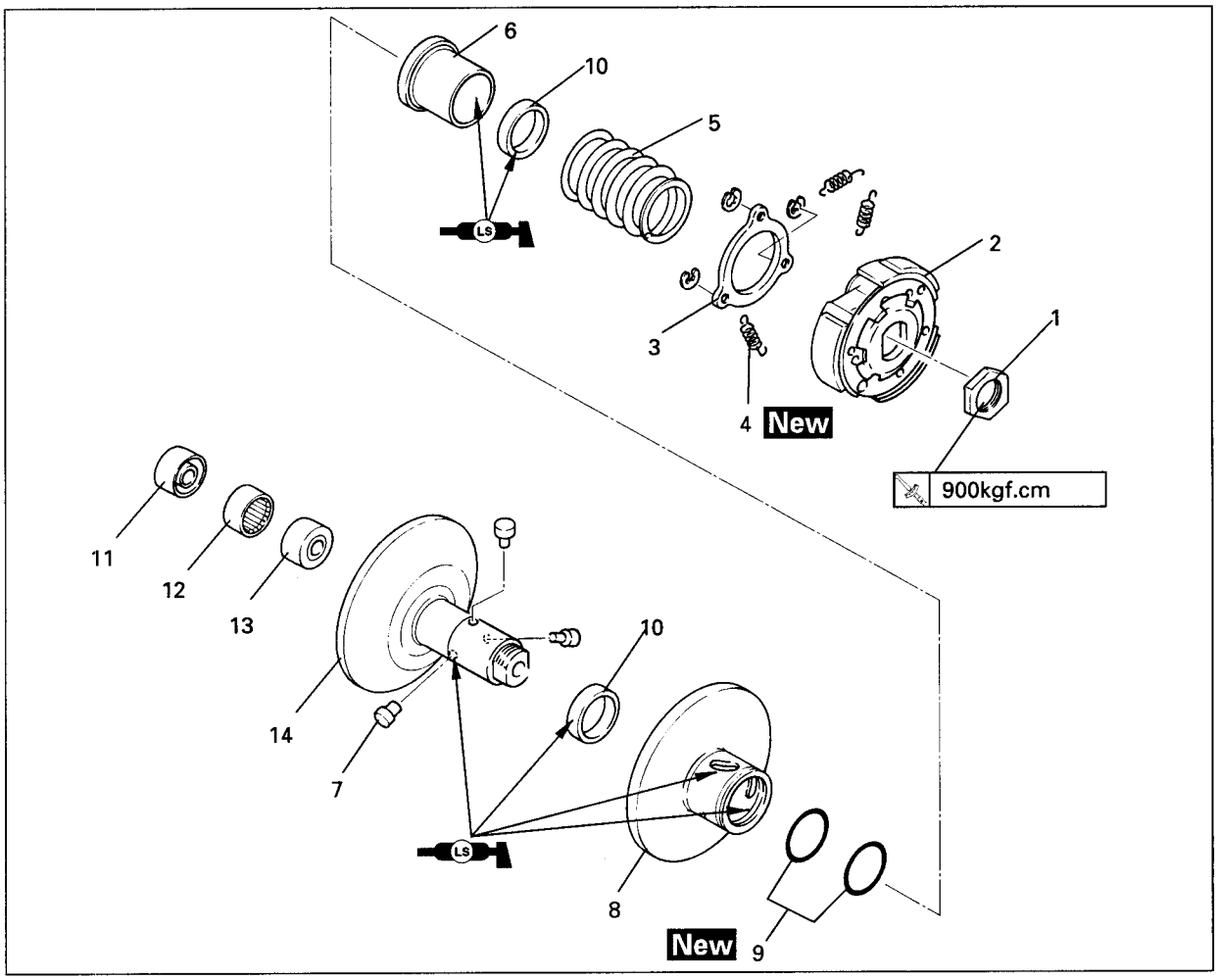
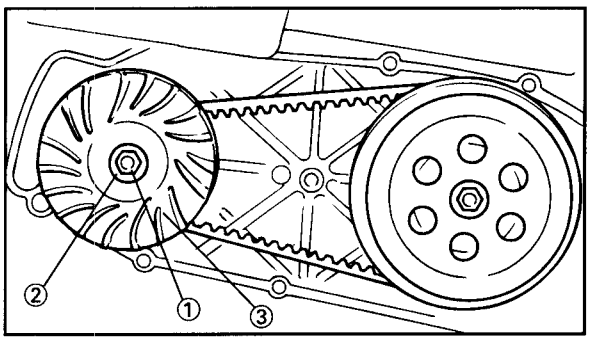
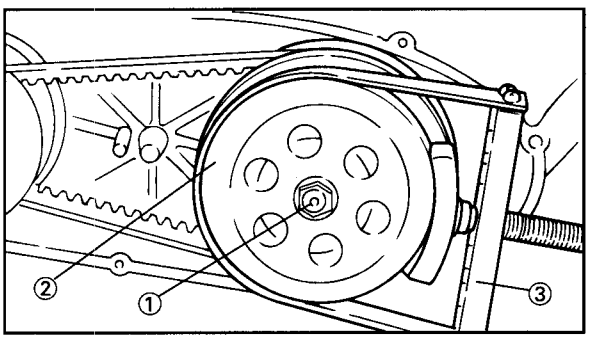


Order	Job name / Part name	Q'ty	Remarks
			Reverse the disassembly procedure for assembly.



PRIMARY SHEAVE REMOVAL

1. Remove:
   - Nut (primary sheave) ①
   - Cone spring washer
   - One-way clutch ②
   - Primary fixed sheave ③



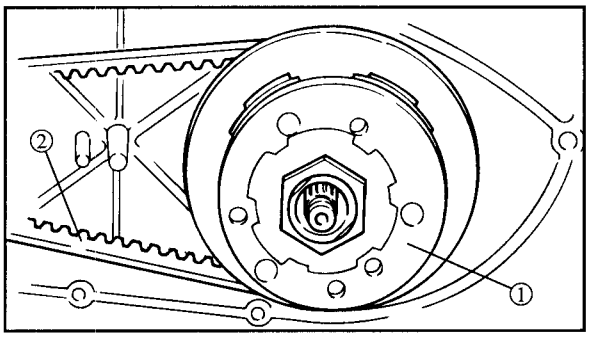
SECONDARY SHEAVE AND V-BELT REMOVAL

1. Remove:
   - Nut (secondary sheave) ①
   - Clutch housing ②

NOTE:

Loosen the nut (secondary sheave) while holding the clutch housing with the sheave holder ③.

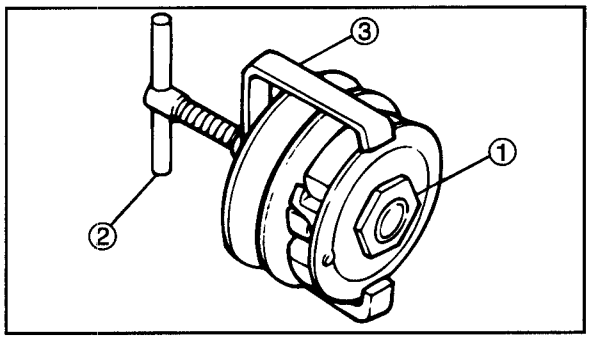
	Sheave holder: 90890-01701

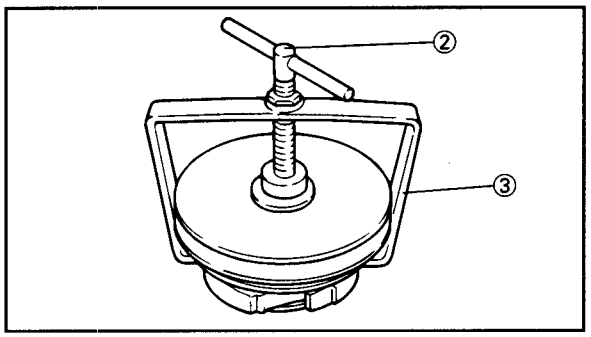


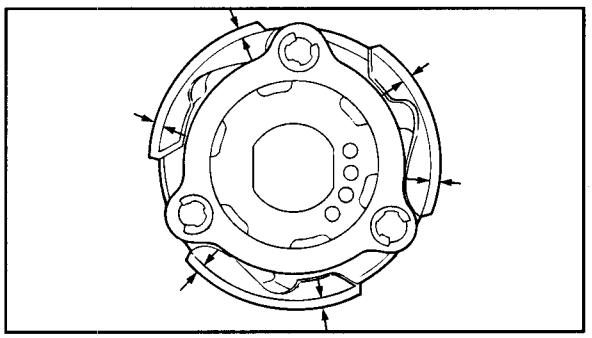
3. Remove:
   - Clutch assembly ①
   - V-belt ②

NOTE:

Remove the V-belt from the secondary sheave side with clutch assembly.







SECONDARY SHEAVE DISASSEMBLY

1. Remove:
   - Nut ①(secondary sheave)

NOTE:

Loosen the nut ① while attaching the clutch spring compressor ③ and clutch spring holder arm ② and release the compressed spring after removing the nut.

Clutch spring holder:
90890-01337
Clutch spring holder arm:
90890-01464

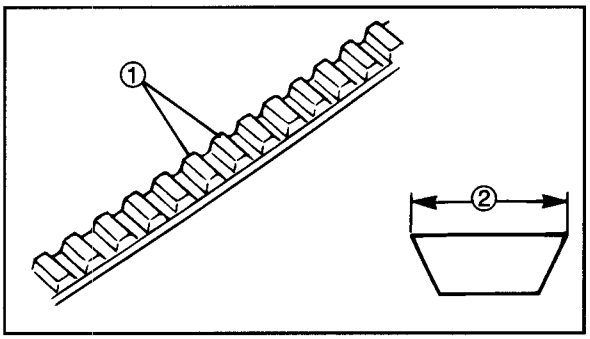
CLUTCH INSPECTION

1. Measure:
   - Clutch shoe thickness
     Scratches → Glaze using coarse sandpa-per.
     Wear/Damage → Replace

Clutch shoe thickness:
3.5 mm
<Limit: 2.0 mm>

NOTE:

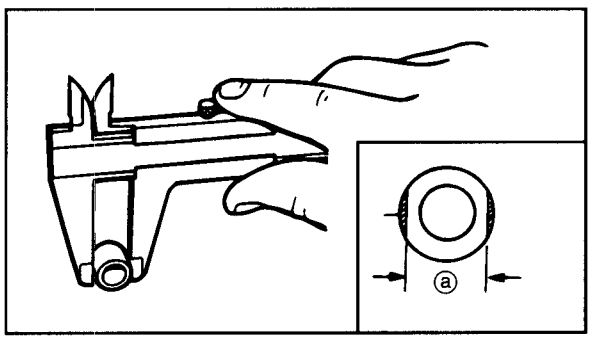
- After using the sandpaper, clean off the polished particles.
- Inspect the other clutch shoes.
- Replace the all three as a set.

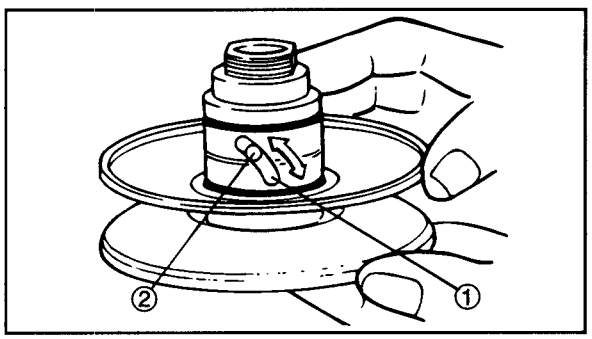


V-BELT INSPECTION

1. Inspect:
   - V-belt ①
     Cracks/Wear/Scaling/Chipping → Replace.
     Oil/Grease → Check primary sheave and secondary sheave.
2. Measure:
   - V-belt width ②
     Out of specification → Replace

V-belt width:
22 mm
<Limit: 19.8 mm>





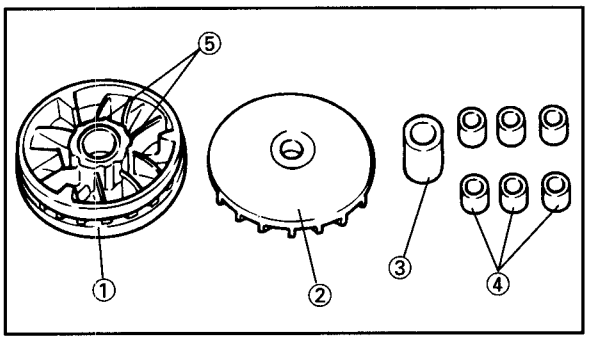
WEIGHT INSPECTION

1. Inspect:
   - Weight minimum outside diameter ⓐ
     Cracks/Wear/Scaling/Chipping → Replace.
     Out of specification → Replace.

Weight out side diameter ⓐ :
20 mm
<Limit: 19.5 mm>

SECONDARY SHEAVE INSPECTION

1. Inspect:
   - Secondary fixed sheave smooth operation
   - Secondary sliding sheave smooth operation
     Scratches/Damage → Replace as a set.
2. Inspect:
   - Torque cam groove ①
     Wear/Damage → Replace.
3. Inspect:
   - Guide pin ②
     Wear/Damage → Replace.

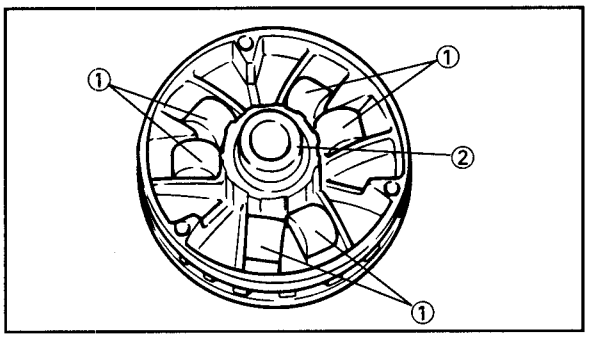


PRIMARY SHEAVE ASSEMBLY

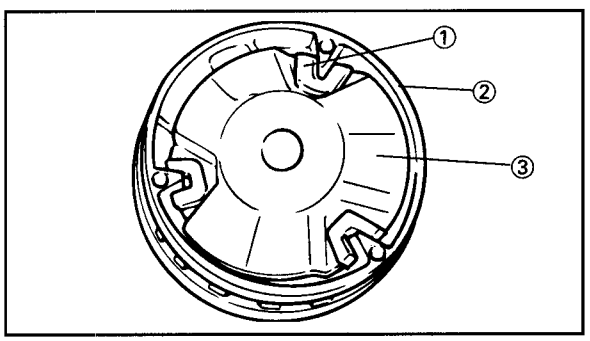
1. Clean:
   - Primary sliding sheave face ①
   - Primary fixed sheave face ②
   - Collar ③
   - Weight ④
   - Primary sliding sheave cam face ⑤

NOTE:

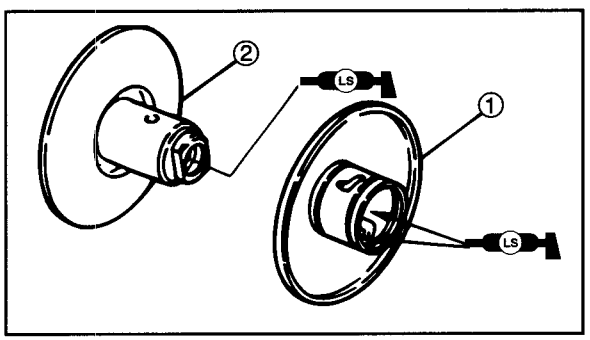
Remove any excess grease.



2. Install:
   - Weight ①
   - Collar ②

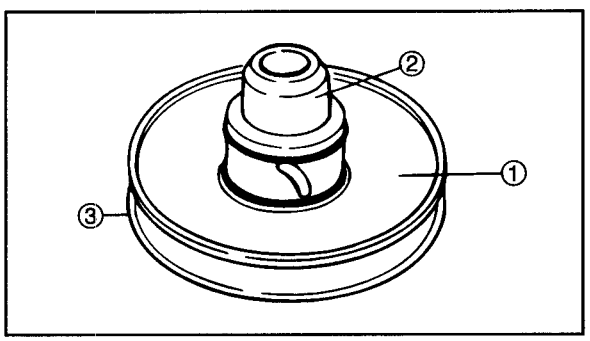


3. Install:
   - Slider ①
   - Primary sheave ②
   - Cam ③



SECONDARY SHEAVE INSTALLATION

1. Apply:
   - BEL-RAY assembly lube
     (to the secondary sliding sheave ① inner surface, grease nipple groove, and oil seals)
   - TBEL-RAY assembly lube
     (to the bearings, oil seals and inner surface of the secondary fixed sheave ②)

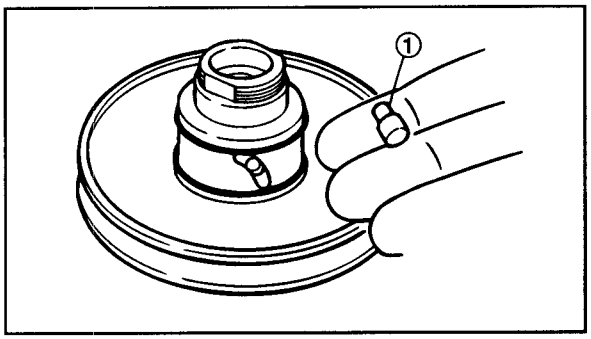


2. Install:
   - Secondary sliding sheave ①

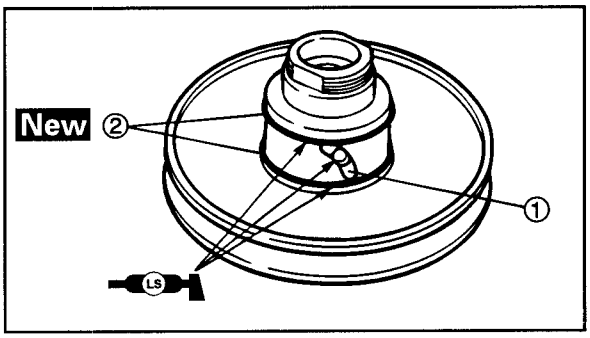
NOTE:

Install the secondary sliding sheave ① using the oil seal guide ② to the secondary fixed sheave ③.

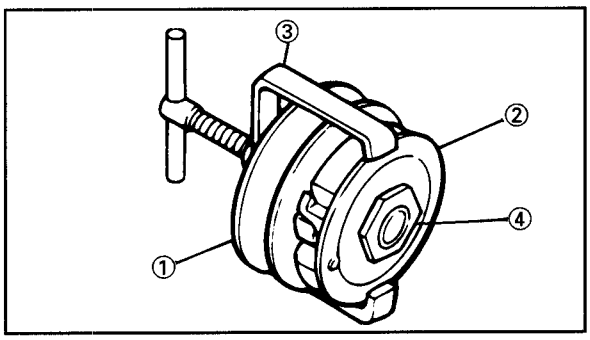
	Oil seal guide: 90890-01384



3. Install:
   - Guide pin ①



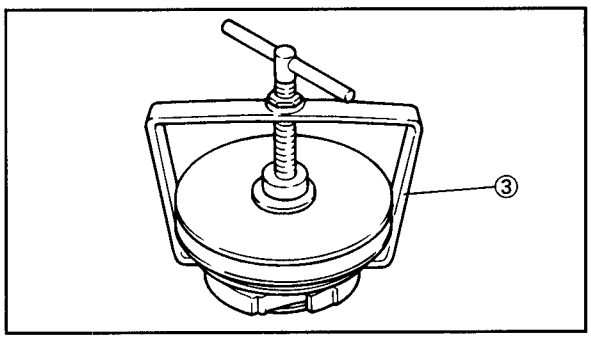
4. Apply:
   - BEL-RAY assembly lube (to the guide pin sliding groove ①, and oil seal ② New)

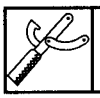


5. Install:
   - Secondary sheave complete ①
   - Compression spring
   - Clutch carrier ②

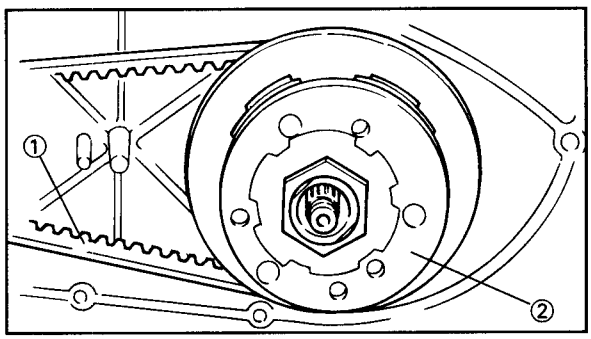
NOTE:

Temporarily tighten the nut ④ while attaching the clutch spring holder ③ and compress the spring.





Clutch spring holder:
90890-01337



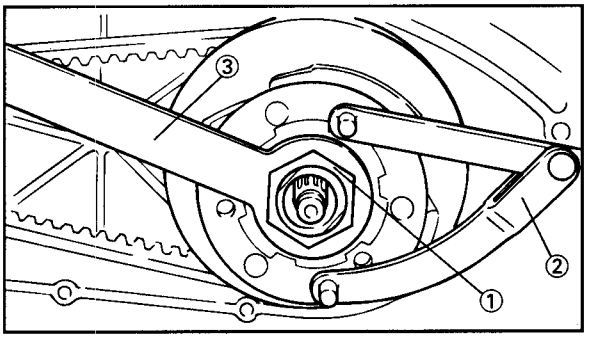
6. Install:
   - V-belt ①

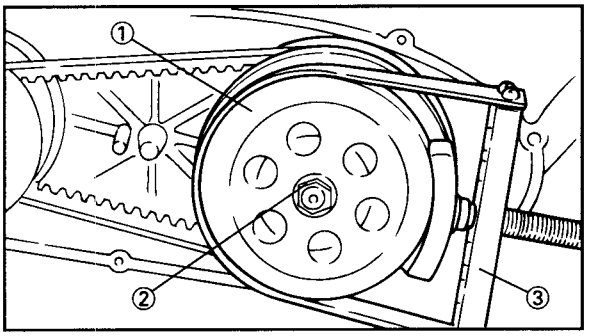
NOTE:

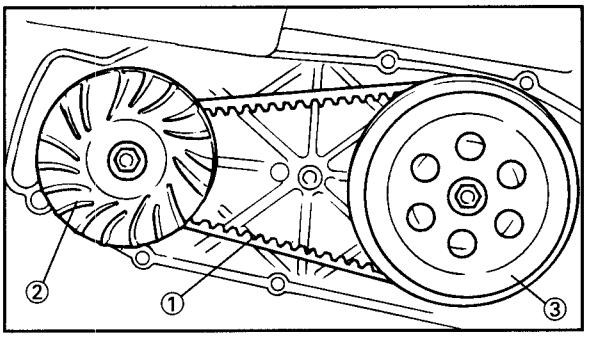
Install the V-belt inside the secondary sheave ②, then install the whole part into the crankcase.

CAUTION:

Never smear grease to the V-belt, secondary sheave and clutch.







7. Install:
   - Nut ① (clutch carrier) 900kg•cm

NOTE:

Tighten the nut (clutch carrier), using the locknut wrench ② while holding the clutch carrier with the rotor holder ③.

Rotor holder:
90890-01235
Locknut wrench:
90890-01348

8. Install:
   - Clutch housing ①
   - Nut ②(clutch housing)
     600kg•cm

NOTE:

Tighten the nut (clutch housing), using the sheave holder ③.

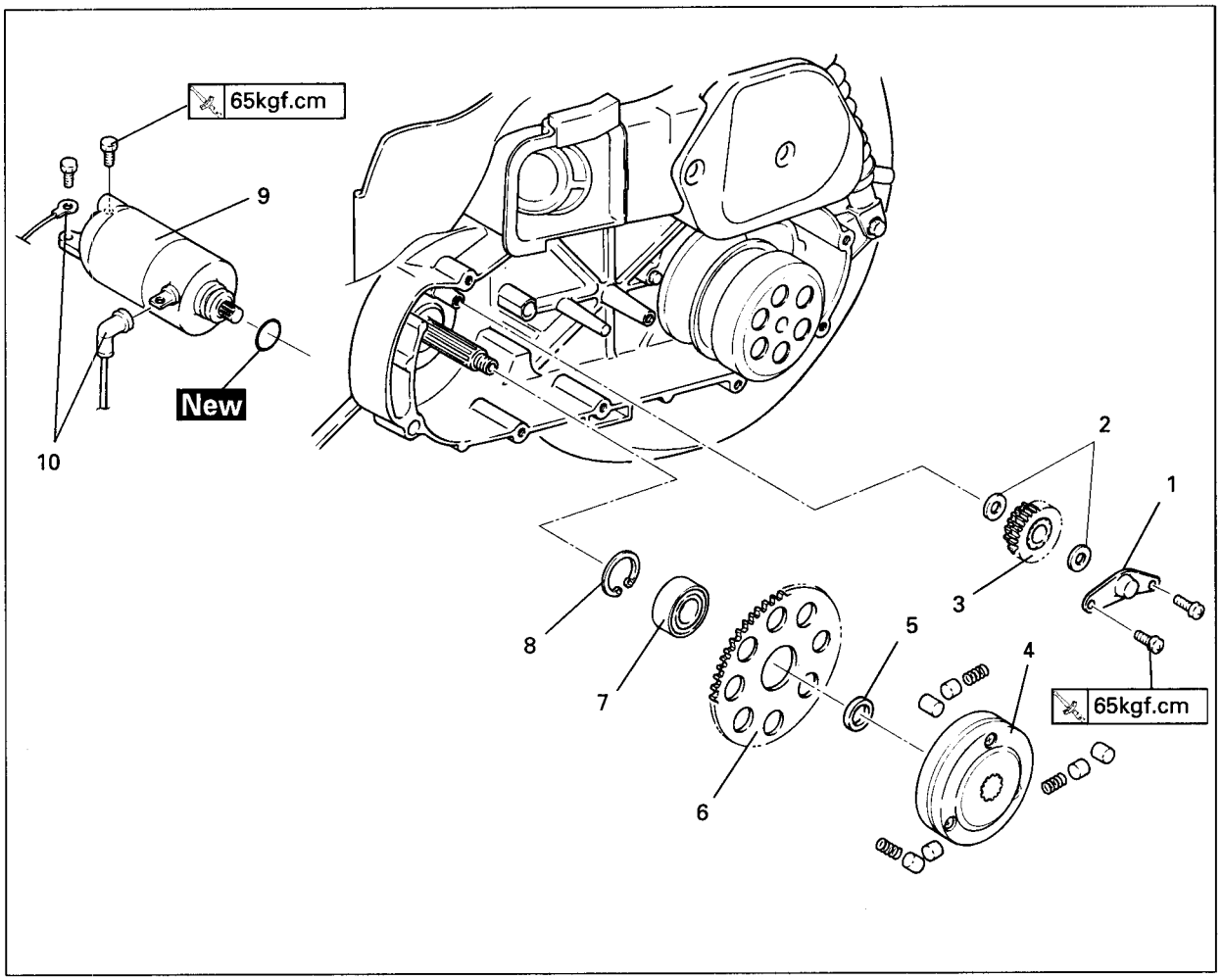
Sheave holder:
90890-01701

9. Set:
   - V-belt ①

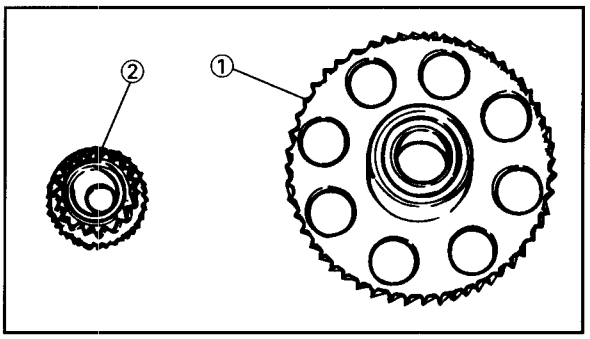
NOTE:

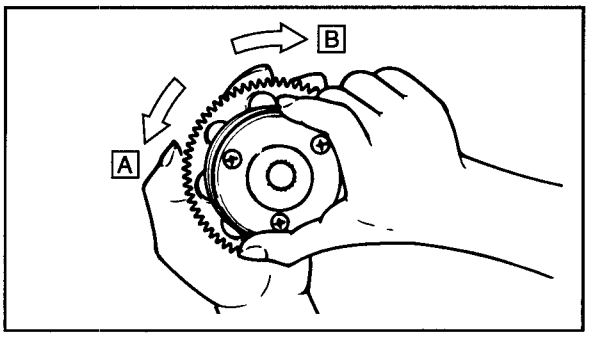
Move the V-belt to minimum diameter of the primary sheave ②, maximum diameter of the secondary sheave ③ and make the V-belt tense.

STARTER CLUTCH, STARTER MOTOR



Order	Job name / Part name	Q'ty	Remarks
	Starter clutch and starter motor removal		Disassemble the parts in order.
	Primary sheave		Refer to "PRIMARY SHEAVE REMOVAL" section.
1	Idle gear plate	1	
2	Plate washer	2	
3	Idle gear	1	
4	Starter clutch	1	
5	Collar	1	
6	Starter wheel	1	
7	Bearing	1	
8	Circlip	1	
9	Starter motor	1	
10	Starter motor lead	1	
			Reverse the disassembly procedure for assembly.





STARTER DRIVE GEAR INSPECTION

1. Inspect:
   - Starter idle gear teeth ①
   - Starter drive gear teeth ②

   Burrs/chips/roughness/wear → Replace.
2. Check:
   - Starter clutch operation

   Push the dowel pins to the arrow direction.

   Unsmooth operation → Replace.

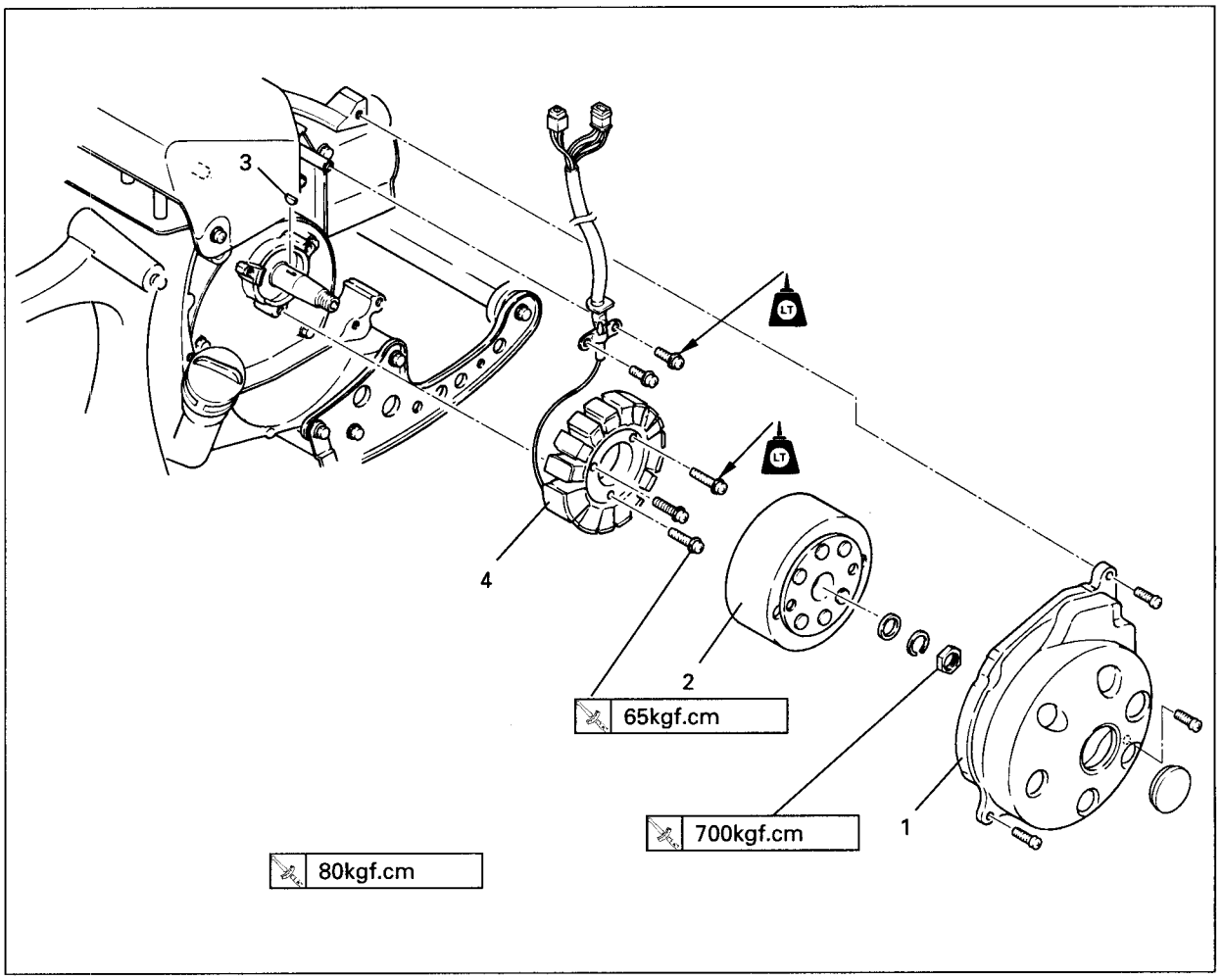
****

Checking steps:

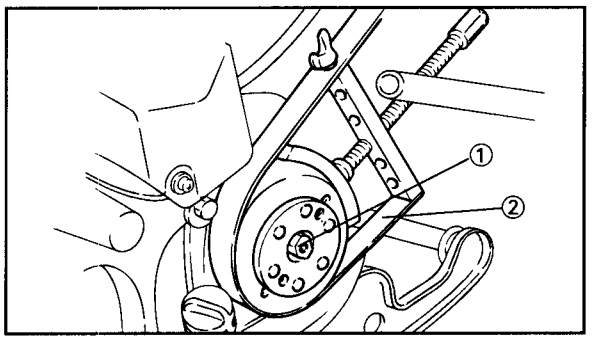
- Hold the starter clutch.
- When turning the starter wheel gear clockwise [A], the starter clutch and the starter wheel gear should be engaged.
- If not, the starter clutch is faulty. Replace it.
- When turning the starter wheel gear counterclockwise [B], it should turn freely.
- If not, the starter clutch is faulty. Replace it.

****

AC MAGNETO



Order	Job name / Part name	Q'ty	Remarks
	AC magneto removal		Remove the parts in order.
1	Magneto housing	1	
2	Rotor assembly	1	
3	Woodruff key	1	Refer to "Rotor Installation" section.
4	Starter coil assembly	1	
			NOTE: Separate the generator coupling.
			Reverse the removal procedure for installation.



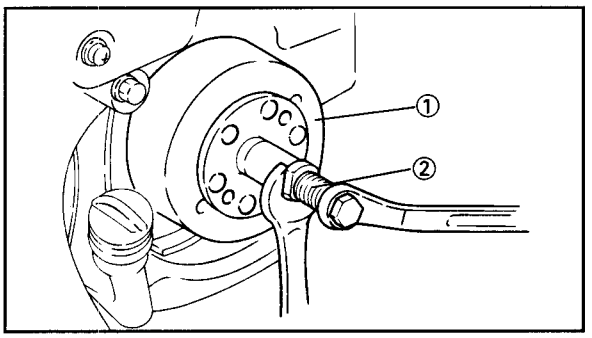
AC MAGNETO ROTOR REMOVAL

1. Remove:
   - Magneto cover
   - Nut ①(rotor)
   - Open washer
   - Plate washer

NOTE:

Loosen the nut (rotor) ① while holding the rotor with a sheave holder ②.

	Sheave holder: 90890-01701



2. Remove:
   - Rotor ①
   - Woodruff key

NOTE:

Remove the rotor using the flywheel puller ②.

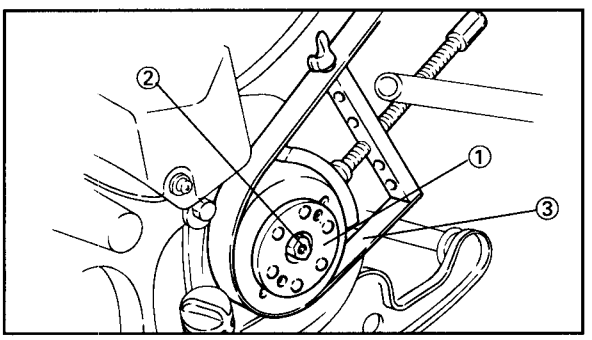
	Fly wheel puller 90890-01189

AC MAGNETO ROTOR INSTALLATION

1. Install:
   - Woodruff key
   - Rotor ①

NOTE:

- Clean the tapered portion of the crankshaft and the rotor hub.
- When installing the generator rotor, make sure the woodruff key is properly seated in the key way of the crankshaft.



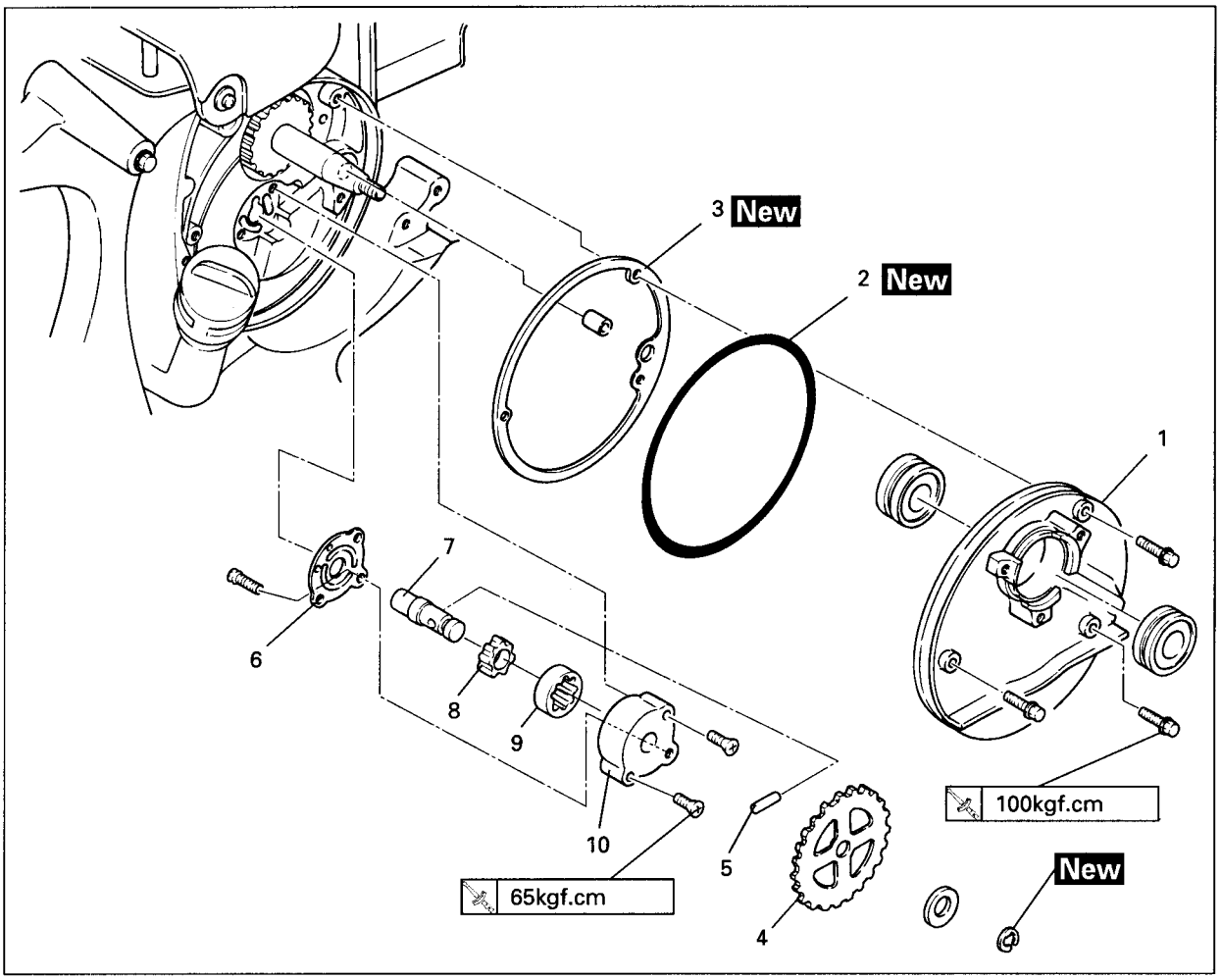
3. Tighten:
   - Nut (rotor) ① 700kg•cm

NOTE:

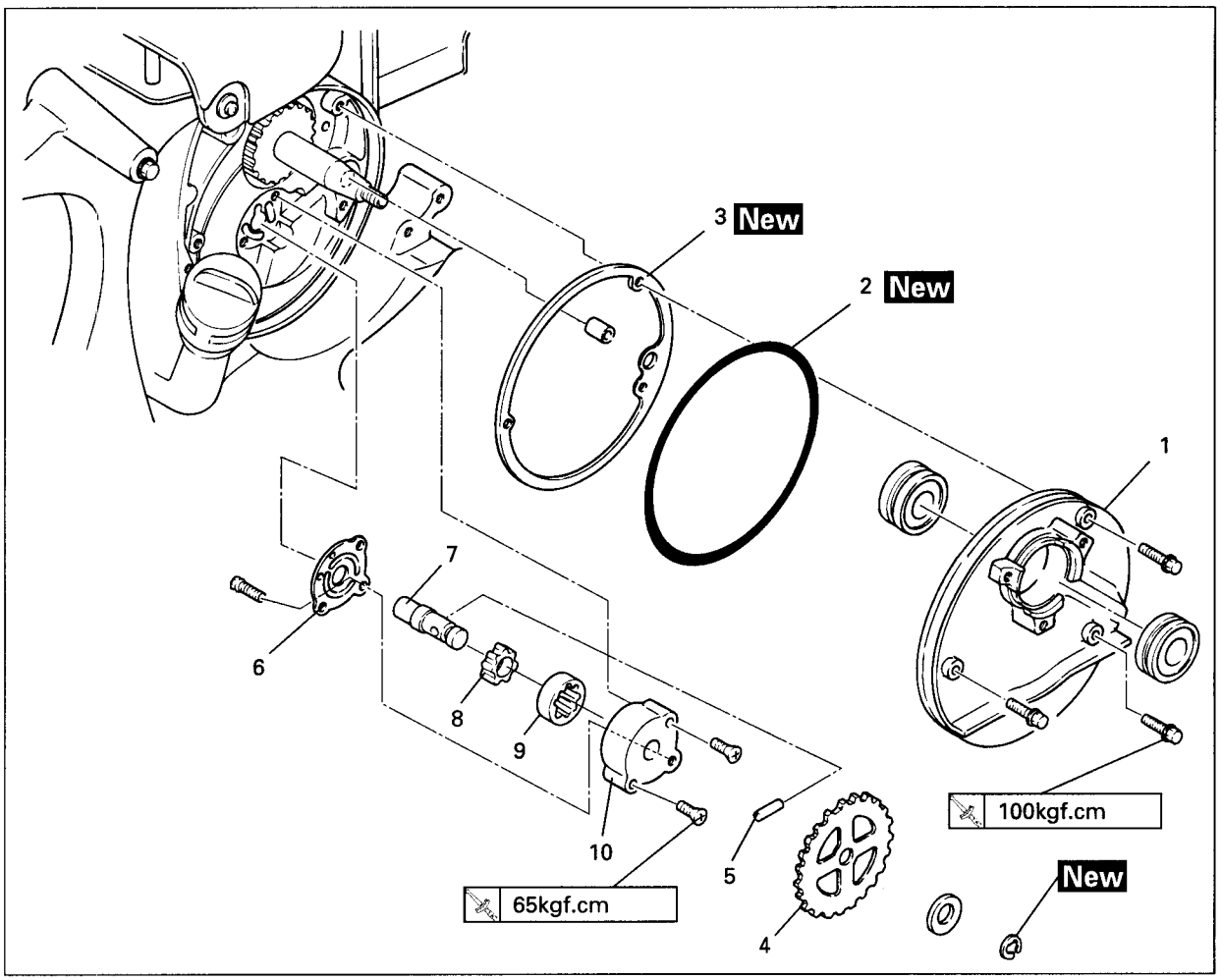
Tighten the nut (rotor) ② while holding the magneto rotor g with a sheave holder ③.

	Sheave holder: 90890-01235

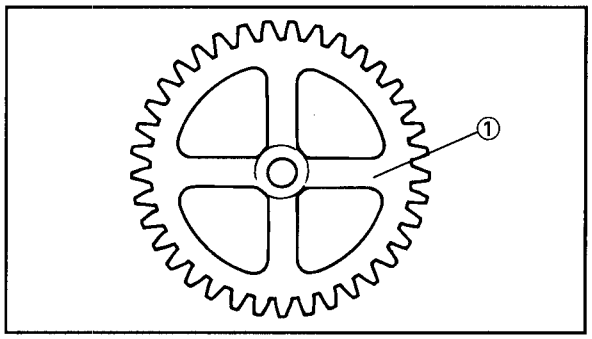
OIL PUMP

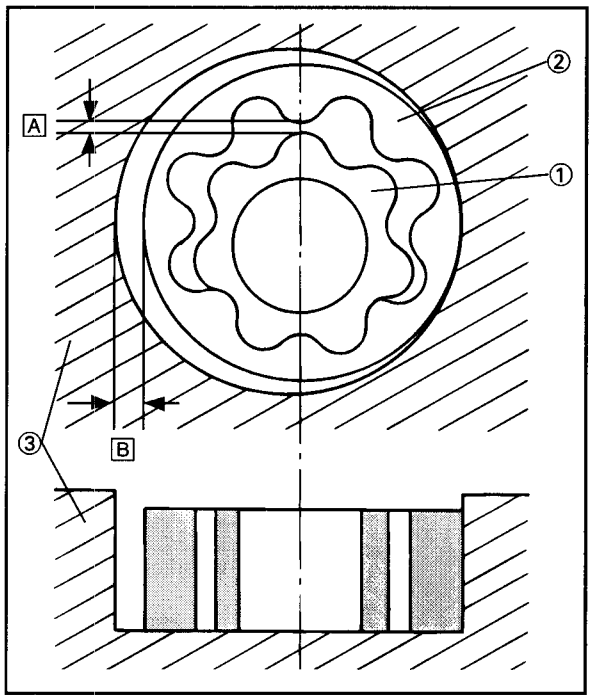


Order	Job name / Part name	Q'ty	Remarks
	Oil pump removal		Disassemble the parts in order.
	Footrest 1		
	Side cover protector 1		Refer to "COVER AND PANELS" section in CHAPTER 3.
	AC generator		Refer to "AC magneto Removal" section.
1	Cover	1	
2	O-ring	1	
3	Gasket	1	
4	Pump driven gear	1	
5	Dowel pin	1	
6	Bottom plate	1	
7	Drive axle	1	
8	Inner rotor	1	
9	Outer rotor	1	
10	Oil pump assembly	1	



Order	Job name / Part name	Q'ty	Remarks
			Reverse the disassembly procedure for assembly.





