Introduction

This service manual describes the service procedures for the CBR1000F.

This Model Specific Manual includes every service procedure that is of a specific nature to this particular model. Basic service procedures that are common to other Honda Motorcycle/Motor Scooter/ATVs are covered in the Common Service Manual. This Model Specific Service Manual should be used together with the Common Service Manual in order to provide complete service information on all aspects of this motorcycle.

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

Sections 1 and 3 apply to the whole motorcycle. Section 2 illustrates procedures for removal/installation of components that may be required to perform service described in the following sections.
Sections 4 through 17 describe parts of the motorcycle, 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 describe the service procedure through system illustration. Refer to the next page for detail on how to use this manual.

If you are not familiar with this motorcycle, read Technical Feature in section 19.
If you don't know the source of the trouble, go to section 20 Troubleshooting.

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 whatever. 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 Publications Office

Contents

Date of Issue: December, 1992

Important Safety Notice

⚠ WARNING **Indicates a strong possibility of severe personal injury or death if instructions are not followed.**

CAUTION: **Indicates a possibility of personal injury or equipment damage if instructions are not followed.**

NOTE: Gives helpful information.

Detailed descriptions of standard workshop procedures, safety principles and service operations are not included. It is important to note that this manual contains some warnings and cautions against some specific service methods which could cause PERSONAL INJURY to service personnel or could damage a vehicle or render it unsafe. Please understand that those warnings could not cover all conceivable ways in which service, whether or not recommended by Honda, might be done or of the possibly hazardous consequences of each conceivable way, nor could Honda investigate all such ways. Anyone using service procedures or tools, whether or not recommended by Honda,must satisfy himself thoroughly that neither personal safety nor vehicle safety will be jeopardized by the service method or tools selected.

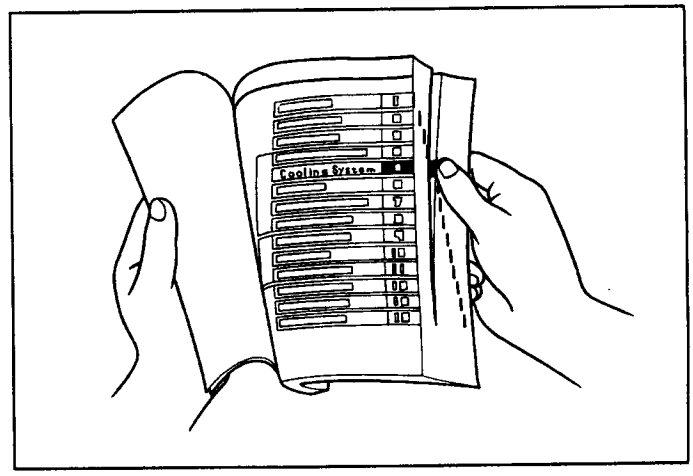
Type Codes

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

Code	Area Type
ED	European direct sales
E	U.K.
F	France
G (GI/GII)	Germany (Full power/Limited power)
U	Australia
ND	North Europe
SW	Switzerland
IT	Italy
H	Netherland
AR	Austria
SP	Spain

How To Use This Manual

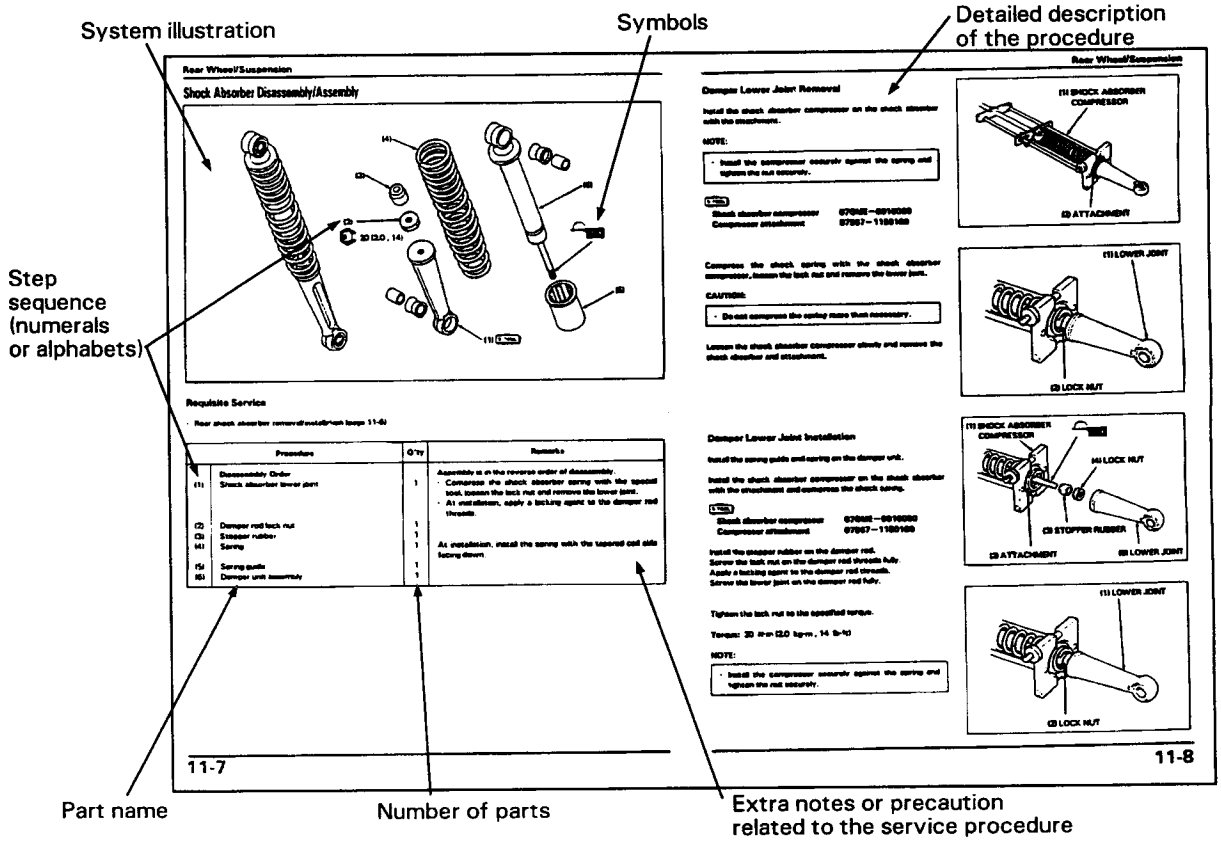
Finding The Information You Need



- This manual is devided into sections which cover each of the major components of the motorcycle.
  To quickly find the section you are interested in, the first page of each sections is marked with a black tab that lines up with one of the thumb index tabs before this page.
  The first page of each section lists the table of contents within the section.
  Read the service information and troubleshooting related to the section before you begin working.
- An index of the entire book is provided in the last chapter to directly locate the information you need.

