YAMAHA

# XV250G
# XV250SG

3LV-AE1

# SUPPLEMENTARY SERVICE MANUAL

# FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the XV250G/XV250SG. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

**XV250W SERVICE MANUAL: 3LV-ME1**

**XV250G/XV250SG**
**SUPPLEMENTARY**
**SERVICE MANUAL**
**©1994 by Yamaha Motor Co., Ltd.**
**1st Edition, August 1994**
**All rights reserved.**
**Any reprinting or unauthorized use without the written permission of Yamaha Motor Co., Ltd. is expressly prohibited.**

# NOTICE

This manual was written by Yamaha Motor Company Ltd. primarily for use by Yamaha dealers and their 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 motorcycle 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.
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.

## 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

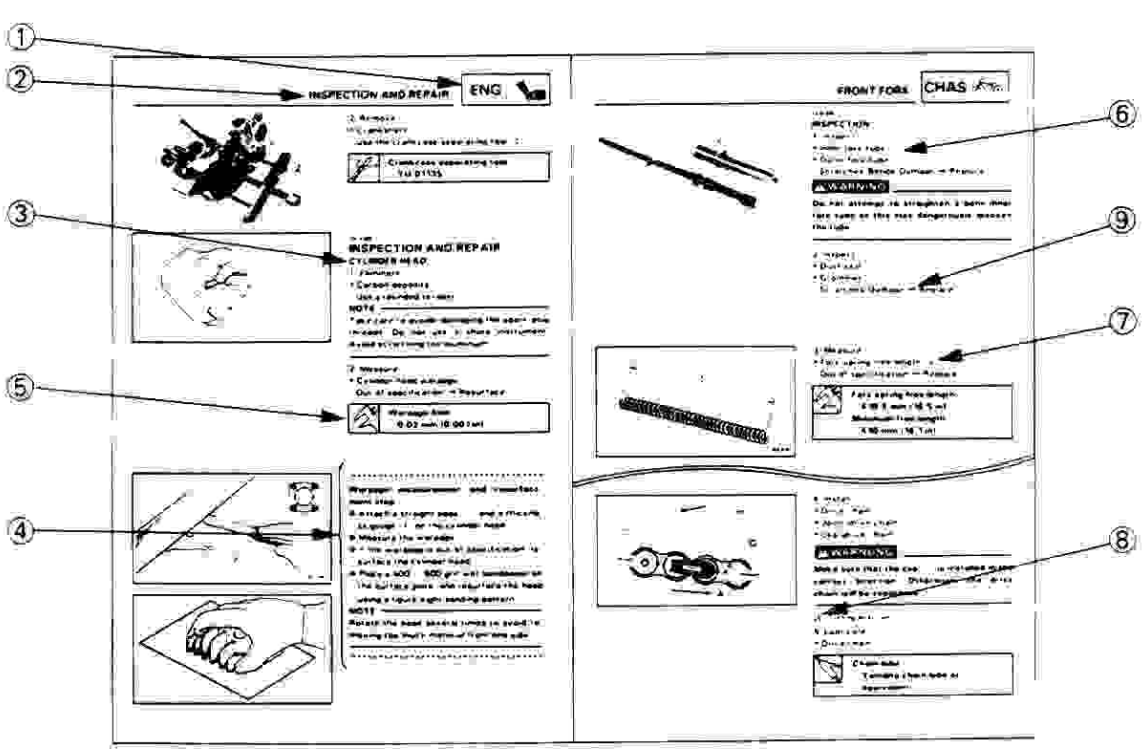
All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all disassembly, repair, assembly, and inspections. A set of particularly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

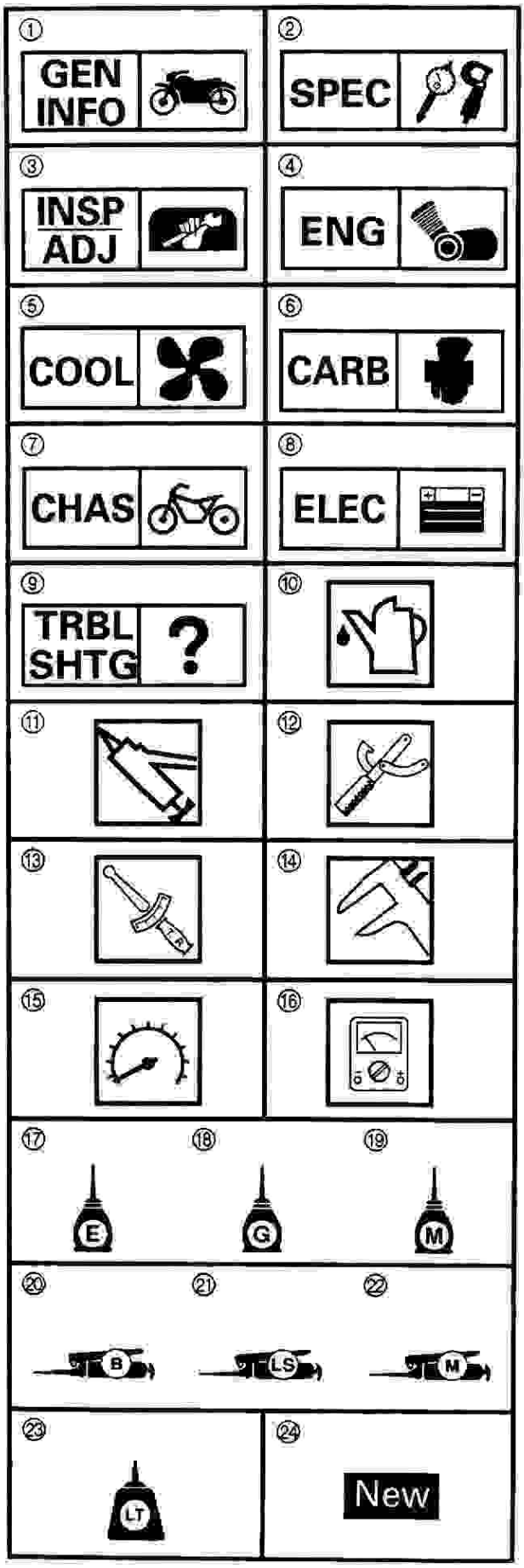
## IMPORTANT FEATURES

- 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.






## 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

# CONTENTS


**GENERAL INFORMATION** ..... K-5
- MOTORCYCLE IDENTIFICATION ..... K-5
  - VEHICLE IDENTIFICATION NUMBER ..... K-5
  - ENGINE SERIAL NUMBER ..... K-5

**SPECIFICATIONS** ..... K-5
- GENERAL SPECIFICATIONS ..... K-5
- MAINTENANCE SPECIFICATIONS ..... K-6
  - ENGINE ..... K-6
  - CHASSIS ..... K-6
  - ELECTRICAL ..... K-7
- CABLE ROUTING ..... K-8

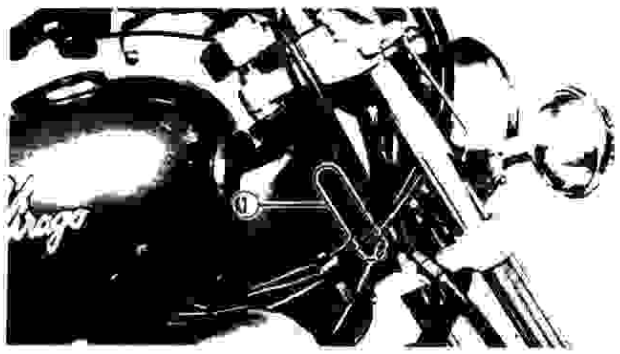
**PERIODIC INSPECTION AND ADJUSTMENT** ..... K-10
- CHASSIS ..... K-10
  - BRAKE PAD INSPECTION ..... K-10

**CHASSIS** ..... K-10
- FRONT WHEEL ..... K-10
- FRONT BRAKE ..... K-11
  - BRAKE PAD REPLACEMENT ..... K-11
  - CALIPER DISASSEMBLY ..... K-12
  - INSPECTION AND REPAIR ..... K-13
  - CALIPER ASSEMBLY ..... K-14
- FRONT FORK ..... K-15
- STEERING HEAD ..... K-16

**ELECTRICAL** ..... K-16
- IGNITION SYSTEM ..... K-16
  - CIRCUIT DIAGRAM ..... K-16
  - TROUBLESHOOTING ..... L-1
- SIGNAL SYSTEM ..... L-4
  - CIRCUIT DIAGRAM ..... L-4
  - SIGNAL SYSTEM TEST AND CHECK ..... L-4

**XV250G/XV250SG WIRING DIAGRAM**

4




# GENERAL INFORMATION

## MOTORCYCLE IDENTIFICATION

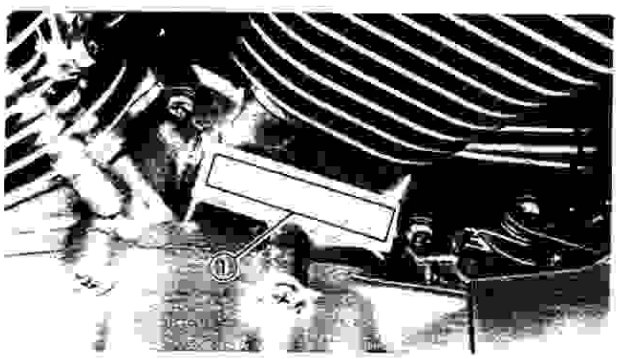
### VEHICLE IDENTIFICATION NUMBER

The vehicle identification number ① is stamped into the right side of the steering head.

**Starting serial number:**
**XV250: JYA3LVT0*SA010101**
**XV250S: JYA3LVT0*SA012101**

**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:**
**XV250: 3LV-010101**
**XV250S: 3LV-012101**

**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 | | XV250G/XV250SG | |
|---|---|---|---|
| Model code number: | | XV250G | XV250SG |
| | | 3LV7 | 3LV8 |
| Vehicle identification number: | | JYA3LVT0*SA010101 | JYA3LVT0*SA012101 |
| Engine starting number: | | 3LV-010101 | 3LV-012101 |
| Dimensions: | | | |
| Overall length | | 2,190 mm (86.2 in) | ← |
| Overall width | | 725 mm (28.5 in) | 815 mm (32.1 in) |
| Overall height | | 1,045 mm (41.1 in) | 1,140 mm (44.9 in) |
| Seat height | | 685 mm (27.0 in) | ← |
| Wheelbase | | 1,490 mm (58.7 in) | ← |
| Minimum ground clearance | | 145 mm (5.7 in) | ← |
| Spark plug: | | | |
| Type | | C6HSA/U20FS-U | |
| Manufacturer | | NGK/NIPPONDENSO | |
| Gap | | 0.6 ~ 0.7 mm (0.024 ~ 0.028 in) | |
| Tire: | | | |
| Type | | With tube | |
| Size | front | 3.00-18 47P | |
| | rear | 130/90-15 M/C 66P | |
| Manufacturer | front | CHENG SHIN | |
| | rear | CHENG SHIN | |
| Type | front | C916 | |
| | rear | C915 | |
| Tire pressure (cold tire): | | | |
| Maximum load-except motorcycle | | 183 kg (404 lb) | |
| Loading condition A* | | 0 ~ 90 kg (0 ~ 198 lb) | |
| | front | 175 kPa (1.75 kg/cm², 25 psi) | |
| | rear | 200 kPa (2.0 kg/cm², 28 psi) | |
| Loading condition B* | | 90 ~ 183 kg (198 ~ 404 lb) | |
| | front | 200 kPa (2.0 kg/cm², 28 psi) | |
| | rear | 225 kPa (2.25 kg/cm², 32 psi) | |
| | | * Load is the total weight of cargo, rider, passenger and accessories. | |

