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YAMAHA

302 motorcycle

XV250

Service Manual

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YAMAHA

XV250G

XV250GC

SUPPLEMENTARY SERVICE MANUAL

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FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the XV250G/XV250GC. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

XV250U/XV250UC SERVICE MANUAL: 2UJ-28197-10

**XV250G/XV250GC
SUPPLEMENTARY
SERVICE MANUAL**

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1st Edition, September 1994

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NOTICE

This manual was written by Yamaha Motor Company Ltd. primarily for use by Yamaha dealers and qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so persons using this book to perform maintenance and repairs on Yamaha motorcycles should have a basic understanding of the mechanical concepts and procedures inherent in motorcycle repair technology. Without such knowledge, attempted repairs or service to the motorcycle may render it unfit to use and/or unsafe.

For USA, California

This model has been designed and manufactured to perform within certain specifications in regard to performance and emissions. Proper service with the correct tools is necessary to ensure that the motorcycle will operate as designed. If there is any question about a service procedure, it is imperative that you contact a Yamaha dealer for any service information changes that apply to this model. This policy is intended to provide the customer with the most satisfaction from his motorcycle and to conform with federal environmental quality objectives.

Yamaha Motor Company, Ltd. is continually striving to improve all models manufactured by Yamaha. Modifications and significant changes in specifications or procedures will be forwarded to all Authorized Yamaha dealers and will, where applicable, appear in future editions of this manual.

NOTE:

FOR USA, California:

This Service Manual contains information regarding periodic maintenance to the emission control system. Please read this material carefully.

PARTICULARLY IMPORTANT INFORMATION

This material is distinguished by the following notation.



The Safety Alert Symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

⚠ WARNING

Failure to follow **WARNING** instructions could result in severe injury or death to the motorcycle operator, a bystander, or a person inspecting or repairing the motorcycle.

CAUTION:

A **CAUTION** indicates special precautions that must be taken to avoid damage to the motorcycle.

NOTE:

A **NOTE** provides key information to make procedures easier or clearer.

HOW TO USE THIS MANUAL

CONSTRUCTION OF THIS MANUAL

This manual consists of chapters for the main categories of subject. (See "Illustrated symbols")

- 1st title ① : This is a chapter with its symbol on the upper right of each page.
- 2nd title ② : This title appears on the upper of each page on the left of the chapter symbol. (For the chapter "Periodic inspection and adjustment" the 3rd title appears.)
- 3rd title ③ : This is a final title.

MANUAL FORMAT

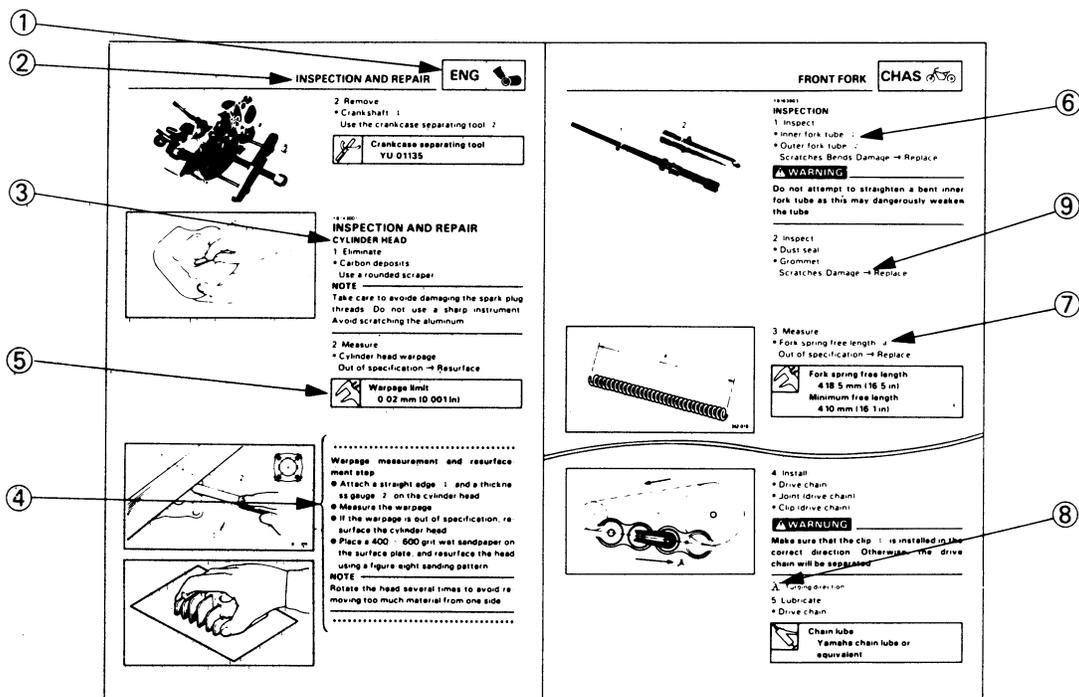
All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all disassembly, repair, assembly, and inspections. A set of particularly important procedure ④ is placed between a line of asterisks "*" with each procedure preceded by "●".

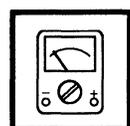
IMPORTANT FEATURES

- Data and a special tool are framed in a box preceded by a relevant symbol ⑤ .
- An encircled numeral ⑥ indicates a part name, and an encircled alphabetical letter data or an alignment mark ⑦, the others being indicated by an alphabetical letter in a box ⑧ .
- A condition of a faulty component will precede an arrow symbol and the course of action required the symbol ⑨ .

EXPLODED DIAGRAM

Each chapter provides exploded diagrams before each disassembly section for ease in identifying correct disassembly and assembly procedures.



① GEN INFO 	② SPEC 	
③ INSP ADJ 	④ ENG 	
⑤ COOL 	⑥ CARB 	
⑦ CHAS 	⑧ ELEC 	
⑨ TRBL SHTG ?	⑩ 	
⑪ 	⑫ 	
⑬ 	⑭ 	
⑮ 	⑯ 	
⑰ 	⑱ 	⑲ 
⑳ 	㉑ 	㉒ 
㉓ 	㉔ New	

ILLUSTRATED SYMBOLS (Refer to the illustration)

Illustrated symbols ① to ⑨ are designed as thumb tabs to indicate the chapter's number and content.

- ① General information
- ② Specifications
- ③ Periodic inspection and adjustment
- ④ Engine
- ⑤ Cooling system
- ⑥ Carburetion
- ⑦ Chassis
- ⑧ Electrical
- ⑨ Troubleshooting

Illustrated symbols ⑩ to ⑯ are used to identify the specifications appearing in the text.

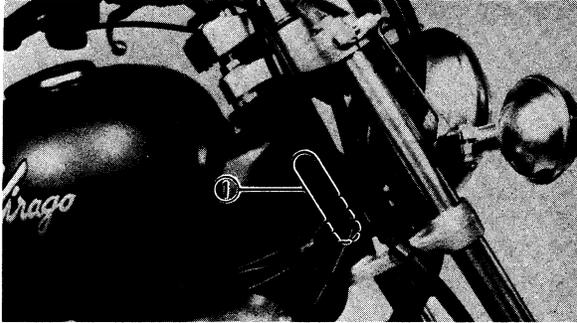
- ⑩ Filling fluid
- ⑪ Lubricant
- ⑫ Special tool
- ⑬ Tightening
- ⑭ Wear limit, clearance
- ⑮ Engine speed
- ⑯ Ω , V, A

Illustrated symbols ⑰ to ㉔ in the exploded diagram indicate grade of lubricant and location of lubrication point.

- ⑰ Apply engine oil
- ⑱ Apply gear oil
- ⑲ Apply molybdenum disulfide oil
- ⑳ Apply wheel bearing grease
- ㉑ Apply lightweight lithium-soap base grease
- ㉒ Apply molybdenum disulfide grease
- ㉓ Apply locking agent (LOCTITE®)
- ㉔ Use new one

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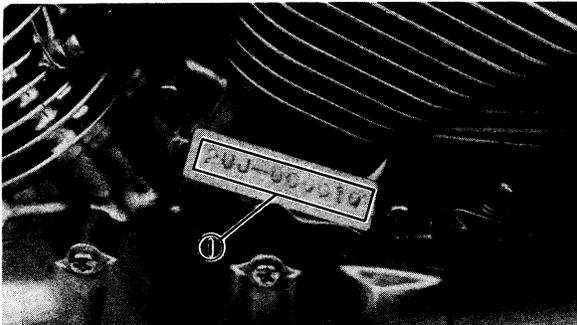
**GENERAL INFORMATION
MOTORCYCLE IDENTIFICATION**

VEHICLE IDENTIFICATION NUMBER

The vehicle identification number ① is stamped into the steering head pipe.

