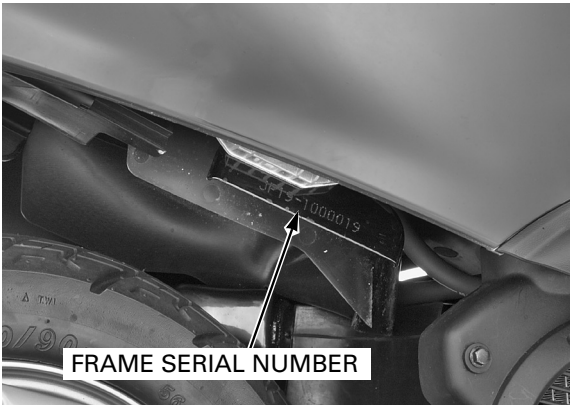
Abbrev. term	Full term
PGM-FI	Programmed Fuel Injection
MAP sensor	Manifold Absolute Pressure sensor
TP sensor	Throttle Position sensor
ECT sensor	Engine Coolant Temperature sensor
IAT sensor	Intake Air Temperature sensor
CKP sensor	Crankshaft Position sensor
IACV	Idle Air Control Valve
ECM	Engine Control Module
EEPROM	Electrically Erasable Programmable Read Only Memory
DLC	Data Link Connector
SCS connector	Service Check Short connector
MIL	Malfunction Indicator Lamp
PCV	Positive Crankcase Ventilation

MODEL IDENTIFICATION

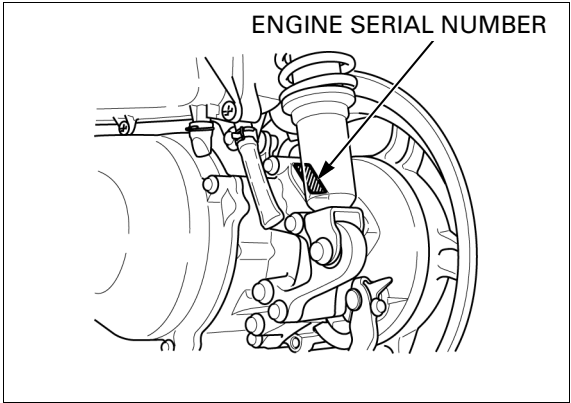


SERIAL NUMBERS

The frame serial number is stamped on the right side of the frame near the regulator.



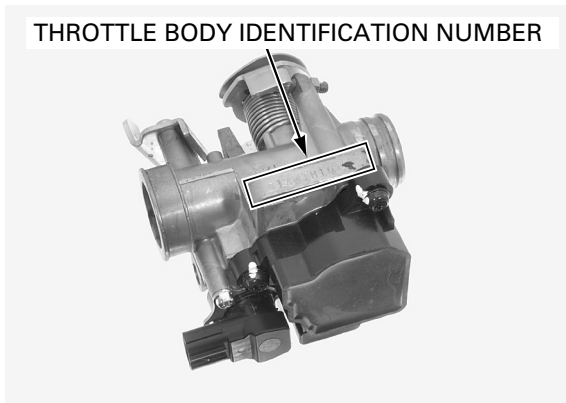
The engine serial number is stamped on the left side of the crankcase.



GENERAL INFORMATION

The throttle body identification number is stamped on the lower side of the throttle body.