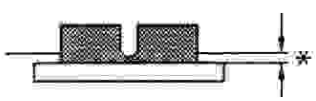
# MAINTENANCE SPECIFICATIONS

## ENGINE

| Model | | XV250G/XV250SG |
|---|---|---|
| Carburetor: | | |
| I.D. mark | | 3DM10 |
| Main jet | (M.J.) | #110 |
| Main air jet | (M.A.J.) | #60 |
| Jet needle | (J.N.) | 4DM1-3 |
| Needle jet | (N.J.) | O-0 |
| Pilot jet | (P.J.) | #17.5 |
| Pilot air jet | (P.A.J.) | #155 |
| Pilot screw | (P.S.) | 2-5/8 |
| Pilot outlet | (P.O.) | ø0.85 |
| Bypass | (B.P. 1) | ø0.8 |
| | (B.P. 2) | ø0.8 |
| | (B.P. 3) | ø0.8 |
| Valve seat size | (V.S.) | ø1.0 |
| Starter jet | (G.S. 1) | #25 |
| | (G.S. 2) | 0.7 |
| Throttle valve size | (Th.V.) | #140 |
| Fuel level | (F.L.) | 16.5 ~ 17.5 mm (0.65 ~ 0.69 in) |
| Engine idling speed | | 1,250 ~ 1,350 r/min |
| Intake vacuum | | 47.9 kPa (360 mmHg, 14.17 inHg) |

## CHASSIS

| Model | | XV250G/XV250SG |
|---|---|---|
| Front suspension: | | |
| Front fork travel | | 140 mm (5.5 in) |
| Fork spring free length | | 415 mm (16.3 in) |
| <Limit> | | <410 mm (16.1 in)> |
| Spring rate: | K1 | 7.85 N/mm (0.8 kg/mm, 44.8 lb/in) |
| | K2 | 11.28 N/mm (1.15 kg/mm, 64.4 lb/in) |
| Stroke: | K1 | 0 ~ 106 mm (0 ~ 4.17 in) |
| | K2 | 106 ~ 140 mm (4.17 ~ 5.51 in) |
| Optional spring | | No |
| Oil capacity | | 245 cm³ (8.64 Imp oz, 8.28 US oz) |
| Oil level | | 120 mm (4.72 in) |
| | | From top of fully compressed inner tube without fork spring |
| Oil grade | | Fork oil 10W or equivalent |
| Rear suspension: | | |
| Shock absorber travel | | 70 mm (2.76 in) |
| Spring free length | | 236 mm (9.29 in) |
| <Limit> | | <229 mm (9.02 in)> |
| Fitting length | | 207.5 mm (8.17 in) |
| Spring rate: | K1 | 13.7 N/mm (1.4 kg/mm, 78.4 lb/in) |
| | K2 | 21.6 N/mm (2.2 kg/mm, 123.2 lb/in) |
| Stroke: | K1 | 0 ~ 41 mm (0 ~ 1.61 in) |
| | K2 | 41 ~ 70 mm (1.61 ~ 2.76 in) |
| Optional spring | | No |

| Model | | XV250G/XV250SG |
|---|---|---|
| Front wheel: | | |
| Type | | Spoke wheel |
| Rim size | | 18 × 1.60 |
| Rim material | | Steel |
| Rim runout limit: | radial | <2 mm (0.08 in)> |
| | lateral | <2 mm (0.08 in)> |
| Rear wheel: | | |
| Type | | Spoke wheel |
| Rim size | | 15 M/C × MT2.75 |
| Rim material | | Steel |
| Rim runout limit: | radial | <2 mm (0.08 in)> |
| | lateral | <2 mm (0.08 in)> |
| Drive chain: | | |
| Type/manufacturer | | 520V6/DAIDO |
| No. of links | | 114 |
| Drive chain slack | | 30 ~ 40 mm (1.2 ~ 1.6 in) |
| Front disc brake: | | |
| Type | | Single |
| Disc outside diameter × thickness | | 282 × 5.0 mm (11.1 × 0.20 in) |
| Pad thickness: | inner | 6.2 mm (0.24 in) |
| <Limit>* | | <0.8 mm (0.03 in)> |
| | outer | 6.2 mm (0.24 in) |
| <Limit>* | | <0.8 mm (0.03 in)> |
|  | | |
| Master cylinder inside diameter | | 12.70 mm (0.50 in) |
| Caliper cylinder inside diameter | | 25.40 mm (1.00 in) + 30.10 mm (1.19 in) |
| Brake fluid type | | DOT #4 |

**Tightening torques**

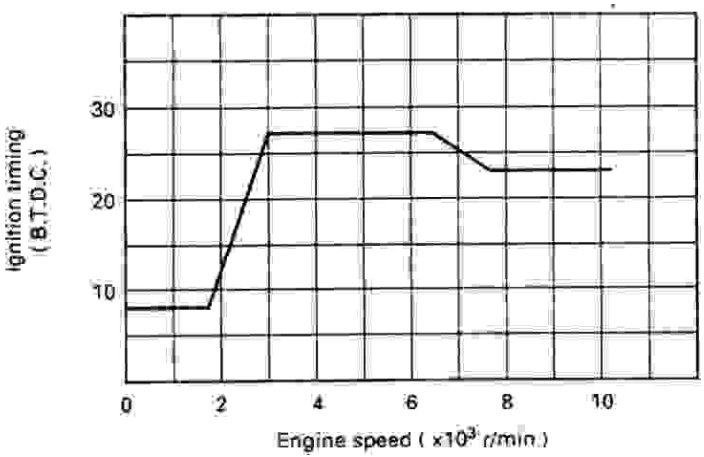
| Part to be tightened | Thread size | Tightening torque | | | Remarks |
|---|---|---|---|---|---|
| | | Nm | m • kg | ft • lb | |
| Headlight stay and headlight (lower) | M6 × 1.0 | 7 | 0.7 | 5.1 | |
| Headlight stay and flasher light | M12 × 1.25 | 23 | 2.3 | 17 | |
| Handlebar crown and inner tube | M8 × 1.25 | 30 | 3.0 | 22 | |
| Steering stem and ring nut | M25 × 1.0 | 38 | 3.8 | 27 | See NOTE. |
| Handlebar crown and handlebar holder | M10 × 1.25 | 52 | 5.2 | 37 | (XV250) |
| (lower) | M10 × 1.25 | 23 | 2.3 | 17 | (XV250S) |
| Handlebar and handlebar holder (upper) | M8 × 1.25 | 23 | 2.3 | 17 | |
| Front brake disc and hub | M8 × 1.25 | 23 | 2.3 | 17 | LT |
| 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 | |

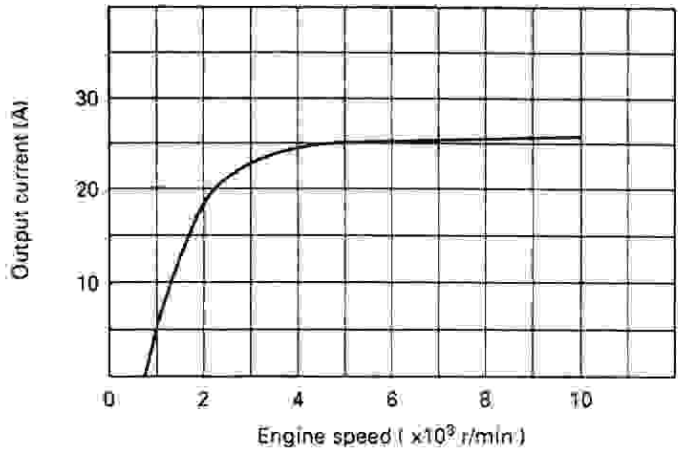
| Part to be tightened | Thread size | Tightening torque | | | Remarks |
|---|---|---|---|---|---|
| | | Nm | m • kg | ft • lb | |
| Engine (rear-lower) and frame | M8 × 1.25 | 35 | 3.5 | 25 | |
| Footrest | M10 × 1.25 | 40 | 4.0 | 28 | |
| Sidestand | M10 × 1.25 | 23 | 2.3 | 17 | |
| Pivot shaft and 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).

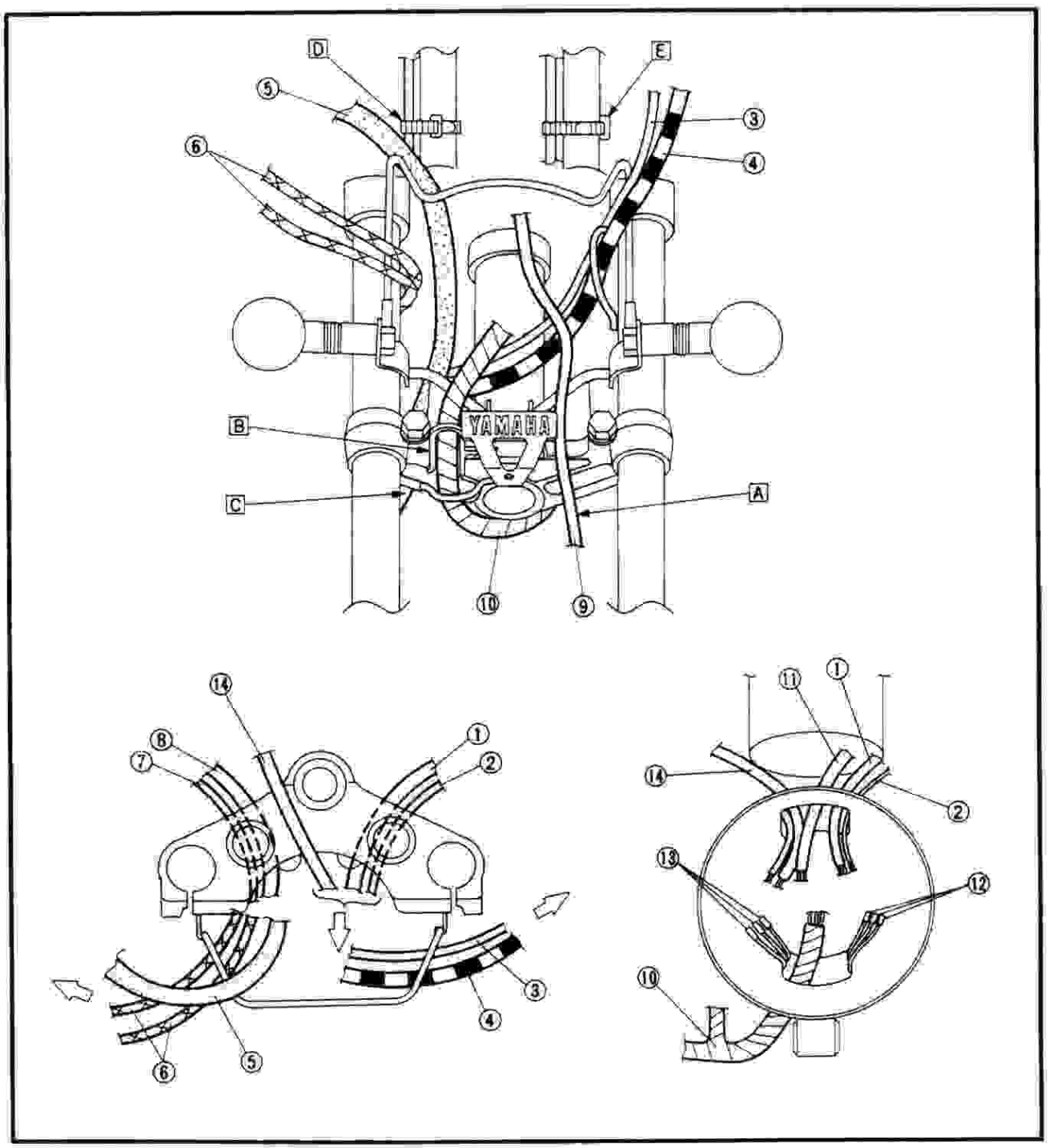
**ELECTRICAL**

| Model | XV250G/XV250SG |
|---|---|
| Ignition system: | |
| Ignition timing (B.T.D.C.) | 8° at 1,300 r/min |
| Advanced timing (B.T.D.C.) | 27° at 3,000 r/min |
| Advancer type | Electrical |
|  | |
| T.C.I.: | |
| Pickup coil resistance (color) | 192 ~ 288Ω at 20°C (68°F) (Blue/Yellow – Green/White) |
| T.C.I. Unit-model/manufacturer | NDF05/NIPPONDENSO |
| Ignition coil: | |
| Model/manufacturer | JO226, JO227/NIPPONDENSO |
| Minimum spark gap | 6 mm (0.24 in) |
| Primary winding resistance | 3.2 ~ 4.8Ω at 20°C (68°F) |
| Secondary winding resistance | 10.4 ~ 15.6kΩ at 20°C (68°F) |

| Model | XV250G/XV250SG |
|---|---|
| A.C. generator: | |
| Model/manufacturer | LMZ65/NIPPONDENSO |
| Nominal output | 14V, 25A at 5,000 r/min |
| |  |
| Stator coil resistance | 0.21 ~ 0.31Ω at 20°C (68°F) (White – White) |
| Rectifier/regulator: | |
| Type | Semiconductor – short circuit |
| Model/manufacturer | SH650/SHINDENGEN |
| No load regulated voltage | 14.2 ~ 15.2V |
| Capacity | 18A |
| Withstand voltage | 240V |
| Flasher relay: | |
| Type | Full-transistor |
| Model/manufacturer | FE246BH/NIPPONDENSO |
| Self-cancelling device | No |
| Flasher frequency | 75 ~ 95 cycle/min |
| Wattage | 21W × 2 + 3W |
| Carburetor heater: | |
| Output | 12V30W × 2 |
| Heater resistance | 6 ~ 10Ω at 23°C (73°F) |

