

Introduction

This service manual describes the service procedures for and technical feature of the VFR400R.

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 Motorcycles/Motor Scooters/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.

Section 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.

While Section 4 through 19 describe parts of the motorcycle, grouped according to locations.

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 details on how to use this manual.

If you are not familiar with this motorcycle, read Technical Feature in section 20.

If you don't know the source of the trouble, go to section 21 TROUBLESHOOTING.

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SERVICE PUBLICATION OFFICE

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Important Safety Notice

⚠ WARNING

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

CAUTION:

Indicates a possibility of 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 methods or tools selected.

Type Codes

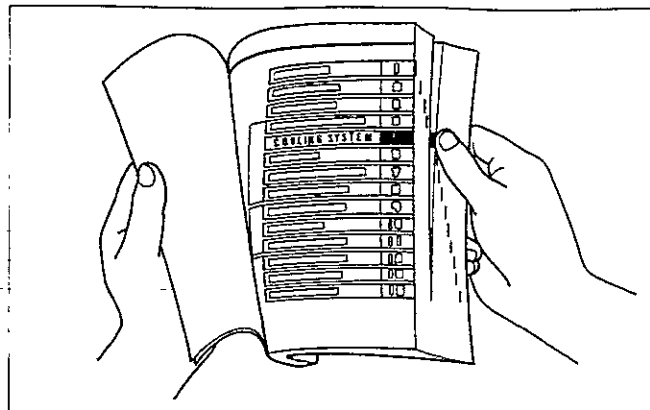
- Throughout this manual, the following abbreviations are used to identify individual model.

Code	Area Type
E	U.K.
AR	Austrie
F (M Model only)	France
G (M Model only)	Germany

How to Use This Manual

Finding Information You Need

- This manual is divided 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 section 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 callouts 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 separately. 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 symbol marks to indicate necessary service procedures and precautions that need to be taken. REfer to the next page for the meaning of each symbol mark.
- Also in the illustration is a chart that lists information such as the order in which the part is removed/installed, the name of the part, and some extra notes that may be needed.
- Step by step instructions are provided to supplement the illustrations when detailed 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.

Symbol mark

System illustration

Detailed description of the procedure

Step sequence (numerals or alphabets)

Part number

Number of parts

Extra notes or precaution related to the service procedure

CYLINDER HEAD/CYLINDER/PISTON

CYLINDER HEAD REMOVAL/INSTALLATION

REQUISITE SERVICE

Engine removal/installation (page 7-2)

Camshaft removal/installation (page 8-2)

REMOVAL ORDER	QTY	REMARKS
(1) Cylinder head mounting nut	12	Installation is in the reverse order of removal. Installation (page 8-5)
(2) Cylinder head mounting bolt	2	
(3) Cylinder head assembly	1	
(4) Gasket	1	
(5) Dowel pin	2	
(6) Camshaft side gear case bolt	2	
(7) Camshaft side gear case dowel pin	2	
(8) Sealing washer	1	
(9) Camshaft side gear case	1	
(10) Camshaft insulator	1	

All installation, align the insulator groove with the engine lug, with the Q UP mark facing upwards (distributor side).

CAMSHAFT SIDE GEAR CASE INSTALLATION

Install the camshaft side gear case dowel pin properly.

NOTE

Without the dowel pin installed properly, the camshaft side gear may not be able to be installed onto the crankshaft timing gear.

Install the camshaft side gear case onto the cylinder. While moving the side gear timing with the gear case held, the gear case should be fitted up slightly from the cylinder.

Install a new sealing washer and mounting bolt. Tighten bolts in a gradual, as shown.

CYLINDER HEAD NUT/BOLT INSTALLATION

Insert the cylinder head mounting nuts as shown. Do not tighten them yet.

Insert the cylinder head mounting bolts. Tighten the special nuts and mounting bolts in a gradual, crosswise pattern.

TORQUE















Special nut: 38 ft-lb (5.0 kg-m, 22 N-m)
Mounting bolt: 12 ft-lb (1.2 kg-m, 9 N-m)

8-4

8-5

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, 7.2)	Torque specification. 10 N·m (1.0 kg-m, 7.2 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 45 (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 3 or DOT 4. Use the recommended brake fluid, unless otherwise specified.
	Use Fork or Suspension Fluid.

1. General Information

1

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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 (or transmission oil in two-strokes) 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 painted, 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.**
- Do not remove the radiator cap when the engine is hot. The coolant is under pressure and could scald you.
- Keep hands and clothing away from the cooling fan, as it starts automatically.

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.

Nitrogen Pressure

For shock absorbers 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 an 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.

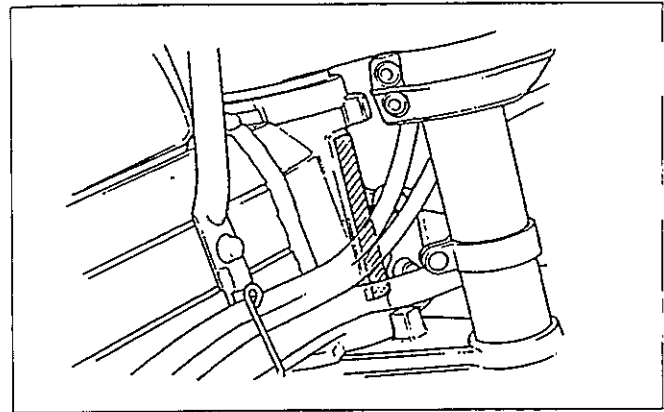
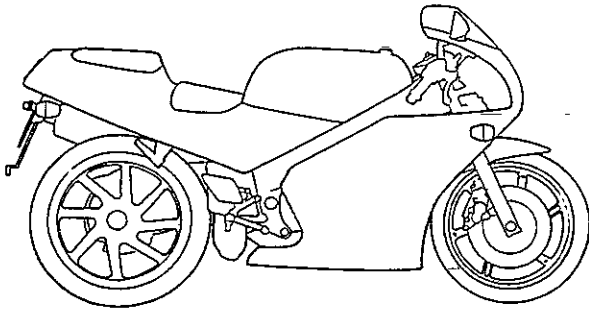
Before disposal of the shock absorber, release the nitrogen by pressing the valve core. Then remove the valve stem from the shock absorber.

Battery Hydrogen Gas & Electrolyte

⚠ WARNING

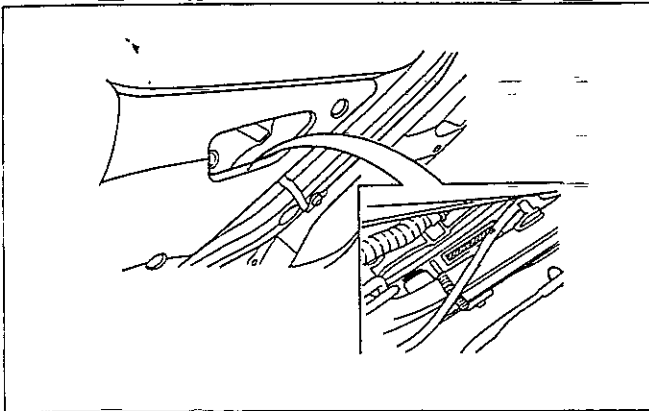
- The battery gives off explosive gases; keep sparks, flames and cigarettes away. Provide adequate ventilation when charging.
- The battery contains sulfuric acid (electrolyte). Contact with skin or eyes may cause severe burns. Wear protective clothing and a face shield.
 - If electrolyte gets on your 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



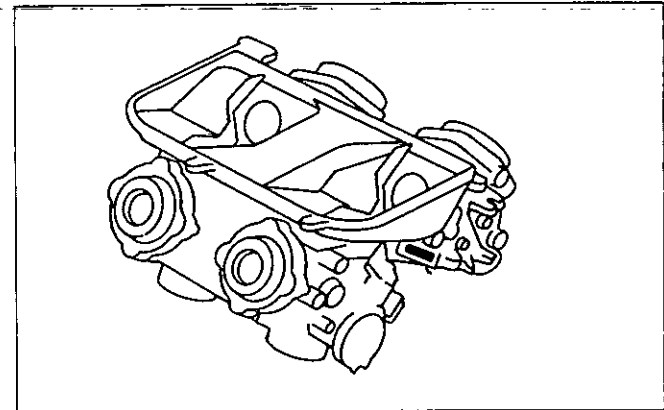
(1) FRAME SERIAL NUMBER

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



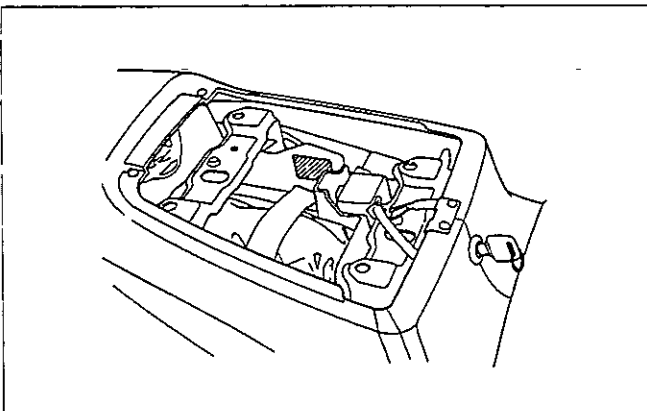
(2) ENGINE SERIAL NUMBER

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



(3) CARBURETOR IDENTIFICATION NUMBER

The carburetor identification number is stamped on the carburetor body intake side.

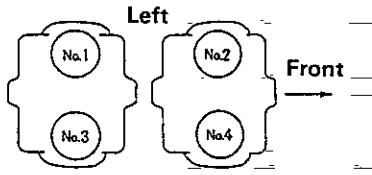


(4) COLOR CODE LABEL

The color code label is attached to the rear fender below the rear seat. When ordering color-coded part, always specify its designated color.

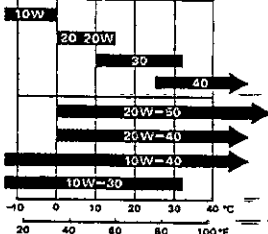
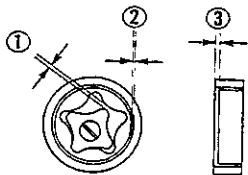
Specifications

Unit: mm (in)

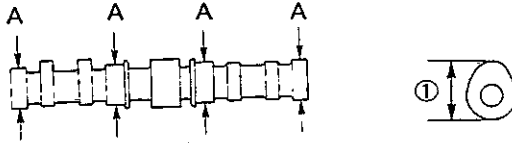
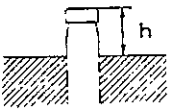
General		
	Item	Specifications
Dimensions	Overall length	1,985 (78.1)
	Overall length (M Model only)	2,035 (80.1), G: 2,070 (81.5)
	Overall width	705 (27.8)
	Overall height	1,075 (42.3)
	Wheelbase	1,345 (53.0)
	Ground clearance	125 (4.9)
	Dry weight	175 kg (385.8 lb)
	Dry weight (M Model only)	176 kg (388.1 lb)
	Curb weight	192 kg (423.3 lb)
	Maximum weight capacity	347 kg (765.0 lb)
	Maximum weight capacity (M Model only)	342 kg (754.0 lb)
Frame	Frame type	Backbone
	Front suspension	Telescopic fork
	Front wheel travel	120 (4.7)
	Rear suspension	Swingarm
	Rear wheel travel	120 (4.7)
	Rear damper	Gas-filled damper with reservoir
	Front tire size	120/60 VR17
	Rear tire size	150/60 VR18
	Tire brand (Bridgestone) FR/RR	—
	Tire brand (Dunlop) FR/RR	K510A RADIAL/K510 RADIAL
	Tire brand (Yokohama) FR/RR	—
	Tire brand (IRC) — EB/RR	—
	Front brake	Hydraulic double disc
	Rear brake	Hydraulic single disc
	Caster angle	25°20'
Engine	Trail length	96 (3.8)
	Fuel tank capacity	15 liters (4.0 US gal, 3.5 Imp gal)
	Fuel tank reserve capacity	2.0 liters (0.5 US gal, 0.4 Imp gal)
	Bore and stroke	55.0 x 42.0 (2.16 x 1.65)
	Displacement	399 cm ³ (24.3 cu in)
	Compression ratio	11.3 : 1
	Valve train	Gear driven DOHC, 4 valves per cylinder
	Intake valve opens at 1 mm lift	15° BTDC
	Intake valve closes at 1 mm lift	35° ABDC
	Exhaust valve opens at 1 mm lift	35° BBDC
	Exhaust valve closes at 1 mm lift	5° ATDC
	Lubrication system	Forced pressure and wet sump
	Oil pump type	Trockoid
	Cooling system	Liquid cooled
	Air filtration	Paper filter
	Crankshaft type	Unit-type, 4 main journals
	Firing order	1 — 90° — 4 — 270° — 3 — 90° — 2
	Cylinder arrangement	4 cylinders 90°V
	Cylinder number	
		

Unit: mm (in)

General (Cont'd)		
	Item	Specifications
Carburetor	Carburetor type Throttle bore	Constant velocity, 4 carburetors 32 (1.3)
Drive Train	Clutch system Clutch operation system Transmission Primary reduction Secondary reduction Third reduction Final reduction Gear ratio 1st Gear ratio 2nd Gear ratio 3rd Gear ratio 4th Gear ratio 5th Gear ratio 6th Gear ratio reverse Gearshift pattern	Multi-plate, wet Cable operated 6 speeds 2.117 (34/72) _____ 2.666 (15/40) 2.928 (14/41) 2.166 (18/39) 1.800 (20/36) 1.591 (22/35) 1.435 (23/33) 1.318 (22/29) _____ Left foot operated return system 1—N—2—3—4—5—6
Electrical	Ignition system Starting system Charging system Regulator/rectifier type Lighting system AC regulator type	Digitalized full transistor ignition Electric starter motor Triple phase output alternator SCR Shorted/triple phase full-wave rectification Battery _____