Note On The Explanation Method Of This Manual

- The removal and installation of parts are for the most part illustrated by large and clear illustrations that should provide the reader with visual aid in understanding the major point for servicing.
- The system illustrations are augmented by call outs whose numbers or letters indicate the order in which the parts should be removed or installed.
- The sequence of steps represented numerically are differentiated from the ones represented alphabetically to notify the reader that they must perform these steps seperately.
  For example, if the steps prior and up to camshaft removal are performed with the engine installed, but the subsequent steps like cylinder head removal require engine removal, the callouts are grouped in numerical and alphabetical orders.
- The illustrations may contain symbols to indicate necessary service procedures and precautions that need to be taken.
  Refer to the next page for the meaning of each symbol.
- Also in the illustration is a chart that lists information such as the order in which the parts is removed/installed, the name of the part, and some extra notes that may needed.
- Step by step instructions are provided to supplement the illustrations when datailed explanation of the procedure is necessary or illustrations alone would not suffice.
- Service procedures required before or after the procedure described on that particular page, or inspection/adjustment procedures required following the installation of parts, are described under the title Requisite Service.
- Standard workshop procedures and knowledge covered in the Common Service Manual are abbreviated in this manual.



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.

	Replace the part (s) with new one (s) before assembly.
	Use special tool.
	Use optional tool. These tools are obtained as you order parts.
 10 (1.0, 7)	Torque specification. 10 N•m (1.0 kg-m, 7 ft-lb)
	Use recommended engine oil, unless otherwise specified.
	Use molybdenum oil solution (mixture of the engine oil and molybdenum grease with the ratio 1 : 1).
	Use multi-purpose grease (Lithium Based multi-purpose grease NLGI #2 or equivalent).
	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
	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
	Use silicone grease.
	Apply a locking agent. Use the agent of the middle strength, unless otherwise specified.
	Apply sealant.
	Use brake fluid DOT 4. Use the recommended brake fluid, unless otherwise specified.
	Use Fork or Suspension Fluid.

1. General Information

General Safety

Carbon Monoxide
If the engine must be running to do some work, make sure the area is well ventilated. Never run the engine in an enclosed area.

⚠ WARNING

- **The exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and may lead to death.**

Run the engine in an open area or with an exhaust evacuation system in an enclosed area.

Gasoline
Work in a well ventilated area. Keep cigarettes, flames or sparks away from the work area or where gasoline is stored.

⚠ WARNING

- **Gasoline is extremely flammable and is explosive under certain conditions. KEEP OUT OF REACH OF CHILDREN.**

Hot Components

⚠ WARNING

- **Engine and exhaust system parts become very hot and remain hot for some time after the engine is run. Wear insulated gloves or wait until the engine and exhaust system have cooled before handling these parts.**

Used Engine/Transmission Oil

⚠ WARNING

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

Brake Dust
Never use an air hose or dry brush to clean brake assemblies.

⚠ WARNING

- **Inhaled asbestos fibers have been found to cause respiratory disease and cancer.**

Brake Fluid

CAUTION

- **Spilling fluid on pained, plastic or rubber parts will damage them. Place a clean shop towel over these parts whenever the system is serviced. KEEP OUT OF REACH OF CHILDREN.**

Coolant

Under some conditions, the ethylene glycol in engine coolant is combustible and its flame is not visible. If the ethylene glycol does ignite, you will not see any flame, but you can be burned.

⚠ WARNING

- **Avoid spilling engine coolant on the exhaust system or engine parts. They may be hot enough to cause the coolant to ignite and burn without a visible flame.**
- **Coolant (ethylene glycol) can cause some skin irritation and is poisonous if swallowed, KEEP OUT OF REACH OF CHILDREN.**
- **Keep out of reach of pets. Some pets are attracted to the smell and taste of coolant and can die if they drink it.**
- **Do not remove the radiator cap when the engine is hot. The coolant is under pressure and could scald you.**

If it contacts your skin, wash the affected areas immediately with soap and water. If it contacts your eyes, flush them thoroughly with fresh water and get immediate medical attention. If it is swallowed, the victim must be forced to vomit then rinse mouth and throat with fresh water before obtaining medical attention. Because of these dangers, always store coolant in a safe place, away from the reach of children. Recycle used coolant in an ecologically correct manner.

Nitrogen Pressure

For shock absorber with a gas-filled reservoir.

⚠ WARNING

- **Use only nitrogen to pressurize the shock absorber. The use of an unstable gas can cause a fire or explosion resulting in serious injury.**
- **The shock absorber contains nitrogen under high pressure. Allowing fire or heat near the shock absorber could lead to and explosion that could result in serious injury.**
- **Failure to release the pressure from a shock absorber before disposing of it may lead to a possible explosion and serious injury if it is heated or pierced.**

To prevent the possibility of an explosion, release the nitrogen by pressing the valve core. Then remove the valve stem from the shock absorber reservoir.

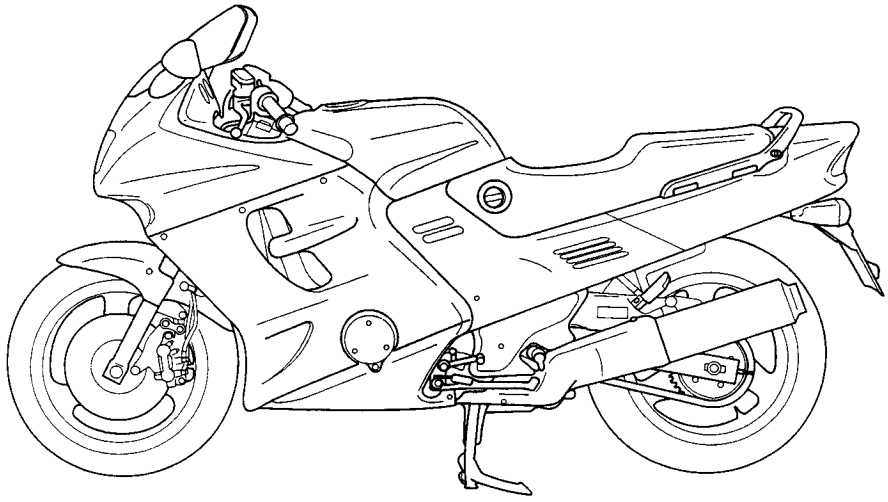
Before disposal of the shock absorber, release the nitrogen by pressing the valve core. Then remove the valve stem from the shock absorber.