## 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.

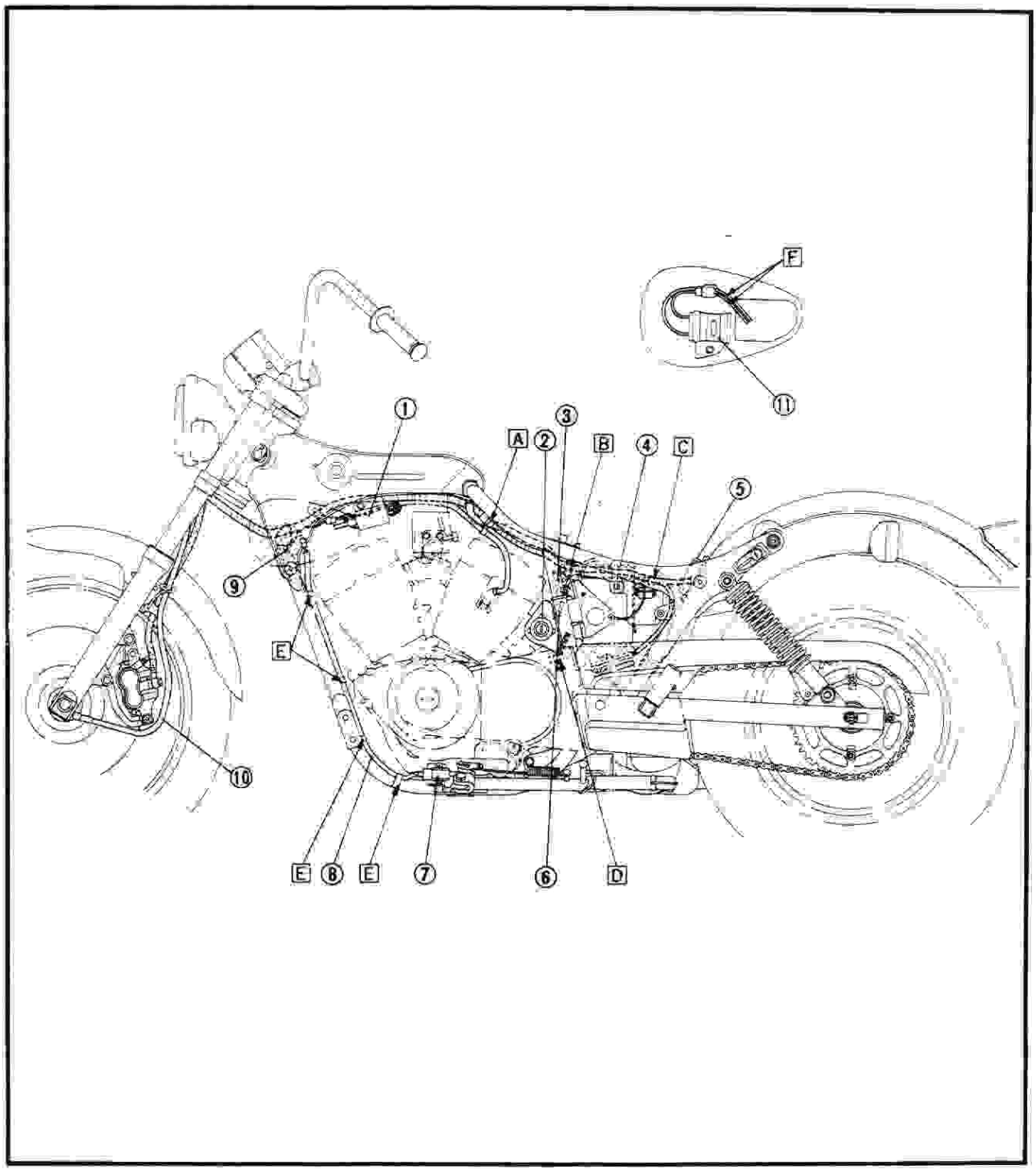


# CABLE ROUTING

SPEC

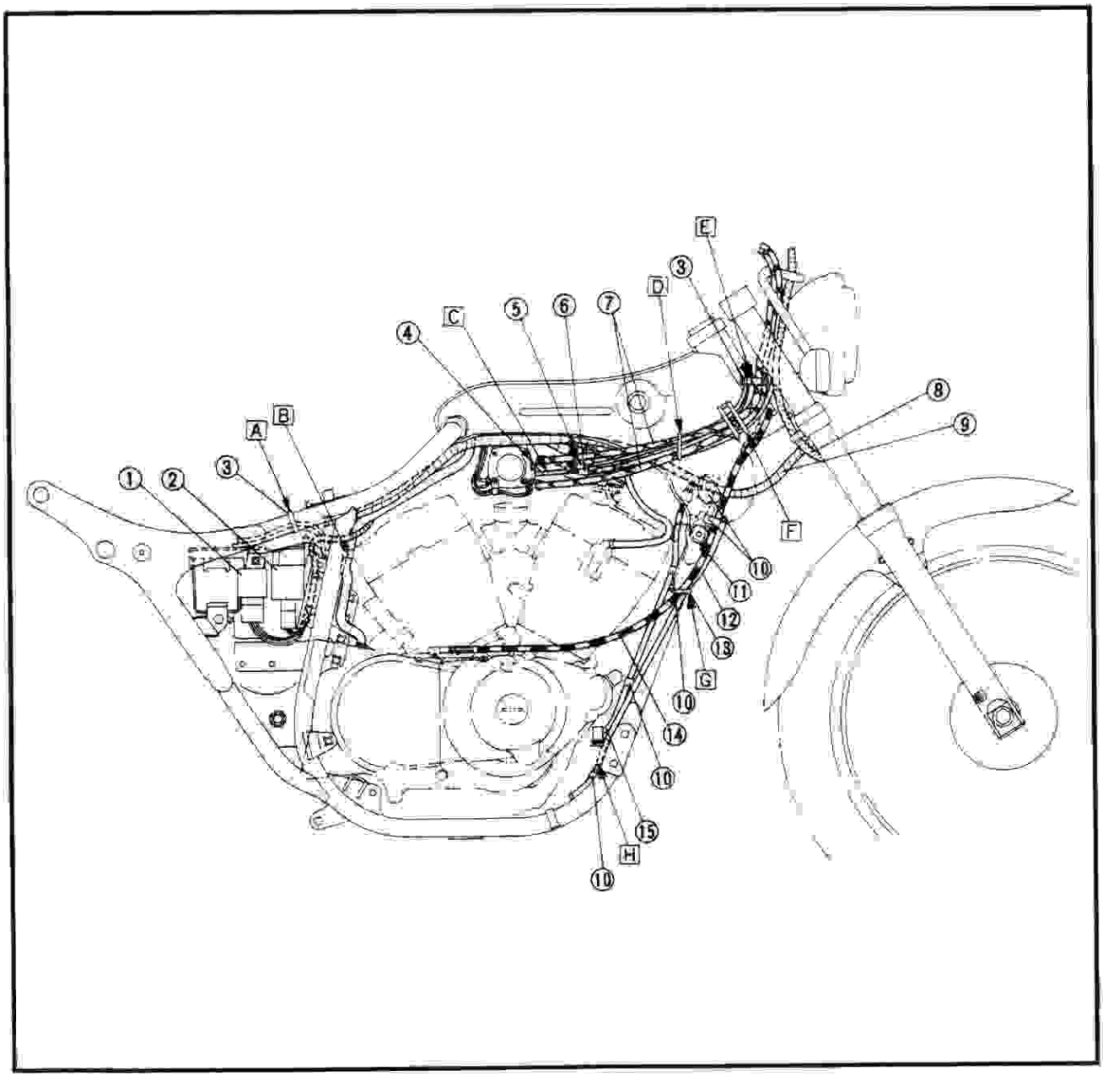
① Ignition coil
② Main switch
③ Starter relay
④ Rectifier/regulator
⑤ Ignitor unit
⑥ Main switch lead
⑦ Sidestand switch
⑧ Sidestand switch lead
⑨ Horn lead
⑩ Speedometer cable
⑪ Thermo switch

[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.

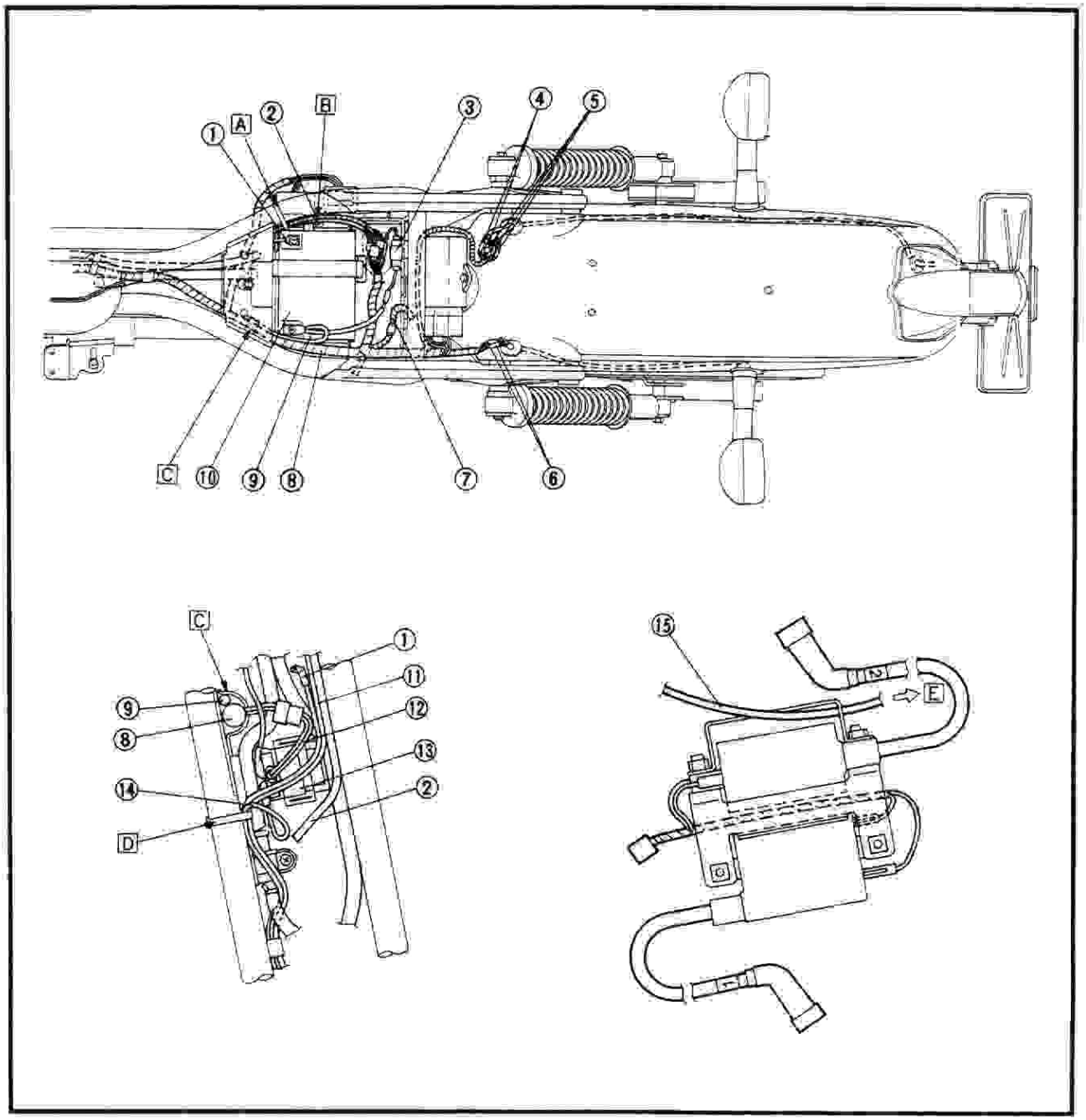


① Flasher relay
② Starting circuit cut-off relay
③ Band
④ Choke cable
⑤ Handlebar switch lead (right)
⑥ Front brake switch lead
⑦ Throttle cable
⑧ Brake hose
⑨ Wire harness
⑩ Clamp
⑪ Horn
⑫ Air cleaner drain hose
⑬ Guide
⑭ Clutch cable
⑮ Rear brake switch

[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.