Starting serial number:
 (For USA)
 XV250GJYA2UJE0*SA035101
 (For California)
 XV250GCJYA3BGC0*SA006101
 (For CDN)
 XV250SGJYA3DNN0*SA007101

NOTE: _____
 The vehicle identification number is used to identify your motorcycle and may be used to register your motorcycle with the licensing authority in your state.



ENGINE SERIAL NUMBER

The engine serial number ① is stamped into the crankcase.

Starting serial number:
 (For USA)
 XV250G2UJ-035101
 (For California)
 XV250GC3BG-006101
 (For CDN)
 XV250SG3DN-007101

NOTE: _____

- The first three digits of these numbers are for model identification; the remaining digits are the unit production number.
- Designs and specifications are subject to changes without notice.



SPECIFICATIONS

GENERAL SPECIFICATIONS

Model	XV250(S)G/XV250GC
Model code number:	2UJ4 (USA) 3BG4 (California) 3DN5 (CDN)
Vehicle identification number:	JYA2UJE0*SA035101 (USA) JYA3BGC0*SA006101 (California) JYA3DNN0*SA007101 (CDN)
Engine starting number:	2UJ-035101 (USA) 3BG-006101 (California) 3DN-007101 (CDN)
Dimensions: Overall length Overall width Overall height Seat height Wheelbase Minimum ground clearance	2,190 mm (86.2 in) 815 mm (32.1 in) 1,140 mm (44.9 in) 685 mm (27.0 in) 1,490 mm (58.7 in) 145 mm (5.7 in)
Basic weight: With oil and full fuel tank	147 kg (324 lb) (USA, CDN) 148 kg (326 lb) (California)
Oil type or grade: Engine oil	<p>Yamalube 4 or SAE 20W40 type SE/SF motor oil SAE 10W30 type SE/SF motor oil</p>
Oil capacity: Engine oil: Periodic oil change With oil filter replacement Total amount	1.4 L (1.2 Imp qt, 1.5 US qt) 1.6 L (1.4 Imp qt, 1.7 US qt) 1.8 L (1.6 Imp qt, 1.9 US qt)
Spark plug: Type Manufacturer Spark plug gap	C6HSA/U20FS-U (USA, California) CR6HSA/U20FSR-U (CDN) NGK/NIPPONDENSO 0.6 ~ 0.7 mm (0.024 ~ 0.028 in)
Tire: Type Size Manufacturer Type	With tube 3.00-18 47P 130/90-15M/C 66P CHENG SHIN CHENG SHIN C916 C915

GENERAL SPECIFICATIONS/ MAINTENANCE SPECIFICATIONS

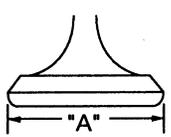
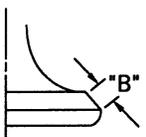
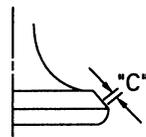
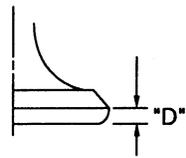
SPEC



Model	XV250(S)G/XV250GC
Tire pressure (cold tire): Maximum load-except motorcycle Loading condition A* <div style="display: flex; justify-content: space-between; width: 100%;"> front rear </div> Loading condition B* <div style="display: flex; justify-content: space-between; width: 100%;"> front rear </div>	183 kg (404 lb) (USA, CDN) 182 kg (401 lb) (California) 0 ~ 90 kg (0 ~ 198 lb) 175 kPa (1.75 kg/cm ² , 25 psi) 200 kPa (2.0 kg/cm ² , 28 psi) 90 kg (198 lb) ~ Maximum load 200 kPa (2.0 kg/cm ² , 28 psi) 225 kPa (2.25 kg/cm ² , 32 psi) * Load is the total weight of cargo, rider, passenger and accessories.
Shock absorber: Front shock absorber Rear shock absorber	Coil spring/Oil damper Coil spring/Oil damper
Bulb wattage × quantity: Headlight Tail/brake light Front flasher light Rear flasher light Meter light Indicator light: "NEUTRAL" "HIGH BEAM" "TURN"	12V, 65W/60W × 1 12V, 8W/27W × 1 12V, 8W/27W × 2 12V, 27W × 2 12V, 3W × 1 12V, 3W × 1 12V, 1.7W × 1 12V, 3W × 1

MAINTENANCE SPECIFICATIONS

ENGINE

Model	XV250(S)G/XV250GC
Valve, valve seat, valve guide: Valve clearance (cold): <div style="display: flex; justify-content: space-between; width: 100%;"> IN. EX. </div> Valve dimensions: <div style="display: flex; justify-content: space-around; align-items: center;">     </div>	0.08 ~ 0.12 mm (0.003 ~ 0.005 in) 0.10 ~ 0.14 mm (0.004 ~ 0.006 in) 25.9 ~ 26.1 mm (1.020 ~ 1.028 in) 21.9 ~ 22.1 mm (0.862 ~ 0.870 in) 1.4 ~ 3.2 mm (0.055 ~ 0.126 in) 1.7 ~ 2.8 mm (0.067 ~ 0.110 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in) <Limit> IN. <1.6 mm (0.063 in)> EX. <1.6 mm (0.063 in)> "D" Margin thickness IN. 0.4 ~ 0.8 mm (0.016 ~ 0.031 in) EX. 0.8 ~ 1.2 mm (0.031 ~ 0.047 in) Stem outside dia. IN. 4.975 ~ 4.990 mm (0.1959 ~ 0.1965 in) EX. 4.960 ~ 4.975 mm (0.1953 ~ 0.1959 in) <Limit> IN. <4.950 mm (0.1949 in)> EX. <4.953 mm (0.1950 in)>

MAINTENANCE SPECIFICATIONS

SPEC



Model	XV250(S)G/XV250GC
Guide inside dia. IN. EX. <Limit> IN. EX. Stem-to-guide clearance IN. EX. <Limit> IN. EX. Stem runout limit	5.000 ~ 5.012 mm (0.1969 ~ 0.1973 in) 5.000 ~ 5.012 mm (0.1969 ~ 0.1973 in) <5.03 mm (0.198 in)> <5.03 mm (0.198 in)> 0.010 ~ 0.037 mm (0.0004 ~ 0.0015 in) 0.025 ~ 0.052 mm (0.0010 ~ 0.0020 in) <0.08 mm (0.0031 in)> <0.10 mm (0.0039 in)> <0.02 mm (0.0008 in)>
Carburetor: I.D. mark Main jet (M.J.) Main air jet (M.A.J.) Jet needle (J.N.) Needle jet (N.J.) Pilot jet (P.J.) Pilot air jet (P.A.J.) Pilot screw (P.S.) Pilot outlet (P.O.) Bypass (B.P. 1) (B.P. 2) (B.P. 3) Valve seat size (V.S.) Starter jet (G.S. 1) (G.S. 2) Throttle valve size (Th.V.) Fuel level (F.L.) Engine idling speed Intake vacuum	2UJ10 (USA) 3BG10 (California) 3DM10 (CDN) #110 #60 4DM3-1 (USA, California) 4DM1-3 (CDN) O-0 #17.5 #155 3-1/4 (USA, California) 2-5/8 (CDN) ø0.85 ø0.8 ø0.8 ø0.8 ø1.0 #25 0.7 #140 16.5 ~ 17.5 mm (0.65 ~ 0.69 in) 1,350 ~ 1,450 r/min (USA, California) 1,250 ~ 1,350 r/min (CDN) 47.9 kPa (360 mmHg, 14.17 inHg)

MAINTENANCE SPECIFICATIONS

SPEC



Model	XV250(S)G/XV250GC
Rear drum brake: Type Drum inside diameter <Limit> Lining thickness <Limit> Shoe spring free length	Leading and trailing 130 mm (5.12 in) <131 mm (5.16 in)> 4 mm (0.16 in) <2 mm (0.08 in)> 50.5 mm (1.99 in)