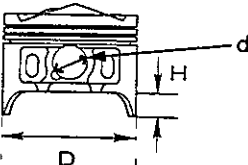
Lubrication		Unit: mm (in)	
Item	Standard	Service Limit	
Engine oil capacity at draining at disassembly at oil filter change Recommended engine oil	2.4 liters (2.54 US qt, 2.11 Imp qt) 3.0 liters (3.17 US qt, 2.64 Imp qt) 2.5 liters (2.64 US qt, 2.20 Imp qt) Use Honda 4-stroke oil or equivalent Viscosity: SAE 10W-40	<div></div> <div></div> <div></div>	
OIL VISCOSITIES 	Other viscosity 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	490-588 kPa (5.0-6.0 kg/cm ² , 71-85 psi) at 5,000 rpm (80°C/176°F)	<div></div>	
Oil pump rotor tip clearance ① body clearance ② end clearance ③	0.15 (0.006) 0.15-0.22 (0.006-0.009) 0.04-0.09 (0.0016-0.0035)	<div></div> <div></div> <div></div>	
			
Fuel System			
Carburetor identification number	VDE 3A (E), VDE 3C (AR)	<div></div>	
Carburetor identification number (M Model only)	VDE 3F (E, F) VDE 3G (AR) VDE 3H (G)	<div></div> <div></div> <div></div>	
Main jet		<div></div>	
(High altitude)		<div></div>	
(2, 3)		<div></div>	
(1, 4)		<div></div>	
(Front)	#122	<div></div>	
(Rear)	#120	<div></div>	
Slow jet	#35	<div></div>	
Jet needle clip position		<div></div>	
Pilot screw initial opening	2 turns out	<div></div>	
Pilot screw high altitude adjustment		<div></div>	
Pilot screw final opening	1/4 turns out	<div></div>	
Pilot screw final opening (M Model only)	1 turns out (E, F) 1/2 turns out (AR, G)	<div></div> <div></div>	
Air screw initial opening		<div></div>	
Air screw high altitude adjustment		<div></div>	
Float level	6.8 (0.28)	<div></div>	
Carburetor Vacuum difference	Within 40 mmHg (1.6 inHg)	<div></div>	
Base carburetor (For carburetor synchronization)	No. 2 carburetor	<div></div>	
Idle speed	1,300 ± 100 min ⁻¹ (rpm)	<div></div>	
Throttle grip free play	2-6 (0.08-0.24)	<div></div>	
Accelerator pump clearance		<div></div>	

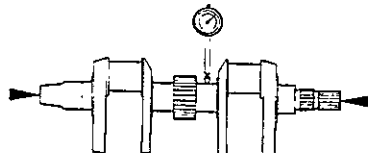
Unit: mm (in)

Cylinder Head		Standard	Service Limit
Cylinder compression		1,274 ± 196 kPa (13.0 ± 2.0 kg/cm ² , 185 ± 28 psi)/400 min ⁻¹ (rpm)	—
Cylinder compression difference		40 mmHg (1.6 inHg)	—
Valve clearance IN		0.12–0.18 (0.005–0.007)	—
EX		0.21–0.27 (0.008–0.011)	—
Cylinder head warpage		—	0.10 (0.004)
Com lobe height ① IN		32.717–32.957 (1.2882–1.2975)	32.67 (1.286)
EX		32.428–32.668 (1.2767–1.2861)	32.38 (1.275)
Camshaft runout		—	0.03 (0.001)
Camshaft oil clearance A		0.040–0.082 (0.0016–0.0032)	0.092 (0.0036)
B		—	—
			
Camshaft journal O.D. A		27.939–27.960 (1.1000–1.1008)	27.93 (1.010)
B		—	—
Camshaft holder I.D. A		28.000–28.021 (1.1024–1.1032)	28.03 (1.104)
B		—	—
Valve stem O.D. IN		4.475–4.490 (0.1762–0.1788)	4.47 (0.176)
EX		4.465–4.480 (0.1758–0.1764)	0.46 (0.1756)
Valve guide I.D. IN		4.500–4.512 (0.1772–0.1776)	4.56 (0.180)
EX		4.500–4.512 (0.1772–0.1776)	4.56 (0.180)
Stem-to-guide clearance IN		0.010–0.037 (0.0004–0.0015)	0.09 (0.004)
EX		0.020–0.047 (0.0008–0.0019)	0.12 (0.005)
Valve guide projection above cylinder head IN (h)		10 (0.4)	—
EX (h)		10 (0.4)	—
 <p>Before guide installation:</p> <ol style="list-style-type: none"> 1. Chill the valve guide in the freezer section of a refrigerator for about an hour. 2. Heat the cylinder head to 100–150°C (212–300°F) 			
Valve seat width IN		1.70–2.30 (0.067–0.091)	—
EX		1.70–2.30 (0.067–0.091)	—
Valve spring free length IN		—	—
EX		—	—
Inner IN		31.4 (1.24)	30.2 (1.19)
Inner EX		31.4 (1.24)	30.2 (1.19)
Outer IN		34.4 (1.35)	33.2 (1.31)
Outer EX		34.4 (1.35)	33.2 (1.31)
Rocker arm I.D. IN		8.500–8.515 (0.3346–0.3352)	8.53 (0.336)
EX		8.500–8.515 (0.3346–0.3352)	8.53 (0.336)
Rocker arm shaft O.D. IN		8.466–8.484 (0.3333–0.3340)	8.46 (0.333)
EX		8.466–8.484 (0.3333–0.3340)	8.46 (0.333)
Rocker arm-to-rocker arm shaft clearance		—	—
Valve lifter O.D.		—	—
Valve lifter bore I.D.		—	—
Hydraulic tappet adjuster assist spring free length		—	—
Hydraulic tappet adjuster compression stroke with kerosene		—	—

General information

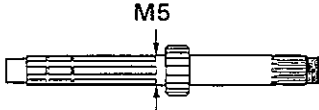
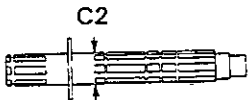
Unit: mm (in)

Cylinder/Piston	Item	Standard	Service Limit
	Cylinder I.D.	55.000—55.015 (2.1654—2.1659)	55.07 (2.168)
	Cylinder out of round	—	0.10 (0.004)
	Cylinder taper	—	0.10 (0.004)
	Cylinder warpage	—	0.10 (0.004)
	Piston mark direction	"IN" mark facing toward the intake side	—
	Piston O.D. (D)	54.970—54.990 (2.1642—2.1650)	54.92 (2.168)
	Piston O.D. measurement point (H)	10 (0.4)	—
	Piston pin hole I.D. (d)	14.002—14.008 (0.5513—0.5515)	14.02 (0.552)
	Cylinder-to-piston clearance	0.010—0.045 (0.0004—0.0018)	0.10 (0.004)
	Piston pin O.D.	13.994—14.000 (0.5509—0.5512)	13.98 (0.550)
	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	0.015—0.050 (0.0006—0.0020)	0.10 (0.004)
	Second ring-to-ring groove clearance	0.015—0.045 (0.0006—0.0018)	0.10 (0.004)
	Top ring end gap	0.18—0.33 (0.007—0.013)	0.65 (0.026)
	Second ring end gap	0.18—0.33 (0.007—0.013)	0.65 (0.026)
	Oil ring (side rail) end gap	0.20—0.80 (0.008—0.031)	0.95 (0.037)
	Top ring mark	"R" mark facing up	—
	Second ring mark	"S" mark facing up	—

Crankshaft	Item	Standard	Service Limit
	Connecting rod small end I.D.	14.016—14.034 (0.5518—0.5525)	14.05 (0.553)
	Connecting rod big end side clearance	0.10—0.30 (0.004—0.012)	0.4 (0.02)
	radial clearance	—	—
	Crankshaft runout	—	0.03 (0.001)
	Crankpin oil clearance	0.028—0.052 (0.0011—0.0020)	0.07 (0.003)
	Crankpin bearing selection	See page 11-10	—
	Main journal oil clearance	0.025—0.049 (0.0010—0.0019)	0.07 (0.003)
	Main journal bearing selection	See page 11-10	—

Kickstarter	Item	Standard	Service Limit
	Kickstarter pinion gear I.D.	—	—
	Kickstarter spindle O.D.	—	—
	Kickstarter idle gear I.D.	—	—
	Countershaft O.D. at kickstarter idle gear	—	—
	Kickstarter idle gear bushing O.D.	—	—
	I.D.	—	—

Unit: mm (in)

Transmission	Item	Standard	Service Limit
	Transmission gear I.D. M5, M6	28.000—28.021 (1.1024—1.1032)	28.04 (1.104)
	C2, C3, C4	28.000—28.021 (1.1024—1.1032)	28.04 (1.104)
	Transmission gear bushing O.D. M5, M6	27.959—27.980 (1.1007—1.1016)	27.94 (1.100)
	C2, C3, C4	27.959—27.980 (1.1007—1.1016)	27.94 (1.100)
	Transmission gear bushing I.D. M5	24.985—25.006 (0.9837—0.9845)	25.03 (0.985)
	C2	24.985—25.006 (0.9837—0.9845)	25.03 (0.985)
	Gear-to-bushing clearance at M5, M6 gear	0.020—0.062 (0.0008—0.0024)	0.10 (0.004)
	at C2, C3, C4 gear	0.020—0.062 (0.0008—0.0024)	0.10 (0.004)
	Mainshaft O.D. at M5 gear bushing	24.967—24.978 (0.9830—0.9834)	24.96 (0.983)
	Countershaft O.D. at C2 gear bushing	24.967—24.978 (0.9830—0.9834)	24.96 (0.983)
	Gear-to-shaft clearance	0.007—0.039 (0.0003—0.0015)	0.06 (0.002)
	Gear bushing-to-shaft clearance at M5 gear	0.007—0.039 (0.0003—0.0015)	0.06 (0.002)
	at C2 gear		
	Shift fork clew thickness L	5.93—6.00 (0.233—0.236)	5.8 (0.23)
	C	5.93—6.00 (0.233—0.236)	5.8 (0.23)
	R	5.93—6.00 (0.233—0.236)	5.8 (0.23)
	Shift fork I.D. L	12.000—12.021 (0.4724—0.4733)	12.04 (0.474)
	C	12.000—12.021 (0.4724—0.4733)	12.04 (0.474)
	R	12.000—12.021 (0.4724—0.4733)	12.04 (0.474)
	Shift fork shaft O.D. L	11.969—11.980 (0.4712—0.4717)	11.95 (0.470)
	C	11.969—11.980 (0.4712—0.4717)	11.95 (0.470)
	R	11.969—11.980 (0.4712—0.4717)	11.95 (0.470)

General information

Unit: mm (in)

Clutch System		
Item	Standard	Service Limit
Clutch lever free play	10—20 (0.4—0.8)	—
Recommended clutch fluid	—	—
Clutch master cylinder I.D.	—	—
Clutch master piston O.D.	—	—
Clutch outer I.D.	29.000—29.021 (1.1417—1.1426)	29.06 (1.144)
Clutch outer guide O.D.	28.967—28.980 (1.1404—1.1409)	28.93 (1.139)
I.D.	21.995—22.015 (0.8659—0.8667)	22.05 (0.868)
Mainshaft O.D. at clutch outer guide	—	—
Oil pump drive sprocket I.D.	29.025—29.075 (1.1427—1.1447)	29.11 (1.146)
Clutch center B I.D.	63.964—63.990 (2.5183—2.5193)	64.00 (2.520)
One way clutch inner O.D.	47.365—47.378 (1.8648—1.8653)	47.36 (1.8646)
Clutch spring free height (As a set of 3pcs.)	5.3 (0.21)	4.8 (0.19)
Clutch spring free length	—	—
Clutch disc thickness	2.92—3.08 (0.115—0.121)	2.8 (0.110)
Clutch disc thickness A	—	—
B	—	—
Clutch plate warpage	—	0.30 (0.012)
Centrifugal clutch drum I.D.	—	—
bushing O.D.	—	—
Centrifugal clutch center guide I.D.	—	—
O.D.	—	—
Centrifugal clutch center guide collar height	—	—
Centrifugal clutch spring free length	—	—
Clutch lining thickness	—	—
Crankshaft O.D. at clutch center	—	—

Cooling System		
Coolant capacity (Radiator and engine)	2.1 liters (2.22 US qt, 1.85 Imp qt)	—
M Model	2.0 liters (2.11 US qt, 1.76 Imp qt)	—
(Reserve tank)	0.2 liter (0.21 US qt, 0.18 Imp qt)	—
Radiator cap relief pressure	108—137 kPa	—
	(1.10—1.40 kg/cm ² , 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 (0.23) min.	—

Drive Train		
Recommended final drive oil	—	—
Final drive gear oil capacity at disassembly	—	—
at draining	—	—
Final drive gear backlash	—	—
Final drive gear backlash difference between measurements	—	—
Ring gear-to-stop pin clearance (A)	—	—
Stop pin shim	—	—
Ring gear spacer	—	—
Pinion spacer	—	—
Final drive gear assembly preload	—	—
Output gear backlash	—	—
Output gear I.D.	—	—
Output gear bushing O.D.	—	—
I.D.	—	—
Output drive shaft O.D.	—	—
Output gear damper spring free length	—	—
Output shaft adjustment shim	—	—
Countershaft drive shaft adjustment shim	—	—

Unit: mm (in)

