YAMAHA MBK

YP250 2000

5GM2-AE1

SUPPLEMENTARY SERVICE MANUAL

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the YP250. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

YP250 SERVICE MANUAL: 4UC-AE1
YP250 (K) '98 SUPPLEMENTARY SERVICE MANUAL: 4UC-AE2
YP250D '98 SUPPLEMENTARY SERVICE MANUAL: 5DF-AE1

YP250 2000
SUPPLEMENTARY
SERVICE MANUAL

First Edition, November 1999

EB001000

NOTICE

This manual was produced by the Yamaha Motor Company primarily for use by Yamaha/MBK dealers and their qualified mechanics. It is not possible to include all the knowledge of a mechanic in one manual, so it is assumed that anyone who uses this book to perform maintenance and repairs on Yamaha/MBK scooter has a basic understanding of the mechanical ideas and the procedures of scooter repair. Repairs attempted by anyone without this knowledge are likely to render the scooter unsafe and unfit for use.

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

NOTE:

Designs and specifications are subject to change without notice.

IMPORTANT INFORMATION

Particularly important information is distinguished in this manual by the following notations.

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

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

CAUTION: A CAUTION indicates special precautions that must be taken to avoid damage to the scooter.

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

YP002000

HOW TO USE THIS MANUAL

MANUAL ORGANIZATION

This manual consists of chapters for the main categories of subjects. (See “Illustrated symbols”)

1st title ①: This is the title of the chapter with its symbol on the upper right corner of each page.

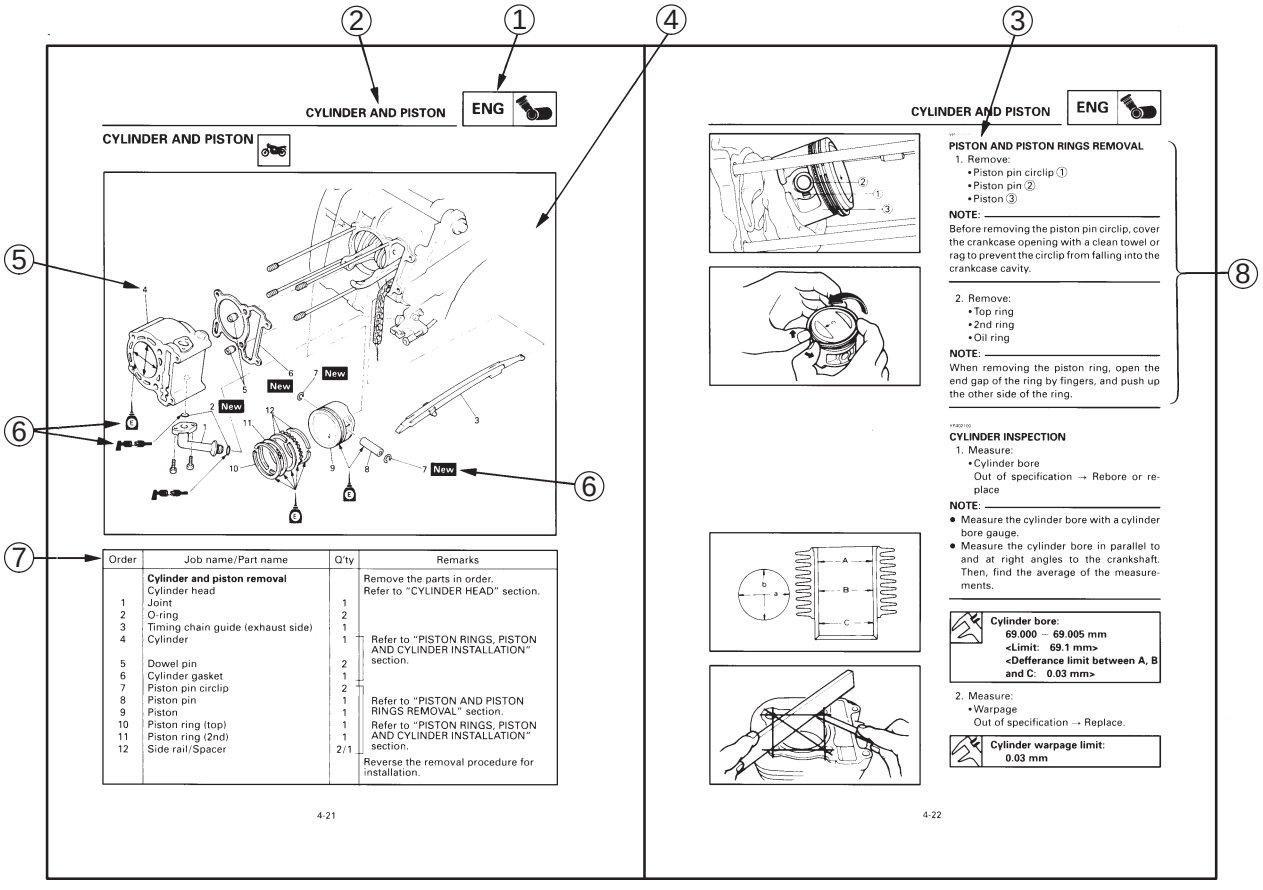
2nd title ②: This title indicates the section of the chapter and only appears on the first page of each section. It is located in the upper left corner of the page.

3rd title ③: This title indicates a sub-section that is followed by step-by-step procedures accompanied by corresponding illustrations.

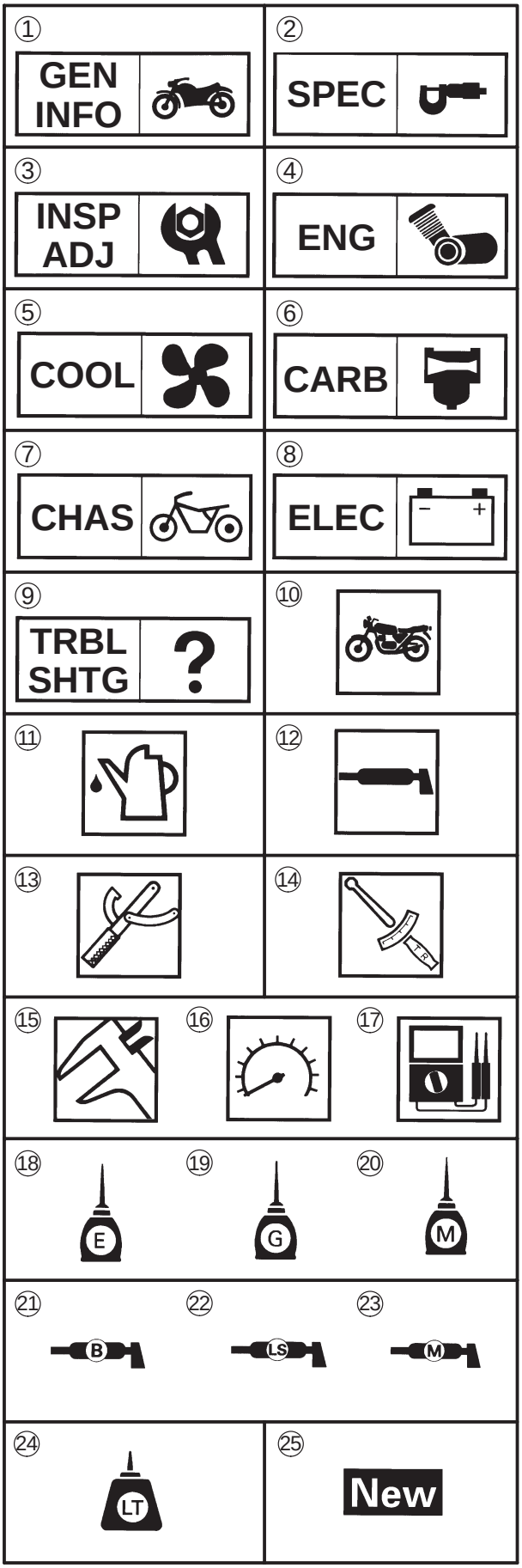
EXPLODED DIAGRAMS

To heps identify parts and clarify procedure steps, there are exploded diagrams at start of each removal and disassembly section.

1. An easy-to-see exploded diagram ④ is provided for disassembly and assembly jobs.
2. Numbers ⑤ are given in the order of jobs in the exploded diagram. A number that is enclosed by a circle indicates a disassembly step.
3. An explanation of jobs and notes is presented in an easy-to-read way by the use of symbol marks ⑥. The meanings of the symbol marks are given on the next page.
4. A job instruction chart ⑦ accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc.
5. For jobs requiring more information, the step-by-step format supplements ⑧ are given in addition to the exploded diagram and the job instruction chart.



Order	Job name/Part name	Q'ty	Remarks
	Cylinder and piston removal		Remove the parts in order.
	Cylinder head		Refer to “CYLINDER HEAD” section.
1	Joint	1	
2	O-ring	2	
3	Timing chain guide (exhaust side)	1	
4	Cylinder	1	Refer to “PISTON RINGS, PISTON AND CYLINDER INSTALLATION” section.
5	Dowel pin	2	
6	Cylinder gasket	1	
7	Piston pin circlip	2	
8	Piston pin	1	Refer to “PISTON AND PISTON RINGS REMOVAL” section.
9	Piston	1	
10	Piston ring (top)	1	Refer to “PISTON RINGS, PISTON AND CYLINDER INSTALLATION” section.
11	Piston ring (2nd)	1	
12	Side rail/Spacer	2/1	
			Reverse the removal procedure for installation.



EB003000

ILLUSTRATED SYMBOLS

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

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

Illustrated symbols ⑩ to ⑰ are used to identify the specifications appearing in the text.

⑩ Possible to maintain with engine mounted
⑪ Filling fluid
⑫ Lubricant
⑬ Special tool
⑭ Tightening
⑮ Wear limit, clearance
⑯ Engine speed
⑰ Ω, V, A

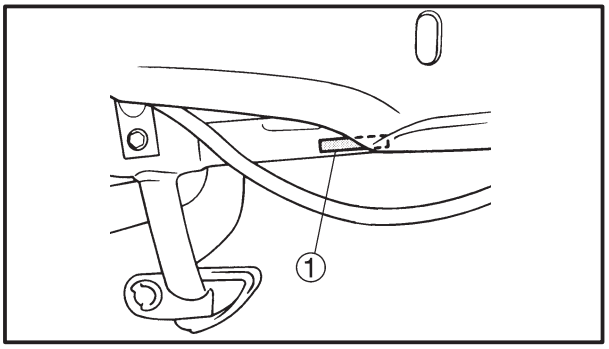
Illustrated symbols ⑱ to ㉓ in the exploded diagrams indicate the types of lubricants and lubrication points.

⑱ Apply engine oil
⑲ Apply gear oil
⑳ Apply molybdenum disulfide oil
㉑ Apply wheel bearing grease
㉒ Apply lightweight lithium-soap base grease
㉓ Apply molybdenum disulfide grease

Illustrated symbols ㉔ to ㉕ in the exploded diagrams indicate the where to apply locking agent ㉔ and when to install new parts ㉕.

㉔ Apply locking agent (LOCTITE®)
㉕ Use new one

CONTENTS



YP100000

GENERAL INFORMATION

SCOOTER IDENTIFICATION

YP100010

VEHICLE IDENTIFICATION NUMBER (for E)

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

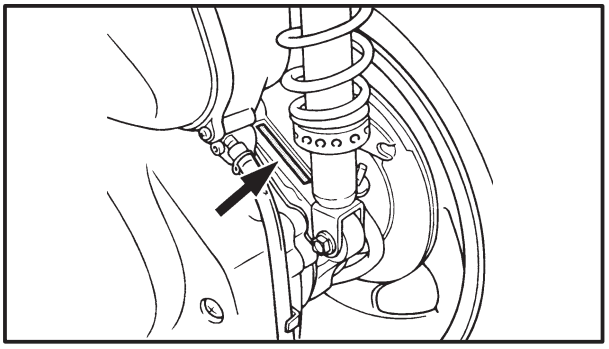
NOTE:

The vehicle identification number is used to identify your scooter and may be used to register your scooter with the licensing authority in your country.

YP100020

FRAME SERIAL NUMBER (except for E)

The frame serial number ① is stamped into the right side of the frame.



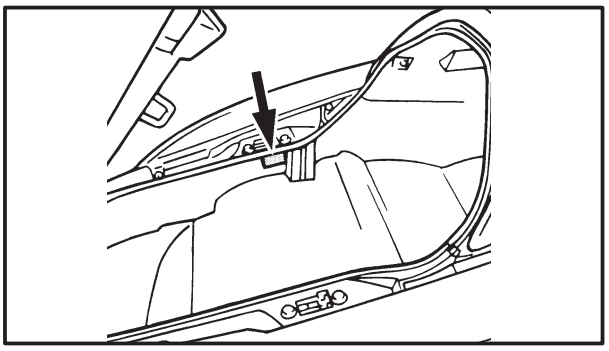
EB100030

ENGINE SERIAL NUMBER

The engine serial number is stamped into the crankcase.

NOTE:

Designs and specifications are subject to change without notice.



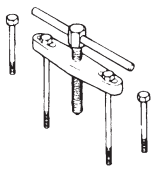
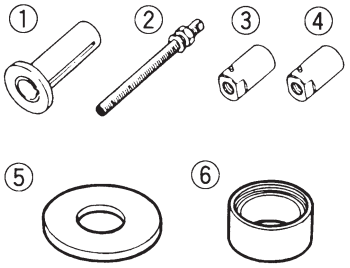
MODEL LABEL

The model label is affixed under the seat.
This information will be needed to order spare parts.

EB102000

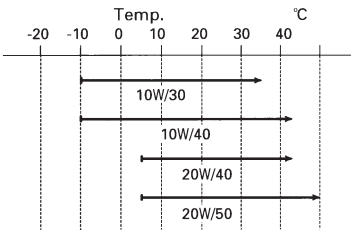
SPECIAL TOOLS

The following special tools are necessary for complete and accurate tune-up and assembly.
Use only the appropriate special tools; this will help prevent damage caused by the use of inappropriate tools or improvised techniques.
When placing an order, refer to the list provided below to avoid any mistakes.

Tool No.	Tool name/Usage	Illustration
90890-01135	Crankcase separating tool This tool is used to remove the crankshaft.	
Installer pot 90890-01274 Bolt 90890-01275 Adaptor 90890-01280 90890-01478 Spacer 90890-01016 90890-01288	Crankshaft installer pot/bolt/adapter/spacer These tools are used to install the crankshaft.	