① Battery negative ⊖ 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 ⊕ 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 ⊕ lead.
[D] Clamp the starter motor lead, neutral switch lead and battery negative ⊖ lead.
[E] To carburetors.

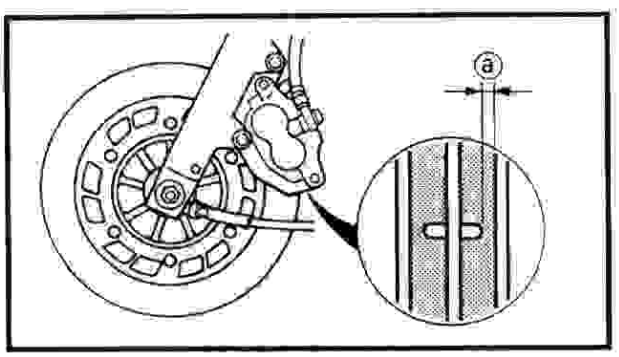


# PERIODIC INSPECTION AND ADJUSTMENT

## 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 .

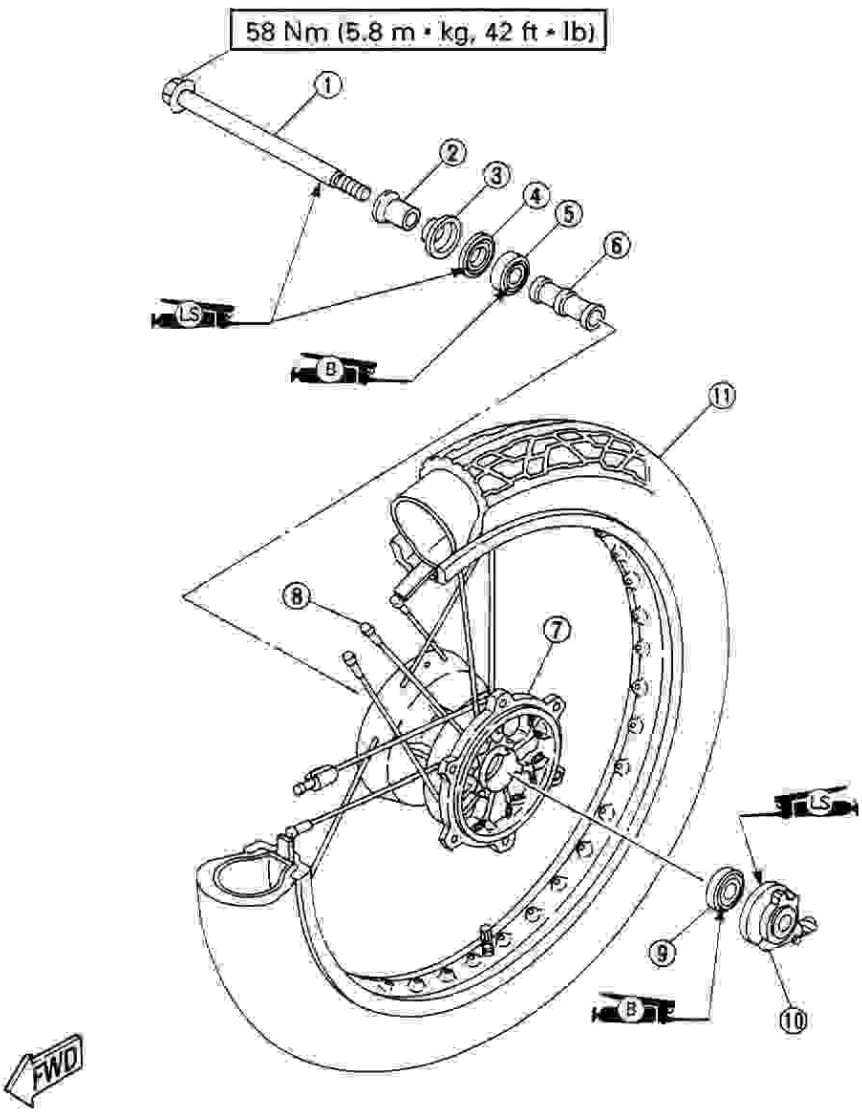
# CHASSIS

## 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) | |
| Maximum load*: | 183 kg (404 lb) | |
| Cold tire pressure: | Front | Rear |
| Up to 90 kg (198 lbs) load* | 175 kPa (1.75 kgf/cm², 25 psi) | 200 kPa (2.0 kgf/cm², 28 psi) |
| 90 kg (198 lbs) ~ Maximum load* | 200 kPa (2.0 kgf/cm², 28 psi) | 225 kPa (2.25 kgf/cm², 32 psi) |

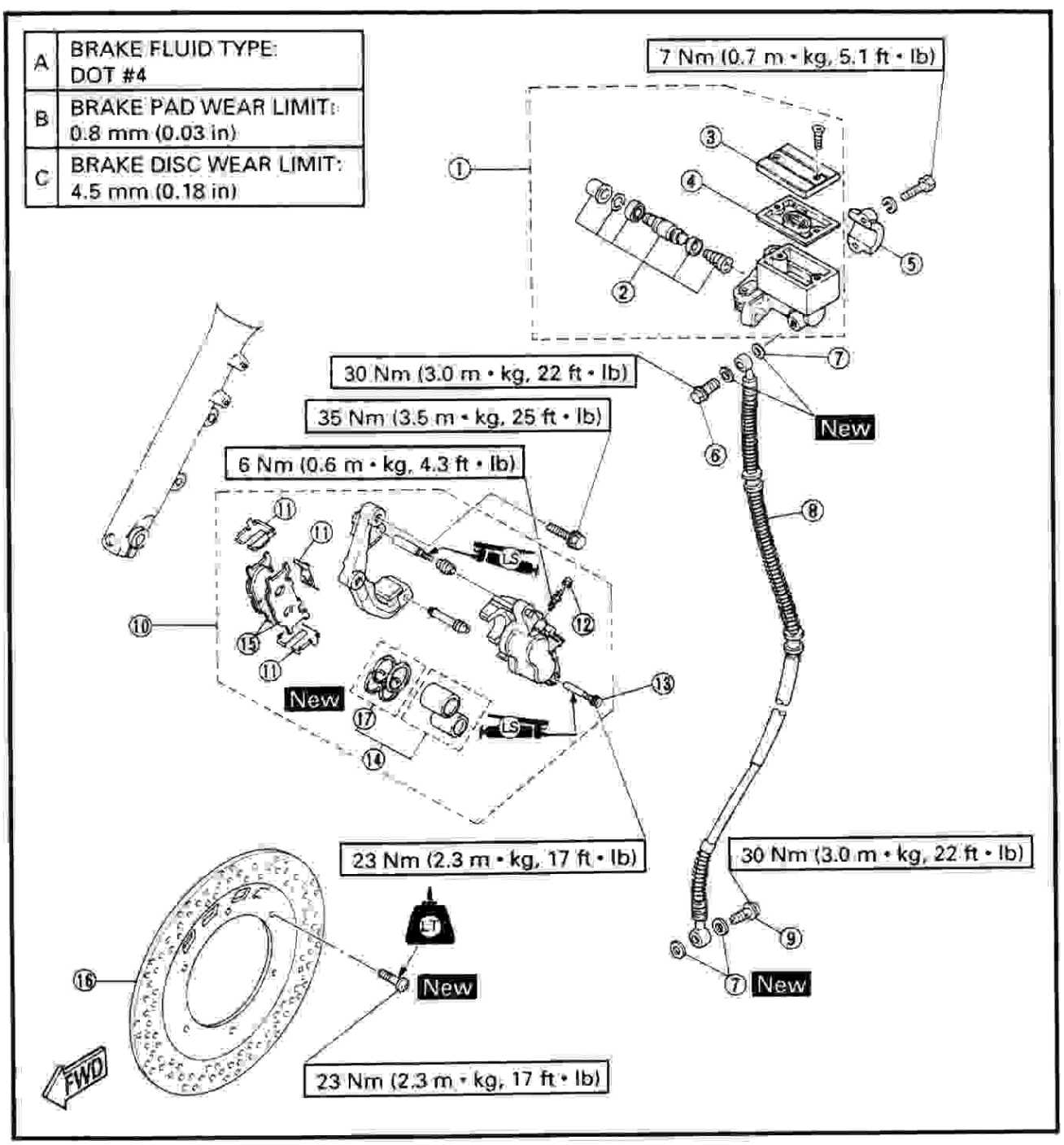
* Load is the total weight of cargo, rider, passenger, and accessories.




| | |
|---|---|
| A | TIRE SIZE:<br>3.00-18 47P |
| B | WEAR LIMIT:<br>1.0 mm (0.04 in) |
| C | RIM SIZE:<br>18 × 1.60 |
| D | RIM RUNOUT LIMIT:<br>Radial:<br>2.0 mm (0.08 in)<br>Lateral:<br>2.0 mm (0.08 in) |

## 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:**

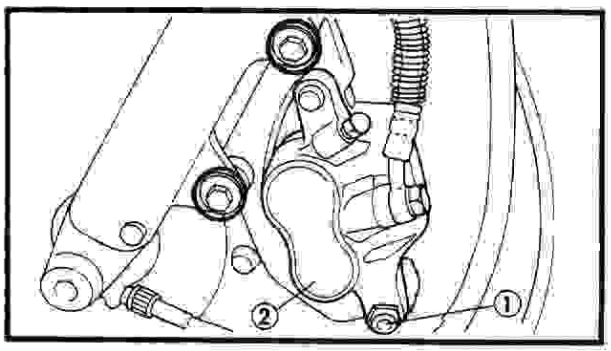
**Disc brake components rarely require disassembly. DO NOT:**

- **Disassembly components unless absolutely necessary.**
- **Use solvents on internal brake components.**
- **Use contaminated brake fluid for cleaning.**
- **Allow brake fluid to came 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.**