OIL PUMP INSPECTION

1. Inspect:
   - Drive gear (oil pump) ①
   - Pump housing
   - Pump housing cover

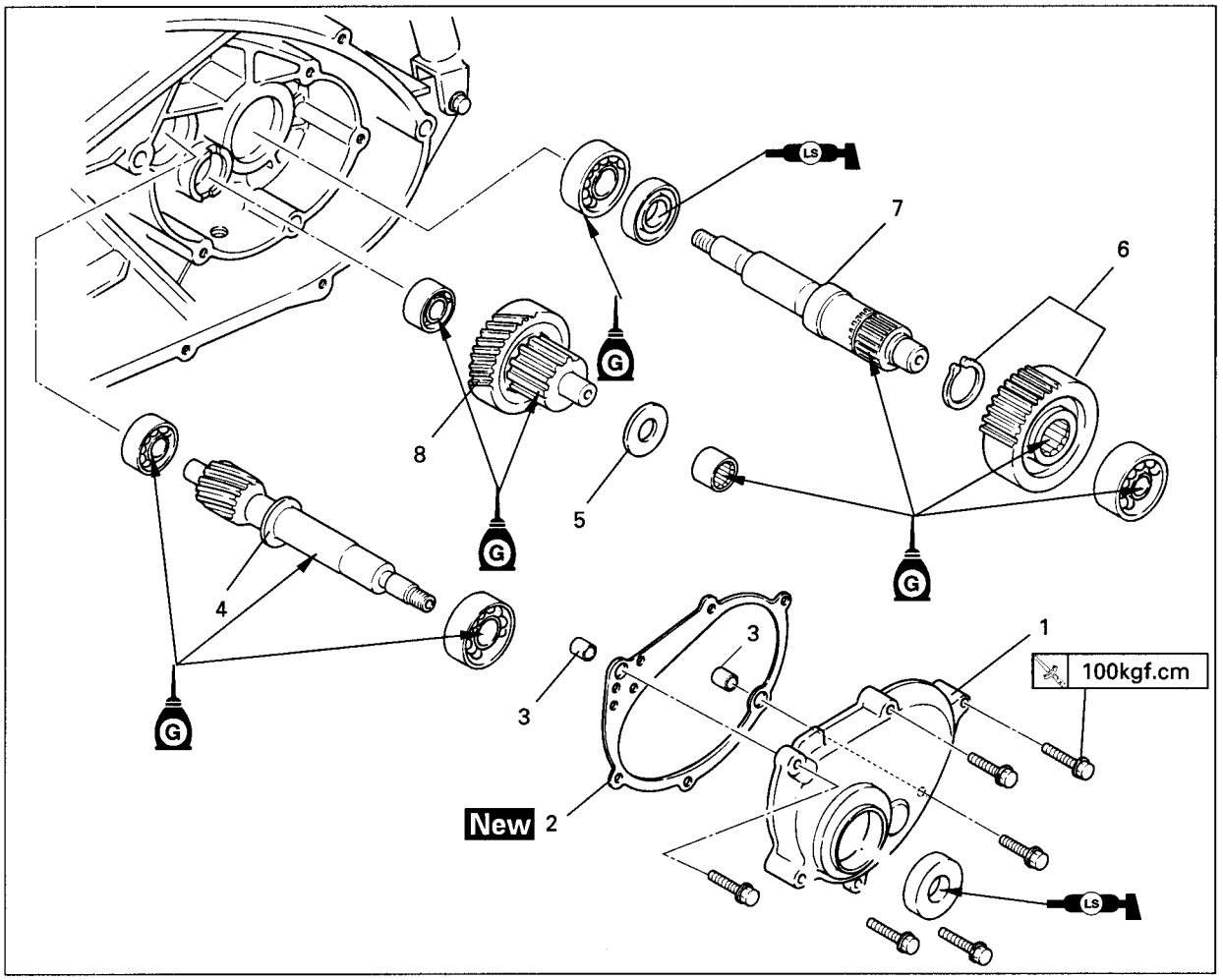
   Wear/cracks/damage → Replace.

2. Measure:
   - Tip clearance [A] (between the inner rotor ① and the outer rotor ②)
   - Side clearance [B] (between the outer rotor ① and the pump housing ②)

   Out of specification → Replace the oil pump assembly.

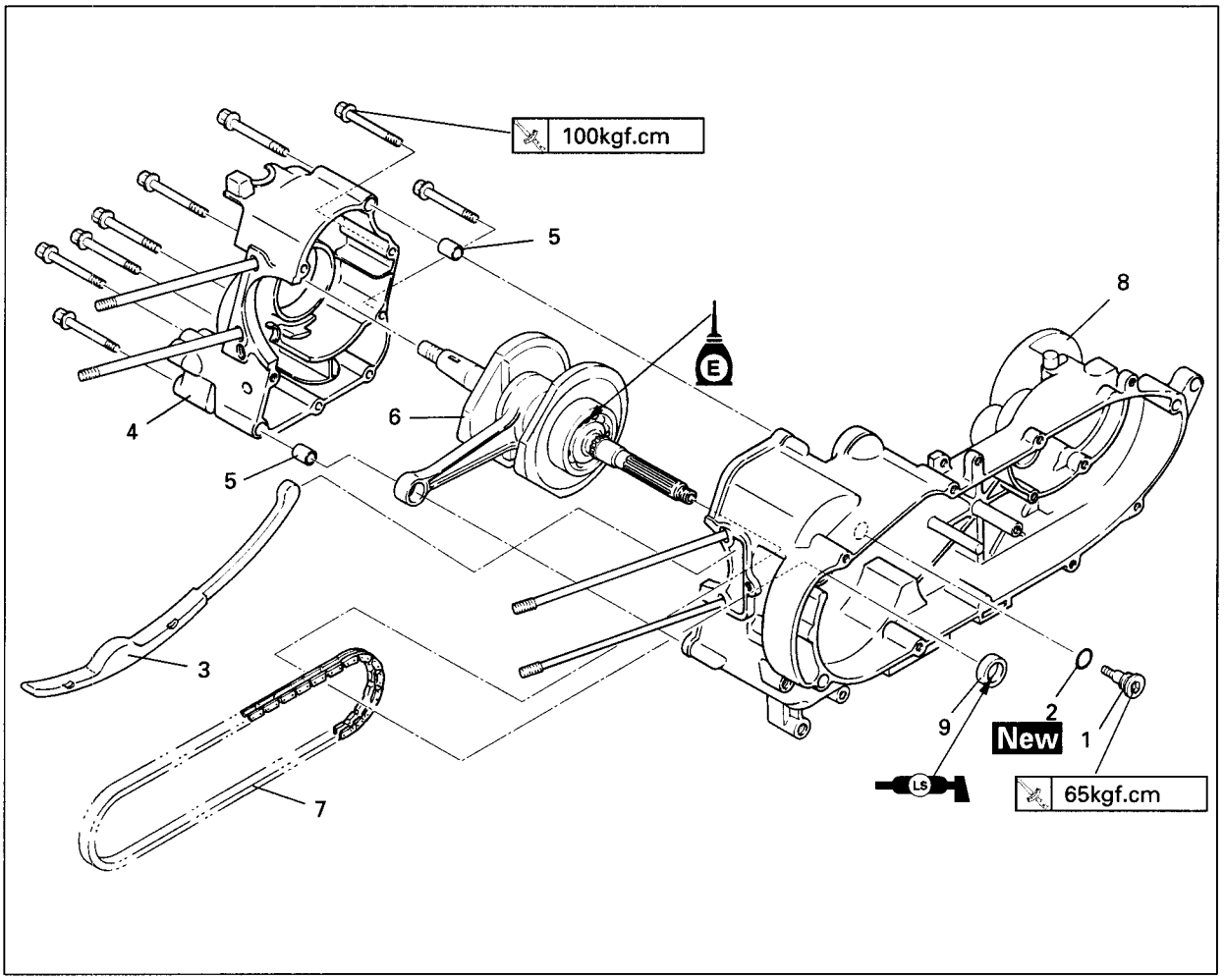
Tip clearance [A]:
0.15 mm <Limit: 0.23 mm>
Side clearance [B]:
0.07 mm <Limit: 0.14 mm>

TRANSMISSION

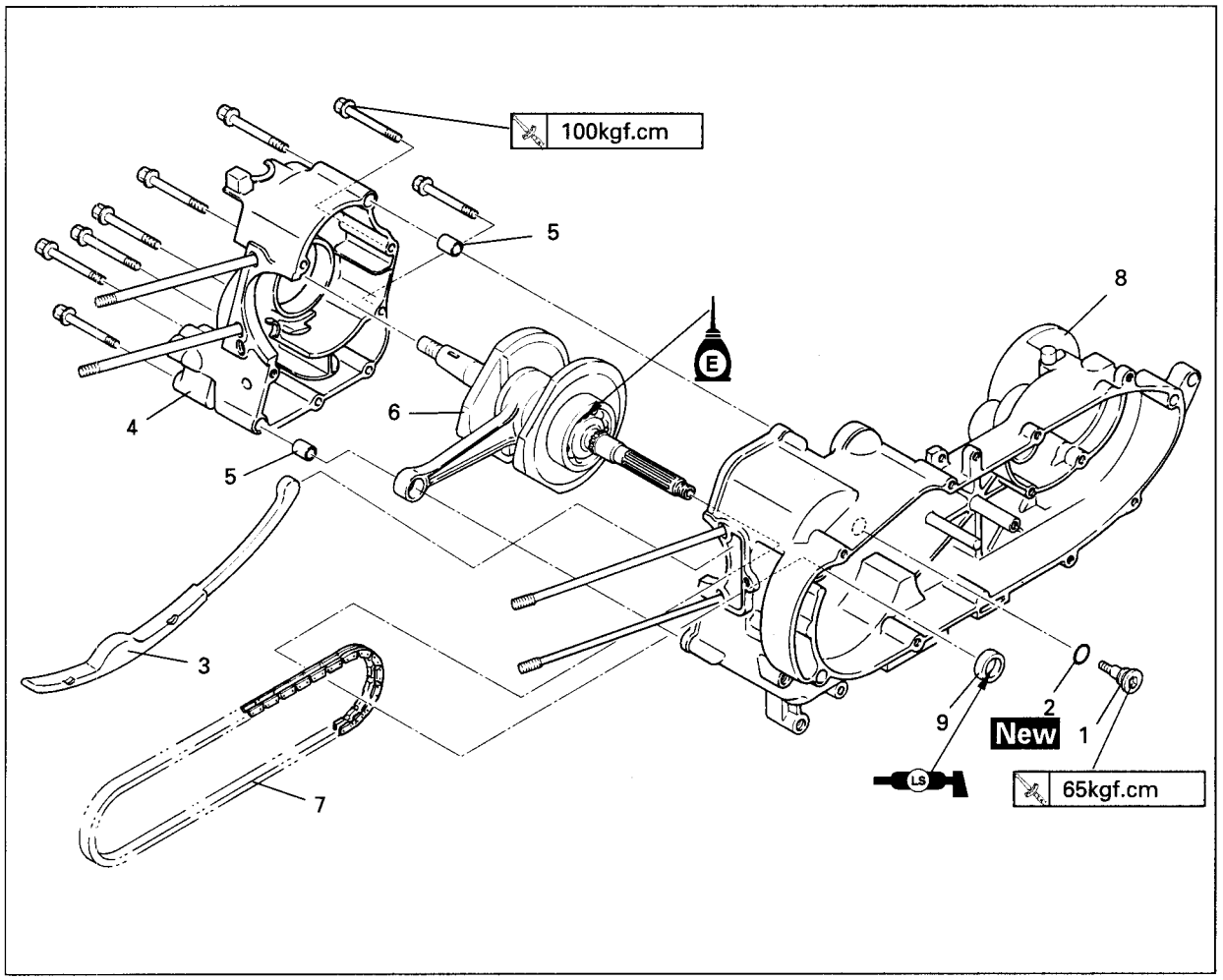


Order	Job name / Part name	Q'ty	Remarks
	Transmission removal		Remove the parts in order.
	Rear wheel		Refer to "REAR WHEEL/REAR BRAKE" section in CHAPTER 7.
	Crankcase cover (left)		Refer to "V-BELT, CLUTCH, SECONDARY/ PRIMA-RY SHEAVE" section.
	Drain the transmission oil.		Refer to "TRANSMISSION OIL REPLACE-MENT" section in CHAPTER 3.
1	Transmission case cover 2	1	
2	Gasket (transmission case cover) 2	1	
3	Dowel pin	2	
4	Primary drive gear	1	
5	Plate washer	1	
6	1st wheel gear / Circlip	1/1	
7	Drive axle	1	
8	Main axle	1	
			Reverse the removal procedure for instal-lation.

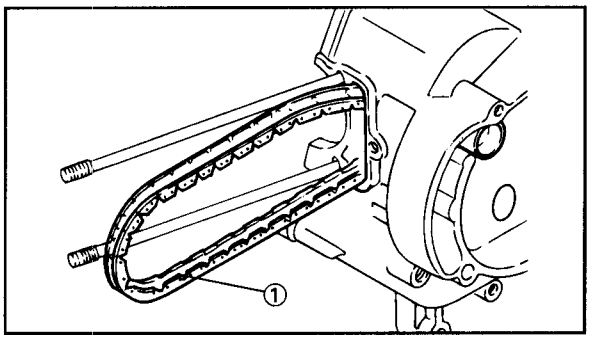
CRANKCASE AND CRANKSHAFT



Order	Job name / Part name	Q'ty	Remarks
	Crankcase and crankshaft removal		Remove the parts in the order.
	Engine removal		Refer to "ENGINE REMOVAL" section.
	Cylinder head		Refer to "CYLINDER HEAD" section.
	Cylinder, piston		Refer to "CYLINDER AND PISTON" section.
	V-belt, clutch, secondary/primary sheave		Refer to "V-BELT, CLUTCH AND SECONDARY/PRIMARY SHEAVE" section.
	Starter clutch		Refer to "Starter Clutch" section.
	AC magneto		Refer to "AC magneto" section.
	Oil pump		Refer to "OIL PUMP" section.
	Rear wheel		Refer to "REAR WHEEL AND REAR BRAKE" section.
1	Bolt	1	
2	O-ring	1	
3	Timing chain guide	1	



Order	Job name / Part name	Q'ty	Remarks
4	Crankcase (right)	1	Refer to "CRANKSHAFT INSTALLATION" section.
5	Dowel pin	2	Refer to "CRANKSHAFT REMOVAL/INSTALLATION" section.
6	Crankshaft assembly	1	
7	Timing chain	1	
8	Crankcase (left)	1	
9	Oil seal	1	
			Reverse the removal procedure for installation.

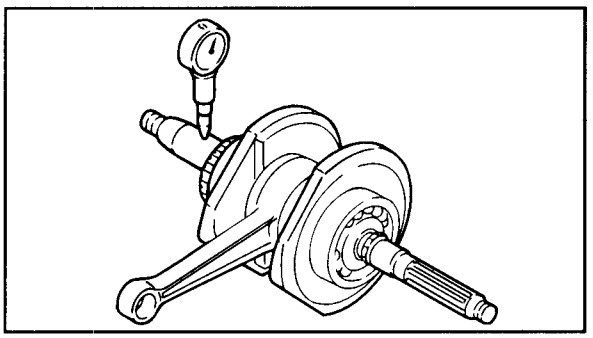


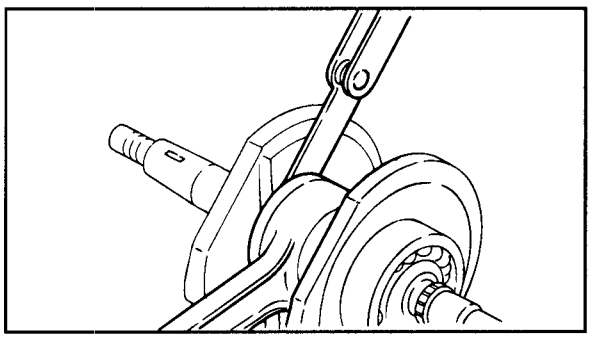
CRANKSHAFT REMOVAL

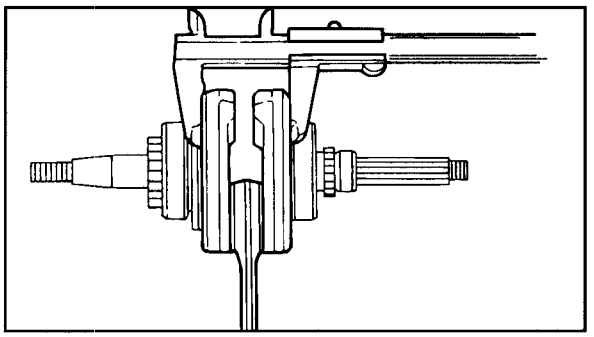
1. Remove:
   - Crankshaft assembly
   - Timing chain ①

NOTE:

- Before removing the crankshaft assembly, remove the timing chain from the crank shaft sprocket.
- If the timing chain hooks to the crankshaft sprocket, the crankshaft cannot be removed.







CRANKSHAFT INSPECTION

1. Measure:
   - Crankshaft runout
     Out of specification → Replace crankshaft and/or bearing.

NOTE:

Measure the crankshaft runout with the crankshaft assembly turning slowly.

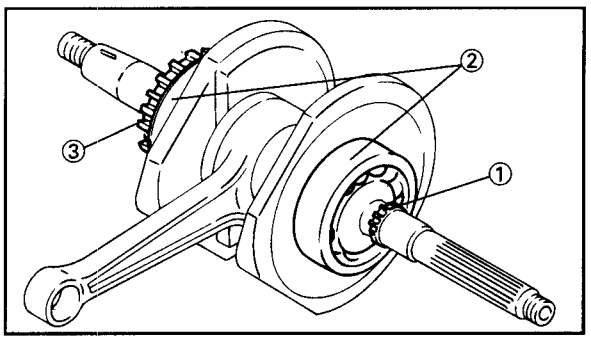
	Runout limit: 0.03 mm

2. Measure:
   - Big end side clearance
     Out of specification → Replace big end bearing, crank pin and/or connecting rod.

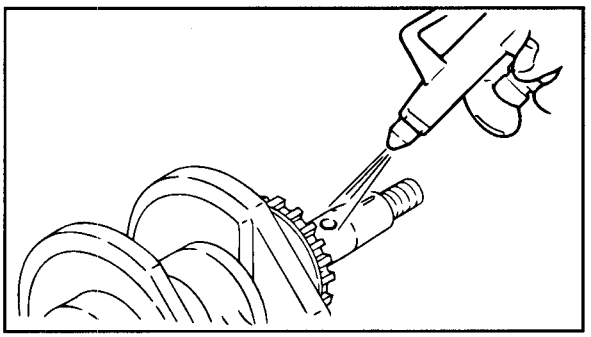
	Big end side clearance: 0.15~0.45 mm

3. Measure:
   - Crank width
     Out of specification → Replace crankshaft.

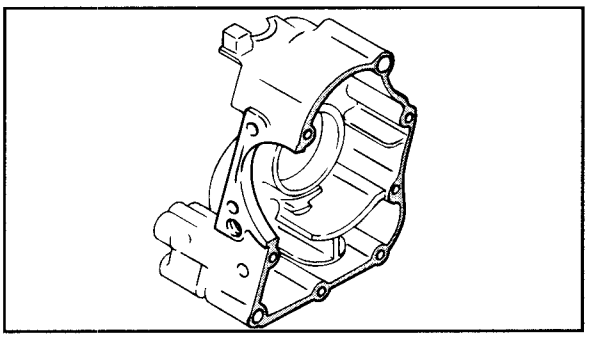
	Crank width: 47.95~48.00 mm



4. Inspect:
   - Crankshaft sprocket ①
     Wear/Damage → Replace crankshaft.
   - Bearing ②
     Wear/Crack/Damage → Replace crankshaft.
   - Pump drive gear ③
     Wear/Damage → Replace crankshaft.



5. Inspect:
   - Crankshaft journal
     Clogged → Blow out the journal with compressed air.



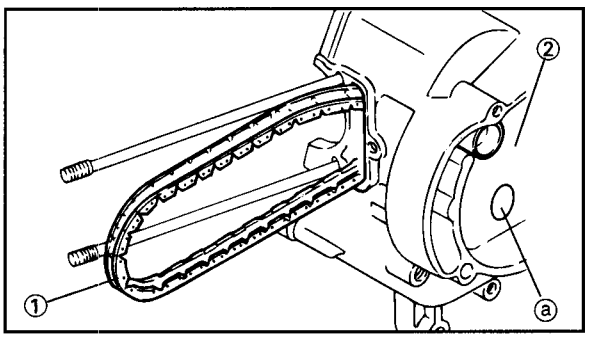
CRANKCASE INSTALLATION

1. Clean all the gasket mating surface and crankcase mating surface thoroughly.
2. Apply:
   - Sealant
     (onto the crankcase mating surfaces)

	Yamaha bond No. 1215

NOTE:

DO NOT ALLOW any sealant to come in contact with the oil gallery.



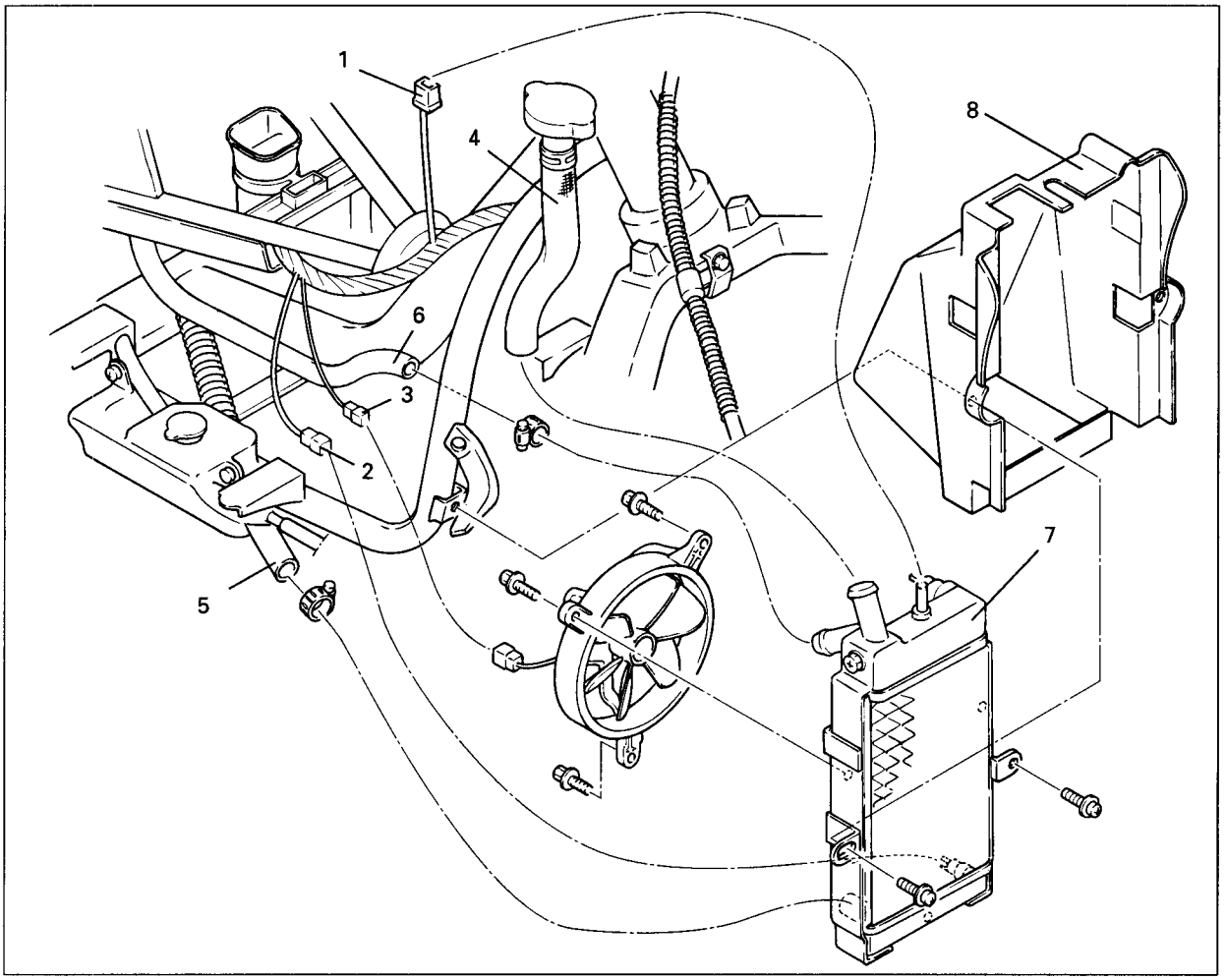
3. Install:
   - Dowel pins
   - Timing chain ①

CAUTION:

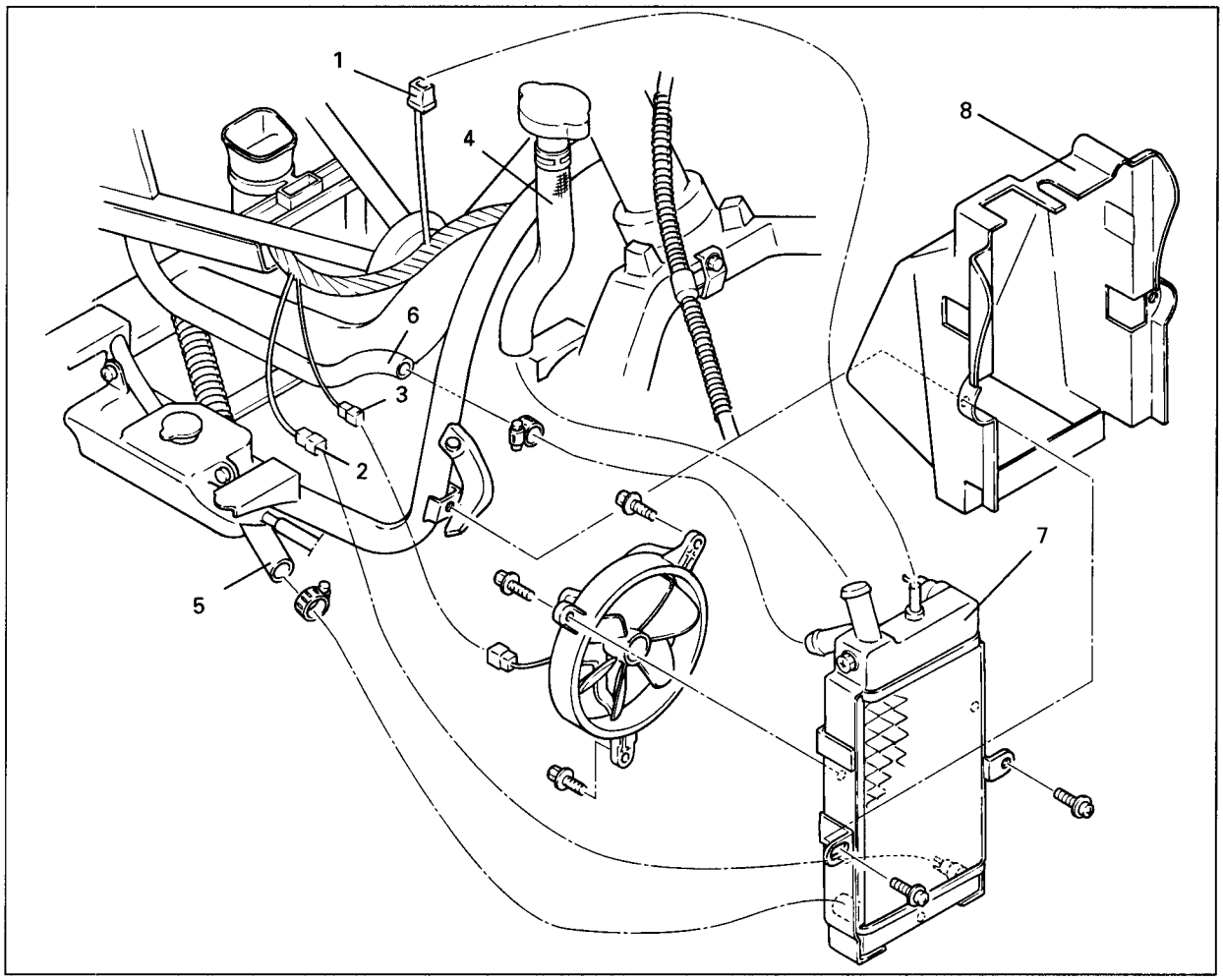
Install the timing chain not to be seen through the crankshaft hole ② on the crankcase (left) ⓐ.

COOLING SYSTEM

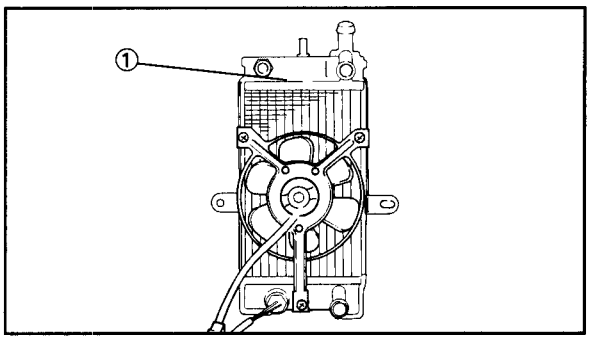
RADIATOR

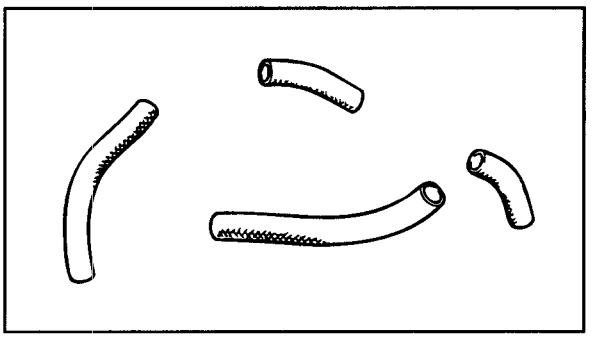


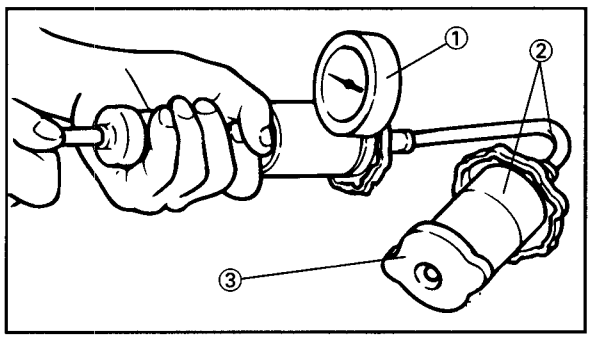
Order	Job name / Part name	Q'ty	Remarks
	Radiator removal		Remove the parts in order.
	Left and right cowling, under cowling Footrest board, leg shield Left and right footrest, let and right side cover protector		Refer to "COVER AND PANEL" section.
	Drain the coolant.		Refer to "COOLANT REPLACEMENT" section.
1	Thermo switch leads (Fan ON/OFF)	1	
2	Thermo switch leads (Auto choke ON/OFF)	1 1	
3	Fan motor leads	1	
4	Filler hose (Radiator)	1	
5	Outlet hose (Radiator)	1	
6	Inlet hose (Radiator)	1	
7	Radiator	1	
8	Radiator guard	1	



Order	Job name / Part name	Q'ty	Remarks
			Reverse the removal procedure for installation.







INSPECTION

1. Inspect:
   - Radiator ①
     Obstruction → Blow out with compressed air through the rear of the radiator.
     Flattened fins → Repair or replace.
     If flattened over the 20% of radiator fin, repair or replace the radiator.

CAUTION:

Use only specified adhesive to repair the radiator.

2. Inspect:
   - Radiator hoses
   - Radiator pipes
     Cracks/damage → Replace.
3. Measure:
   - Radiator cap opening pressure

	Radiator cap opening pressure: 0.95~1.25 kg/cm²

****

Measurement steps:

- Attach the radiator cap tester ① and adapter ② to the radiator cap ③.

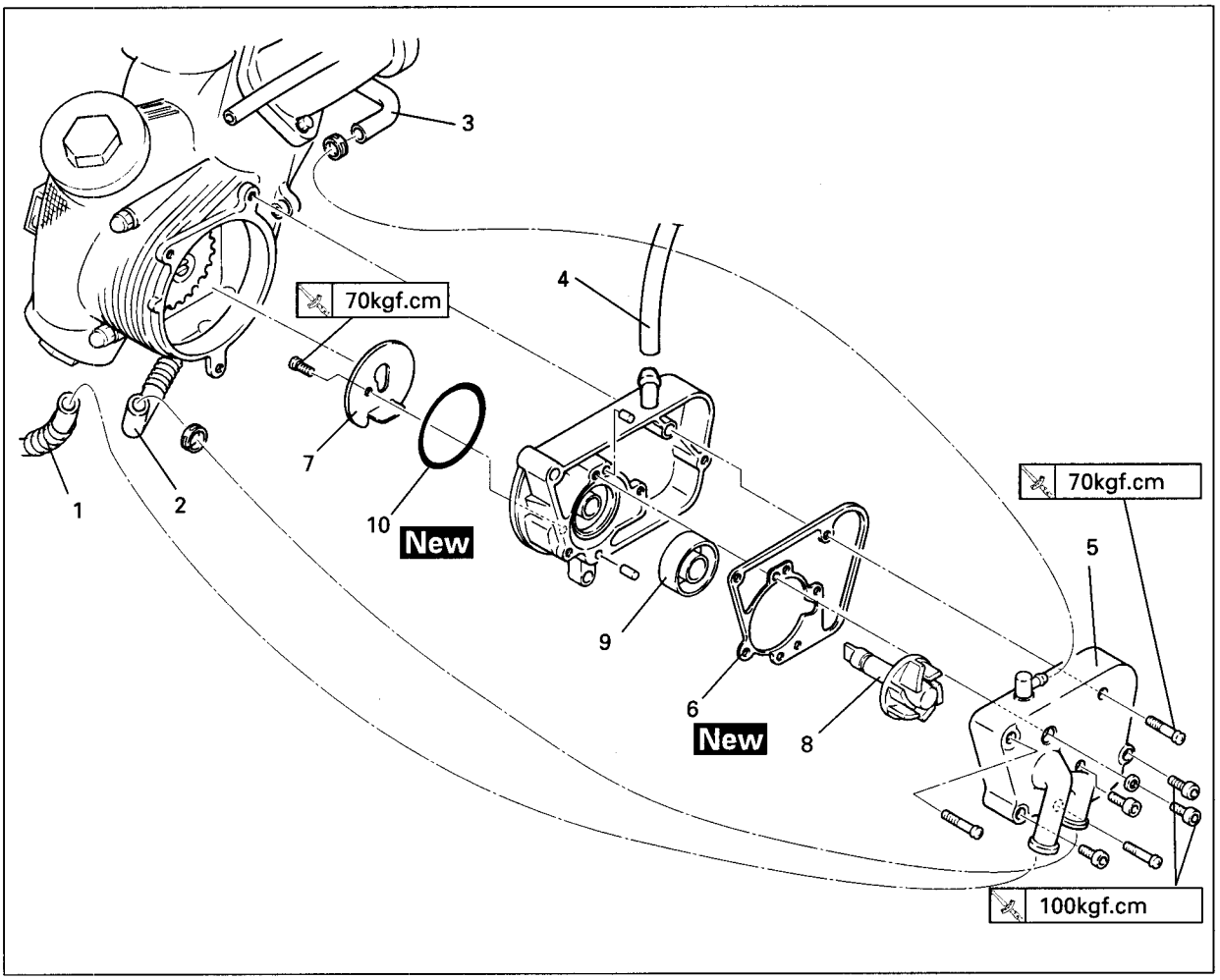
	Radiator cap tester: 90890-01325 Adapter: 90890-01352

- Apply the specified pressure for 10 seconds, and make sure there is no pressure drop.

****

4. Inspect:
   - Fan motor assembly
     Damage → Replace.
     Malfunction → Check and repair.
     Refer to "COOLING SYSTEM" in CHAPTER 8.
5. Inspect:
   - Pipes
     Cracks/damage → Replace.

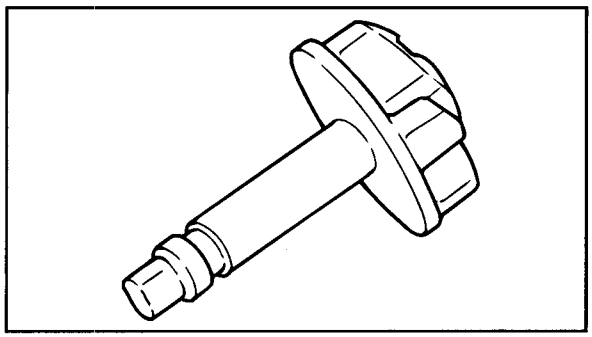
WATER PUMP



Order	Job name / Part name	Q'ty	Remarks
	Water pump removal Drain the coolant.		Remove the parts in order. Refer to "COOLANT REPLACEMENT" section in CHAPTER 3.
1	Inlet pipe	1	
2	Discharge pipe	1	
3	Return pipe	1	
4	PCV pipe	1	
5	Cover housing	1	
6	Gasket	1	
7	Plate	1	
8	Impeller shaft	1	
9	Oil seal	1	Refer to "WATER PUMP INSTALLATION" section.
10	O-ring	1	
			Reverse the removal procedure for installation.

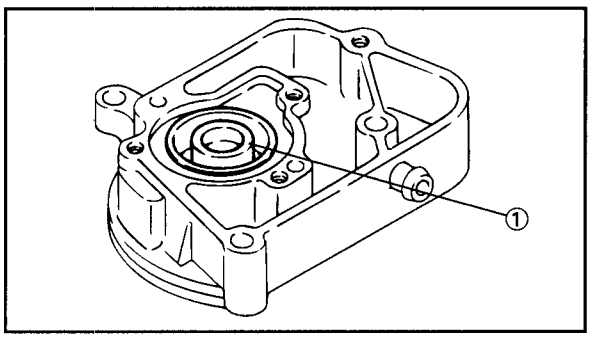
NOTE:

- It is not necessary to disassemble the water pump, unless there is no abnormality such as excessive change in coolant temperature and/or level, discoloration of coolant, or milky transmission oil.
- If necessary, replace water pump as an assembly.



INSPECTION

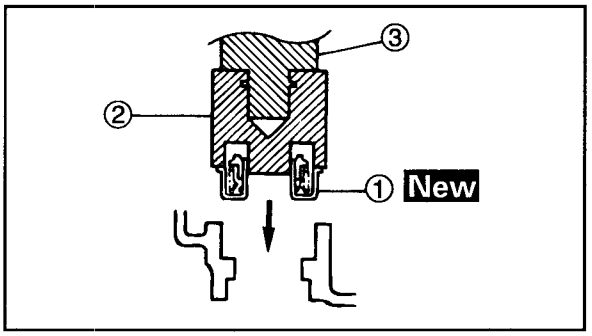
1. Inspect:
   - Impeller shaft
     Wear/damage → Replace.
     Fur deposits → Clean.



2. Inspect:
   - Mechanical seal ①
     Damage/worn/wear → Replace.

WATER PUMP INSTALLATION

1. Install:
   - Oil seal ① New



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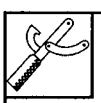
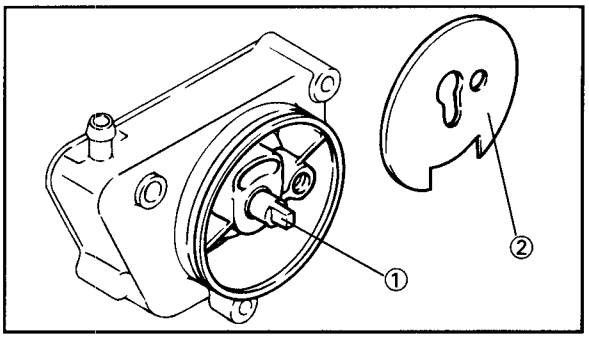
Installation steps:

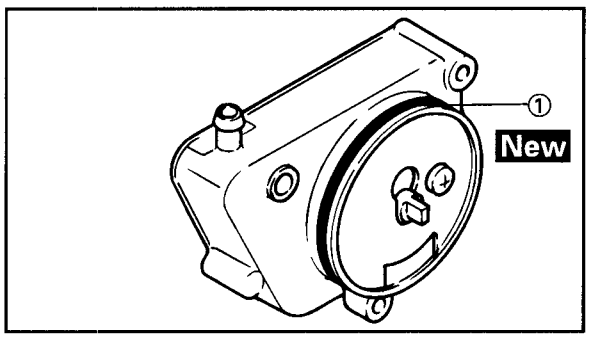
- Apply the Yamaha bond No.1215 to the outside of the mechanical seal.
- Install the mechanical seal by using the mechanical seal installer ② and middle shaft bearing driver ③.

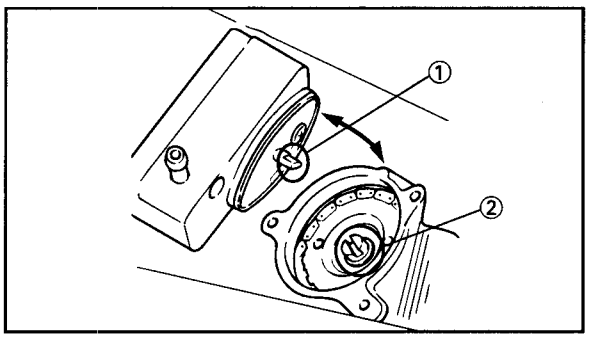
****



Mechanical seal installer:
90890-04078
Middle shaft bearing driver:
90890-04058







2. Install:
   - Impeller shaft ①
   - Plate ②

****

Installation steps:

- Apply a small amount of grease to the impeller shaft tip.
- Install the impeller shaft while turning it. Use care so that the oil seal lip is not damaged or the spring does not slip off its position.

NOTE:

After installing the impeller shaft, check it for smooth rotation.

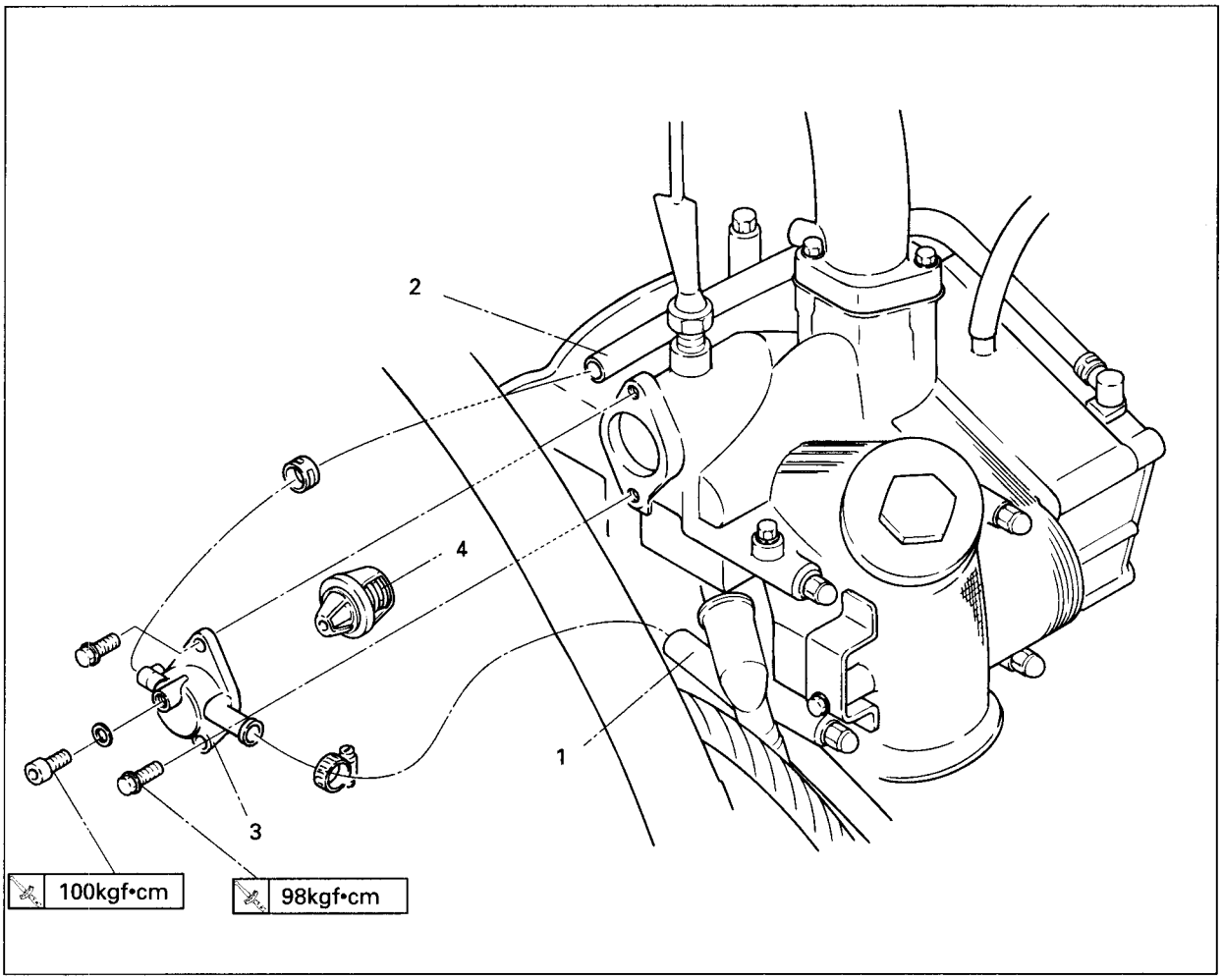
****

3. Install:
   - O-ring ① New

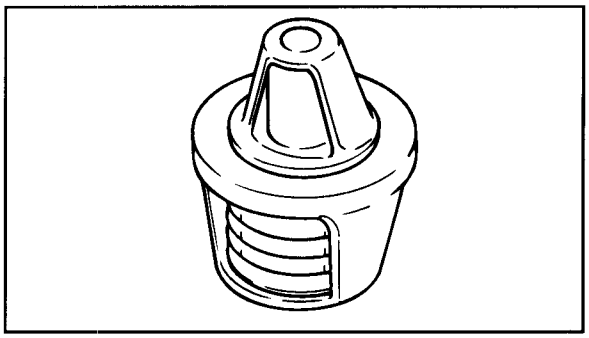
4. Install:
   - Water pump 70kg•cm

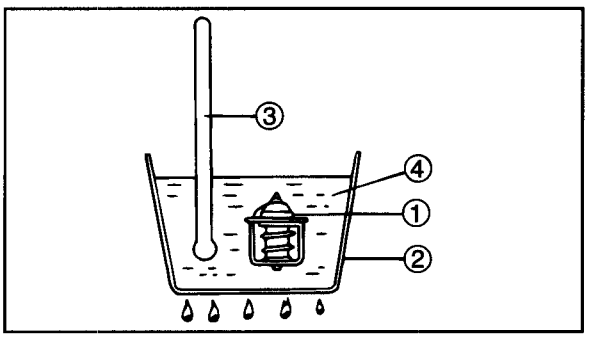
   During installation, make sure that the water pump impeller shaft ① is tabled on the screw flute ② of timing chain pulley.