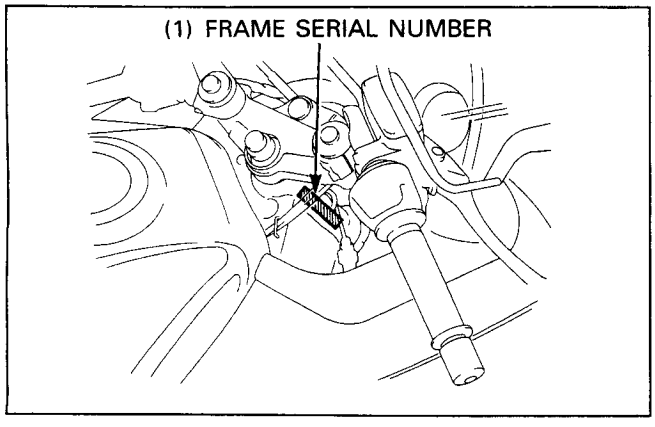
Battery Hydrogen Gas & Electrolyte

⚠ WARNING

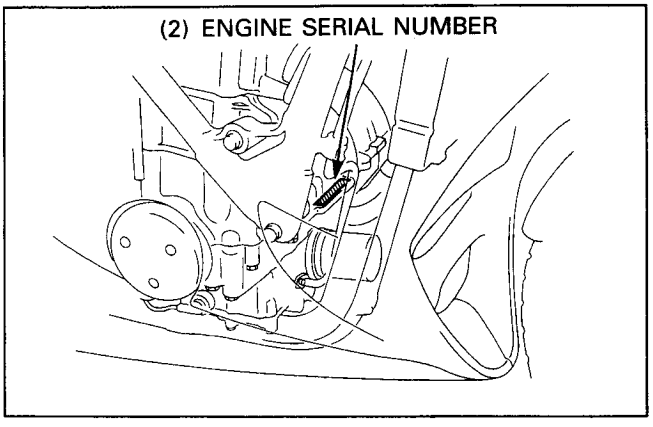
- **The battery gives off explosive gases; keep sparks, flames and cigarettes away. Provide adequate ventilation when charging.**
- **The battery contains sulfuric acid (electrolyte). Contact with skin or eyes may cause severe burns. Wear protective clothing and a face shield.**
  - **If electrolyte gets on your skin, flush with water.**
  - **If electrolyte gets in your eyes, flush with water for at least 15 minutes and call a physician.**
- **Electrolyte is poisonous.**
  - **If swallowed, drink large quantities of water or milk and follow with milk of magnesia or vegetable oil and call a physician. KEEP OUT OF REACH OF CHILDREN.**

Model Identification

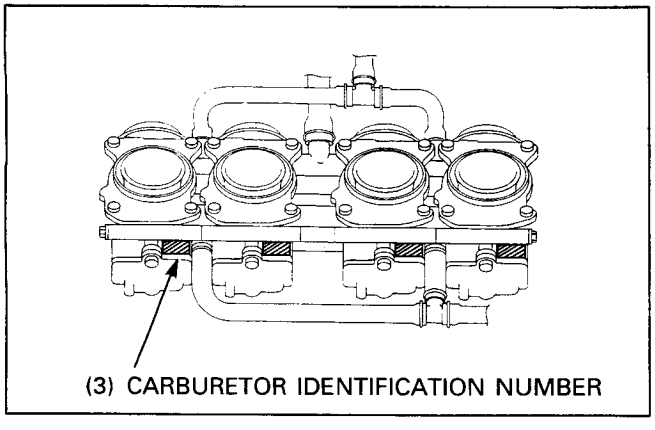




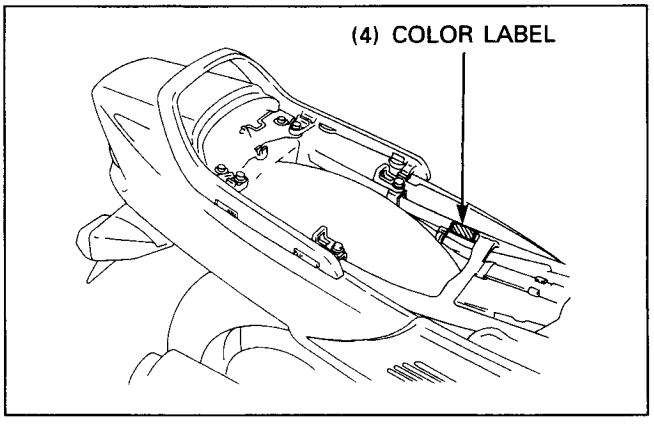
(1) The frame serial number is stamped on the right side of the steering head.



(2) The engine serial number is stamped on the front of the crankcase.



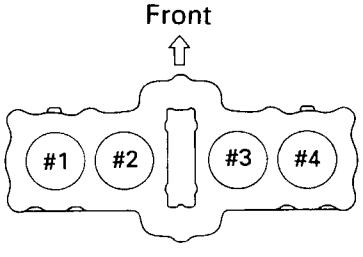
(3) The carburetor identification number is stamped on the rear side of each carburetor.



(4) The color label is attached as shown. When ordering color-coded parts, always specify the designated color code.

Specifications

General

Item		Specifications
Dimensions	Overall length (G, SW, IT, ND type) (ED, E, F, AR, SP, U type) Overall width Overall height Wheel base Seat height Footpeg height Ground clearance Dry weight Curb weight Maximum weight capacity	2,235 mm (88.0 in) 2,270 mm (89.4 in) 740 mm (29.1 in) 1,215 mm (47.8 in) 1,500 mm (59.1 in) 780 mm (30.7 in) 355 mm (14.0 in) 140 mm (5.5 in) 235 kg (518 lbs) 271 kg (597 lbs) 185 kg (408 lbs)
Frame	Frame type Front suspension Front wheel travel Rear suspension Rear wheel travel Rear damper Front tire size Rear tire size Tire brand (Bridgestone) FR/RR Tire brand (Dunlop) FR/RR Front brake Rear brake Caster angle Trail length Fuel tank capacity Fuel tank reserve capacity	Diamond Telescopic fork 130 mm (5.1 in) Swingarm 115 mm (4.5 in) Nitrogen gas filled damper 120/70 VR17–V270 170/60 VR17–V270 CYROX19E/CYROX16E (Except AR type) K510A/K510B Hydraulic double disc brake Hydraulic single disc brake 27° 110 mm (4.3 in) 22 liter (5.81 US gal, 4.84 Imp gal) 3.5 liter (0.91 US gal, 0.77 Imp gal)
Engine	Bore and stroke Displacement Compression ratio Valve train Intake valve opens at 1 mm lift Intake valve closes at 1 mm lift Exhaust valve opens at 1 mm lift Exhaust valve closes at 1mm lift Lubrication system Oil pump type Cooling system Air filtration Crankshaft type Engine weight Firing order Cylinder arrangement Cylinder number  	77.0 x 53.6 mm (3.03 x 2.11 in) 998 cm³ (60.9 cu-in) 10.5 : 1 Chain drive and DOHC 15° BTDC / 38° ABDC / 40° BBDC / 10° ATDC (E, G type) 0° BTDC / 40° ABDC / 40° BBDC / 0° ATDC (SW, AR type) 5° BTDC / 30° ABDC / 40° BBDC / 10° ATDC (F type) Forced pressure and wet sump Trochoid Liquid cooled Paper filter Unit type, 6 main journals 94.7 kg (209 lbs) 1 – 2 – 4 – 3 4 cylinder, inline