Tightening torques

Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m • kg	ft • lb	
Headlight stay and headlight (lower)	M6 × 1.0	7	0.7	5.1	See NOTE.
Headlight stay and flasher light	M12 × 1.25	23	2.3	17	
Handlebar crown and inner tube	M8 × 1.25	30	3.0	22	
Steering stem and ring nut	M25 × 1.0	38	3.8	27	
Handlebar crown and handlebar holder (lower)	M10 × 1.25	23	2.3	17	
Handlebar and handlebar holder (upper)	M8 × 1.25	23	2.3	17	
Front brake disc and hub	M8 × 1.25	23	2.3	17	
Front brake hose and caliper	M10 × 1.25	30	3.0	22	
Front brake caliper and caliper bracket	M8 × 1.25	23	2.3	17	
Caliper bracket and frontfork	M10 × 1.25	35	3.5	25	
Master cylinder and bracket	M6 × 1.0	7	0.7	5.1	
Engine stay (front) and frame	M10 × 1.25	40	4.0	28	
Engine stay (rear) and frame	M8 × 1.25	35	3.5	25	
Engine (front) and frame	M8 × 1.25	40	4.0	28	
Engine (rear-upper) and engine stay (rear)	M8 × 1.25	35	3.5	25	
Engine (rear-lower) and frame	M8 × 1.25	35	3.5	25	
Footrest	M10 × 1.25	40	4.0	28	
Sidestand	M10 × 1.25	23	2.3	17	
Pivot shaft and swingarm	M12 × 1.25	46	4.6	33	
Fuel tank and frame	M8 × 1.25	16	1.6	11	
Seat (rear) and reinforcement	M8 × 1.25	16	1.6	11	
Rear shock absorber (upper)	M8 × 1.25	23	2.3	17	
Rear shock absorber (lower)	M8 × 1.25	23	2.3	17	
Rear wheel axle	M14 × 1.5	104	10.4	75	
Rear fender and flasher light stay	M8 × 1.25	10	1.0	7.2	
Brake rod and swingarm	M8 × 1.25	23	2.3	17	
Brake rod and brake shoe plate	M8 × 1.25	23	2.3	17	
Sidestand switch pannel and frame	M6 × 1.0	13	1.3	9.4	

NOTE:

1. First, tighten the ring nut approximately 38 Nm (3.8 m • kg, 27 ft • lb) by using the torque wrench, then loosen the ring nut one turn.
2. Retighten the ring nut 20 Nm (2.0 m • kg, 14 ft • lb).



ELECTRICAL

Model	XV250(S)G/XV250GC
Ignition coil: Model/manufacture Minimum spark gap Primary winding resistance Secondary winding resistance	JO226, JO227/NIPPONDENSO 6 mm (0.24 in) 3.2 ~ 4.8Ω at 20°C (68°F) 10.4 ~ 15.6kΩ at 20°C (68°F)
A.C. generator: Model/manufacture Nominal output	LMZ65/NIPPONDENSO 14V, 25A at 5,000 r/min
<div style="text-align: center;"> <p>The graph plots Output current (A) on the y-axis (0 to 30) against Engine speed (x10³ r/min) on the x-axis (0 to 10). The curve starts at approximately 5A at 1x10³ r/min, rises steeply to about 20A at 2x10³ r/min, and then continues to rise more gradually, reaching a plateau of approximately 25A between 4x10³ and 10x10³ r/min.</p> </div>	
Stator coil resistance	0.21 ~ 0.31Ω at 20°C (68°F) (White – White)
Rectifier/regulator: Type Model/manufacture No load regulated voltage Capacity Withstand voltage	Semiconductor – short circuit SH650/SHINDENGEN 14.2 ~ 15.2V 18A 240V
Electric starter system: Type Starter motor: Model/manufacture Output Armature coil resistance Brush: Overall length <Limit> Spring pressure Commutator: Outside diameter <Wear limit> Mica undercut Starter relay: Model/manufacture Amperage rating Coil winding resistance	Constant mesh type 2UJ/YAMAHA 0.4 kW 0.019 ~ 0.023Ω at 20°C (68°F) 10 mm(0.39 in) <3.5 mm (0.14 in)> 560 ~ 840 g (19.8 ~ 29.7 oz) 22 mm (0.87 in) <21 mm (0.83 in)> 1.5 mm (0.059 in) A104-128/HITACHI 100A 3.0 ~ 3.7Ω at 20°C (68°F)

MAINTENANCE SPECIFICATIONS

SPEC

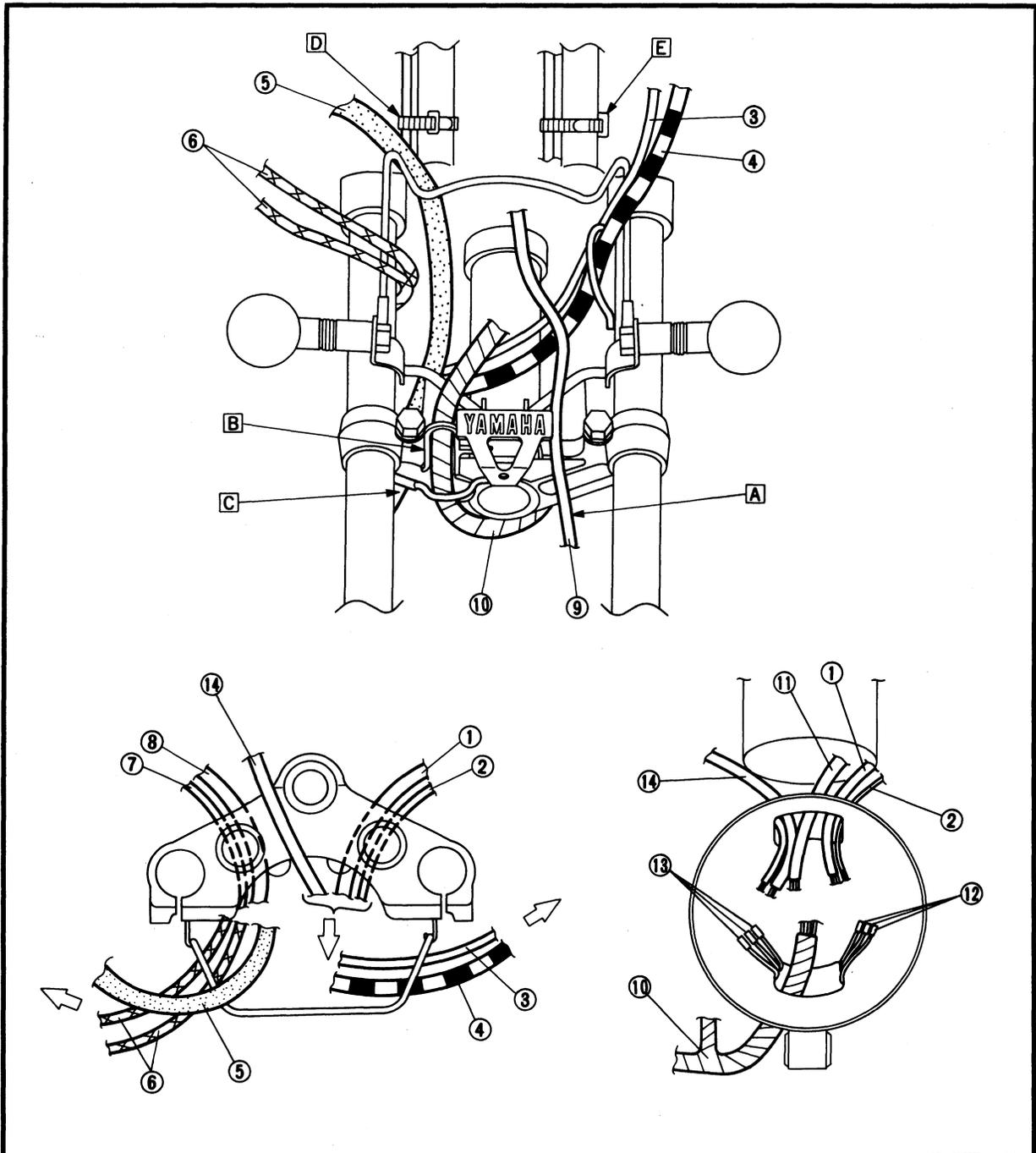


Model	XV250(S)G/XV250GC
Flasher relay: Type Model/manufacture Self-cancelling device Flasher frequency Wattage	Full-transistor FE246BH/NIPPONDENSO No 75 ~ 95 cycle/min 27W × 2 + 3W
Carburetor heater: Output Heater resistance	12V 30W × 1 + 14V 20W × 1 (USA) 12V 30W × 1 (California) 12V 30W × 2 (CDN) 6 ~ 10Ω at 23°C (73°F)
Horn: Type/quantity Model/manufacture Maximum amperage	Plain type × 1 MF-12/NIKKO (USA, CDN) GF-12/NIKKO (California) 1.5A
Circuit breaker: Type Amperage for individual circuit × quantity:	Fuse Main 30A × 1 Signal 10A × 1 Reserve 30A × 1 10A × 1