SPECIFICATIONS

GENERAL SPECIFICATIONS

Model	YP250
Model code:	5GM2, 5GM3
Dimensions:	
Overall length	2,140 mm
Overall width	780 mm
Overall height	1,350 mm
Seat height	730 mm
Wheelbase	1,535 mm
Minimum ground clearance	120 mm
Minimum turning radius	2,700 mm
Basic weight:	
With oil and full fuel tank	168 kg
Engine:	
Engine type	Liquid-cooled 4-stroke, SOHC
Cylinder arrangement	Forward-inclined single cylinder
Displacement	0.249L (249 cm^3)
Bore √ stroke	69.0 √ 66.8 mm
Compression ratio	10 : 1
Compression pressure (STD)	1,400 kPa (14 kg/cm^2, 14 bar) at 500 r/min
Starting system	Electric starter
Lubrication system:	Wet sump
Oil type or grade:	
Engine oil	 API STANDERD: SE or higher grade
Periodic oil change	1.2 L
Total amount	1.4 L
Transmission oil	
Total amount	0.25 L
Radiator capacity:	
Total amount (including all routes)	1.4 L
Air filter:	
Carburetor side	Wet type element
Crankcase side	Dry type element
Fuel:	
Type	Regular unleaded gasoline
Fuel tank capacity	12 L

Model		YP250
Carburetor:		
Type/quantity		Y28V-1E/1
Manufacturer		TEIKEI
Spark plug:		
Type		DR8EA
Manufacturer		NGK
Spark plug gap		0.6 ~ 0.7 mm
Clutch type:		Dry, centrifugal automatic
Transmission:		
Primary reduction system		Helical gear
Primary reduction ratio		40/15 (2.666)
Secondary reduction system		Helical gear
Secondary reduction ratio		38/15 (2.533)
Transmission type		Single speed automatic (V-belt type)
Operation		Centrifugal automatic type
Single speed automatic		2.44 ~ 0.83:1
Chassis:		
Frame type		Steel tube underbone
Caster angle		28°
Trail		103 mm
Tire:		
Type		Tubeless
Size	front	110/90-12 64L
	rear	130/70-12 62L
Manufacturer	front	IRC/MICHELN
	rear	IRC/MICHELN
Type	front	MB67/BOPPER
	rear	MB67/BOPPER
Tire pressure (cold tire):		
Maximum load-except motorcycle		187 kg
Loading condition A*		0 ~ 90 kg
	front	175 kPa (1.75 kg/cm^2, 1.75 bar)
	rear	200 kPa (2.0 kg/cm^2, 2.0 bar)
Loading condition B*		90 ~ 205 kg
	front	200 kPa (2.0 kg/cm^2, 2.0 bar)
	rear	225 kPa (2.25 kg/cm^2, 2.25 bar)
High-speed riding		
	front	200 kPa (2.0 kg/cm^2, 2.0 bar)
	rear	225 kPa (2.25 kg/cm^2, 2.25 bar)

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

Model	YP250
Brake:	
Front brake type	Single disc brake
operation	Right hand operation
Rear brake type	Single disc brake
operation	Left hand operation
Suspension:	
Front suspension	Telescopic fork
Rear suspension	Unit swing
Shock absorber:	
Front shock absorber	Coil spring/Oil damper
Rear shock absorber	Coil spring/Oil damper
Wheel travel:	
Front wheel travel	100 mm
Rear wheel travel	90 mm
Electrical:	
Ignition system	T.C.I. (Digital)
Generator system	A.C. magneto
Battery type	GT7B-4
Battery capacity	12 V 6.5 AH
Headlight type:	Quartz bulb (Halogen)
Bulb wattage √ quantity:	
Headlight (High)	12 V 60 W/55 W √ 1
Headlight (Low)	12 V 55 W √ 1
Auxiliary light	12 V 5 W √ 1
Tail/brake light	12 V 5 W/21 W √ 2
Flasher light (Front)	12 V 21 W √ 2
Flasher light (Rear)	12 V 16 W √ 2
Meter light	12 V 1.7 W √ 3
High beam indicator light	12 V 1.7 W √ 1
Oil indicator light	12 V 1.7 W √ 1
Turn indicator light	12 V 3.4 W √ 2
License light	12 V 5 W √ 1

MAINTENANCE SPECIFICATIONS

ENGINE

Item	Standard	Limit
Cylinder head:		
Warp limit	※	0.05 mm
Cam chain:		
Cam chain type/No. of links	DID SC※A-0404A SDH/104	※
Cam chain adjustment method	Automatic	※
Automatic centrifugal clutch:		
Clutch shoe thickness	3.3 mm	2.0 mm
Clutch housing inside diameter	135 mm	135.5 mm
Clutch shoe spring free length	28.1 mm	※
Weight outside diameter	20 mm	19.5 mm
Clutch – in revolution	2,250 2,850 r/min	※
Clutch – stall revolution	3,700 4,700 r/min	※
V-belt:		
V-belt width	22.6 mm	21.0 mm
Carburetor:		
Type	Y28V-1E/1	※
I.D. mark	5GM 10	※
Ventuly outside diameter	ø28	※
Main jet (M.J)	#128	※
Main air jet (M.A.J)	ø0.9	※
Jet needle (J.N)	5D9B-3/5	※
Throttle valve size (Th.V)	11	※
Pilot air jet (P.A.J.1)	ø1.2	※
Needle jet (N.J)	#85	※
Pilot outlet (P.O)	ø0.8	※
Pilot jet (P.J)	#43	※
Bypass (B.P)	0.7 √ 3	※
Pilot screw (P.S)	2 1/2	※
Valve seat size (V.S)	1.4	※
Starter jet 1 (G.S.1)	ø0.5	※
Starter jet 2 (G.S.2)	ø0.5	※
Float height (F.H)	26.5 27.5 mm	※
Engine idle speed	1,300 1,500 r/min	※
Intake vacuum	29.3 36.0 kPa (220 270 mmHg)	※
Oil temperature	65 75 C	※
Cooling water temperature	80 C	※
Fuel pump:		
Type	Electrical	※
Model/manufacturer	2GV/MITSUBISHI	※

Item	Standard	Limit
Radiator:		
Type	Cooling fin with electric fan	※
Width/height/thickness	140/238/24 mm	※
Radiator cap opening pressure	110 ~ 140 kPa (1.1 ~ 1.4 kg/cm^2, 1.1 ~ 1.4 bar)	※
Radiator capacity	1.4 L	※
Reservoir tank capacity	0.4 L	※

TIGHTENING TORQUES

ENGINE

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque		Remarks
				Nm	m-kg	
Oil check bolt	—	M6	1	7	0.7	
Exhaust pipe stud bolt	—	M8	2	13	1.3	
Air induction system pipe stud bolt	—	M6	2	10	1.0	
Spark plug	—	M12	1	18	1.8	
Cam sprocket cover	Bolt	M6	2	10	1.0	
Cylinder head and cylinder	Nut	M8	4	22	2.2	
Cylinder head and cylinder (Cam chain side)	Bolt	M6	2	10	1.0	
Valve cover	Bolt	M6	5	10	1.0	
Rotor	Nut	M16	1	80	8.0	
Valve adjuster locknut	Nut	M6	2	14	1.4	
Cam shaft bearing stopper	Bolt	M6	2	8	0.8	
Cam sprocket	Bolt	M10	1	60	6.0	
Cam chain tensioner						
(Body)	Bolt	M6	2	10	1.0	
(Plug)	Bolt	M8	1	8	0.8	
Guide stopper 2	Bolt	M6	1	10	1.0	
Water pump housing cover	Bolt	M6	3	10	1.0	
Hose joint	—	M6	2	7	0.7	
Thermostatic valve cover	Bolt	M6	2	10	1.0	
Filler neck supporting	Bolt	M5	1	5	0.5	
Oil pump	Screw	M6	2	7	0.7	
Oil pump cover	Bolt	M3	1	1	0.1	
Oil strainer cover	Bolt	M35	1	32	3.2	
Carburetor joint	Bolt	M6	2	10	1.0	
Carburetor joint and carburetor	Nut	M6	2	10	1.0	
Air filter assembly	Bolt	M6	2	7	0.7	
Air filter cover	Screw	M5	7	1	0.1	
Exhaust pipe assembly	Nut	M8	2	20	2.0	
Muffler	Bolt	M10	3	53	5.3	
Muffler and exhaust pipe	Bolt	M8	1	14	1.4	
Protector (Exhaust pipe)	Screw	M6	2	10	1.0	LT
Protector (Muffler end cap)	Screw	M6	3	10	1.0	LT
Air induction system pipe	Nut	M6	2	12	1.2	
Air induction system assembly	Bolt	M6	2	10	1.0	
Air induction system air filter assembly	Bolt	M6	2	7	0.7	
Crankcase (left and right)	Bolt	M6	9	10	1.0	
Drain bolt (Engine oil)	Bolt	M12	1	20	2.0	
Drain bolt (Transmission oil)	Bolt	M8	1	22	2.2	
Oil filler	Bolt	M14	1	3	0.3	
Transmission case cover	Bolt	M8	6	16	1.6	
Crankcase cover (left)	Bolt	M6	8	10	1.0	
Crankcase filter cover	—	M5	3	1.2	0.12	
Crankcase cover protector	Bolt	M6	1	7	0.7	
Crankcase cover protector	Screw	M6	3	7	0.7	
Magnet cover	—	M6	10	10	1.0	

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque		Remarks
				Nm	m·kg	
Cover (oil pump)	Bolt	M6	2	12	1.2	LT
Timing check plug	Plug	M16	1	8	0.8	
One way clutch	—	M8	3	30	3.0	LT
Clutch housing	Bolt	M14	1	60	6.0	
Grease stopper (Primary sheave)	—	M4	4	3	0.3	
Primary fixed sheave	—	M14	1	80	8.0	
Clutch carrier assembly	—	M36	1	90	9.0	
Stator	—	M6	3	10	1.0	LT
Pick up coil	—	M5	2	7	0.7	LT
Starter motor	Bolt	M6	2	10	1.0	
Thermo switch	—	M18	2	23	2.3	
Thermo unit	—	Pt 1/8	1	8	0.8	

CHASSIS

Item	Standard	Limit
Front suspension:		
Front fork travel	100 mm	※
Fork spring free length	268 mm	263 mm
Spring rate (K1)	4.82 N/mm (0.49 kg/mm)	※
Spring rate (K2)	8.84 N/mm (0.9 kg/mm)	※
Stroke (K1)	0 40 mm	※
Stroke (K2)	40 100 mm	※
Oil capacity	0.142 L (142 cm^3)	※
Oil level	80 mm	※
Oil grade	Fork oil 15 WT or equivalent	※
Inner tube vend limit	※	0.2 mm
Rear suspension:		
Shock absorber stroke	106 mm	※
Spring free length	262 mm	257 mm
Spring rate (K1)	7.57 N/mm (0.77 kg/mm)	※
(K2)	14 N/mm (1.43 kg/mm)	※
(K3)	26.39 N/mm (2.69 kg/mm)	※
Stroke (K1)	0 40 mm	※
(K2)	40 70 mm	※
(K3)	70 106 mm	※
Rear disk brake:		
Type	Single	※
Disc outside diameter √ thickness	230 √ 5 mm	※
Pad thickness	5.3 mm	0.8 mm
Master cylinder inside diameter	11 mm	※
Caliper cylinder outside diameter	22.2 mm √ 2	※
Brake fluid type	DOT #4	※
Brake lever:		
Brake lever free play (front at lever side)	2 5 mm	※
Brake lever free play (rear)	2 5 mm	※
Throttle cable free play	3 5 mm	※

TIGHTENING TORQUES

CHASSIS

Part to be tightened	Thread size	Tightening torque		Remarks
		Nm	m-kg	
Frame and engine bracket	M12 x 1.25	59	5.9	
Engine bracket, compression rod and engine	M10 x 1.25	32	3.2	
Compression rod and frame	M10 x 1.25	64	6.4	
Sidestand (bolt and frame)	M10 x 1.25	40	4.0	
Sidestand (bolt and nut)	M10 x 1.25	40	4.0	
Rear footrest bracket	M 6 x 1.0	7	0.7	
Swingarm	M 8 x 1.25	35	3.5	
Rear shock absorber and frame	M10 x 1.25	40	4.0	
Rear shock absorber and engine	M 8 x 1.25	20	2.0	
Steering ring nut	M25 x 1.0	22	2.2	See “NOTE”
Handle holder and steering shaft	M20 x 1.5	155	15.5	
Handle upper holder and lower holder	M 8 x 1.25	23	2.3	
Brake hose and master cylinder	M10 x 1.25	30	3.0	
Fuel tank				
(font)	M 6 x 1.0	10	1.0	
(rear)	M 6 x 1.0	7	0.7	
Fuel sender	M 5 x 0.8	3	0.3	
Filter	M 6 x 1.0	7	0.7	
Roll over valve	M 5 x 0.8	4	0.4	
Box	M 6 x 1.0	10	1.0	
Box (Bracket)	M 8 x 1.25	16	1.6	
Standing handle	M 8 x 1.0	16	1.6	
Sheet lock assembly	M 6 x 1.0	10	1.0	
Plastic parts & cover	M 5	2	0.2	
Cowling stay	M 8 x 1.25	16	1.6	
Cowling body	M 6 x 1.0	7	0.7	
Footrest board	M 6 x 1.0	7	0.7	
Headlight assembly	M 6 x 1.0	7	0.7	
Tail light assembly	M 6 x 1.0	7	0.7	
Front wheel axle and nut	M14 x 1.5	70	7.0	
Rear wheel axle and nut	M14 x 1.5	135	13.5	
Front brake caliper and front fork	M10 x 1.25	50	5.0	
Brake disc and hub	M 8 x 1.25	23	2.3	LT
Brake hose and caliper	M10 x 1.25	30	3.0	
Brake caliper and bleed screw	M 7 x 1.0	6	0.6	
Rear brake caliper and swingarm	M10 x 1.25	40	4.0	
Speed sensor and sensor housing	M 8 x 1.25	23	2.3	
Windscreen	M 5	0.4	0.04	

NOTE:

1. First, tighten the ring nut (lower) approximately 38 Nm (3.8 m·kg) by using the torque wrench, then loosen the ring nut 1/4 turn.
2. Second, tighten the ring nut (lower) approximately 22 Nm (2.2 m·kg) by using the torque wrench, then finger tighten the ring nut (center). Align the slots both ring nut and install the lock washer.
3. Final, hold the ring nuts (lower and center) and tighten the ring nut (upper) 75 Nm (7.5 m·kg) by using the torque wrench.