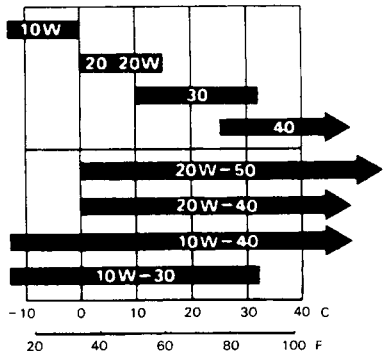
General (Cont'd)

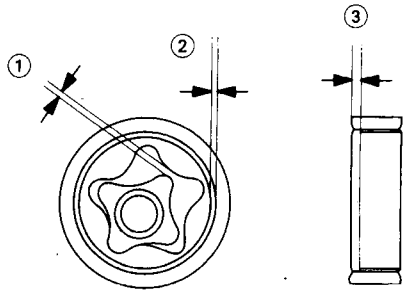
Item		Specifications
Carburetor	Carburetor type Throttle bore	CV (Constant Velocity) type, with flat valve 38 mm (1.5 in)
Drive Train	Clutch system Clutch operation system Transmission Primary reduction Final reduction Gear ratio 1st Gear ratio 2nd Gear ratio 3rd Gear ratio 4th Gear ratio 5th Gear ratio 6th Gearshift pattern	Multi-plate, wet Hydraulic operating 6-speeds constant mesh 1.785 (75/42) 2.470 (42/17) 2.750 (33/12) 2.066 (31/15) 1.647 (28/17) •1.368 (26/19) 1.173 (27/23) 1.045 (23/22) Left foot operated, return system 1 – N – 2 – 3 – 4 – 5 – 6
Electrical	Ignition system Starting system Charging system Regulator/rectifier type Lighting system	Full transistor digital ignition Electric starter motor Triple phase output alternator Transistor opened/triple phase, full-wave rectification Battery

Unit: mm (in)

Lubrication System

Item	Standard	Service Limit
Engine oil capacity at draining	3.6 liter (3.78 US qt, 3.17 Imp qt)	———
at disassembly	4.5 liter (4.76 US qt, 3.96 Imp qt)	———
at oil filter change	3.8 liter (4.02 US qt, 4.43 Imp qt)	———
Recommended engine oil	Use Honda 4-stroke oil or equivalent API Service Classification: SE, SF or SG viscosity: SAE 10W–40 Other viscosities shown in the chart may be used when the average temperature in your riding area is within the indicated range.	———
Oil pressure at oil pressure switch	588–686 kPa (6.0–7.0kg/cm², 85–100 psi) at 5,000 min⁻¹ (rpm) (80°C/176°F)	———
Oil pump rotor tip clearance ①	0.15 (0.006)	0.20 (0.008)
body clearance ②	0.15–0.22 (0.006–0.009)	0.35 (0.014)
end clearance ③	0.02–0.07 (0.001–0.003)	0.10 (0.004)





Fuel System

Carburetor identification number		———
(G type)	VP83A	———
(ED, E, ND, SP, IT, U type)	VP83B	———
(F type)	VP83C	———
(SW type)	VP85A	———
(AR type)	VP85B	———
Main jet	#122	———
Slow jet (ED, E, F, ND, SP, IT, U type)	#42	———
(G, SW, AR type)	#40	———
Pilot screw initial opening (Except SW, AR type)	3 turns out	———
(SW type)	1-3/4 turns out	———
(AR type)	2-5/8 turns out	———
Float level	13.7 (0.54)	———
Carburetor vacuum difference	20 mm Hg (0.8 in Hg)	———
Base carburetor (For carburetor synchronization)	No.3	———
Idle speed (Except SW, AR type)	1,000 ± 100 min⁻¹ (rpm)	———
(SW type)	1,050 ± 50 min⁻¹ (rpm)	———
(AR type)	1,050 ± 100 min⁻¹ (rpm)	———
Throttle grip free play	2–6 (0.08–0.24)	———
Secondary air supply system (SW, AR type)	Reed valves are built into the ASV	———
Air injection control valve vacuum pressure (SW, AR type)	420 mm Hg (16.5 in Hg)	———

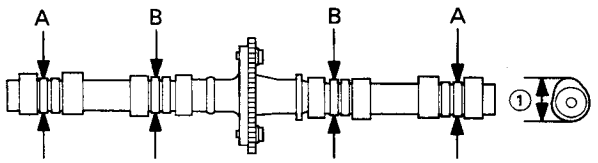
Unit: mm (in)

Cooling System

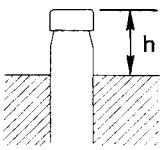
Item	Standard	Service Limit
Coolant capacity (Radiator and engine)	2.6 liter (2.75 US qt, 2.29 Imp qt)	———
(Reserve tank)	0.4 liter (0.42 US qt, 0.35 Imp qt)	———
Radiator cap relief pressure	108–137 kPa (1.1–1.4 kg/cm², 16–20 psi)	———
Thermostat begins to open	80°–84°C (176–183°F)	———
Thermostat fully open	95°C (203°F)	———
Thermostat valve lift	8.0 (0.32) minimun	———