THROTTLE BODY IDENTIFICATION NUMBER



GENERAL SPECIFICATIONS

	ITEM	SPECIFICATIONS
DIMENSIONS	Overall length Overall width Overall height Wheelbase Seat height Footpeg height Ground clearance Curb weight	1,838 mm (72.4 in) 668 mm (26.3 in) 1,125 mm (44.3 in) 1,274 mm (50.2 in) 740 mm (29.1 in) 289 mm (11.4 in) 115 mm (4.5 in) 113 kg (249 lbs)
FRAME	Frame type Front suspension Front axle travel Rear suspension Rear axle travel Front tire size Rear tire size Front tire brand Rear tire brand Front brake Rear brake Caster angle Trail length Fuel tank capacity	Under bone type Telescopic fork 80 mm (3.1 in) Unit swing 70 mm (2.8 in) 90/90 – 12M/C 44J 100/90 – 10M/C 56J C-922 (CHENG SHIN), MB60(IRC) C-922 (CHENG SHIN), MB47(IRC) Hydraulic disc brake Mechanical leading trailing 26° 30' 74 mm (2.91 in) 6.5 liter (1.72 US gal, 1.43 Imp gal)
ENGINE	Bore and stroke Displacement Compression ratio Valve train Intake valve opens Intake valve closes Exhaust valve opens Exhaust valve closes Lubrication system Oil pump type Cooling system Air filtration Engine dry weight	50.0 x 55.0 mm (1.97 x 2.17 in) 108.0 cm ³ (6.59 cu-in) 11.0: 1 2 valve, single chain driven SOHC 10° BTDC (at 1 mm lift) 25° ABDC (at 1 mm lift) 35° BBDC (at 1 mm lift) 5° BTDC (at 1 mm lift) Forced pressure and wet sump Trochoid Liquid cooled Viscous paper element 27.5 kg (60.6 lbs)
FUEL DELIV- ERY SYSTEM	Type Throttle bore	PGM-FI 20 mm (0.8 in)
DRIVE TRAIN	Clutch system Drive belt ratio Final reduction	Dry, automatic centrifugal clutch 2.59: 1 – 0.88: 1 9.423 (50/20 x 49/13)
ELECTRICAL	Ignition system Starting system Charging system Regulator/rectifier Lighting system	Full transistorized Electric starter motor Triple phase output alternator SCR shorted/triple phase full-wave rectification Battery

GENERAL INFORMATION

LUBRICATION SYSTEM SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Engine oil capacity	After draining	0.7 liter (0.7 US qt, 0.6 Imp qt)	–
	After disassembly	0.8 liter (0.8 US qt, 0.7 Imp qt)	–
Recommended engine oil		API service classification: SG or higher (except oils labeled as energy conserving on the circular API service label) Viscosity: SAE 10W-30 JASO T 903 standard: MB	–
Oil pump rotor	Tip clearance	0.15 (0.006)	0.20 (0.008)
	Body clearance	0.15 – 0.21 (0.006 – 0.008)	0.35 (0.014)
	Side clearance	0.05 – 0.10 (0.002 – 0.004)	0.12 (0.005)

FUEL SYSTEM (PGM-FI) SPECIFICATIONS

ITEM	SPECIFICATIONS
Throttle body identification number	GQQ2A
Engine idle speed	1,700 ± 100 min ⁻¹ (rpm)
Throttle grip freeplay	2 – 6 mm (0.08 – 0.24 in)
Fuel injector resistance (at 20°C /68°F)	9 – 12 Ω
PCV solenoid valve resistance (at 20°C /68°F)	30 – 34 Ω
Fuel pressure	294 kPa (3.0 kgf/cm ² , 43 psi)
Fuel pump flow (at 12 V)	98 cm ³ (3.3 US oz, 3.5 Imp oz) minimum/10 seconds

COOLING SYSTEM SPECIFICATIONS

ITEM	SPECIFICATIONS	
Coolant capacity	Radiator and engine	0.41 liter (0.43 US qt, 0.36 Imp qt)
	Reserve tank	0.10 liter (0.11 US qt, 0.09 Imp qt)
Radiator cap relief pressure		108 – 137 kPa (1.1 – 1.4 kgf/cm ² , 16 – 20 psi)
Thermostat	Begin to open	74.5 – 77.5 °C (166 – 172 °F)
	Fully open	85 °C (185 °F)
	Valve lift	3.5 mm (0.1 in) minimum
Recommended coolant		Honda PRE-MIX COOLANT