Wheels/Tires

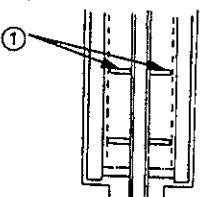
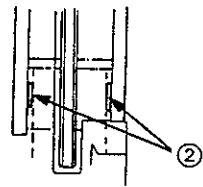
Item	Standard	Service Limit
Minimum tire tread depth (FR)	—	1.5 (0.06)
(RR)	—	2.0 (0.08)
Cold tire pressure Driver only (FR)	225 kPa (2.25 kg/cm ² , 33 psi)	—
Driver only (RR)	225 kPa (2.25 kg/cm ² , 33 psi)	—
Driver and passenger (FR)	225 kPa (2.25 kg/cm ² , 33 psi)	—
Driver and passenger (RR)	250 kPa (2.50 kg/cm ² , 36 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)
Front wheel hub-to-rim distance	—	—
Front wheel hub standard surface	—	—
Rear wheel hub-to-rim distance	—	—
Rear wheel hub standard surface	—	—
Wheel balance weight (Front)	—	60 g (2.1 oz) max.
(Rear)	—	60 g (2.1 oz) max.
Drive chain slack	15–25 (5/8–1)	—
Drive chain size link (DID)	—	—
(RK)	RK GB525SM4/104	—

Front Suspension

Fork spring free length	277.3 (10.92)	271.8 (10.70)
Fork spring free length A	—	—
B	—	—
Fork spring direction	Tightly wound coil end facing down	—
Fork tube runout	—	0.20 (0.008)
Recommended fork oil	Fork fluid	—
Fork oil level	122 mm (4.8 in)	—
Fork oil level (R)	—	—
(L)	—	—
Fork oil capacity	390 cc (13.2 US oz, 13.7 Imp oz)	—
Fork oil capacity (M Model only)	404 cc (13.7 US oz, 14.2 Imp oz)	—
Fork oil capacity (R)	—	—
(L)	—	—
Fork air pressure	—	—
Steering bearing preload	1.0–1.5 kg (2.2–3.3 lb)	—

Rear Suspension

Shock absorber spring free length	158.7 (6.2 in)	155.5 (6.12)
Shock absorber spring free length (R)	—	—
(L)	—	—
Damper gas pressure	98 kPa (10 kg/cm ² , 142 psi)	—
Damper compressed gas	Nitrogen	—
Damper rod compressed force at 10 mm compressed	15–20 kg (33–44 lb)	—
Damper drilling point	See page 13–13	—
Shock absorber spring installed length	—	—
(Standard)	147.7 (5.81)	—
(Adjustable range)	—	—
Shock absorber spring adjuster standard position	—	—
Shock absorber spring direction	—	—
Recommended shock absorber oil	—	—
Shock absorber oil capacity	—	—
air pressure	—	—

Brakes		
Item	Standard	Service Limit
Front brake fluid	DOT 4	—
Brake lever free play	—	—
Brake pad wear indicator	—	—
		To the groove 1
brake disc thickness	4 (0.16)	3.5 (0.14)
brake disc runout	—	0.30 (0.012)
master cylinder I.D.	14.000—14.043 (0.5512—0.5529)	14.06 (0.554)
master piston O.D.	13.957—13.984 (0.5495—0.5506)	13.95 (0.549)
caliper cylinder I.D.	—	—
caliper cylinder I.D. (Upper)	30.230—30.280 (1.1902—1.1921)	30.29 (1.193)
(Lower)	25.400—25.450 (1.0000—1.0020)	25.46 (1.0024)
caliper piston O.D.	—	—
caliper piston O.D. (Upper)	30.148—30.198 (1.1869—1.1889)	30.14 (1.1866)
(Lower)	25.318—25.368 (0.9968—0.9987)	25.31 (0.9965)
brake drum I.D.	—	—
brake lining thickness	—	—
Rear brake fluid	DOT 4	—
brake pedal height	—	—
brake pedal free play	—	—
brake pad wear indicator	—	—
		To the groove 2
brake disc thickness	6.0 (0.24)	5.0 (0.20)
brake disc runout	—	0.30 (0.012)
master cylinder I.D.	14.000—14.043 (0.5512—0.5529)	14.06 (0.554)
master piston O.D.	13.957—13.984 (0.5495—0.5506)	13.95 (0.549)
caliper cylinder I.D.	25.400—25.450 (1.0000—1.0020)	25.46 (1.0024)
caliper piston O.D.	25.318—25.368 (0.9968—0.9987)	25.31 (0.996)
brake drum I.D.	—	—
brake lining thickness	—	—

Battery/Charging System		
Alternator charging coil resistance (At 20°C/68°F)	0.1—1.0 Ω	—
Regulator/rectifier regulated voltage/amperage	13.5—15.5 V/0—6 A at 5,000 min ⁻¹ (rpm)	—
Battery capacity	12V — 6AH (Maintenance Free battery: YTX7A—BS)	—
Specified current leakage	—	1 mA max.
Battery specific gravity (Fully charged)	—	—
(Needs charging)	—	—
Battery charging rate (Normal)	0.7 A/5—10 hr.	—
(Quick)	3.0 A/1 hr.	—
Battery voltage (Fully charged at 20°C/68°F)	13.0—13.2 V	—
(Needs charging at 20°C/68°F)	12.3 V	—
Alternator lighting coil resistance (At 20°C/68°F)	—	—
AC regulator regulated voltage (With analogue type)	—	—
(With digital type)	—	—

Unit: mm (in)

Ignition System		
Item	Standard	Service limit
Spark plug (Standard NGK)	ER9EH	—
(Standard ND)	Y27FER	—
(For cold climate/below 5°C/41°F NGK)	ER8EH	—
(For cold climate/below 5°C/41°F ND)	Y24FER	—
(For extended high speed riding NGK)	ER10EH	—
(For extended high speed riding ND)	Y31FER	—
Spark plug gap	0.6—0.7 (0.024—0.028)	—
Ignition timing "F" mark	18° BTDC at 1,200 min ⁻¹ (rpm)	—
Advance starts	1,800 ± 200 min ⁻¹ (rpm)	—
stops	12,000 ± 200 min ⁻¹ (rpm)	—
Fully advance	37 ± 2° BTDC at 12,000 min ⁻¹ (rpm)	—
Alternator exciter coil resistance (At 20°C/68°F)	—	—
Ignition coil resistance (Primary: at 20°C/68°F)	2.5—3.5 Ω	—
(Secondary with plug cap)	14—25 kΩ	—
(Secondary without plug cap)	11—14 kΩ	—
Pulse generator resistance (At 20°C/68°F)	450—550 Ω	—

Lights/Meters/Switches		
Main fuse	30 A	—
Fuse	20A x 1, 10A x 3	—
Headlight (high/low beam)	12 V 60/50 W x 2 (H4)	—
Tail/brake light	12 V 5/21 W x 2	—
License light	12 V 5 W	—
Position light	12 V 5 W (E, AR), 12 V 4 W (F, G)	—
Front turn signal/running light	—	—
Front turn signal light	12 V 21 W	—
Rear turn signal light	12 V 21 W	—
Instrument light	12 V 1.7 W x 5	—
Oil pressure warning indicator	12 V 1.7 W	—
Tail/brake light warning indicator	—	—
Side stand warning indicator	—	—
Low fuel indicator	—	—
Coolant temperature indicator	—	—
Oil temperature indicator	—	—
High beam indicator	12 V 1.7 W	—
Turn signal indicator	12 V 1.7 W	—
Neutral indicator	12 V 1.7 W	—
Reverse indicator	—	—
Overdrive indicator	—	—
Oil temperature sensor resistance	—	—
Fuel unit resistance (At full level)	—	—
(At empty)	—	—
Fuel pump flow capacity (min./minute)	—	—
Thermo sensor resistance (50°C/122°F)	130—180 Ω	—
(80°C/176°F)	45—60 Ω	—
(120°C/248°F)	10—20 Ω	—
Fan motor switch Starts to close (ON)	98—102°C (208—216°F)	—
Stops to open (OFF)	93—97°C (199—207°F)	—

Starting System		
Starter driven gear O.D.	41.975—42.000 (1.6526—1.6535)	41.96 (1.652)
Starter reduction gear shaft O.D.	9.994—10.000 (0.3935—0.3937)	9.90 (0.390)
Starter reduction gear I.D.	10.070—10.110 (0.3965—0.3980)	10.16 (0.400)
Starter motor brush length	12—13 (0.47—0.51)	6.5 (0.26)

Torque Values

Standard Fasteners Type	Torque	Fasteners Type	Torque
	N·m (kg-m, ft-lb)		N·m (kg-m, ft-lb)
5 mm hex bolt and nut	5 (0.5, 3.5)	5 mm screw	4 (0.4, 3)
6 mm hex bolt and nut	10 (1.0, 7.2)	6 mm screw	9 (0.9, 7)
8 mm hex bolt and nut	22 (2.2, 16)	6 mm flange bolt (8 mm head)	9 (0.9, 7)
10 mm hex bolt and nut	35 (3.5, 25)	6mm 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 locking agent to the threads.
 2. Apply oil to the threads and flange surface.
 3. Apply molybdenum disulfide oil to the threads and flange surface.
 4. Apply sealant to the threads.
 5. Stake.
 6. Apply clean engine oil to the O-ring.
 7. UBS bolt.
 8. Self-locking nut.
 9. Never apply molybdenum disulfide oil.

Engine		Q'ty	Thread dia. (mm)	Torque N·m (kg-m, ft-lb)	Remarks
Item					
Lubrication:					
Oil pump driven sprocket bolt	—	1	6	15 (1.5, 11)	Note 1
Oil pump mounting bolt		3	6	12 (1.2, 9)	
Oil pump cover bolt		3	6	12 (1.2, 9)	
Oil filter		1	20	10 (1.0, 7)	Note 6
Oil drain bolt		1	12	38 (3.8, 27)	
Oil pressure switch	—	1	PT1/8	12 (1.2, 9)	Note 4
Fuel system:					
Carburetor insulator band screw		8	4	1 (0.1, 0.7)	
Cooling system:					
Water pump mounting bolt		2	6	10 (1.0, 7)	
Water pump cover bolt		2	6	10 (1.0, 7)	Note 4
Thermo sensor		1	PT1/8	10 (1.0, 7)	Note 4
Cylinder head/cylinder/piston:					
Cam gear case mounting bolt		8	8	36 (3.6, 26)	Note 2
Cam gear case set bolt		2	6	12 (1.2, 9)	
Cylinder head cover bolt		8	6	10 (1.0, 7)	
Camshaft holder bolt		32	6	12 (1.2, 9)	
Rocker arm shaft plug		8	PT1/8	8 (0.8, 6)	Note 4
Cylinder head special bolt, 8 mm		16	8	36 (3.6, 26)	Note 2
Cylinder head bolt, 6 mm		6	6	12 (1.2, 9)	
Spark plug		4	8	9 (0.9, 7)	
Clutch/gearshift linkage:					
Right crankcase cover		12	6	10 (1.0, 7)	
Clutch lock nut		1	20	85 (8.5, 61)	Note 5
Gearshift return spring stud pin		1	8	23 (2.3, 17)	
Shift drum center bolt		1	6	23 (2.3, 17)	Note 1
Shift drum set plate bolt		2	6	12 (1.2, 9)	Note 1
Shift fork shaft set bolt		1	6	12 (1.2, 9)	Note 1
Timing hole cap		1	45	18 (1.8, 13)	Note 3

Engine (Cont'd)		Q'ty	Thread dia. (mm)	Torque N·m (kg-m, ft-lb)	Remarks
Crankcase/crankshaft/transmission:					
Drive sprocket bolt		1	10	55 (5.5, 40)	Note 2, 9
Neutral switch		1	10	12 (1.2, 9)	
Connecting rod bearing cap nut		8	7	24 (2.4, 17)	
Crankcase bolt 6 mm		12	6	12 (1.2, 9)	
8 mm		11	8	23 (2.3, 17)	
10 mm		1	10	40 (4.0, 29)	
Lower case oil bolt		1	10	23 (2.3, 17)	
Alternator:					
Flywheel bolt		1	10	85 (8.5, 61)	Note 7
Starter clutch:					
Primary drive gear bolt (starter clutch bolt)		1	10	85 (8.5, 61)	Note 7
Starter clutch cover bolt		3	8	28 (2.8, 20)	Note 1

Frame					
Frame/body panels:					
Main step holder bolt		4	8	27 (2.7, 20)	Note 1
Main step bolt		2	10	45 (4.5, 33)	
Pillion step bracket bolt		4	8	27 (2.7, 20)	Note 1
Sub-frame mounting bolt		4	10	27 (2.7, 20)	
Side stand pivot bolt		1	10	38 (3.8, 27)	
Side stand bracket bolt		2	8	35 (3.5, 25)	
Exhaust system:					
Exhaust pipe joint nut		8	6	8 (0.8, 6)	
Cooling system:					
Fan motor switch		1	16	23 (2.3, 17)	Note 4
Fuel system:					
Fuel tank breather check valve		1	18	11 (1.1, 1.8)	Note 1
Fuel valve		1	18	23 (2.3, 17)	
Engine mount:					
Engine mounting bolt		7	10	40 (4.0, 29)	
Engine mounting adjust bolt		2	22	11 (1.1, 8)	Note 2
Engine mounting lock nut		2	22	55 (5.5, 40)	
Engine mounting nut		1	10	40 (4.0, 29)	
Gearshift pedal bolt		1	6	12 (1.2, 9)	
Front suspension:					
Handlebar holder pinch bolt		4	6	12 (1.2, 9)	Note 1
Ignition switch mounting bolt		2	8	25 (2.5, 18)	
Fork socket bolt		2	8	20 (2.0, 14)	Note 1
Fork bolt		2	37	23 (2.3, 17)	
Upper fork pinch bolt		2	7	11 (1.1, 8)	Note 2
Lower fork pinch bolt		2	10	40 (4.0, 29)	
Steering bearing adjustment nut		1	35	50 (5.0, 36)	
Steering stem nut		1	33	140 (14.0, 101)	
Front axle pinch bolt		4	8	22 (2.2, 16)	Note 2
Front axle bolt		1	14	60 (6.0, 43)	