Cylinder Head

Cylinder compression	1,050–1,450 kpa (10.5–14.4 kg/cm², 149–206 psi)/400 min⁻¹ (rpm)	———
Cylinder compression synchronization difference	40 mm Hg	———
Valve clearance IN	0.10 ± 0.02 (0.004 ± 0.001)	———
EX	0.18 ± 0.02 (0.007 ± 0.001)	———
Cylinder head warpage	———	0.07 (0.003)
Cam lobe height ① IN (ED, E, G, ND, SP, IT, U type)	35.668–35.748 (1.4042–1.4074)	35.62 (1.402)
IN (F type)	33.352–33.432 (1.3131–1.3162)	33.30 (1.311)
IN (SW, AR type)	34.907–34.987 (1.3743–1.3774)	34.85 (1.372)
EX (ED, E, G, ND, SP, IT, U type)	35.540–35.620 (1.3992–1.4024)	35.49 (1.397)
EX (F type)	35.540–35.620 (1.3992–1.4024)	35.49 (1.397)
EX (SW, AR type)	34.835–34.915 (1.3715–1.3746)	34.79 (1.370)
Camshaft runout	———	0.03 (0.001)
Camshaft oil clearane A	0.020–0.062 (0.0008–0.0024)	0.12 (0.005)
B	0.050–0.092 (0.0020–0.0036)	0.14 (0.006)



Camshshaft journal O.D A (Except F type)	27.959–27.980 (1.1007–1.1016)	———
A (F type)	27.459–27.480 (1.0811–1.0819)	———
B (Except F type)	27.929–27.950 (1.0996–1.1004)	———
B (F type)	27.421–27.450 (1.0796–1.0807)	———
Valve stem O.D. IN	5.475–5.490 (0.2156–0.2161)	5.47 (0.215)
EX	5.455–5.470 (0.2148–0.2154)	5.45 (0.215)
Valve guide I.D. IN	5.500–5.512 (0.2165–0.2170)	5.55 (0.219)
EX	5.500–5.512 (0.2165–0.2170)	5.55 (0.219)
Stem-to-guide clearance IN	0.010–0.037 (0.0004–0.0015)	———
EX	0.030–0.057 (0.0012–0.0022)	———
Valve guide projection above cylinder head IN	17.8–18.0 (0.70–0.71)	———
EX	17.8–18.0 (0.70–0.71)	———

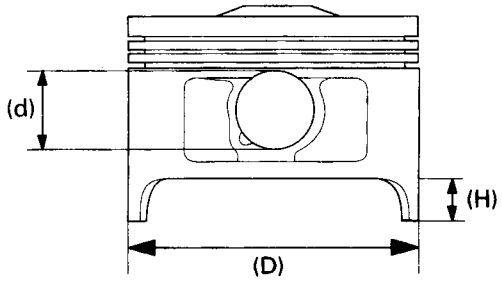


Before guide installation:
1. Chill the valve guides in the freezer section of the refrigerator for about an hour.
2. Heat the cylinder head to 100–150°C (212–300°F)

Valve seat width	0.9–1.1 (0.035–0.043)	1.5 (0.6)
Valve spring free length inner IN	43.15 (1.699)	41.8 (1.65)
inner EX	43.15 (1.699)	41.8 (1.65)
outer IN	47.08 (1.854)	45.7 (1.80)
outer EX	47.08 (1.854)	45.7 (1.80)

Unit: mm (in)

Cylinder/Piston

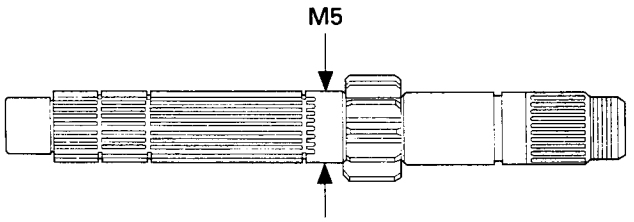
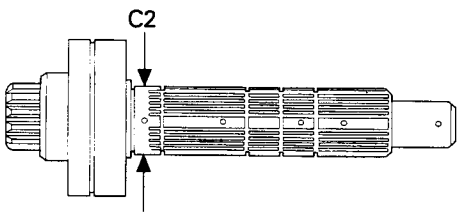
Item	Standard	Service Limit
Cylinder I.D.	77.000–77.010 (3.0315–3.0319)	77.10 (3.305)
Cylinder out of round	———	0.05 (0.002)
Cylinder taper	———	0.05 (0.002)
Cylinder warpage	———	0.05 (0.002)
Piston mark direction	"IN" mark facing toward the intake side	———
Piston O.D. (D)	76.970–76.990 (3.0303–3.0311)	76.87 (3.026)
Piston O.D. measurement point (H)	15 mm (0.6 in) from the bottom	———
Piston pin hole I.D. (d)	20.002–20.008 (0.7875–0.7877)	20.06 (0.790)
		
Cylinder-to-piston clearance	0.010–0.040 (0.0004–0.0016)	0.10 (0.004)
Piston pin O.D.	19.994–20.000 (0.7872–0.7874)	19.98 (0.787)
Piston-to-piston pin clearance	0.002–0.014 (0.0001–0.0006)	0.04 (0.002)
Connecting rod-to piston pin clearance	0.016–0.040 (0.0006–0.0016)	0.06 (0.002)
Top ring-to-ring groove clearance	0.025–0.055 (0.0010–0.0022)	0.09 (0.004)
Second ring-to-ring groove clearance	0.015–0.045 (0.0006–0.0018)	0.10 (0.004)
Top Ring end gap	0.250–0.400 (0.0100–0.0157)	0.58 (0.023)
Second Ring end gap	0.320–0.470 (0.0126–0.0185)	0.65 (0.026)
Oil ring (side rail) end gap	0.300–0.900 (0.0118–0.0354)	1.10 (0.043)
Top ring mark	Marking side facing up	———
Second ring mark	Marking side facing up	———

Clutch System

Recommended clutch fluid	DOT 4 brake fluid	———
Clutch master cylinder I.D.	14.000–14.043 (0.5512–0.5529)	14.06 (0.554)
Clutch master piston O.D.	13.957–13.984 (0.5495–0.5506)	13.94 (0.549)
Clutch outer I.D.	47.005–47.030 (1.8506–1.8516)	47.10 (1.854)
Clutch outer guide I.D.	27.995–28.012 (1.1022–1.1028)	28.08 (1.106)
Mainshaft O. D. at clutch outer guide	27.980–27.993 (1.1016–1.1021)	27.97 (1.101)
Clutch spring free length	46.7 (1.839)	44.7 (1.76)
Clutch disc thickness A	3.42–3.58 (0.135–0.141)	3.1 (0.12)
B	3.72–3.33 (0.146–0.153)	3.1 (0.12)
Clutch plate warpage	———	0.30 (0.012)

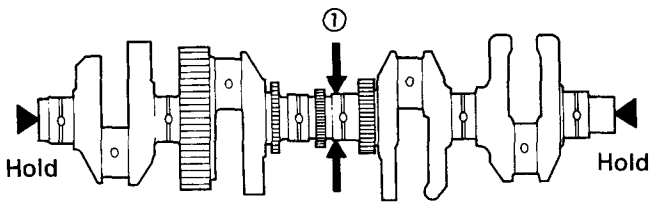
Transmission

Unit: mm (in)