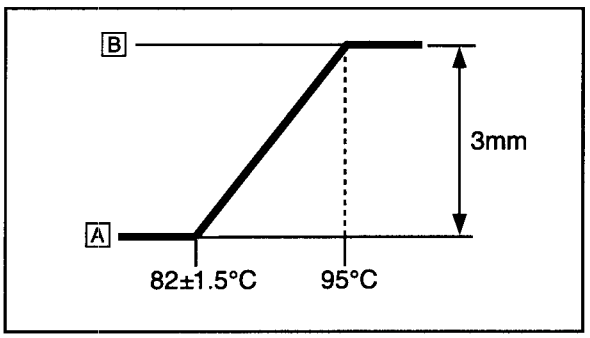
THERMOSTAT

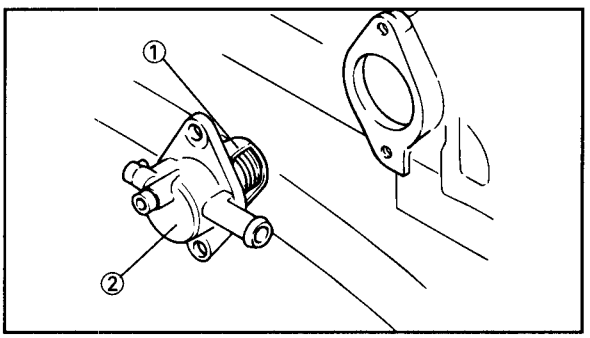


Order	Job name / Part name	Q'ty	Remarks
	Thermostat removal		Remove the parts in order.
	Left and right footrest board, left and right side cover Left and right protective plates		Refer to "COVER AND PANEL" section in CHAPTER 3.
	Drain the coolant		Refer to "COOLANT REPLACEMENT" section in CHAPTER 3.
1	Inlet pipe	1	
2	Return pipe	1	
3	Thermostatic cover	1	
4	Thermostat	1	Refer to "THERMOSTAT INSTALLATION" section. Reverse the removal procedure for installation.









INSPECTION

1. Inspect:
   - Thermostatic valve
     Valve does not open at 80.5°C~83.5°C
     → Replace.

****

Inspection steps:

- Suspend the thermostatic valve in a vessel.
- Place a reliable thermometer in coolant.
- Observe the thermometer, while continually stirring the water.

****

① Thermostatic valve
② Vessel
③ Thermometer
④ Coolant
[A] CLOSE
[B] OPEN

NOTE:

The thermostatic valve is sealed and its setting requires specialized work. If its accuracy is in doubt, replace it. A faulty unit could cause serious overheating or over-cooling.

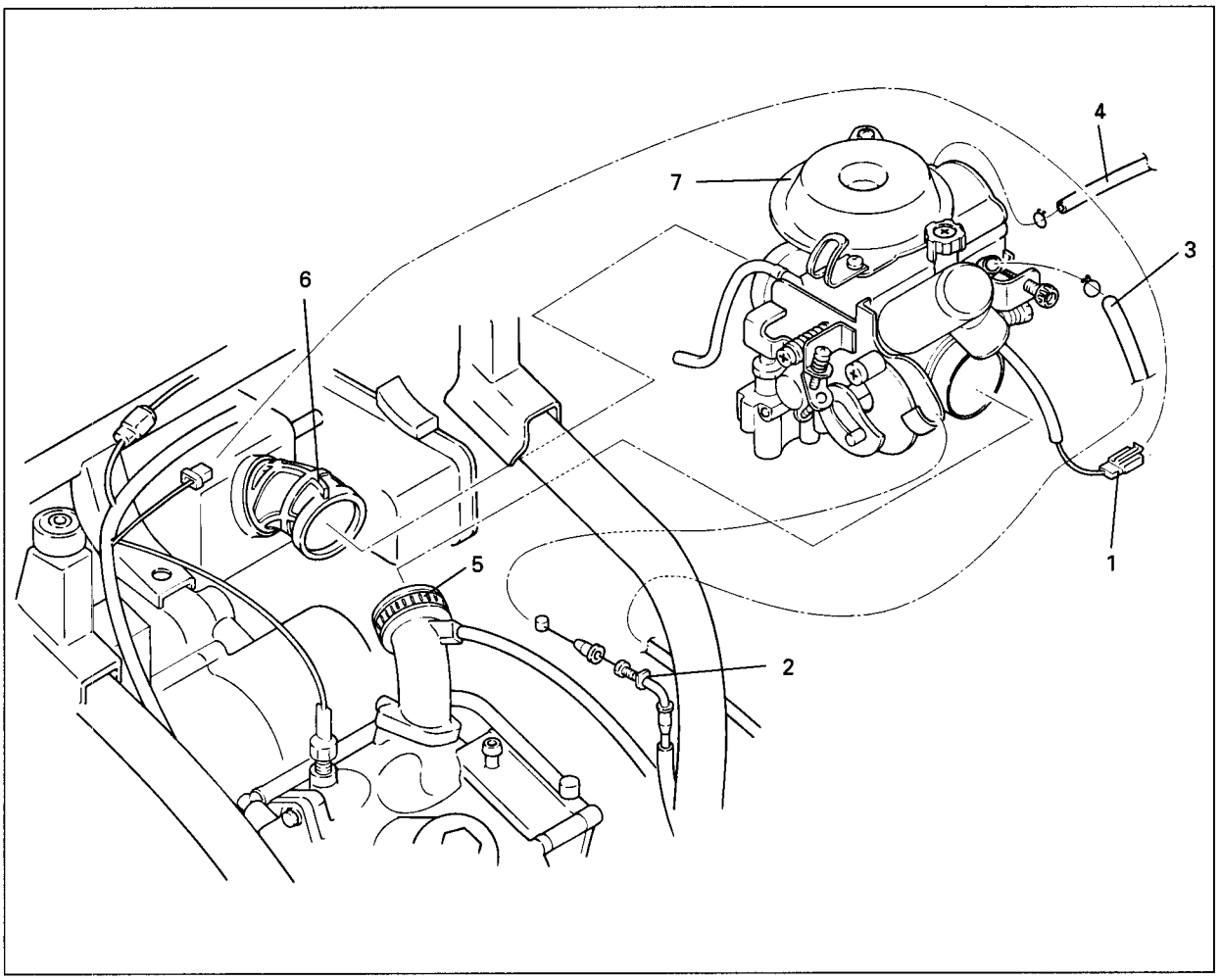
2. Inspect:
   - Thermostatic cover
     Cracks/damage → Replace.

INSTALLATION

1. Install:
   - Thermostat ①
   - Thermostatic cover ②

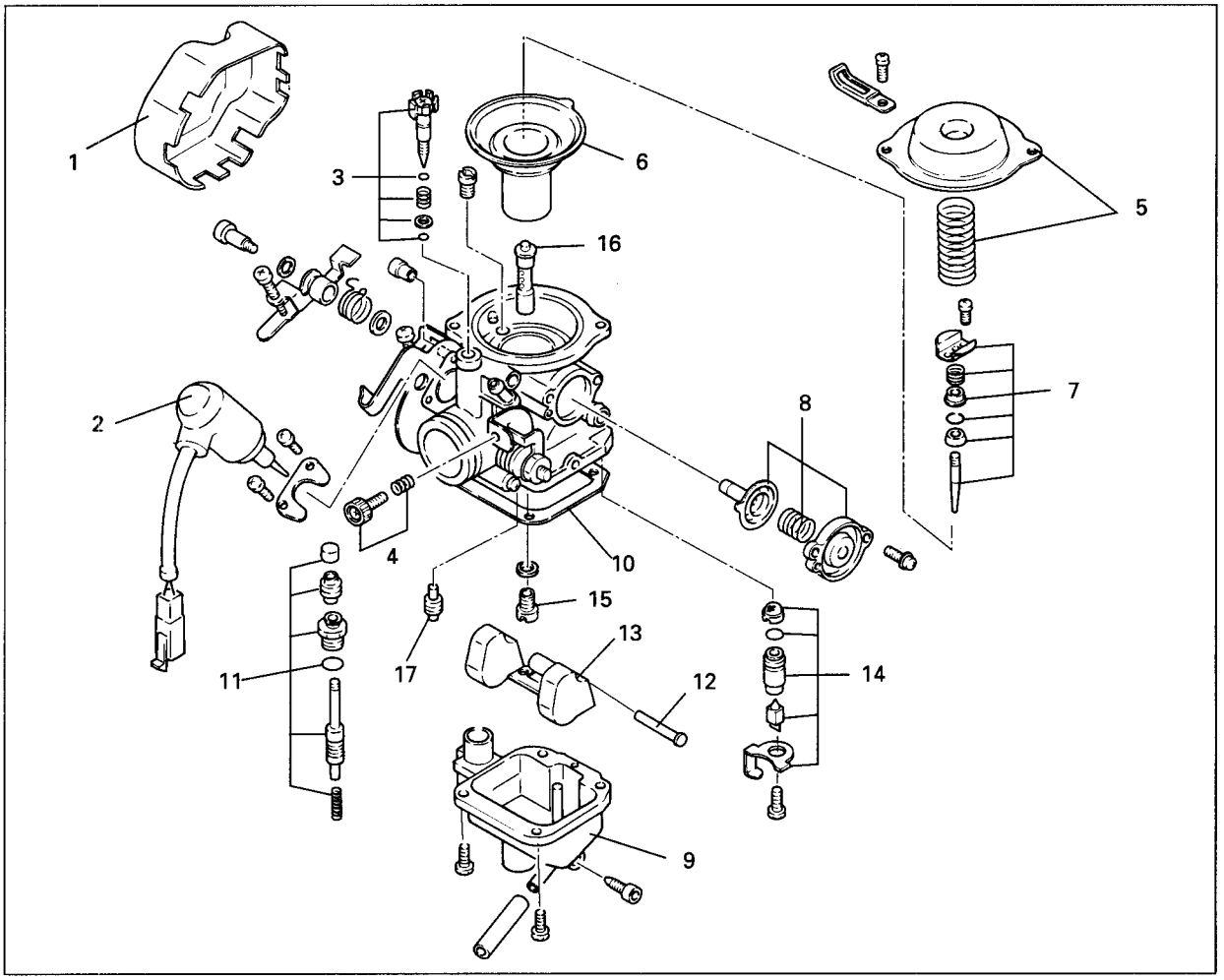
CARBURETION

CARBURETOR



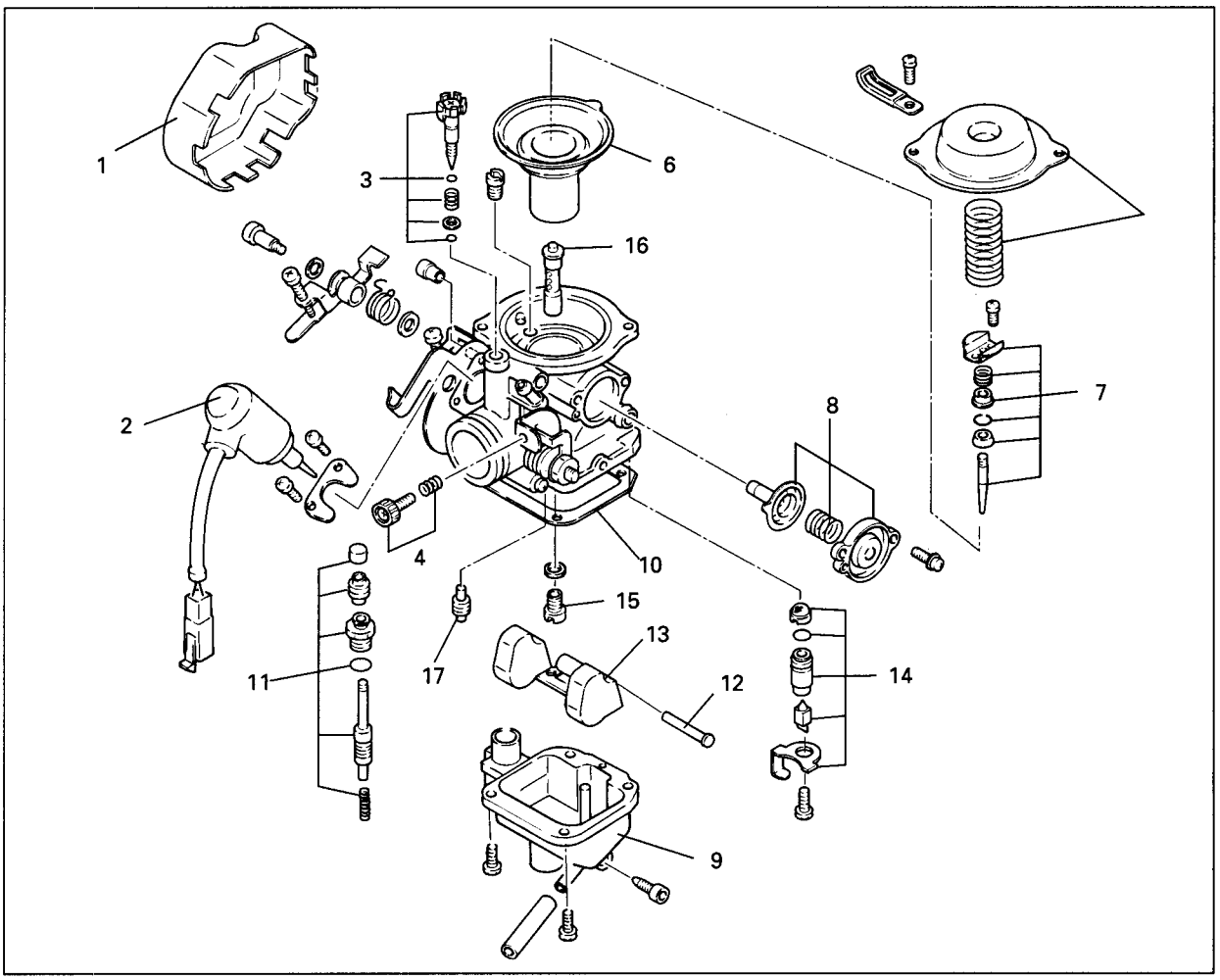
Order	Job name / Part name	Q'ty	Remarks
	Carburetor removal		Remove the parts in order.
	Left footrest		Refer to "COVER AND PANEL" section in CHAPTER 3.
	Side cover (left)		
1	Auto choke lead coupler	1	
2	Throttle cable	1	**CAUTION:**
3	E.E.C. recovery pipe	1	Do not bend the air filter joint clamp when installing the carburetor.
4	Fuel hose	1	
5	Maniford pipe	1	
6	Air filter hose	1	
7	Carburetor ass'y	1	
			Reverse the removal procedure for installation.

CARBURETOR DISASSEMBLY



Order	Job name / Part name	Q'ty	Remarks
	Carburetor disassembly		Disassemble the parts in order.
1	Cover	1	
2	Auto choke unit	1	
3	Pilot screw set	1	
4	Idle speed adjusting screw set	1	
5	Cover/Diaphragm spring	1/1	
6	Piston valve	1	
7	Jet needle ass'y	1	
8	Coasting enricher	1	
9	Float chamber	1	
10	Gasket	1	
11	Accelerating pump unit	1	Refer to "CARBURETOR ASSEMBLY"
12	Float pin	1	section.
13	Float	1	
14	Pin valve assembly	1	Refer to "CARBURETOR ASSEMBLY"
15	Main jet	1	section.

CARBURETOR DISASSEMBLY



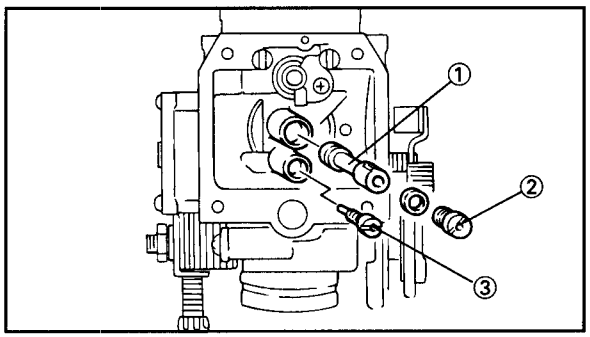
Order	Job name / Part name	Q'ty	Remarks
16	Main nozzle	1	
17	Pilot jet	1	
			Reverse the disassembly procedure for assembly.

ASSEMBLY

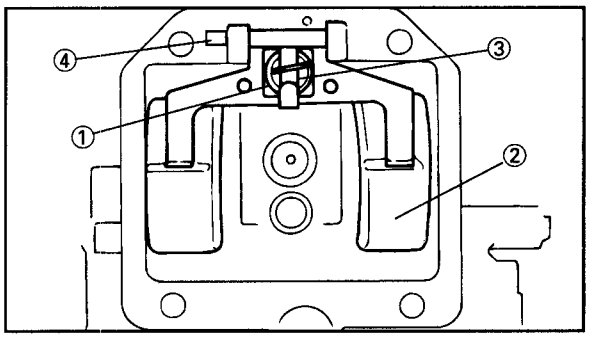
Reverse the "DISASSEMBLY" procedure.
Note the following points.

CAUTION:

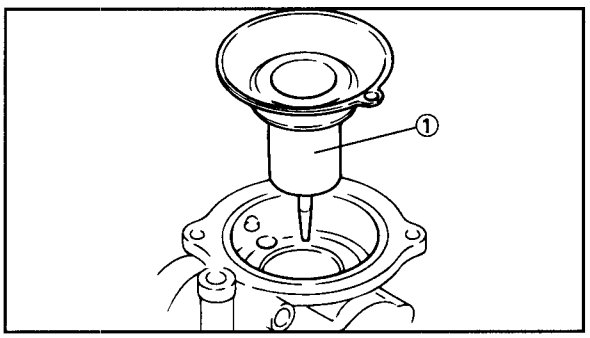
- Before assembling, wash all parts in clean petroleum based solvent.
- Always use a new gasket.



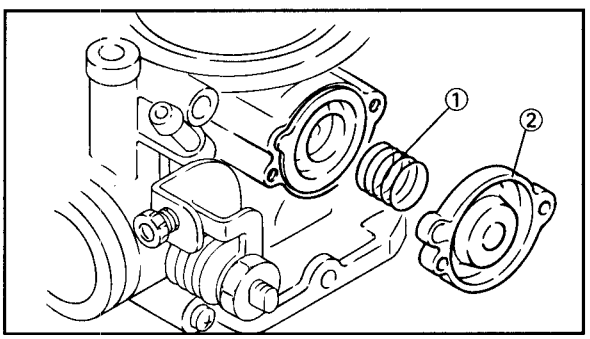
1. Install:
   - Main nozzle ①
   - Main jet ②
   - Pilot jet ③



2. Install:
   - Valve seat ①
   - Float ②
   - Needle valve ③
   - Float pin ④



3. Install:
   - Piston valve ①

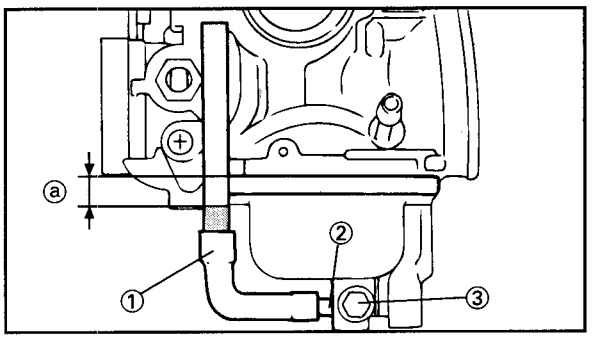


4. Install:
   - Compression spring ①
   - Cover ②

FUEL LEVEL ADJUSTMENT

⚠ WARNING

Gasoline (fuel) and its vapors are highly flammable and explosive. Keep away from sparks, cigarettes, flames or other sources of ignition.



1. Measure:
   - Fuel level ⓐ
     Out of specification on → Adjust.

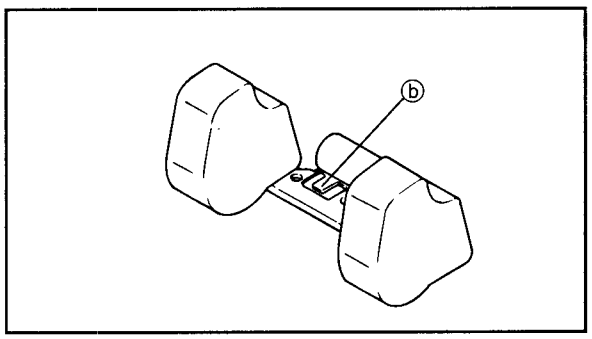
	Fuel level: 6.5 ~ 7.5 mm below the float chamber line

****

Measurement and adjustment steps:

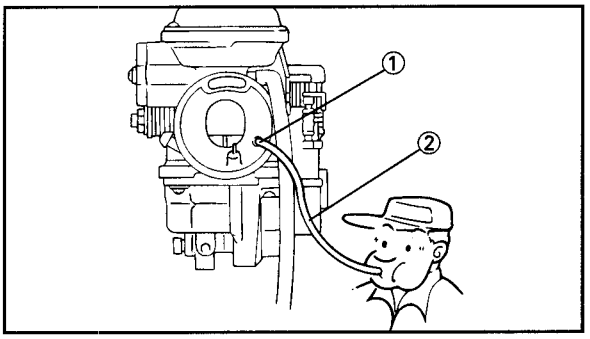
- Place the scooter on a level surface.
- Put a garage jack under the engine to ensure that the carburetors are positioned vertically.
- Connect the fuel level gauge ① to the drain pipe ②.

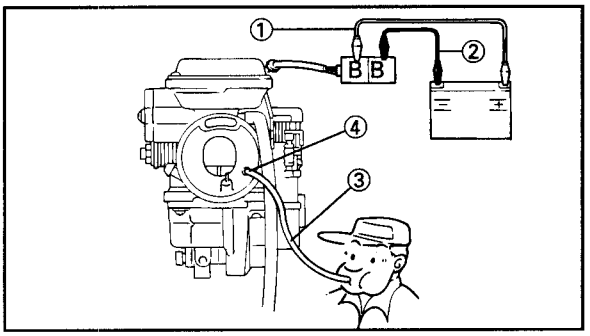
	Fuel level gauge: 90890-01312



- Loosen the drain screw ③.
- Hold the gauge vertically next to the float chamber line.
- Measure the fuel level ⓐ with the gauge.
- If the fuel level is incorrect, adjust the fuel level.
- Remove the carburetor. Inspect the valve seat and needle valve.
- If either is worn, replace them both.
- If both are fine, adjust float level by bending the float tang ⓑ slightly.
- Install the carburetor. Recheck the fuel level.

****





AUTO CHOKE INSPECTION

(Ambient temperature lower than 45°C)

1. Remove:
   - Carburetor
2. Inspect:
   - Auto choke unit

   Connect 3.3mm pipe ② to the starter ①, and blow it with the mouth etc.

   Possible → Good condition.

   Impossible → Replace auto choke unit.
3. Inspect:
   - Auto choke unit (with battery)

****

Inspection and adjustment steps:

- Connect auto choke unit leads to the 12V battery for 5 minutes.

  Black terminal → 12V battery (+) ①

  Black terminal → 12V battery (–) ②
- Connect proper pipe ③ to the starter ④, and blow it with the mouth etc.

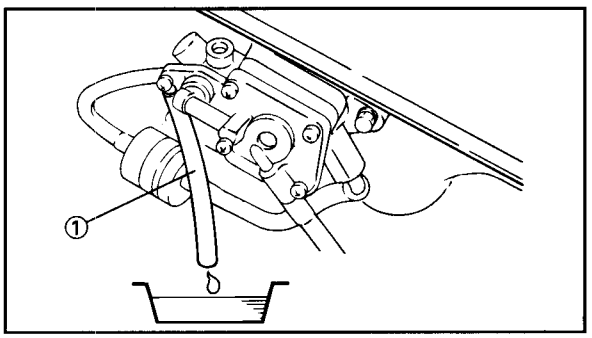
  Possible → Replace auto choke unit.

  Impossible → Good condition.

****

FUEL PUMP INSPECTION

1. Remove:
   - Side panels
     Refer to "COVER AND PANEL" section in CHAPTER 3.



2. Inspect:
   - Fuel pump

****

Inspection steps:

- Place the receptacle under the fuel pipe end.
- Start engine, and inspect gasoline to flow out from fuel pipe ①.

Engine is running:
Gasoline flows out → Good.
Engine is stopping:
Gasoline does not flow out → Good.

****

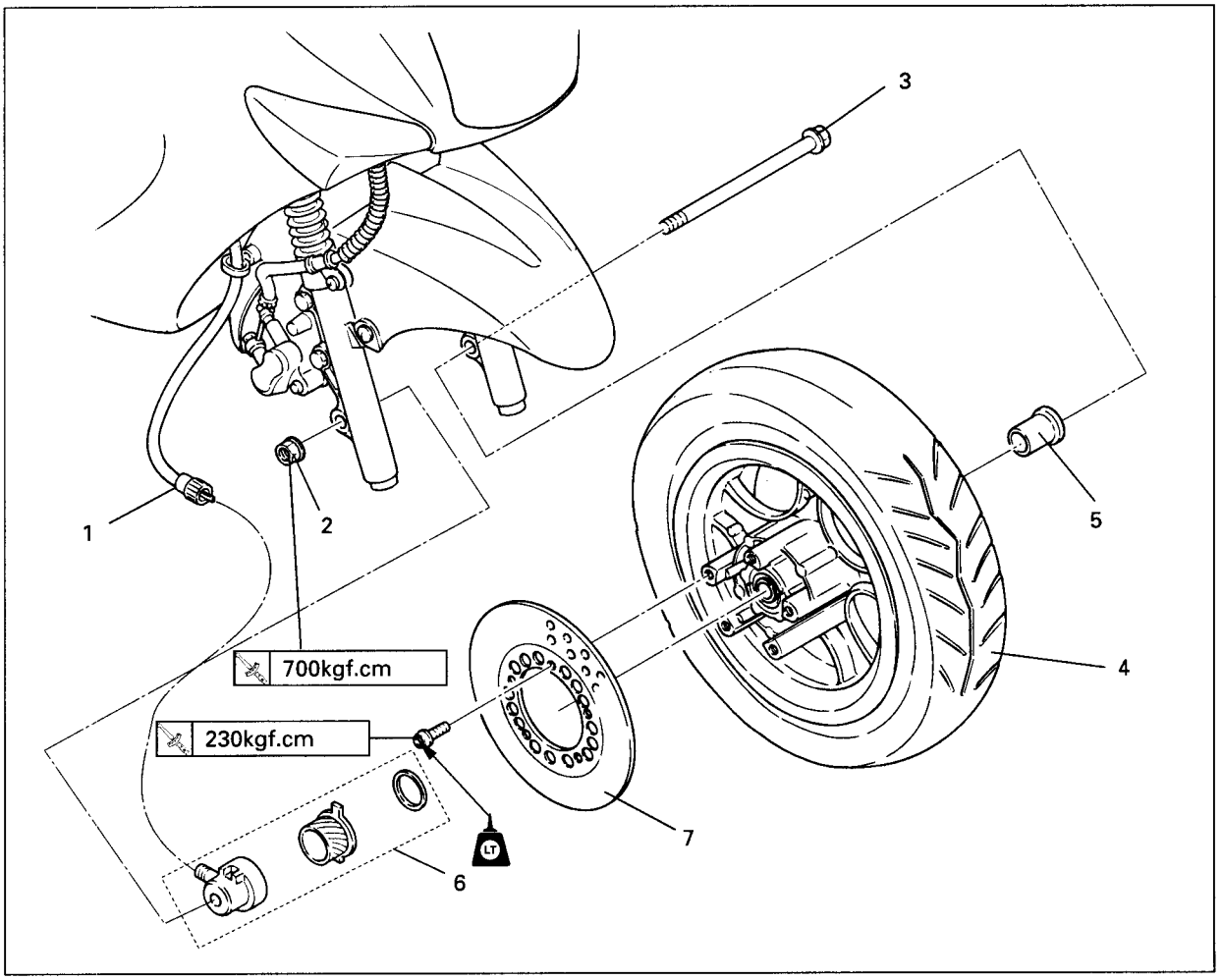
⚠ WARNING

- Gasoline (fuel) and its vapors are highly flammable and explosive. Keep away from sparks, cigarettes, flames or other sources of ignition.
- Failure to check for fuel leakage may result in fire or explosion.

3. Install:
   - Side panels
     Refer to "COVER AND PANEL" section in CHAPTER 3.

CHASSIS

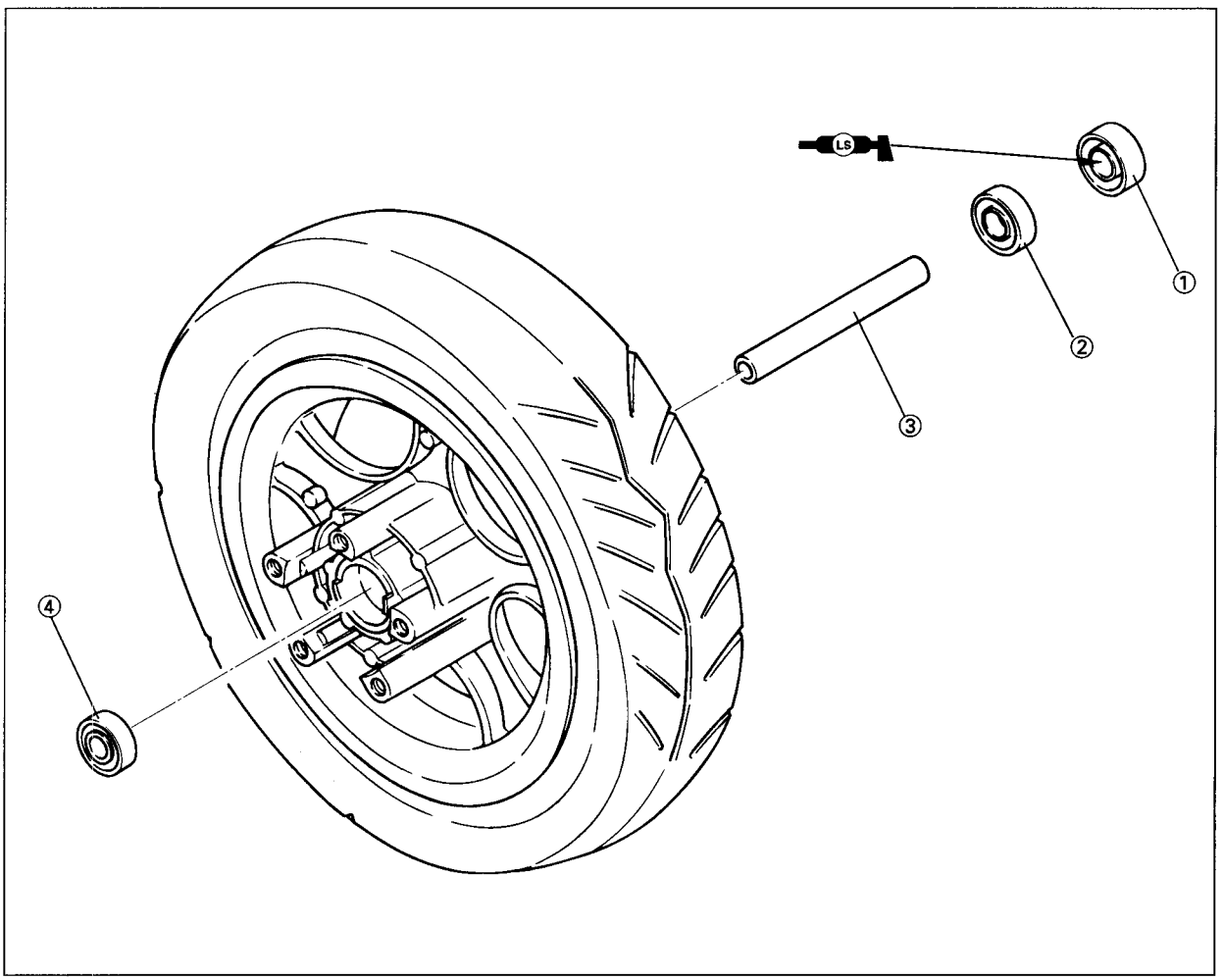
FRONT WHEEL AND BRAKE DISC



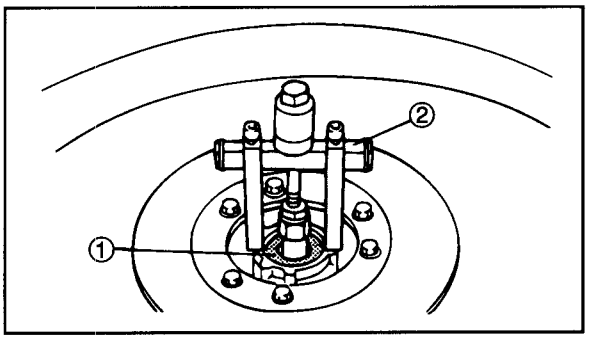
Order	Job name / Part name	Q'ty	Remarks
	Front wheel and brake disc removal		Remove the parts in order. **⚠WARNING** Securely support the scooter so there is no danger of it falling over.
1	Speedometer cable	1	
2	Axle nut	1	
3	Wheel axle	1	
4	Front wheel assembly	1	Refer to "FRONT WHEEL INSTALLATION" section.
5	Collar	1	
6	Gear unit assembly	1	
7	Brake disc	1	Refer to "FRONT WHEEL ASSEMBLY" section. Reverse the removal procedure for installation.

7

FRONT WHEEL DISASSEMBLY



Order	Job name / Part name	Q'ty	Remarks
	Front wheel disassembly		Remove the parts in order.
①	Oil seal	1	
②	Bearing	1	Refer to "FRONT WHEEL DISASSEMBLY / ASSEMBLY" section.
③	Spacer	1	
④	Bearing	1	
			Reverse the removal procedure for installation .



FRONT WHEEL DISASSEMBLY

1. Remove:
   - Bearing ①
   - Spacer

   Remove the bearing using a general bearing puller ②.

NOTE:

Handle the wheel with care not to damage the brake disc. If the brake disc is damaged, replace.

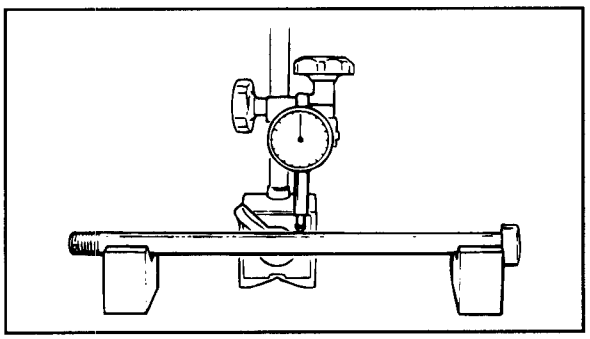
FRONT WHEEL INSPECTION

1. Inspect:
   - Front wheel axle

   (by rolling it on a flat surface)
   Bends → Replace.

⚠WARNING

Do not attempt to straighten a bent axle.

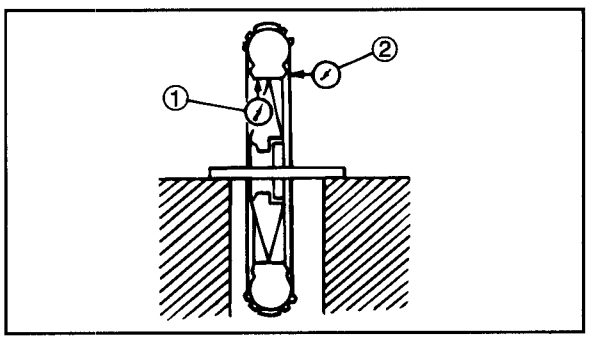


Wheel axle bending limit:
0.25 mm

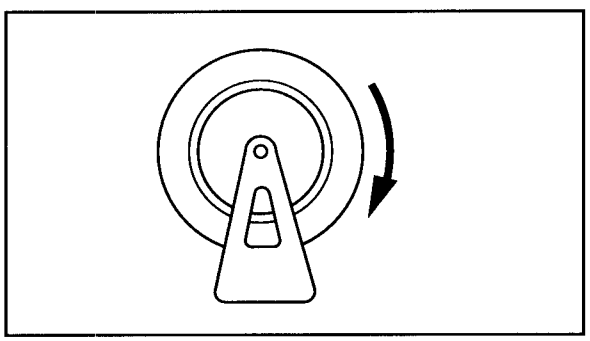
2. Inspect:
   - Front tire

   Wear/damage → Replace.
   Refer to "TIRE INSPECTION" section in CHAPTER 3. Front wheel.
   Refer to "WHEEL INS-PECTION" section in CHAPTER 3.
3. Measure:
   - Front wheel runout

   Over the specified limits → Replace.



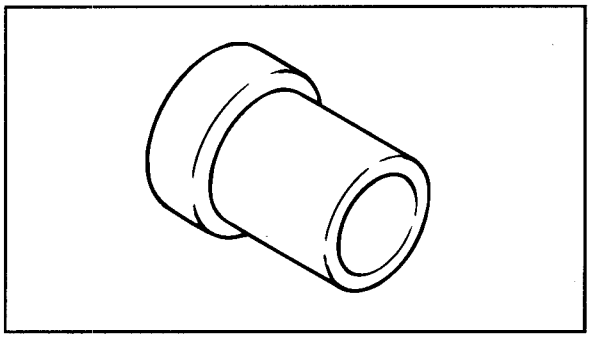
Front wheel runout limits:
Radial ① : 2.0 mm
Lateral ② : 2.0 mm



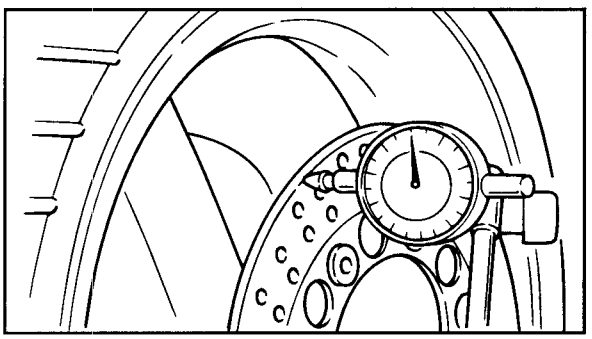
4. Inspect:
   - Front wheel bearings

   Bearings allow free play in the wheel hub or the wheel does not turn smoothly → Replace.
   - Oil seals

   Wear/damage → Replace.



4. Inspect:
   - Collar
     Grooved wear → Replace the collar and the oil seal as a set.

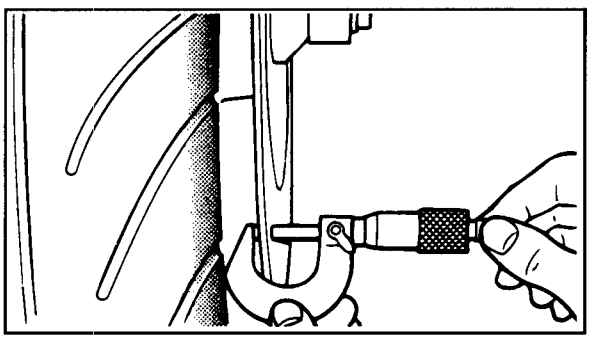


BRAKE DISC INSPECTION

1. Measure:
   - Brake disc deflection

	Maximum deflection: 0.15 mm

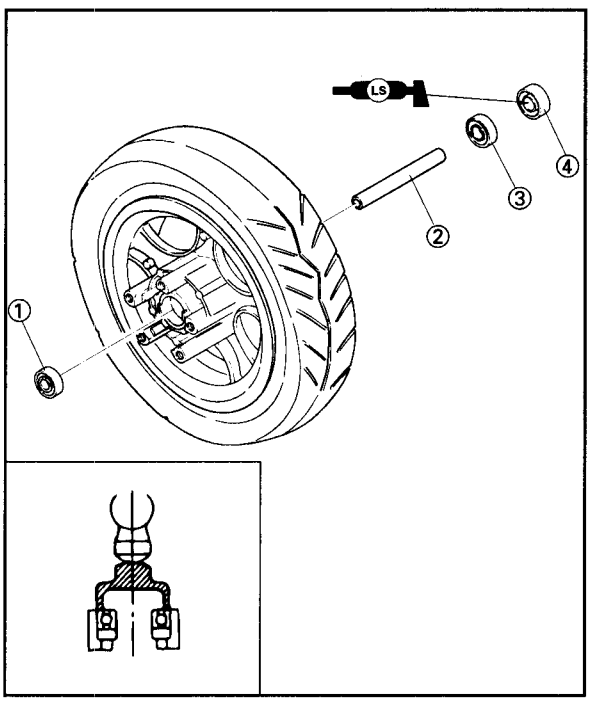
Out of specification → Replace.



2. Measure:
   - Brake disc thickness

	Brake disc thickness: 4.0 mm Minimum thickness: 3.5 mm

Out of specification → Replace.



FRONT WHEEL ASSEMBLY

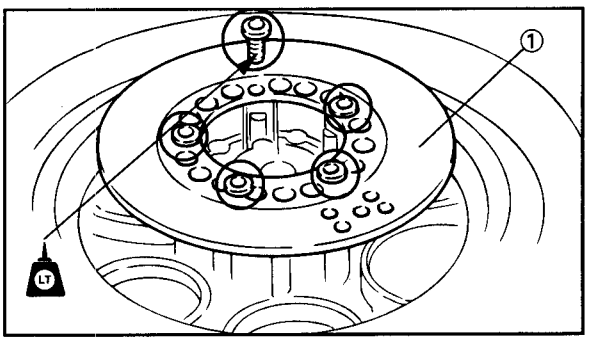
1. Install:
   - Bearing ①
   - Spacer ②
   - Bearing ③
   - Oil seal ④

NOTE:

- Apply the lithium soap base grease on the bearing and oil seal lip when installing.
- Use a socket that matches the outside diameter of the race of the bearing.
- Always use a new oil seal.
- Install the oil seal with its manufacturer's marks or numbers facing outward.

CAUTION:

Do not strike the inner race of balls of the bearing. Contact should be made only with the outer race.



2. Install:
   - Brake dise ① 230 kg•cm

NOTE:

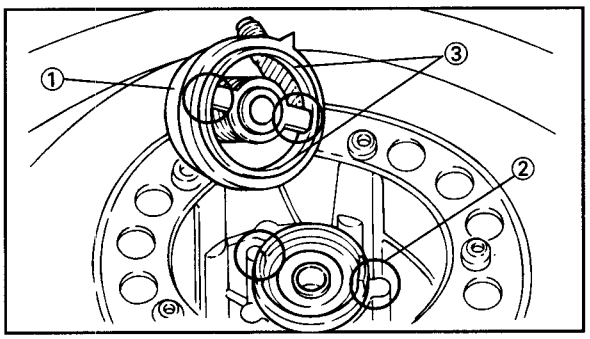
Tighten the bolts (brake disc) in stage using a crisscross 2~3 times.

FRONT WHEEL INSTALLATION

Reverse the "Removal" procedure.
Note the following points.

1. Lubricate
   - Front wheel axle
   - Bearings
   - Oil seal (lips)
   - Drive/driven gear (speedometer)

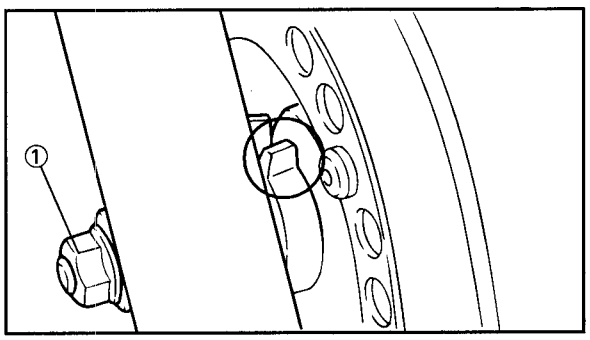
	Recommended lubricant: Lithium soap base grease



2. Install:
   - Speedometer gear unit ①

NOTE:

Make sure that the wheel hub and the speedometer gear unit are installed with the three projections ② meshed into the three slots ③.



3. Install:
   - Front wheel

NOTE:

Make sure that the slot in the speedometer gear unit fits over the stopper on the front fork outer tube.

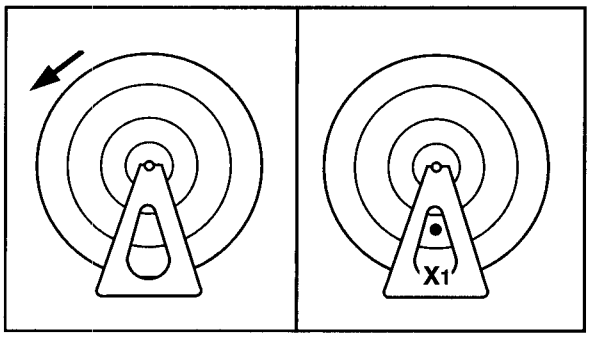
4. Tighten:
   - Front wheel axle
   - Axle (front wheel axle) ①

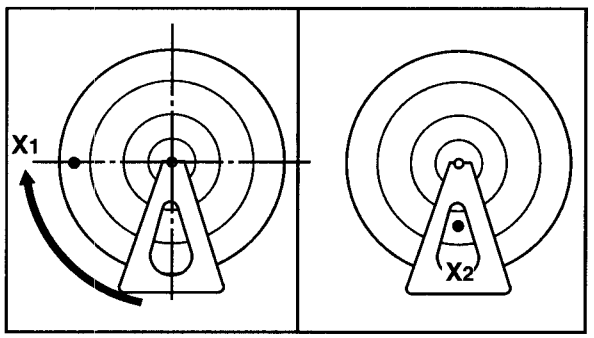
CAUTION:

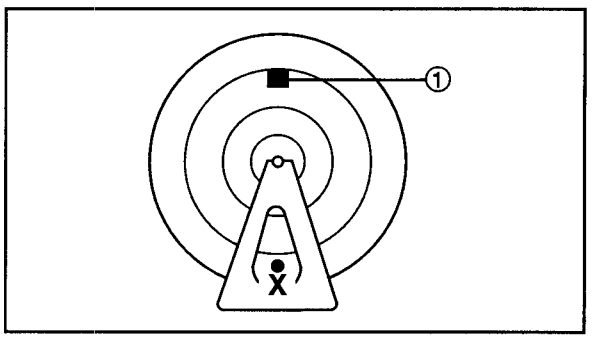
Before tightening the axle nut, stroke the front fork several times to check for proper fork operation.

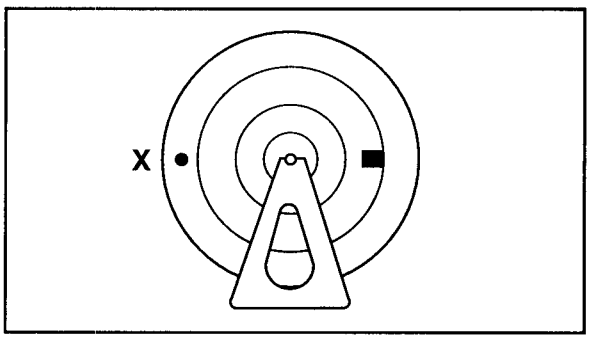
⚠WARNUNG

Make sure that the brake hose is routed properly.









WHEEL STATIC BALANCE ADJUSTMENT

NOTE:

- After replacing the tire and/or rim, the wheel static balance should be adjusted.
- Adjust the front wheel static balance with the brake disc installed.

1. Remove:
   - Balancing weight
2. Set:
   - Wheel
     (on a suitable stand)
3. Find:
   - Heavy spot

****

Procedure:

a. Spin the tire and wait for it to rest.
b. Put an "X_1" mark on the wheel's bottom spot.
c. Turn the wheel so that the "X_1" mark is 90° up.
d. Release the wheel and wait for it to rest. Put an "X_1" mark on the wheel's bottom spot.
e. Repeat the above b. c. and d. several times until all marks come to the same spot.
f. This spot is the wheel's heavy spot "X".