ELECTRICAL

Item	Standard	limit
Ignition timing:		
Ignition timing (B.T.D.C.)	10° at 1,400 r/min	※
Advanced timing (B.T.D.C.)	32° at 5,000 r/min	※
Advanced type	Electrical type	※
T.C.I.:		
Pickup coil resistance/color	189 √ 231 Ω at 20°C/ Yellow – Blue	※
T.C.I. unit model/manufacturer	J4T117/MITSUBISHI	※
Ignition coil:		
Model/manufacturer	F6T507/MITSUBISHI	※
Minimum spark gap	6 mm	※
Primary winding resistance	3.6 √ 4.8 Ω at 20°C	※
Secondary winding resistance	10.7 √ 14.5 kΩ at 20°C	※
Spark plug cap:		
Type	Resin type	※
Resistance	10 kΩ	※
Charging system:		
Type	A.C. magneto	※
Model/manufacturer	F4T370/MITSUBISHI	※
Normal output	14 V 19.5 A at 5,000 r/min	※
Stator coil resistance/color	0.37 √ 0.45 Ω at 20°C/ White – White	※
Rectifire/regulator:		
Model/manufacturer	SH640A-12/SHINDENGEN	※
No load regulated voltage	14.1 √ 14.9 V	※
Capacity	18 A	※
Withstand voltage	200 V	※
Electric starter system:		
Type	Constant mesh type	※
Starter motor:		
Model/manufacturer/ID number	SM-13/MITSUBA/SM-13454	※
Operation voltage	12 V	※
Output	0.65 kW	※
Armature coil resistance	0.0017 √ 0.0027 Ω at 20°C	※
Brush overall length	10 mm	4 mm
Brash quantity	2 pcs.	※
Spring force	8.82 N (899 g)	570 g
Commutator diameter	28 mm	27 mm
Mica undercut (depth)	0.7 mm	※

Item	Standard	limit
Starter relay:		
Model/manufacturer	MS5F-421/JIDECO	※
Amperage rating	180 A	※
Coil winding resistance	4.2 ~ 4.6 Ω at 20°C	※
Horn:		
Model/manufacturer	YF-12/NIKKO	※
Maximum amperage	3 A	※
Flasher/hazard relay		
Type	Full transistor type	※
Model/manufacturer	FE246BH/DENSO	※
Flasher frequency	75 ~ 95 cycle/min	※
Fuel gage:		
Model/manufacturer	5GM/NIPPON SEIKI	※
Sender unit resistance – full	4 ~ 10 Ω	※
– empty	90 ~ 100 Ω	※
Starting circuit cut-off relay:		
Model/manufacturer	ACA12115-1/MATSUSHITA	※
Coil winding resistance	72 ~ 88 Ω	※
Electric fan motor:		
Model/manufacturer	5GM/MITSUBA	※
Thermo switch (electric fan):		
Model/manufacturer	5GH/NIHON THERMOSTAT	※
Thermo switch (auto choke):		
Model/manufacturer	5GM/NIHON THERMOSTAT	※
Thermo unit:		
Model/manufacturer	46X/NIPPON SEIKI	※
Circuit breaker:		
Type	Fuse	※
MAIN	30 A × 1 pc.	※
HEAD LIGHT	15 A × 1 pc.	※
SIGNALING SYSTEM	15 A × 1 pc.	※
IGNITION	7.5 A × 1 pc.	※
RADIATOR	4 A × 1 pc.	※
BACK UP	10 A × 1 pc.	※
Reserve	30 A × 1 pc.	※
Reserve	15 A × 1 pc.	※
Reserve	10 A × 1 pc.	※
Reserve	7.5 A × 1 pc.	※

LUBRICATION POINTS AND GRADE OF LUBRICANT

ENGINE

Lubrication Point	Symbol
Oil seal lips	LS
O-ring (Except V-belt drive unit)	LS
Cylinder head tightening nut mounting surface	E
Crankshaft pin outside	E
Connecting rod big end thrust surface	E
Rotary filter inner surface	E
Drive gear inner surface	E
Cam chain outside sprocket inner surface	E
Piston pin	E
Piston outside and ring groove	E
Camshaft cam profile	M
Valve stem (IN, EX)	M
Valve stem end (IN, EX)	M
Rocker shaft	E
Valve rocker arm inner surface	M
Shaft	E
Shaft (Oil pump assembly)	E
Gasket (Oil pump assembly)	LS
Holder	LS
Idle gear 1 thrust surfaces	E
Shaft 1	E
Idle gear 2 thrust surfaces	E
Idle gear 2 inner surface	E
Main axle thrust surfaces	E
Crankcase mating surfaces	Yamaha bond No. 1215
Crankcase breather plug	LT
Stator grommet	Yamaha bond No. 1215
Suction pipe	LT

LUBRICATION POINT AND GRADE OF LUBRICANT

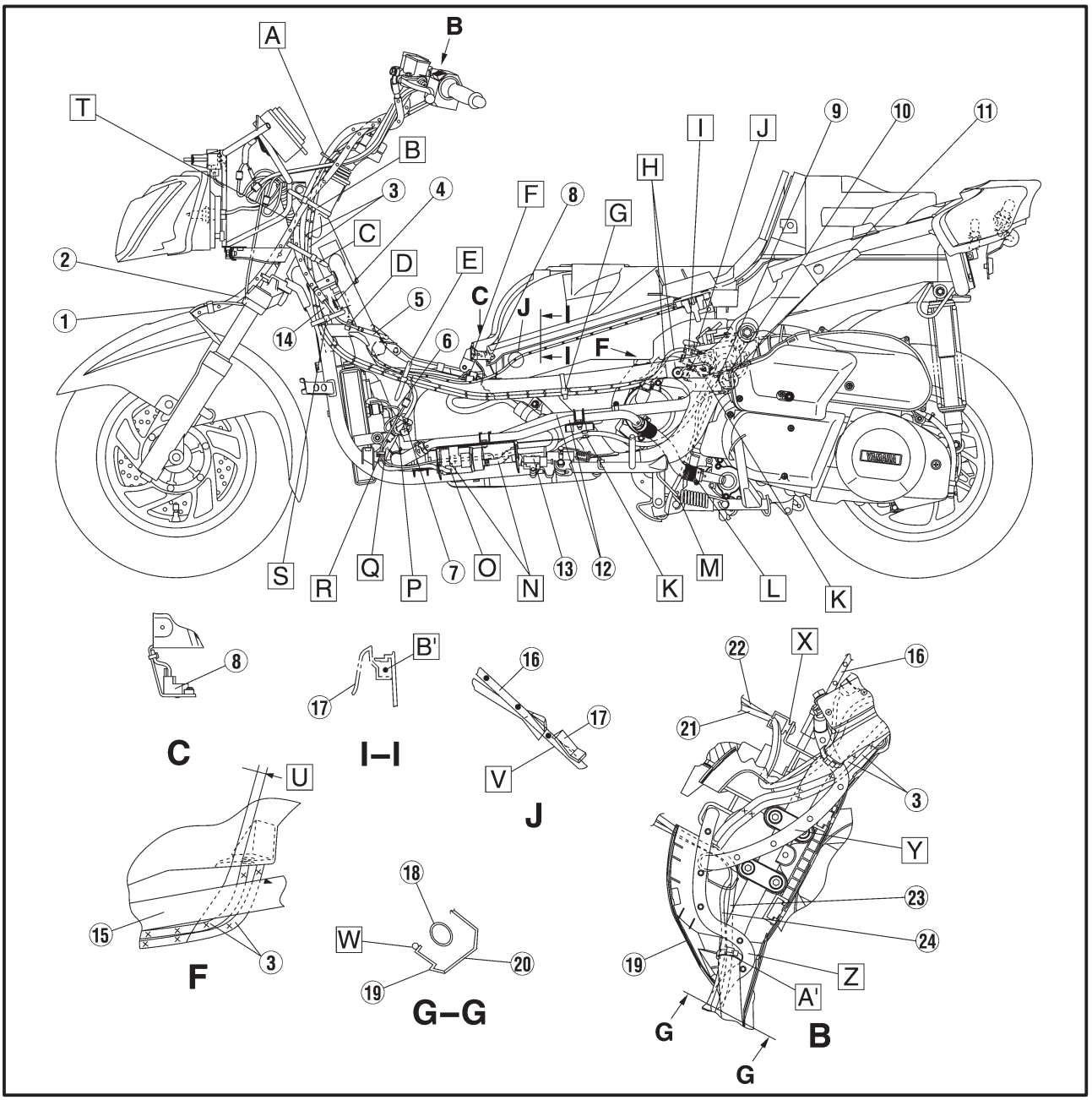
CHASSIS

Lubrication Point	Symbol
Front wheel oil seal lips (left/right)	LS
Swingarm oil seal lips (left/right)	LS
Steering head pipe bearing (upper/lower)	LS
Steering head pipe dust seal lips (upper/lower)	LS
Tube guide (throttle grip) inner surface	LS
Brake lever and lever holder bolt sliding surface	LS
Sidestand sliding surface	LS
Centerstand sliding surface and mounting bolt	LS
Centerstand stopper pivot shaft	LS

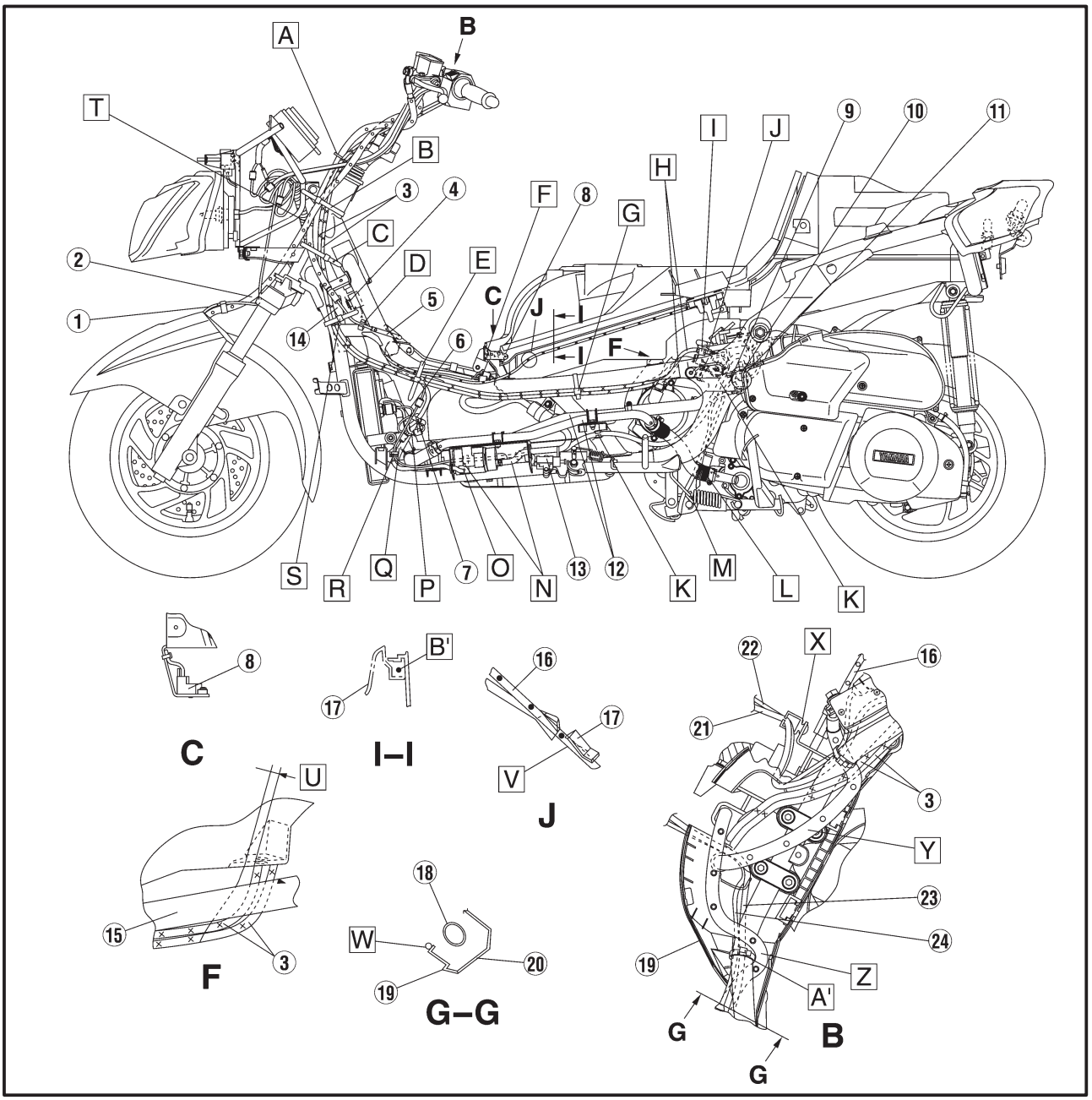
CABLE ROUTING

① Speed sensor
② Front brake hose
③ Throttle cable
④ Relay
⑤ Brake hose assembly
⑥ Thermo switch lead
⑦ Fan motor lead
⑧ Switch assembly
⑨ Carburetor fuel drain hose
⑩ Carburetor coolant drain hose
⑪ Carburetor air ventilation hose
⑫ Coolant pipe
⑬ Sidestand switch
⑭ Ignitor unit
⑮ Frame
⑯ Seat lock cable
⑰ Footrest board
⑱ Handlebar
⑲ Handlebar under cover
⑳ Handlebar upper cover
㉑ Right handlebar switch lead
㉒ Front brake switch lead
㉓ Left handlebar switch lead
㉔ Rear brake switch lead