General Information

Frame (Cont'd)				
Item	Q'ty	Thread dia. (mm)	Torque N·m (kg-m, ft-lb)	Remarks
Rear suspension:				
Rear wheel nut	1	18	120 (12.0, 87)	Note 5
Rear axle holder lock nut	1	38	165 (16.5, 119)	
Swingarm pivot nut	1	18	95 (9.5, 69)	
Swingarm pivot adjust bolt	1	30	15 (1.5, 11)	
Swingarm pivot lock nut	1	30	80 (8.0, 58)	
Drive chain slider screw	4	5	4 (0.4, 2.9)	Note 8
Driven sprocket nut	6	8	35 (3.5, 25)	
Torque link bolt/nut	2	10	35 (3.5, 25)	
Rear shock absorber mounting bolt	2	10	45 (4.5, 33)	
Rear shock absorber spring adjuster lock nut	1	—	90 (9.0, 65)	
Rear shock absorber reservoir holder band	2	—	4 (0.4, 2.9)	Note 8
Shock linkage bolt/nut	3	10	45 (4.5, 33)	
Rear bearing holder pinch bolt	1	14	55 (5.5, 40)	Note 1
Drive pin bolt	4	12	15 (1.5, 11)	
Brake/clutch system:				
Master cylinder mounting bolt	4	6	12 (1.2, 9)	Note 1
Master cylinder oil bolt	2	10	35 (3.5, 25)	
Front caliper bolt	8	8	33 (3.3, 24)	
Front caliper oil bolt	2	10	35 (3.5, 25)	
Front brake disc bolt	12	6	20 (2.0, 14)	
Caliper mounting bolt	6	8	27 (2.7, 20)	Note 1
Caliper pad pin	3	10	17 (1.7, 12)	
Caliper pad pin plug	3	10	2.5 (0.25, 1.8)	
Caliper bleed valve	3	8	6 (0.6, 4.3)	
Rear brake reservoir mounting bolt	1	6	9 (0.9, 7)	
Rear brake reservoir hose joint screw	1	5	1.5 (0.15, 1.1)	Note 1
Rear caliper pivot pin bolt (5 mm HEX side)	1	8	13 (1.3, 9)	Note 1
Rear caliper pivot pin bolt	1	8	23 (2.3, 17)	Note 1
Rear brake hose joint nut (hose side)	1	10	14 (1.4, 10)	Note 8
Rear brake hose joint (caliper side)	1	10	35 (3.5, 25)	
Rear brake disc nut	4	8	35 (3.5, 25)	

Tools

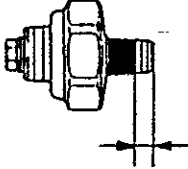
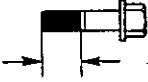
- The newly designed tools are indicated with * mark in the list.

Description	Tool Number	Application	Section
Compression gauge attachment, 8 mm Oil pressure gauge attachment Oil filter wrench Spark plug wrench, 8 mm	*07KME-MR80100 07510-4220100 07HAA-PJ70100 *07KMA-MR80200	Cylinder compression measurement Engine oil pressure measurement Oil filter replacement Spark plug removal/installation	3
Lock nut wrench	07HMA-MR70200	Engine removal/installation	7
Valve spring compressor attachment Valve guide driver Valve guide reamer, 4.5 mm Valve seat cutter, 24 mm (45° IN) Valve seat cutter, 22 mm (45° EX) Valve flat cutter, 24 mm (32° IN) Valve flat cutter, 21.5 mm (32° EX) Valve interior cutter, 22 mm (60° IN/EX) Cutter holder, 4.5 mm	07959-KM30101 07HMD-ML00100 07HMH-ML00101 07780-0010600 07780-0010701 07780-0012500 07780-0012800 07780-0014202 07781-0010600	Cylinder head disassembly/assembly Valve guide replacement Valve guide reaming Valve seat refacing	8
Lock nut wrench, 26 × 30 mm Extension bar Gear holder	07716-0020203 07716-0020500 07724-0010100	Clutch disassembly/assembly Primary drive gear removal/installation	9
Fork seal driver Fork seal driver attachment Lock nut wrench, 39 × 41 mm Steering stem socket Steering stem driver attachment Inner driver C Driver attachment B (2 pcs. required) Driver assembly shaft Bearing remover B Assembly base	07947-KA50100 07947-KF00100 07GMA-KS40100 07HMA-MR70100 07HMD-MR70100 07746-0030100 07946-KM90200 07946-KM90300 07946-KM90500 07946-KM90600	Fork oil seal installation Steering stem nut removal/installation Steering bearing adjustment nut tightening Steering bearing lower inner race installation Steering bearing outer race removal/installation	12
Driver Attachment, 42 × 47 mm Attachment, 62 × 68 mm Pilot, 40 mm Shock absorber compressor attachment Shock absorber compressor Bushing driver B Pivot adjust wrench Driver shaft Attachment, 37 × 40 mm Pilot, 20 mm Bearing remover set - Remover handle - Bearing remover - Sliding weight Needle bearing remover Driver shaft Pilot, 28 mm	07749-0010000 07746-0010300 07746-0010500 07746-0040900 07959-MB10000 07GME-0010000 07HMF-MM90200 07908-4690001 07946-MJ00100 07746-0010200 07746-0040500 07936-3710001 07936-3710100 07936-3710600 07741-0010201 07HMC-MR70100 07946-MJ00100 07746-0041100	Bearing installation Bearing holder needle bearing replacement Shock absorber disassembly/assembly Shock absorber upper mounting bushing replacement Swingarm pivot bolt removal/installation Right swingarm pivot bearing installation Right swingarm pivot bearing removal Left swingarm pivot bearing replacement	13

General Information

Description	Tool Number	Application	Section
Pin driver assembly	07GMD-KT80100	Shock arm needle bearing removal	13
Bearing remover	07936-3710300	Shock link needle bearing removal	
Remover handle	07936-0710100		
Sliding weight	07741-0010201		
Driver	07749-0010000	Shock arm and link needle bearing	
Attachment, 24 x 26 mm	07746-0010700	installation	
Pilot, 17 mm	07746-0040400		
Snap ring pliers	07914-3230001	Brake master cylinder disassembly/ assembly	14
Peak voltage adaptor	07HGJ-0020100	Peak voltage measurement	16
Digital multimeter	07411-0020000		
Universal holder	07725-0030000	Flywheel removal/installation	17
Rotor puller	07733-0020001		