CABLE ROUTING

- ① Handlebar switch lead (left)
- ② Clutch switch lead
- ③ Choke cable
- ④ Clutch cable
- ⑤ Brake hose
- ⑥ Throttle cable
- ⑦ Front brake switch lead
- ⑧ Handlebar switch lead (right)
- ⑨ Speedometer cable
- ⑩ Wire harness
- ⑪ Speedometer lead
- ⑫ Flasher light lead (left)
- ⑬ Flasher light lead (right)
- ⑭ Indicator light lead
- A Pass the speedometer cable in front of the steering stem.
- B Pass the wire harness through the guide.
- C Clamp the brake hose behind the steering stem.
- D Clamp the handlebar switch lead (right) and front brake switch lead.
- E Clamp the handlebar switch lead (left) and clutch switch lead.



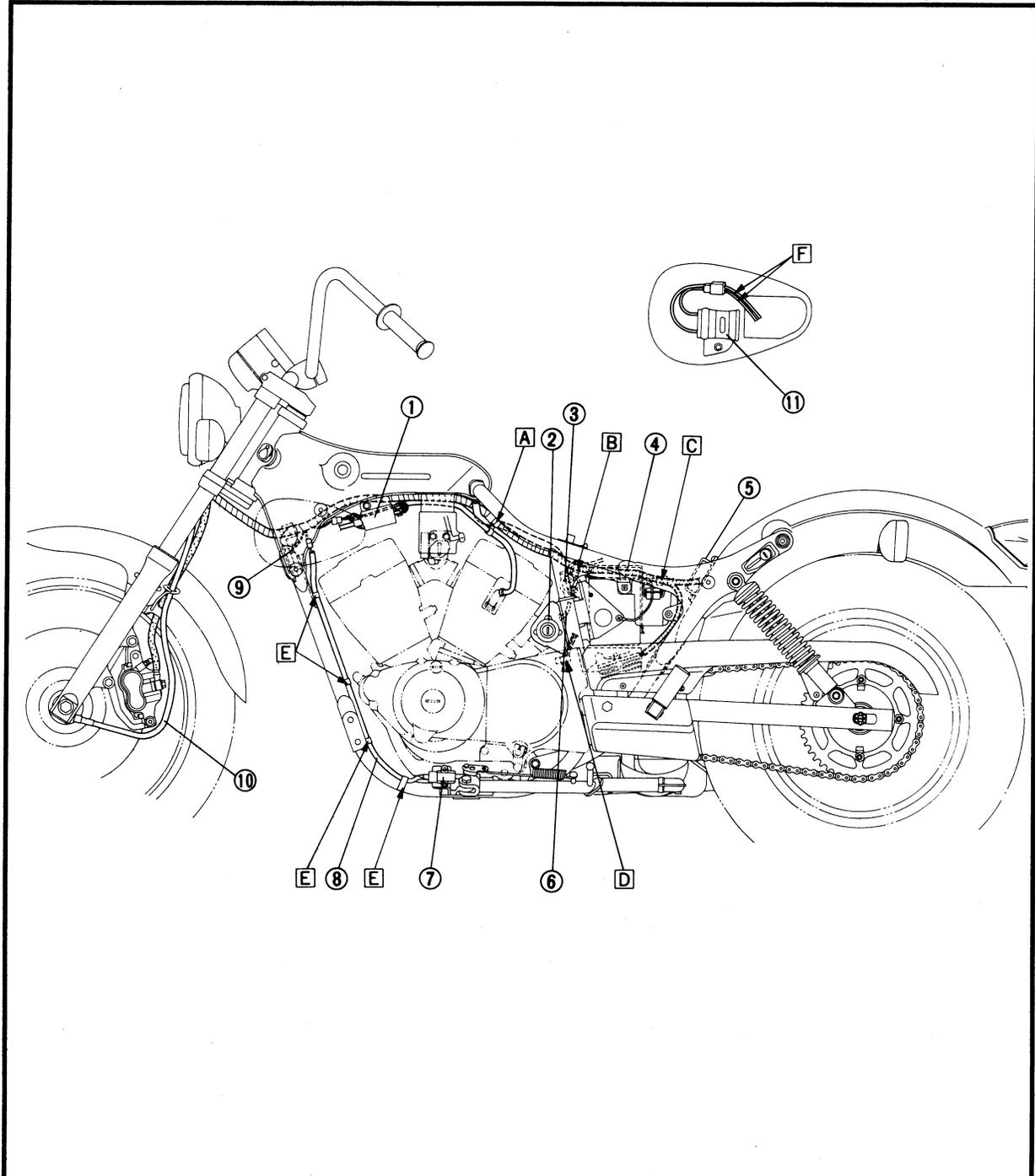
CABLE ROUTING

SPEC



- ① Ignition coil
- ② Main switch
- ③ Starter relay
- ④ Rectifier/regulator
- ⑤ Ignitor unit
- ⑥ Main switch lead
- ⑦ Sidestand switch
- ⑧ Sidestand switch lead
- ⑨ Horn lead
- ⑩ Speedometer cable
- ⑪ Thermo switch

- A Clamp the wire harness.
- B Pass the wire harness and battery positive ⊕ lead through the clamp.
- C Pass the rectifier/regulator lead in front of the frame.
- D Clamp the starter motor lead and neutral switch lead.
- E Clamp the sidestand switch lead.
- F To wire harness.