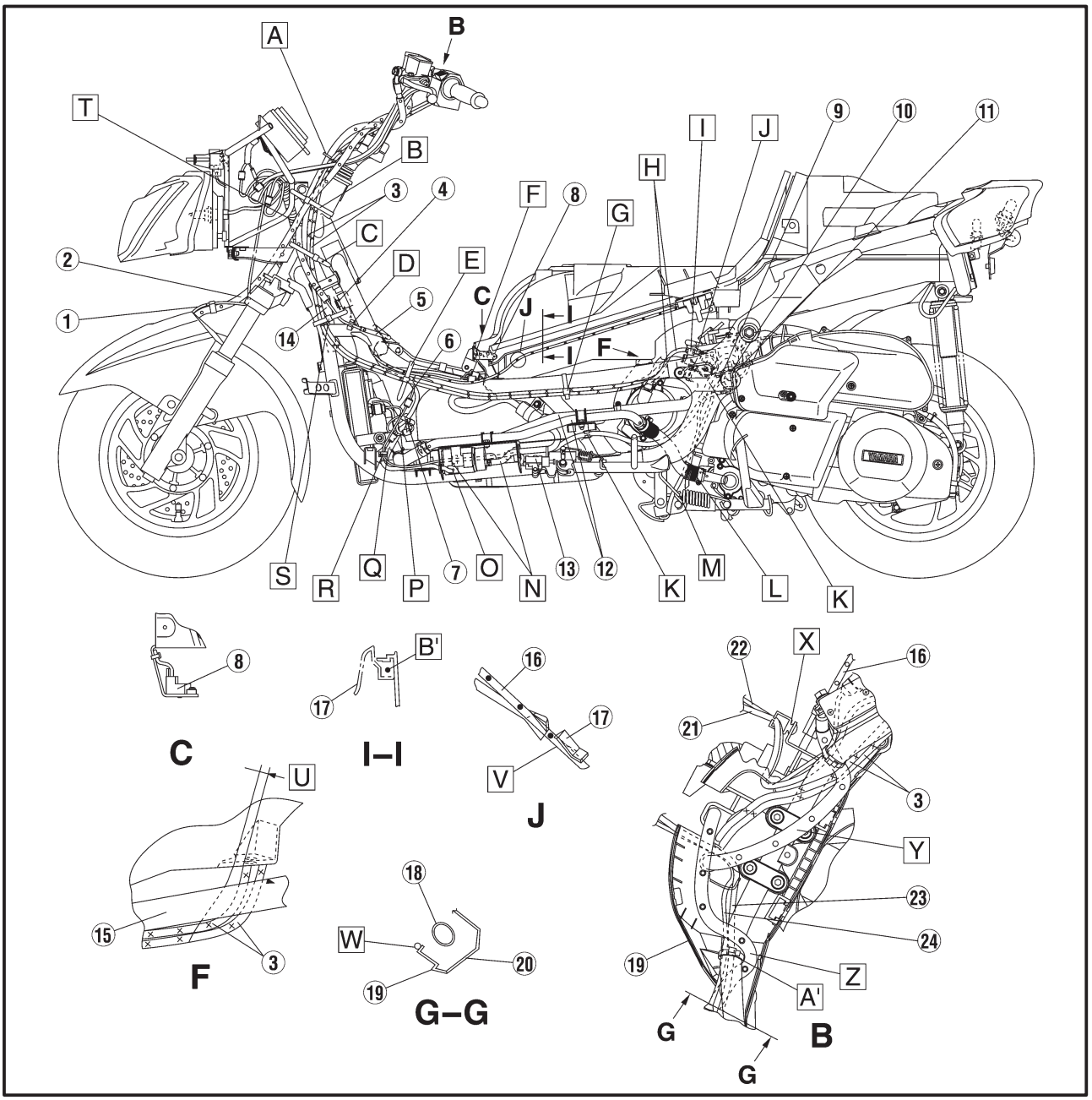
Ⓐ Route the brake hose assembly through the guide on the handlebar.
Ⓑ Fasten the front brake hose, brake hose assembly throttle cable to the frame with a plastic band.
Ⓒ Fasten the brake hose assembly, throttle cable to the frame with a band and the end of band is backward.



D Clamp the brake hose assembly.
E Fasten the seat lock cable throttle cable and wireharness to the frame with a band, and the end of band is downward.
F Clamp the switch assembly lead with a band and cut the end of band. It's downward.
G Fasten the throttle cable with a band and more than 10 mm between throttle cable and box.
H Don't scrub each other when fix the throttle cables.
I Throttle cable pull side. (White nut)
J Throttle cable push side. (Black and white nut)
K Clamp the fuel hose.
L Route the carburetor coolant drain hose, carburetor fuel drain hose through the clamp.
M Route the carburetor drain hose through the centerstand spring hook.
N Clamp the sidestand switch lead.
O Touch the protection tube on the fuel pump.
P Fasten the wire harness to the frame with a band and the end of band inside.
Q Roll the tape because of fix the protection tube to the fuel pum lead.
R Clamp the fuel pump lead and sidestand switch lead.
S Fasten the throttle cable and the end of band backward.
T Lubricate the silicone grease befor fasten the cable and hoses.

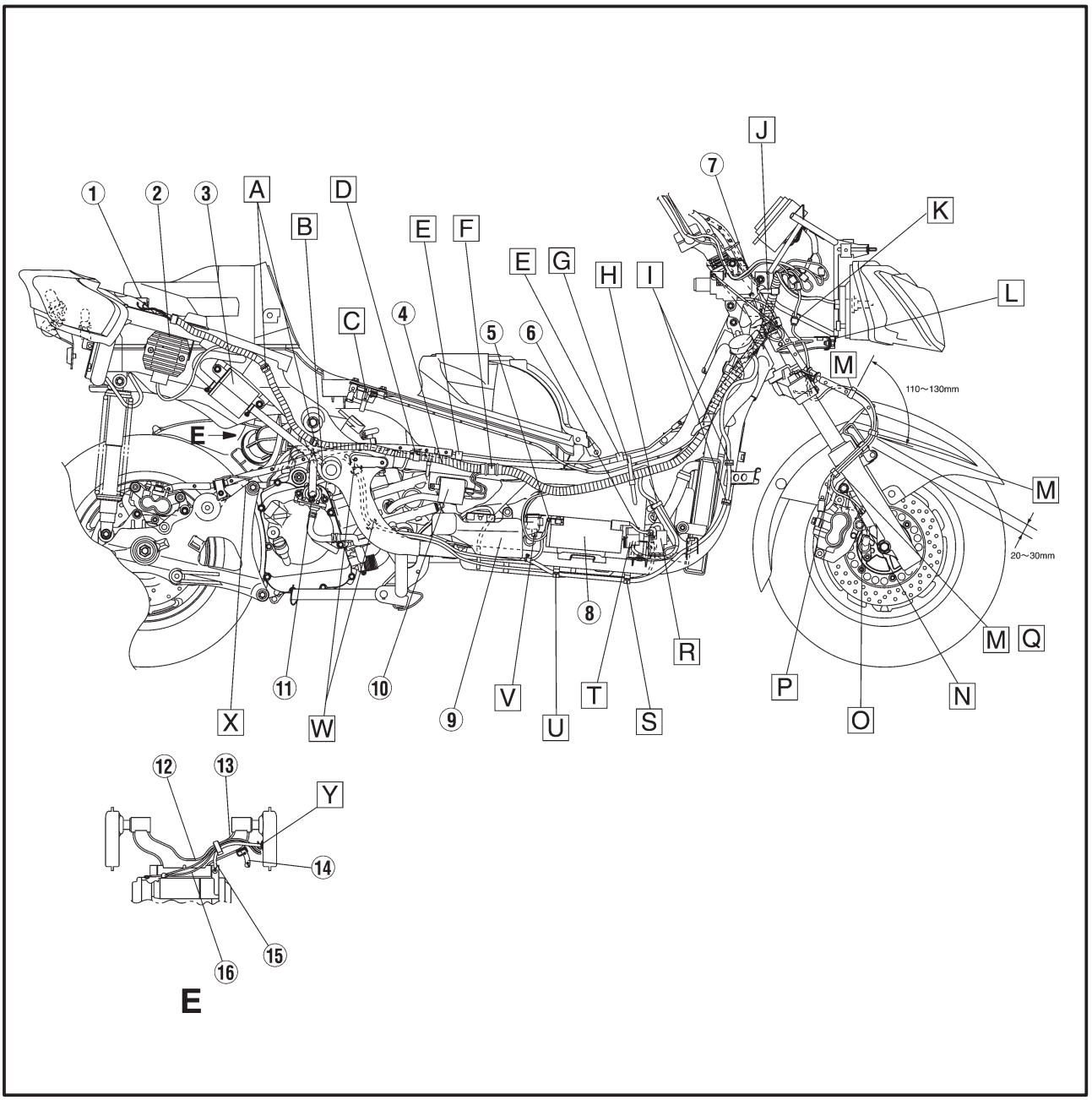


U More than 10 mm.
V Route the seat lock cable through the footrest board.
W Route the left handlebar switch lead through front side of the handlebar under cover.
X Route the right handlebar switch lead through the clamp.
Y Route the front brake hose through the right hole of handlebar under cover.
Z Route the brake hose assembly through the left hole of the handlebar under cover.
A' Fasten the left handlebar switch lead and rear brake switch lead to the handlebar with a plastic locking tie, cut the end of locking tie at 5 mm or less.
B' Don't catch the seat lock cable between footrest board and box.

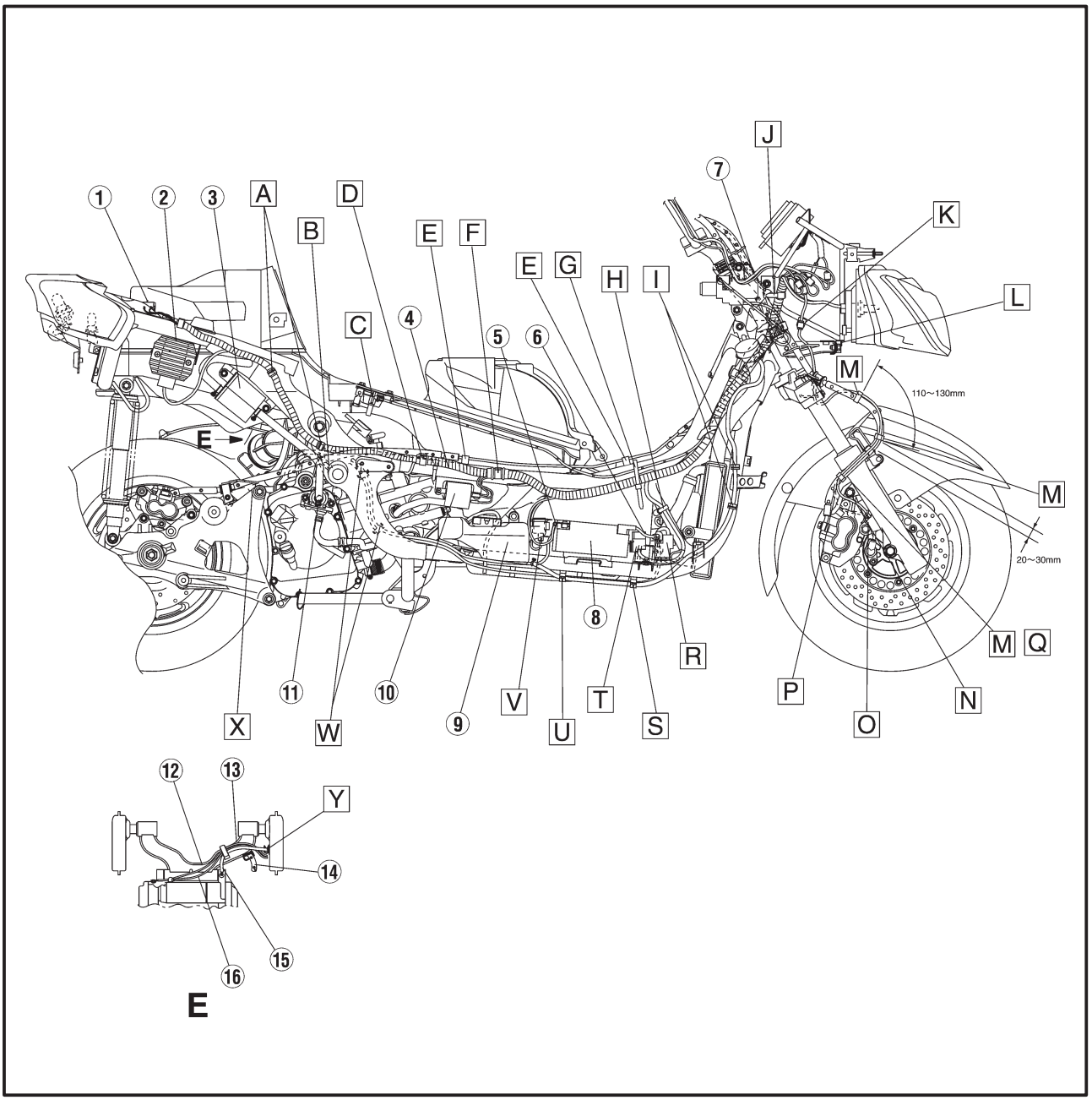


① Box light
② Rectifire/regulator
③ Air induction system air filter
④ Wireharness
⑤ Battery negative lead
⑥ Battery positive lead
⑦ Seat lock cable assembly
⑧ Battery
⑨ Rodiator reservoir tank
⑩ Ignition coil
⑪ Air induction system
⑫ Engine ground
⑬ Engine bracket
⑭ Rear brake hose
⑮ A. C. magneto lead
⑯ Starter motor lead

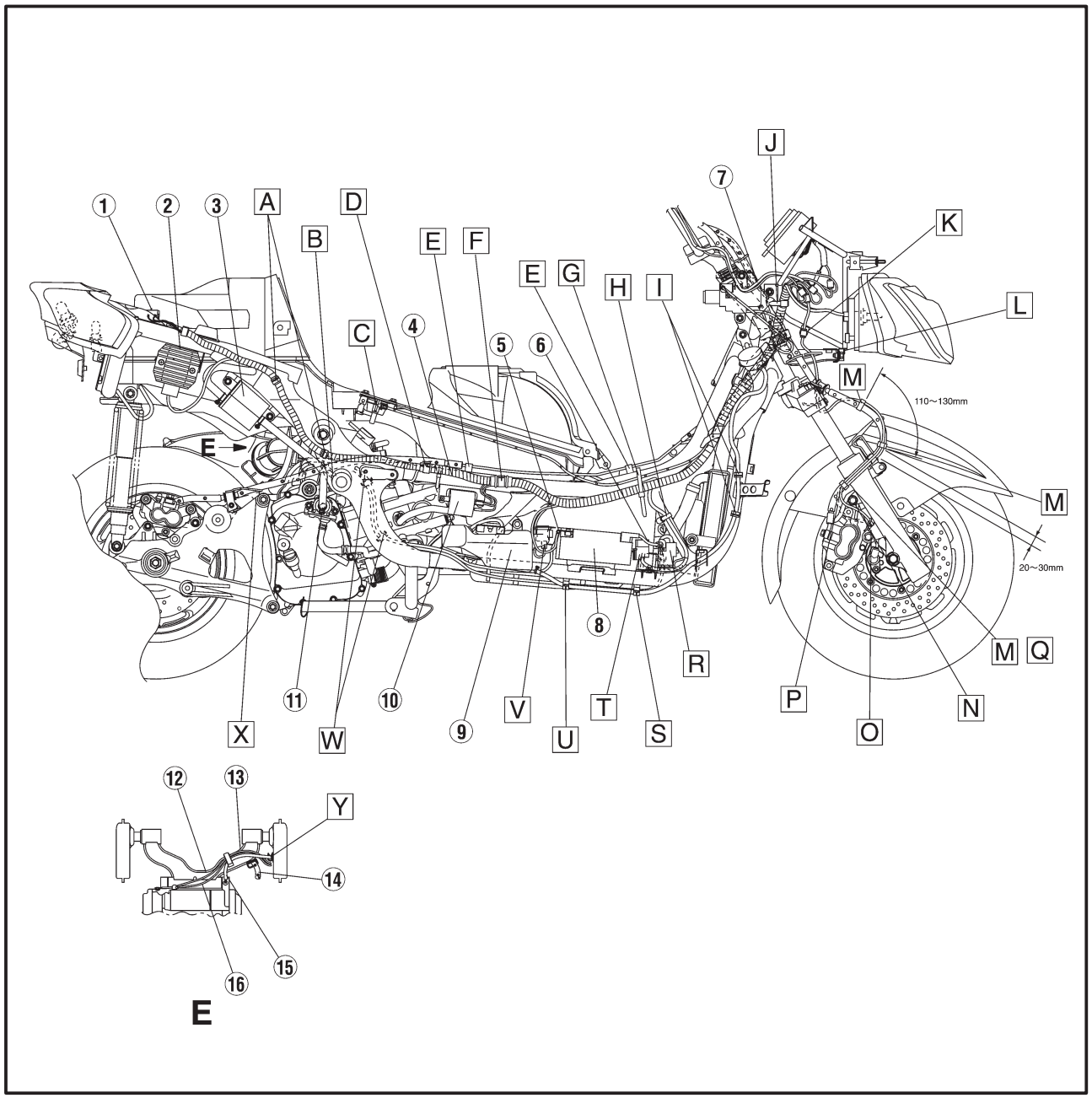
A Fasten the wireharness to the frame with a plastic locking tie.
B Route the brake hose assembly through the clamp of engine bracket.
C Fix the seat lock to the box.
D Fasten the wireharness to the frame with a plastic locking tie.
E Clamp the rear brake hose.
F Clamp the wireharness to the frame with a plastic locking tie.
G Fasten the seat lock cable and wireharness with a band and band of the end on inside of the frame.