Item	Standard	Service Limit
Transmission gear I.D. M5, M6	31.000–31.016 (1.2205–1.2211)	31.04 (1.222)
C2, C3, C4	33.000–33.016 (1.2992–1.2998)	33.04 (1.301)
Transmission gear bushing O.D. M5, M6	30.955–30.980 (1.2187–1.2197)	30.93 (1.218)
C2, C3, C4	32.955–32.980 (1.2976–1.2984)	32.93 (1.296)
Transmission gear bushing I.D. M5	27.985–28.006 (1.1018–1.1026)	28.02 (1.103)
C2	29.985–30.006 (1.1805–1.1813)	30.02 (1.182)
Gear-to-bushing clearance at M5, M6 gear	0.020–0.061 (0.0008–0.0024)	0.10 (0.004)
at C2, C3, C4 gear	0.020–0.061 (0.0008–0.0024)	0.10 (0.004)
Mainshaft O.D. at M5 gear	27.967–27.980 (0.1011–1.1016)	27.94 (1.100)
		
Countershaft O.D. at C2 gear	29.950–29.975 (1.1791–1.1801)	29.92 (1.178)
		
Gear bushing-to shaft clearance at M5 gear	0.005–0.039 (0.0002–0.0015)	0.06 (0.002)
at C2 gear	0.010–0.056 (0.0004–0.0022)	0.06 (0.002)
Shift fork claw thickness L	5.43–5.50 (0.214–0.217)	5.1 (0.20)
C	6.43–6.50 (0.253–0.256)	6.1 (0.24)
R	5.43–5.50 (0.214–0.217)	5.1 (0.20)
Shift fork I.D. L	14.000–14.018 (0.5112–0.5519)	14.04 (0.553)
C	14.000–14.018 (0.5112–0.5519)	14.04 (0.553)
R	14.000–14.018 (0.5112–0.5519)	14.04 (0.553)
Shift fork shaft O.D. L	13.957–13.968 (0.5495–0.5499)	13.90 (0.547)
C	13.957–13.968 (0.5495–0.5499)	13.90 (0.547)
R	13.957–13.968 (0.5495–0.5499)	13.90 (0.547)

Unit: mm (in)

Crankshaft

Item	Standard	Service Limit
Connecting rod small end I.D.	20.016–20.034 (0.7880–0.7887)	20.08 (0.791)
Connecting rod big end side clearance	0.05–0.20 (0.002–0.008)	0.3 (0.01)
Crankshaft runout ①	———	0.03 (0.001)
		
Crankpin oil clearance	0.028–0.052 (0.0011–0.0020)	0.08 (0.003)
Crankpin bearing selection	See page 10-21	———
Main journal oil clearance	0.021–0.045 (0.008–0.0018)	0.08 (0.003)
Main journal bearing selection	See page 10-20	———

Alternator

Alternator shaft collar spring free height	2.1 (0.08)	1.8 (0.07)

Unit: mm (in)

Wheels/Tires

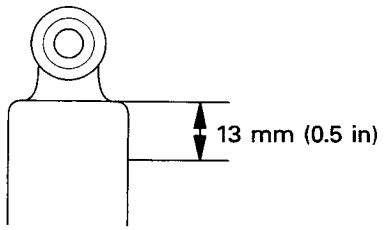
Item	Standard	Service Limit
Minimum tire tread depth (FR)	———	1.5 (0.06)
(RR)	———	2.0 (0.08)
Cold tire pressure Driver only (FR)	250 kPa (2.5 kg/cm², 36 psi)	———
Driver only (RR)	290 kPa (2.9 kg/cm², 42 psi)	———
Driver and passenger (FR)	250 kPa (2.5 kg/cm², 36 psi)	———
Driver and passenger (RR)	290 kPa (2.9 kg/cm², 42 psi)	———
Front and rear axle runout	———	0.2 (0.01)
Front and rear wheel rim runout (Radial)	———	2.0 (0.08)
(Axial)	———	2.0 (0.08)
Wheel balance weight (Front)	———	60 g (2.1 oz)
(Rear)	———	60 g (2.1 oz)
Drive chain slack	15–25 (0.6–1.0)	———
Drive chain size/link (DID)	DID50ZV/114	———
(RK)	RK50LFO/114	———

Front Suspension

Fork spring free length	446.3 (17.57)	437.4 (17.22)
Fork spring direction	Tapered wound coil facing down	———
Fork tube runout	———	0.2 (0.01)
Recommended fork oil	Fork fluid	———
Fork oil level	173 (6.8)	———
Fork oil capacity	418 cm³ (14.1 US oz, 11.8 Imp oz)	———
Steering bearing preload	1.1–1.6 kg (2.43–3.53 lb)	———

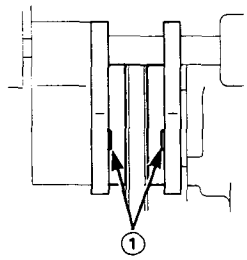
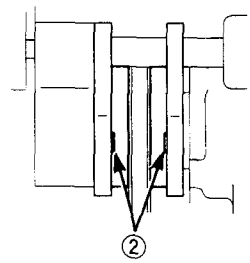
Rear Suspension

Damper compressed gas	Nitrogen	———
Damper drilling point	13 (0.5)	———



Unit: mm (in)

Brakes

Item		Standard	Service Limit
Front	brake fluid	DOT 4	———
	brake pad wear indicator ①	———	To the groove
			
	brake disc thickness	5.0 (0.20)	4.0 (0.16)
	brake disc runout	———	0.30 (0.012)
	master cylinder I.D.	12.700–12.743 (0.5000–0.5017)	12.76 (0.502)
	caliper piston O.D.	12.657–12.684 (0.4983–0.4994)	12.65 (0.498)
	caliper cylinder I.D. (22.6 mm bore)	22.650–22.700 (0.8917–0.8937)	22.710 (0.8941)
	(25.4 mm bore)	25.400–25.450 (1.0000–1.0020)	25.460 (1.0024)
	(27.0 mm bore)	27.000–27.050 (1.0630–1.0650)	27.060 (1.0654)
	caliper piston O.D. (22.6 mm bore)	22.585–22.618 (0.8892–0.8905)	22.560 (0.8882)
	(25.4 mm bore)	25.318–25.368 (0.9968–0.9987)	25.310 (0.9965)
	(27.0 mm bore)	26.916–26.968 (1.0597–1.0617)	26.910 (1.0594)
	Secondary master cylinder I.D.	12.700–12.743 (0.5000–0.5017)	12.76 (0.502)
	Secondary master piston O.D.	12.657– 12.684 (0.4983–0.4994)	12.65 (0.498)
Rear	brake fluid	DOT 4	———
	brake pedal height	75 (3.0)	———
	brake pad wear indicator ②	———	To the groove
			