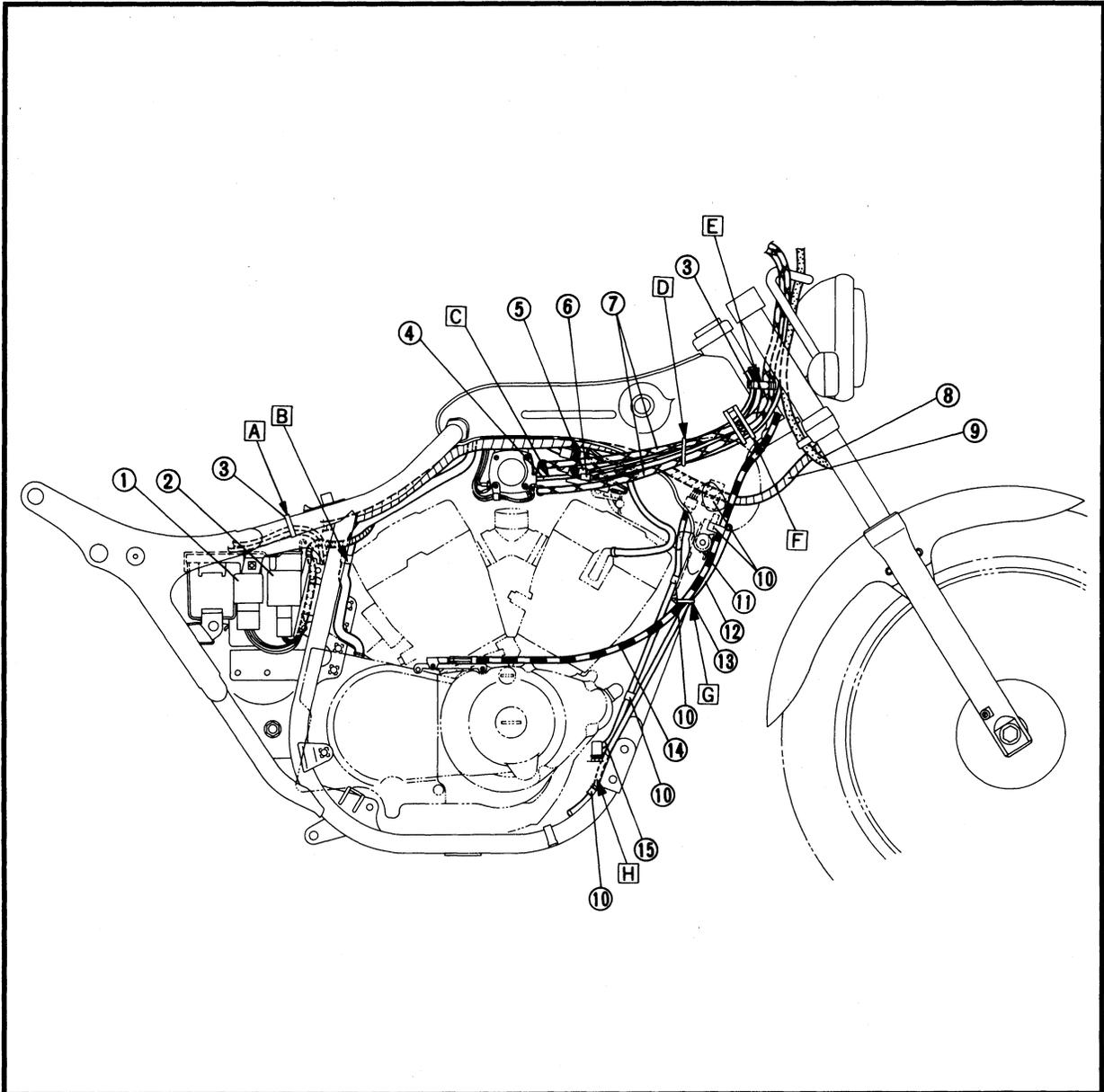
CABLE ROUTING

SPEC



- ① Flasher relay
- ② Starting circuit cut-off relay
- ③ Band
- ④ Choke cable
- ⑤ Handlebar switch lead (right)
- ⑥ Front brake switch lead
- ⑦ Throttle cable
- ⑧ Brake hose
- ⑨ Wire harness
- ⑩ Clamp
- ⑪ Horn
- ⑫ Air cleaner drain hose
- ⑬ Guide
- ⑭ Clutch cable
- ⑮ Rear brake switch

- A** Clamp the main switch lead and neutral switch lead.
- B** Clamp the breather hose.
- C** Pass the choke cable between the ignition coil and bridge plate.
- D** Pass the throttle cables, handlebar switch lead (right), front brake switch lead and choke cable through the guide.
- E** Clamp the handlebar switch lead (right), front brake switch lead and throttle cables.
- F** Pass the throttle cables, handlebar switch lead (right), front brake switch lead and starter cable through the holder.
- G** Pass the clutch cable and air cleaner drain hose through the guide.
- H** Pass the air cleaner drain hose inside the engine stay.



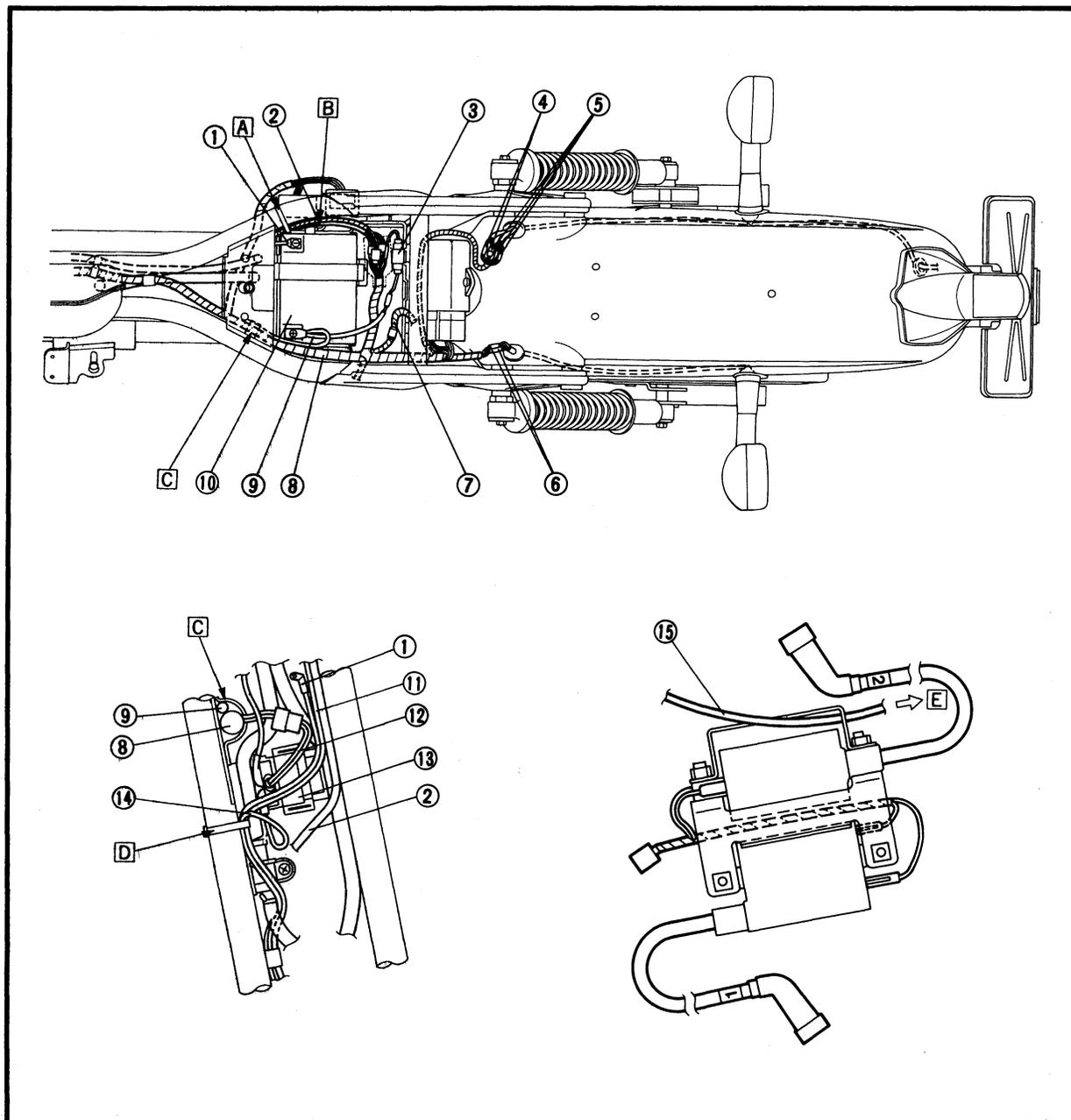
CABLE ROUTING

SPEC



- ① Battery negative \ominus lead
- ② Main switch lead
- ③ Fuse holder
- ④ Flasher light lead (right)
- ⑤ Tail/brake light lead
- ⑥ Flasher light lead (left)
- ⑦ Rectifier/regulator lead
- ⑧ Wire harness
- ⑨ Battery positive \oplus lead
- ⑩ Battery
- ⑪ Neutral switch lead
- ⑫ Starter relay lead

- ⑬ Starter relay
- ⑭ Starter motor lead
- ⑮ Choke cable
- A Clamp the main switch lead and neutral switch lead.
- B Do not pinch the leads with the seat.
- C Clamp the wire harness and battery positive \oplus lead.
- D Clamp the starter motor lead, neutral switch lead and battery negative \ominus lead.
- E To carburetors.



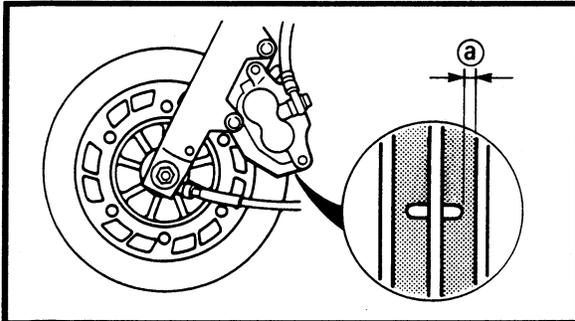


**PERIODIC INSPECTION AND
ADJUSTMENT**

CHASSIS

BRAKE PAD INSPECTION

1. Activate the brake lever.



2. Inspect:

- Brake pad thickness (front)



Wear limit @:
0.8 mm (0.03 in)

Wear/Damage → Replace brake pad as a set.
Refer to the "BRAKE PAD REPLACEMENT"
section .