****

4. Adjust:
   - Wheel static balance

****

Adjusting steps:

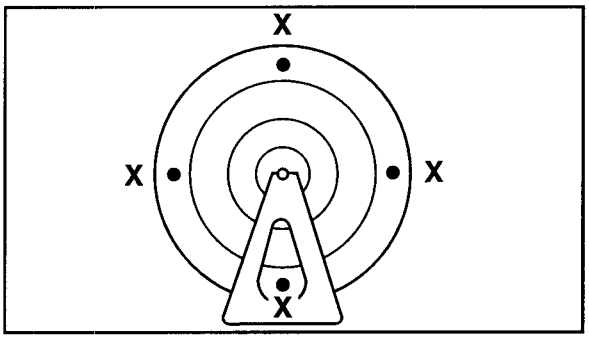
- Install a balancing weight ① on the rim exactly opposite to the heavy spot "X".

NOTE:

Start with the smallest weight.

- Turn the wheel so that the heavy spot is 90° up.
- Check that the heavy spot is at rest there. If not, try another weight until the wheel is balanced.

****



5. Check:
   - Wheel static balance

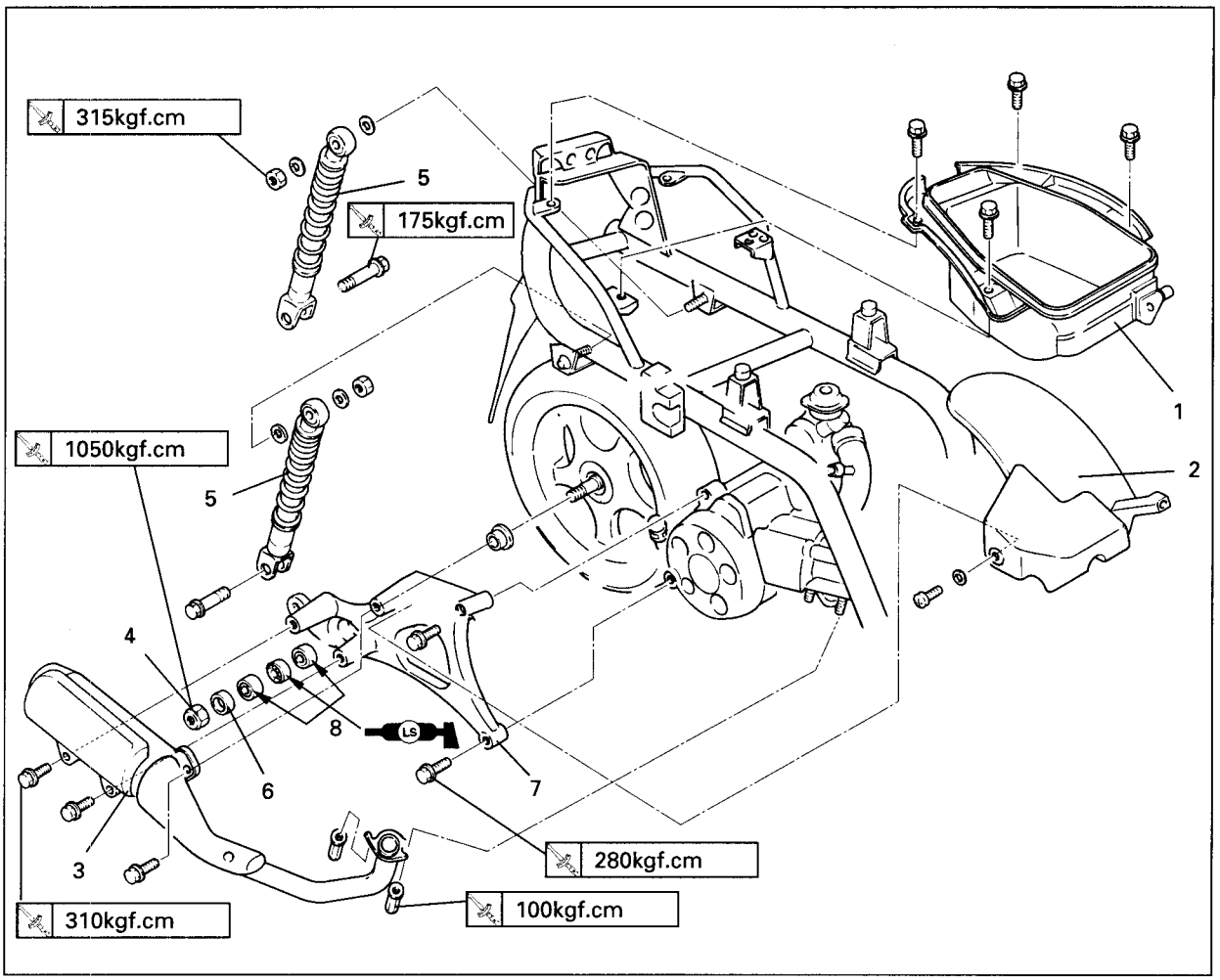
****

Checking steps:

- Turn the wheel so that it comes to each point as shown.
- Check that the wheel is at rest at each point. If not, readjust the front wheel static balance.

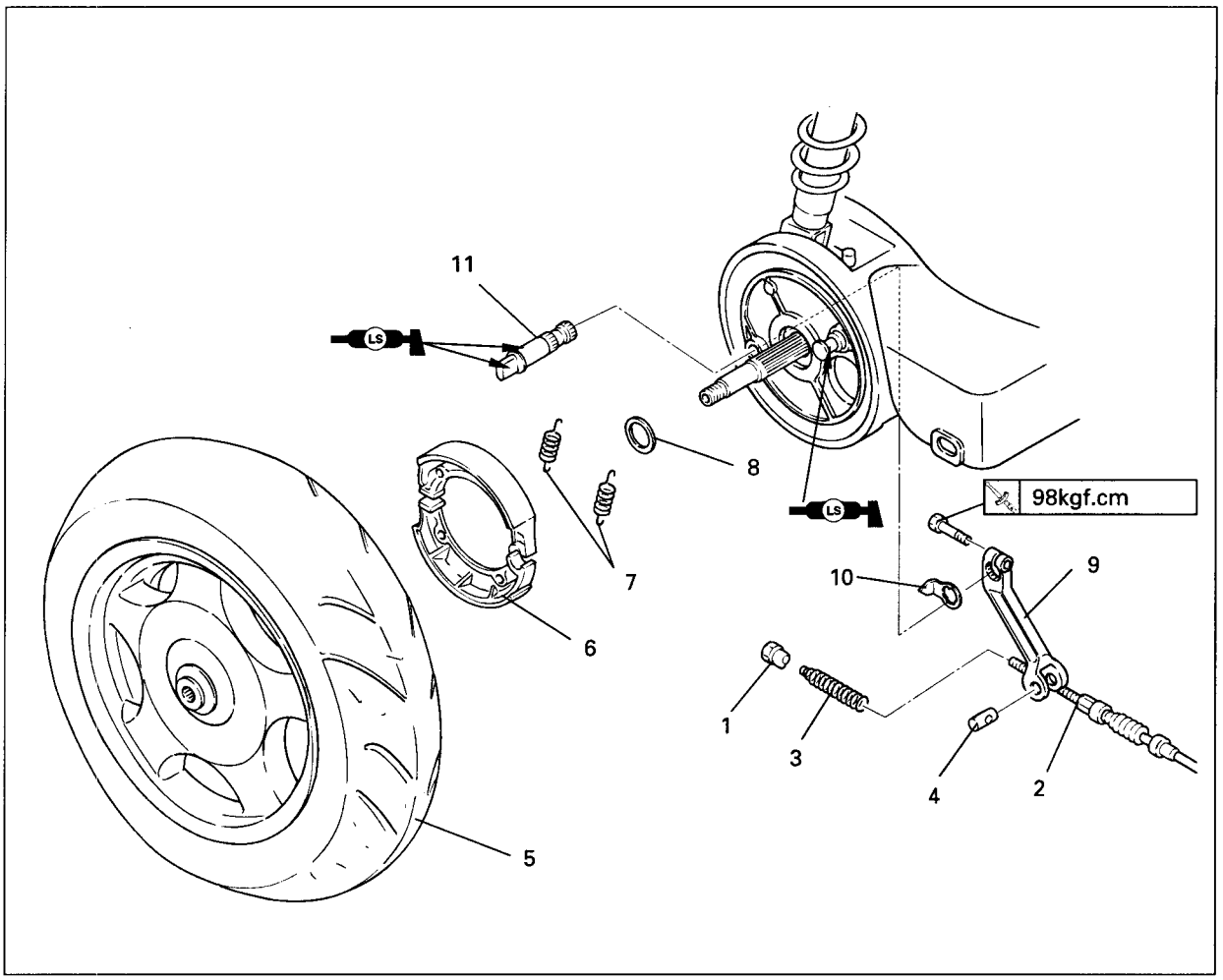
****

REAR SHOCK ABSORBER AND SWING ARM



Order	Job name / Part name	Q'ty	Remarks
	Rear shock absorber and swing arm removal		Remove the parts in order.
	Side cover		Refer to"COVER AND PANELS" section in CHAPTER 3.
1	Box	1	
2	Rear mudguard	1	
3	Exhaust assembly	1	
4	Auto lock nut	1	
5	Rear shock absorber	1	
6	Collar	1	
7	Swing arm	1	
8	O-ring /Bearing/Oil seal	1/1/1	
			Reverse the removal procedure for installation.

REAR WHEEL AND REAR BRAKE



Order	Job name / Part name	Q'ty	Remarks
	Rear wheel and rear brake removal Swingarm		Remove the parts in order. Refer to "REAR SHOCK ABSORBER AND SWINGARM" section.
1	Adjuster	1	
2	Brake cable 2	1	
3	Compression spring	1	
4	Pin	1	
5	Rear wheel assembly	1	
6	Brake lining	2	
7	Tension spring	2	
8	Plate washer	1	
9	Camshaft lever	1	Refer to "REAR BRAKE INSTALLATION" section.
10	Indicator plate	1	
11	Camshaft	1	
			Reverse the removal procedure for installation.

REAR WHEEL INSPECTION

1. Inspect:
   - Rear wheel axle
   - Rear wheel
   - Rear wheel bearings
   - Oil seals

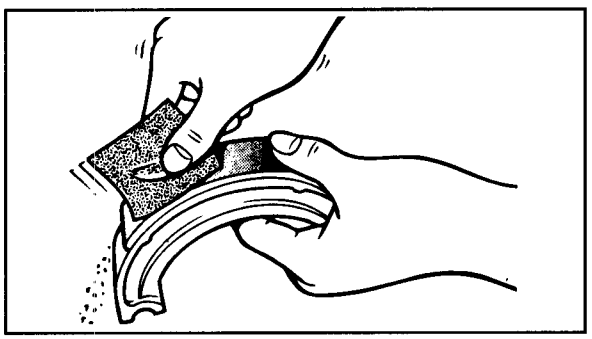
   Refer to "REAR WHEEL".
2. Measure:
   - Rear wheel runout

   Refer to "REAR WHEEL".

REAR BRAKE INSPECTION

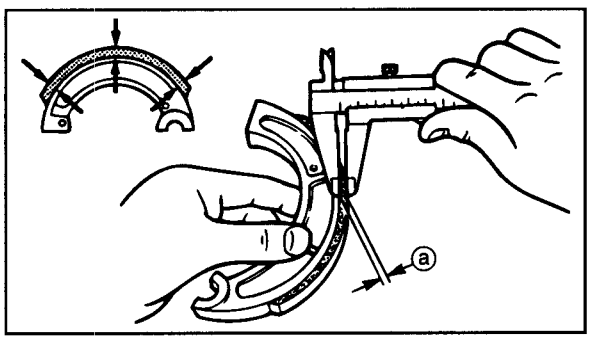
1. Inspect:
   - Brake lining surface

   Glazed areas → Polish.
   Use coarse sand paper.



NOTE:

After polishing, wipe the polished particles with a cloth.



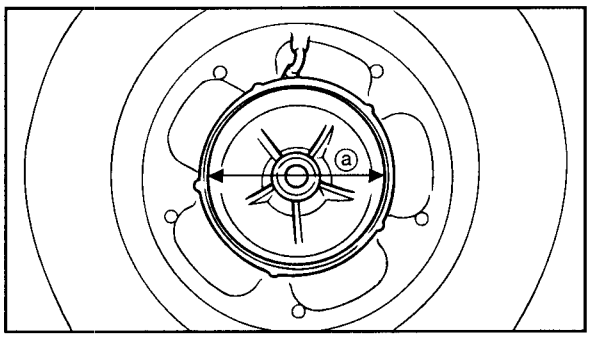
2. Measure:
   - Brake lining thickness

Brake lining thickness :
Standard: 4 mm
<Limit:1 mm>

Out of specification → Replace.
Measuring points ⓐ

NOTE:

Replace the brake shoes as a set if either is worn to the limit.



3. Measure:
   - Brake drum inside diameter ⓐ

   Out of specification → Replace the wheel.

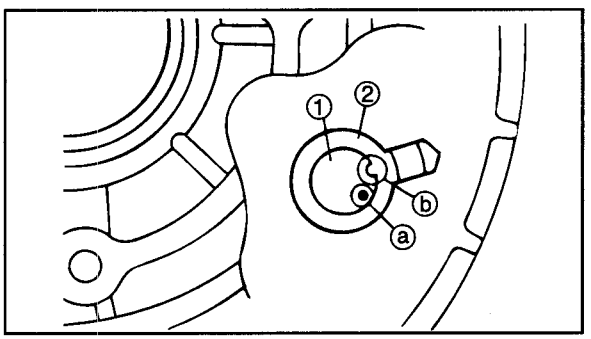
Brake drum inside diameter:
Standard:
130 mm
<Limit:131 mm>

4. Inspect:
   - Brake drum inner surface
     Oil/scratches → Repair.
     Oil → Use a rag soaked in lacquer thinner or solvent.
     Scratches → Use an emery cloth (lightly and evenly polishing)

5. Inspect:
   - Cam shaft face
     Wear → Replace.

⚠WARNING

When inspecting the brake lining, do not spill oil or grease on the brake lining.



REAR BRAKE INSTALLATION

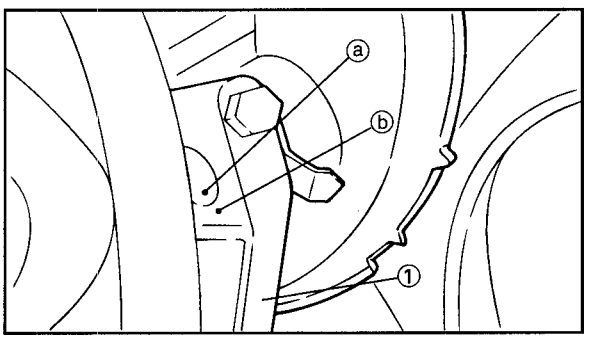
1. Install:
   - Camshaft ①
   - Indicator plate ②

****

Installation steps:

- Set the camshaft with its punched mark ⓐ facing the direction as shown.
- Align the projection ⓑ on the indicator plate with the camshaft notch and install.
- Check the proper position of the brake shoe.

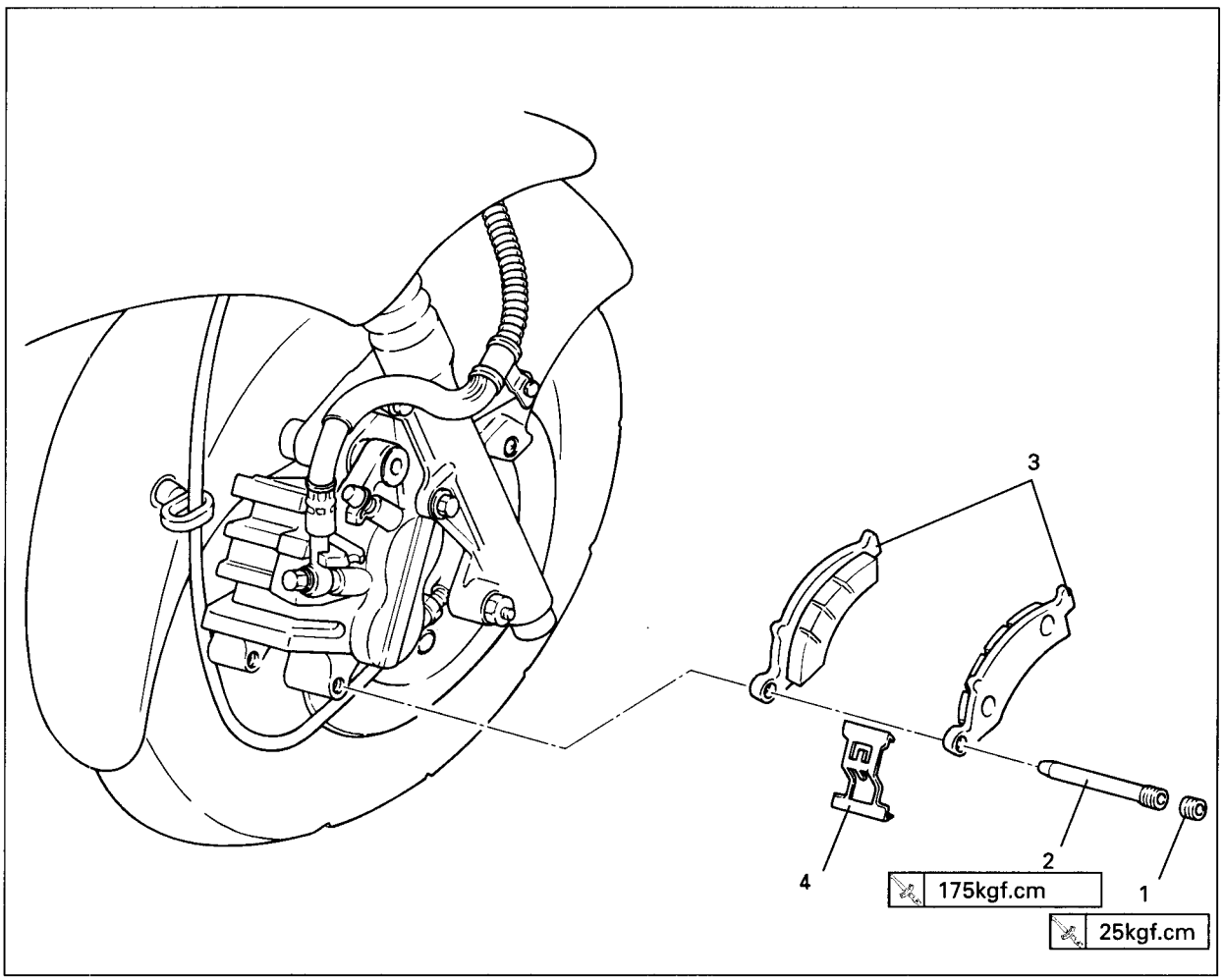
****



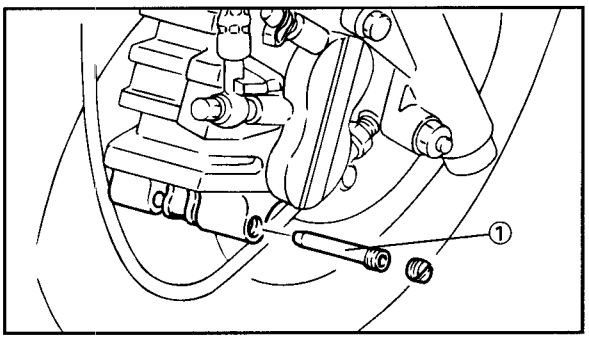
2. Install:
   - Camshaft lever ①
     Align the punched mark ⓐ on the camshaft with the punched mark ⓑ on the camshaft rocker as shown in the drawing.

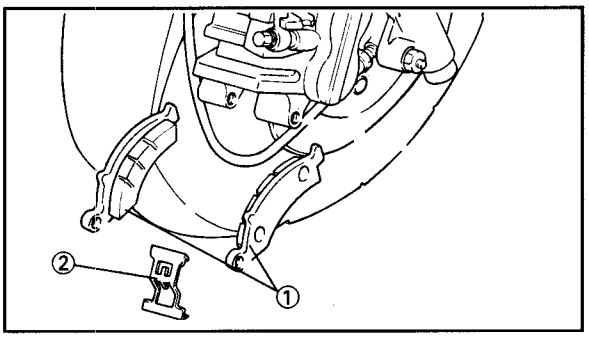
FRONT BRAKE

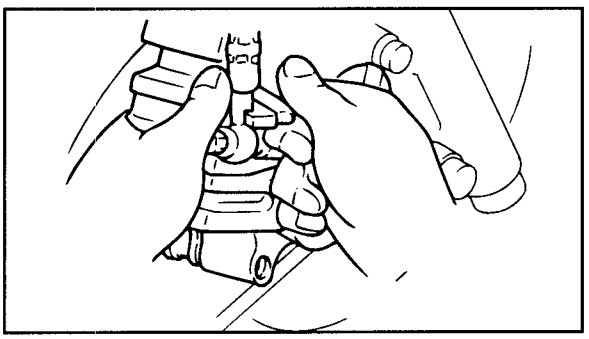
BRAKE PAD

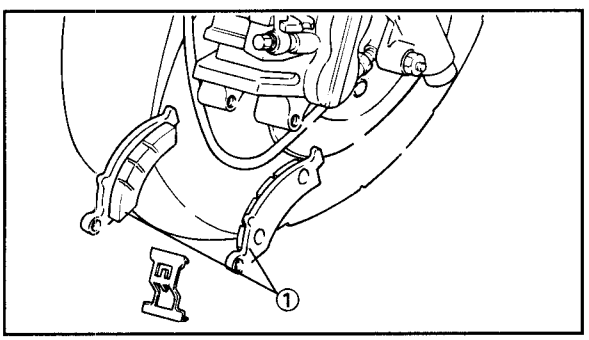


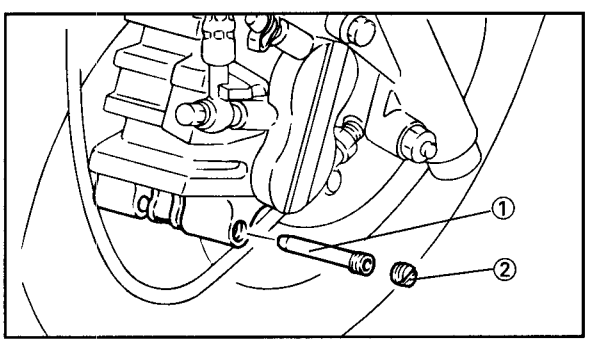
Order	Job name / Part name	Q'ty	Remarks
	Brake pad removal		Remove the parts in order.
1	Bolt protector	1	
2	Caliper support bolt	1	Refer to "BRAKE PAD REPLACEMENT" section.
3	Brake pad	2	
4	Pad support	1	
			Reverse the removal procedure for installation.











BRAKE PAD REPLACEMENT

NOTE:

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

1. Remove:
   - Caliper support bolt ①
2. Remove:
   - Brake pads ①

NOTE:

- Install new brake pad springs ② when the brake pads have to be replaced.
- Replace the brake pads as a set if either is found to be worn to the wear limit.

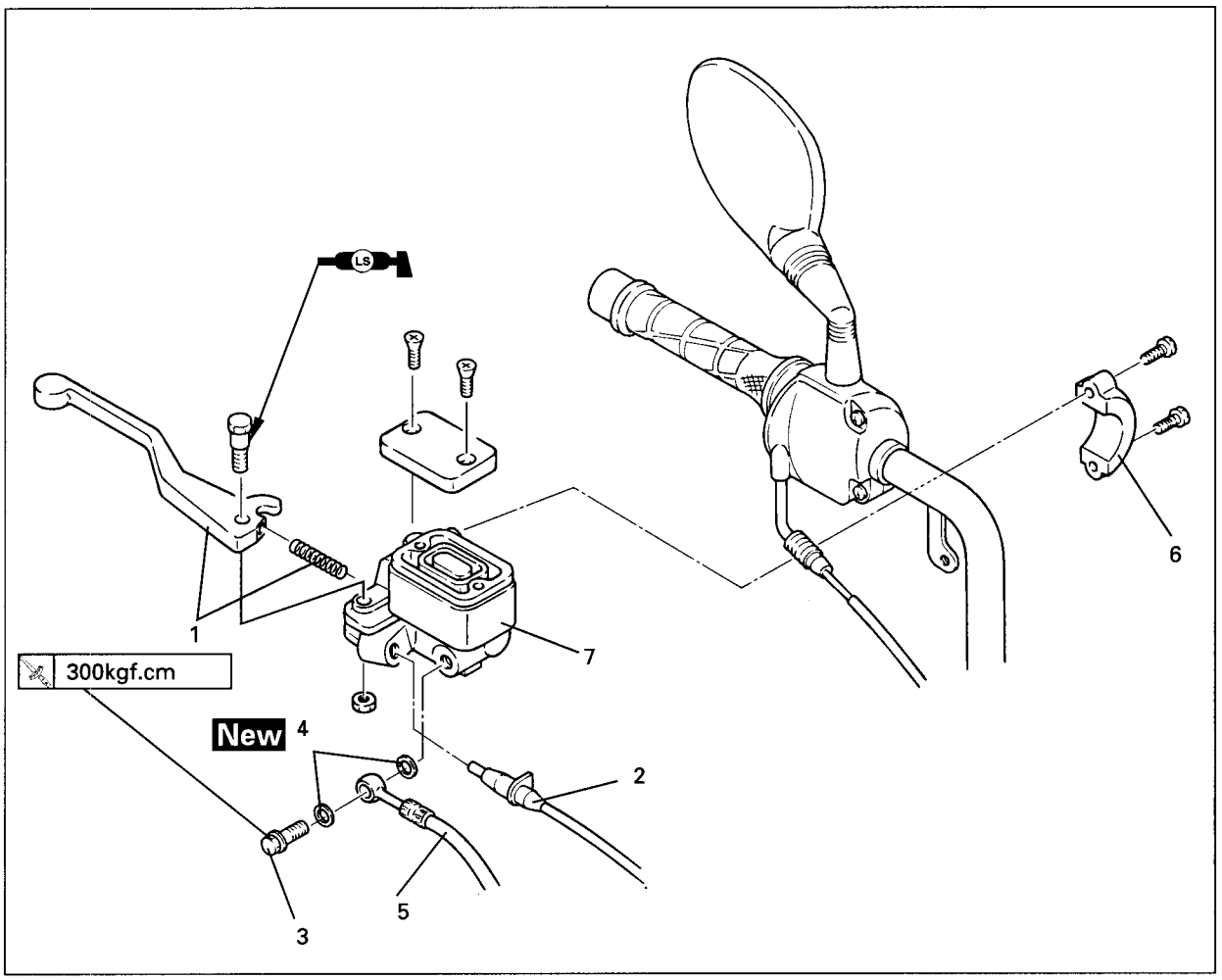
3. Push the caliper piston into the brake caliper by finger.

CAUTION:

When pushing the caliper piston into the brake caliper, brake fluid level in reservoir tank is increasing higher.

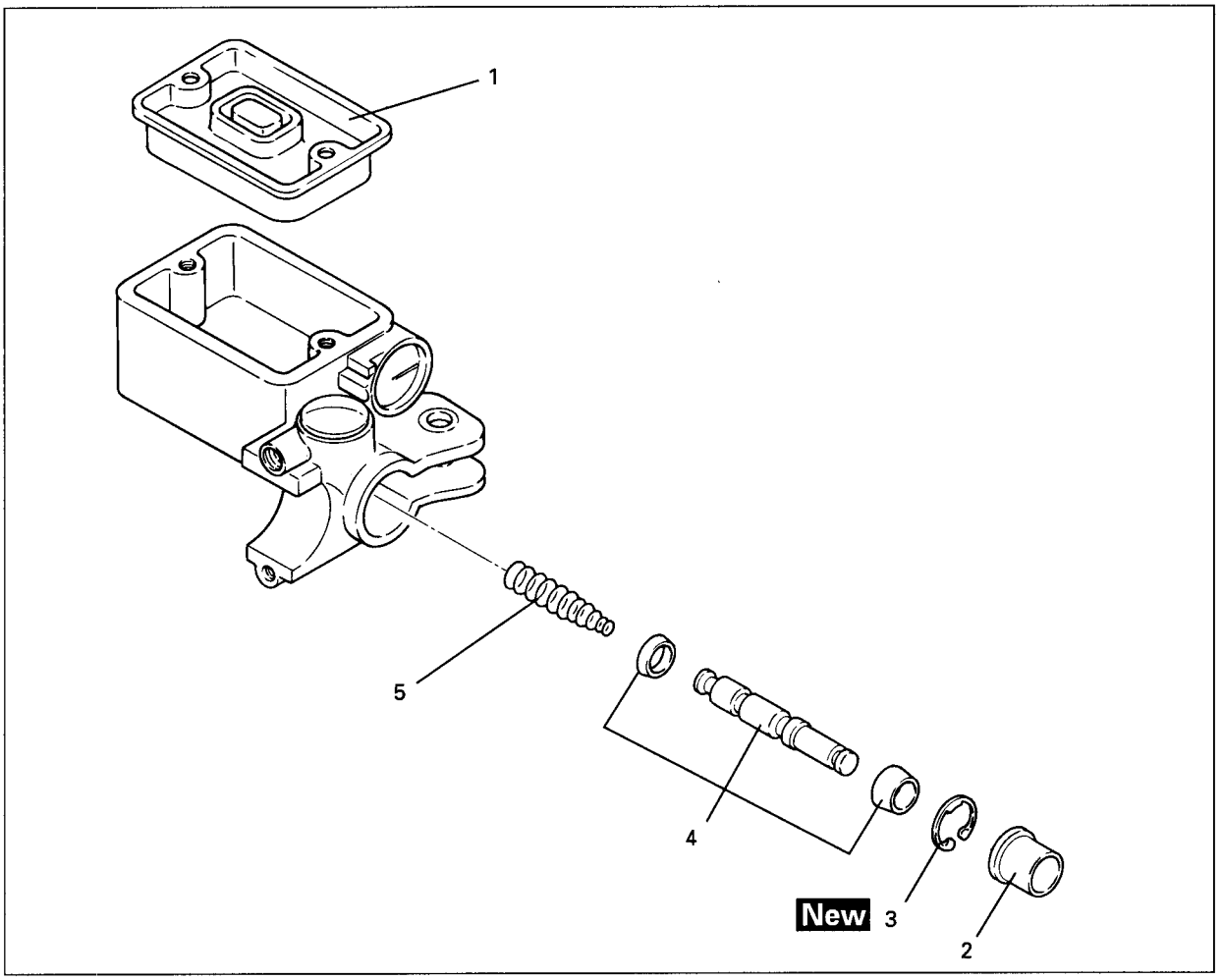
4. Install:
   - Brake pad ①
5. Install:
   - Caliper support bolt ① 175kg•cm
   - Bolt cover ② 25kg•cm
6. Inspect:
   - Brake fluid level
     Refer to "BRAKE FLUID LEVEL INSPECTION" section in CHAPTER 3.
7. Check:
   - Brake lever operation
     Soft spongy feeling → Bleed the brake system.
     Refer to "AIR BLEEDING" in CHAPTER 3.

MASTER CYLINDER

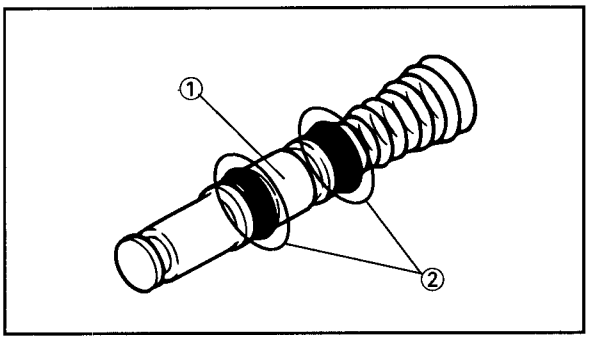


Order	Job name / Part name	Q'ty	Remarks
	Master cylinder removal Drain the brake fluid		Remove the parts in order. Refer to "BRAKE FLUID REPLACEMENT" section in CHAPTER 3.
1	Brake lever/compression spring	1/1	
2	Brake switch	1	
3	Union bolt	1	
4	Plain washer	2	Refer to "MASTER CYLINDER INSTALLATION" section.
5	Brake hose	1	
6	Master cylinder bracket	1	
7	Master cylinder	4	
			Reverse the removal procedure for installation.

MASTER CYLINDER DISASSEMBLY

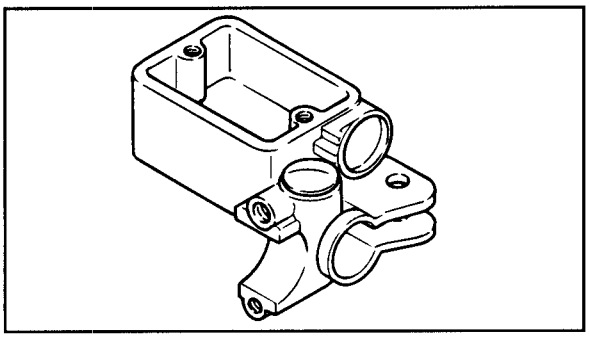


Order	Job name / Part name	Q'ty	Remarks
	Master cylinder disassembly		Remove the parts in order.
1	Diaphragm	1	
2	Master cylinder boot	1	
3	Circlip	1	Refer to "MASTER CYLINDER ASSEMBLY" section.
4	Master cylinder assembly	1	
5	Spring	1	
			Reverse the disassembly procedure for assemble

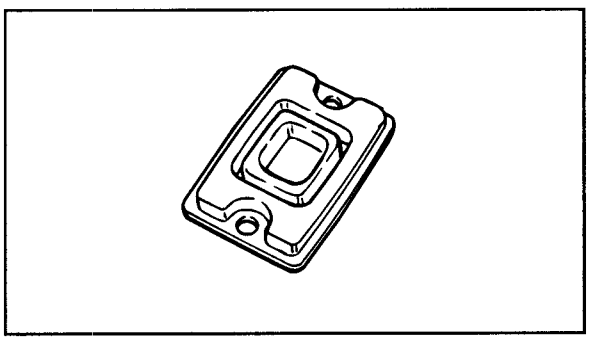


MASTER CYLINDER INSPECTION

1. Inspect:
   - Master cylinder ①
     Wear/scratches → Replace the master cylinder assembly.
   - Master cylinder cup ②
     Cracks/damage → Replace.



2. Inspect:
   - Master cylinder
     Scratches/wear/damage → Replace the master cylinder assembly.



3. Inspect:
   - Diaphragm
     Wear/damage → Replace.

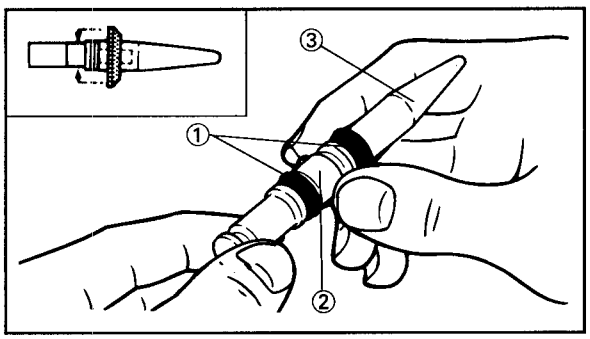
MASTER CYLINDER ASSEMBLY

⚠WARNING

- All internal brake components should be cleaned and lubricated with new brake fluid only before installation.

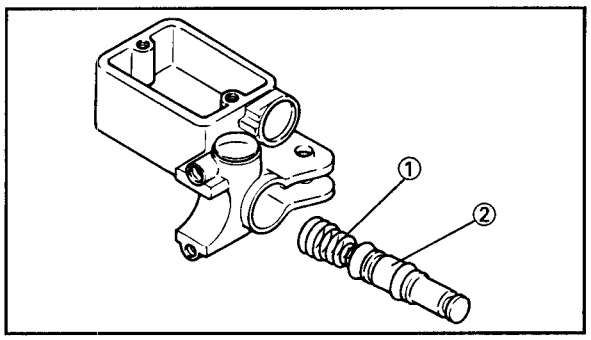
Recommended brake fluid:
DOT #4

- Replace the piston seals and dust seals whenever a master cylinder is disassembled.

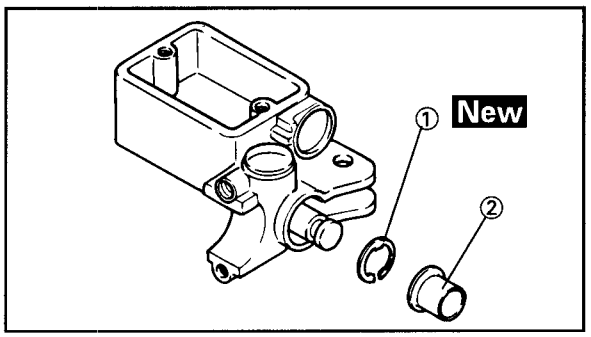


1. Install:
   - Cylinder cup ①
   - Master cylinder piston ②
     Install cylinder cup by using cylinder cup installer ③.

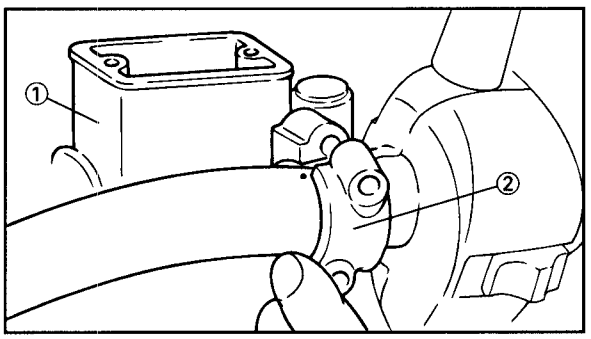
Cylinder cup installer set:
90890-01996



2. Install:
   - Spring ①
     Install the spring with its smaller diameter to the master cylinder piston.
   - Master cylinder kit ②



3. Install:
   - Circlip ① New
     Install the circlip securely into the master cylinder groove.
   - Master cylinder boot ②



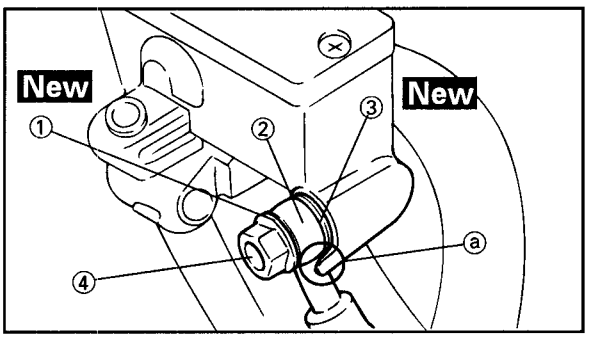
MASTER CYLINDER INSTALLATION

1. Install:
   - Master cylinder ①
   - Master cylinder bracket ②

   85kg•cm

CAUTION:

- The "UP" mark on the fixing mount should face upward when installing the master cylinder.
- Align the end of fixing mount with the punched mark "•" of handlebar.



2. Install:
   - Plain washer ① New
   - Brake hose ②
   - Plain washer ③ New
   - Union bolt ④ 300kg•cm

CAUTION:

Align the plain washer notch and master cylinder edge ⓐ for assembly.

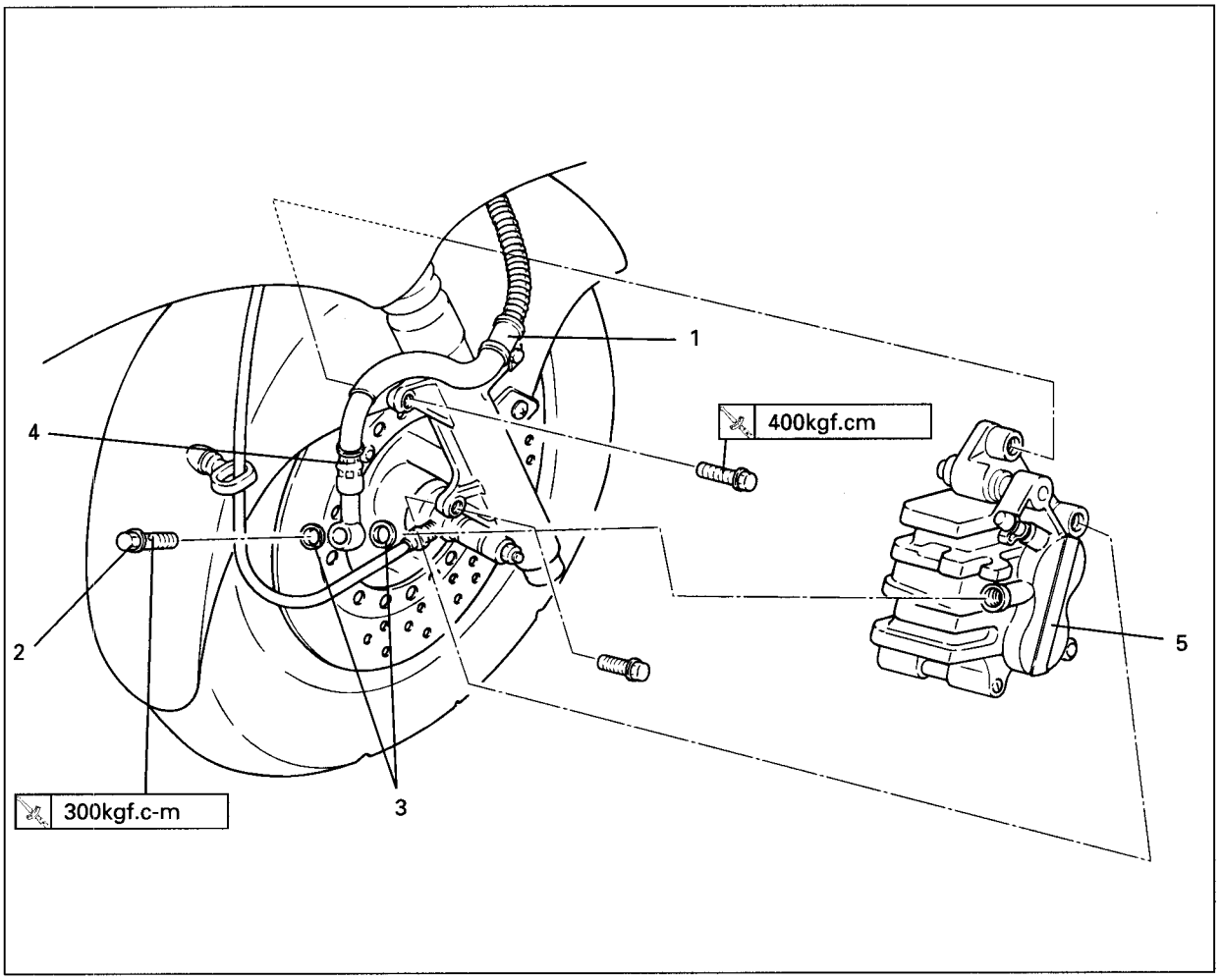
3. Air bleed:
   - Brake system
     Refer to "AIR BLEEDING" section in CHAPER 3.

⚠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 significantly lower the boiling point of the fluid may result in vapor lock.

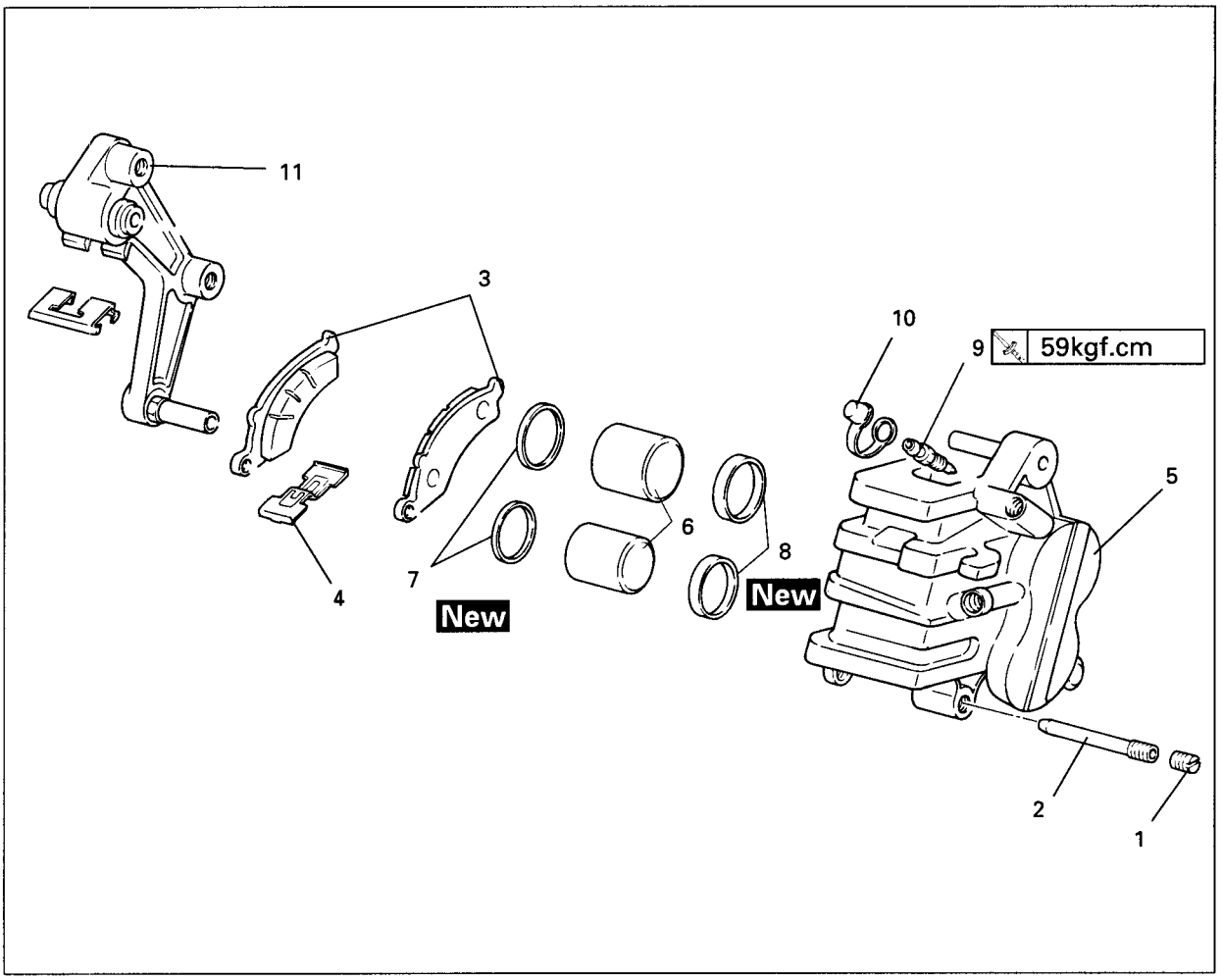
4. Inspect:
   - Brake operation

CALIPER

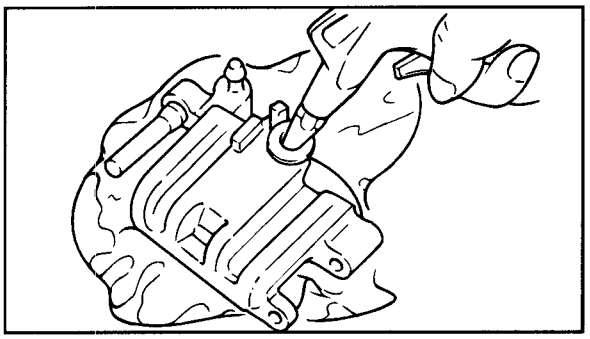


Order	Job name / Part name	Q'ty	Remarks
	Caliper removal Drain the brake fluid		Remove the parts in order. Refer to "BRAKE FLUID REPLACEMENT" section in CHAPTER 3.
1	Brake hose holder	1	
2	Union bolt	1	
3	Plain washer(Brass)	2	Refer to "CALIPER INSTALLATION" section.
4	Brake hose	1	
5	Caliper assembly	1	
			Reverse the removal procedure for installation.