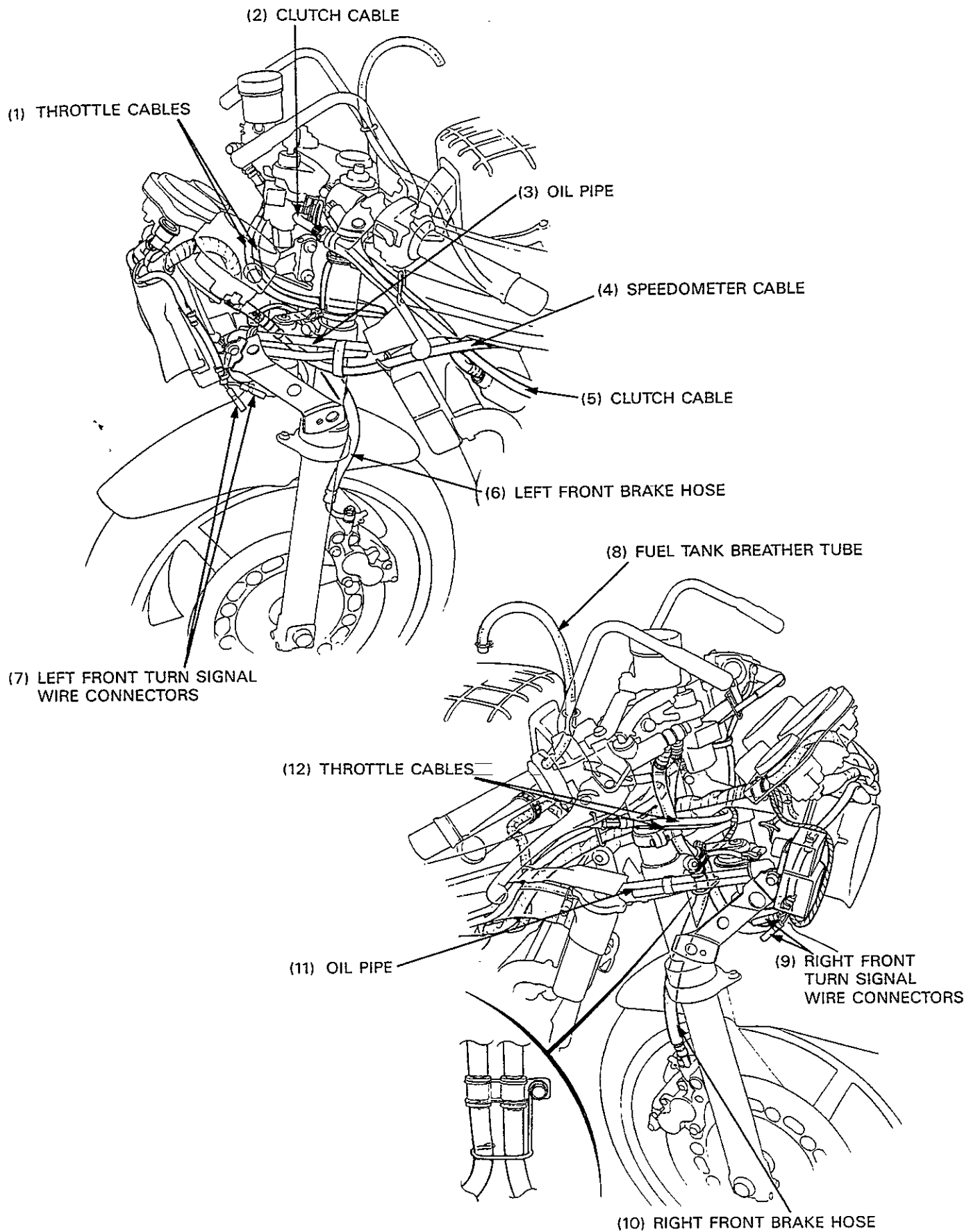
Lubrication & Seal Points

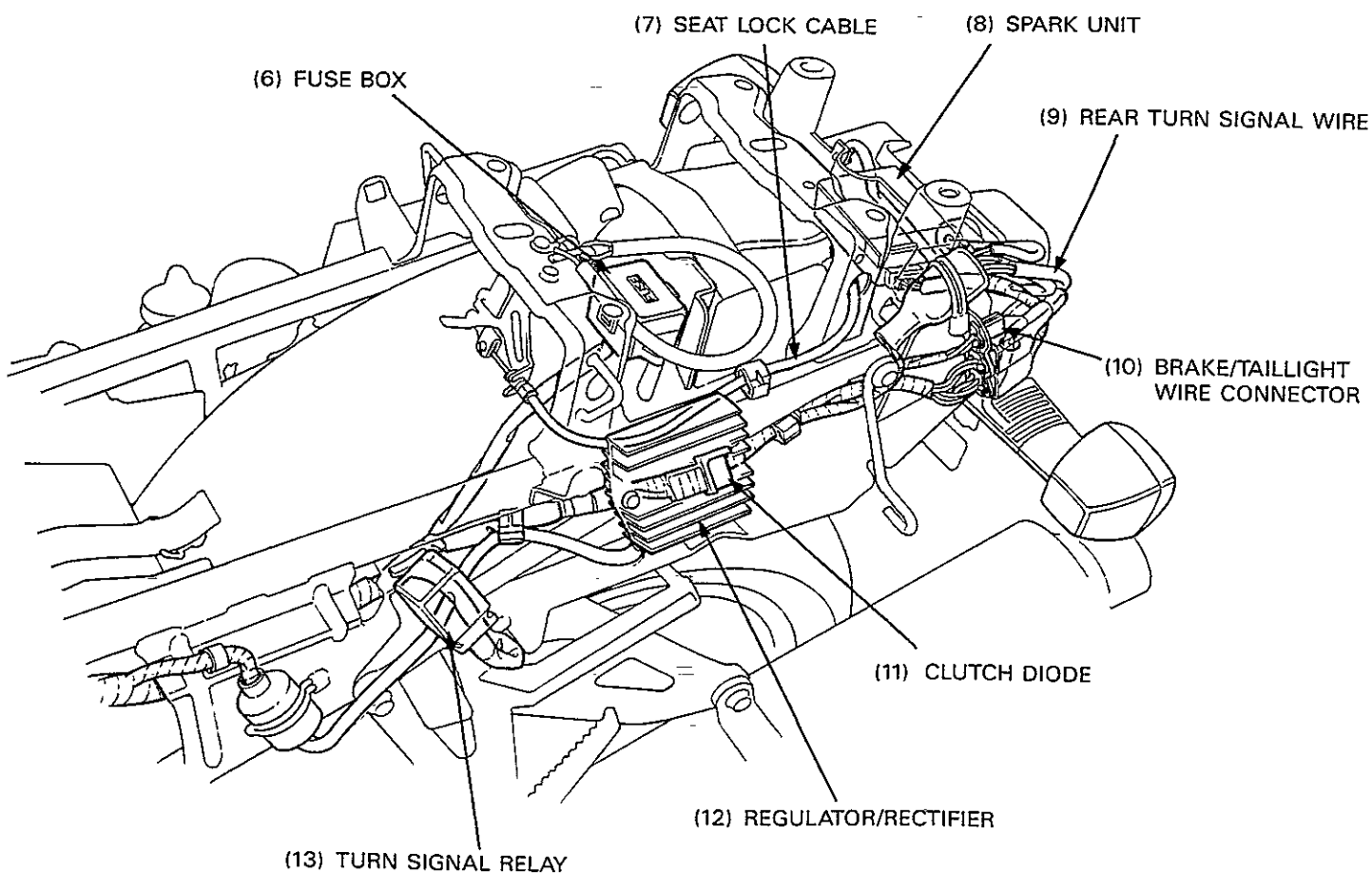
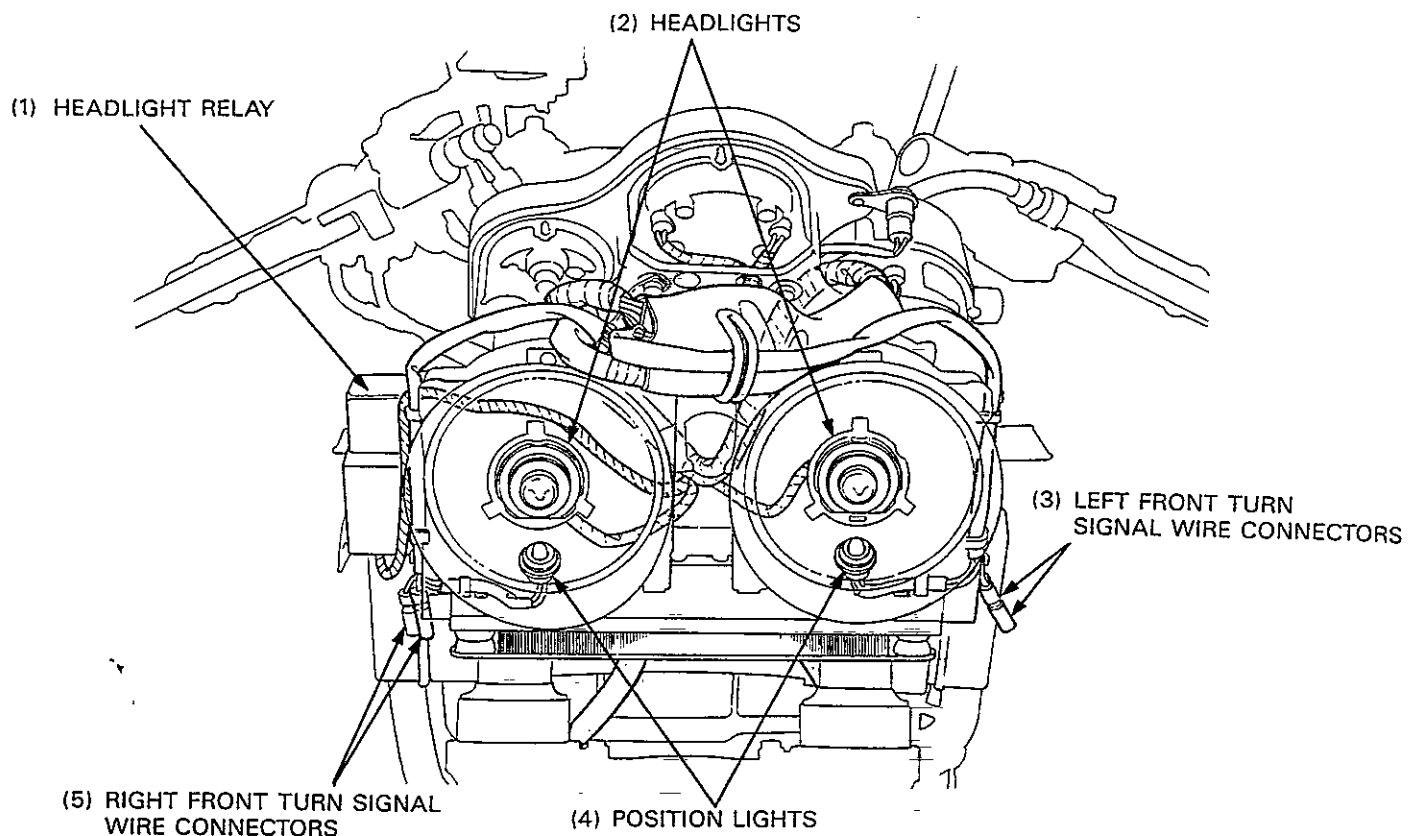
Engine		
Location	Material	Remarks
Valve stem (valve guide sliding surface) Connecting rod small end bearing Transmission gearshift fork groove Timing hole cap threads Connecting rod bearing Crankshaft main bearing	Molybdenum disulfide oil	
Crankcase mating surface	Liquid sealant	Do not apply sealant near the main bearings.
Rocker arm shaft plug Oil pressure switch threads  Thermò sensor threads 3-4 mm (0.12-0.16 in)	Sealant	Do not apply sealant to the switch thread head as shown.
Oil filter O-ring Piston Cylinder head bolt threads Connecting rod bearing cap nut Rocker arm sliding surface Camshaft journal, cam lobe Other sliding surface	Engine oil	CAUTION Never apply molybdenum disulfide oil.
Clutch lifter rod (lifter cam contacting area)	Multipurpose grease	
Cylinder head sealing bolt threads Shift drum center bolt threads Gearshift return spring stud pin Shift drum set plate bolt threads Shift fork shaft set bolt threads Oil pump driven sprocket bolt threads  5.5-7.5 mm (0.22-0.30 in)	Locking agent	

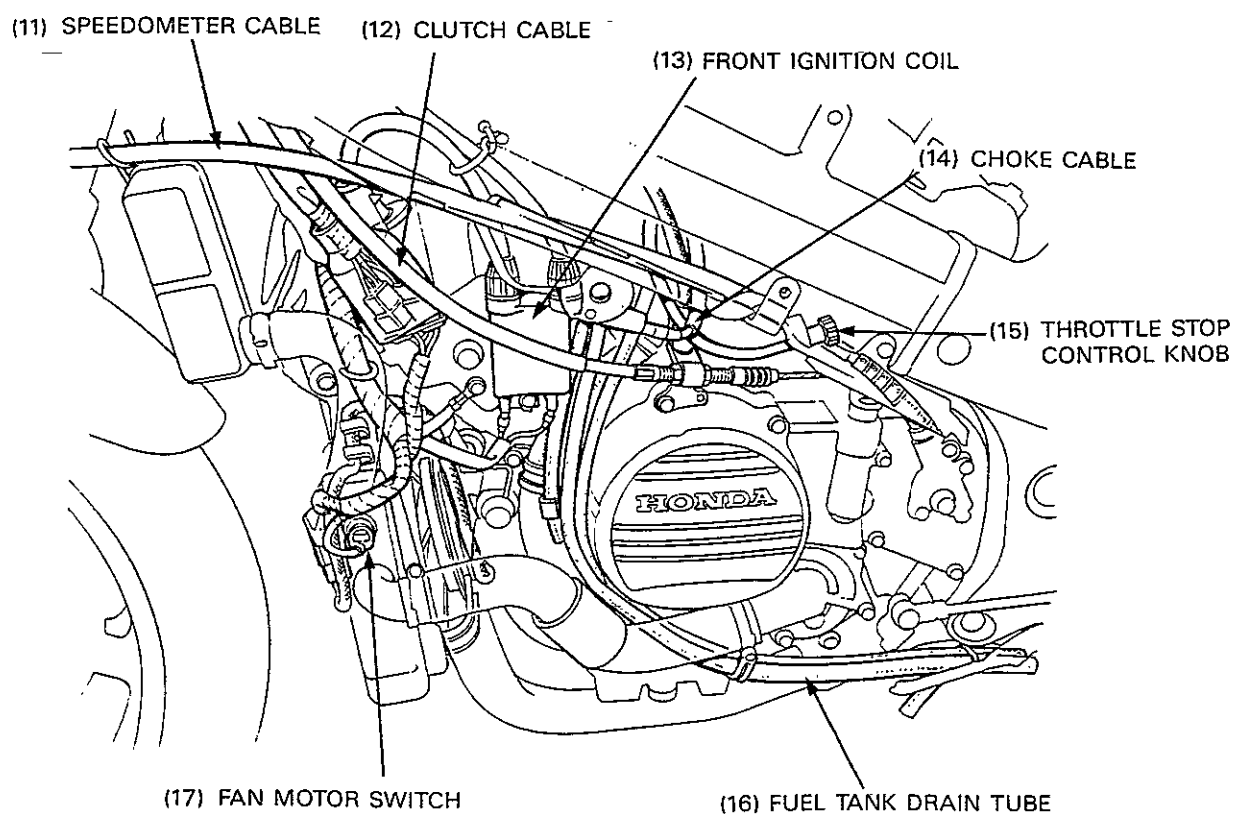
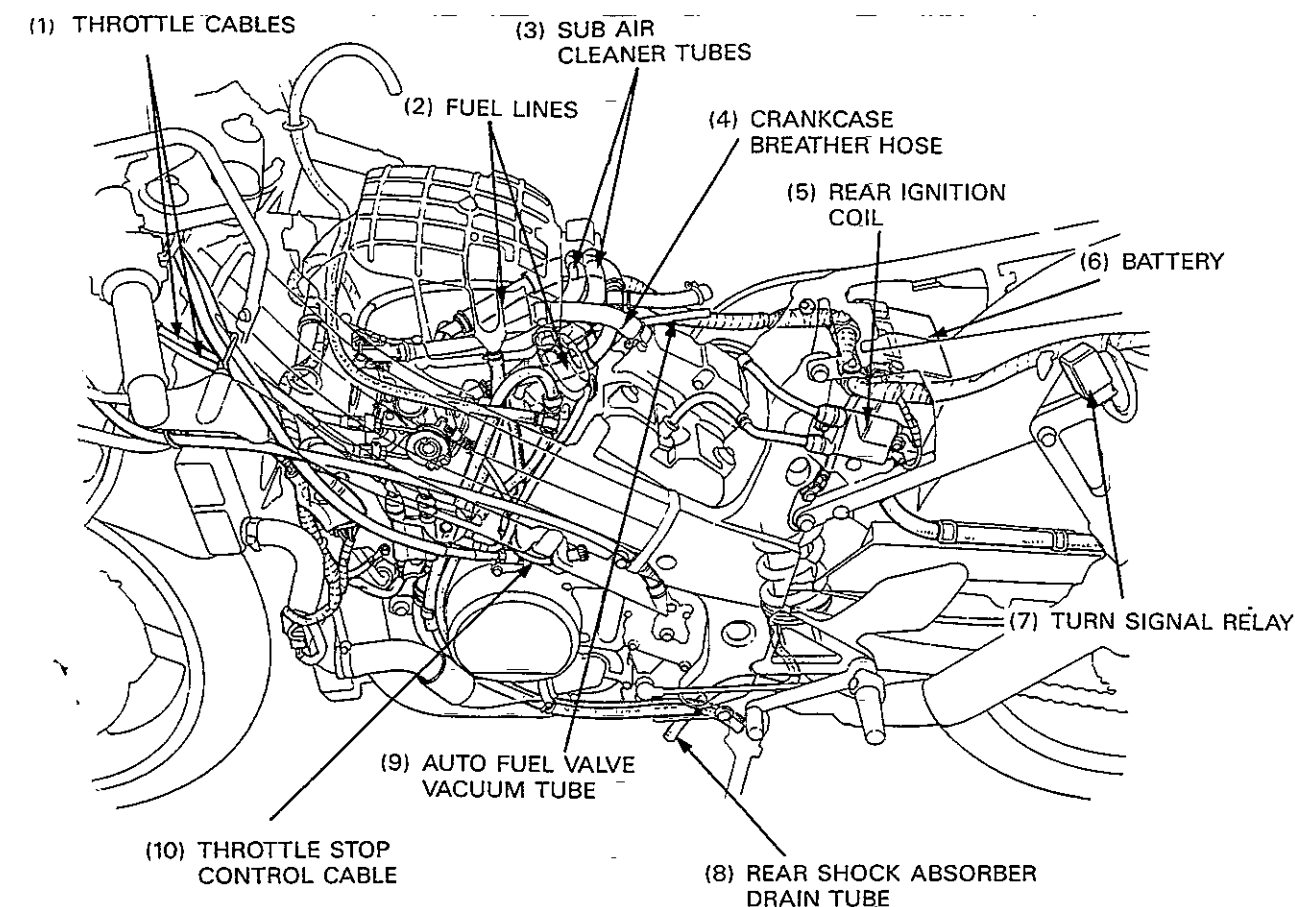
General Information