H Fasten the wireharness to the frame with a band and the band of end on inside of the frame.
I Clamp the radiator reservoir hose.
J Fasten the wireharness to the stay with a band and the end of band on rearside.
K Fasten the speed sensor lead to the stay.
L Route the front speed sensor lead and front brake hose through the clamp on the frame. (front side: speed sensor lead rear side: front brake hose)
M Clamp the speed sensor lead to the front brake hose. Position the clamp (locatio of the speed sensor) to front of the upper clamp and another clamps to outside.
N Through the speed sensor lead between front brake caliper and bolt.
O Route the speed sensor lead through the guide.
P When pull the speed sensor lead. Don't loose.
Q Clamp the speed sensor lead and that caliper tightning bolt and clamp in parallel with front fork.
R Fix the starter relay to the footrest board.
S Clamp the radiator reservoir hose and starter motor lead to the frame with a plastic clamp.
T Fix the fuse box to the footrest board.
U Fasten the rodiator reservoir hose and starter motor lead on the frame with a plastic clamp.

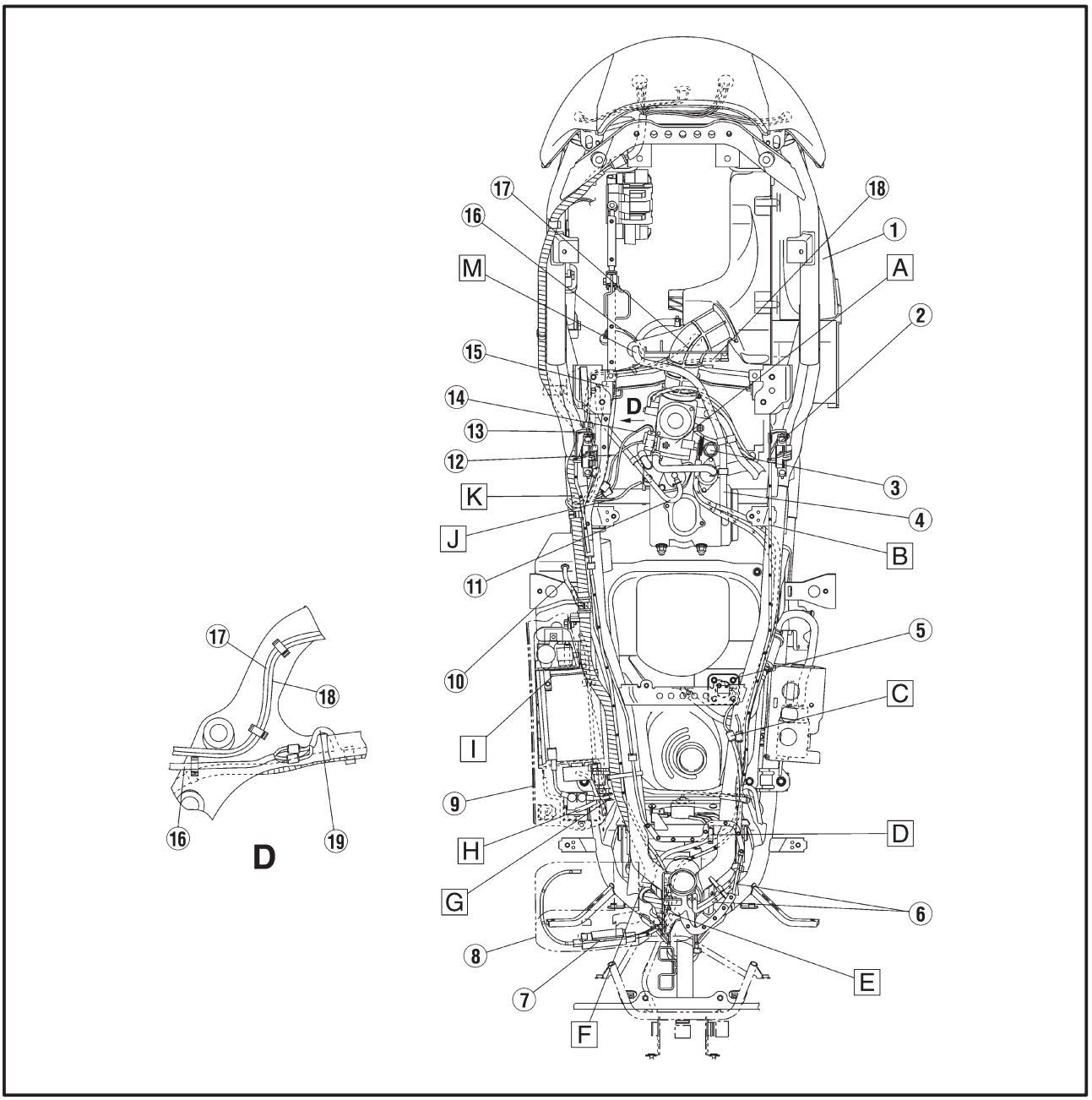


V Fix the turn signal relay on the footboard.
W Fasten the starter motor lead and engine ground lead on the frame with the plastic clamp.
X Route the parking cable and rear brake hose through the guide.
Y Clamp the A. C. magneto.

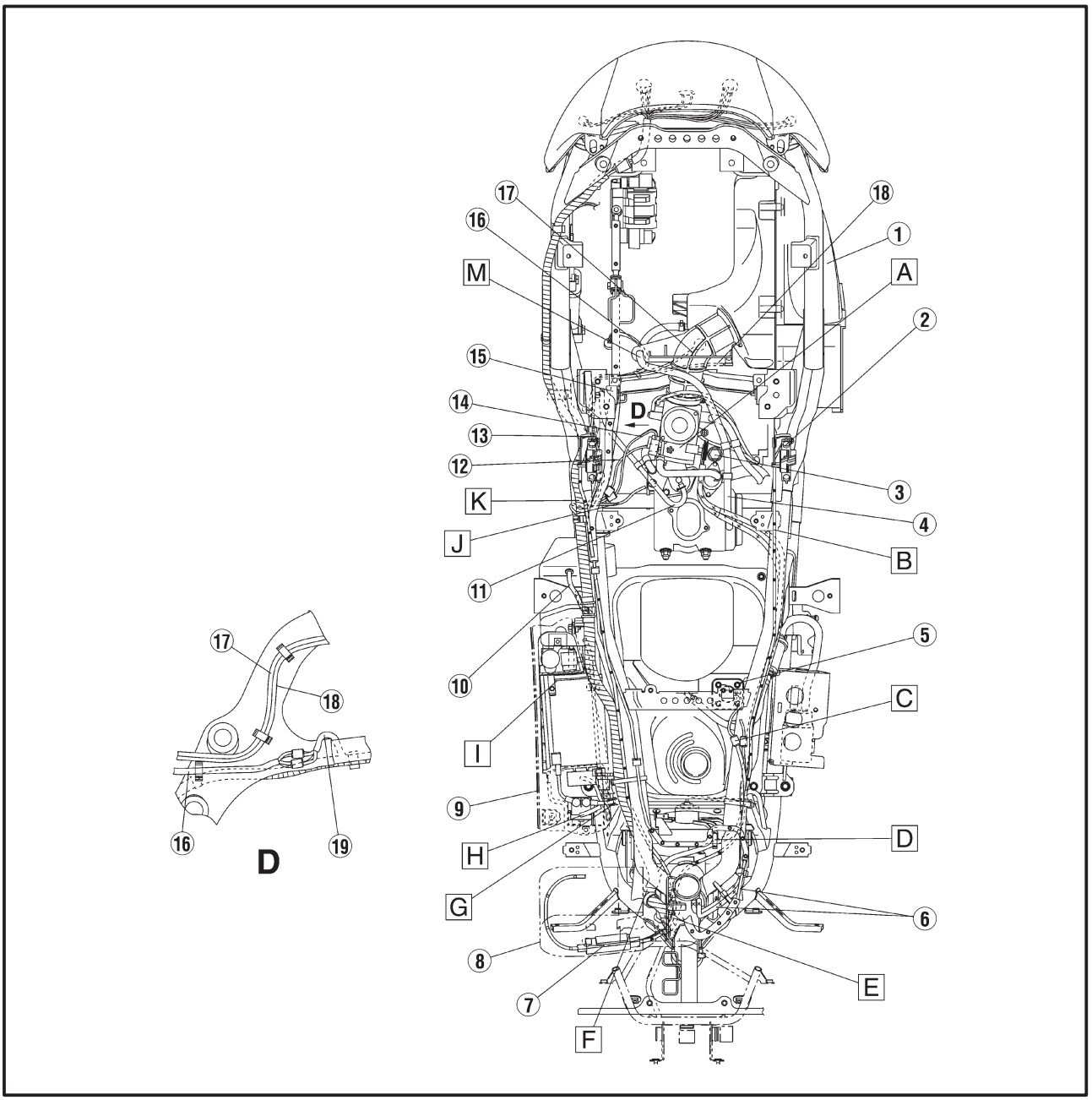


① Air filter case
② Seat lock
③ Tensioner
④ Crankcase breather hose
⑤ Fuel sender
⑥ Throttle cable
⑦ Seat lock cable assembly
⑧ Panel
⑨ Footrest board
⑩ Radiator resorvoir tank breather hose
⑪ Vacuum hose
⑫ Throttle position sensor lead
⑬ Seat lock
⑭ Auto choke lead
⑮ Brake hose assembly
⑯ A. C. magneto lead
⑰ Starter motor lead
⑱ Engine ground lead
⑲ Wireharness

A Don't turn the idle adjust screw, when fix the hose.
B Route the gray seat lock outer cable through the left side of frame.
C Set the fuel tank sender lead and sub lead.
D Fasten the wireharness on the frome with a band and the end of band match the tank rail pipe angle.
E Fix the seat lock cable along the guide of panel.
F Fasten the wireharness on the frame with a plastic clamp.
G Fasten the starter motor lead on the fuel tank brocket with a plastic locking tie.
H Route the starter relay lead toward inside.
I Route the battery negative lead toward inside.

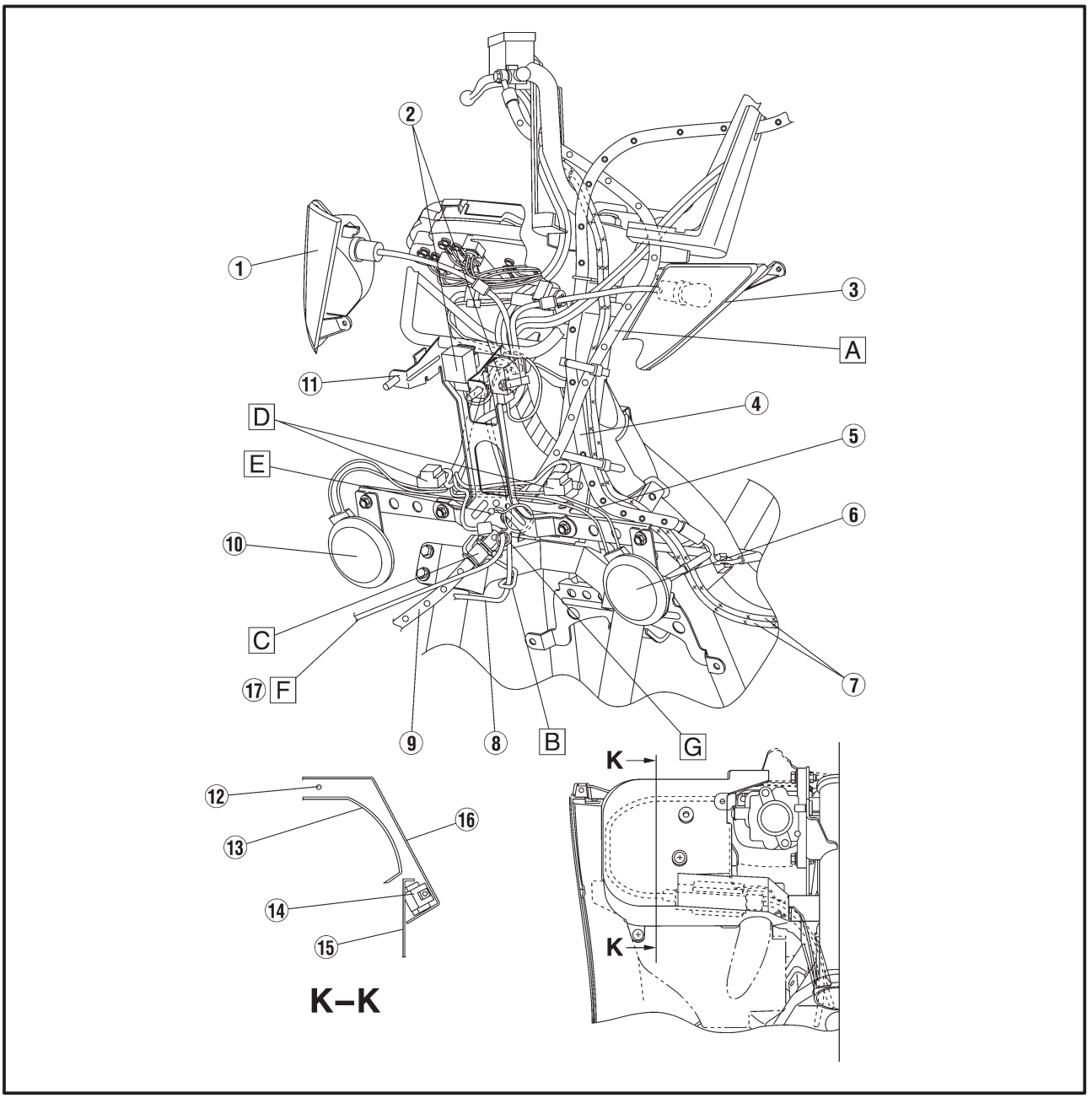


[J] Route the thermo unit lead through the shortest distance and dont roll another lead but loose the thermounit lead.
[K] Route the black seat lock cable outer through right side of frame.
[L] Fasten the A. C. magneto lead starter motor lead and engine ground lead to the clamp on the engine bracket.
[M] Route the crankcase breather hose into the hole of air filter case.