	brake disc thickness	5.0 (0.20)	4.0 (0.16)
	brake disc runout	———	0.30 (0.012)
	master cylinder I.D.	17.460–17.503 (0.6874–0.6891)	17.515 (0.6896)
	master piston O.D.	17.417–17.444 (0.6857–0.6868)	17.405 (0.6852)
	caliper cylinder I.D. (22.6 mm bore)	22.650–22.700 (0.8917–0.8937)	22.710 (0.8941)
	(25.4 mm bore)	25.400–25.450 (1.0000–1.0020)	25.460 (1.0024)
	(27.0 mm bore)	27.000–27.050 (1.0630–1.0650)	27.060 (1.0654)
	caliper piston O.D. (22.6 mm bore)	22.585–22.618 (0.8892–0.8905)	22.560 (0.8882)
	(25.4 mm bore)	25.318–25.368 (0.9968–0.9987)	25.310 (0.9965)
	(27.0 mm bore)	26.916–26.968 (1.0597–1.0617)	26.910 (1.0594)

Battery/Charging System

Alternator/charging coil resistance (At 20°C/68°F)	0~1.0Ω	———
Alternator field coil resistance (At 20°C/68°F)	0~4.0Ω	———
Regulator/rectifier regulated voltage	12.6–15.0V/5,000 min^{-1} (rpm)	———
Battery capacity	12V–14Ah	———
Specified current leakage	0.1 mA max.	———
Battery specific gravity (Fully charging)	1.270–1.290	———
(Needs charging)	Below 1.260	———

Ignition System

Item	Standard	Service Limit
Spark plug (Standard : NGK)	DPR9EA-9	———
(Standard : NIPPONDENSO)	X27EPR-U9	———
Spark plug gap	0.8–0.9 mm (0.03–0.04 in)	———
Ignition timing "F"mark (Except SW, type)	10° BTDC/1,000 min^{-1} (rpm)	———
(SW, type)	5° BTDC/1,000 min^{-1} (rpm)	———
Full advance (Except G, F, SW, AR type)	40° BTDC/5,000 min^{-1} (rpm)	———
(G. F, SW, AR type)	37° BTDC/9,500 min^{-1} (rpm)	———
Ignition coil resistance (Primary: at 20°C/68°F)	2.5–3.2Ω	———
(Secondary with plug cap)	21–27kΩ	———
(Secondary without plug cap)	11–17kΩ	———
Pulse generator resistance (At 20°C/68°F)	460–580Ω	———

Starting System

Starter motor brush length	12.0–13.0 mm (0.47–0.51 in)	6.5mm (0.26 in)

Lights/Meters/Switches

Main fuse	30A	———
Fuse (Except G type)	10A x 5, 20A x 1	———
(G type)	10A x 6, 20A x 1	———
Headlight (High/low beam; E type)	12V–60/55W x 2	———
(High/low beam; Except E, IT, U, type)	12V–60/55W x 1, 12V60W x 1	———
(High/low beam; IT type)	12V–60/55W x 1	———
(High/low beam; U type)	12V–45/45W x 2	———
Tail/brake light	12V–5/21W x 2	———
Position light (Except U type)	12V–5W	———
Front turn signal light	12V–21W x 2	———
Rear turn signal light	12V–21W x 2	———
Instrument light	12V–1.7W x 4	———
Oil pressure warning indicator	12V–3.4W	———
Side stand warning indicator	12V–3.4W	———
High beam indicator	12V–3.4W	———
Turn signal indicator	12V–3.4W x 2	———
Neutral indicator	12V–3.4W	———
Fuel unit resistance (At full level)	10Ω	———
(At low level)	90Ω	———
Coolant temperature sensor resistance (50°C/122°F)	130–180Ω	———
(80°C/176°F)	45–60Ω	———
(120°C/248°F)	10–20Ω	———
Fan motor switch start to close (ON)	98–102°C (208–216°F)	———
stop opening	93–97°C (199–207°F)	———

Torque Values

Standard

Fasteners Type	Torque N • m (kg-m, ft-lb)	Fasteners Type	Torque N • m (kg-m, ft-lb)
5 mm hex bolt and nut	5 (0.5, 3.6)	5 mm screw	4 (0.4, 2.9)
6 mm hex bolt and nut	10 (1.0, 7)	6 mm screw	9 (0.9, 6.5)
8 mm hex bolt and nut	22 (2.2, 16)	6 mm flange bolt (8 mm head)	9 (0.9, 6.5)
10 mm hex bolt and nut	35 (3.5, 25)	6 mm flange bolt (10 mm head) and nut	12 (1.2, 9)
12 mm hex bolt and nut	55 (5.5, 40)	8 mm flange bolt and nut	27 (2.7, 20)
		10 mm flange bolt and nut	40 (4.0, 29)

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

Notes: 1. Apply sealant to the threads.
2. Apply a locking agent to the threads.
3. Apply molybdenum disulfide oil to the threads and flange surface.
4. Stake.
5. Apply oil to the threads and flange surface.
6. Apply clean engine oil to the O-ring.
7. Apply grease to the threads and flange surface.
8. UBS bolt.
9. U-nut.
10. ALOC bolt.

Engine

Item	Q'ty	Thread dia. (mm)	Torque N • m (kg-m, ft-lb)	Remarks
Maintenance:				
Timing hole cap	1	45	18 (1.8, 13)	Note 7
Spark plug	4	12	15 (1.5, 11)	
Lubrication System:				
Oil filter boss	1	20	18 (1.8, 13)	Note 2
Oil filter cartridge	1	20	10 (1.0, 7)	Note 5
Oil drain plug	1	14	30 (3.0, 22)	
Oil pass plate	3	6	12 (1.2, 9)	Note 2
Oil pipe C special bolt	2	6	12 (1.2, 9)	Note 2
Oil pump driven sprocket bolt	1	6	15 (1.5, 11)	Note 2
Oil pump assembly flange bolt	3	6	13 (1.3, 9)	
Oil pressure switch	1	PT 1/8	12 (1.2, 9)	Note 1
Oil pressure switch connector bolt	1	4	2.2 (0.22, 1.6)	
Fuel System:				
Carburetor connecting nut, 6 mm	2	6	10 (1.0, 7)	
5 mm	2	5	5.2 (0.52, 3.8)	
Cooling System:				
Water pump flange bolt	2	6	13 (1.3, 9)	
Water pipe D flange bolt	2	6	13 (1.3, 9)	