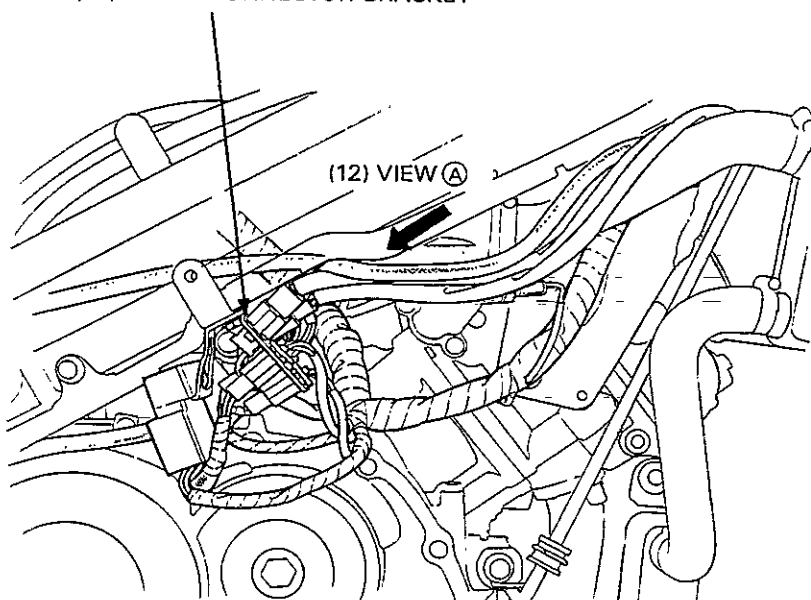
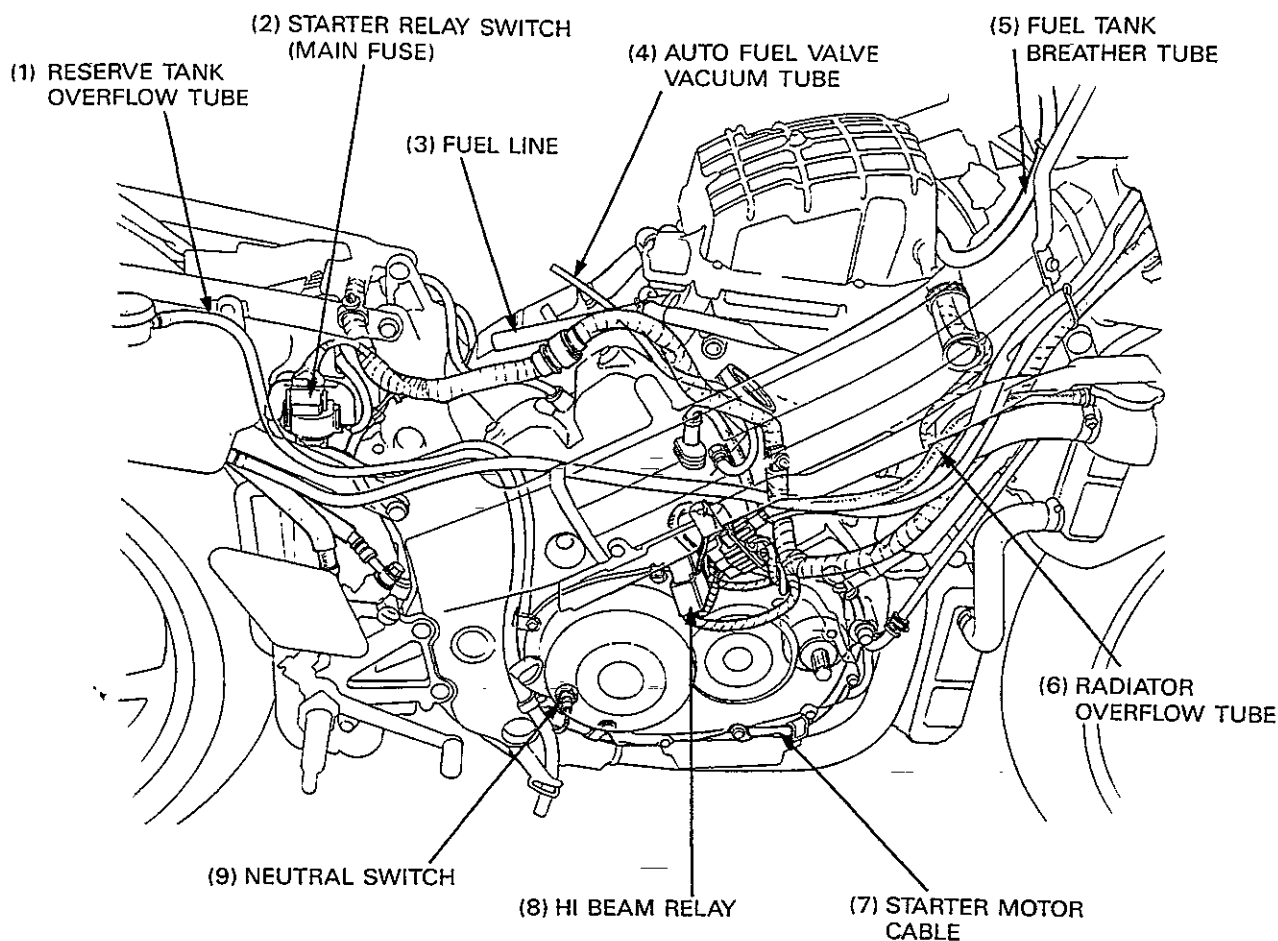
Frame	Location	Material	Remarks
	Drive chain	Gear oil # 80 - 90	
	Axle holder bearing Side stand pivot Shock linkage bearing collar Shock linkage bearing Seat lock hook Gearshift pedal pivot Shock absorber upper mounting collar Swingarm pivot bearing Steering head bearing Step pivot Speedometer gearbox Throttle pipe flange Rear brake pedal pivot Dust seal lip Pad pin threads Pad pin plug threads	Multipurpose grease	
	Caliper piston Caliper piston seal Caliper dust seal Master cylinder piston Master cylinder piston cup	DOT 4 brake fluid	
	Steering bearing adjustment nut threads	Engine oil	
	Fan motor switch threads	Sealant	
	Handlebar grip rubber	Honda Bond A or equivalent	
	Caliper pivot pin Caliper pivot pin boot	Silicone grease	
	Side stand bracket bolt threads Drive chain slider screw threads Drive pin bolt threads Fork socket bolt threads Ignition switch mounting bolt threads Main step holder bolt threads Rear caliper pivot bolt threads Rear brake reservoir hose screw threads	Locking agent	

Cable & Harness Routing



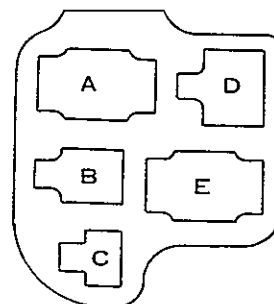






(13)

- A: IGNITION SWITCH WIRE CONNECTOR (3P-BLACK)
- B: PULSE GENERATOR WIRE CONNECTOR (4P-BLACK)
- C: OIL PRESSURE SWITCH/NEUTRAL SWITCH WIRE CONNECTOR (2P-BLACK)
- D: RIGHT HANDLEBAR SWITCH WIRE CONNECTOR (6P-RED)
- E: ALTERNATOR WIRE CONNECTOR (3P-WHITE)



(14) VIEW A

2. Frame/Body Panels/Exhaust System

2

Service Information	2-1	Fuel Tank Removal/Installation	2-5
Seat Cowling Removal/Installation	2-2	Windshield Removal/Installation	2-6
Upper Fairing Removal/Installation	2-2	Muffler Removal/Installation	2-8
Side Fairing Removal/Installation	2-3	Exhaust Pipe Removal/Installation	2-10
Lower Fairing Removal/Installation	2-4	Sub-Frame Removal/Installation	2-12

Service Information

⚠ WARNING

- Gasoline is extremely flammable and explosive under certain conditions.
- Serious burns may result if the exhaust system is not allowed to cool before components are removed or serviced.

- Work in a well ventilated area. Smoking or allowing flames or sparks in the working area or where gasoline is stored can cause a fire or explosion.
- This section cover removal and installation of the frame body panels, fuel tank and exhaust system.
- Frame body panel installation is in the reverse order of removal, unless noted otherwise.
- When removing the cover, be careful not to damage any tab or groove of the cover.
- Be careful not to bind the wire harnesses when installing the sub-frame.

Seat Cowling Removal/Installation

Unlock the rear seat by turning the ignition key clockwise. Remove the rear seat.

Remove the six attaching screws.

Raise the rear of the seat cowl and release the two bosses from the grommets.

Disconnect the brake/taillight wire connector and remove the seat cowl rearward.

NOTE

- Be careful not to damage the front of the cowl.

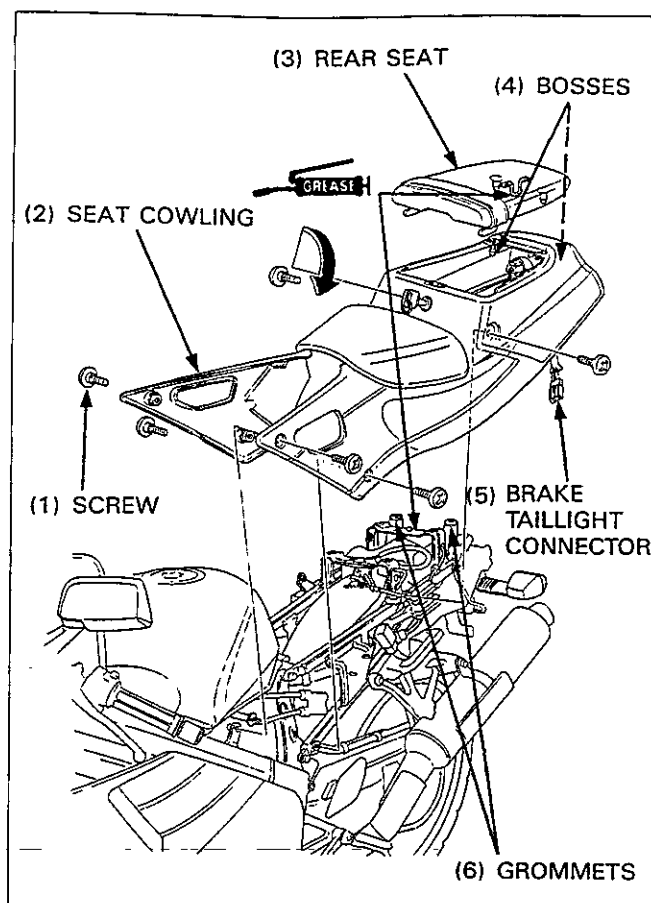
Install the seat cowl, while inserting the hook of the cowl under the frame.

Insert the bosses into the grommet by pushing the rear of the cowl.

Install the rear seat, aligning the hook with the cowl, and push the seat down to lock the seat.

NOTE

- Grease the seat striker and latch.
- The rear seat is not installed securely if any obstructions are under the seat.
- Be careful not to bind the wire harness etc.



Upper Fairing Removal/Installation

Disconnect the left and right turn signal wire connectors.

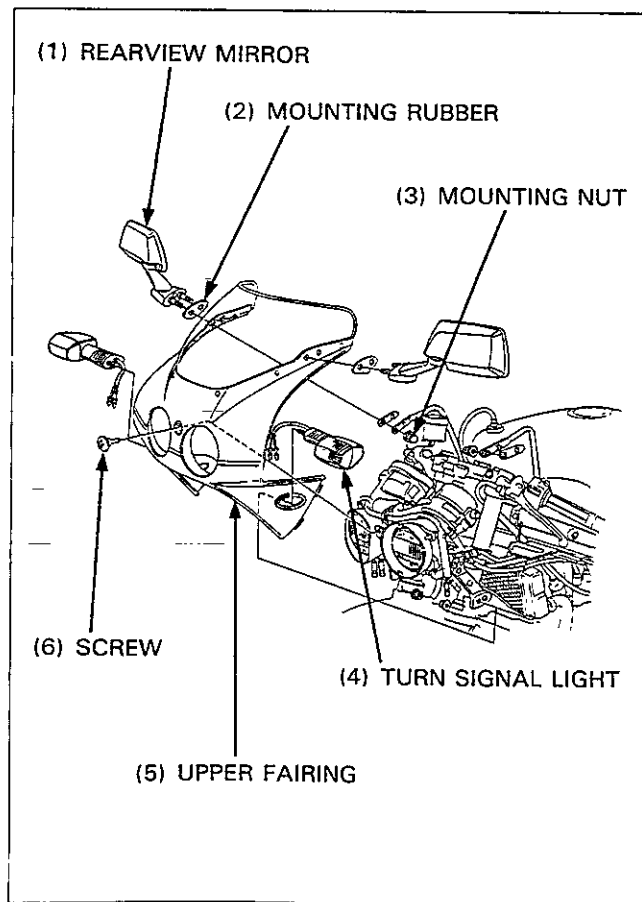
Remove the following:

- both side fairings (page 2-3).
- front panel (page 2-4).
- both rearview mirror mounting nuts.
- both rearview mirror.
- both rearview mirror mounting rubbers.
- both turn signal lights.
- screw.
- upper fairing.

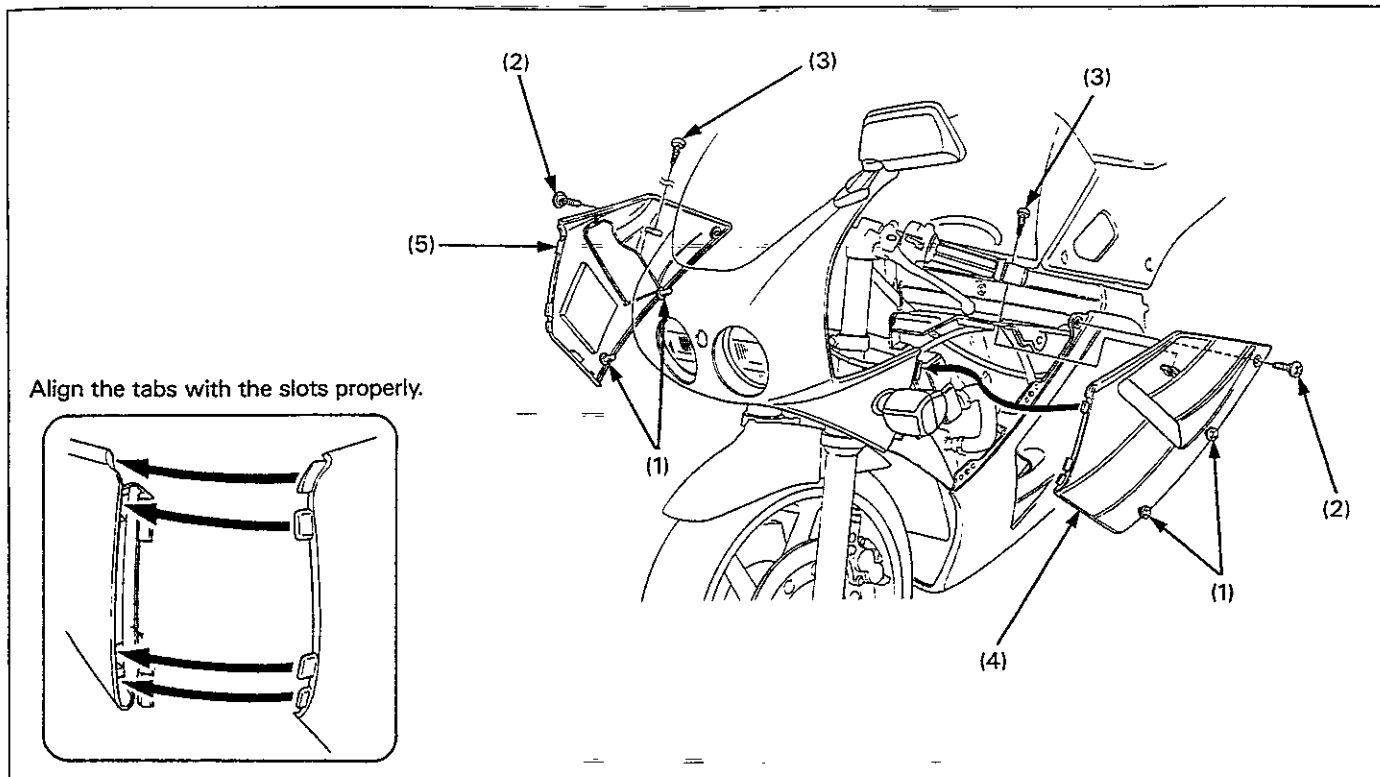
Install the upper fairing in the reverse order of removal.