① Front right turn signal light
② Relay
③ Front left turn signal light
④ Front brake hose assembly
⑤ Horn lead (Hi)
⑥ Horn (Hi)
⑦ Throttle cable
⑧ Speed sensor lead
⑨ Front brake hose
⑩ Horn (Lo)
⑪ Stay
⑫ Seat lock cable
⑬ Leg sealed
⑭ Seat lock cable assembly
⑮ Inner fender
⑯ Panel
⑰ Auxiliary light lead

A Don't loosen the break hose when fix the break hose.
B Route the speed sensor lead through the brake hose holder.
C Fix the front brake hose on the front brake hose holder.
D Align the white mark H of headlight assembly with the white tape of coupler lead
E Install in stay 1
F To the headlight assembly
G Clamp near the caupler side root of auxiliary light lead.



EB300000

PERIODIC INSPECTIONS AND ADJUSTMENTS

INTRODUCTION

This chapter includes all information necessary to perform recommended inspections and adjustments. These preventive maintenance procedures, if followed, will ensure more reliable vehicle operation and a longer service life. The need for costly overhaul work will be greatly reduced. This information applies to vehicles already in service as well as to new vehicles that are being prepared for sale. All service technicians should be familiar with this entire chapter.

YP301000

PERIODIC MAINTENANCE/LUBRICATION INTERVALS

No.		ITEM	CHECKS AND MAINTENANCE JOB	Initial (1,000 km)	EVERY		ANNUAL CHECK
					10,000 km	20,000 km	
1	*	Fuel line	⁜Check fuel hoses and vacuum hose for cracks or damage. ⁜Replace if necessary.		√		√
2		Fuel filter	⁜Check condition. ⁜Replace if necessary.			√	
3		Spark plug	⁜Check condition. ⁜Clean, regap or replace if necessary.		√		
4	*	Valves	⁜Check valve clearance. ⁜Adjust if necessary.			√	
5		Air filter	⁜Clean or replace if necessary.		√		
6		V-belt case air filter	⁜Clean or replace if necessary.		√		
7	*	Front brake	⁜Check operation, fluid level and vehicle for fluid leakage. ⁜Correct accordingly. ⁜Replace brake pads if necessary.	√	√		√
8	*	Rear brake	⁜Check operation, fluid level and vehicle for fluid leakage. ⁜Correct accordingly. ⁜Replace brake pads if necessary.	√	√		√
9	*	Brake hoses	⁜Check for cracks or damage. ⁜Replace if necessary.		√		√
10	*	Wheels	⁜Check balance, runout and for damage. ⁜Rebalance or replace if necessary.		√		
11	*	Tires	⁜Check tread depth and for damage. ⁜Replace if necessary. ⁜Check air pressure. ⁜Correct if necessary.		√		
12	*	Wheel bearings	⁜Check bearing for looseness or damage. ⁜Replace if necessary.		√		
13	*	Steering bearings	⁜Check bearing play and steering for roughness. ⁜Correct accordingly.	√	√		
			⁜Lubricate with lithium soap base grease.			√	
14	*	Chassis fasteners	⁜Make sure that all nuts, bolts and screws are properly tightened. ⁜Tighten if necessary.		√		√
15		Sidestand/centerstand	⁜Check operation. ⁜Lubricate and repair if necessary.		√		√
16	*	Sidestand switch	⁜Check operation. ⁜Replace if necessary.	√	√		√
17	*	Front fork	⁜Check operation and for oil leakage. ⁜Correct accordingly.		√		
18	*	Rear shock absorber assemblies	⁜Check operation and shock absorbers for oil leakage. ⁜Replace shock absorber assembly if necessary.		√		
19	*	Carburetor	⁜Check engine idling speed and starter operation. ⁜Adjust if necessary.	√	√		√
20		Engine oil	⁜Check oil level and vehicle for oil leakage. ⁜Correct if necessary. ⁜Change. (Warm engine before draining.)	√	Replace every 3,000 km		
21	*	Engine oil strainer	⁜Clean or replace if necessary.	√	Clean or replace every 6,000 km		
22	*	Cooling system	⁜Check coolant level and vehicle for coolant leakage. ⁜Correct if necessary.		√		√
			⁜Change coolant.			√	
23		Final gear oil	⁜Check oil level and vehicle for oil leakage. ⁜Change oil.	√	√		
24	*	V-belt	⁜Replace.			√	

INSP ADJ

No.		ITEM	CHECKS AND MAINTENANCE JOB	Initial (1,000 km)	EVERY		ANNUAL CHECK
					10,000 km	20,000 km	
25	*	Front / Rear brake switch	⁎Check operation. ⁎Adjust or replace if necessary.	√	√		√
26		Moving parts and cables	⁎Lubricate if necessary.		√		√
27	*	Electrical components	⁎Check all lights, signals and switches function. ⁎Correct if necessary. ⁎Adjust headlight beam if necessary.	√	√		√

*: Since these items require special tools, data and technical skills, they should be serviced by a Yamaha dealer.

EAU02970

NOTE:

The annual checks must be performed once a year unless a 10,000 km or 20,000 km maintenance was performed in the same year.

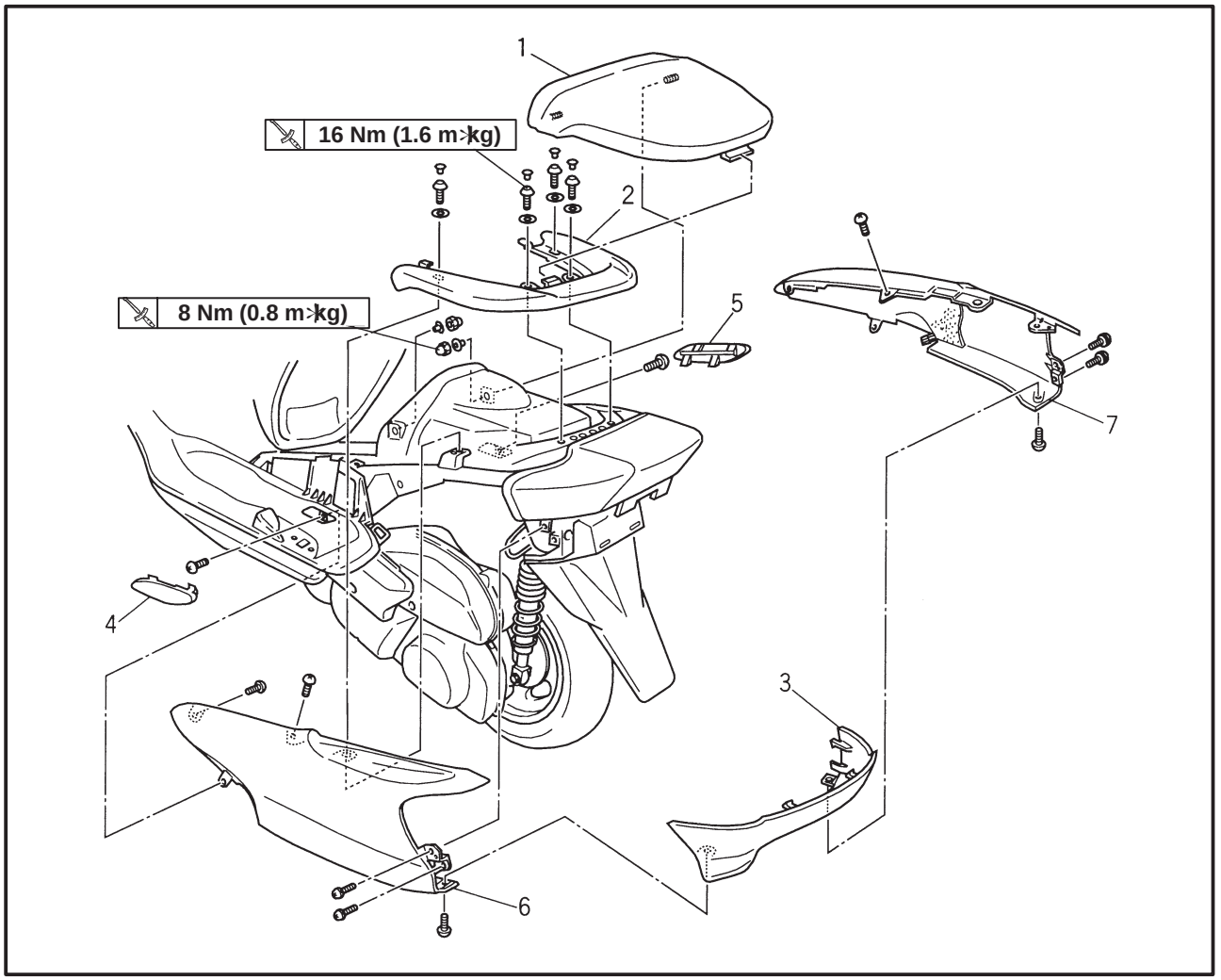
⁎The air filter needs more frequent service if you are riding in unusually wet or dusty areas.

⁎Hydraulic brake system

- ⁎When disassembling the master cylinder or caliper, always replace the brake fluid. Check the brake fluid level regularly and fill as required.
- ⁎Replace the oil seals on the inner parts of the master cylinder and caliper every two years.
- ⁎Replace the brake hoses every four years or if cracked or damaged.