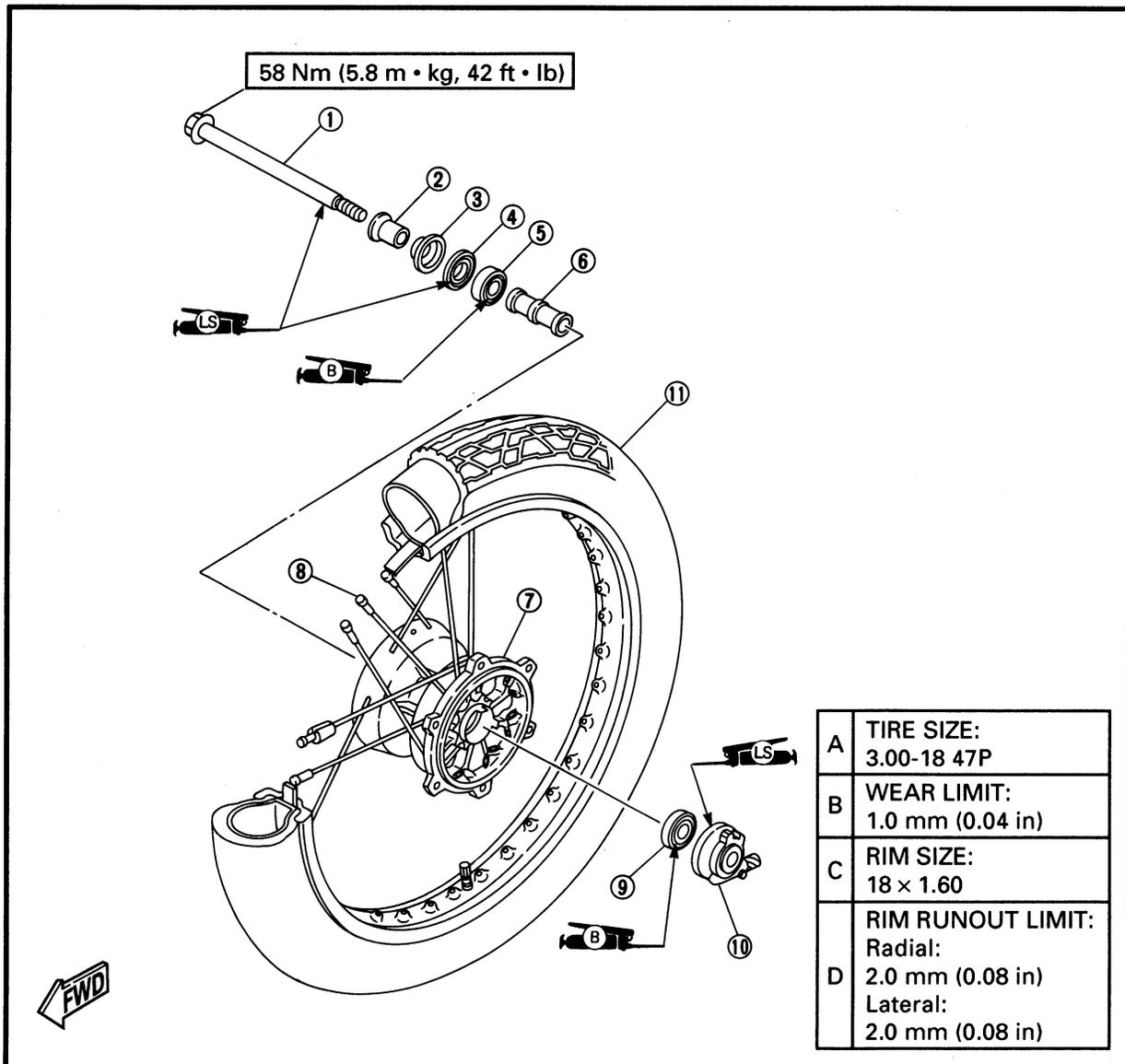
CHASSIS

FRONT WHEEL

- ① Wheel axle
- ② Collar
- ③ Dust seal
- ④ Oil seal
- ⑤ Bearing
- ⑥ Spacer
- ⑦ Hub
- ⑧ Spoke
- ⑨ Bearing
- ⑩ Speedometer gear unit
- ⑪ Tire

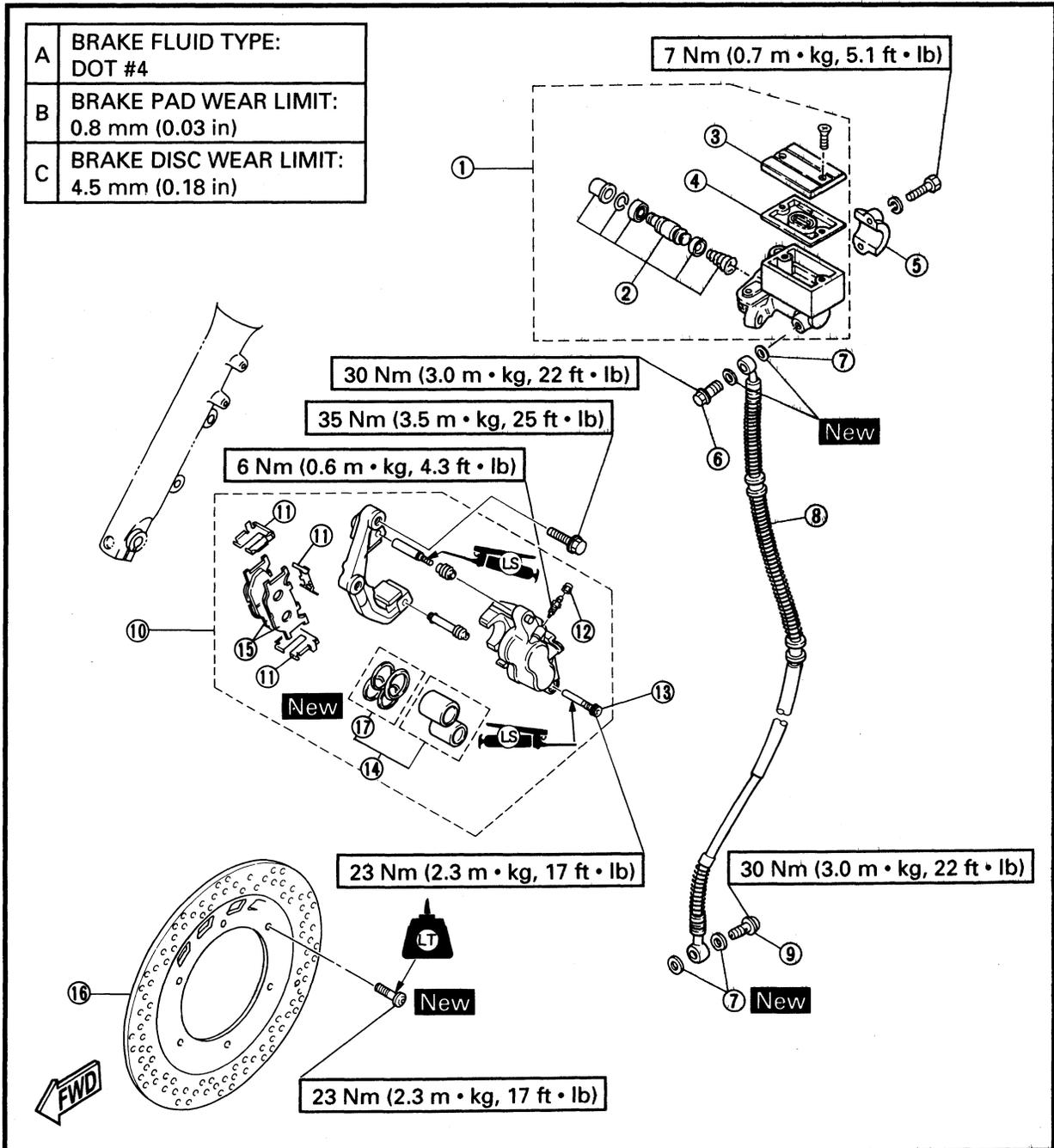
Basic weight: With oil and full fuel tank	147 kg (324 lb) (USA, CDN) 148 kg (326 lb) (California)	
Maximum load*:	183 kg (404 lb) (USA, CDN) 182 kg (401 lb) (California)	
Cold tire pressure:	Front	Rear
Up to 90 kg (198 lbs) load*	175 kPa (1.75 kgf/cm ² , 25 psi)	200 kPa (2.0 kgf/cm ² , 28 psi)
90 kg (198 lbs) ~ Maximum load*	200 kPa (2.0 kgf/cm ² , 28 psi)	225 kPa (2.25 kgf/cm ² , 32 psi)

* Load is the total weight of cargo, rider, passenger, and accessories.