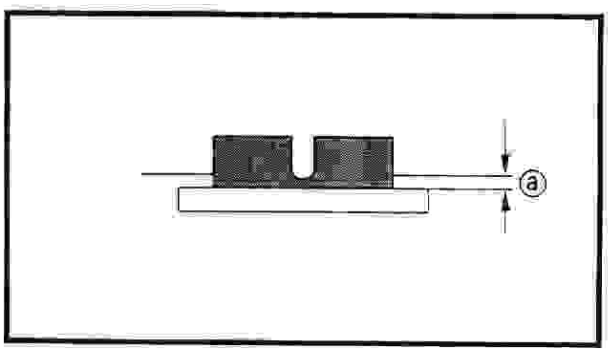
## BRAKE PAD REPLACEMENT

**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

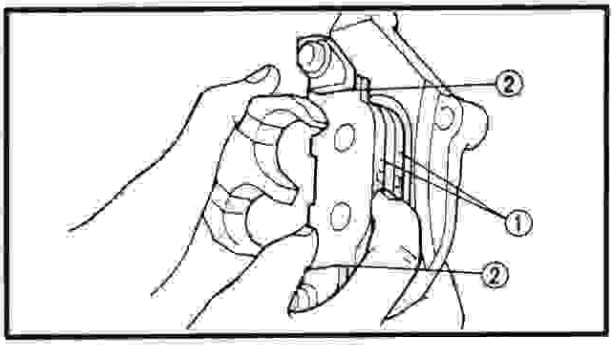


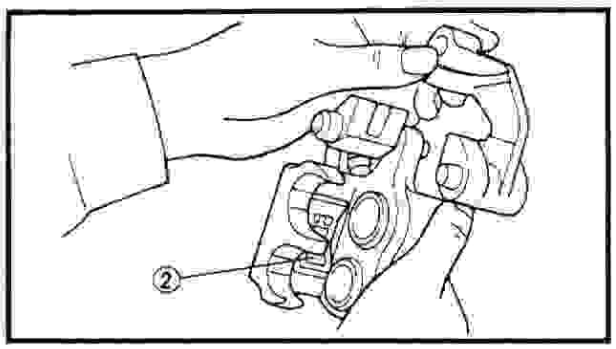

2. Remove:
- Brake pads

**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 ⓐ:**
**0.8 mm (0.03 in)**



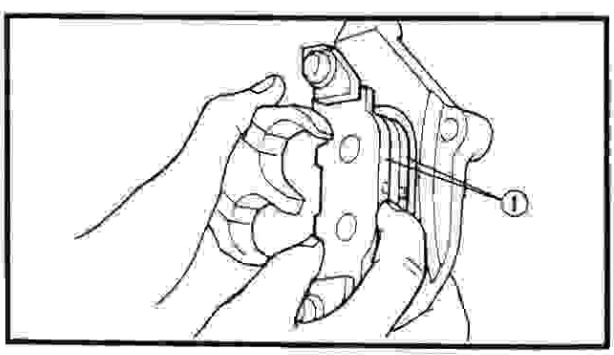

3. Install:
- Brake pads ①
- Pad springs ②

**********

**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.

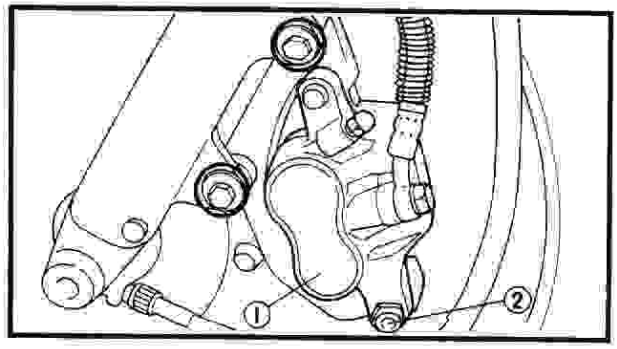
**********

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

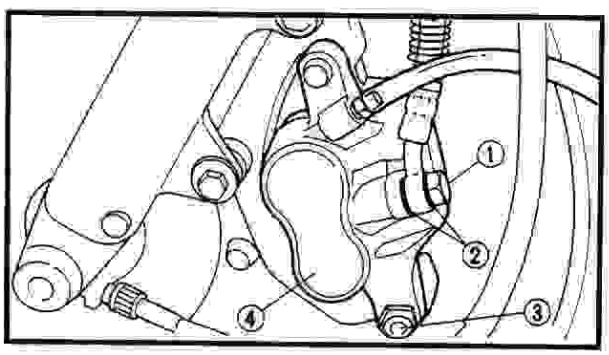
**Retaining bolt:**
**23 Nm (2.3 m • kg, 17 ft • lb)**
**Bolt (caliper bracket):**
**35 Nm (3.5 m • kg, 25 ft • lb)**

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.

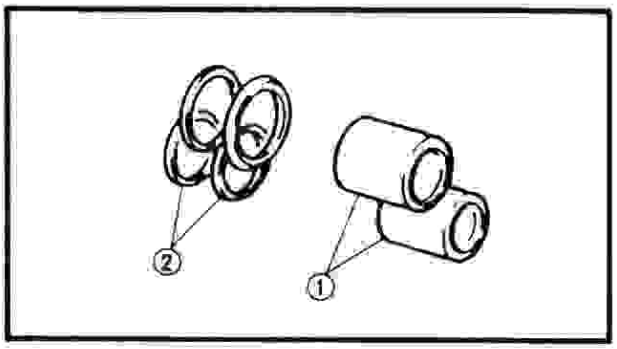
### CALIPER DISASSEMBLY

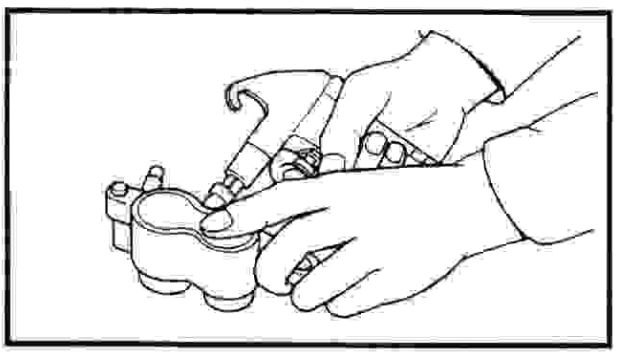
**NOTE:**
Before disassembling the front brake caliper, drain the brake hose, master cylinder, brake caliper and reservoir tank of their brake fluid.




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.

**********

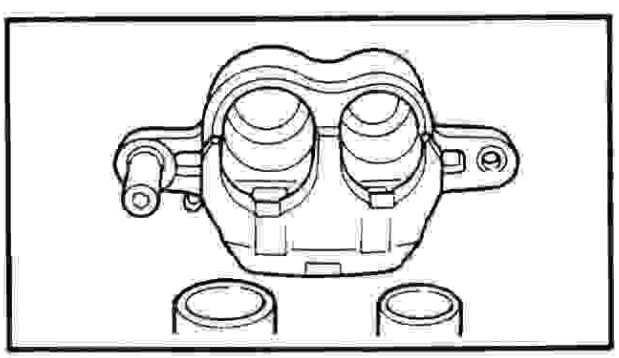
**INSPECTION AND REPAIR**

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.**



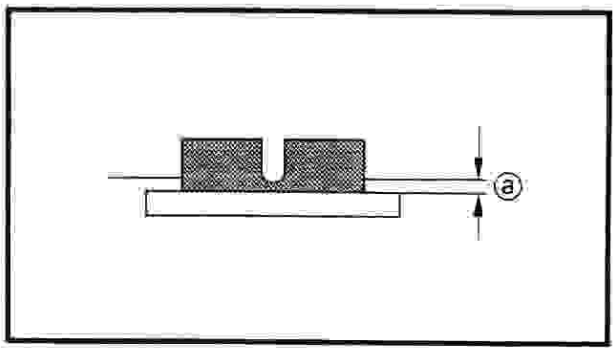
1. Inspect:
- Caliper piston
  Scratches/Rust/Wear → Replace caliper assembly.
- Caliper cylinder
  Wear/Scratches → Replace caliper assembly.

**⚠ 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.

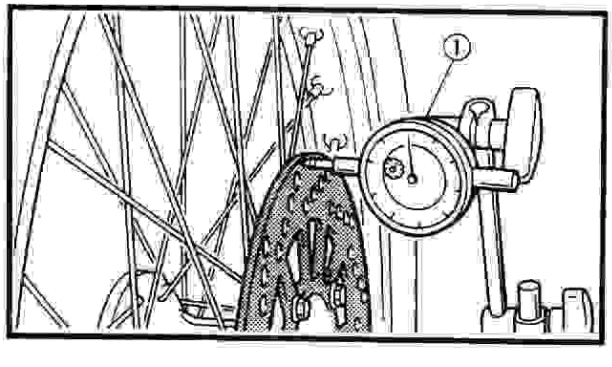


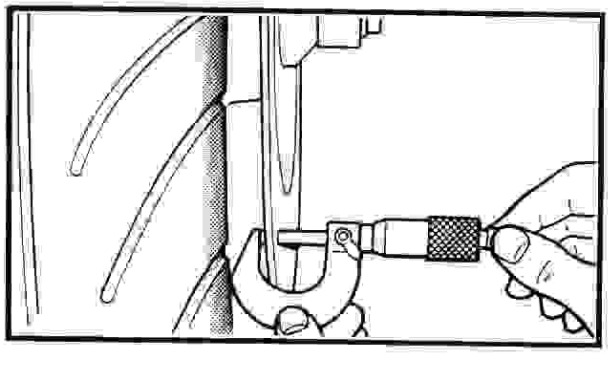

4. Measure:
- Brake pads (thickness)
  Out of specification → Replace.

**Wear limit ⓐ:**
**0.8 mm (0.03 in)**

**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)**

① Dial gauge

- Brake disc thickness
  Out of specification → Replace.

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

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

| | |
|---|---|
| | **Bolt (brake disc):**<br>**23 Nm (2.3 m • kg, 17 ft • lb)**<br>**LOCTITE®** |

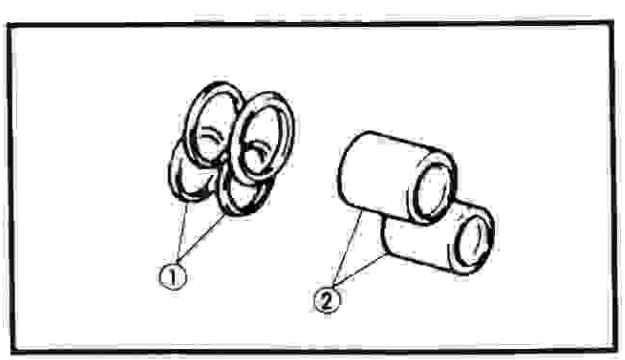
## CALIPER ASSEMBLY

**⚠ 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:**<br>**DOT #4** |

- **Replace the piston seals whenever a caliper is disassembled.**



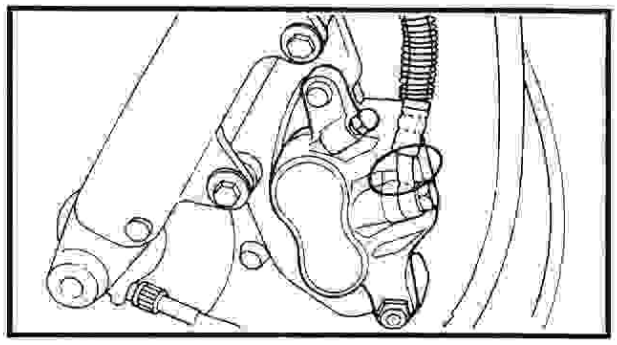

1. Install:
- Piston seals ①
- Caliper pistons ②
- Pad springs

**⚠ 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):**<br>**23 Nm (2.3 m • kg, 17 ft lb)**<br>**Bolt (caliper bracket):**<br>**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.**