CYLINDER HEAD/VALVES SPECIFICATIONS

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Cylinder compression			1,098 kPa (11.2 kgf/cm ² , 159 psi) at 550 rpm	–
Cylinder head warpage			–	0.05 (0.002)
Rocker arm	Rocker arm I.D.	IN/EX	10.000 – 10.015 (0.3937 – 0.3943)	10.10 (0.398)
	Rocker arm shaft O.D.	IN/EX	9.972 – 9.987 (0.3926 – 0.3932)	9.91 (0.390)
	Arm-to-shaft clearance	IN/EX	0.013 – 0.043 (0.0005 – 0.0017)	0.08 (0.003)
Camshaft	Cam lobe height	IN	32.542 – 32.782 (1.2812 – 1.2906)	32.52 (1.280)
		EX	32.263 – 32.503 (1.2702 – 1.2796)	32.24 (1.269)
Valve, valve guide	Valve clearance	IN	0.16 ± 0.02 (0.006 ± 0.001)	–
		EX	0.25 ± 0.02 (0.010 ± 0.001)	–
	Valve stem O.D.	IN	4.975– 4.990 (0.1959 – 0.1965)	4.90 (0.193)
		EX	4.955 – 4.970 (0.1951 – 0.1957)	4.90 (0.193)
	Valve guide I.D.	IN/EX	5.000 – 5.012 (0.1969 – 0.1973)	5.03 (0.198)
	Stem-to-guide clearance	IN	0.010 – 0.037 (0.0004 – 0.0015)	0.08 (0.003)
		EX	0.030 – 0.057 (0.0012 – 0.0022)	0.10 (0.004)
	Valve guide projection above cylinder head	IN/EX	9.1 – 9.3 (0.36 – 0.37)	–
Valve seat width	IN/EX	0.90 – 1.10 (0.035 – 0.043)	1.5 (0.06)	
Valve spring free length	IN/EX	Outer	38.33 (1.509)	37.04 (1.458)
		Inner	31.53 (1.241)	30.66 (1.207)

CYLINDER/PISTON SPECIFICATIONS

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT	
Cylinder	I.D.		50.000 – 50.010 (1.9685 – 1.9689)	50.10 (1.972)	
	Out-of-round		–	0.05 (0.002)	
	Taper		–	0.05 (0.002)	
	Warpage		–	0.05 (0.002)	
Piston, piston ring, piston pin	Piston O.D.		49.970 – 49.990 (1.9673 – 1.9681)	49.95 (1.967)	
	Piston O.D. measurement point		10 (0.4) from bottom of skirt	–	
	Piston pin bore I.D.		13.002 – 13.008 (0.5119 – 0.5121)	13.04 (0.513)	
	Piston pin O.D.		12.994 – 13.000 (0.5116 – 0.5118)	12.96 (0.510)	
	Piston-to-piston pin clearance		0.002 – 0.014 (0.0001 – 0.0006)	0.02 (0.001)	
	Piston ring-to-ring groove clearance	Top		0.015 – 0.045 (0.0006 – 0.0018)	0.08 (0.003)
		Second		0.015 – 0.045 (0.0006 – 0.0018)	0.08 (0.003)
	Piston ring end gap	Top		0.10 – 0.25 (0.004 – 0.010)	0.45 (0.018)
		Second		0.10 – 0.25 (0.004 – 0.010)	0.45 (0.018)
Oil (side rail)			0.20 – 0.70 (0.008 – 0.028)	–	
Cylinder-to-piston clearance			0.010 – 0.040 (0.0004 – 0.0016)	0.09 (0.004)	
Connecting rod small end I.D.			13.010 – 13.028 (0.5122 – 0.5129)	13.05 (0.514)	
Connecting rod-to-piston pin clearance			0.010 – 0.034 (0.0004 – 0.0013)	0.05 (0.002)	
Stud bolt projection above crankcase			177.5 – 178.5 (6.99 – 7.03)	–	

GENERAL INFORMATION

DRIVE PULLEY/DRIVEN PULLEY/CLUTCH SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Drive belt width		18.5 (0.73)	17.5 (0.69)
Movable drive face	Bushing I.D.	22.035 – 22.085 (0.8675 – 0.8695)	22.11 (0.870)
	Boss O.D.	22.010 – 22.025 (0.8665 – 0.8671)	21.98 (0.865)
	Weight roller O.D.	17.92 – 18.08 (0.706 – 0.712)	17.5 (0.69)
Clutch	Lining thickness	–	2.0 (0.08)
	Clutch outer I.D.	125.0 – 125.2 (4.92 – 4.93)	125.5 (4.94)
Driven pulley	Face spring free length	111.4 (4.39)	108.0 (4.25)
	Driven face boss O.D.	33.965 – 33.985 (1.3372 – 1.3380)	33.94 (1.336)
	Movable driven face I.D.	34.000 – 34.025 (1.3386 – 1.3396)	34.06 (1.341)