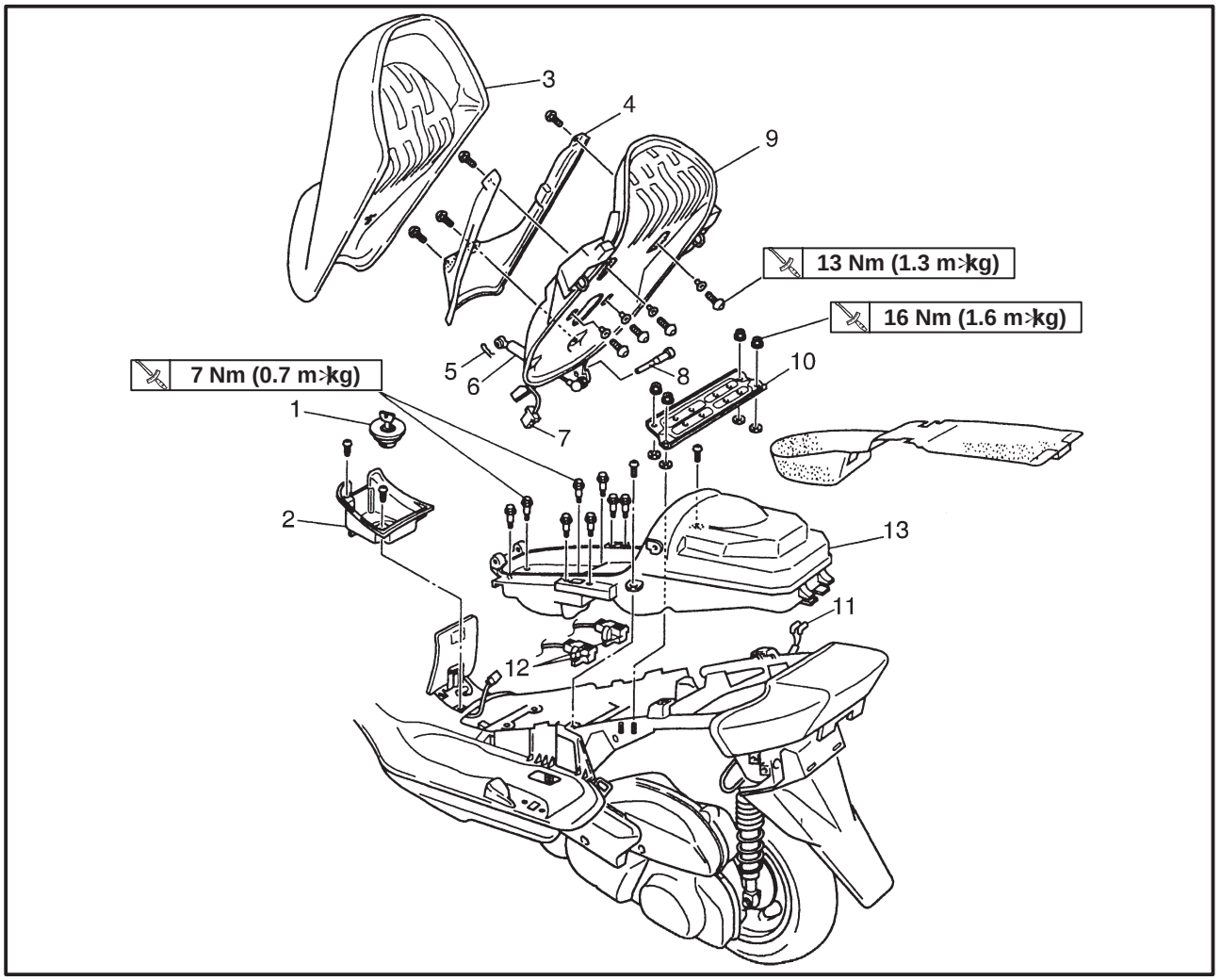
COVER AND PANEL

SIDE COVER, SIDE COVER MOLE, PASSENGER SEAT



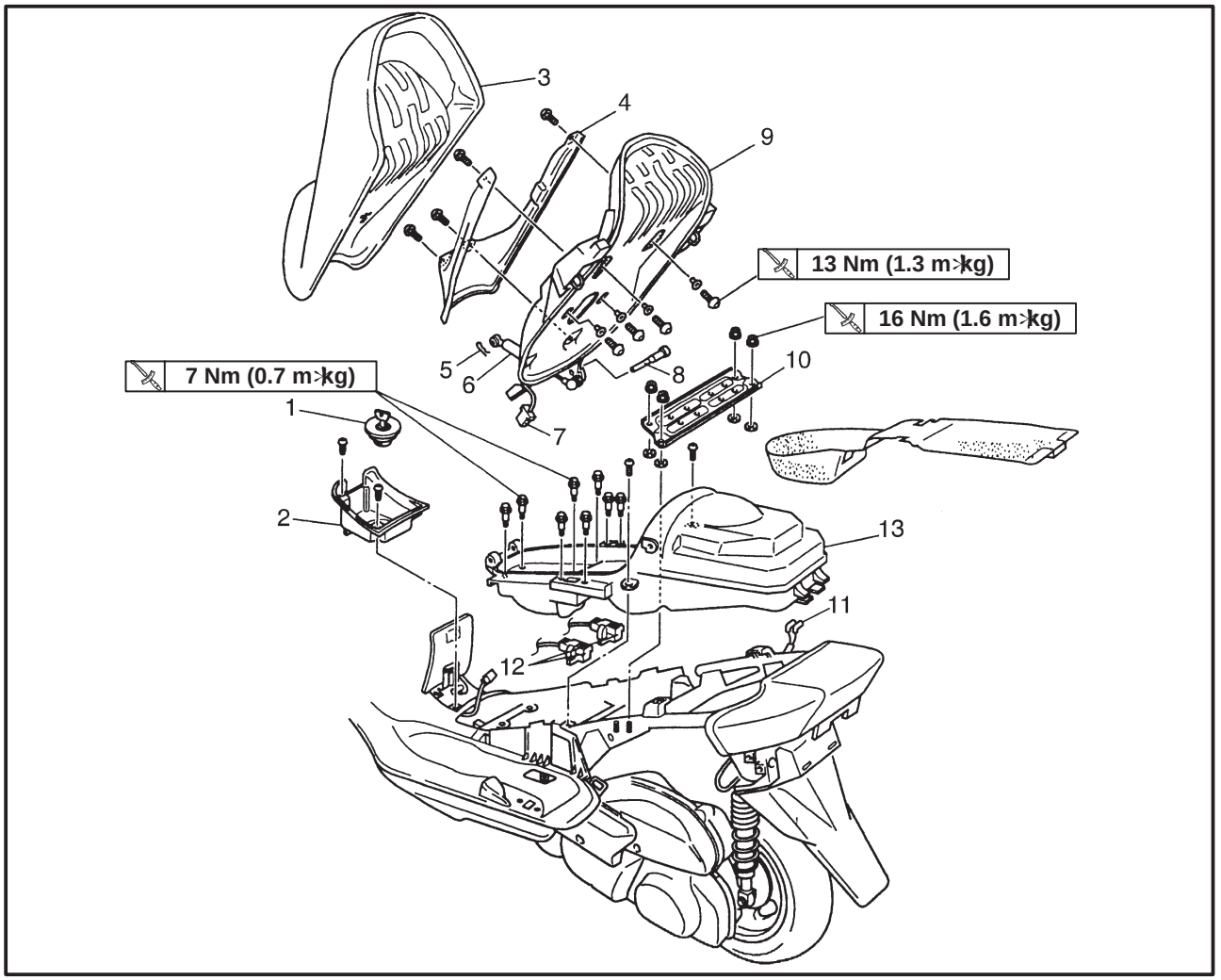
Order	Job name/Part name	Q'ty	Remarks
	Side cover, Side cover panel and passenger seat removal		Remove the parts in order.
1	Passenger seat	1	
2	Standing handle	1	
3	Side cover mole 3	1	
4	Cap 1	1	
5	Cap 2	1	
6	Side cover 1	1	
7	Side cover 2	1	
			Reverse the removal procedure for installation.

RIDER SEAT AND MAIN BOX



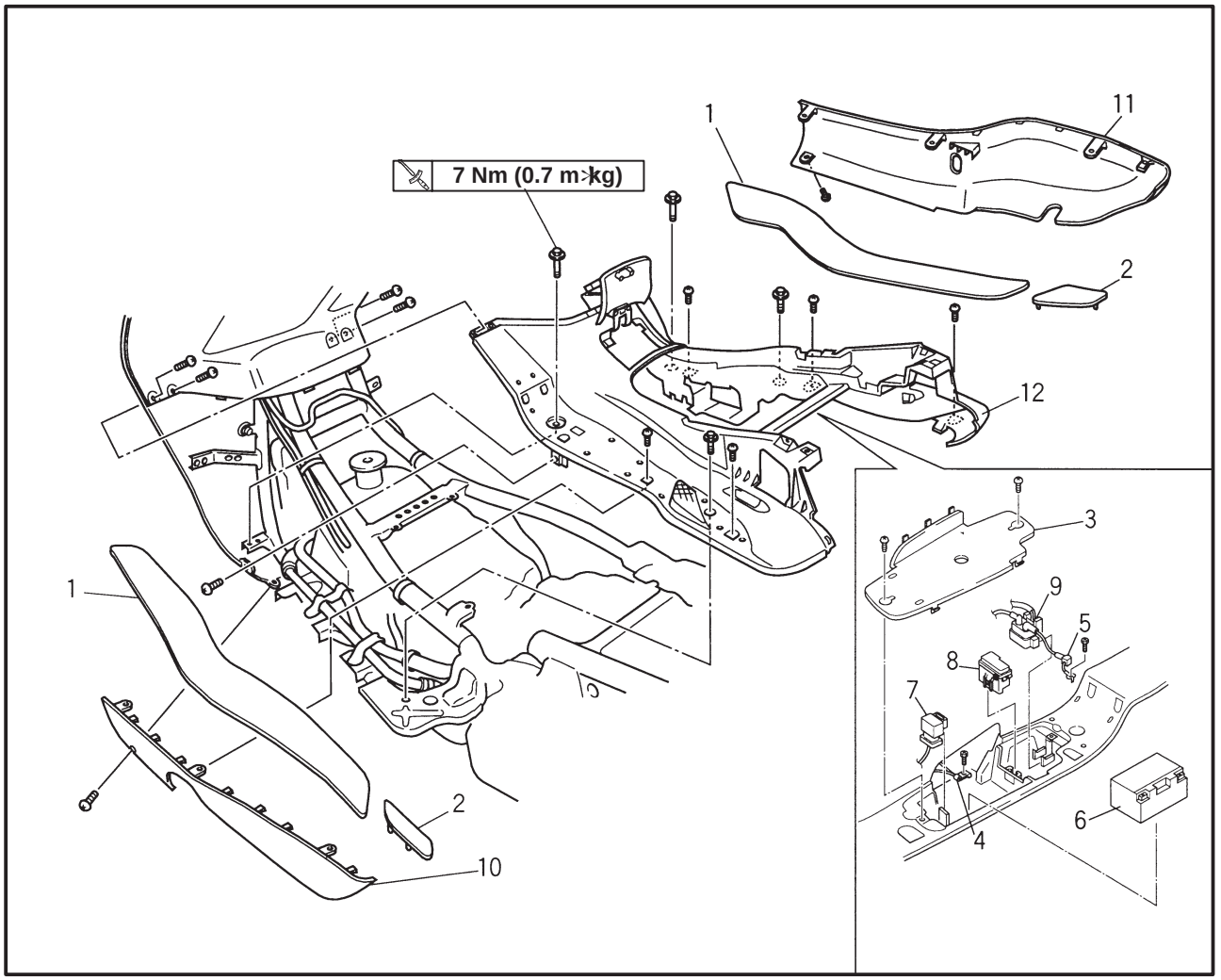
Order	Job name/Part name	Q'ty	Remarks
	Rider seat and main box removal		Remove the parts in order
1	Fuel tank cap	1	
2	Cover	1	
3	Rider seat	1	
4	Side cover 3	1	
5	Clip	1	**NOTE:**
6	Damper assembly	1	Install the damper assembly to the body with its rod side backward and labels up ward.
			NOTE:
7	Coupler (Seat switch lead)	1	Disconnect the couplers.
8	Pin	1	
9	Bottom plate	1	

RIDER SEAT AND MAIN BOX



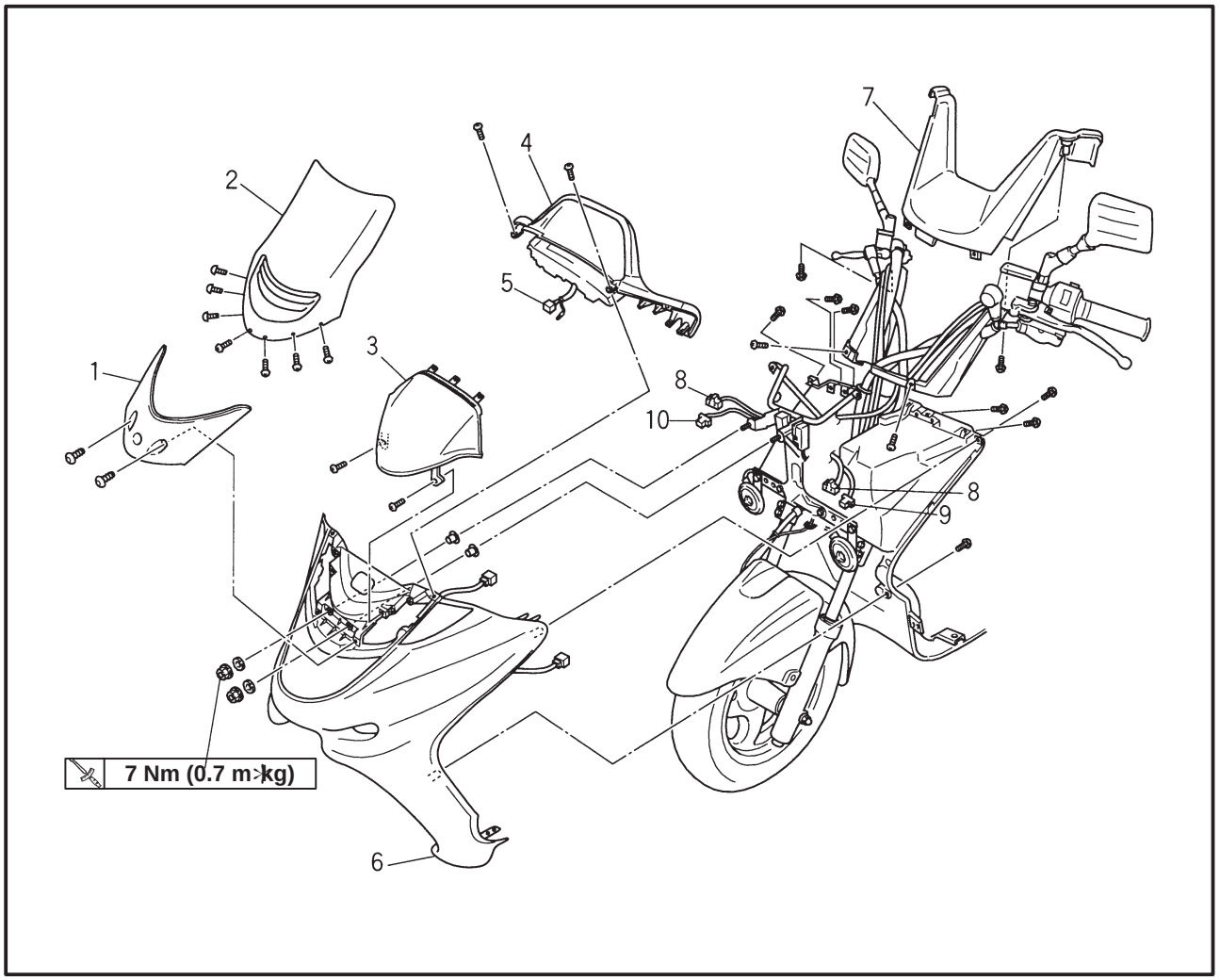
Order	Job name/Part name	Q'ty	Remarks
10	Bracket	1	**NOTE:**
11	Coupler (Main box light read)	1	Disconnect the couplers.
12	Seat lock	2	
13	Main box	1	
			Reverse the removal procedure for installation.