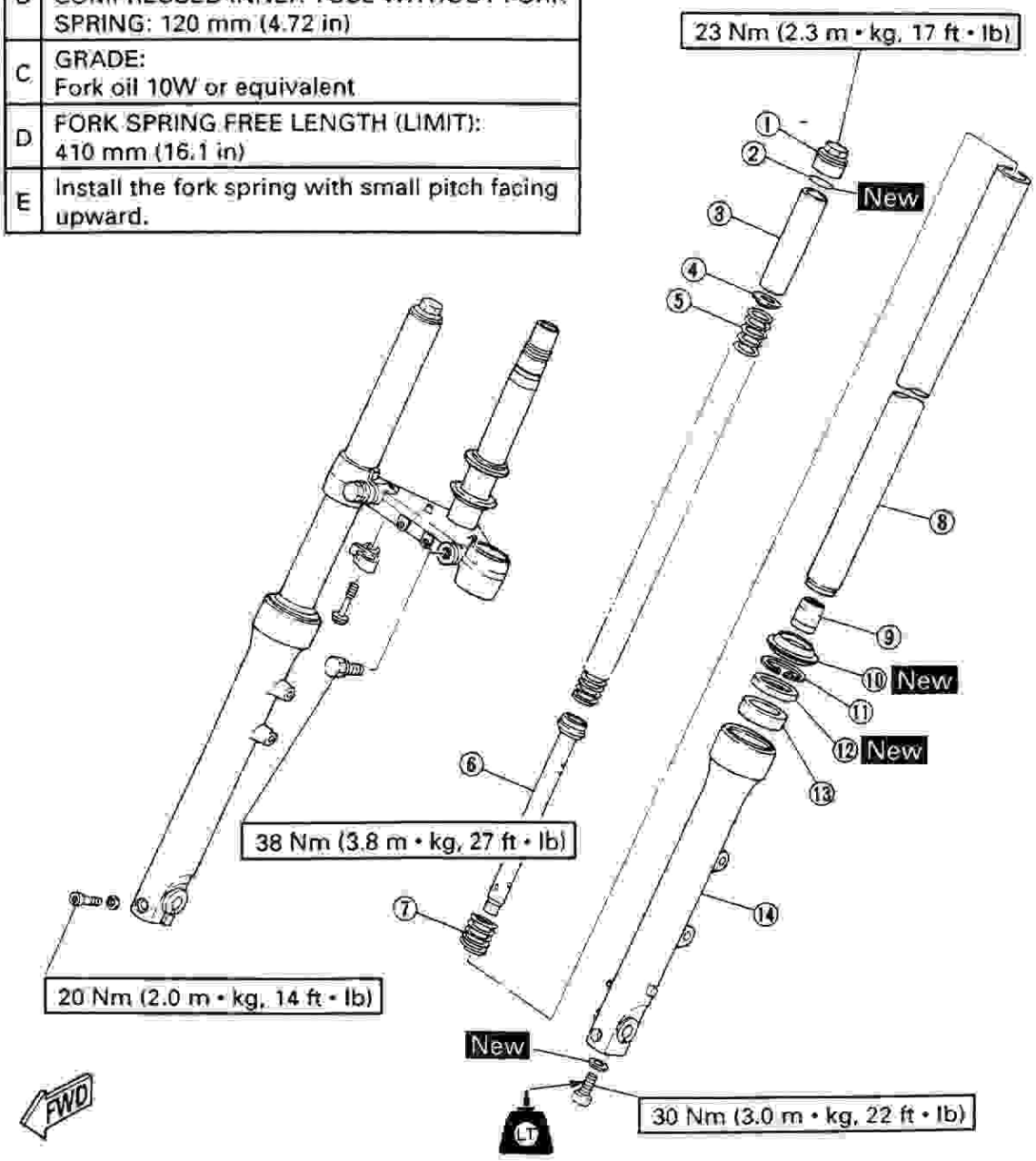
5. Air bleed:
- Brake system
  Refer to the "AIR BLEEDING" section.

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

## FRONT FORK

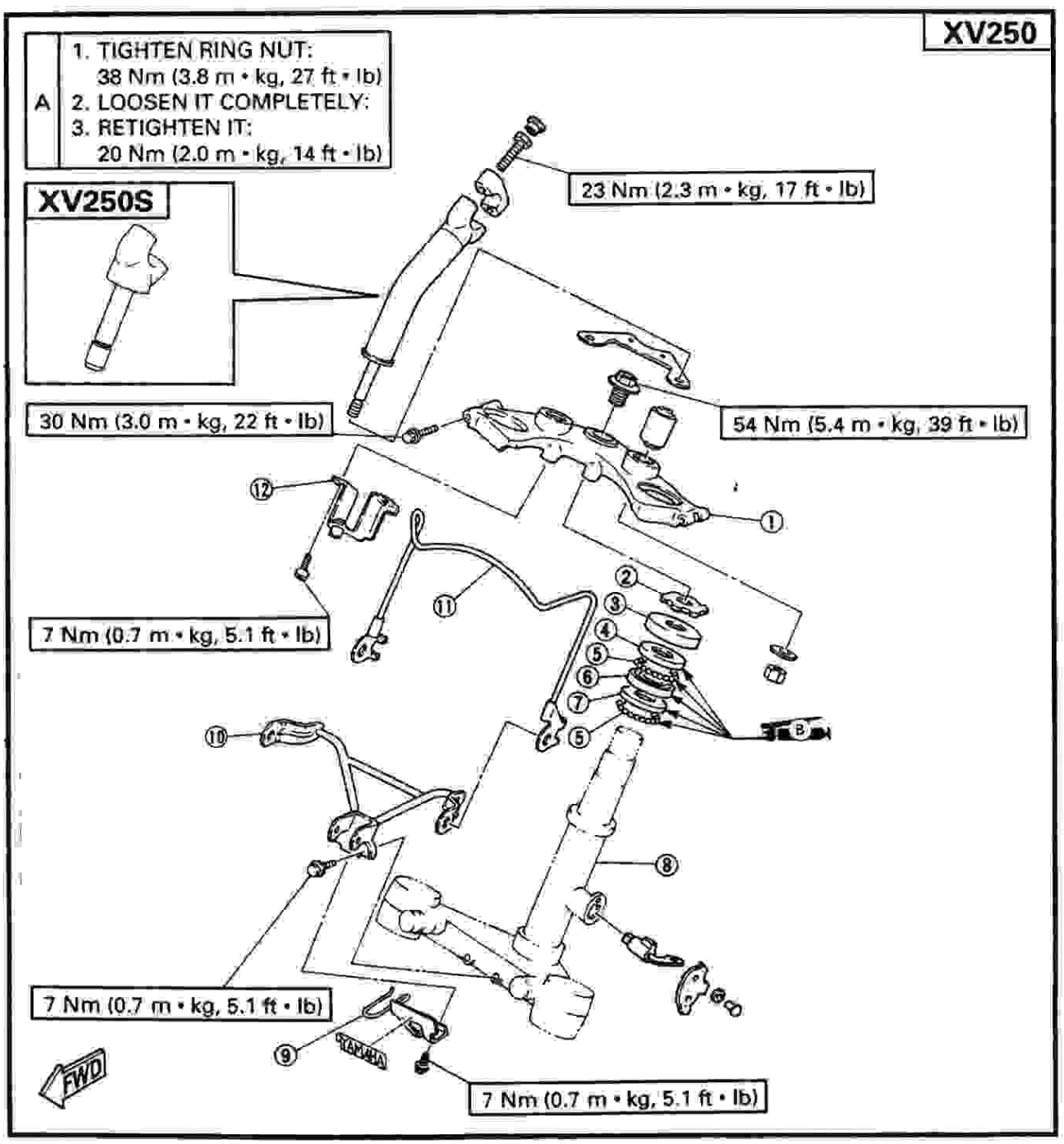
① Cap bolt
② O-ring
③ Spacer
④ Spring retainer
⑤ Fork spring
⑥ Damper rod
⑦ Rebound spring
⑧ Inner fork tube
⑨ Oil lock piece
⑩ Dust seal
⑪ Circlip
⑫ Oil seal
⑬ Slide metal
⑭ Outer fork tube

| | |
|---|---|
| A | FORK OIL CAPACITY (EACH):<br>245 cm³ (8.64 Imp oz, 8.28 US oz) |
| B | FORK OIL LEVEL (FROM TOP OF FULLY COMPRESSED INNER TUBE WITHOUT FORK SPRING: 120 mm (4.72 in) |
| C | GRADE:<br>Fork oil 10W or equivalent |
| D | FORK SPRING FREE LENGTH (LIMIT):<br>410 mm (16.1 in) |
| E | Install the fork spring with small pitch facing upward. |



## STEERING HEAD

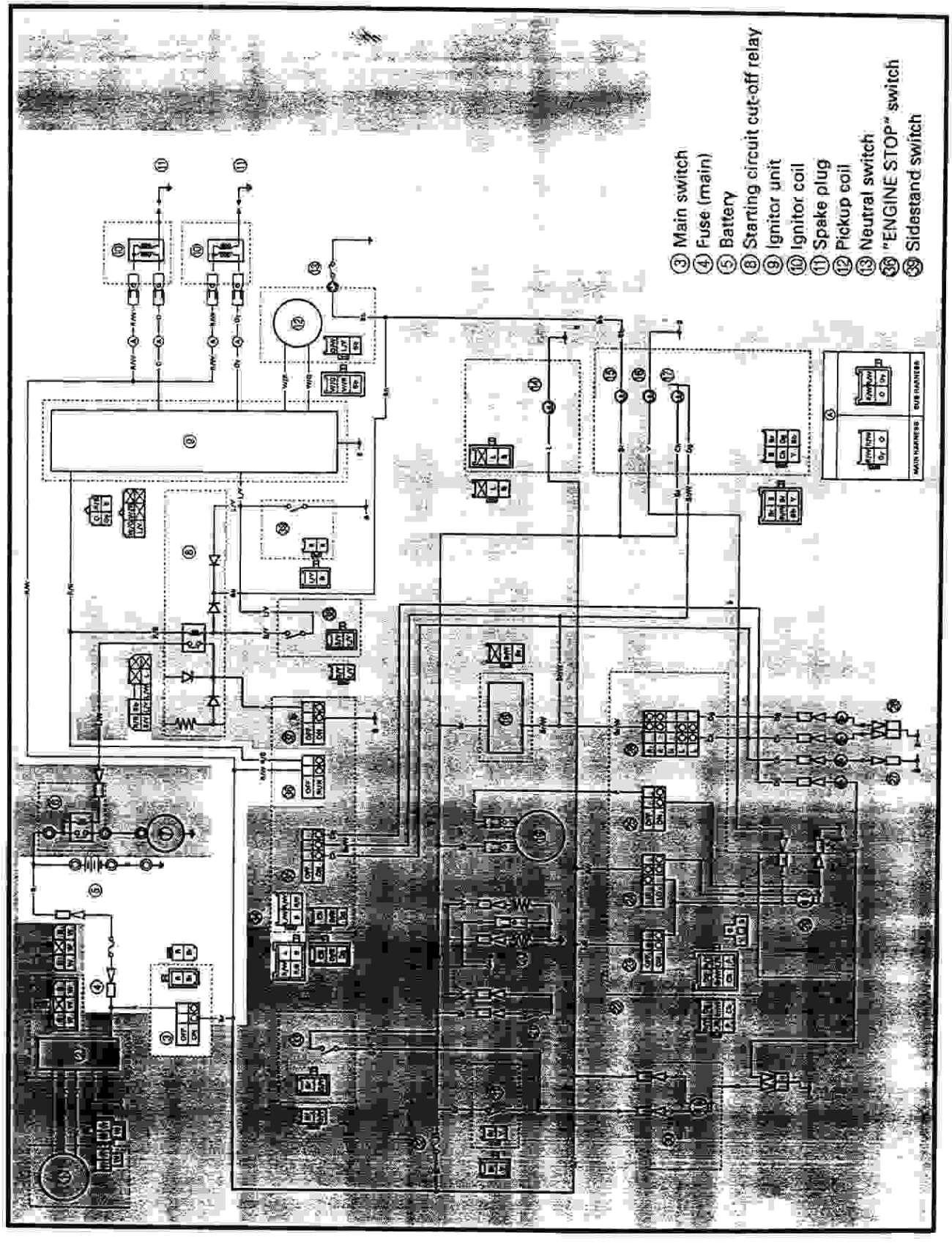
① Handlebar crown
② Ring nut
③ Bearing cover
④ Ball race (upper – top)
⑤ Ball (38 pcs.)
⑥ Ball race (upper – bottom)
⑦ Ball race (lower – top)
⑧ Steering stem
⑨ Wire guide
⑩ Headlight stay
⑪ Headlight guard stay
⑫ Stay 2



# ELECTRICAL

## IGNITION SYSTEM

### CIRCUIT DIAGRAM



## TROUBLESHOOTING

**IF IGNITION SYSTEM SHOULD BECOME INOPERATIVE (NO SPARK OR INTERMITTENT SPARK).**

**Procedure**

Check:

1. Fuse (main)
2. Battery
3. Spark plug
4. Ignition spark gap
5. Spark plug cap resistance
6. Ignition coil resistance
7. Main switch
8. "ENGINE STOP" switch
9. Neutral switch
10. Sidestand switch
11. Pickup coil resistance
12. Wire connections (entire ignition system)

**NOTE:**

- Remove the following parts before troubleshooting.
  1) Seat
  2) Fuel tank
  3) Side cover (right)
- Use the following special tools in this troubleshooting.