CALIPER DISASSEMBLY



Order	Job name / Part name	Q'ty	Remarks
	Caliper Dismantling		Remove the parts in order.
1	Screw	1	
2	Caliper support bolt	1	
3	Brake pad	2	
4	Brake pad bracket	1	
5	Caliper	1	
6	Caliper piston	2	Refer to " BRAKE CALIPER DISASSEMIBLY / ASSEMBLY" section.
7	Dust seal	2	
8	Piston seal	2	
9	Bleed screw	1	
10	Dust cover	1	
11	Caliper bracket	1	
			Reverse the disassembly procedure for assembly.



BRAKE CALIPER DISASSEMBLY

NOTE:

Before disassembling either brake caliper, drain the brake fluid from the brake hose, master cylinder, brake caliper and reservoir tank.

1. Remove:
   - Brake caliper piston

****

Removal steps:

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

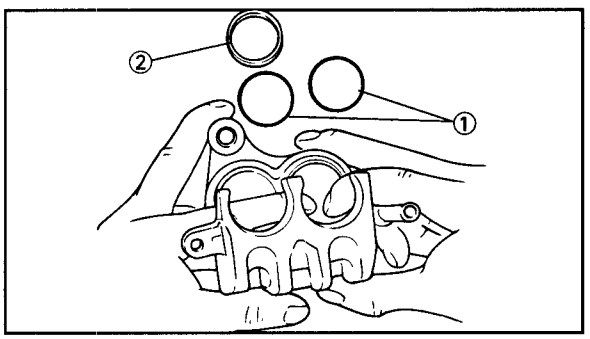
⚠WARNING

- Never try to pry out the caliper piston.
- Cover the caliper piston with a rag. Be careful not to get injured when the piston is expelled from the master cylinder.

CAUTION:

Carefully remove the caliper piston to prevent damage.

****

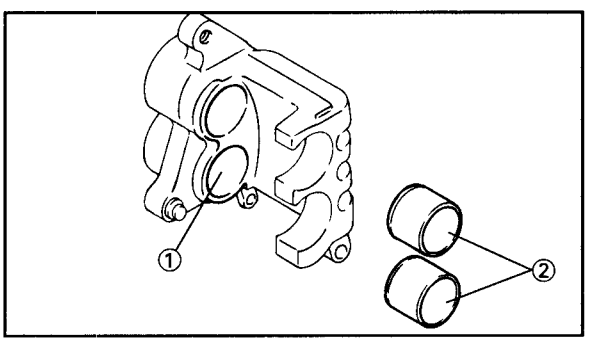


2. Remove:
   - Dust seal ①
   - Piston seal ②

   When removing, push the seals by your finger.

CAUTION:

- Do not use a sharp instrument. Remove seals by your finger.
- Do not re-use removed parts.



CALIPER INSPECTION

1. Inspect:
   - Caliper cylinder ①
   - Caliper piston ②

   Scratches / Wear → Replace caliper assembly.

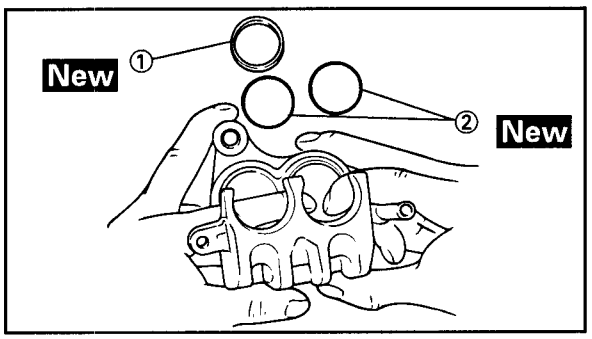
BRAKE CALIPER ASSEMBLY

⚠WARNING

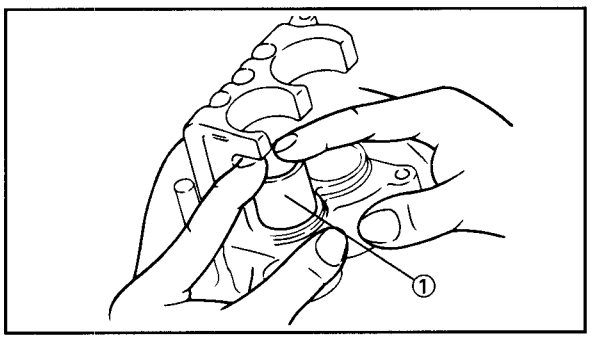
- All internal brake components should be cleaned and lubricated with new brake fluid only before installation.

Recommended brake fluid:
DOT #4

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



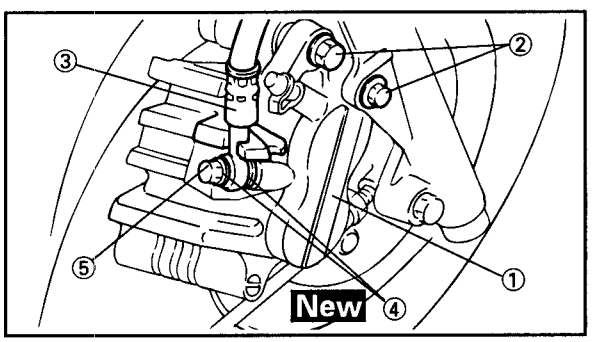
1. Install:
   - Piston seals ① New
   - Dust seal ② New



2. Install:
   - Caliper piston ①
     Apply brake fluid to the outer surface and install.

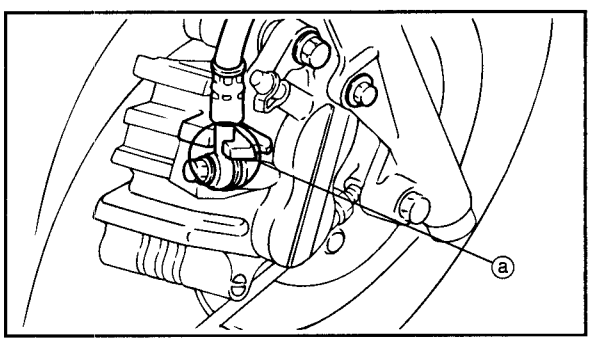
CAUTION:

- Do not force.
- Use care to prevent damage on caliper piston.



CALIPER INSTALLATION

1. Install:
   - Caliper ①
   - Caliper support bolt ②
     400kg•cm
   - Brake hose ③
   - Plain washer ④ New
   - Union bolt ⑤ 300kg•cm

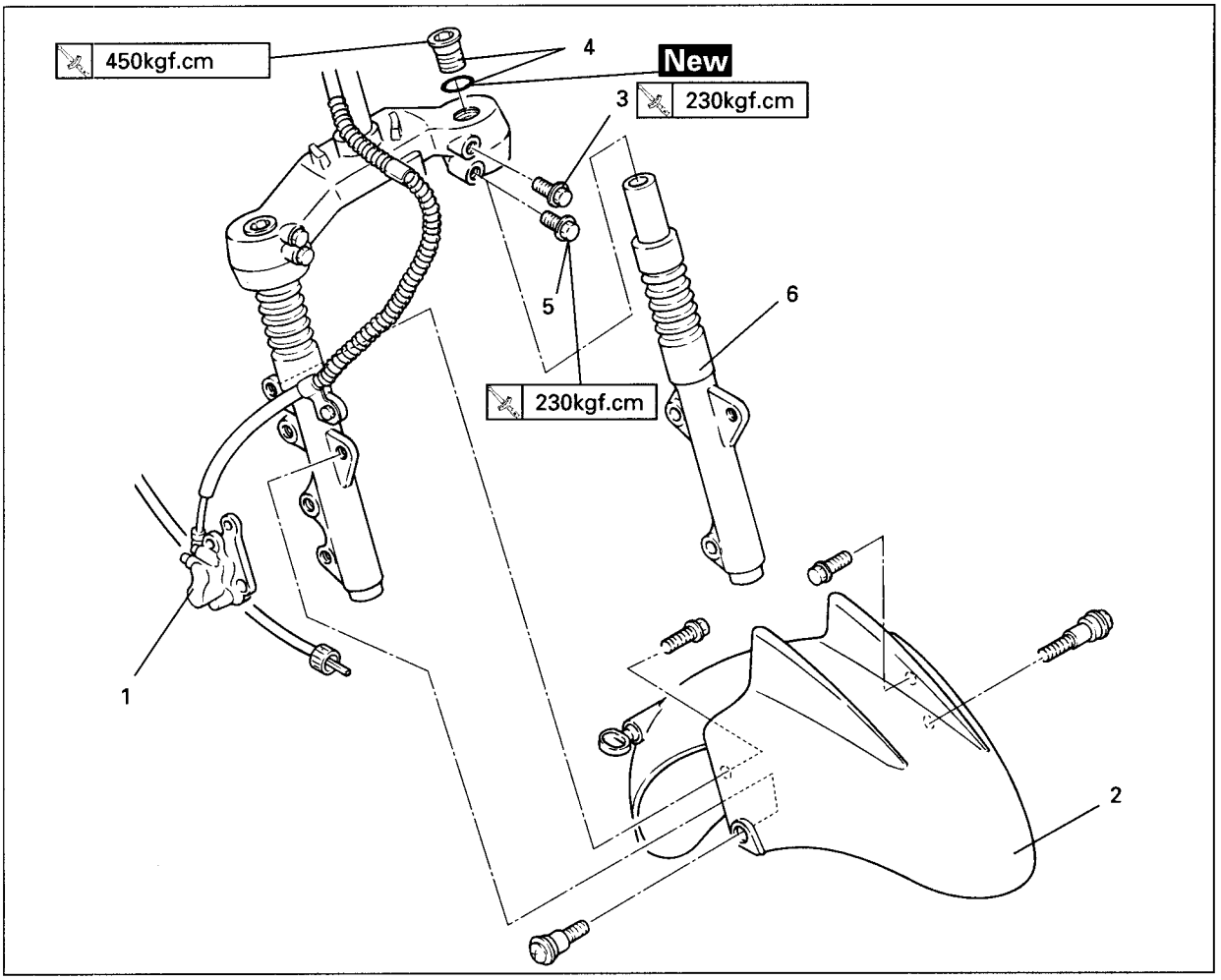


CAUTION:

When installing the brake hose to the caliper, lightly touch the brake hose with the stopper ⓐ on the caliper.

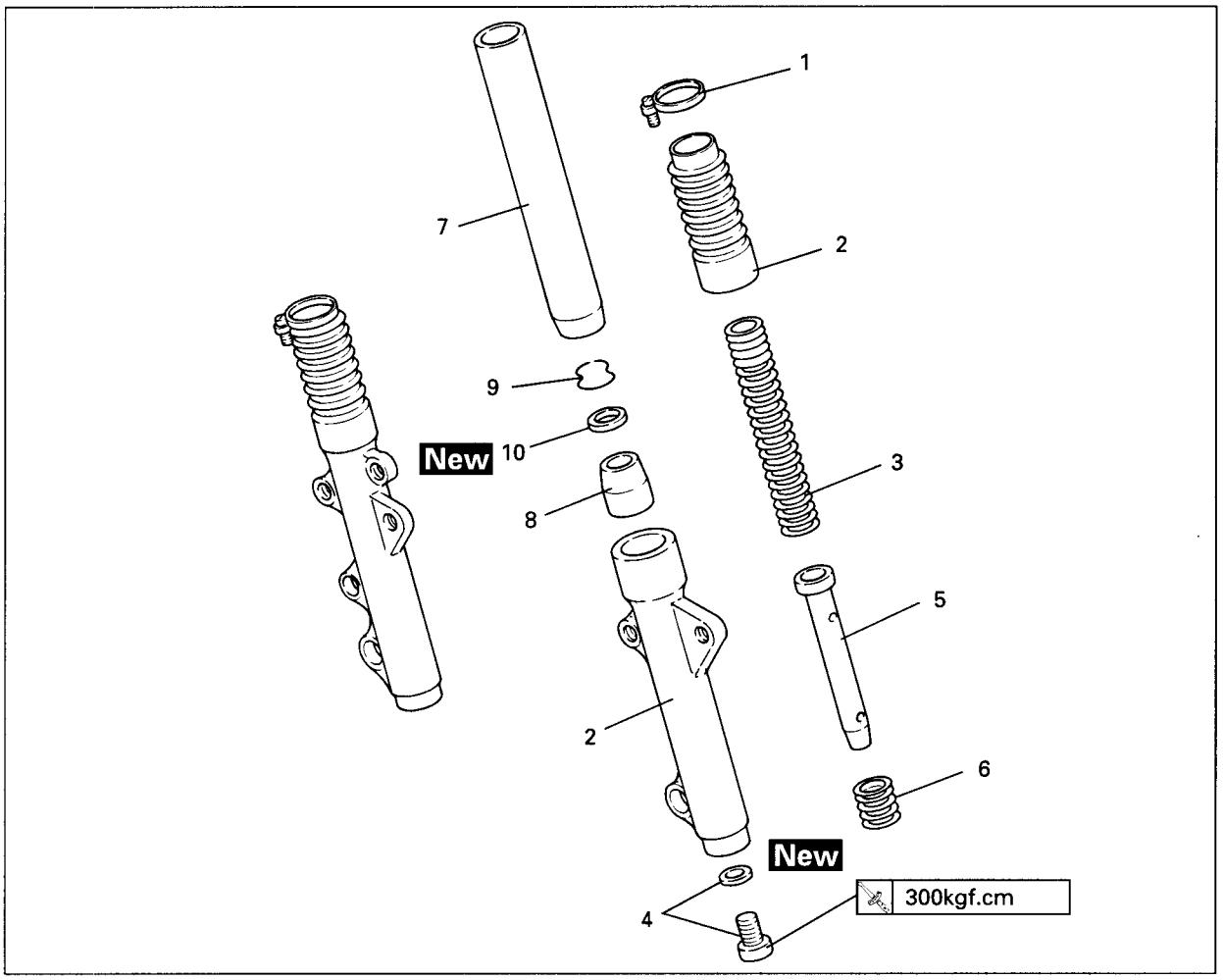
FRONT FORK

FRONT FORK



Order	Job name / Part name	Q'ty	Remarks
	Front fork removal		Remove the parts in order.
	Front wheel		Refer to "FRONT WHEEL" section.
1	Caliper assembly	1	
2	Front fender	1	
3	Bolt (under bracket upper)	2	
4	Cap bolt/O-ring	2	Refer to "FRONT FORK REMOVAL/IN-
5	Bolt (under bracket lower)	2	STALLATION" section.
6	Front fork (left/right)	1/1	
			Reverse the removal procedure for in-
			stallation.

FRONT FORK DISASSEMBLY

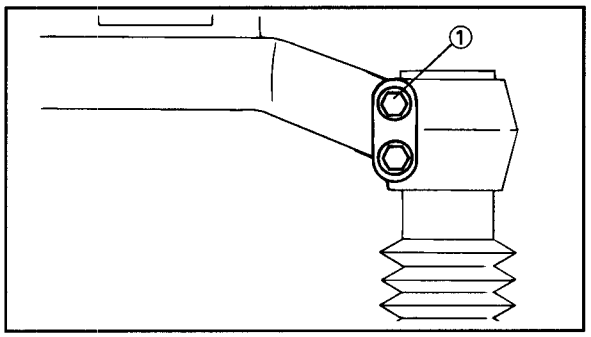


Order	Job name / Part name	Q'ty	Remarks
	Front fork disassembly		Remove the parts in order.
	Cap bolt	1	Refer to "FRONT FORK REMOVAL/INSTALLATION" section.
1	Band	1	
2	Front fork boot	1	
3	Fork spring	1	
4	Bolt (damper rod)/Gasket	1/1	
5	Damper rod	1	
6	Rebound spring	1	Refer to "FRONT FORK DISASSEMBLY / ASSEMBLY" section.
7	Inner tube	1	
8	Oil lock piece	1	
9	Retaining clip	1	
10	Oil seal	1	
			Reverse the disassembly procedure for assembly.

FRONT FORK REMOVAL

⚠WARNING

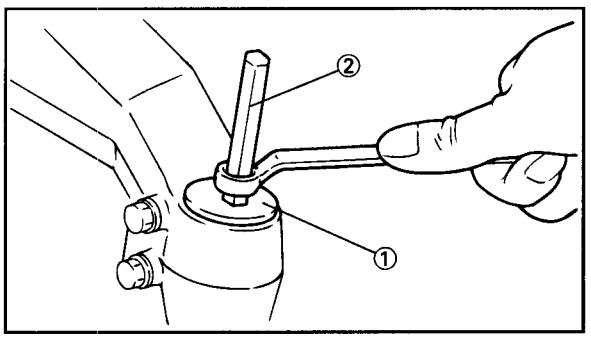
- Securely support the scooter so there is no danger of it falling over.
- Stand the scooter on a level surface.
- Stand the scooter on its centerstand.



1. Loosen:
   - Bolt (lower bracket upper) ①

NOTE:

Loosen only the upper bolt.



2. Remove:
   - Cap bolt ①

NOTE:

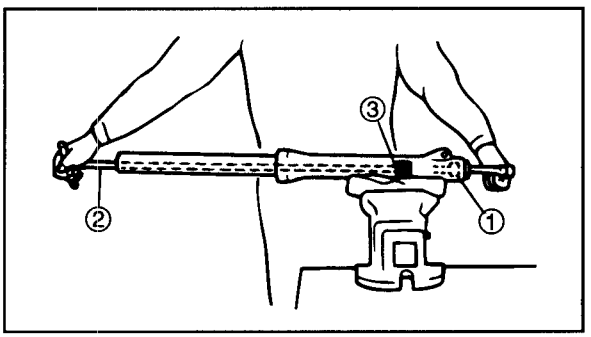
Use 17mm width hexagonal wrench ② for removing.

3. Loosen the bolt (under bracket lower) to remove the front forks.

⚠WARNING

Support the front fork before loosening the pinch bolts.

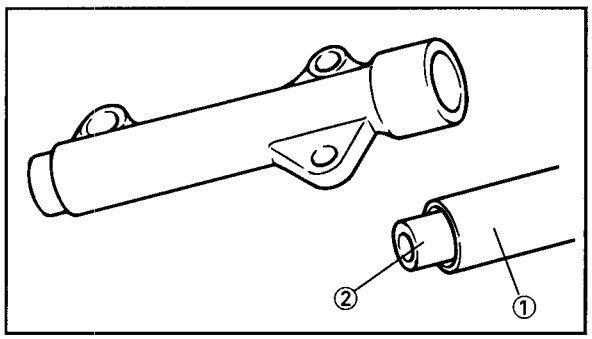
FRONT FORK DISASSEMBLY



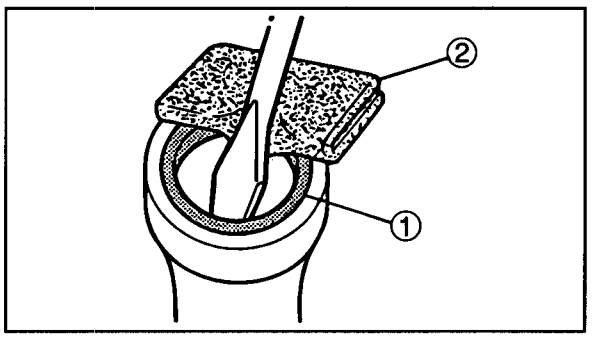
1. Remove:
   - Bolt (damper rod) ①

   Loosen the bolt (damper rod) ① while holding the damper rod with T-handle ② and holder ③.

Damper rod holder:
90890-04084
T-handle
90890-01326



2. Remove:
   - Inner tube ①
   - Cone mandrel ②

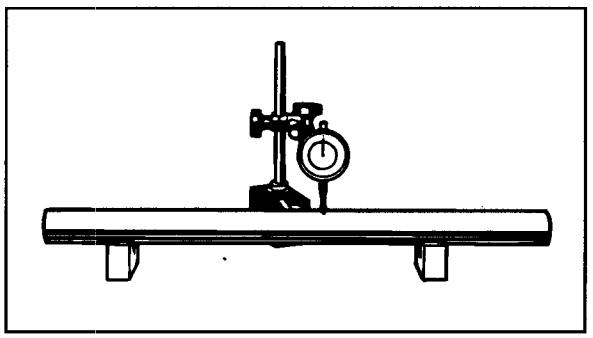


3. Remove:
   - Oil seal ①

CAUTION:

Never reuse the oil seal.

② Rag



FRONT FORK INSPECTION

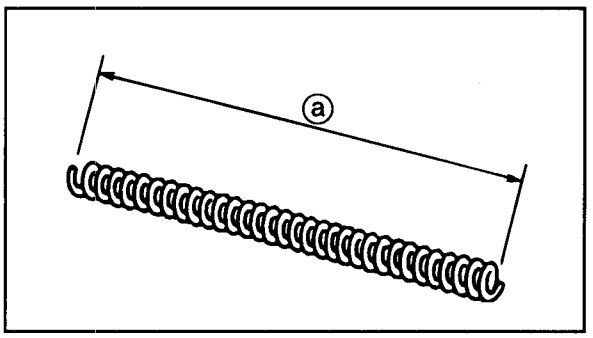
1. Inspect:
   - Inner tube bending

	Inner tube bending limit: 0.2 mm

Scratches/bends/damage → Replace.

⚠WARNUNG

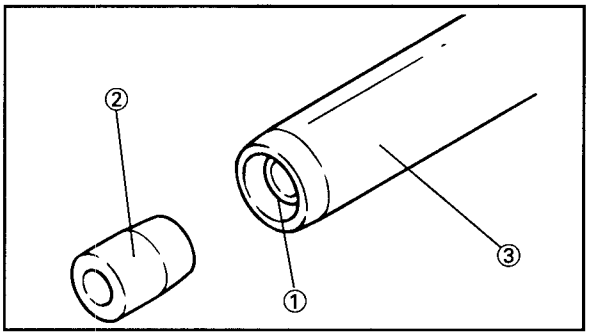
Do not attempt to straighten a bent inner tube as this may dangerously weaken the tube.



2. Measure:
   - Fork spring ⓐ

	Front fork spring free length: 376.4 mm <Wear limit> 368.9 mm

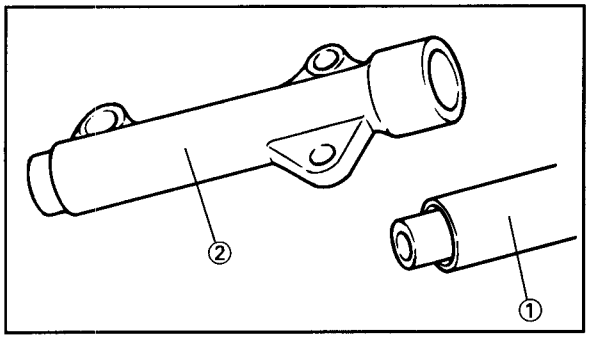
Over the specified limit → Replace.



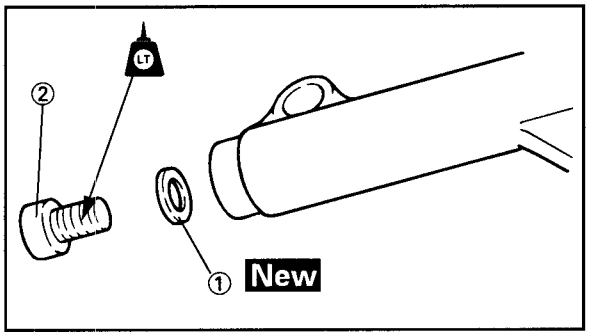
FRONT FORK ASSEMBLY

Reverse the "Disassembly" procedure.
Note the following points.

1. Install:
   - Damper rod ①
   - Rebound spring
   - Oil lock piece ②
   - Inner tube ③



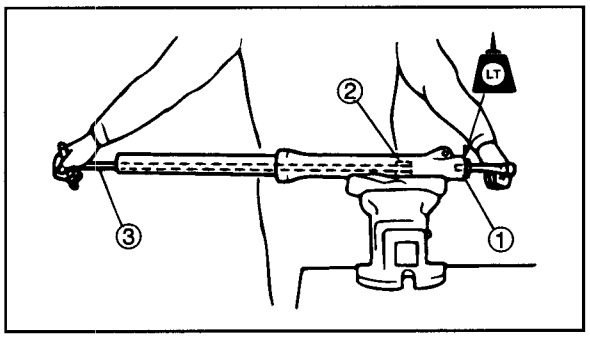
2. Install:
   - Inner tube ①
   - Into outer tube ②



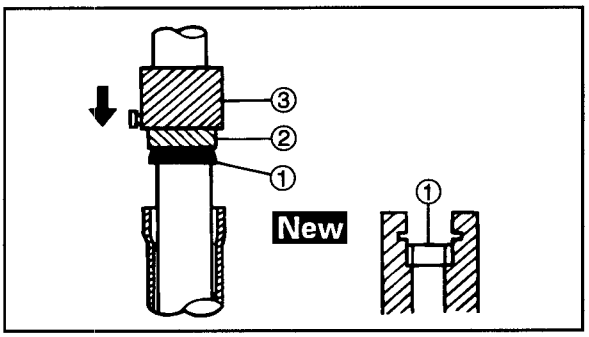
3. Install:
   - Plain washer ① New
   - Bolt (damper rod) ②
4. Tighten:
   - Bolt (damper rod) ② 300kg•cm

NOTE:

Tighten the damper rod bolt ① while holding the damper rod with a T-handle ② and a damper rod holder ③.



Damper rod holder:
90890-04084
T-handle:
90890-01326



5. Install:
   - Oil seal ① New
   - Retaining clip
   - Dust seal

   Use the fork seal driver weight ③ and the attachment ②.

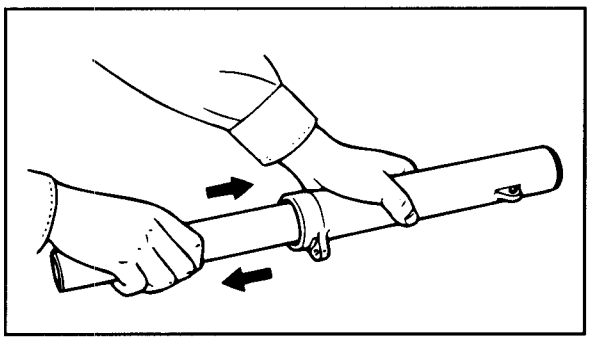
NOTE:

- Before installing the oil seal ①, apply lithium soap base grease onto the oil seal lips.
- Adjust the retaining clip so that it fits into the outer tube groove.

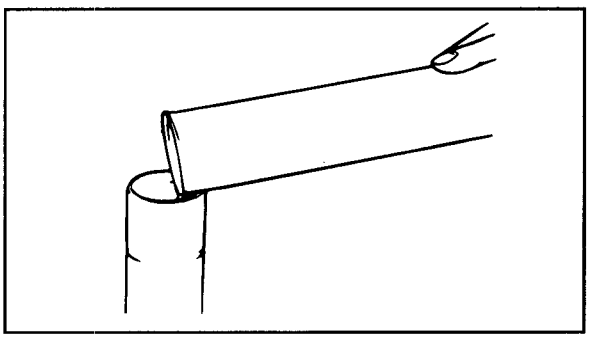
CAUTION:

Make sure that the oil seal numbered side faces upward.

Fork seal driver weight:
90890-01367
Attachment:
90890-01374



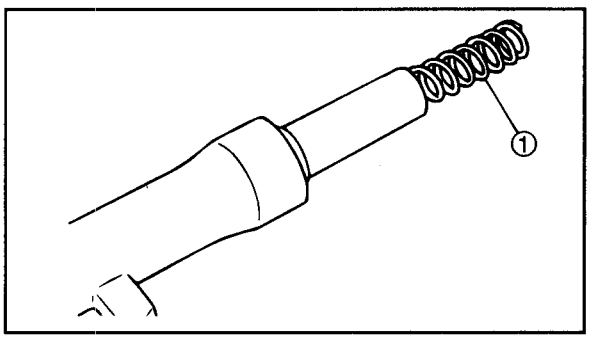
6. Inspect:
   - Inner tube operation
     Unsmooth operation → Disassemble and recheck.



7. Fill:
   - Fork oil

Oil quantity:
108c.c.
Recommended oil:
Fork oil 10W

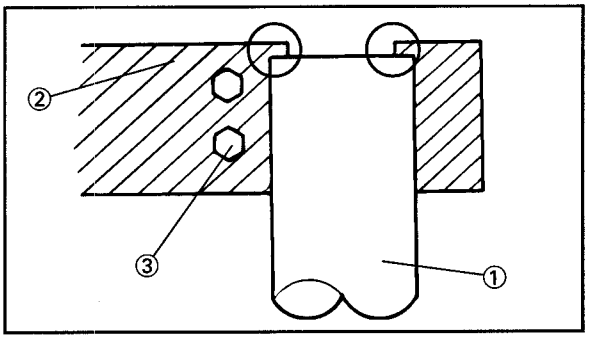
8. After filling up, slowly pump the fork up and down to distribute the fork oil.



9. Install:
   - Front fork spring ①

⚠WARNING

- Install the fork spring with its smaller pitch upward.
- Before installing the cap bolt, apply grease to the O-ring.
- Temporarily tighten the cap bolt.



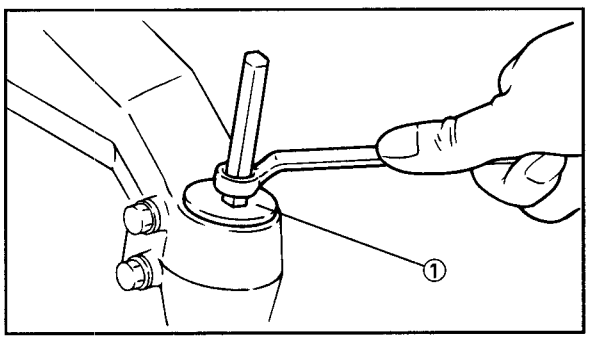
FRONT FORK INSTALLATION

Reverse the "Removal" procedure.
Note the following points.

1. Install:
   - Front fork ①
     Temporary tighten the pinch bolts.

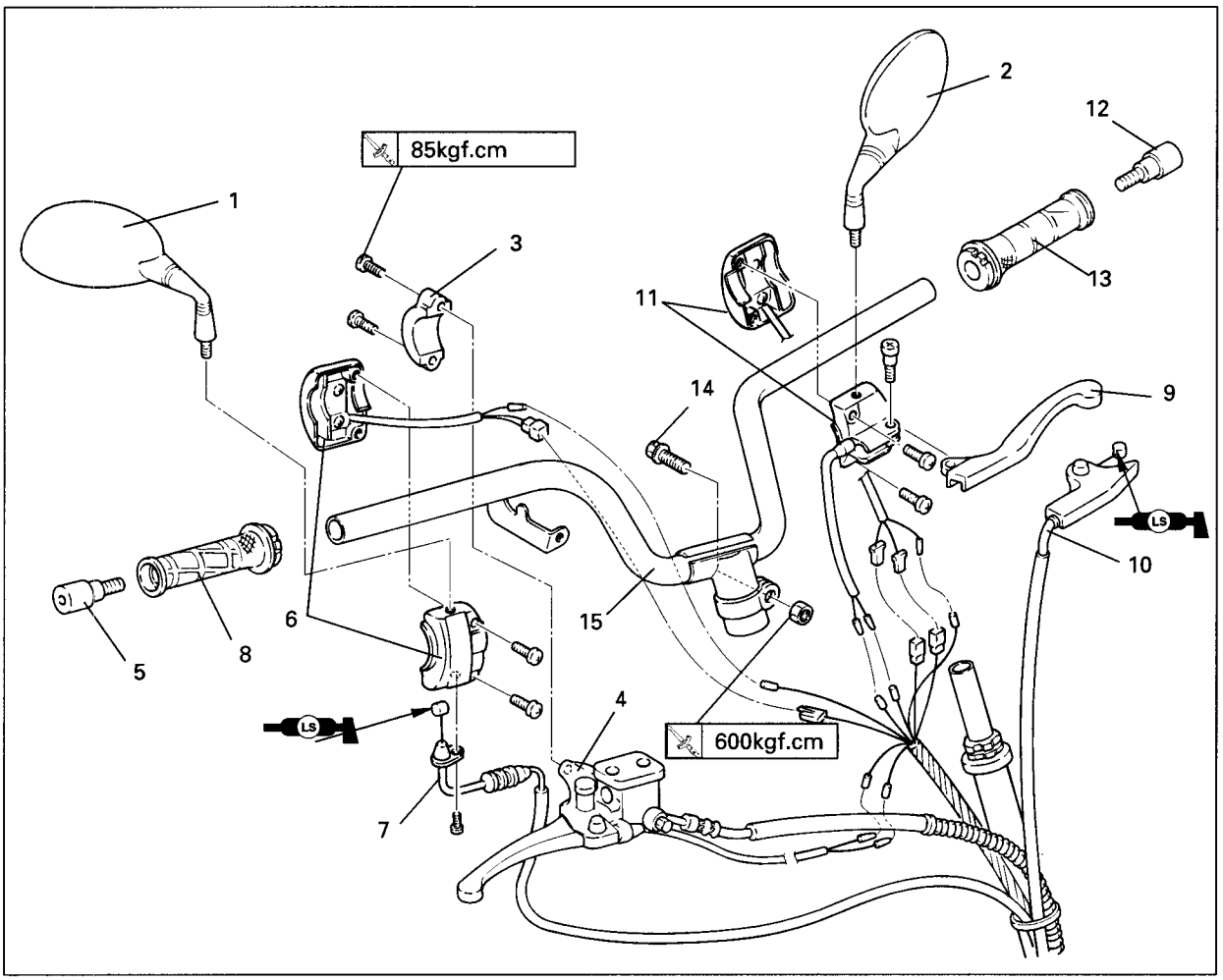
NOTE:

Pull up the inner tube until its end flushes the top of the under bracket ②, then temporarily tighten the bolt (under bracket lower) ③.



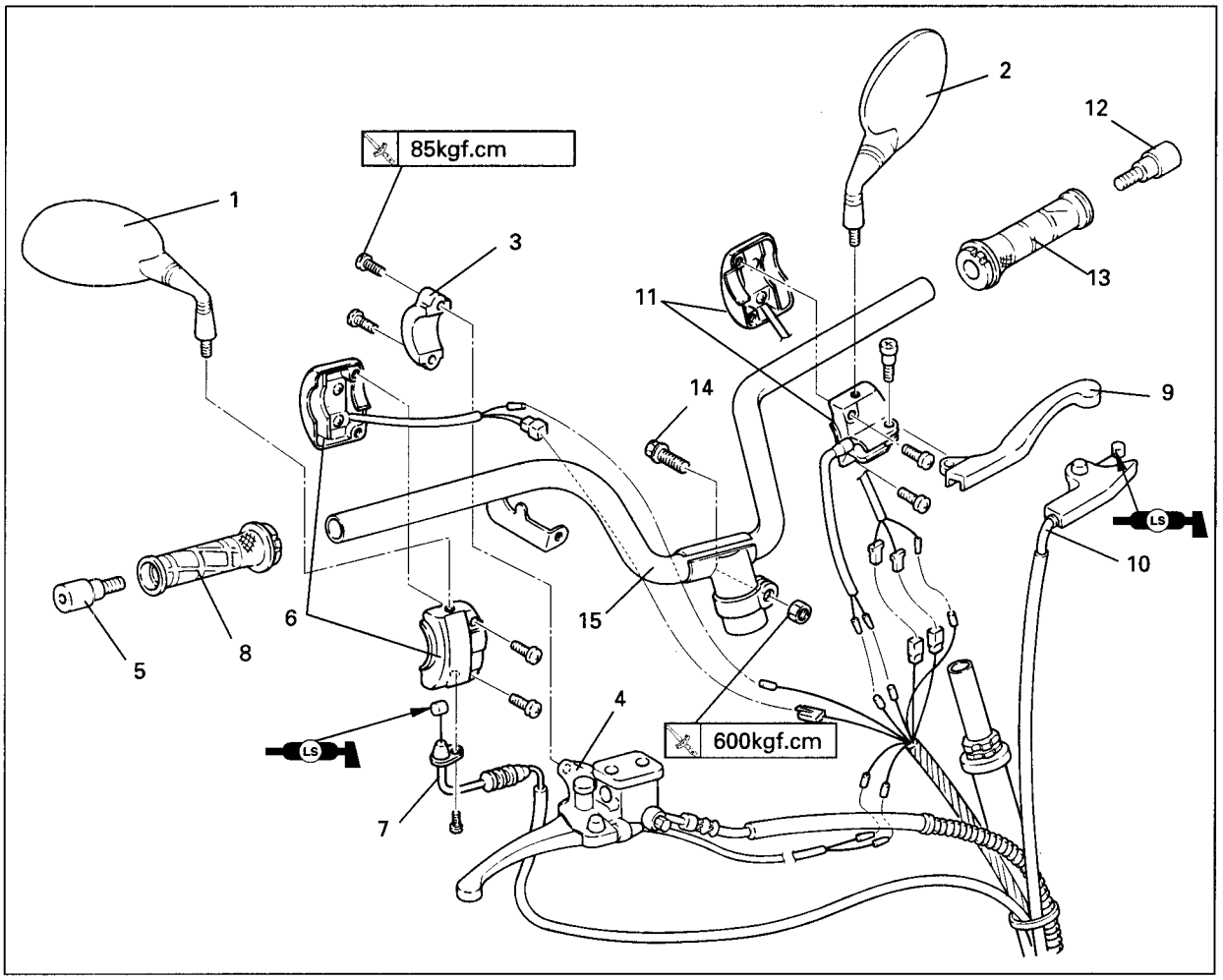
2. Tighten:
   - Cap bolts ① 450 kg•cm
   - Pinch bolts (under bracket upper/lower) 230kg•cm

HANDLEBAR

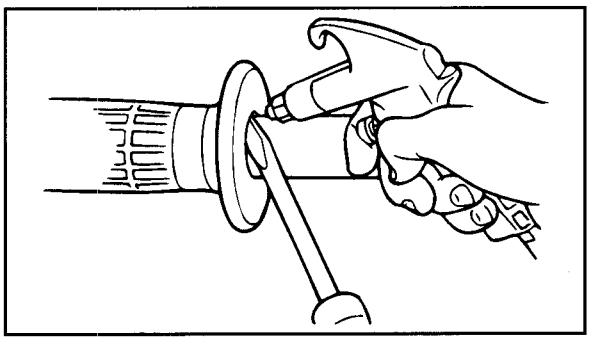


Order	Job name / Part name	Q'ty	Remarks
	Handlebar removal		Remove the parts in order.
	Handlebar upper cover / Handlebar lower cover		Refer to "COVER AND PANEL" section in CHAPTER 3.
1	Rear view mirror (right)	1	
2	Rear view mirror (left)	1	
3	Master cylinder bracket	1	
4	Master cylinder	1	
5	Grip end (right)	1	Refer to "HANDLEBAR INSTALLATION" section.
6	Handlebar switch (right)	1	
7	Throttle cable	1	
8	Handlebar (right)	1	
9	Handle (left)	1	
10	Brake cable	1	
11	Lever holder (left)	1	
12	Grip end (left)	1	
13	Handlebar	1	

HANDLEBAR



Order	Job name / Part name	Q'ty	Remarks
14	Bolt	1	
15	Grip assembly	1	
			Reverse the removal procedure for installation.



HANDLEBAR REMOVAL

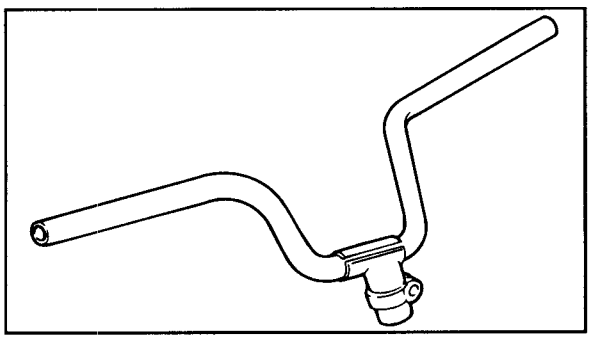
1. Remove:
   - Grip (Left)

****

Removal steps:

- Remove the grip end (left).
- Blow with compressed air between the handlebar and adhesive side of the grip to remove.

****

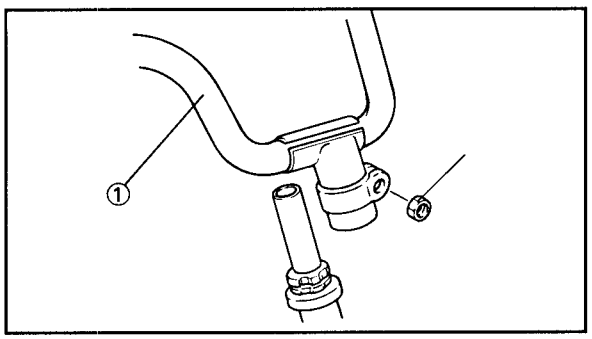


HANDLEBAR INSPECTION

1. Inspect:
   - Handlebar
     Bends/Cracks/Damage → Replace.

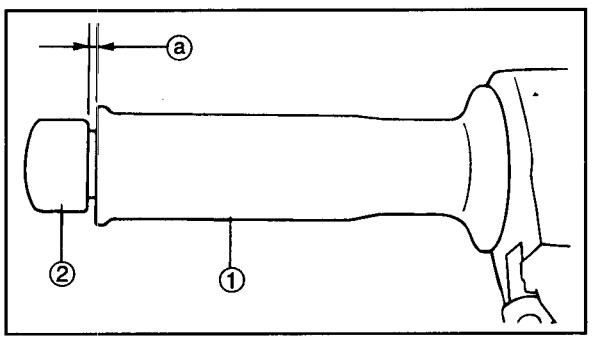
⚠WARNING

Do not attempt to straighten a bent handlebar as this may dangerously weaken the handlebar.



HANDLEBAR INSTALLATION

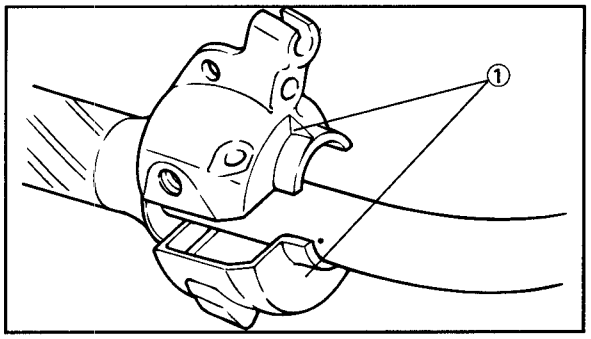
1. Install:
   - Handlebar
     Secure the bolt | 600kg•cm



2. Install:
   - Grip ①
   - Grip end (Left) ②

NOTE:

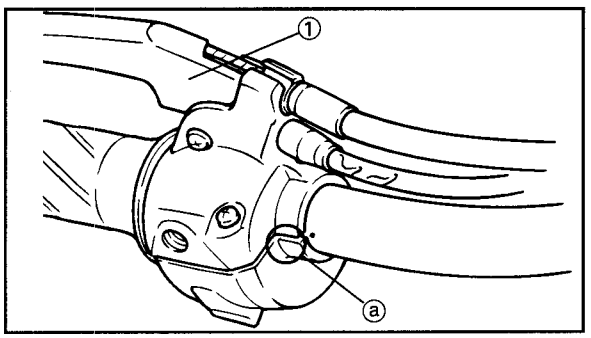
- Apply 8300L (bonding agent) on the left handlebar before installation.
- Provide a clearance ⓐ of 2.5mm between the handlebar grip and handlebar grip end.



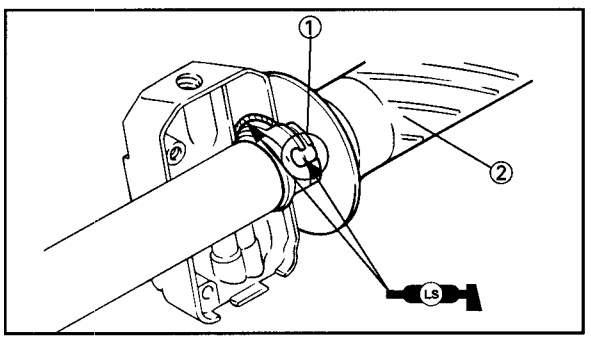
3. Install:
   - Handlebar switch (left) ①

NOTE:

Align the handlebar switch mating surface ⓐ with the punched mark "•" on the handlebar.



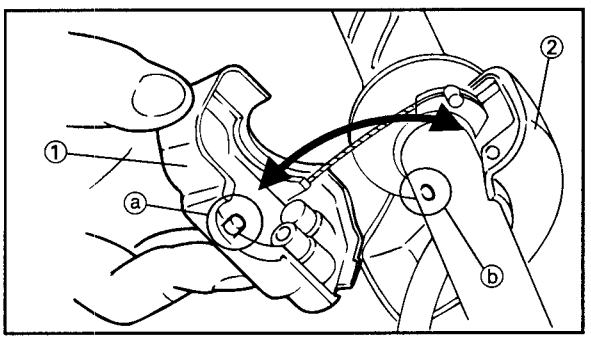
4. Install:
   - Lever holder (left) ①



5. Install:
   - Throttle cable ①
   - Grip assembly ②

NOTE:

Apply a light coat of lithium soap base grease onto the inside of the grip assembly and install it to the handlebar.

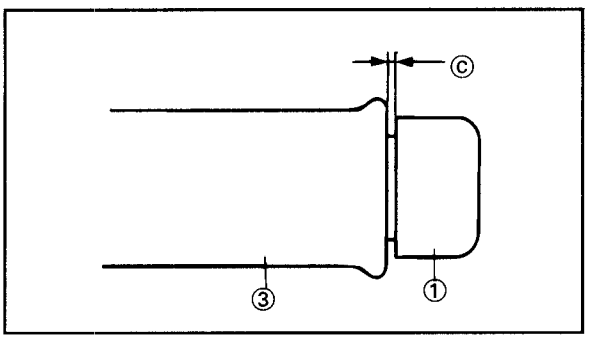


6. Install:
   - Handlebar holder (right) ①
   - Handle switch (right) ②

****

Installation steps:

- Align the projection ⓐ on the fixing mount to the dent ⓑ on the handle during installation.
- Maintain a 2.5mm gap ⓒ between the handlebar ③ and grip end ①.
- Do not remove the handlebar unless necessary.