Engine (Cont'd)

Item	Q'ty	Thread dia. (mm)	Torque N • m (kg-m, ft-lb)	Remarks
Cylinder Head/Valves:				
Cylinder head flange cap nut	4	10	45 (4.5, 33)	Note 5
Cylinder head flange nut	8	10	45 (4.5, 33)	Note 5
Cylinder head socket bolt	4	8	26 (2.6, 19)	
Cylinder head sealing bolt	1	18	32 (3.2, 23)	Note 2
Vacuum port socket bolt	1	5	3 (0.30, 2.2)	
Camshaft holder flange bolt	16	6	14 (1.4, 10)	
Cylinder head cover bolt	8	6	10 (1.0, 7)	
Boost joint	3	5	2.5 (0.25, 1.8)	
Cam sprocket bolt	4	7	20 (2.0, 14)	Note 2, 8
Valve adjuster screw lock nut	16	7	23 (2.3, 17)	Note 5
Cam chain tensioner bracket bolt	4	6	14 (1.4, 10)	
Rocker arm guide bolt	16	6	12 (1.2, 9)	Note 8
Clutch /Gearshift Linkage:				
Clutch center lock nut	1	25	128 (12.8, 93)	Note 5
Clutch spring bolt	5	6	12 (1.2, 9)	
Clutch slave cylinder bleeder screw	1	8	8 (0.8, 5.8)	
Shift fork shaft stopper plate bolt	2	6	12 (1.2, 9)	Note 2
Shift drum center bolt	1	8	23 (2.3, 17)	Note 2
Gearshift spindle return spring pin	1	8	22 (2.2, 16)	
Drive sprocket special bolt	1	10	54 (5.4, 39)	
Clutch slave cylinder oil bolt	1	10	35 (3.5, 25)	
Crankshaft/Transmission:				
Crankcase main journal bolt	12	9	37 (37, 27)	Note 8
Crankcase flange bolt	10	1	39 (3.9, 28)	
	8	17	24 (2.4, 17)	
Crankcase sealing bolt	20	1	30 (3.0, 22)	
	10	1	12 (1.2, 9)	
Connecting rod nut	8	8	35 (3.5, 25)	Note 5
Balancer shaft holder flange bolt	1	6	12 (1.2, 9)	
Charging System/Alternator:				
Alternator base flange bolt	3	8	25 (2.5, 18)	Note 1
Alternator assembly flange socket bolt	3	6	8 (0.8, 5.8)	Note 2
Alternator shaft flange nut	1	12	49 (4.9, 35)	Note 5
Ignition System:				
Pulse generator rotor flange bolt	1	10	49 (4.9, 35)	Note 2
Lights/Meters/Switches:				
Neutral switch	1	10	12 (1.2, 9)	
Neutral switch terminal nut	1	4	2.2 (0.22, 1.6)	
Other:				
General torque: SH flange bolt	–	6	10 (1.0, 7)	
SHF flange bolt	–	6	12 (1.2, 9)	

Frame

Item	Q'ty	Thread dia. (mm)	Torque N • m (kg-m, ft-lb)	Remarks
Frame/Body Panels/Exhaust System:				
Exhaust pipe joint nut	8	7	17 (1.7, 12)	
Muffler band bolt	4	8	22 (2.2, 16)	
Muffler stay flange nut	3	8	22 (2.2, 16)	
Step holder bolt	4	8	33 (3.3, 24)	
Center stand bolt	1	10	50 (5.0, 36)	
Side stand pivot bolt	1	10	8 (0.8, 5.8)	
Side stand pivot lock nut	1	10	40 (4.0, 29)	Note 9
Side stand bracket bolt	3	10	65 (6.5, 47)	
Grub rail mounting bolt	4	8	35 (3.5, 2.5)	
Lubrication System:				
Oil cooler pipe joint	4	6	9 (0.9, 6.5)	
Fuel System:				
Fuel valve	1	6	10 (1.0, 7)	
Fuel tank cap	7	4	3 (0.30, 2.2)	
Fuel unit	4	6	10 (1.0, 7)	Note 9
Fuel tank mounting bolt	2	6	10 (1.0, 7)	
Fuel tank pivot nut	1	6	10 (1.0, 7)	Note 9
Cooling System:				
Fan motor switch	1	16	18 (1.8, 13)	Note 1
Water hose joint	1	6	9 (0.9, 6.5)	
Water hose band			1.0-1.5 (0.10-0.15, 0.7-1.1)	
Engine Mounting:				
Front engine hanger bolt/nut (Upper)	2	10	45 (4.5, 33)	
Front engine hanger bolt/nut (Lower)	2	10	45 (4.5, 33)	
Rear engine hanger bolt/nut (Upper)	1	12	55 (5.5, 40)	
Rear engine hanger bolt/nut (Lower)	1	12	55 (5.5, 40)	
Engine hanger adjusting bolt	1	20	8 (0.8, 5.8)	
Engine hanger adjusting bolt lock nut	1	20	25 (2.5, 18)	
Clutch/Gearshift Linkage:				
Clutch master cylinder holder bolt	2	6	12 (1.2, 9)	
Clutch master cylinder cap screw	2	4	1.5 (0.15, 1.1)	
Clutch lever pivot bolt	1	6	0.8 (0.08, 0.6)	
Clutch lever pivot nut	1	6	5.9 (0.59, 4.3)	
Clutch switch screw	1	4	1.2 (0.12, 0.8)	
Gearshift pedal arm pinch bolt	1	6	16 (1.6, 12)	
Gearshift pedal arm pivot bolt	1	8	27 (2.7, 20)	
Wheels:				
Front axle bolt	1	14	59 (5.9, 43)	
Front axle holder bolt	4	8	22 (2.2, 16)	
Front brake disc bolt	12	8	42 (4.2, 30)	Note 10
Rear axle nut	1	18	93 (9.3, 67)	
Rear brake disc bolt	6	8	42 (4.2, 30)	Note 10
Driven sprocket nut	5	12	110 (11.0, 78)	Note 9
Front Suspension:				
Steering stem nut	1	24	103 (10.3, 96)	
Top thread A	1	26	25 (2.5, 18)	See page 11-18
Top thread B	1	26	—	
Top bridge pinch bolt	2	8	23 (2.3, 17)	
Bottom bridge pinch bolt	2	10	49 (4.9, 35)	
Handlebar pivot pinch bolt	2	8	27 (2.7, 20)	
Handlebar weight mounting screw	2	6	10 (1.0, 7)	