**Ignition checker:**
**90890-06754**
**Pocket tester:**
**90890-03112**

**1. Fuse (main)**

- Remove the fuse.
- Connect the pocket tester (Ω × 1) to the fuse.
- Check the fuse for continuity.

NOCONTINUITY → Replace fuse.

CONTINUITY ↓

**2. Battery**

- Check the battery condition. Refer to "BATTERY INSPECTION" in CHAPTER 3.

**Specific gravity:**
**1.280 at 20°C (68°F)**

INCORRECT →

- Refill battery fluid.
- Clean battery terminals.
- Recharge or replace the battery.

CORRECT ↓

*

*

3. Spark plug

- Check the spark plug condition.
- Check the spark plug type.
- Check the spark plug gap.
  Refer to "SPARK PULG INSPECTION" in CHAPTER 3.

**Standard spark plug:**
**C6HSA/U20FS-U**
**NGK/NIPPONDENSO**

**Spark plug gap:**
**0.6 ~ 0.7 mm (0.024 ~ 0.028 in)**

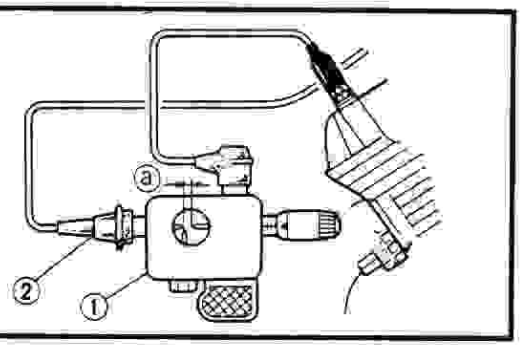
INCORRECT

Repair or replace spark plug.

CORRECT

4. Ignition spark gap

- Disconnect the spark plug cap from spark plug.
- Connect the ignition checker ① as shown.
  ② Spark plug cap
- Turn the main switch to "ON".




- Check the ignition spark gap ⓐ.
- Crank the engine by pushing the starter switch, and increase the spark gap until a misfire occurs.

**Minimum spark gap:**
**6.0 mm (0.24 in)**

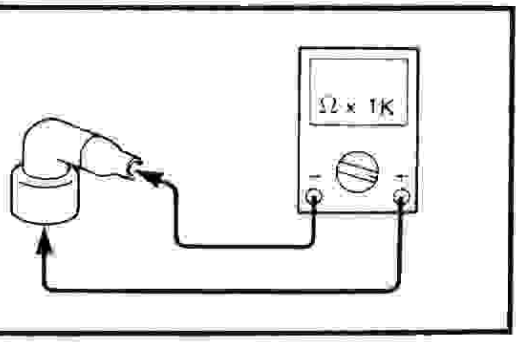
MEETS SPECIFICATION

Ignition system is good.

OUT OF SPECIFICATION OR NO SPARK

5. Spark plug cap resistance

- Remove the spark plug cap.
- Connect the pocket tester (Ω × 1k) to the spark plug cap.



- Check the spark plug cap for specified resistance.

**Spark plug cap resistance:**
**10 kΩ at 20°C (68°F)**

OUT OF SPECIFICATION → Replace spark plug cap.

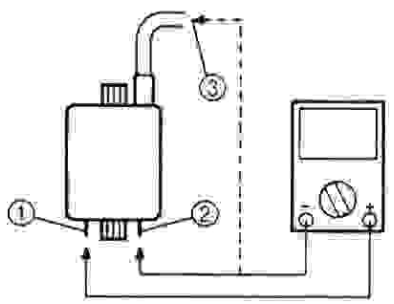
MEETS SPECIFICATION ⇩

6. Ignition coil resistance

- Disconnect the ignition coil coupler from the wireharness.
- Connect the pocket tester (Ω × 1) to the ignition coil.

**Tester (+) lead → Red/White terminal ①**
**Tester (–) lead → Orange (Gray) terminal ②**

**Tester (+) lead → Red/White terminal ①**
**Tester (–) lead → Spark plug lead ③**




- Check the primary coil for specified resistance.

**Primary coil resistance:**
**3.2 ~ 4.8 Ω at 20°C (68°F)**

- Check the secondary coil for specified resistance.

**Secondary coil resistance:**
**10.4 ~ 15.6 kΩ at 20°C (68°F)**

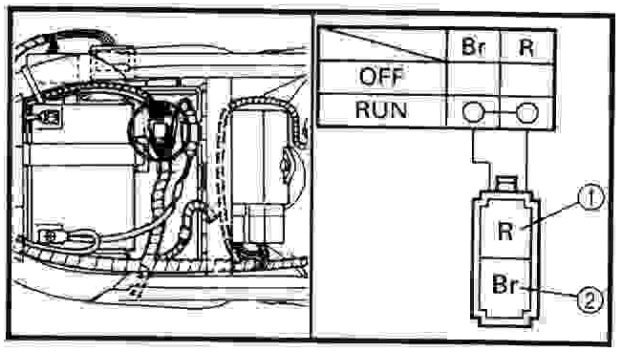
- Connect the pocket tester (Ω × 1k) to the ignition coil.

OUT OF SPECIFICATION → Replace ignition coil.

BOTH MEETS SPECIFICATION ⇩

7. Main switch

- Disconnect the main switch coupler from the wireharness.
- Check the switch component for the continuity between "Red ① and Brown ②".



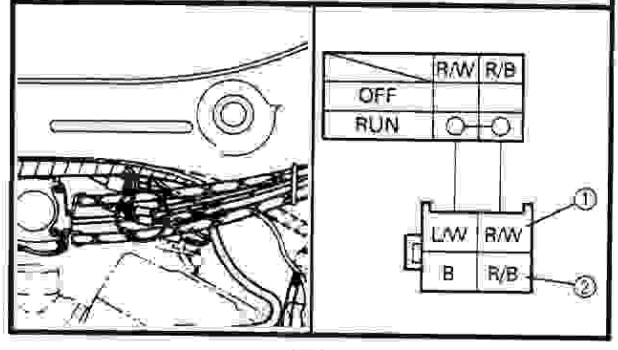

INCORRECT

Replace main switch.

CORRECT

8. "ENGINE STOP" switch

- Disconnect the handlebar switch (right) coupler from the wireharness.
- Check the switch component for the continuity between "Red/White ① and Red/Black ②".




INCORRECT

Replace handlebar switch (right).

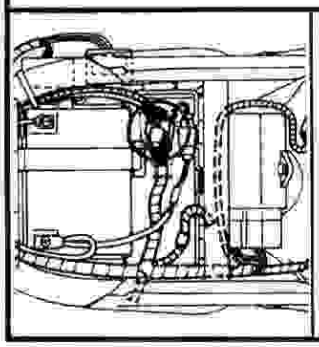
CORRECT

*

*

9. Neutral switch

- Disconnect the neutral switch coupler from the wireharness.
- Check the switch component for the continuity between "Sky blue ①" and ground.





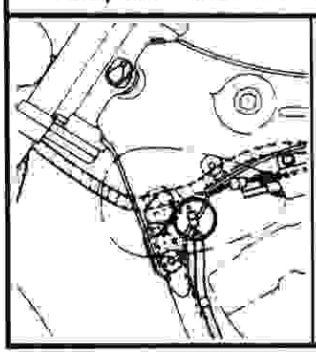

INCORRECT

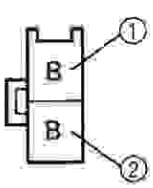
Replace neutral switch.

CORRECT

10. Sidestand switch

- Disconnect the sidestand switch coupler from the wireharness.
- Check the switch component for the continuity between "Black ①" and "Black ②".






INCORRECT

Replace sidestand switch.

CORRECT

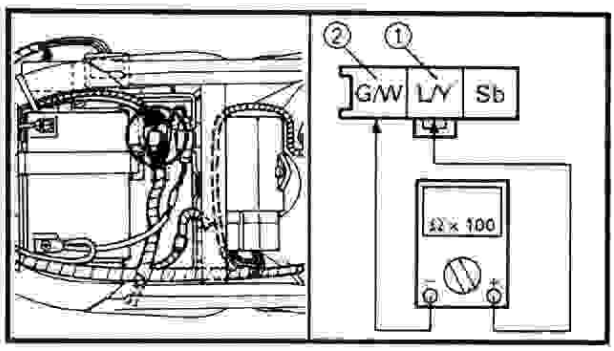
*

*

**11. Pickup coil resistance**

- Disconnect the pickup coil coupler from the wireharness.
- Connect the pocket tester (Ω × 100) to the pickup coil terminal.

**Tester (+) lead → Blue/Yellow terminal ①**
**Tester (–) lead → Green/White terminal ②**




- Check the pickup coil for specified resistance.

**Pickup coil resistance:**
**192 ~ 288 Ω at 20°C (68°F)**
**(Blue/Yellow-Green/White)**

OUT OF SPECIFICATION → Replace pickup coil.

MEETS SPECIFICATION

**12. Wiring connections**

- Check the entire ignition system for connections.
  Refer to "CIRCUIT DIAGRAM".

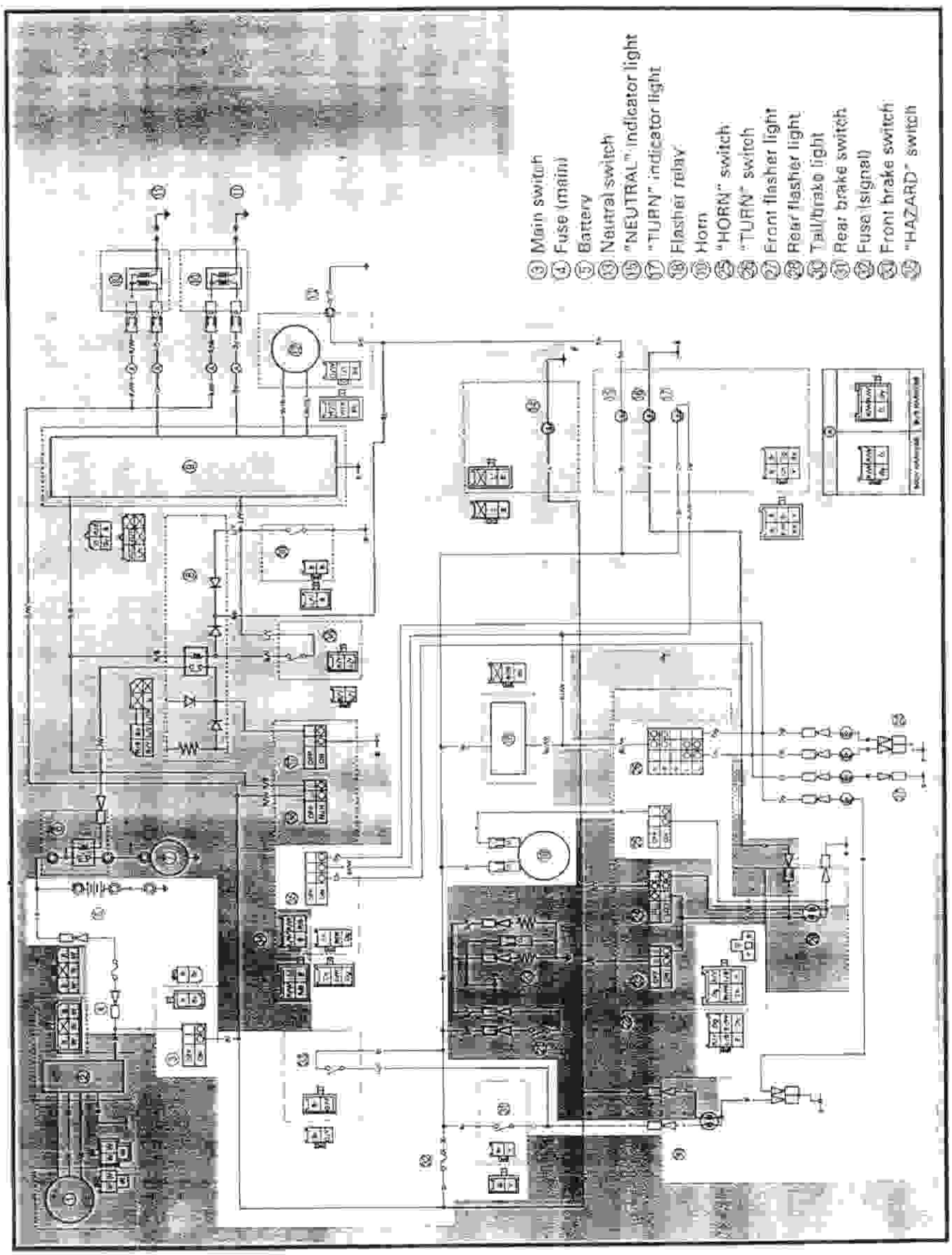
POOR CONNECTION → Correct.