CAUTION

- Be careful not to bind the mounting rubber.



Side Fairing Removal/Installation

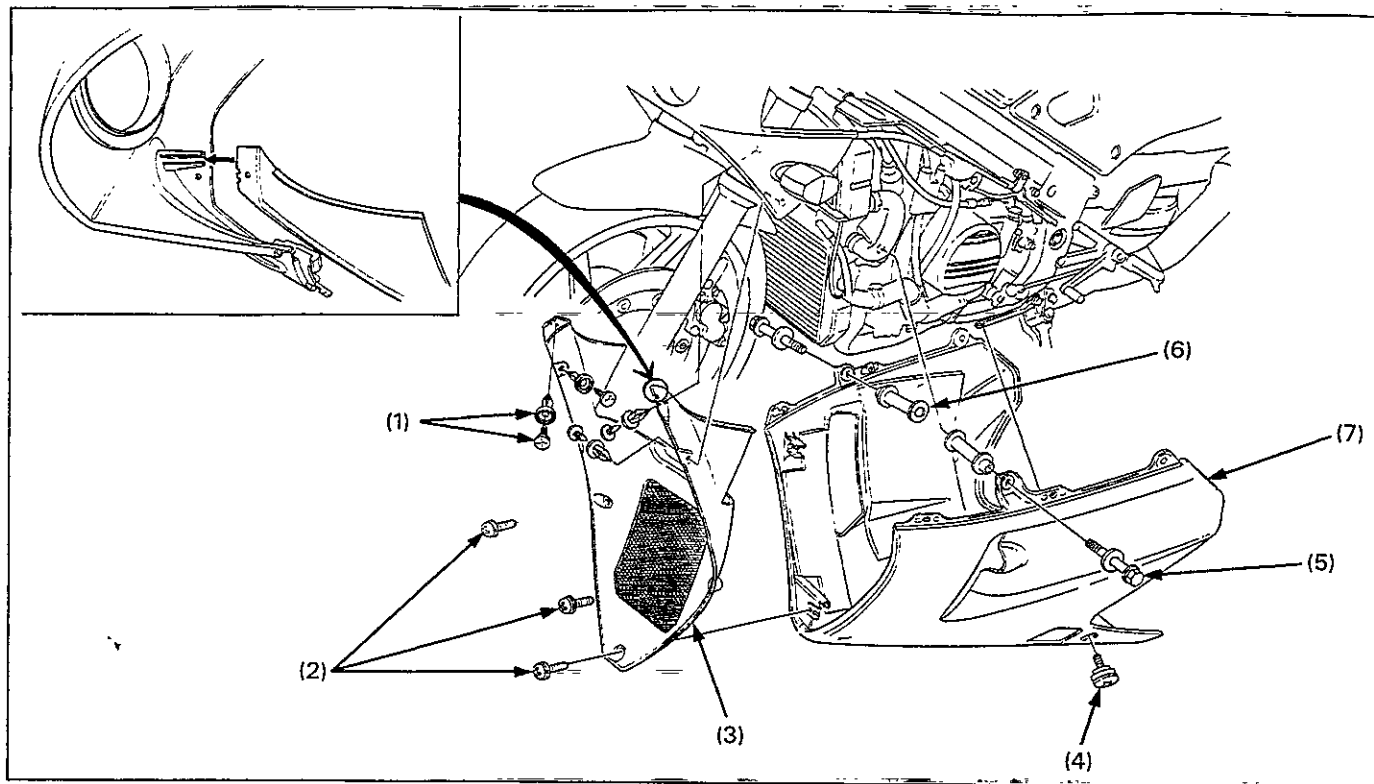


CAUTION

- Be careful not to damage the tabs.
- Make sure that the clip nut for the tapping screw is installed properly. If it is missing, install it securely with the threaded side facing down.

Procedure		Q'ty	Remarks
Removal Order			Installation is in the reverse order of removal.
(1)	Quick screw	4	
(2)	Screw	2	
(3)	Tapping screw	2	
(4)	Left side fairing	1	
(5)	Right side fairing	1	

Lower Fairing Removal/Installation



CAUTION

- Make sure that the clip nut for the tapping screw is installed properly. If it is missing, install it securely with the threaded side facing down.

Procedure		Q'ty	Remarks
Removal Order			Installation is in the reverse order of removal.
(1)	Trim clip screw/nut	4	
(2)	Front panel screw	3	
(3)	Front panel	1	NOTE At installation, insert the top ends under the tab of the upper fairing properly as shown.
(4)	Mounting screw	2	
(5)	Mounting bolt/washer	2	
(6)	Mounting collar	2	
(7)	Lower fairing assembly	1	

Fuel Tank Removal/Installation

⚠ WARNING

- Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.

Remove the seat cowl (page 2-2).

Turn the fuel valve OFF.

Disconnect the fuel tank breather tube from the tank.

Remove the fuel tank mounting bolt.

Raise the rear of the tank and disconnect the fuel line and vacuum tube from the fuel valve.

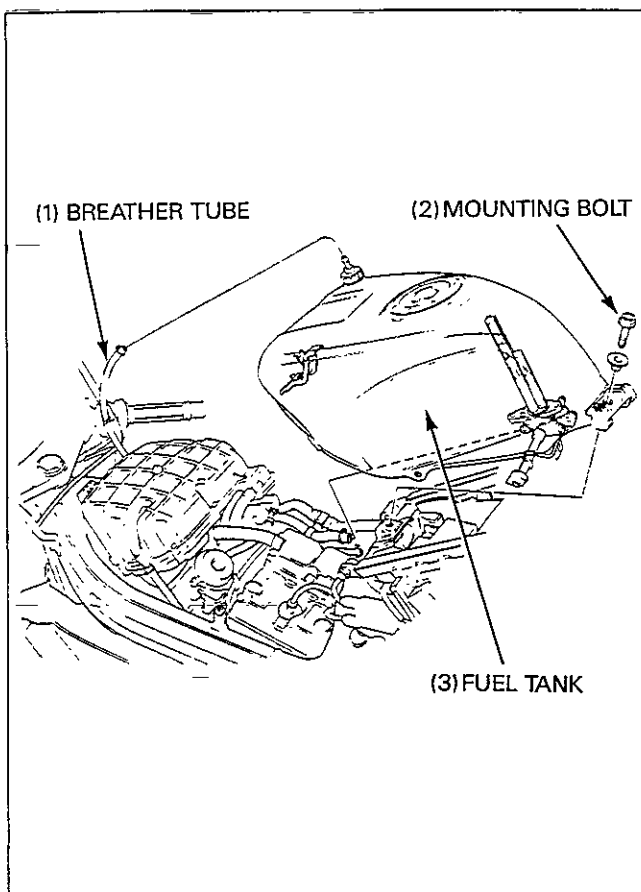
Install the fuel tank in the reverse order of removal.

NOTE

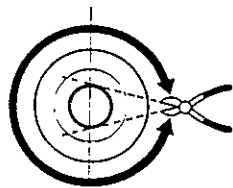
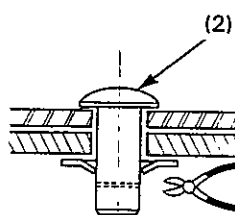
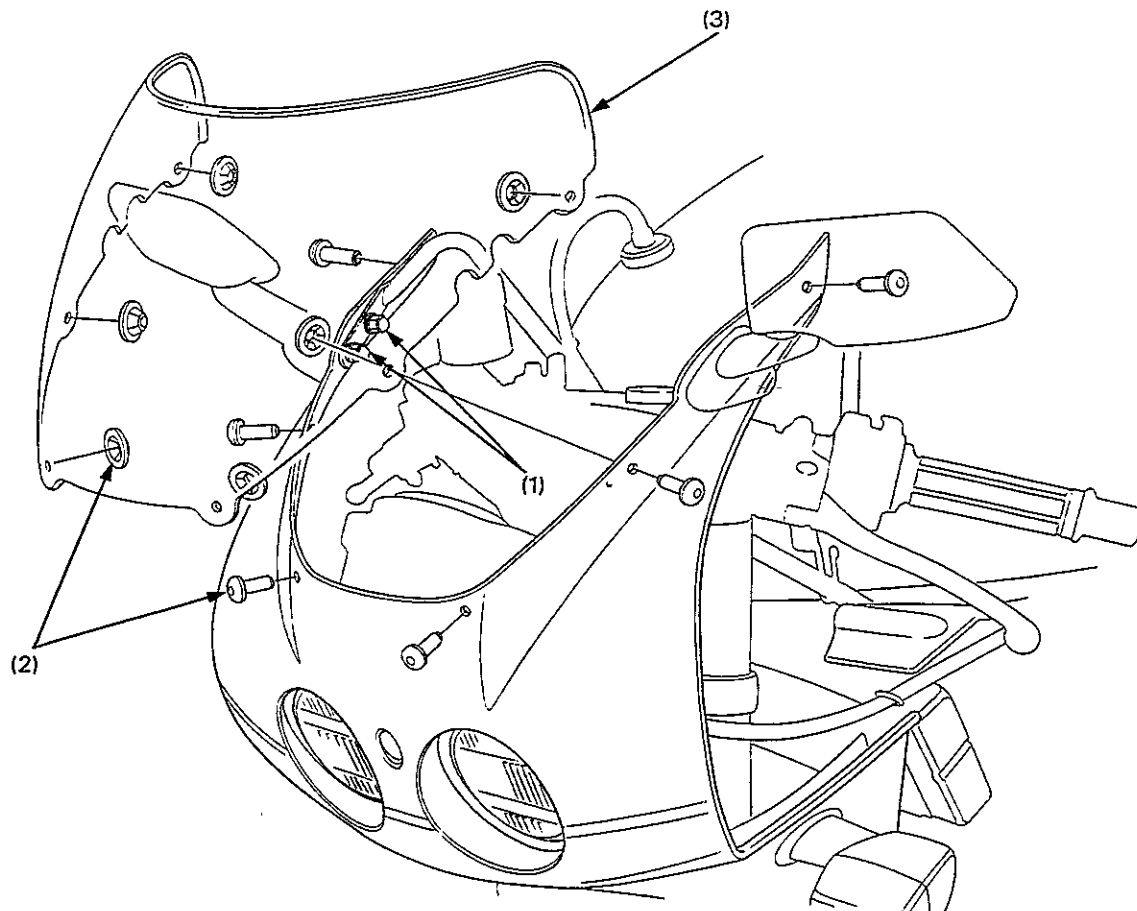
- Make sure that the fuel tank mounting rubber is installed onto the frame properly before installing the tank.

After connecting the fuel line, connect a vacuum pump to the auto fuel valve vacuum joint and apply vacuum.

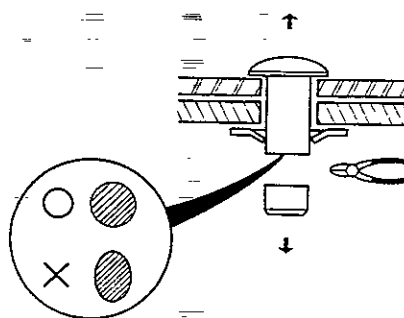
Turn the fuel valve ON and check the fuel line for leakage.



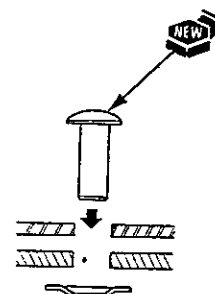
Windshield Removal/Installation



1. Put the kerf around the circumference of the pin.



2. Cut the pin at the kerf, being careful not to deform the pin. Pull out the remaining pin.



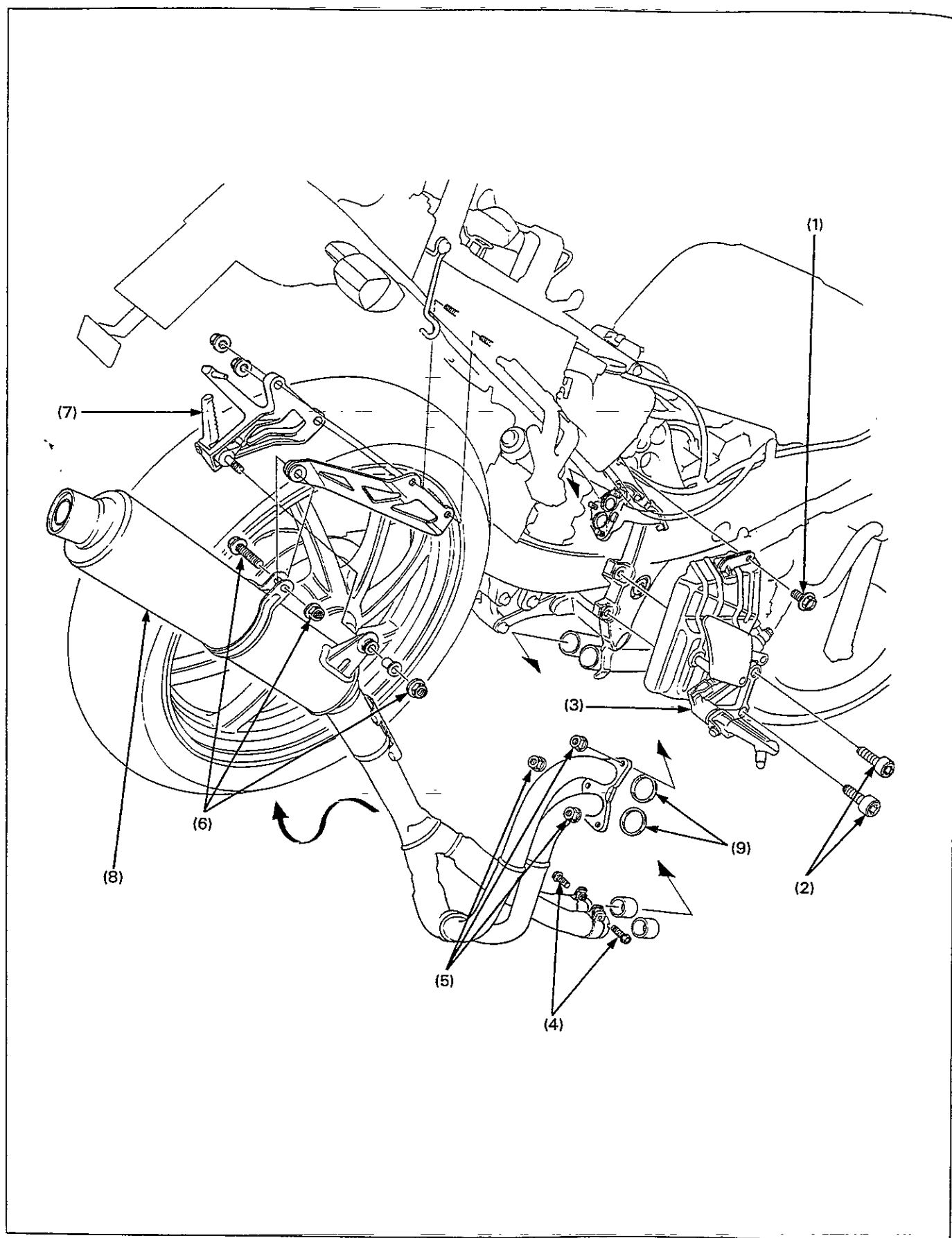
3. Install with using new pins.