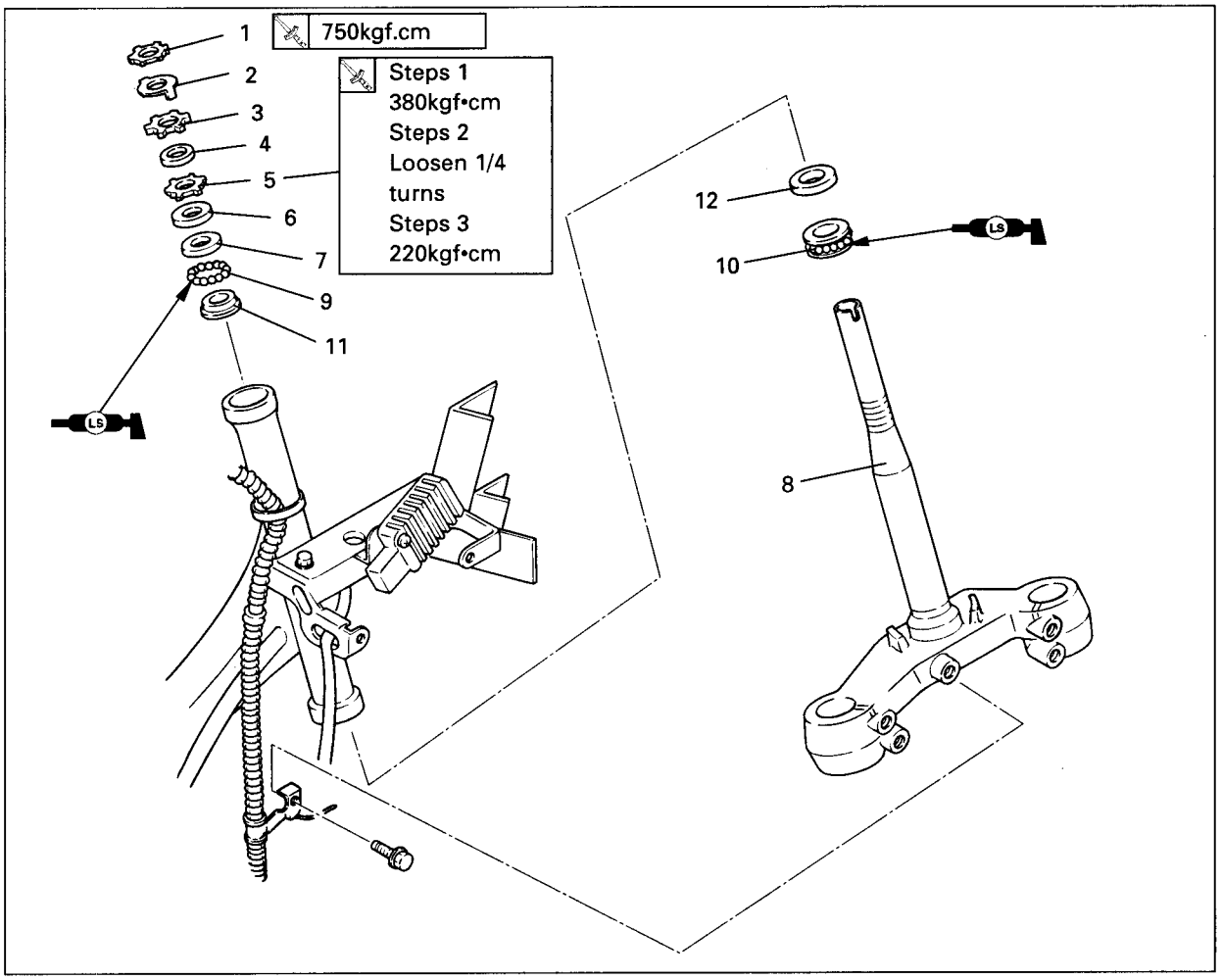


⚠ WARNING

Check the throttle grip for smooth operation.

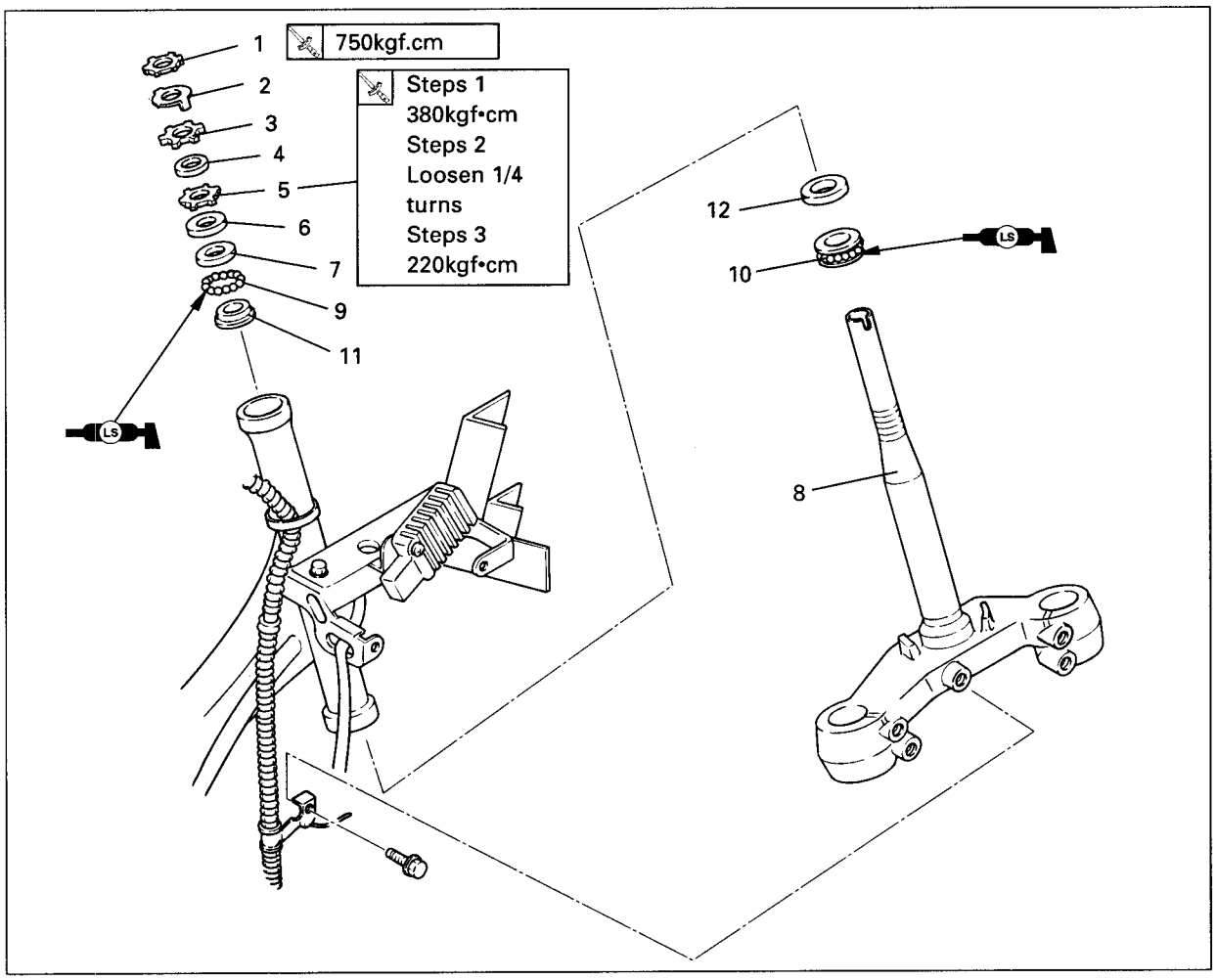
****

STEERING

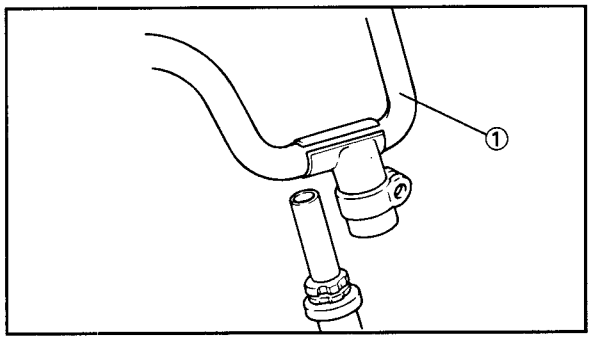


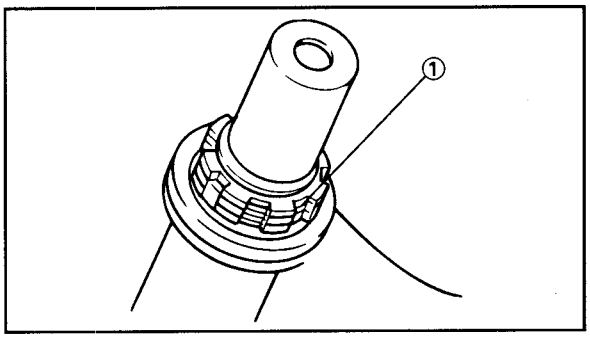
Order	Job name / Part name	Q'ty	Remarks
	Steering removal		Remove the parts in order.
	Handlebar upper cover		Refer to "FRONT WHEEL, BRAKE DISC" section.
	Front fork		Refer to "FRONT FORK" section.
	Handle unit		Refer to "HANDLEBAR" section.
1	Ring nut (upper)	1	Refer to "STEERING REMOVAL/INSTALLATION" section.
2	Look washer	1	
3	Ring nut (center)	1	
4	Rubber washer	1	
5	Ring nut (lower)	1	
6	Bali race cover	1	
7	Bail race 1	1	
8	Lower bracket	1	
9	Ball bearing	22	
10	Ball bearing	19	

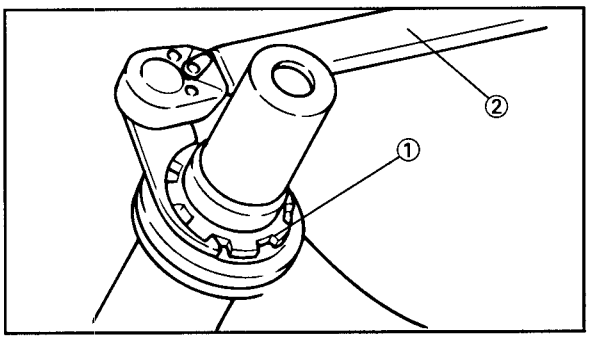
STEERING



Order	Job name / Part name	Q'ty	Remarks
11	Ball race 2	1	Refer to "STEERING INSTALLATION" section.
12	Ball race	1	
			Reverse the removal procedure for installation.







STEERING REMOVAL

⚠WARNING

- Securely support the scooter so that there is no danger of it falling over.
- Stand the scooter on a level surface.

1. Remove:
   - Handlebar unit ①
2. Remove:
   - Ring nut (upper)
   - Lock washer ①
   - Ring nut (center)
   - Rubber washer
3. Remove:
   - Ring nut (lower) ①

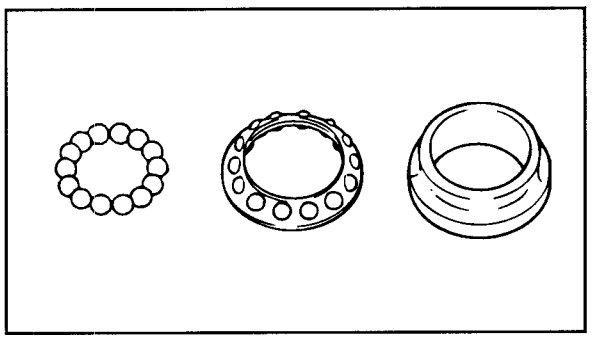
NOTE:

Hold the lower bracket by hand, then remove by using the exhaust ring and steering nut wrench ②.

	Exhaust and steering nut wrench: 90890-01268

⚠WARNING

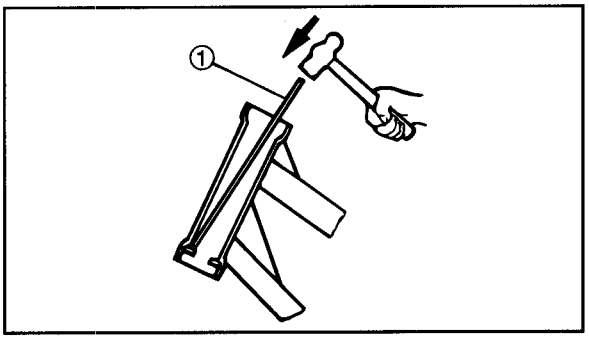
Securely support the steering shaft so that there is no danger of it falling down.

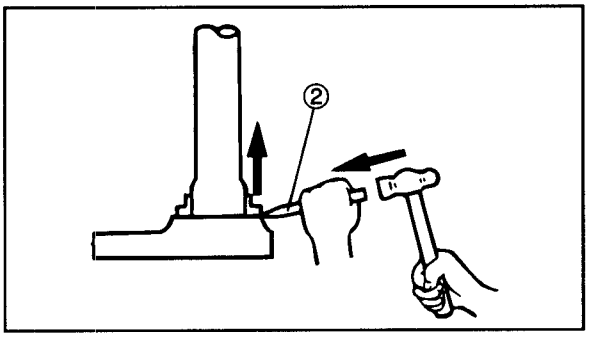


INSPECTION

1. Wash the bearing and bearing races with a solvent.
2. Inspect:
   - Bearings
   - Bearings seat

   Pitting/Damage → Replace.





****

Bearing race replacement steps:

- Remove the bearing races on the head pipe using long rod ① and the hammer as shown.
- Remove the bearing race on the under bracket using the floor chisel ② and the hammer as shown.
- Install the new dust seal and races.

****

NOTE:

- Always replace bearings and races as a set.
- Replace the dust seal whenever a steering head disassembled.

CAUTION:

If the bearing race is fitted not squarely, the head pipe could be damaged.

STEERING INSTALLATION

Reverse the "REMOVAL" procedure.

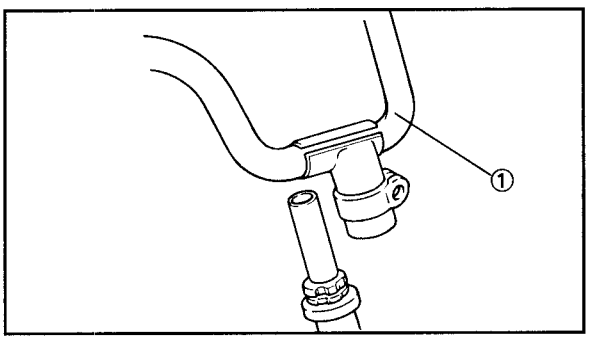
Note the following points.

1. Lubricate:
   - Bearings (upper and lower)
   - Bearings seat

	Recommended lubricant: Lithium - soap base grease

2. Install:
   - Ring nut (lower)
   - Rubber washer
   - Ring nut (center)
   - Lock washer
   - Ring nut (upper)

   Refer to "STEERING HEAD INSPECTION" section in CHAPTER 3.



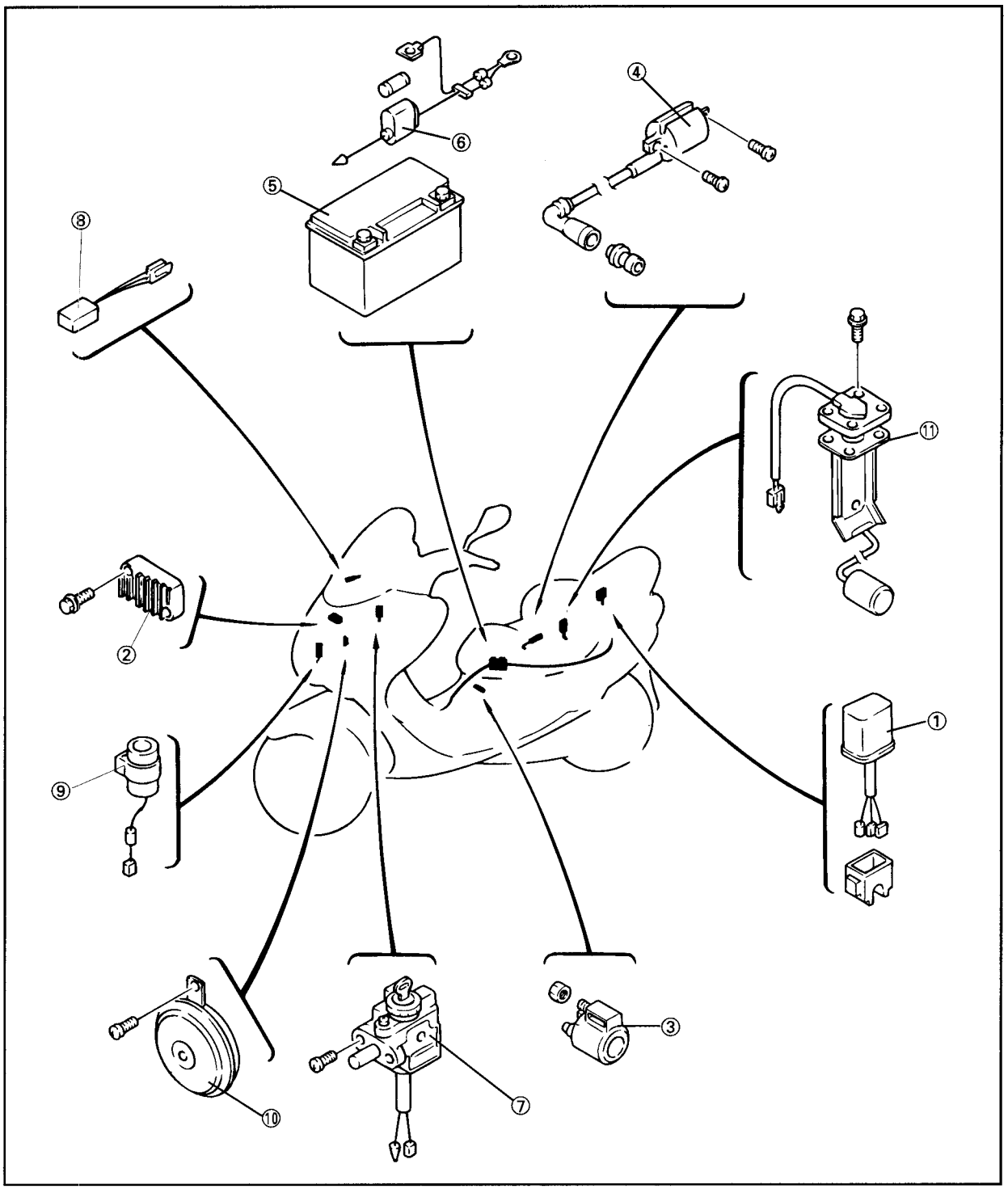
3. Install:
   - Handlebar unit ①

	600kg•cm

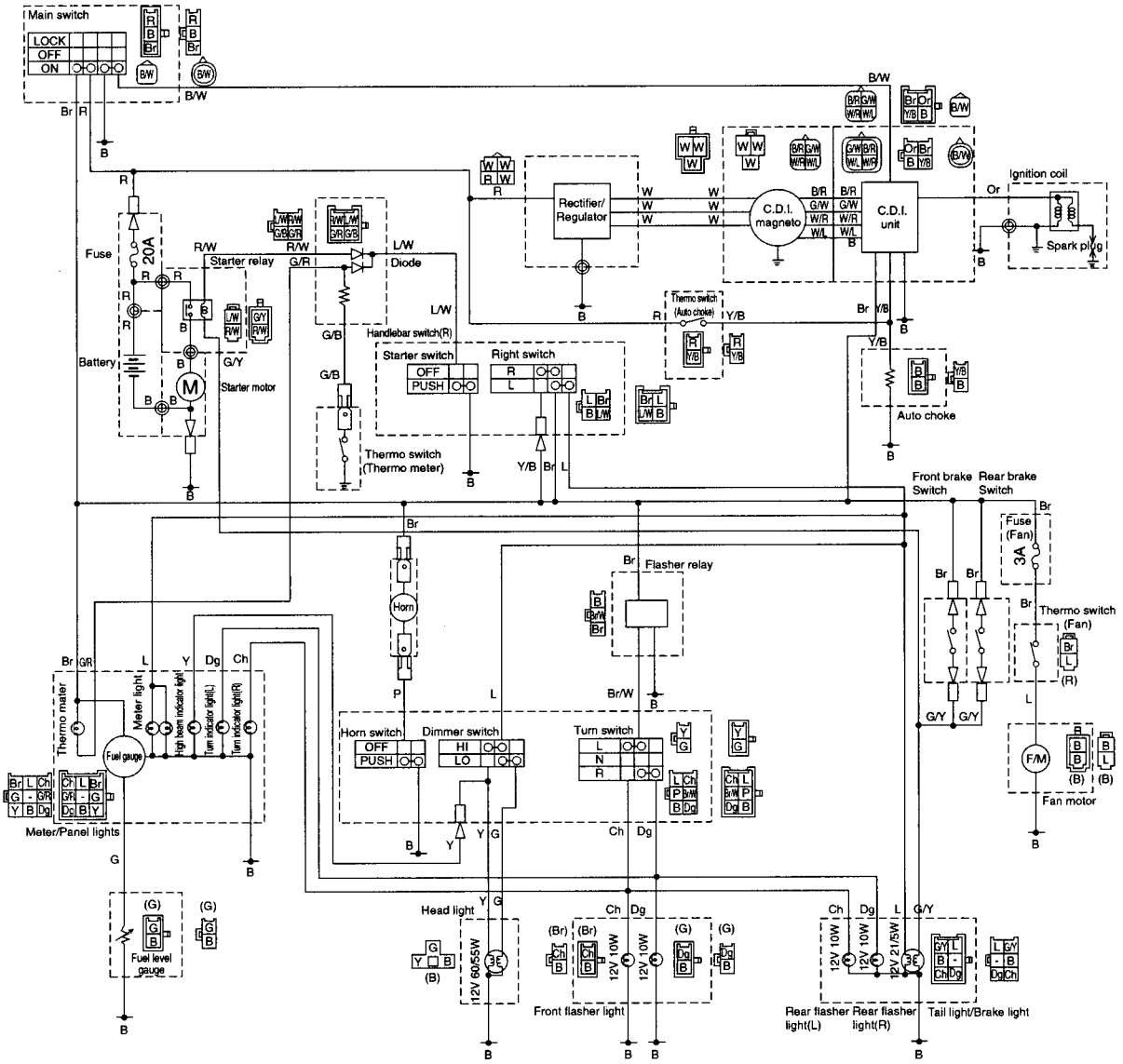
ELECTRICAL

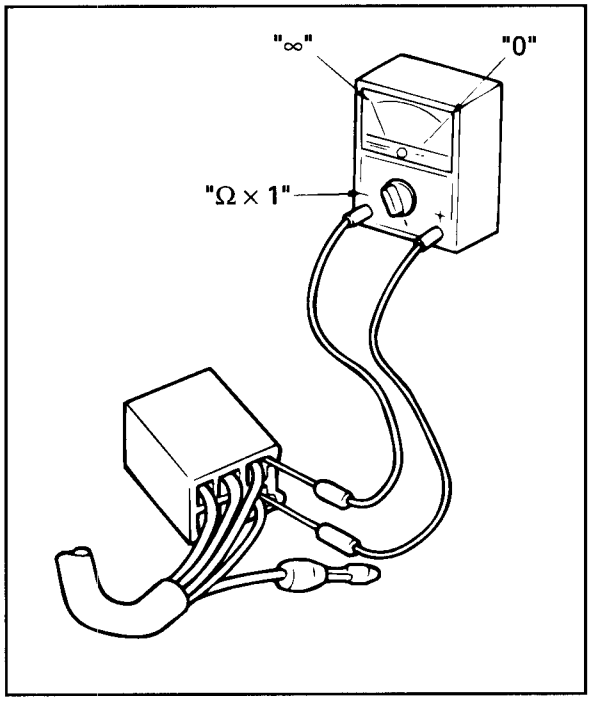
ELECTRICAL COMPONENTS

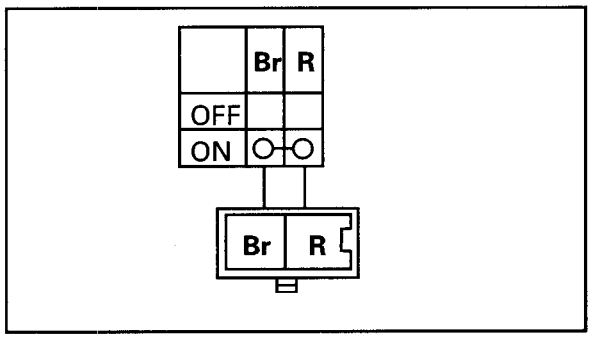
① C.D.I. unit
② Rectifier/Regulator
③ Starter relay
④ Ignition coil
⑤ Battery
⑥ Fuse
⑦ Main switch
⑧ Diode
⑨ Flasher relay
⑩ Horn
⑪ Fuel level gauge



CIRCUIT DIAGRAM







CHECKING SWITCHES

CHECKING STEPS

Using pocket tester, check switches for continuity between their terminals to determine whether they are correctly connected. Replace the switch component if any of the combinations does not produce the correct reading.

	Pocket tester: 90890-03112

NOTE:

- Turn the switch to the "ON", "OFF" positions several times.
- Adjust the pocket tester to correct "0" position before checking switches.
- Sat the pocket tester selector to "Ω × 1".

SWITCH CONNECTION AS SHOWN IN THIS MANUAL

This manual contains connection charts, like the one shown on the left, showing the terminal connections of switches (e.g. the main switch, handlebar switch, brake switch, lighting switch etc.)

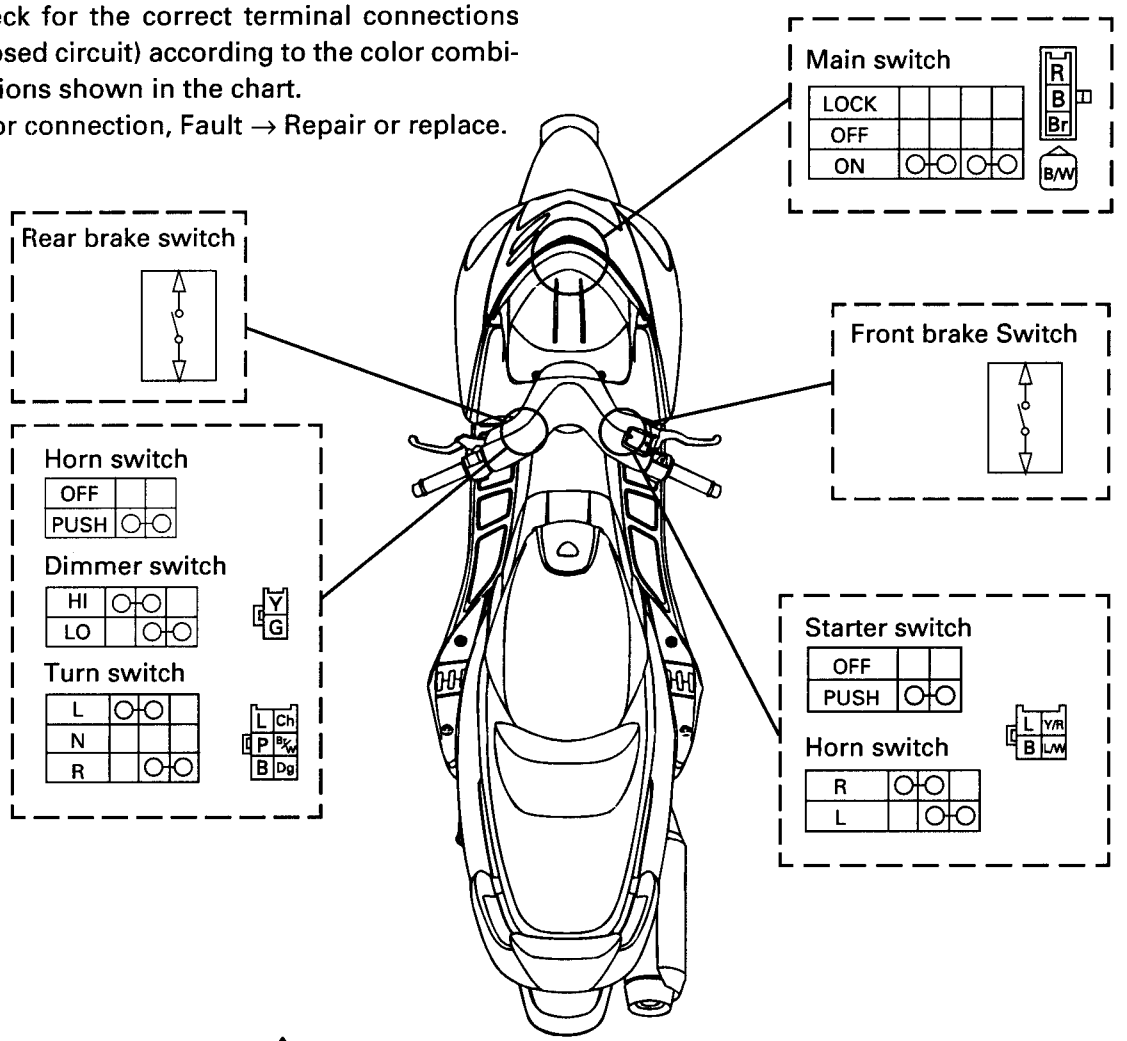
The column on the extreme left indicates the different switch positions, the top line indicates the colors of the leads connected to the terminals on the switch.

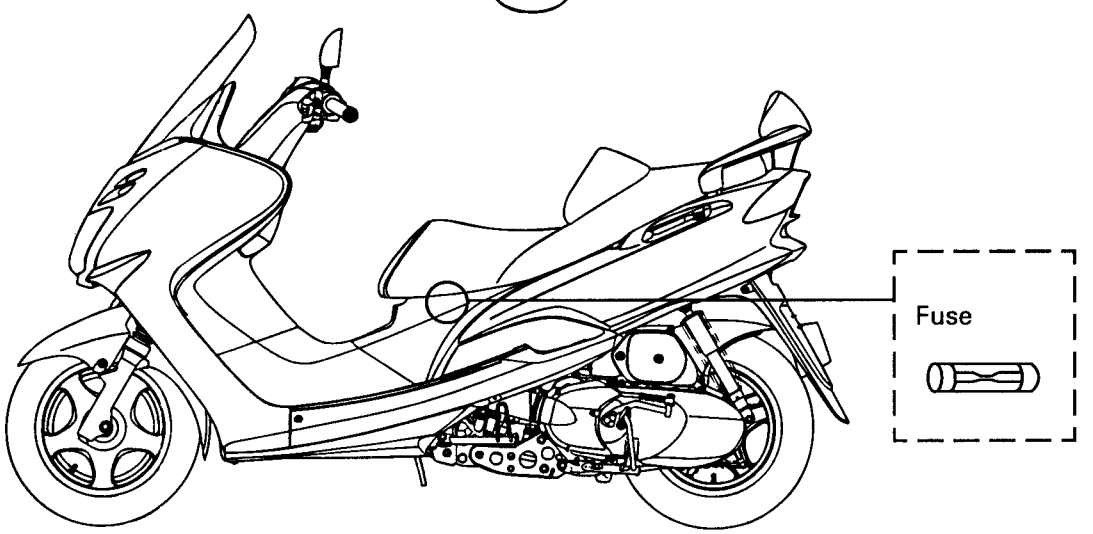
"○—○" indicates terminals between which there is continuity, i.e. a closed circuit, in the given switch position.

In this chart:
"Br and R" have continuity with the switch in the "ON" position.
There is no circuit passing between "Br" terminal and "R" terminal when the switch is at "OFF" position.

SWITCH POSITION AND TERMINAL CONNECTION

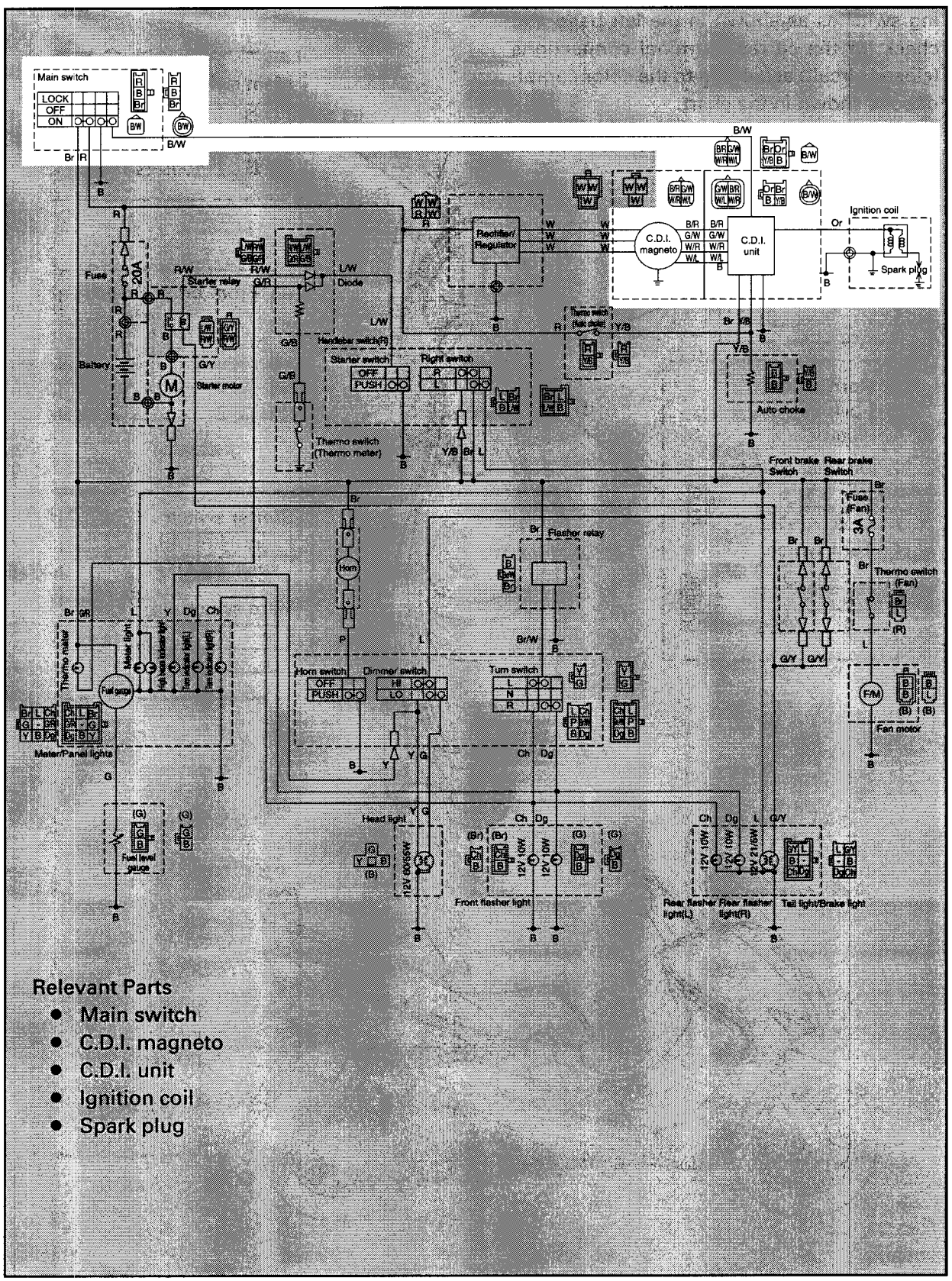
Before checking a switch refer to the checking switches as shown in the left page and check for the correct terminal connections (closed circuit) according to the color combinations shown in the chart.
Poor connection, Fault → Repair or replace.





IGNITION SYSTEM

CIRCUIT DIAGRAM



Relevant Parts

- Main switch
- C.D.I. magneto
- C.D.I. unit
- Ignition coil
- Spark plug

TROUBLESHOOTING

IF THE IGNITION SYSTEM FAILS TO OPERATE. (NO SPARK OR INTERMITTENT SPARK)

Procedure
Check:

1. Spark plug
2. Ignition spark gap
3. Spark plug cap resistance
4. Ignition coil
5. Pick up coil resistance
6. Main switch
7. Wiring connection (entire ignition system)

NOTE:

- Remove the following parts before trouble-shooting.
  1) Footrest board
  2) Side cover protector
  3) Cowling body
- Use the special tools specified in the trouble shooting section.

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

1. Spark plug

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

Spark plug gap:
0.7~0.8 mm

OUT OF SPECIFICATION

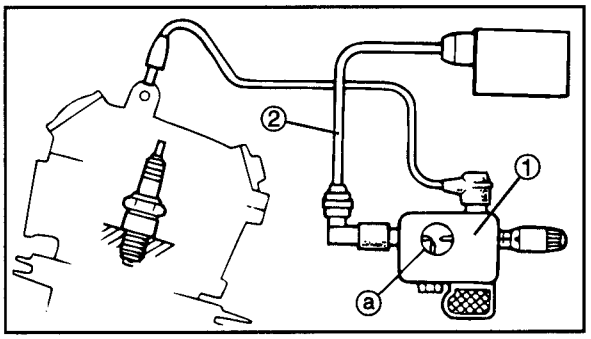
Standard spark plug
C7E/NGK

Repair or replace the spark plug

*

2. Ignition spark gap
- Disconnect the spark plug cap from the spark plug.
- Connect the ignition checker ① as shown. ②.
- Turn the main switch to "ON".
- Check the ignition spark gap ⓐ.
- Check the spark by pushing the starter switch, and increase the spark gap until a misfire occurs.

Minimum spark gap:
6 mm (0.24 in)



MEETS SPECIFICATION

The ignition system is not faulty.

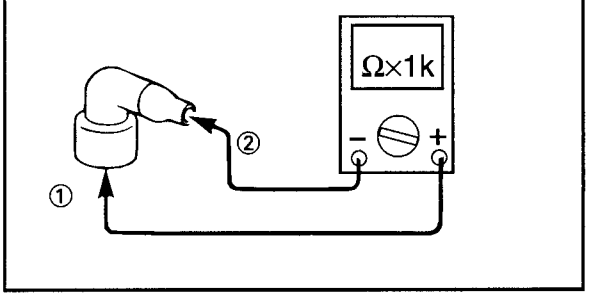
OUT OF SPECIFICATION OR NO SPARK

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

NOTE:
- When removing the spark plug cap, do not pull the spark plug cap from high tension cord.
- Remove → Turning counterclockwise.
- Connect → Turning clockwise.
- Check the high tension cord when connecting the spark plug cap.
- When connecting the spark plug cap, cut the high tension cord about 5 mm.

Spark plug cap resistance:
10 kΩ (20°C)

Tester (+) lead →
Spark plug side ①
Tester (-) lead →
High tension cord side ②



OUT OF SPECIFICATION

Replace the spark plug cap.

CORRECT

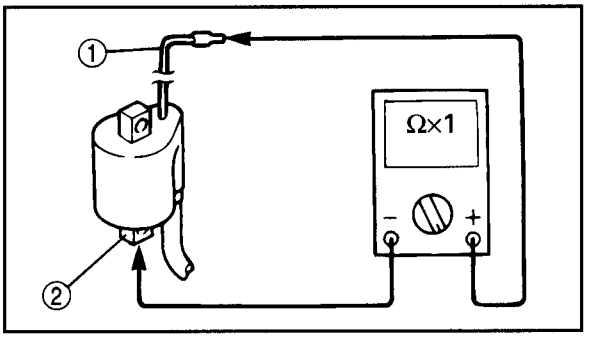
*

4. Ignition coil resistance (Primary coil)

- Disconnect the ignition coil connector from the wireharness.
- Connect the pocket tester (Ω×1) to the ignition coil.
- Check if the primary coil has the specified resistance.

Tester (+) lead →
Orange terminal ①
Tester (-) lead →
Ignition coil base seat ②

Primary coil resistance:
0.56~0.84 Ω (20°C)

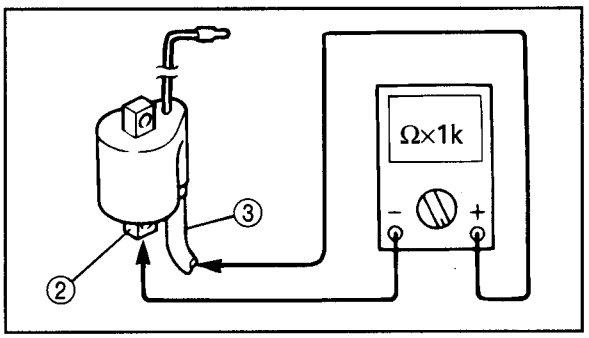


4. Ignition coil resistance (Secondary coil)

- Connect the pocket tester (Ω×1k) to the ignition coil.
- Check the secondary has the specified resistance.

Tester (+) lead →
High voltage terminal ③
Tester (-) lead →
Ignition coil base seat ②

Secondary coil resistance:
5.7~8.5 kΩ (20°C)



OUT OF SPECIFICATION

Replace the ignition coil.

BOTH MEET SPECIFICATION

*

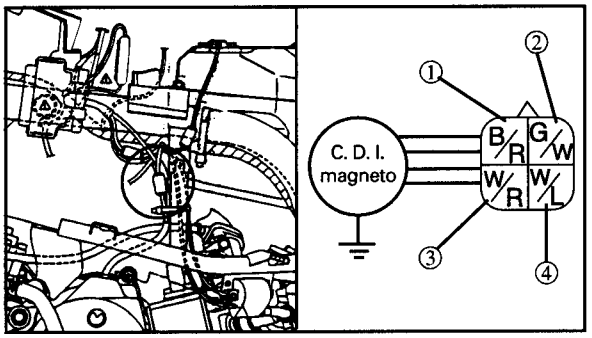
5. Pickup coil resistance

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

Head coil resistance:
Tester (+) lead → B/R Terminal ①
Tester (-) lead → G/W Terminal ②
Pulse coil resistance:
Tester (+) lead → W/R Terminal ③
Tester (-) lead → W/L Terminal ④

- Check the pickup coil has the specified resistance.

Head coil resistance:
750~ 1080Ω (B/R-G/W)
Pulse coil resistance:
168 ~ 252Ω (W/R-W/L)



OUT OF SPECIFICATION

Replace C.D.I. magneto.

MEETS SPECIFICATION

6. Main switch

Refer to "CHECKING SWITCHES" section in the CHAPTER 8.

NO CONTINUITY

Replace the main switch.

CONTINUITY

7. Wiring connectiona

- Check the connection of the entire ignition system.
  Refer to "CIRCUIT DIAGRAM".

POOR CONNECTIONS

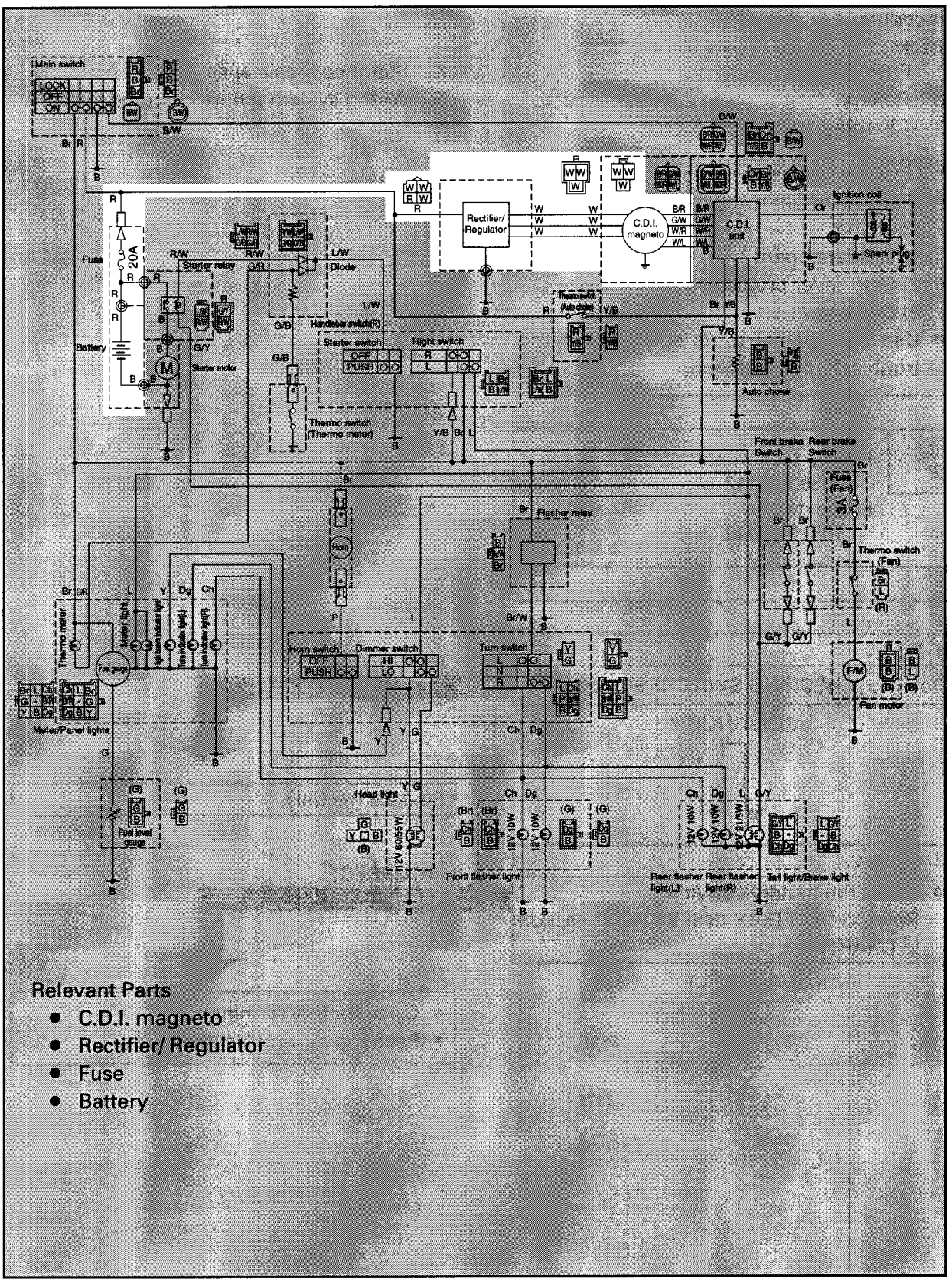
Correct.

CORRECT

Replace C.D.I. unit.

CHARGING SYSTEM

CIRCUIT DIAGRAM



Relevant Parts

- C.D.I. magneto
- Rectifier/ Regulator
- Fuse
- Battery

TROUBLESHOOTING

IF THE BATTERY IS NOT CHARGED

Procedure
Check:
1. Fuse (Main)
2. Battery
3. Charging voltage
4. Stator coil resistance
5. Wiring system (entire charging system)

NOTE:
- Remove the following parts before troubleshooting.
  1) Footrest board
  2) Side cover protector
  3) Cowling
- Use the special tools specified in the troubleshooting section.

Engine tachometer
90890-03113
Pocket tester:
90890-03112

1. Fuse
Refer to "CHECKING SWITCHES" section.

NO CONTINUITY → Replace the fuse.

CONTINUITY ↓

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

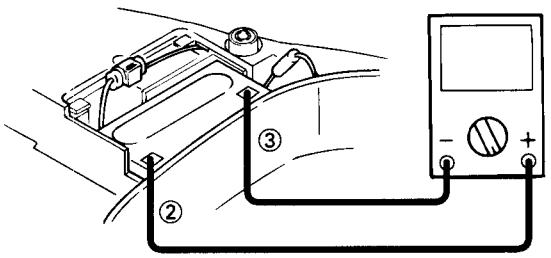
INCORRECT →
- Clean battery terminals.
- Recharge or replace the battery.

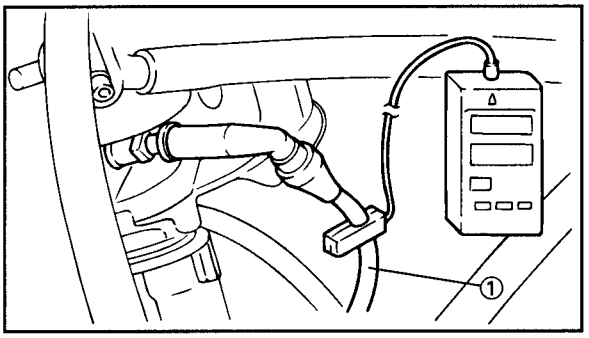
CORRECT ↓

3. Charging voltage

- Connect the engine tachometer to the spark plug lead ①.
- Connect the pocket tester (DC20V) to the battery.

Tester (+) lead →
Battery (+) terminal ②
Tester (-) lead →
Battery (-) terminal ③





- Start the engine and accelerate to about 5,000 r/min.
- Check the terminal voltage.