CORRECT

Replace ignitor unit.

# SIGNAL SYSTEM

## CIRCUIT DIAGRAM



## SIGNAL SYSTEM TEST AND CHECK

**FLASHER LIGHT AND/OR "TURN" INDICATOR LIGHT DOSE NOT BRINK.**

**1. Bulbs and bulb sockets**

- Remove the bulb.
- Check the bulbs and bulb sockets for continuity. Refer to the "CHECKING OF BULBS" section.

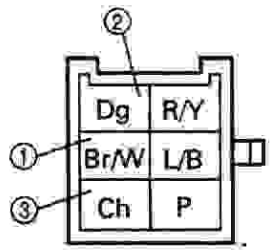
NOCONTINUITY → Replace bulb(s) and/or bulb socket(s).

CONTINUITY ↓

**2. "TURN" switch**

- Disconnect the handlebar switch (left) coupler from the wireharness.
- Check the switch component for the continuity between "Brown/White ① and Dark green ②" and "Brown/ White ① and Chocolate ③". Refer to the "CHECKING OF SWITCHES" section.

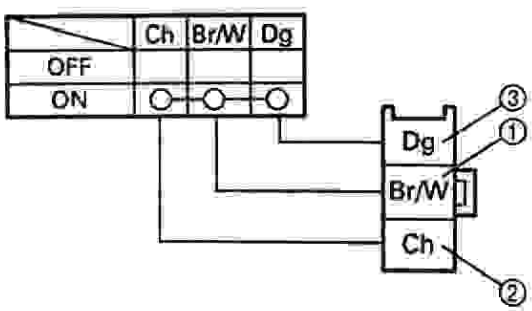
INCORRECT → "TURN" switch is faulty, replace handlebar switch (left).




CORRECT ↓

**3. "HAZARD" switch**

- Disconnect the handlebar switch (right) coupler from the wireharness.



- Check the switch component for the continuity between "Brown/White ① and Chocolate ②" and "Brown/White ① and Dark green ③" and "Chocolate ② and Dark green ③". Refer to the "CHECKING OF SWITCHES" section.

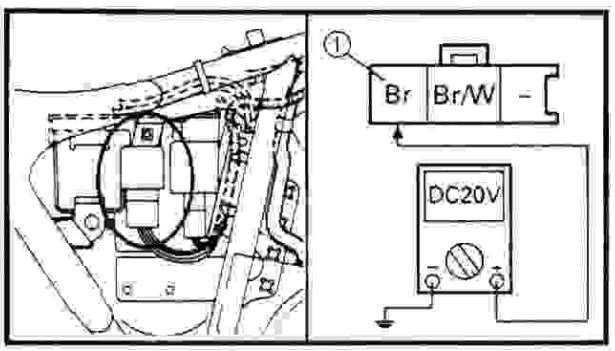
INCORRECT → Replace handlebar switch (right).

⇩ CORRECT

4. Voltage

- Connect the pocket tester (DC 20 V) to the flasher relay lead.

**Tester (+) lead → Brown ① terminal**
**Tester (–) lead → Frame ground**




- Turn the main switch to "ON".
- Check for voltage (12 V) on the "Brown" lead at the flasher relay terminal.

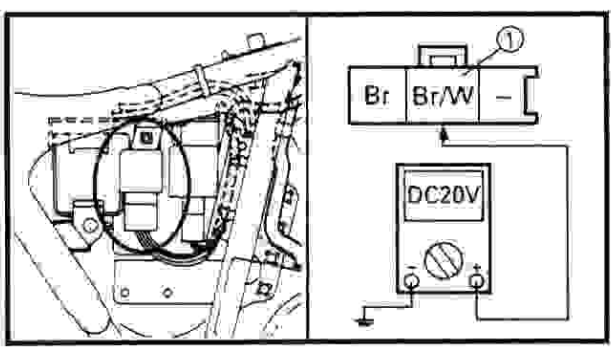
OUT OF SPECIFICATION → Wiring circuit from main switch to flasher relay connector is faulty, repair.

⇩ MEETS SPECIFICATION

5. Voltage

- Connect the pocket tester (DC 20 V) to the flasher relay lead.

**Tester (+) lead → Brown/White ① terminal**
**Tester (–) lead → Frame ground**



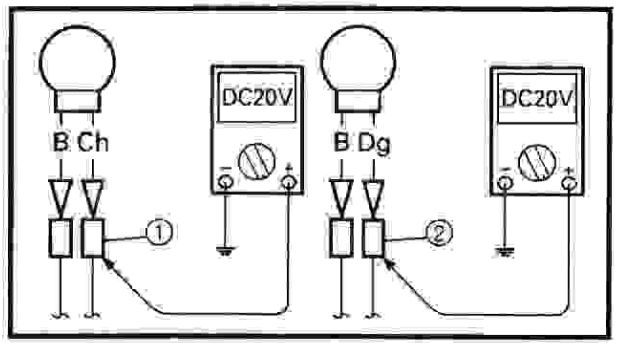

- Turn the main switch to "ON".
- Check for voltage (12 V) on the "Brown/White" lead at the flasher relay terminal.

OUT OF SPECIFICATION → Replace flasher relay.

⇩ MEETS SPECIFICATION

6. Voltage

- Connect the pocket tester (DC 20 V) to the bulb socket connector.




At flashier light (left).
**Tester (+) lead → Chocolate ① lead**
**Tester (–) lead → Frame ground**

At flashier light (right).
**Tester (+) lead → Dark green ② lead**
**Tester (–) lead → Frame ground**

- Turn the main switch to "ON".
- Turn the "TURN" switch to "L" or "R".
- Check for voltage (12 V) on the "Chocolate" lead or "Dark green" lead at the bulb socket connector.

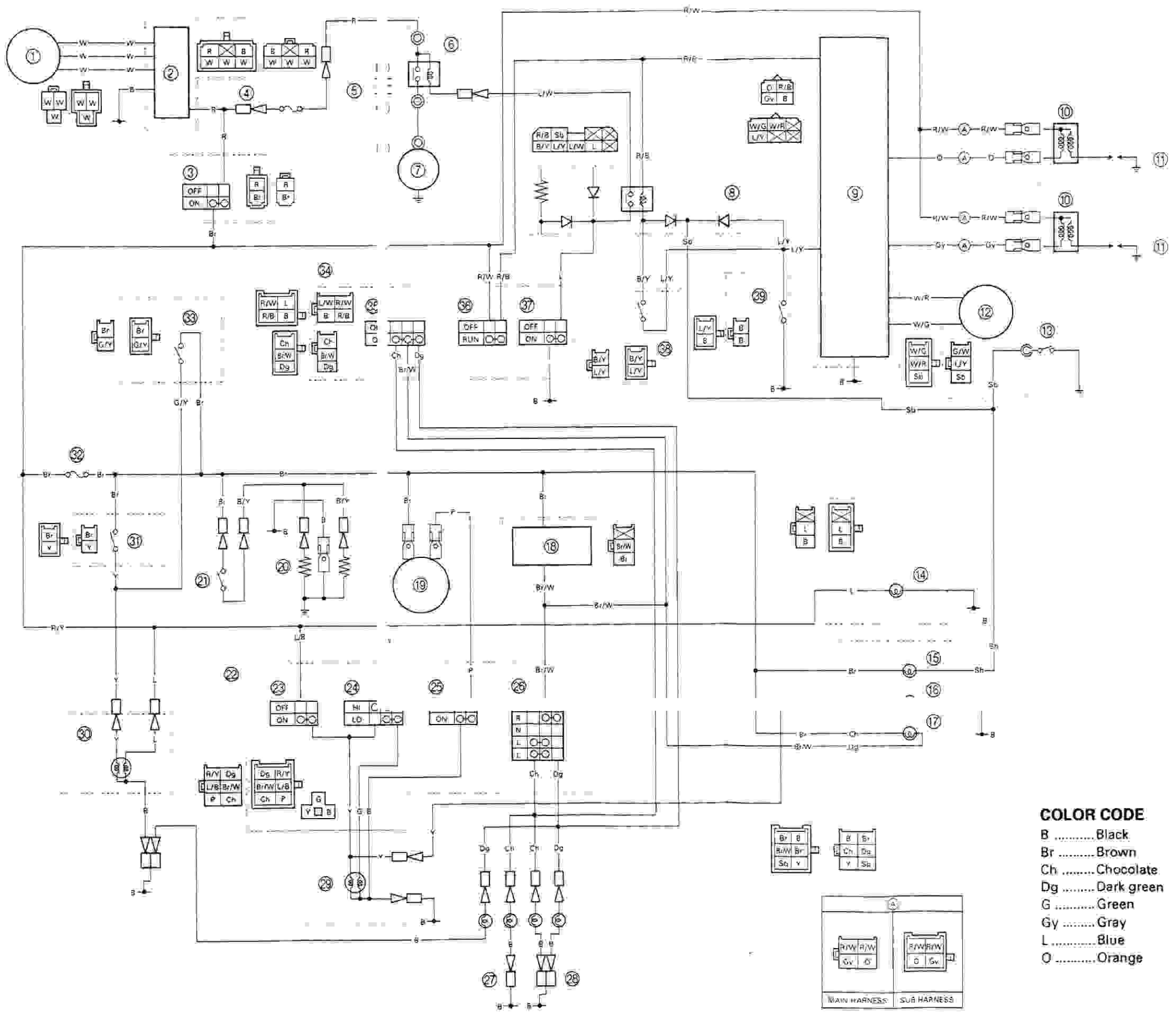
OUT OF SPECIFICATION

Wiring circuit from "TURN" switch to bulb socket connector is faulty, repair.

MEETS SPECIFICATION

This circuit is good.

# XV250G/XV250SG WIRING DIAGRAM



① A.C. magneto
② Rectifier/regulator
③ Main switch
④ Fuse (main)
⑤ Battery
⑥ Starter relay
⑦ Starter motor
⑧ Starting circuit cut-off relay
⑨ Ignitor unit
⑩ Ignition coil
⑪ Spark plug
⑫ Pickup coil
⑬ Neutral switch
⑭ Meter light
⑮ "NEUTRAL" indicator light
⑯ "HIGH BEAM" indicator light
⑰ "TURN" indicator light
⑱ Flasher relay
⑲ Horn
⑳ Carburetor heater
㉑ Thermo switch
㉒ Handlebar switch (left)
㉓ "PASS" switch
㉔ "LIGHTS" (dimmer) switch
㉕ "HORN" switch
㉖ "TURN" switch
㉗ Front flasher light
㉘ Rear flasher light
㉙ Headlight
㉚ Tail/brake light
㉛ Rear brake switch
㉜ Fuse (signal)
㉝ Front brake switch
㉞ Handlebar switch (right)
㉟ "HAZARD" switch
㊱ "ENGINE STOP" switch
㊲ Clutch switch
㊳ Sidestand switch

## COLOR CODE

| | | | | | |
|---|---|---|---|---|---|
| B | Black | P | Pink | L/R | Blue/Red |
| Br | Brown | R | Red | L/W | Blue/White |
| Ch | Chocolate | Sb | Sky blue | L/Y | Blue/Yellow |
| Dg | Dark green | W | White | R/B | Red/Black |
| G | Green | Y | Yellow | R/W | Red/White |
| Gy | Gray | B/Y | Black/Yellow | R/Y | Red/Yellow |
| L | Blue | Br/W | Brown/White | W/G | White/Green |
| O | Orange | L/B | Blue/Black | W/R | White/Red |