FINAL REDUCTION SPECIFICATIONS

ITEM		SPECIFICATIONS
Final reduction oil capacity	After draining	0.10 liter (0.11 US qt, 0.09 Imp qt)
	After disassembly	0.12 liter (0.13 US qt, 0.11 Imp qt)
Recommended final reduction oil		API service classification: SG or higher (except oils labeled as energy conserving on the circular API service label) Viscosity: SAE 10W-30 JASO T 903 standard: MB

CRANKCASE/CRANKSHAFT SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Crankshaft	Connecting rod side clearance	0.10 – 0.35 (0.004 – 0.014)	0.55 (0.022)
	Connecting rod radial clearance	0.004 – 0.016 (0.0002 – 0.0006)	0.05 (0.002)
	Runout	–	0.10 (0.004)

FRONT WHEEL/SUSPENSION/STEERING SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Minimum tire tread depth		–	To the indicator
Cold tire pressure	Driver only	175 kPa (1.75 kgf/cm ² , 25 psi)	–
	Driver and passenger	175 kPa (1.75 kgf/cm ² , 25 psi)	–
Axle runout		–	0.2 (0.01)
Wheel rim runout	Radial	–	2.0 (0.08)
	Axial	–	2.0 (0.08)
Fork	Spring free length	218.0 (8.58)	213.6 (8.41)
	Pipe runout	–	0.2 (0.01)
	Recommended fluid	Fork fluid	–
	Fluid level	52 (2.0)	–
	Fluid capacity	89.0 ± 1.0 cm ³ (3.01 ± 0.03 US oz, 3.13 ± 0.04 Imp oz)	–

REAR WHEEL/SUSPENSION SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Minimum tire tread depth		–	To the indicator
Cold tire pressure	Driver only	200 kPa (2.00 kgf/cm ² , 29 psi)	–
	Driver and passenger	225 kPa (2.25 kgf/cm ² , 33 psi)	–
Wheel rim runout	Radial	–	2.0 (0.08)
	Axial	–	2.0 (0.08)

BRAKE SYSTEM SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Front disc brake	Specified brake fluid	DOT 3 or DOT 4	–
	Brake disc thickness	3.3 – 3.7 (0.13 – 0.15)	3.0 (0.12)
	Brake disc warpage	–	0.30 (0.012)
	Master cylinder I.D.	12.700 – 12.743 (0.5000 – 0.5017)	12.755 (0.5022)
	Master piston O.D.	12.657 – 12.684 (0.4983 – 0.4994)	12.645 (0.4978)
	Caliper cylinder I.D.	27.000 – 27.050 (1.0630 – 1.0650)	27.060 (1.0654)
	Caliper piston O.D.	26.918 – 26.968 (1.0598 – 1.0617)	26.91 (1.059)
Rear drum brake	Brake lever freeplay	10 – 20 (0.4 – 0.8)	–
	Brake drum I.D.	130.0 – 130.2 (5.12 – 5.13)	131.0 (5.16)

GENERAL INFORMATION

BATTERY/CHARGING SYSTEM SPECIFICATIONS

ITEM			SPECIFICATIONS
Battery	Capacity		12 V – 6 Ah
	Current leakage		0.1 mA max.
	Voltage (20°C/68°F)	Fully charged	Above 12.8 V
		Needs charging	Below 12.3 V
	Charging current	Normal	0.6 A/5 – 10 h
Quick		3.0 A/1.0 h	
Alternator	Capacity		0.22 kW/5,000 min ⁻¹ (rpm)
	Charging coil resistance (20°C/68°F)		0.1 – 1.0 Ω

IGNITION SYSTEM SPECIFICATIONS

ITEM		SPECIFICATIONS
Spark plug	Standard	CR7EH-9 (NGK), U22FER9 (DENSO)
	For extended high speed riding	CR8EH-9 (NGK), U24FER9 (DENSO)
Spark plug gap		0.80 – 0.90 mm (0.031 – 0.035 in)
Ignition coil primary peak voltage		100 V minimum
CKP sensor peak voltage		0.7 V minimum
Ignition timing ("F"mark)		14° BTDC at engine idle speed

ELECTRIC STARTER SPECIFICATIONS

Unit: mm (in)

ITEM	STANDARD	SERVICE LIMIT
Starter motor brush length	7.0 (0.28)	3.5 (0.14)