Charging voltage :
14V AT (5,000r/min)

NOTE:
Use a fully charged battery.

MEETS SPECIFICATION

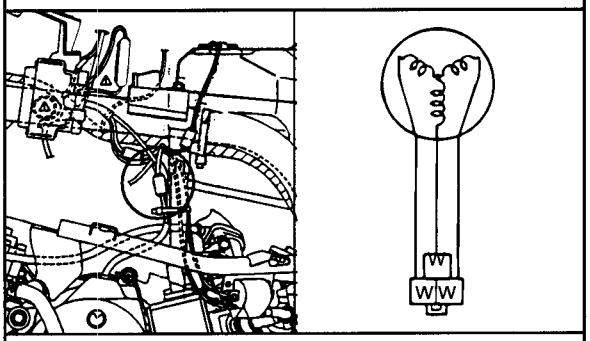
The charging circuit is not faulty.
Replace the battery.

OUT OF SPECIFICATION

*

4. Starter coil resistance

- Remove the 3-Phase AC generator coupler from wireharness.
- Connect the pocket tester (Ωx1) to the stator coil.
  Tester (+) lead → White terminal
  Tester (-) lead → White terminal



- Measure the stator coil resistance.

Stator coil resistance:
0.6~0.9Ω (20°C)

OUT OF SPECIFICATION → Replace the stator coil.

MEETS SPECIFICATION

5. Wiring connection

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

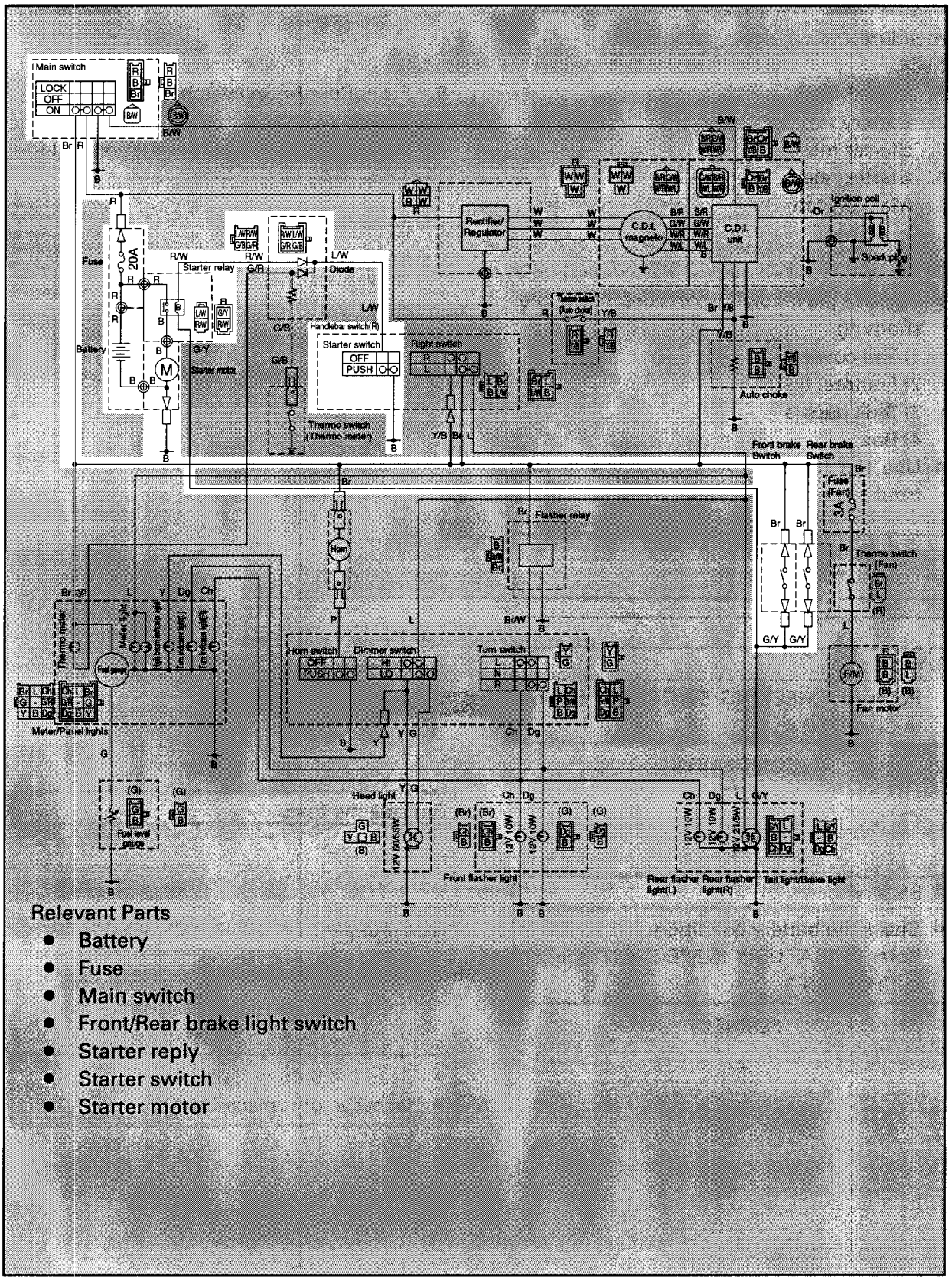
POOR CONNECTION → Correct.

CORRECT

Replace the rectifier/regulator.

ELECTRIC STARTING SYSTEM

CIRCUIT DIAGRAM



Relevant Parts

- Battery
- Fuse
- Main switch
- Front/Rear brake light switch
- Starter reply
- Starter switch
- Starter motor

TROUBLESHOOTING

IF THE STARTER MOTOR FAILS TO OPERATE.

Procedure
Check:

1. Fuse (Main)
2. Battery
3. Starter motor
4. Starter relay
5. Main switch
6. Front/Rear brake switch
7. Starter switch
8. Wiring connection (entire starting system)

NOTE:

- Remove the following parts before trouble shooting.
  1) Tail cover
  2) Footrest board
  3) Side panels
  4) Box
- Use the special tools specified in the troubleshooting section.

Pocket tester:
90890-03112

1. Fuse

Refer to "CHECKING SWITCHES" section in CHAPTER 8.

NO CONTINUITY → Replace the fuse.

CONTINUITY ⇩

2. Battery

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

INCORRECT →
- Clean the battery terminals.
- Recharge or replace battery.

CORRECT ⇩

*

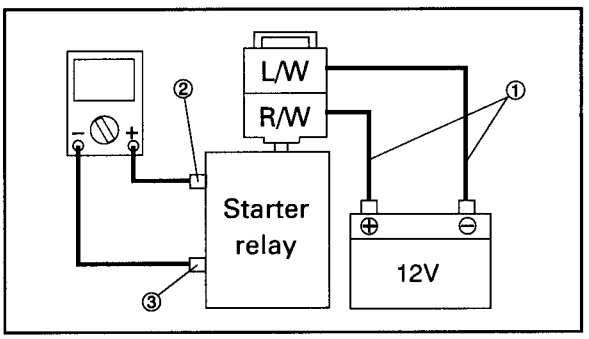
*

3. Starter motor
- Connect the battery positive terminal (+) and starter motor cable using a jumper lead.
- Check the starter motor operation.

DOES NOT MOVE → Repair or replace the starter motor.

MOVES

4. Starter Relay
- Disconnect the connection of starter relay and wire assembly.
- Connect the triple electrometer (Ω×1) as shown in the drawing at the right and use a jumper ① to connect the battery (12V) to the relay terminal.



Battery (+) lead → Red/White terminal
Battery (-) lead → Blue/White terminal

Tester (+) lead → ② terminal
Tester (-) lead → ③ terminal

- Check the starter relay for continuity.

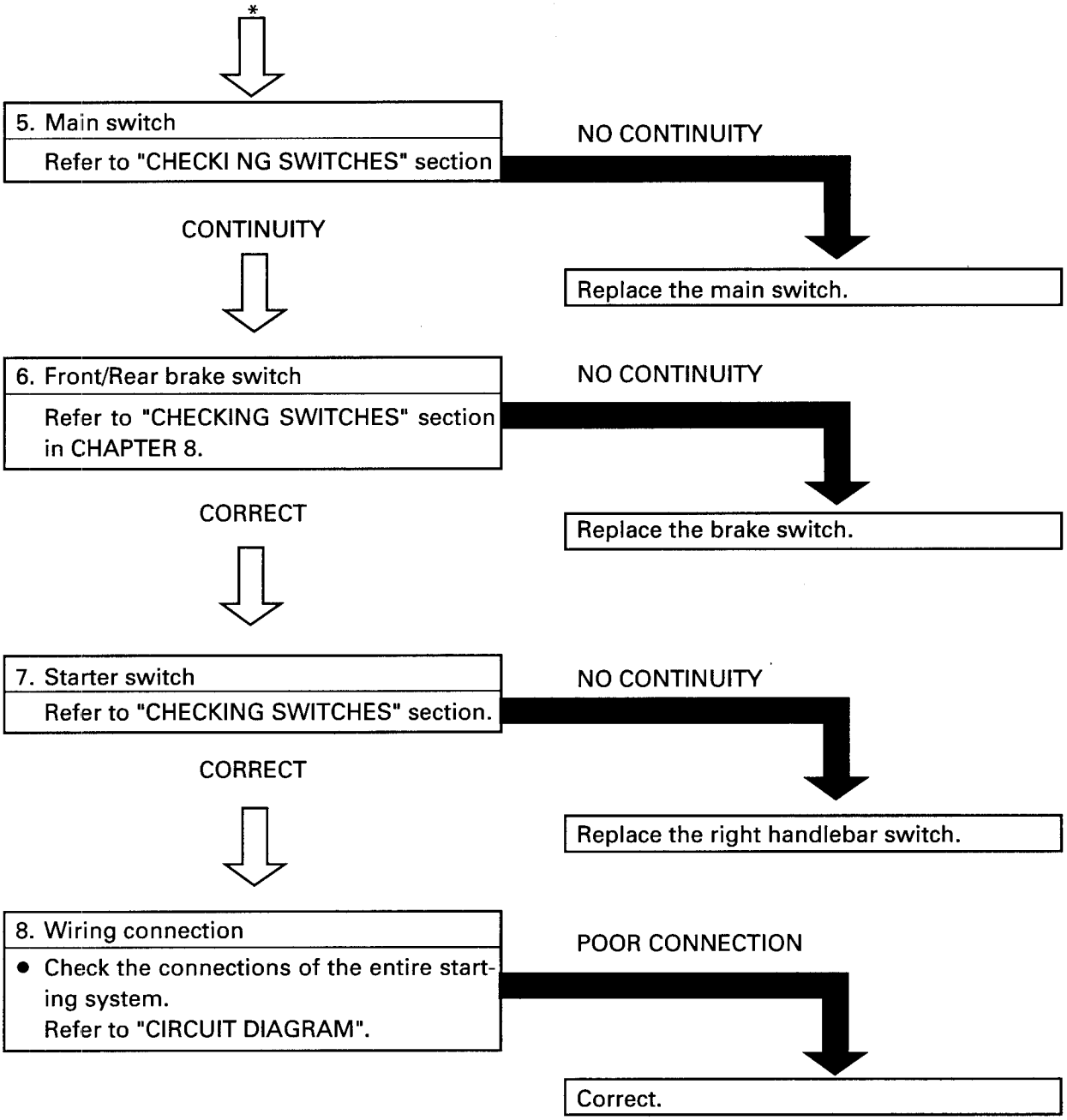
NO CONTINUITY → Replace the starter relay.

⚠WARNING

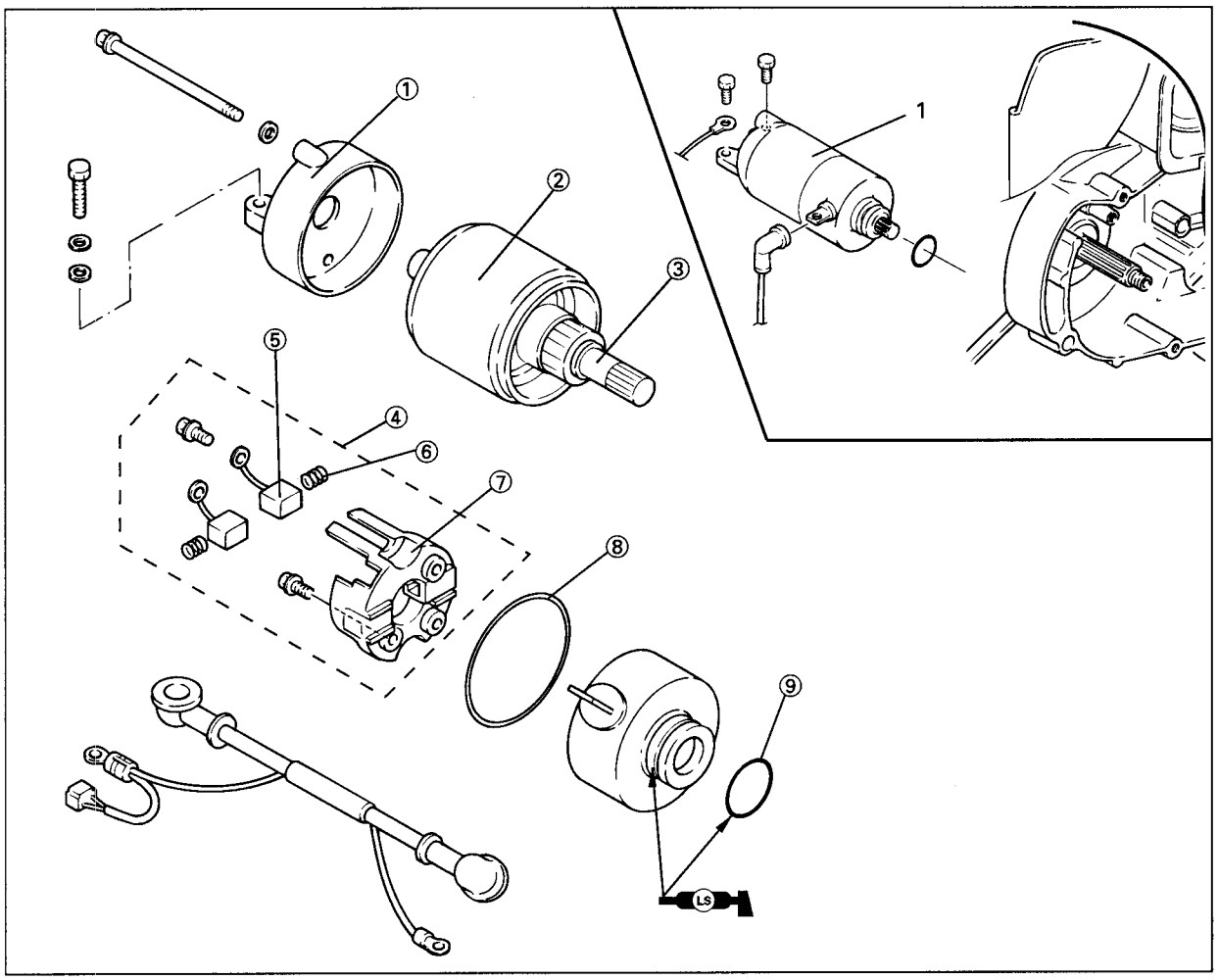
A wire used as a jumper lead must have the equivalent capacity as that of the battery lead or more, otherwise it may burn. This check is likely to produce sparks, so be sure that no flammable gas or fluid is in the vicinity.

CONTINUITY

*

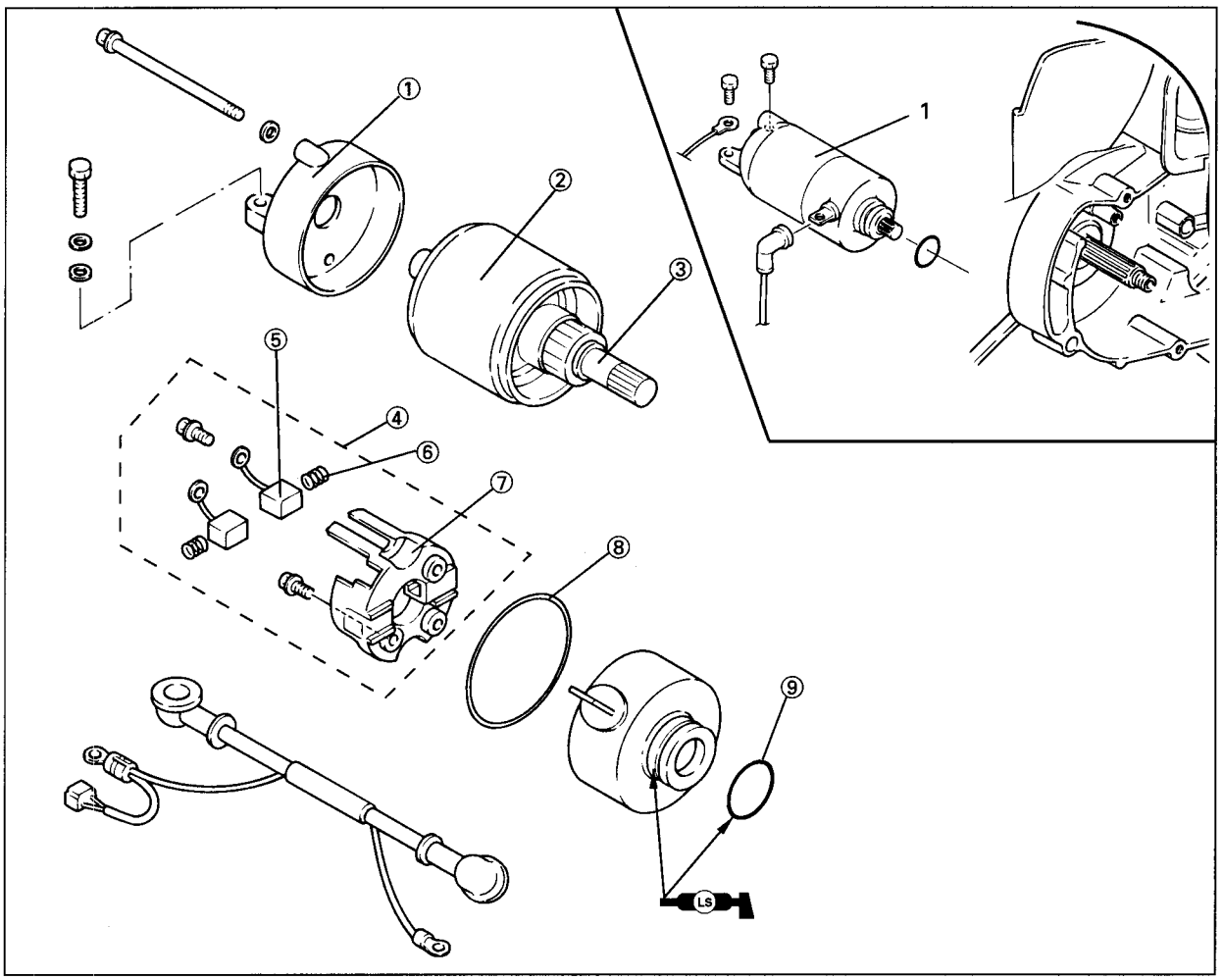

*
5. Main switch
Refer to "CHECKI NG SWITCHES" section
NO CONTINUITY
Replace the main switch.
CONTINUITY
6. Front/Rear brake switch
Refer to "CHECKING SWITCHES" section in CHAPTER 8.
NO CONTINUITY
Replace the brake switch.
CORRECT
7. Starter switch
Refer to "CHECKING SWITCHES" section.
NO CONTINUITY
Replace the right handlebar switch.
CORRECT
8. Wiring connection
• Check the connections of the entire starting system.
Refer to "CIRCUIT DIAGRAM".
POOR CONNECTION
Correct.

STARTER MOTOR

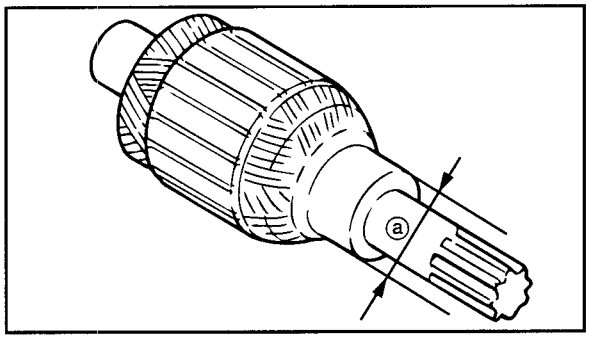


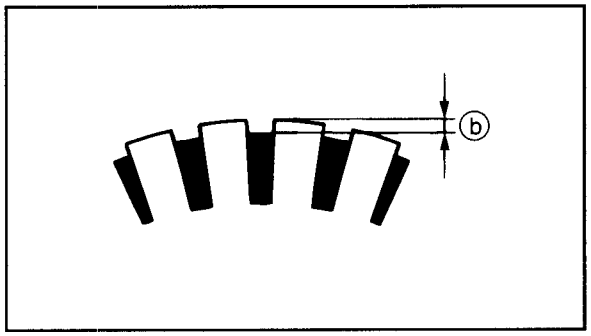
Order	Job name/Part name	Q'ty	Remarks
	Starter motor removal		Remove the parts in order.
	Air cleaner case		Refer to "ENGINE REMOVAL AND INSTALLATION" section in CHAPTER 4.
1	Starter motor	1	Reverse the removal procedure for installation.
	Starter motor disassembly		Disassembly the parts in order.
①	Cover	1	
②	Housing	1	
③	Armature	1	
④	Carbon brush set	1	Refer to "Starter motor assembly" section.
⑤	Carbon brush	1	

STARTER MOTOR



Order	Job name/Part name	Q'ty	Remarks
⑥	Spring	1	
⑦	Carbon brush mount	1	Refer to "Starter motor assembly" section.
⑧	Washer	1	
⑨	O-ring	1	
			Reverse the disassembly procedure for assembly.





INSPECTION AND REPAIR

1. Inspect:
   - Commutator
   Dirt → Clean it with #600 grit sandpaper.
2. Measure:
   - Commutator diameter

	Commutator wear limit ⓐ: 21 mm

Out of specification → Replace the starter motor.

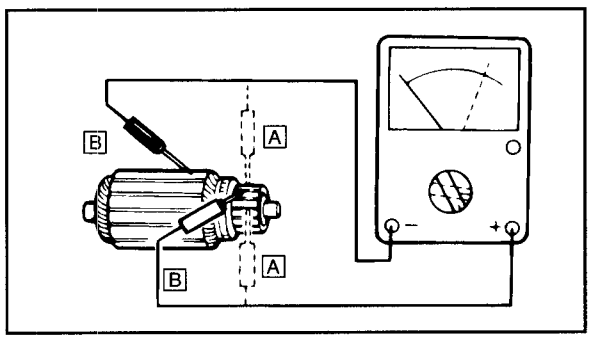
3. Measure:
   - Mica undercut ⓑ

	Mica undercut ⓑ: 1.5 mm

Out of specification → Scrape the mica to the proper value (a hacksaw blade can be ground to fit).

NOTE:

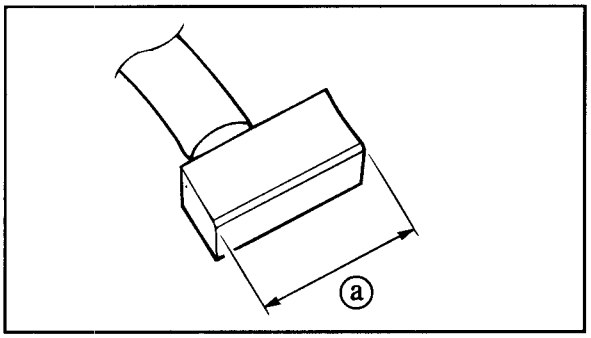
The mica insulation of the commutator must be undercut to ensure proper operation of commutator.



4. Inspect:
   - Armature coil resistances (installation/continuity)
   Defects → Replace the starter motor.
   If commutator is dirty, clean it with sandpaper.

	Good condition	Bad condition		
A	○	○	×	×
B	×	○	×	○

○ : Continuity
× : No continuity
Bad condition → Replace.



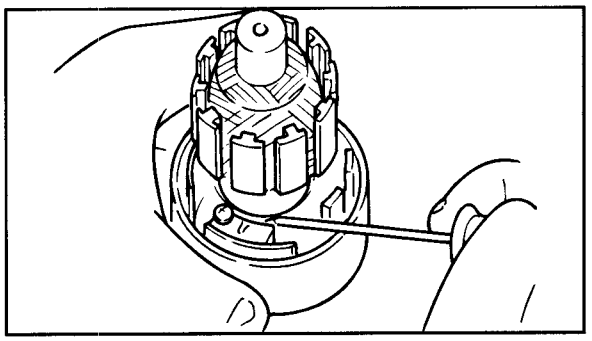
5. Measure:
   - Brush length
     Out of specification → Replace.

	Brush length wear limit: 3.5 mm

6. Measure:
   - Brush spring force ⓐ
     Fatigue/out of specification → Replace as a set.

	Brush spring force: 552~828g

7. Inspect:
   - Bearing
   - Oil seal
     Wear/damage → Replace.

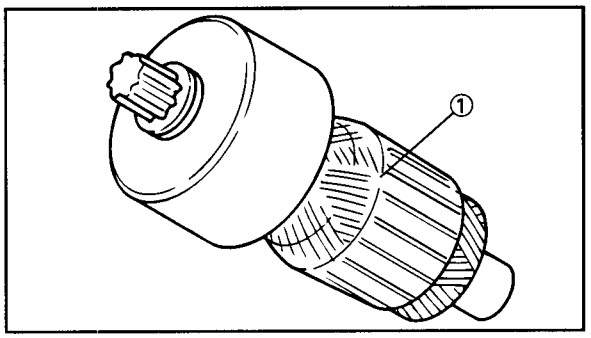


ASSEMBLY

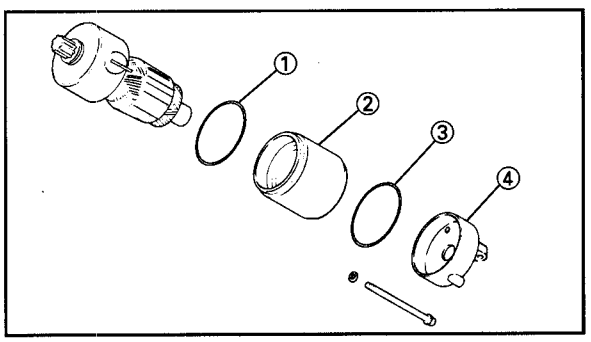
Reverse the "Removal" procedure.

Note the following points.

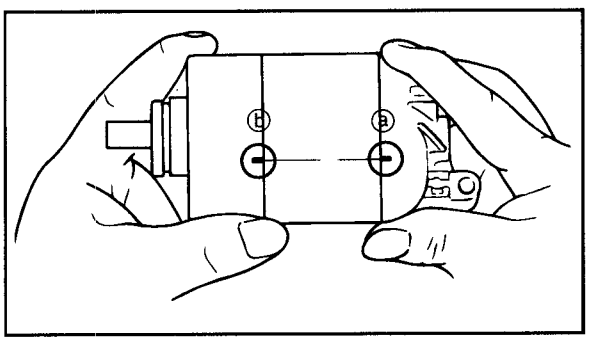
1. Install:
   - Carbon brush spring
   - Carbon brush
     Use flat driver.



2. Install:
   - Armature coil ①



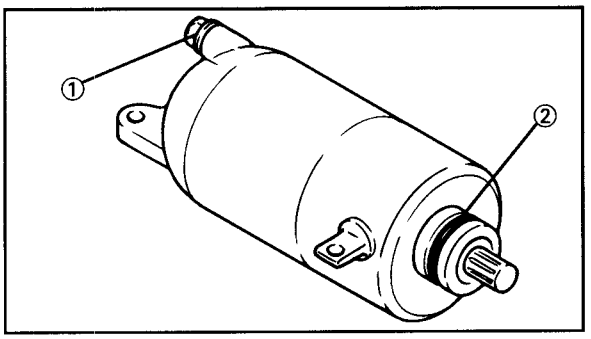
3. Install:
   - Washer ①
   - Housing ②
   - Washer ③
   - Cover ④ 5 Nm (0.5m•kg)



4. Install:
   - Housing

NOTE:

- Apply molybdenum grease lightly on to the bearings of the starter motor.
- Align the match marks on the hose ⓐ with the match marks on the carbon brush mount ⓑ.



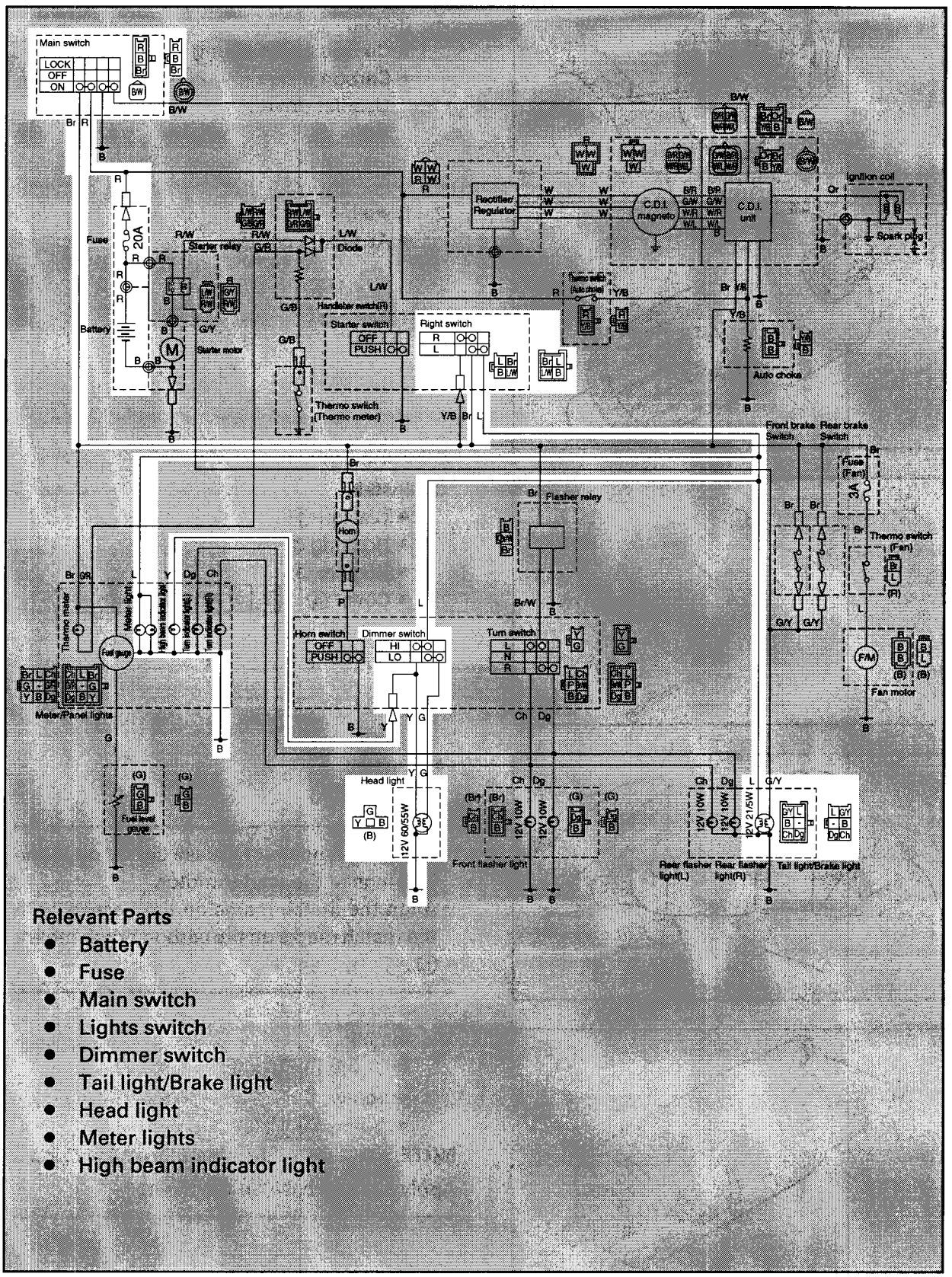
5. Install:
   - O-ring New ①
   - Screw
   - O-ring New ②

NOTE:

Apply some grease on the O-ring.

LIGHTING SYSTEM

CIRCUIT DIAGRAM



Relevant Parts

- Battery
- Fuse
- Main switch
- Lights switch
- Dimmer switch
- Tail light/Brake light
- Head light
- Meter lights
- High beam indicator light

TROUBLESHOOTING

IF THE HEAD LIGHT, HIGH BEAM INDICATOR LIGHT, TAIL LIGHT AND/OR METER LIGHT FAIL TO COME ON.

Procedure

Check:

1. Fuse (Main)
2. Battery
3. Main switch
4. Light switch
5. Dimmer switch
6. Wiring connection (entire lighting system)

NOTE:

- Remove the following parts before troubleshooting.
  1) Head light cowling
  2) Cowling
- Use the special tools specified in the troubleshooting section.

Pocket tester:
90890-03112

1. Fuse
   Refer to "CHECKING SWITCHES" section.
   - NO CONTINUITY → Replace the fuse.
   - CONTINUITY ↓

2. Battery
   - Check the battery condition.
     Refer to "BATTERY INSPECTION" section in CHAPTER 3.
   - INCORRECT → • Clean battery terminals. • Recharge or replace battery.
   - CORRECT ↓

3. Main switch
   Refer to "CHECKING SWITCHES" section.
   - NO CONTINUITY → Replace the main switch.
   - CONTINUITY ↓

4. Lights switch
   Refer to "CHECKING SWITCHES" section.
   - NO CONTINUITY → Replace the right handlebar switch.
   - CONTINUITY ↓

*

*

5. Dimmer switch
Refer to "CHECKI NG SWITCHES" section.

NO CONTINUITY

Replace the left handlebar switch.

6. Wiring connection
- Check the connections of the entire lighting system.
Refer to "WIRING DIAGRAM"section.

POOR CONNECTIONS

Correct.

Check the condition of each of the lighting system's circuits.
Refer to "LIGHTING SYSTEM CHECK" section.

LIGHTING SYSTEM CHECK

1. If the headlight and the high beam indicator light fail to come on.

1. Bulb and bulb socket
Refer to "CHECKING SWITCHES" section.

NO CONTINUITY

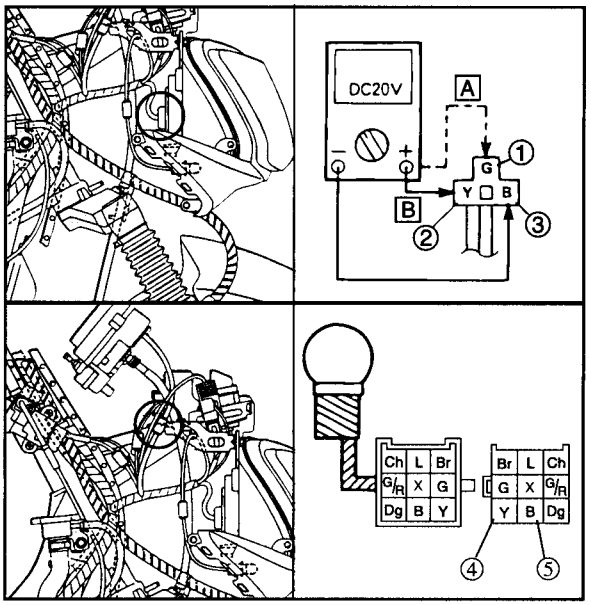
Replace the bulb and/or bulb socket.

CONTINUITY

2. Voltage
- Connect the pocket tester (DC20V) to the headlight and high beam indicator light couplers.

[A] When the dimmer switch is on low beam.
[B] When dimmer switch is on high beam or the Pass switch is pushed.

Headlight:
Tester (+) lead →
Green ① or Yellow ② lead
Tester (-) lead →
Black ③ lead
High beam indicator light:
Tester (+) lead →
Yellow ④ lead
Tester (-) lead →
Black ⑤ lead



*

*
- Turn the main switch to "ON".
- Turn the light switch to "ON" position.
- Turn the dimmer switch to low beam or high beam.
- Pass switch to push in. Check for voltage (12V) on the lead at bulb socket connectors.

OUT OF SPECIFICATION → The wiring circuit from the main switch to bulb socket connector is faulty. Repair.

MEETS SPECIFICATION

This circuit is not faulty.

2. If the meter light fails to come on.

1. Bulb and bulb socket

Refer to "CHECKING SWITCHES" section.

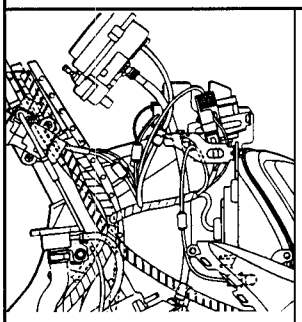
NO CONTINUITY → Replace the bulb and/or bulb socket.

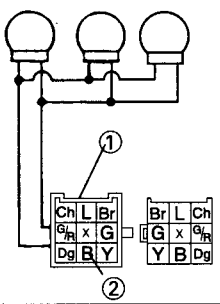
CONTINUITY

2. Voltage

Connect the pocket tester (DC20V) to the bulb socket coupler.

Tester (+) lead → Blue terminal ①
Tester (-) lead → Black terminal ②





- Turn the main switch to on.
- Turn the lights switch to on or pilot position.
- Check the voltage (12V) of the (Blue) leads on the bulb socket connector.

OUT OF SPECIFICATION → The wiring circuit from main switch to bulb socket is faulty. Repair.

MEETS SPECIFICATION

This circuit is not faulty.

3. The taillight fails to come on.

1. Bulb and bulb socket
Refer to "CHECKING SWITCHES" section.

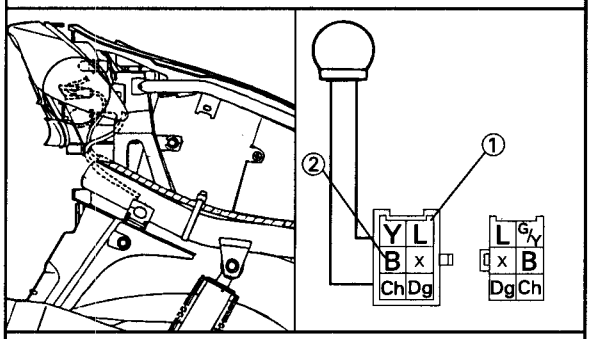
NO CONTINUITY

Replace the bulb and/or bulb socket.

CONTINUITY

2. Voltage
- Connect the pocket tester (DC20V) to the bulb socket connector.

Tester (+) lead →
Blue terminal ①
Tester (-) lead →
Black terminal ②



- Turn the main switch to on.
- Turn the lights switch to on or pilot position.
- Check the voltage (12V) of the (Blue) leads on the bulb socket connector.

OUT OF SPECIFICATION

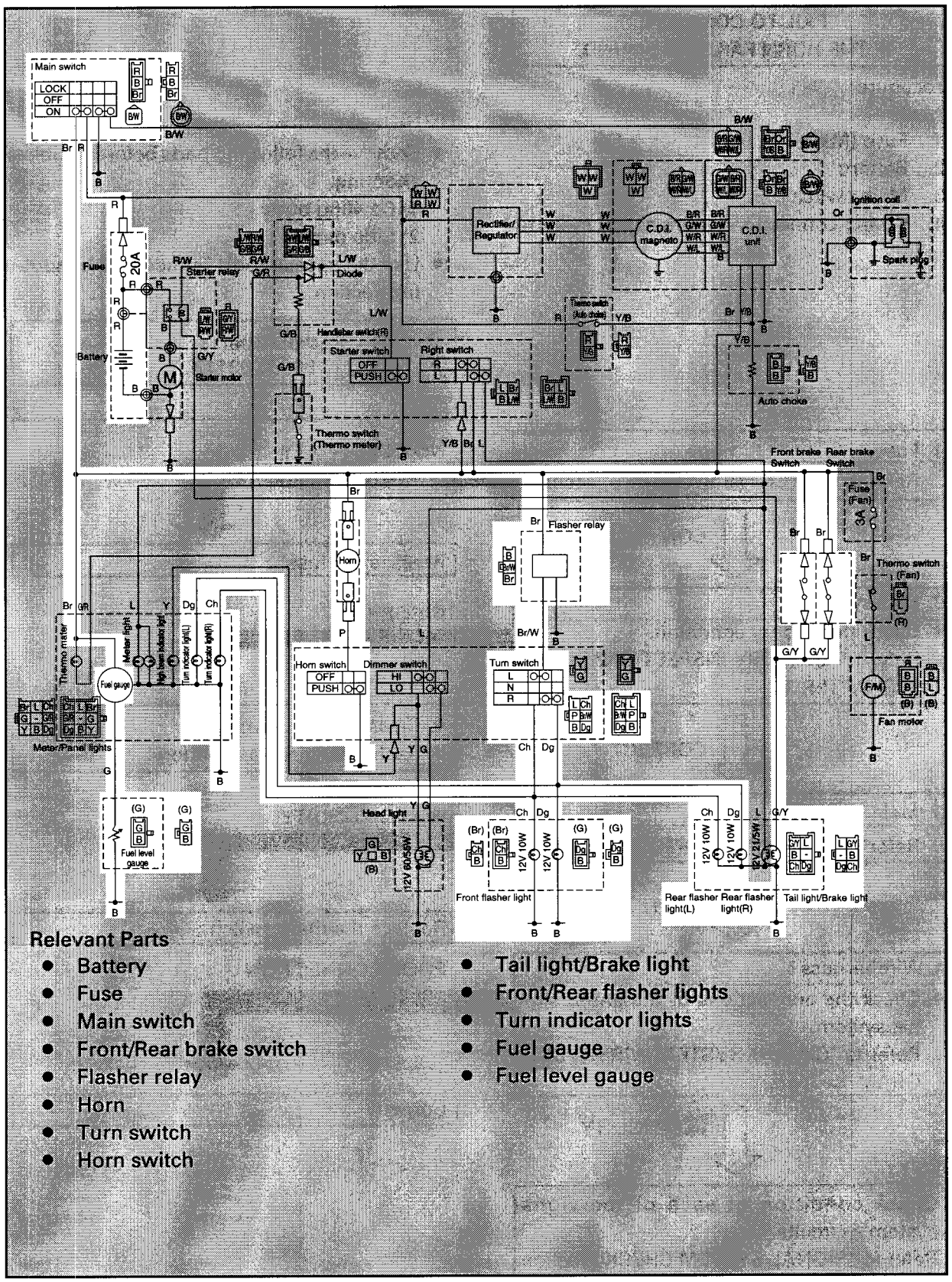
The wiring circuit from main switch to bulb connector is faulty. Repair.

MEETS SPECIFICATION

This circuit is not faulty.

SIGNAL SYSTEM

CIRCUIT DIAGRAM



Relevant Parts

- Battery
- Fuse
- Main switch
- Front/Rear brake switch
- Flasher relay
- Horn
- Turn switch
- Horn switch
- Tail light/Brake light
- Front/Rear flasher lights
- Turn indicator lights
- Fuel gauge
- Fuel level gauge

TROUBLESHOOTING

IF THE FLASHER LIGHT, BRAKE LIGHT AND/OR TURN INDICATOR LIGHT FAIL TO COME ON.
IF THE HORN FAILS TO SOUND.

Procedure
Check:
1. Fuse (Main)
2. Battery
3. Main switch
4. Wiring connection (entire signal system)

NOTE:
- Remove the following parts before troubleshooting.
  1) Cowling body
  2) Side panels
- Use the special tools in the troubleshooting section.

Pocket tester:
90890-03112

1. Fuse
Refer to "CHECKING SWITCHES" section.

NO CONTINUITY → Replace the fuse.

CONTINUITY ↓

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

INCORRECT →
- Clean battery terminals.
- Recharge or replace battery.

CORRECT ↓

3. Main switch
Refer to "CHECKING SWITCHES" section.

NO CONTINUITY → Replace the main switch.

CONTINUITY ↓

4. Wireharness1
- Check the connections of the entire signal system.
Refer to "CIRCUIT SYSTEM WIRING DIAGRAM" section.

POOR CONNECTION → Correct.

CONTINUITY ↓

Check condition of each of the signal system's circuits.
Refer to "SIGNAL SYSTEM CHECK" section.

SIGNAL SYSTEM CHECK

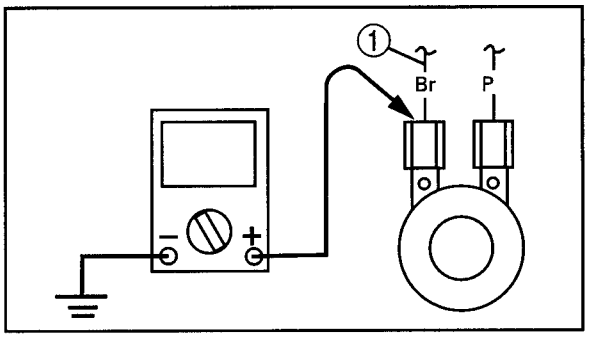
1. If the horn fails to sound.

1. Horn switch
Refer to "CHECKING SWITCHES" section.

NO CONTINUITY → Replace the left handlebar switch.

CONTINUITY ↓

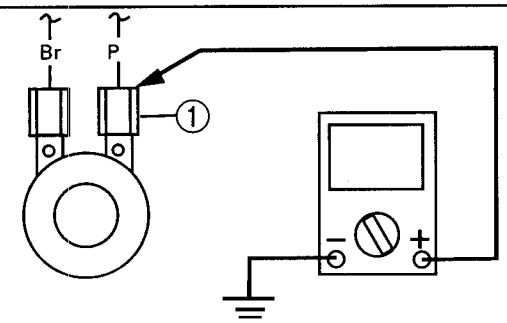
2. Voltage
• Connect the pocket tester (DC20V) to the horn lead.
Tester (+) lead → Brown terminal ① Tester (-) lead → Frame ground
• Turn the main switch to on. • Check for voltage (12V) on the "Brown" lead at the horn terminal.



OUT OF SPECIFICATION → The wiring circuit from the main switch to the horn is faulty. Repair.

MEETS SPECIFICATION ↓

3. Horn
• Connect the pocket tester (DC20V) to the horn at the "Pink" terminal.
Tester (+) lead → Pink ① terminal. Tester (-) lead → Frame ground
• Turn the main switch to on. • Check for voltage on the "Pink" lead to frame ground.



NO CONTINUITY → Replace the horn.

CONTINUITY ↓

Adjust or replace horn.

2. If the brake light fails to come on:

1. Bulb and bulb socket
Refer to "CHECKING SWITCHES" section.

NO CONTINUITY → Replace the bulb and/or bulb socket.

CONTINUITY ↓

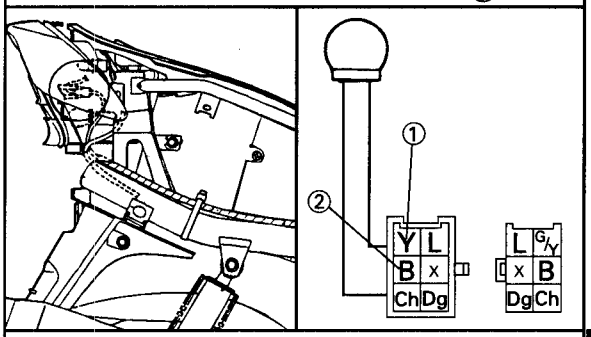
2. Brake switch (Front/Rear)
Refer to "CHECKING SWITCHES" section.