FRONT BRAKE

- ① Master cylinder assembly
- ② Master cylinder kit
- ③ Master cylinder cap
- ④ Diaphragm
- ⑤ Bracket
- ⑥ Union bolt
- ⑦ Copper washer
- ⑧ Brake hose
- ⑨ Union bolt
- ⑩ Caliper assembly
- ⑪ Pad spring
- ⑫ Bleed screw
- ⑬ Retaining bolt
- ⑭ Caliper piston assembly
- ⑮ Brake pad
- ⑯ Brake disc
- ⑰ Piston seal



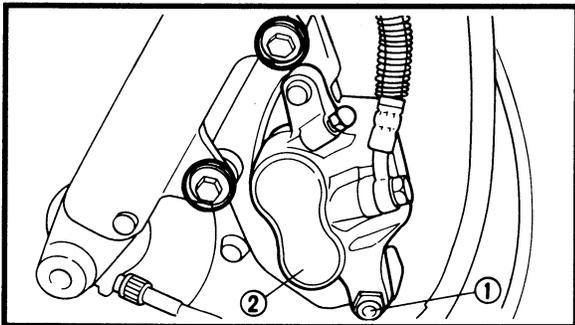
**CAUTION:**

Disc brake components rarely require disassembly. **DO NOT:**

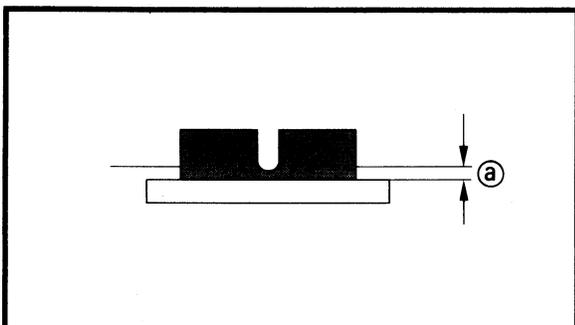
- Disassembly components unless absolutely necessary.
- Use solvents on internal brake components.
- Use contaminated brake fluid for cleaning.
- Allow brake fluid to come in contact with the eyes, otherwise eye injury may occur.
- Allow brake fluid to contact painted surfaces or plastic parts, otherwise damage may occur.
- Disconnect any hydraulic connection, otherwise the entire system must be disassembled, drained, cleaned, and then, properly filled and bled after reassembly.

BRAKE PAD REPLACEMENT**NOTE:**

It is not necessary to disassemble the brake caliper and brake hose to replace the brake pads.

**1. Remove:**

- Retaining bolt ①
- Caliper assembly ②

**2. Remove:**

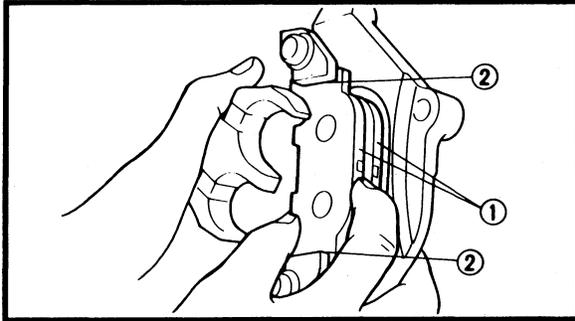
- Brake pads

NOTE:

- Replace the pad spring if pad replacement is required.
- Replace the pads as a set if either is found to be worn to the wear limit.

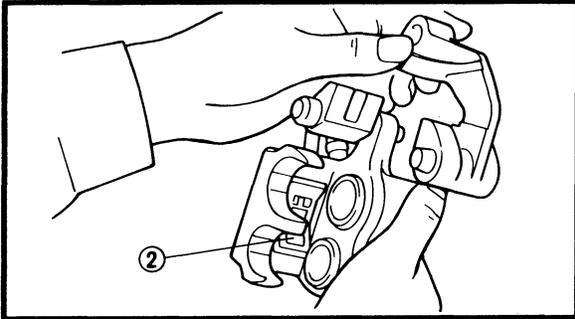


Wear limit ①:
0.8 mm (0.03 in)



3. Install:

- Brake pads ①
- Pad springs ②

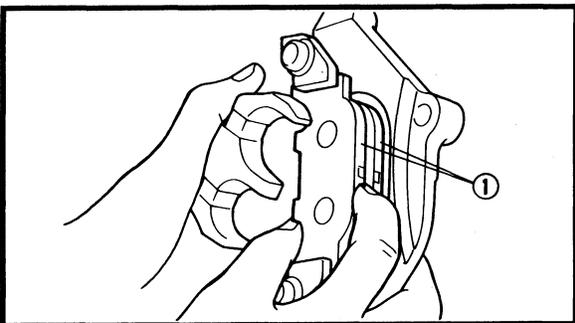


Installation steps:

- Tightly connect a suitable hose to the caliper bleed screw. Then, place the other end of that hose into an open container.
- Loosen the caliper bleed screw and push the piston into the caliper using your finger.
- Tighten the caliper bleed screw.



Caliper bleed screw:
6 Nm (0.6 m · kg, 4.3 ft · lb)



- Be careful to install the pad springs in their proper positions.
- Install the brake pads ①.

4. Lubricate:

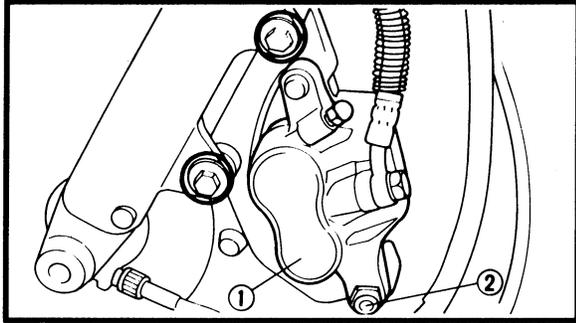
- Retaining bolt (caliper body)
- Caliper guide shaft



Recommended lubricant:
Lithium soap base grease

CAUTION:

- Don't allow any grease to splatter onto the brake pads.
- Wipe off any excess grease.



5. Install:

- Caliper assembly ①
- Retaining bolt ②

**Retaining bolt:**

23 Nm (2.3 m · kg, 17 ft · lb)

Bolt (caliper bracket):

35 Nm (3.5 m · kg, 25 ft · lb)

6. Inspect:

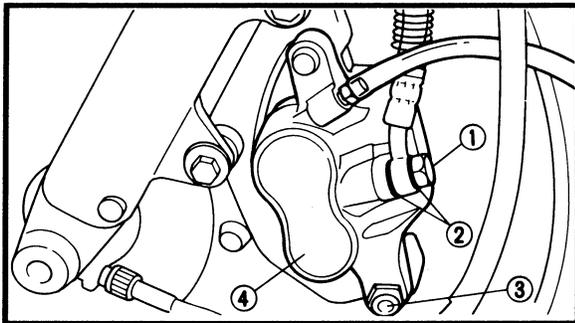
- Brake fluid level
Refer to the "BRAKE FLUID LEVEL INSPECTION" section.

7. Check:

- Brake lever operation
A soft, spongy feeling → Bleed brake system.
Refer to the "AIR BLEEDING" section.

CALIPER DISASSEMBLY**NOTE:**

Before disassembling the front brake caliper, drain the brake hose, master cylinder, brake caliper and reservoir tank of their brake fluid.

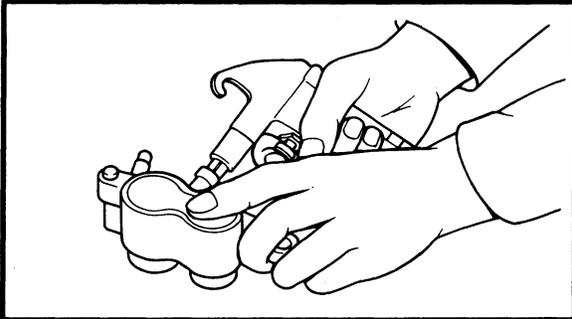
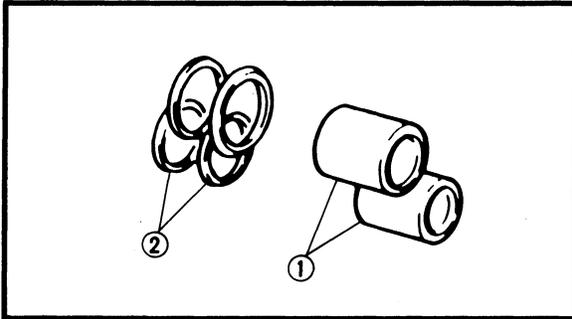


1. Remove:

- Union bolt ①
- Copper washers ②
- Retaining bolt ③
- Caliper assembly ④
- Brake pads
- Pad springs

NOTE:

Place the open hose end into a container and carefully drain the brake fluid.