LIGHTS/METERS/SWITCHES SPECIFICATIONS

ITEM			SPECIFICATIONS
Bulbs	Headlight	Hi	12 V – 35 W
		Lo	12 V – 30 W
	Brake/tail light		12 V – 21/5 W
	Turn signal light		12 V – 21 W x 4
	License light		12 V – 5 W
	Instrument light		12 V – 1.7 W x 2
	Turn signal indicator		12 V – 3 W x 2
	High beam indicator		12 V – 1.7 W
PGM-FI malfunction indicator lamp (MIL)		LED	
Fuse	Main fuse		20 A
	Sub fuse		10 A x 3

STANDARD TORQUE VALUES

FASTENER TYPE	TORQUE N·m (kgf·m, lbf·ft)	FASTENER TYPE	TORQUE N·m (kgf·m, lbf·ft)
5 mm hex bolt and nut	5.2 (0.53, 3.8)	5 mm screw	4.2 (0.43, 3.1)
6 mm hex bolt and nut (Include SH flange bolt)	10 (1.0, 7)	6 mm screw	9 (0.92, 6.6)
8 mm hex bolt and nut	22 (2.2, 16)	6 mm flange bolt (Include NSHF) and nut	12 (1.2, 8.9)
10 mm hex bolt and nut	34 (3.5, 25)	8 mm flange bolt and nut	27 (2.8, 20)
12 mm hex bolt and nut	54 (5.5, 40)	10 mm flange bolt and nut	39 (4.0, 29)

ENGINE & FRAME TORQUE VALUES

- Torque specifications listed below are for specified fasteners.
- Others should be tightened to standard torque values listed above.

FRAME/BODY PANELS/EXHAUST SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Front fender mounting bolt	4	6	10 (1.0, 7)	Apply locking agent to the threads.
Floor panel mounting bolt	4	6	7 (0.71, 5.2)	
Exhaust pipe joint nut	2	6	14 (1.4, 10)	
Muffler mounting bolt	2	10	59 (6.0, 44)	
Exhaust pipe stud bolt	2	–	–	See page 3-13

MAINTENANCE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Throttle cable lock nut (Throttle body side)	2	8	8.5 (0.87, 6.3)	Apply engine oil to the threads and seating surface.
Air cleaner element screw	4	5	1.1 (0.11, 0.8)	
Air cleaner housing cover screw	7	5	1.1 (0.11, 0.8)	
Spark plug	1	10	16 (1.6, 12)	
Valve adjusting screw lock nut	2	5	10 (1.0, 7)	
Engine oil drain bolt	1	12	24 (2.4, 18)	
Engine oil strainer screen cap	1	30	20 (2.0, 15)	
Final reduction oil check bolt	1	8	13 (1.3, 10)	
Final reduction oil drain bolt	1	8	13 (1.3, 10)	
Equalizer connecting cable lock nut	1	8	6.4 (0.65, 4.7)	
Headlight adjusting bolt	1	4	1.8 (0.18, 1.3)	

LUBRICATION SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Oil pump plate screw	1	4	3 (0.31, 2.2)	
Oil pump mounting bolt	2	6	10 (1.0, 7)	

GENERAL INFORMATION

FUEL SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Fuel pump mounting nut	7	6	12 (1.2, 9)	See page 6-37
Left floor panel side frame mounting bolt	1	10	49 (5.0, 36)	
Air connecting hose band	–	–	–	See page 6-40
Sensor unit mounting torx screw	3	5	3.4 (0.35, 2.5)	
Throttle cable bracket screw	1	5	3.4 (0.35, 2.5)	
IACV mounting torx screw	2	4	2.1 (0.21, 1.5)	
Insulator band	–	–	–	See page 6-41
Injector mounting bolt	2	6	12 (1.2, 9)	
Bank angle sensor mounting screw	2	4	1.2 (0.12, 0.9)	
ECT sensor	1	12	25 (2.5, 18)	
O ₂ sensor	1	12	25 (2.5, 18)	
Intake pipe stud bolt	2	–	–	See page 6-58
PCV solenoid valve mounting bolt	2	5	6 (0.61, 4.4)	

COOLING SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Radiator drain bolt	1	10	1 (0.10, 0.7)	
Cooling fan bolt	3	6	8 (0.82, 5.9)	
Water pump impeller	1	6	10 (1.0, 7)	

ENGINE REMOVAL/INSTALLATION

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Engine hanger link pivot nut (Frame side)	1	10	69 (7.0, 51)	
Engine hanger link pivot nut (Engine side)	1	10	49 (5.0, 36)	