NOTE

- Be careful not to damage the windshield.

Procedure		Q'ty	Remarks
Removal Order			
(1)	Rearview mirror mounting nut	4	NOTE Loosen until the clearance is made. NOTE Cut the pin to remove.
(2)	Set pin/ring	6	
(3)	Windshield	1	
Installation Order			
(3)	Windshield	1	NOTE Temporarily install the set rings, position the windshield properly and fit the pins.
(2)	Set pin/ring	6	
(1)	Rearview mirror mounting nut	4	

Muffler Removal/Installation



⚠ WARNING

- Do not service the exhaust system while it is hot.

CAUTION

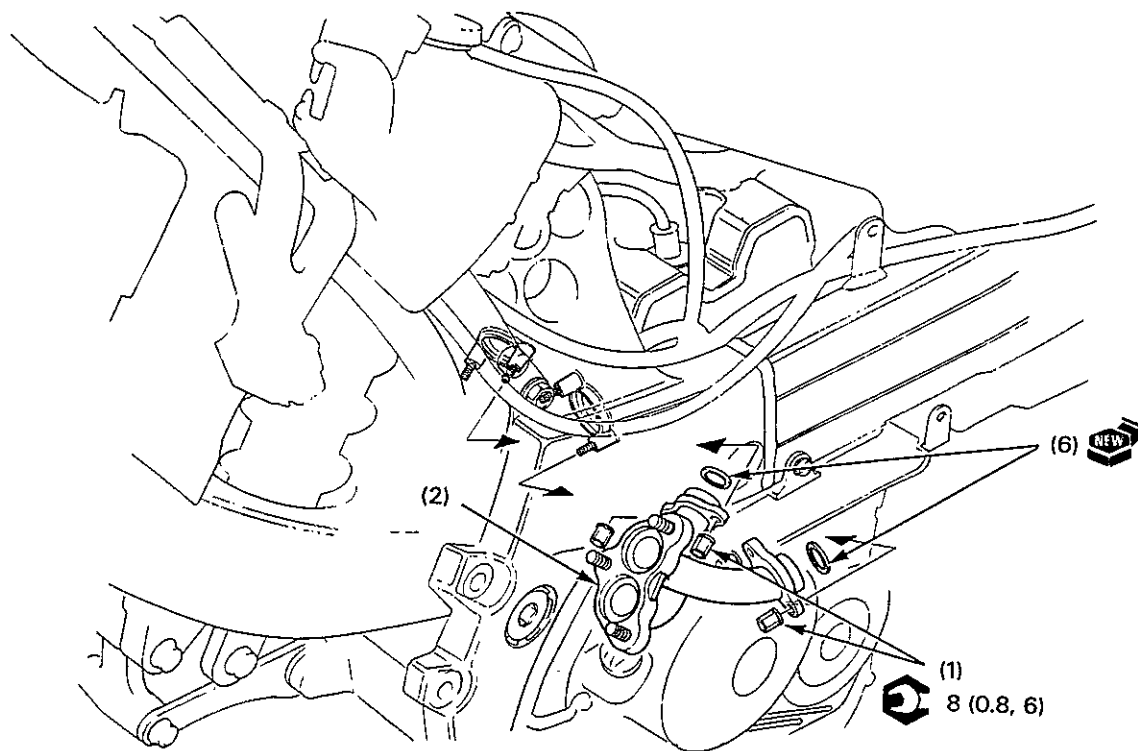
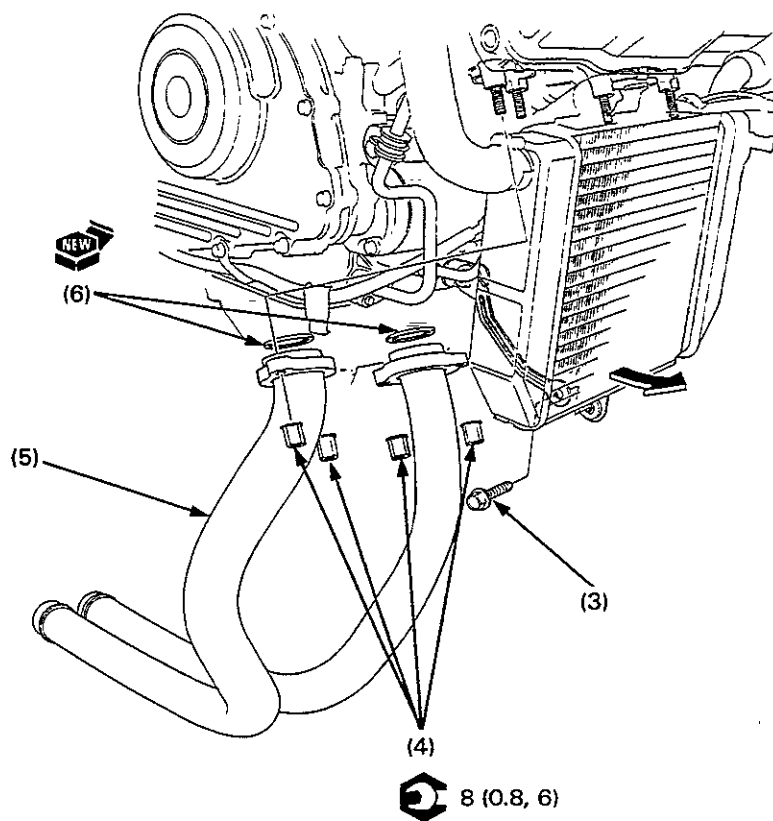
- Do not bend or twist the brake hose. Support the removed right step assembly so that it does not hang from the brake hose.

Requisite Service

- Seat cowling removal/installation (page 2-2)
- Lower fairing removal/installation (page 2-4)

Procedure		Q'ty	Remarks
Removal Order			Installation is in the reverse order of removal.
(1)	Heat guard mounting bold	1	NOTE Remove together with the heat guard. Never hang it from the brake hose.
(2)	Right step bolt	2	
(3)	Right step	1	
(4)	Exhaust pipe band bolt	2	NOTE Loosen the bolts.
(5)	Exhaust pipe nut	3	NOTE At installation, loosely install the bolt and nuts, tighten the exhaust pipe nuts and band bolts first, then tighten them.
(6)	Muffler mounting bolt/nut	1/2	
(7)	Left pillion step	1	
(8)	Muffler assembly	1	
(9)	Gasket	2	

Exhaust Pipe Removal/Installation



CAUTION

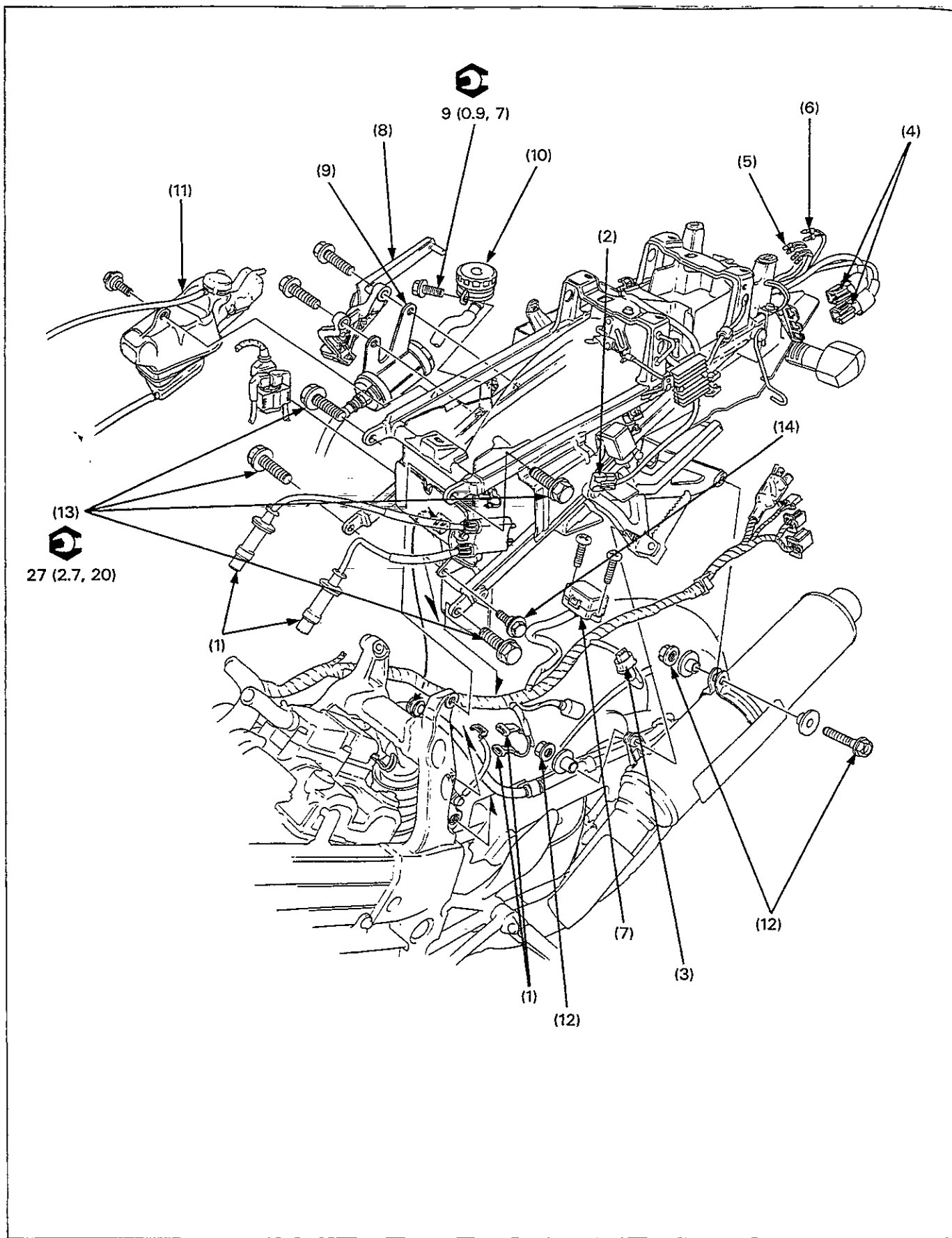
- Cover the radiator fins to prevent them from damaging when servicing the front exhaust pipe.

Requisite Service

- Muffler removal/installation (page 2-8)

Procedure		Q'ty	Remarks
Removal Order			Installation is in the reverse order of removal.
(1)	Rear exhaust pipe joint nut	4	NOTE Remove the bolts, move the radiator forward and hold it with a string.
(2)	Rear exhaust pipe	1	
(3)	Lower radiator mounting bolt	2	
(4)	Front exhaust pipe joint nut	4	
(5)	Front exhaust pipe	1	
(6)	Gasket	4	

Sub-Frame Removal/Installation



CAUTION

- Turn the ignition switch OFF and disconnect the battery negative cable from the battery terminal.
- Be careful not to bind the wire harness when installing the sub-frame.
- Route the wire harness, cable, etc. (page 1-21).

Requisite Service

- Seat cowling removal/installation (page 2-2)
- Fuel tank removal/installation (page 2-5)
- Battery removal/installation (page 15-4)

Procedure		Q'ty	Remarks
Removal Order			Installation is in the reverse order of removal.
(1)	Spark plug cap/primary wire connector	2/2	
(2)	Regulator/rectifier connector	1	
(3)	Turn signal relay connector	1	
(4)	Spark unit wire connector	2	
(5)	Rear turn signal wire connector	4	
(6)	License light wire connector	2	
(7)	Fuse box	1	
(8)	Right grab rail	1	
(9)	Shock absorber reservoir/bracket	1	
(10)	Rear brake reservoir	1	CAUTION Keep the reservoir level to prevent air from entering the system.
(11)	Radiator reserve tank	1	
(12)	Muffler mounting bolt/nut	1/2	
(13)	Sub-frame mounting bolt	4	NOTE Remove the main wire harness from the clamp.
(14)	Rear fender bolt	1	