2. Remove:
- Caliper pistons ①
 - Piston seals ②

Removal steps:

- Blow compressed air into the hose joint opening to force out the caliper piston from the caliper body.

⚠ WARNING

- Never try to pry out the piston.
- Cover the piston with a rag. Use care so that piston does not cause injury as it is expelled from the cylinder.

- Remove the piston seals.

INSPECTION AND REPAIR

Recommended brake component replacement schedule:

Brake pads	As required
Piston seal, Dust seal	Every two years
Brake hoses	Every four years
Brake fluid	Replace only when brakes are disassembled.

⚠ WARNING

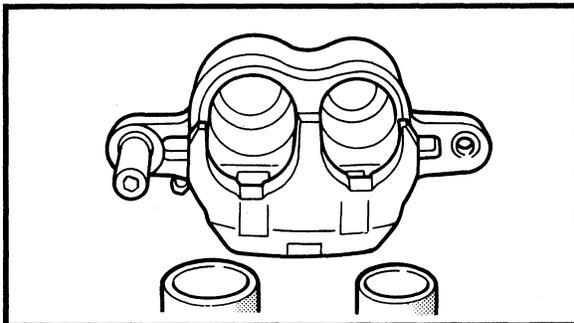
All internal parts should only be cleaned with new brake fluid. Do not use solvents which cause seals to swell and distort.

1. Inspect:

- Caliper piston
Scratches/Rust/Wear → Replace caliper assembly.
- Caliper cylinder
Wear/Scratches → Replace caliper assembly.

⚠ WARNING

Replace the piston seals whenever a caliper is disassembled.



2. Inspect:

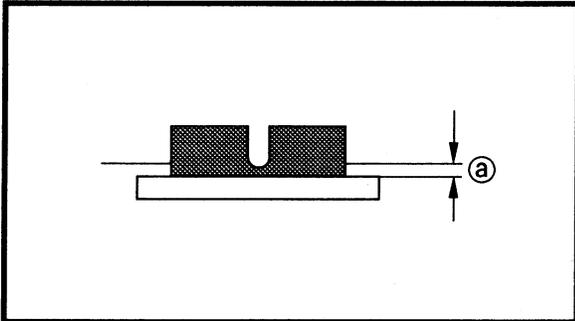
- Caliper body
- Caliper bracket
- Cracks/Damage → Replace.
- Oil delivery passage (caliper body)
- Blow out with compressed air.

3. Inspect:

- Brake hose
- Cracks/Wear/Damage → Replace.

4. Measure:

- Brake pads (thickness)
- Out of specification → Replace.



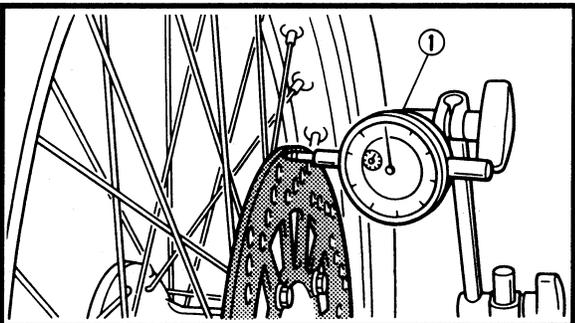
	Wear limit ②: 0.8 mm (0.03 in)
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NOTE:

- Replace the pad spring as a set if pad replacement is required.
- Replace the pad as a set if either is found to be worn to the wear limit.

5. Inspect:

- Brake disc
- Scratches/Damage → Replace.



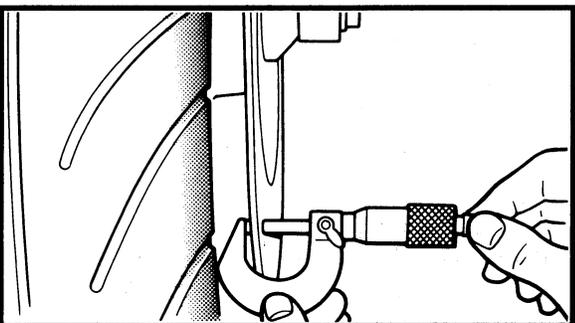
6. Measure:

- Brake disc deflection
- Out of specification → Inspect wheel runout.
- If wheel runout is in good condition, replace the brake disc.

	Maximum deflection: 0.15 mm (0.006 in)
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① Dial gauge

- Brake disc thickness
- Out of specification → Replace.



	Minimum thickness: 4.5 mm (0.18 in)
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**NOTE:**

Tighten the bolts (brake disc) in stage using a crisscross pattern.



Bolt (brake disc):
23 Nm (2.3 m · kg, 17 ft · lb)
LOCTITE®

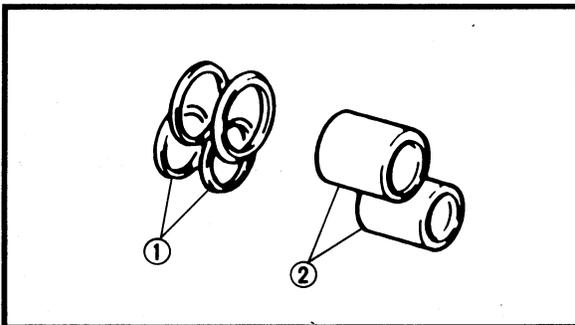
CALIPER ASSEMBLY**⚠ WARNING**

- All internal parts should only be cleaned with new brake fluid.
- Internal parts should be lubricated with brake fluid when installed.



Recommended brake fluid:
DOT #4

- Replace the piston seals whenever a caliper is disassembled.

**1. Install:**

- Piston seals ①
- Caliper pistons ②
- Pad springs

⚠ WARNING

Always use new piston seals.

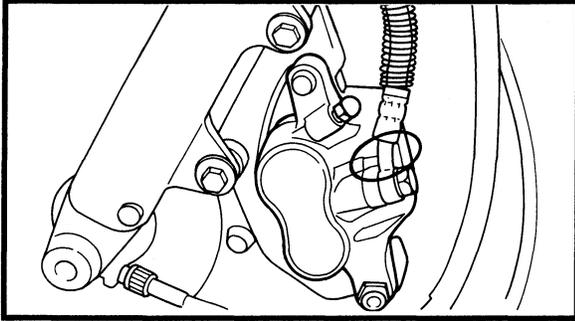
2. Install

- Brake pads
- Caliper body
- Caliper bracket

Refer to the "BRAKE PAD REPLACEMENT" section.



Retaining bolt (caliper body):
23 Nm (2.3 m · kg, 17 ft lb)
Bolt (caliper bracket):
35 Nm (3.5 m · kg, 25 ft · lb)



3. Install:

- Brake hose
- Copper washers
- Union bolt



Union bolt:
30 Nm (3.0 m • kg, 22 ft • lb)

CAUTION:

When installing the brake hose to the caliper, lightly touch the brake pipe with the projection on the caliper.

⚠ WARNING

- Proper hose routing is essential to ensure safe motorcycle operation. Refer to the "CABLE ROUTING" section.
- Always use new copper washers.

4. Fill:

- Brake fluid



Recommended brake fluid:
DOT #4

CAUTION:

Brake fluid may erode painted surfaces or plastic parts. Always clean up spilled fluid immediately.

⚠ WARNING

- Use only designated quality brake fluid, otherwise the rubber seals may deteriorate, causing leakage and poor brake performance.
- Refill with the same type of brake fluid, mixing fluids may result in a harmful chemical reaction and lead to poor performance.
- Be careful that water does not enter the master cylinder when refilling. Water will significantly lower the boiling point of the fluid, which may result in vapor lock.



5. Air bleed:

- Brake system
Refer to the "AIR BLEEDING" section.

6. Inspect:

- Brake fluid level
Brake fluid level is under "LOWER" level line → Fill to proper level.
Refer to the "BRAKE FLUID LEVEL INSPECTION" section.