NO CONTINUITY → Replace brake switch.

CONTINUITY ↓

3. Voltage
- Connect the pocket tester (DC20V) to the bulb socket connector.

Tester (+) lead → Yellow terminal ①
Tester (-) lead → Black terminal ②



- Turn the main switch to "ON".
- The brake lever is pulled in.
- Check for voltage (12V) of the "Yellow" lead on the bulb socket connector.

OUT OF SPECIFICATION → 4. Wiring connection
- Wiring circuit from the main switch to the bulb socket connector is faulty. Repair. Refer to "SIGNAL SYSTEM WIRING DIAGRAM" section.

MEETS SPECIFICATION ↓

This circuit is not faulty.

3. If the flasher light and/or turn indicator light fails to blink.

1. Bulb and bulb socket
Refer to "CHECKING SWITCHES" section.

NO CONTINUITY → Replace the bulb and/or bulb socket.

CONTINUITY ⇩

2. Turn switch
Refer to "CHECKING SWITCHES" section.

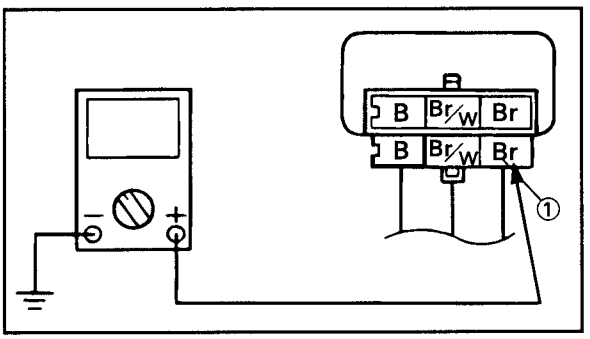
NO CONTINUITY → Replace the left handlebar switch.

CONTINUITY ⇩

4. Voltage
- Connect the pocket tester (DC20V) to the flasher relay coupler.

Tester (+) lead → Brown terminal ①
Tester (-) lead → Frame ground

- Turn the main switch to on.
- Check for voltage (12V) of the "Brown" ① lead at the flasher relay terminal.



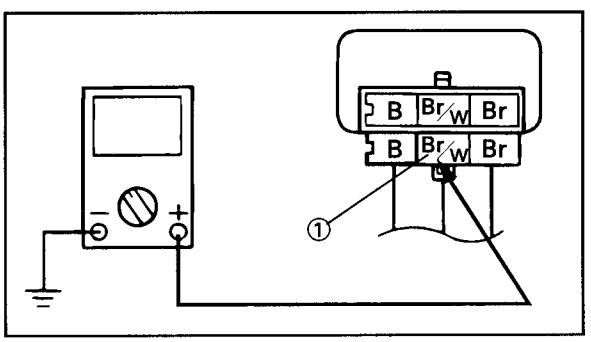
OUT OF SPECIFICATION → The wiring circuit from main switch to flasher relay connector is faulty. Repair.

MEETS SPECIFICATION ⇩

4. Voltage
- Connect the pocket tester (DC20V) to the flasher relay coupler.

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

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



OUT OF SPECIFICATION → The flasher relay is faulty. Replace.

⇩
*

*

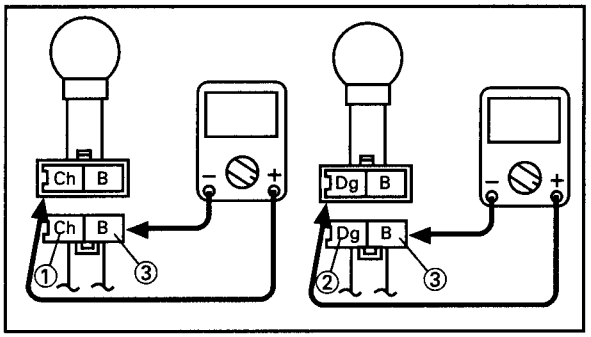
5. Voltage

- Connect the pocket tester (DC20V) to the bulb socket connector.

At flasher light (left)
Tester (+) lead → Chocolate lead ①
Tester (-) lead → Black terminal ③

At flasher light (right)
Tester (+) lead → Dark green lead ②
Tester (-) lead → Black terminal ③

- Turn the main switch to on.
- Turn the turn switch to left or right.
- Check for voltage (12V) on the "Chocolate" lead and "Dark green" at the flasher light terminal.



OUT OF SPECIFICATION

6. Wiring connection

- Wiring circuit from the turn switch to bulb socket connector is fault. Repair.
  Refer to "CIRCUIT DIAGRAM" section.

MEETS SPECIFICATION

This circuit is not faulty.

4. If the fuel gauge fails to operate.

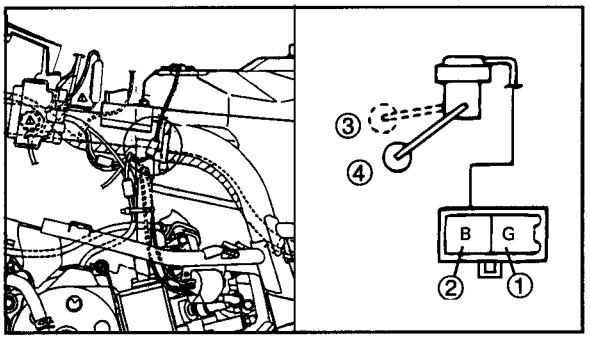
1. Fuel sender

- Remove the fuel sender from the fuel tank.
- Disconnect the fuel sender coupler from the wireharness.
  Connect the pocket tester (Ωx10) to the fuel sender coupler lead.

Tester (+) lead → Green terminal
Tester (-) lead → Black terminal ①

- Check the fuel sender for specificated resistance.

Float position	Specificated resistance
UP ③	4 ~ 10 Ω
DOWN ④	90 ~ 100 Ω



OUT OF SPECIFICATION

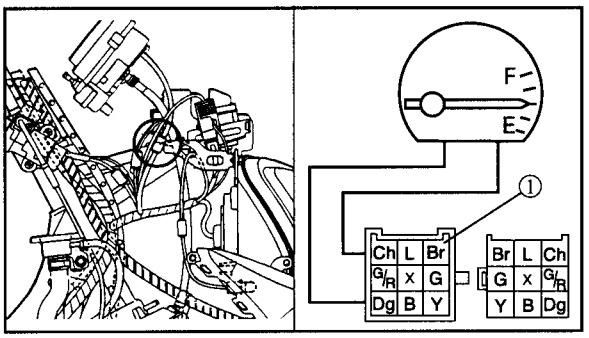
Replace the fuel sender

BOTH MEET SPECIFICATION

2. Voltage

- Connect the pocket tester (DC20V) to the fuel gauge coupler.

Tester (+) lead → Brown terminal ①
Tester (-) lead → Frame ground



OUT OF SPECIFICATION

MEETS SPECIFICATION

- Turn the main switch to "ON".
- Check for voltage (12V) of the "Brown" lead on the fuel sender lead.

MEETS SPECIFICATION

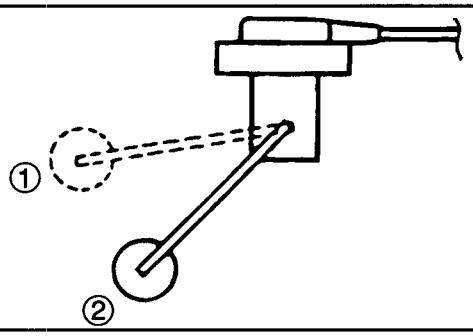
*

Check the connection of the entire signal system .
Refer to "CHECKING OF CONNECTIONS" section.
Refer to "CIRCUIT DIAGRAM".

*

3. Fuel gauge

- Connect the fuel sender to wireharness.
- Move the float to "UP" ① or "DOWN" ②.



- Turn the main switch to "ON".
- Check the fuel gauge needle moves "F" or "E".

Float position	Needle moves
Float "UP" ①	"F"
Float "DOWN" ②	"E"

DOES NOT MOVE

Replace the fuel gauge.

MOVES

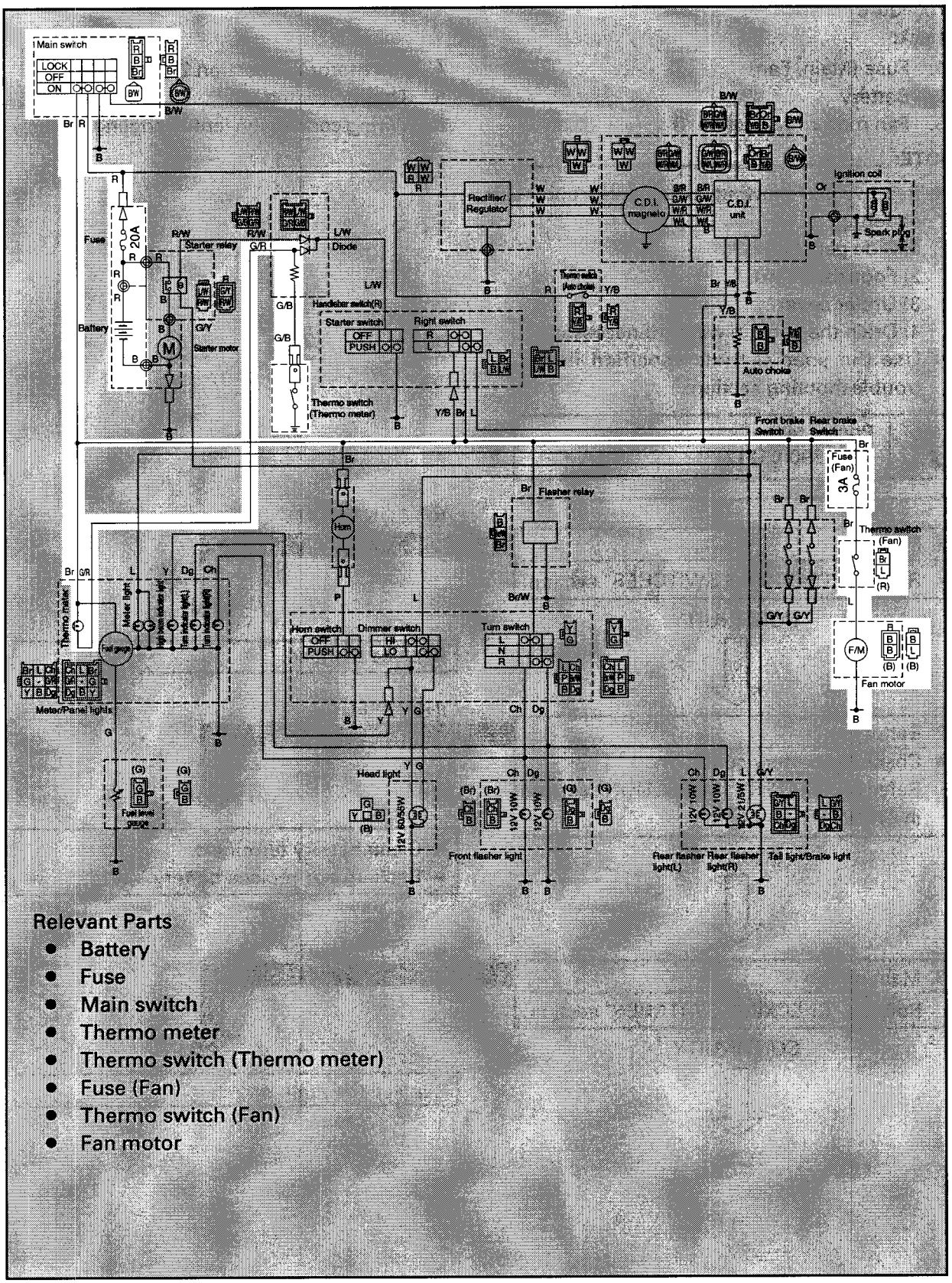
This circuit is not faulty.

NOTE:

Before reading the meter, stay put the float for more than three minutes respectively at "UP" or "DOWN".

COOLING SYSTEM

CIRCUIT DIAGRAM



Relevant Parts

- Battery
- Fuse
- Main switch
- Thermo meter
- Thermo switch (Thermo meter)
- Fuse (Fan)
- Thermo switch (Fan)
- Fan motor

TROUBLESHOOTING

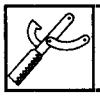
IF THE FAN MOTOR FAILS TO TURN.

Procedure
Check:

1. Fuse (Main, Fan)
2. Battery
3. Fan motor (inspection 1)
4. Fan motor (inspection 2)
5. Thermo switch
6. Wiring connection (entire cooling system)

NOTE:

- Remove the following parts before troubleshooting.
  1) Side panels
  2) Footrest board
  3) Under cover
  4) Drain the cooling water (If necessary)
- Use the special tools specified in the troubleshooting section.



Pocket tester:
90890-03112

1. Fuse
   Refer to "CHECKING SWITCHES" section.

NO CONTINUITY → Replace the fuse.

CONTINUITY ↓

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

INCORRECT → • Clean battery terminals.
• Recharge or replace battery.

CORRECT ↓

3. Main switch
   Refer to "CHECKING SWITCHES" section.

NO CONTINUITY → Replace the main switch.

CONTINUITY ↓

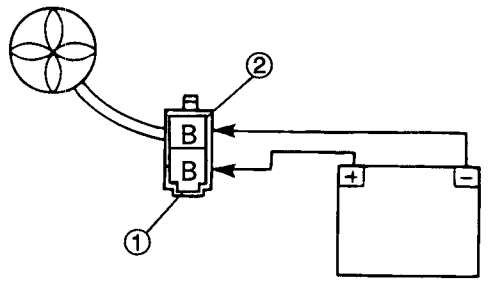
*

*

4. Fan motor (inspection 1)
- Disconnect the fan motor couplers.
- Connect the battery as shown.

Battery (+) lead → Blue terminal ①
Battery (-) lead → Black terminal ②

- Check the fan motor operation.

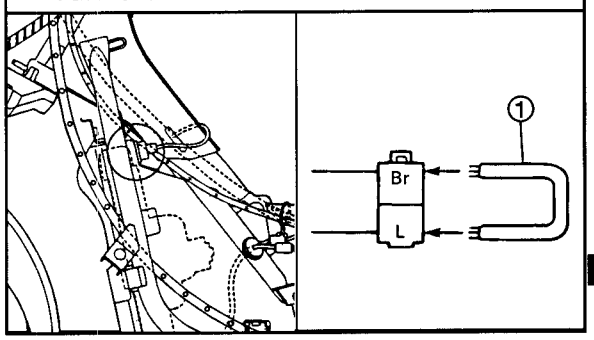


DOES NOT MOVE

Replace fan motor.

MOVES

5. Fan motor (inspection 2)
- Turn the main switch to "OFF".
- Remove the thermo switch lead from thermo switch.
- Connect jumper lead ① to thermo switch leads.
- Turn the main switch to "ON".



DOES NOT MOVE

The wiring circuit from battery to fan motor is faulty. Repair.

MOVES

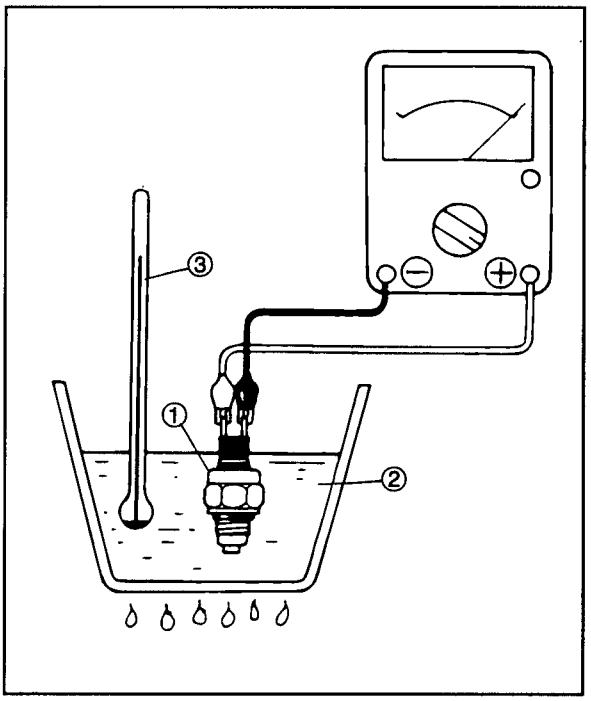
*

6. Thermo switch

- Remove the thermo switch from the radiator.
- Connect the pocket tester (Ωx1) to the thermo switch ①.
- Immerse the thermo switch in the water ②.
- Check the thermo switch for continuity.

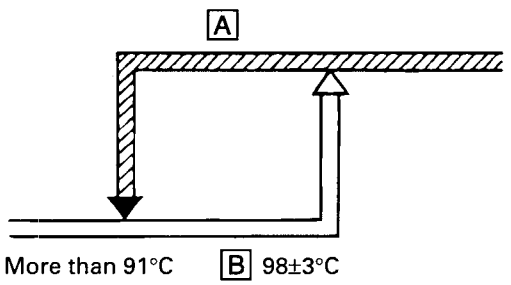
NOTE:

Measure temperatures while heating the coolant with the temperature gauge ③.



⚠WARNING

- Handle the thermo switch with special care.
- Never subject it to strong shocks or allow it to be dropped.
- Should it be dropped, it must be replaced. Do not touch the thermo switch to the bottom of the heated vessel.



A Thermo switch "ON" (98±3°C)
B Thermo switch "OFF" (More than 90°C)

OUT OF SPECIFICATION

Replace the thermo switch.

CORRECT

7. Wiring connection

- Check the connection of the entire cooling system.
  Refer to "CIRCUIT DIAGRAM" section.

POOR CONNECTION

Correct

TROUBLESHOOTING

IF THE THERMO METER FAILS TO MOVE, WHEN ENGINE IS WARM

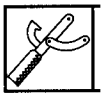
Procedure

Check:

1. Fuse (Main, Fan)
2. Battery
3. Main switch
4. Thermo switch
5. Voltage
6. Thermo meter
7. Wiring connection (entire cooling system)

NOTE:

- Remove the following parts before troubleshooting.
  1) Fuel tank
  2) Cowling body
- Use the special tools specified in the troubleshooting section.



Pocket tester:
90890-03112

1. Fuse
   Refer to "CHECKING SWITCHES" section.

NO CONTINUITY → Replace the fuse.

CONTINUITY ↓

2. Battery
   - Check the battery condition.
     Refer to "BATTERY INSPECTION' section in CHAPTER 3.

INCORRECT →
- Clean battery terminals.
- Recharge or replace battery.

CORRECT ↓

3. Main switch
   Refer to "CHECKING SWITCHES" section.

NO CONTINUITY → Replace the main switch.

CONTINUITY ↓

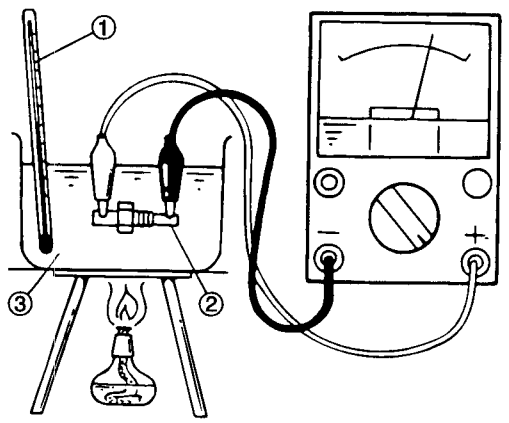
*

*

4. Thermo unit

- Drain the coolant, and remove the thermo switch from the radiator.
- Immerse the thermo switch ② in the coolant ③.

① Thermometer



Thermo switch	Temperature
ON	120±3°C
OFF	More than 113°C

OUT OF SPECIFICATION

Replace the thermo switch unit.

MEETS SPECIFICATION

⚠WARNUNG

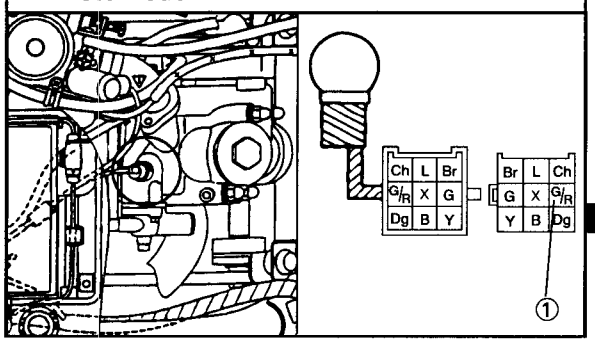
- Handle the thermo switch with special care.
- Never subject it to strong shocks or allow it to be dropped. Should it be dropped, it must be replaced.
- Do not touch the thermo switch to the bottom of the heated vessel.

5. Voltage

- Connect the pocket tester (DC20V) to the thermo meter lead.

Tester (+) lead → Green/Red terminal ①
Tester (-) lead → Frame ground

- Turn the main switch to "ON".
- Check for voltage (12V) on the thermo meter lead.

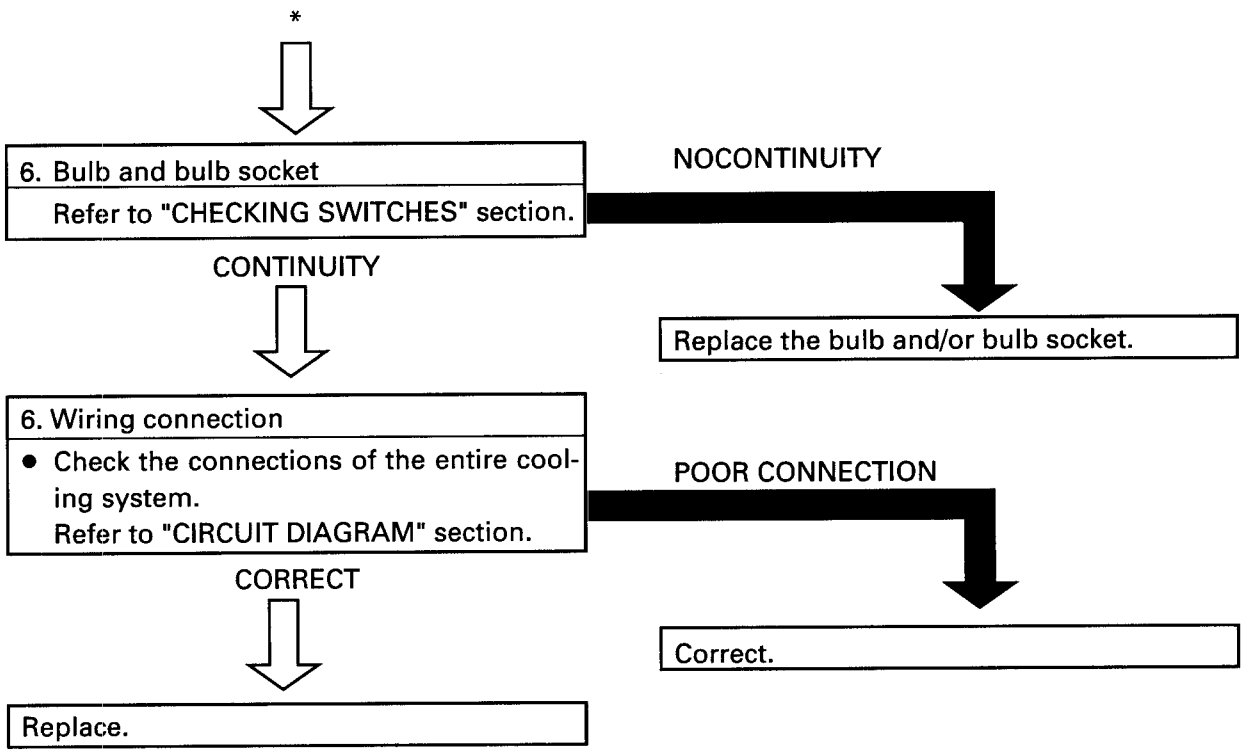


OUT OF SPECIFICATION

The wiring circuit from main switch to thermo meter is faulty. Repair.

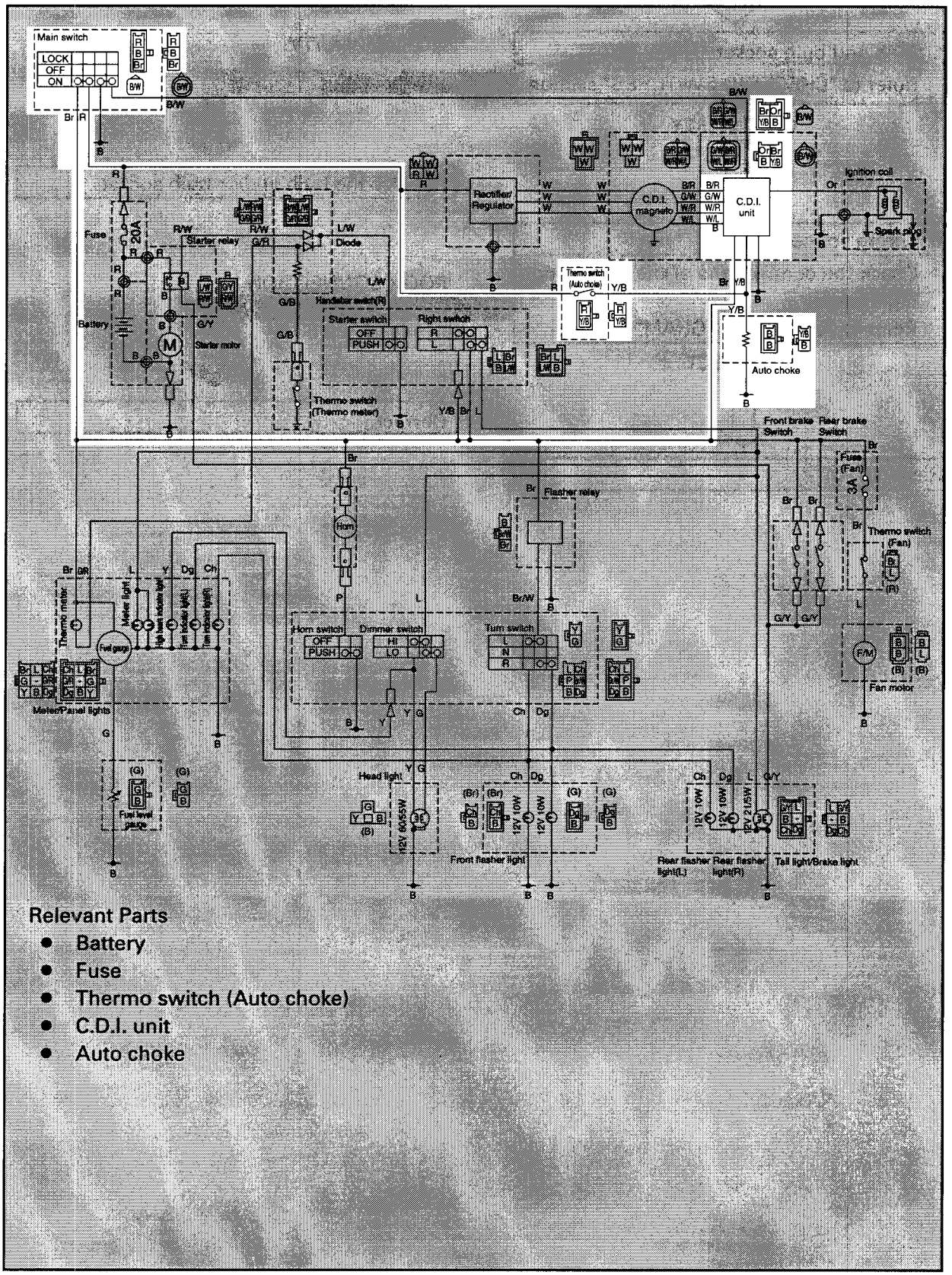
CORRECT

*


*
6. Bulb and bulb socket
Refer to "CHECKING SWITCHES" section.
NOCONTINUITY
Replace the bulb and/or bulb socket.
CONTINUITY
6. Wiring connection
• Check the connections of the entire cooling system.
Refer to "CIRCUIT DIAGRAM" section.
POOR CONNECTION
Correct.
CORRECT
Replace.

AUTO CHOKE SYSTEM

CIRCUIT DIAGRAM



Relevant Parts

- Battery
- Fuse
- Thermo switch (Auto choke)
- C.D.I. unit
- Auto choke

TROUBLESHOOTING

IF THE AUTO CHOKE FAILS TO OPERATE.

Procedure
Check:

1. Fuse (Main)
2. Battery
3. Main switch
4. Thermo switch
5. Auto choke resistance
6. Voltage
7. Wiring connection (entire auto choke system)

NOTE:

- Remove the following parts before troubleshooting.
  1) Footrest board
  2) Side cover
  3) Rectifier hood
  4) Bottom cover
- Use the special tools specified in the troubleshooting section.

Pocket tester:
90890-03112

1. Fuse
   Refer to "CHECKING SWITCHES" section.

NO CONTINUITY → Replace the fuse.

CONTINUITY ↓

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

INCORRECT → Clean battery terminals. Recharge or replace battery.

CORRECT ↓

3. Main switch
   Refer to "CHECKING SWITCHES" section.

NO CONTINUITY → Replace the main switch.

CONTINUITY ↓

*

*

5. Thermo switch

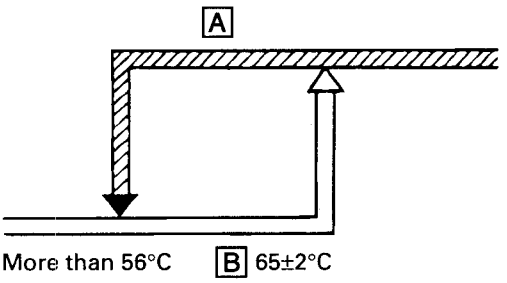
- Disconnect the thermo switch from the radiator.
- Connect the pocket tester (Ωx1) to the thermo switch ①.
- Immerse the thermo switch in the coolant ②.
- Check the thermo switch for continuity.

NOTE:

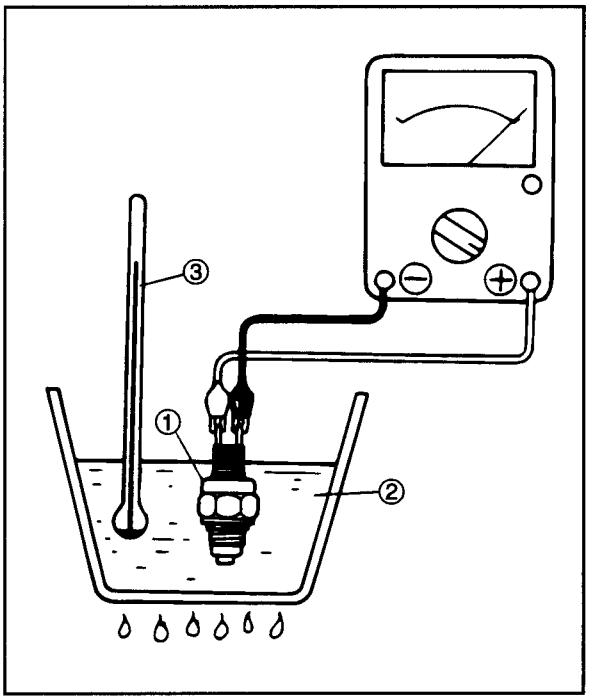
Note temperatures while heating the water with the temperature gauge ③.

⚠WARNUNG

- Handle the thermo switch with special care.
- Never subject it to strong shocks or allow it to be dropped. Should it be dropped, it must be replaced.
- Do not touch the thermo switch to bottom of the heated vessel.



A Thermo switch "ON".(65±2°C)
B Thermo switch "OFF".(More than 56°C)

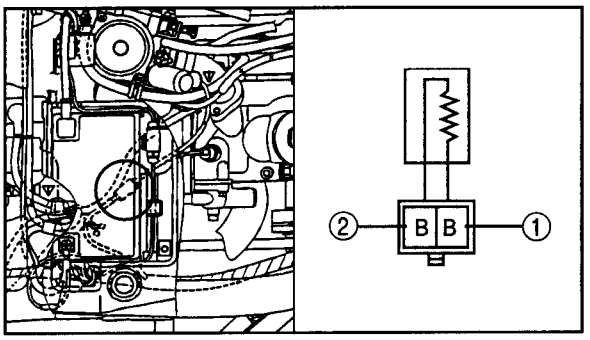


OUT OF SPECIFICATION

Replace the thermo switch.

CORRECT

*



6. Auto choke unit resistance
- Disconnect the auto choke unit coupler from the wireharness.
- Connect the pocket tester (Ωx1) to the auto choke unit coupler lead.
  Tester (+) lead → Black terminal ①
  Tester (-) lead → Black terminal ②

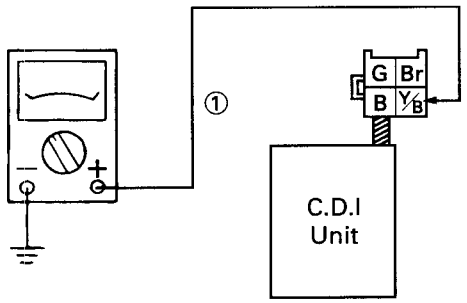
Auto choke unit resistance:
30 Ω (20°C)

OUT OF SPECIFICATION → Replace the auto choke.

MEETS SPECIFICATION

7. Voltage (temperature under 65°C)
- Connect the pocket tester (DC20V) to the C.D.I. unit.

Tester (+) lead →
Yellow/Black terminal ① (1 terminal)
Tester (-) lead → Frame ground



- Turn the main switch to on, and start the engine.
- Check for voltage (12V) on "Yellow/Red" terminal at the ignitor unit.

OUT OF SPECIFICATION → Replace the ignitor unit.

MEETS SPECIFICATION

8. Wiring connection
- Check the connection of the entire auto choke system.
  Refer to "CIRCUIT DIAGRAM" section.

POOR CONNECTION → Correct.

TROUBLESHOOTING

NOTE:

The following troubleshooting does not cover all the possible causes of trouble. It should be helpful, however, as a guide to troubleshooting. Refer to the relative procedure in this manual for inspection, adjustment and replacement of parts.

STARTING FAILURE/HARD STARTING

FUEL SYSTEM

Fuel tank

- Empty
- Clogged fuel tank cap breather hole
- Deteriorated fuel or fuel containing water or foreign material

Fuel pump

- Clogged fuel hose
- Clogged fuel pump
- Broken vacuum hose or improperly hose setting

Carburetor

- Deteriorated fuel or fuel containing water or foreign material
- Clogged pilot jet
- Clogged air passage
- Improperly set pilot air screw
- Clogged pilot air passage
- Improperly sealed valve seat
- Improperly adjusted fuel level
- Clogged starter jet
- Sucked-in air

Auto choke

- Starter plunger malfunction
- Wax malfunction
- P.T.C. thermister malfunction
- Ignitor unit malfunction
- Thermo switch malfunction

Air cleaner

- Clogged air cleaner element
- Improper air cleaner setting

COMPRESSION SYSTEM

Cylinder and cylinder head

- Loose spark plug
- Loose cylinder head
- Broken cylinder head gasket
- Broken cylinder gasket
- Worn, damaged or seized cylinder

Piston and piston ring

- Worn piston
- Worn, fatigued or broken piston ring
- Seized piston ring
- Seized or damaged piston

Valve system

- Improperly adjusted valve clearance
- Improperly sealed valve
- Improperly contacted valve and valve seat
- Improper valve timing
- Broken valve spring
- Seized valve

IGNITION SYSTEM

Battery
- Improperly charged battery
- Faulty battery

Fuse
- Burnt out, improper connection

Spark Plug
- Improper plug gap
- Worn electrodes
- Wire between terminals broken
- Improper heat range
- Faulty spark plug cap

Ignition coil
- Broken or shorted primary/secondary coil
- Faulty high tension cord
- Broken ignition coil body

Ignition system
- Faulty ignitor unit
- Faulty pickup coil
- Broken magneto woodruff key

Switch
- Faulty main switch
- Faulty front and/or rear brake switch

Wiring
- Loose battery terminal
- Loose coupler connection
- Improperly grounded
- Broken wireharness

POOR IDLE SPEED PERFORMANCE

POOR IDLE SPEED PERFORMANCE

Carburetor
- Loose or clogged pilot jet
- Damaged carburetor joint
- Improperly tightened carburetor joint clamp hose
- Improperly adjusted idle speed (Pilot screw), (Throttle stop screw), (CO test)
- Improperly adjusted throttle cable
- Flooded carburetor

Auto choke
- Faulty starter plunger
- Improper wax operation
- Faulty ignitor unit
- Faulty P.T.C. thermister

Air cleaner
- Clogged air cleaner element

Ignition system
- Faulty spark plug
- Faulty high tension cord
- Faulty ignitor unit
- Faulty pick up coil
- Faulty ignition coil

Valve system
- Improperly adjusted valve clearance

POOR MEDIUM AND HIGH SPEED PERFORMANCE

POOR MEDIUM AND HIGH SPEED PERFORMANCE

Refer to "STARTING FAILURE/HARD STARTING" section. (Fuel system, electrical system, compression system and valve train)

Carburetor

- Improperly adjusted fuel level
- Clogged main nozzle
- Clogged or loose pilot jet

Air cleaner

- Clogged air cleaner element

POOR SPEED PERFORMANCE

POOR SPEED PERFORMANCE

Ignition system

- Dirty spark plug
- Improper heat range
- Faulty ignitor unit
- Faulty pick up coil

Fuel system

- Clogged fuel tank cap breather hole
- Clogged air cleaner element
- Clogged jet
- Improperly adjusted fuel level
- Improper carburetor air vent hose setting

Compression system

- Worn cylinder
- Worn or seized piston ring
- Cylinder head gasket broken
- Cylinder gasket broken
- Carbon deposit build-up
- Improperly adjusted valve clearance
- Improperly contacted valve and valve seat
- Faulty valve timing

Clutch

- Refer to UCLUTCH SLIPPING/DRAGGING" section

Engine oil

- Improper oil level (low or over oil level)
- Improper quality (Low oil viscosity)
- Deterioration
- Clogged oil passage

Brakes

- Dragging brake

FAULTY CLUTCH

WHEN ENGINE IS RUN, SCOOTER DOES NOT RUN

V belt
- Worn/bent/slipping

Cam, slider
- Worn/damaged

Compression spring
- Damage

Gears
- Damage

CLUTCH SLIPPING

Clutch weight spring
- Worn/loose

Clutch shoe
- Worn/damaged

Primary sliding sheave
- Seized

POOR STARTING PERFORMANCE

V-belt
- Slipping/oily V-belt

Primary sliding sheave
- Improper operation
- Damage

Compression spring
- Worn/loose

Secondary sliding sheave
- Improper operation
- Worn guide pin groove
- Worn guide Din

Clutch shoe
- Worn/bent

POOR SPEED PERFORMANCE

V belt
- Worn
- Oily V belt

Roller weight
- Worn/improper operation

Primary/secondary sheave
- Worn

OVER HEATING OR OVER-COOLING

OVER HEATING

Ignition system

- Improper spark plug gap
- Improper spark plug heat range
- Faulty ignitor unit

Fuel system

- Improper carburetor setting
- Improper fuel level adjustment
- Clogged air cleaner element

Compression system

- Heavy carbon deposit build-up
- Improperly adjusted valve timing
- Improperly adjusted valve clearance

Engine oil

- Incorrect engine oil level
- Improper engine oil quality (High viscosity)
- Low engine oil quality

Brakes

- Dragging brake

Cooling system

- Inoperative fan motor
- Faulty thermostat
- Faulty thermo switch
- Incorrect coolant level (low coolant level)
- Faulty radiator (Clogged, damage)
- Faulty radiator cap
- Damaged impeller shaft
- Disconnected fan motor connector

OVER-COOLING

Cooling system

- Faulty cooling fan
- Faulty thermostat
- Faulty thermo switch

FAULTY BRAKE

POOR BRAKING EFFECT

Front brake

- Worn brake pad
- Worn brake disc
- Air in brake fluid
- Leaking brake fluid
- Faulty master cylinder kit
- Faulty caliper seal kit
- Loose union bolt
- Broken brake hose
- Oily or greasy brake pad

Rear brake

- Improper brake lever adjustment
- Worn brake shoe
- Improper brake shoe contact
- Worn camshaft
- Worn brake drum
- Mud or water into brake drum inside
- Oily or greasy brake lining
- Faulty brake cable
- Broken or fatigued tension spring
- Faulty camshaft, cam lever

FRONT FORK MALFUNCTION

OIL LEAKAGE

- Bent, damaged or rusty inner tube
- Damaged or cracked outer tube
- Damaged oil seal lip
- Loose hexagon bolt
- Damaged cap bolt O-ring

MALFUNCTION

- Bent inner tube
- Deformed outer tube
- Damaged fork spring
- Bent cylinder complete
- Improper oil viscosity (High viscosity)
- Improper oil level

INSTABLE HANDLING

INSTABLE HANDLING

Handlebars

- Loose handlebar tightening bolt

Steering

- Loose or overtightening steering nut
- Bent under bracket
- Damaged bearing or ball race

Front forks

- Uneven oil levels on both sides
- Broken front fork spring
- Twisted front forks

Wheels

- Incorrect wheel balance
- Deformed wheel rim
- Unevenly worn tires
- Incorrect tire pressure
- Loose bearing
- Bent or loose wheel axle

Frame

- Twisted
- Damaged head pipe bearings

Rear arm

- Faulty bearings
- Bent rear arm

Rear shock absorber

- Fatigued spring
- Improperly adjusted spring preload
- Oil leakage

Cowling

- Damage
- Improper mounting

STARTER MOTOR DOES NOT OPERATE

STARTER MOTOR DOES NOT OPERATE

Battery

- Insufficient battery capacity
- Faulty battery

Fuse

- Burnt out, improper connection

Switch

- Faulty main switch
- Faulty front and/or rear brake switch
- Faulty starter relay

Wireharness

- Loose battery terminal
- Loosely connected coupler
- Improperly grounded
- Broken wireharness

Starter motor

- Worn brush
- Faulty commutator
- Broken armature coil

Engine

- Seized engine

FAULTY SIGNAL AND LIGHTING SYSTEM

HEADLIGHT DARK
- Improper bulb
- Too many electric accessories
- Hard charging
- Faulty rectifier/regulator
- Faulty battery
- Improperly connected coupler, connector, wireharness
- Improperly grounded
- Faulty main switch or Lights (dimmer) switch
- Bulb life expired

BULB BURNT OUT
- Improper bulb
- Faulty battery
- Faulty rectifier/regulator
- Improperly grounded
- Faulty main switch
- Bulb life expired

FLASHER DOES NOT BLINK
- Improperly grounded
- Insufficient battery capacity
- Faulty fuse
- Faulty turn switch
- Faulty flasher relay
- Broken wireharness, incorrect coupler connection
- Bulb burnt out

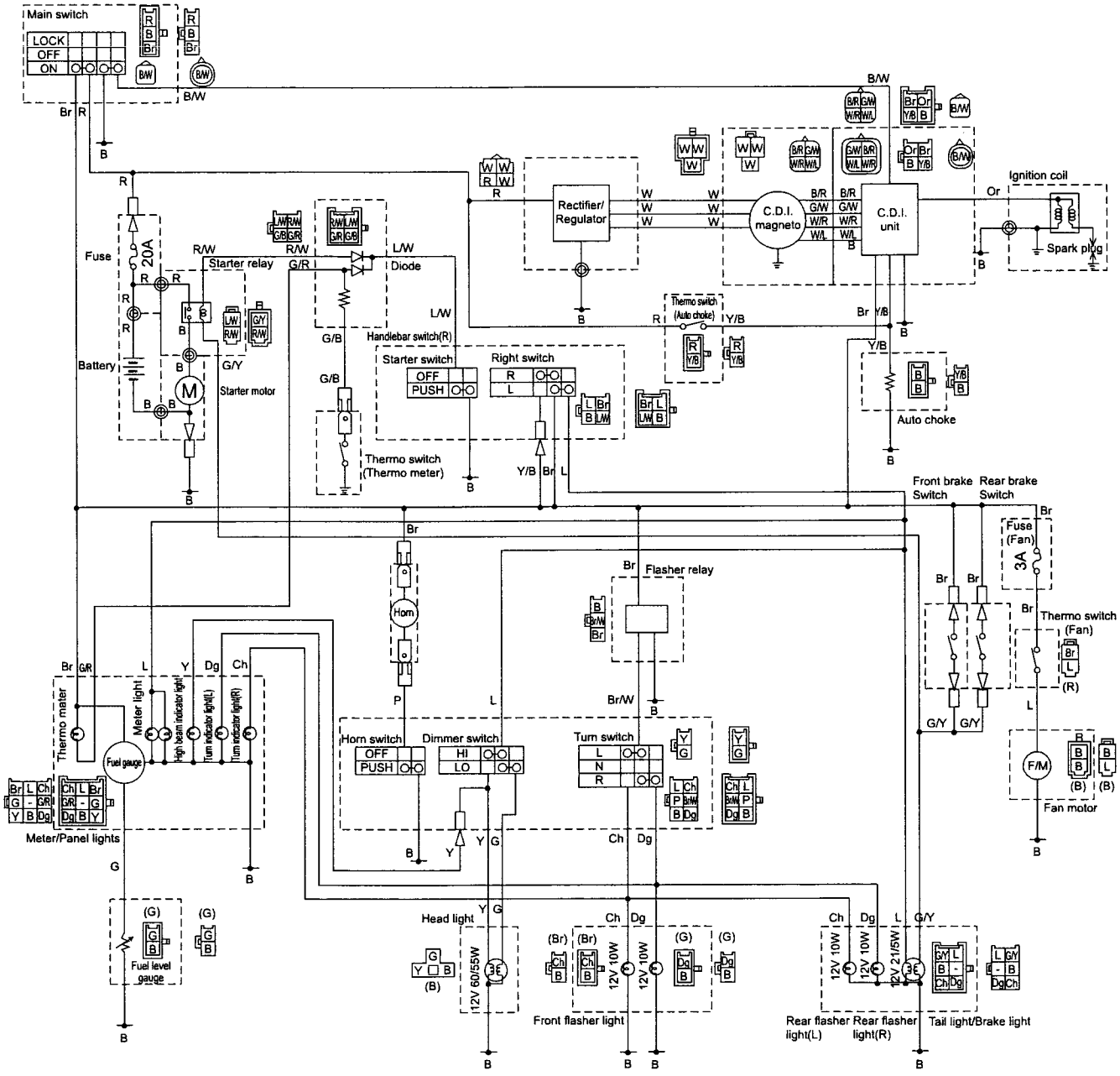
FLASHER KEEPS ON
- Faulty flasher relay
- Insufficient battery capacity (nearly discharged)
- Bulb burnt out (front or rear)

FLASHER BLINKS SLOWER
- Faulty flasher relay
- Insufficient battery capacity (nearly discharged)
- Improper bulb
- Faulty main and/or turn switch

FLASHER BLINKS QUICKER
- Improper bulb
- Faulty flasher relay

HORN DOES NOT SOUND
- Faulty battery
- Faulty fuse
- Faulty main and/or horn switch
- Improper horn adjustment
- Faulty horn (burnt coil, connector)
- Broken wireharness

YP125E WIRING DIAGRAM



COLOR CODE

B	Black
Br	Brown
Ch	Chocolate
Dg	Dard green
G	Green
L	Blue
Or	Orange
P	Pink
R	Red
W	White
Y	Yellow
B/R	Black/Red
B/W	Black/White
Br/W	Brown/White
G/B	Green/Black
G/R	Green/Red
G/W	Green/White
G/Y	Green/Yellow
L/W	Blue/White
R/W	Red/White
W/L	White/Blue
W/R	White/Red
Y/B	Yellow/Black