CYLINDER HEAD/VALVES

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Cylinder head cover special bolt	2	6	12 (1.2, 9)	
Camshaft holder nut	4	7	18 (1.8, 13)	Apply engine oil to the threads and seating surface.
Cam sprocket socket bolt	2	5	8 (0.82, 5.9)	Apply engine oil to the threads and seating surface.
Cam chain tensioner lifter screw	1	6	4 (0.41, 3.0)	

CYLINDER/PISTON

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Cylinder stud bolt	–	–	–	See page 10-7

DRIVE PULLEY/DRIVEN PULLEY/CLUTCH

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Drive pulley face nut	1	14	108 (11.0, 80)	Apply engine oil to the threads and seating surface.
Left crankcase cover air duct band	–	–	–	See page 6-37
Clutch/driven pulley nut	1	28	54 (5.5, 40)	
Clutch outer nut	1	12	49 (5.0, 36)	

ALTERNATOR

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Stator mounting socket bolt	3	6	10 (1.0, 7)	
Flywheel nut	1	12	59 (6.0, 44)	

FRONT WHEEL/SUSPENSION/STEERING

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Front brake disc socket bolt	4	8	42 (4.3, 31)	ALOC bolt; replace with a new one.
Front axle nut	1	12	59 (6.0, 44)	U-nut
Fork socket bolt	2	8	20 (2.0, 15)	Apply locking agent to the threads.
Fork pinch bolt	4	10	49 (5.0, 36)	
Fork cap bolt	2	26	23 (2.3, 17)	
Handlebar post nut	1	10	33 (3.4, 24)	See page 15-22
Steering stem lock nut	1	BC 1	-	See page 15-26
Steering stem adjusting nut	1	BC 1	-	See page 15-26

REAR WHEEL/SUSPENSION

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Rear axle nut	1	16	118 (12.0, 87)	Apply engine oil to the threads and seating surface. U-nut

BRAKE SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Brake caliper bleed valve	1	8	5.4 (0.55, 4.0)	
Master cylinder reservoir cap screw	2	4	1.5 (0.15, 1.1)	
Brake caliper mounting bolt	2	8	30 (3.1, 22)	ALOC bolt; replace with a new one.
Brake pad pin	2	10	17.2 (1.8, 13)	
Brake pad pin plug	2	10	2.4 (0.25, 1.8)	
Front brake light switch screw	1	4	1.2 (0.12, 0.9)	
Front brake lever pivot screw	1	6	1.0 (0.10, 0.7)	
Front brake lever pivot nut	1	6	5.9 (0.60, 4.4)	
Brake master cylinder holder bolt	2	6	12 (1.2, 9)	
Brake hose oil bolt	2	10	34 (3.5, 25)	
Rear brake lever pivot screw	1	5	1.0 (0.10, 0.7)	
Rear brake lever pivot nut	1	5	4.5 (0.46, 3.3)	U-nut
Equalizer rod pivot screw	1	5	1.0 (0.10, 0.7)	
Equalizer rod pivot nut	1	5	4.5 (0.5, 3.3)	U-nut
Equalizer bracket cover screw	2	5	4.2 (0.43, 3.1)	
Equalizer bracket cover special screw	1	5	4.2 (0.43, 3.1)	
Rear brake arm bolt	1	6	10 (1.0, 7)	ALOC bolt; replace with a new one.

GENERAL INFORMATION

ELECTRIC STARTER

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Starter motor case screw	3	4	2 (0.20, 1.5)	

LIGHTS/METERS/SWITCHES

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Ignition switch protector socket bolt	1	6	8.5 (0.87, 6.3)	One way bolt; replace with a new one.

OTHERS

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Brake shoe anchor pin nut (When using the stake nut)	1	8	20(2.0, 15)	Stake after tightening.
(When using the normal nut)	1	8	18(1.8, 13)	
Centerstand spring bolt	1	8	22 (2.2, 16)	U-nut
Reflector mounting nut	1	5	1.7 (0.17, 1.3)	
Throttle cable lock nut (Throttle housing side)	1	10	1.5 (0.15, 1.1)	
Left crankcase cover plate screw	3	4	3 (0.31, 2.2)	
Crankcase breather hose joint plate screw	1	4	3 (0.31, 2.2)	