SIDE COVER MOLE AND FOOTREST BOARD



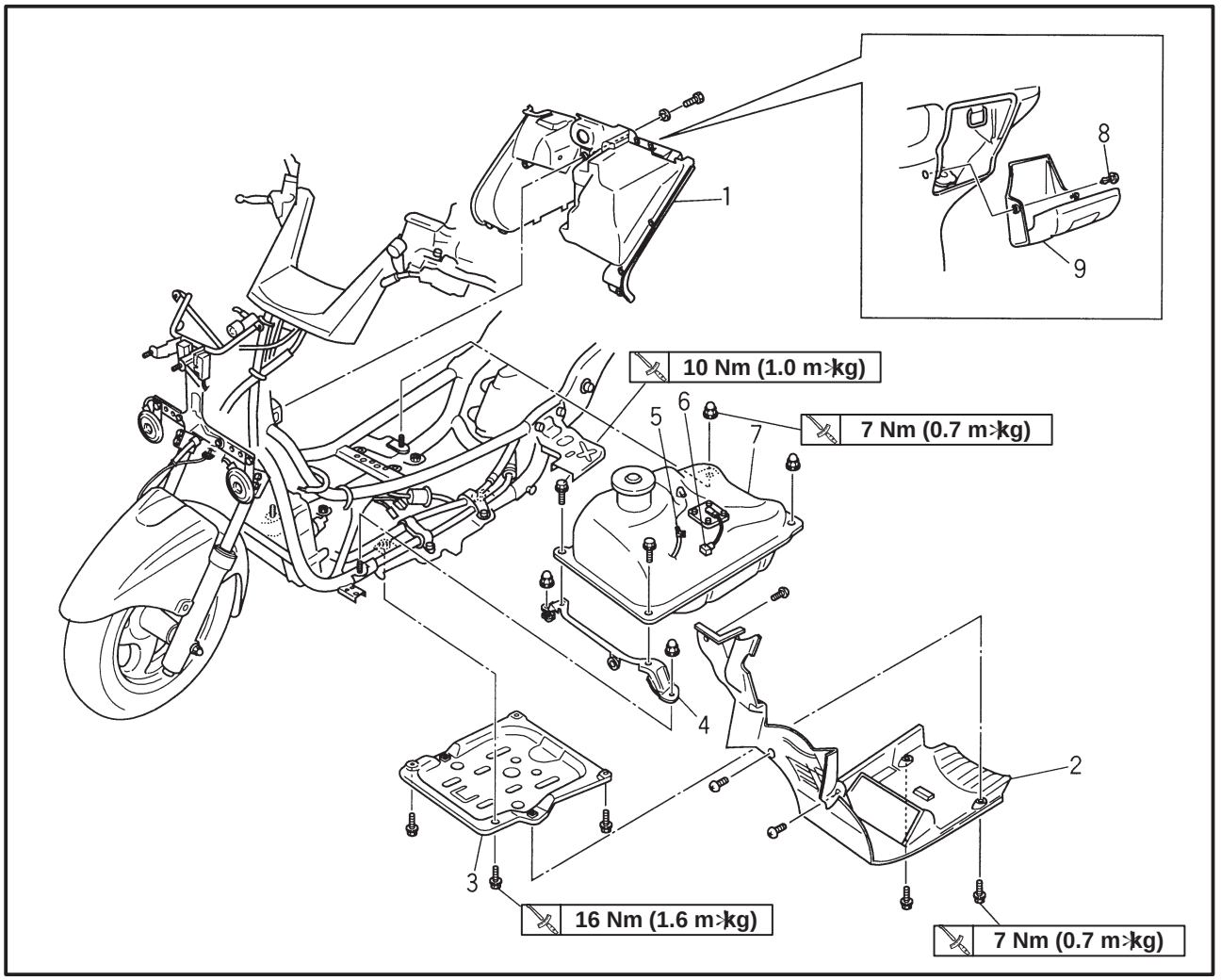
Order	Job name/Part name	Q'ty	Remarks
	Side panel and footrest board removal		Remove the parts in order.
1	Mat (footrest board) (left/right)	1/1	
2	Cover (footrest board) (left/right)	1/1	
3	Cover 2	1	
4	Battery negative (–) lead	1	
5	Battery positive (+) lead	1	
6	Battery	1	
7	Flasher relay	1	
8	Fuse box	1	
9	Starter relay	1	
10	Side cover mole 1	1	
11	Side cover mole 2	1	
12	Footrest board	1	
			Reverse the removal procedure for installation.

COWLING, HANDLE COVER, METER ASSEMBLY

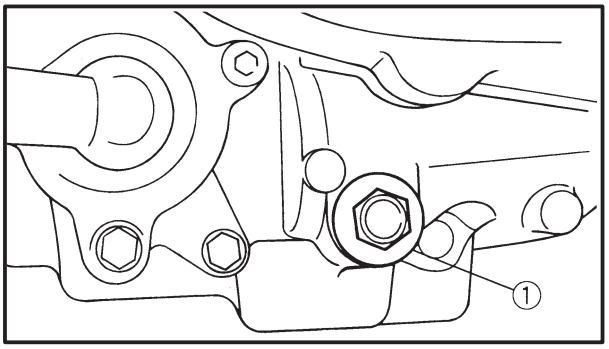


Order	Job name/Part name	Q'ty	Remarks
	Cowling, handle cover, meter assembly removal		Remove the parts in order.
1	Upper cover	1	
2	Wind screen	1	
3	Inner panel	1	
4	Meter assembly	1	**NOTE:**
5	Coupler (Meter lead)	1	Disconnect the couplers.
6	Cowling body	1	
7	Handle cover	1	
8	Coupler (headlight lead)	2	**NOTE:**
9	Coupler (front flasher light lead (left))	1	Disconnect the couplers.
10	Coupler (front flasher light lead (right))	1	
			Reverse the removal procedure for installation.

LEGSHIELD AND FUEL TANK



Order	Job name/Part name	Q'ty	Remarks
	Legshield and fuel tank removal		Remove the parts in order.
1	Legshield	1	
2	Inner fender	1	
3	Front under braket	1	
4	Fuel tank braket	1	
5	Fuel hose	1	**NOTE:**
6	Coupler (fuel sensor lead)	1	Disconnect the couplers.
7	Fuel tank	1	
8	Rivet	1	
9	Cover	1	
			Revers the removal procedure for installation.



ENGINE

ENGINE OIL REPLACEMENT

1. Start the engine and let it warm up for several minutes.
2. Turn off the engine and place an oil pan under the engine.
3. Remove:
   - Drain plug ①
   - Gasket

   Drain the crankcase of its oil.
4. Install:
   - Gasket New
   - Drain plug ①

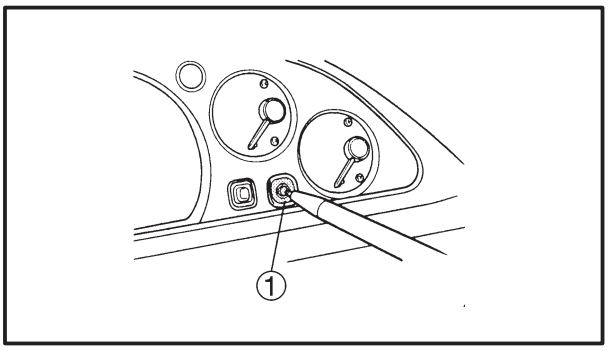
   20 Nm (2.0 m·kg)
5. Fill:
   - Crankcase

   Oil quantity: 1.4 L
6. Check:
   - Engine oil level

   Refer to "ENGINE OIL LEVEL INSPECTION" section.
7. Reset:
   - Engine oil indicator circuit

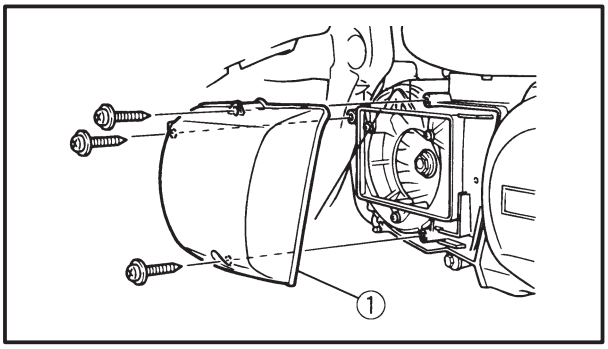
Resetting steps:

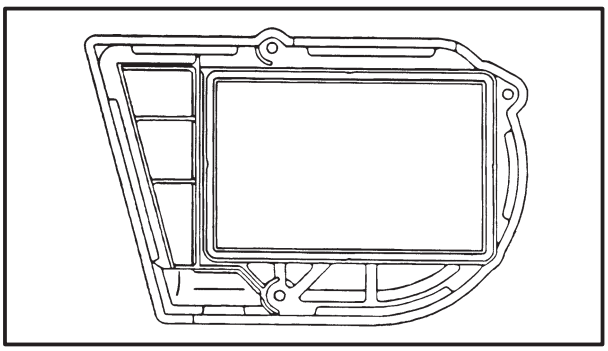
- Turn the main switch to on.
- Push and hold in the reset button for 2 to 5 seconds.
- Release the reset button ① and the oil indicator light will go off.

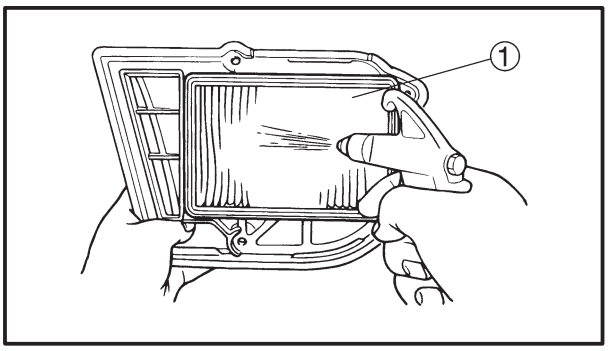


NOTE:

If the oil is changed before the oil indicator light comes on (i.e. before the 3,000 km oil change interval is reached), be sure to reset the oil indicator light after changing the oil, so that it will come on at the correct time to indicate the next 3,000 km oil replacement.
To reset the oil indicator light before it comes on: Release the reset button and the oil indicator light will come on for 1.4 seconds.







CRANKCASE FILTER CLEANING

1. Remove:
   - Crankcase filter cover ①
   - Crankcase filter cover seal
   - Crankcase filter element

NOTE:

When installing the element in its case, besure its sealing surface matches the sealing surface of the case so there is no air leak.

2. Inspect:
   - Crankcase filter element
     Damaged → Replace.

CAUTION:

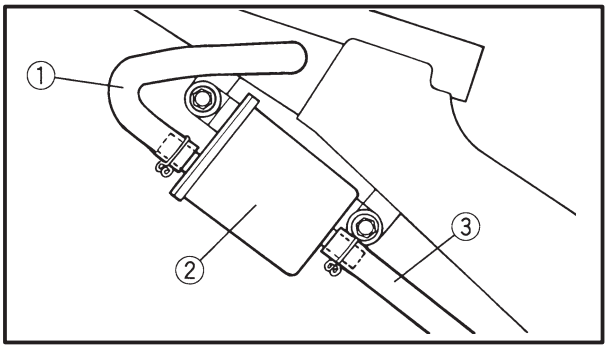
This element is a dry type.
Be careful not to stain with grease or water.

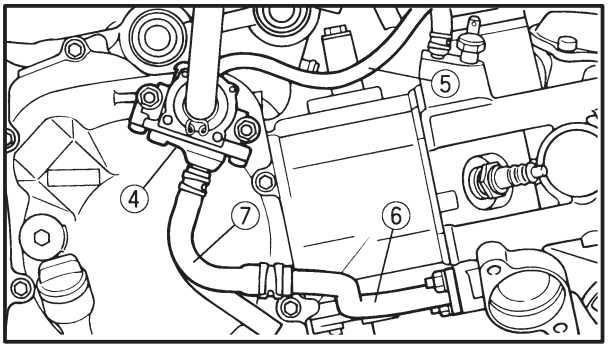
3. Clean:
   - Crankcase filter element ①
     Blow out the dust in the element from the outer surface using compressed air.
4. Install:
   - Crankcase filter element
   - Crankcase filter cover seal
   - Crankcase filter cover **7 Nm (0.7 m·kg)**

AIR INDUCTION SYSTEM INSPECTION

1. Remove:
   - Side cover mole 3
   - Passenger seat
   - Standing handle
   - Side cover 2

   Refer to “COVER AND PANEL” section.

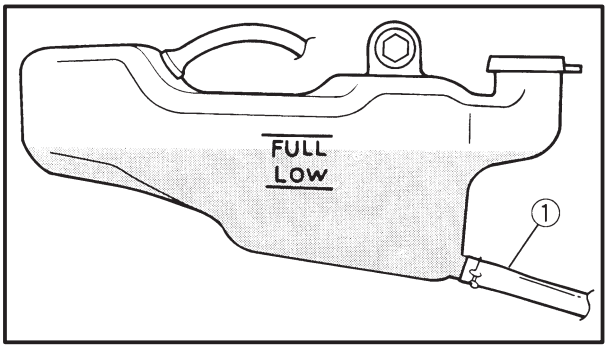




2. Inspect:
   - Hose 3 ①
   - Air filter case ②
   - Hose 2 ③
   - Air induction system assembly ④
   - Vacuum hose ⑤
   - Pipe 1 ⑥
   - Hose 1 ⑦

   Cracks/damage → Replace.

3. Install:
   - Side cover 2
   - Standing handle
   - Passenger seat
   - Side cover mole 3



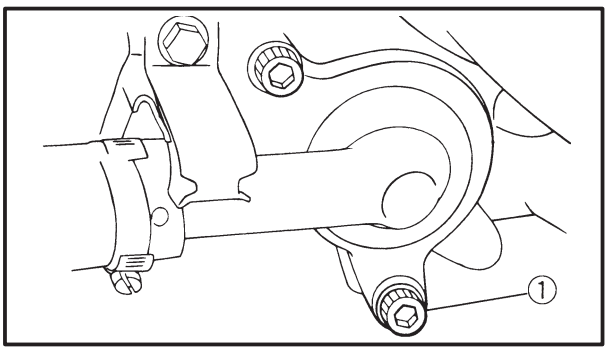
YP303180

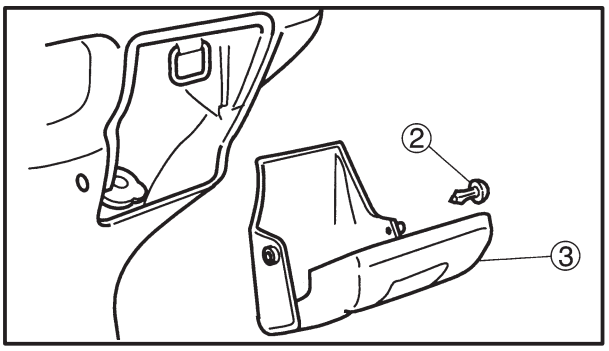
COOLANT REPLACEMENT

1. Remove:
   - Side cover mole

   Refer to the "COVERS AND PANEL" section.
2. Remove:
   - Hose ① (reservoir tank)

   Drain the reservoir tank of its coolant.





3. Remove:
   - Drain bolt ①
   - Rivet ②
   - Cover ③
   - Radiator cap

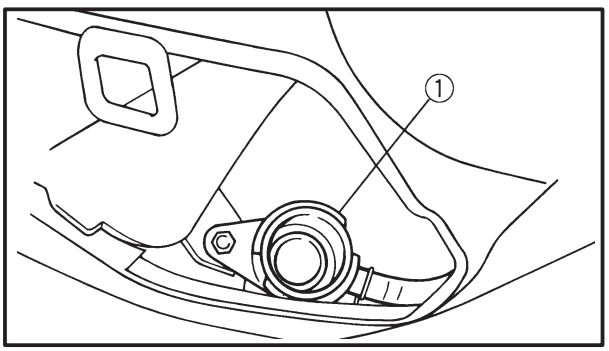
   Open the front trunk, remove the cover, slowly loosen to remove the radiator cap and drain the coolant.

⚠ WARNING

Do not remove the radiator cap when the engine and radiator are hot. Scalding hot fluid and steam may be blown out under pressure, which could cause serious injury. When the engine has cooled, open the radiator cap as follows:
Place a thick rag or a towel over the radiator cap. Slowly rotate the cap counterclockwise toward the detent. This allows any residual pressure to escape. When the hissing sound has stopped, press down on the cap while turning counterclockwise and remove it.

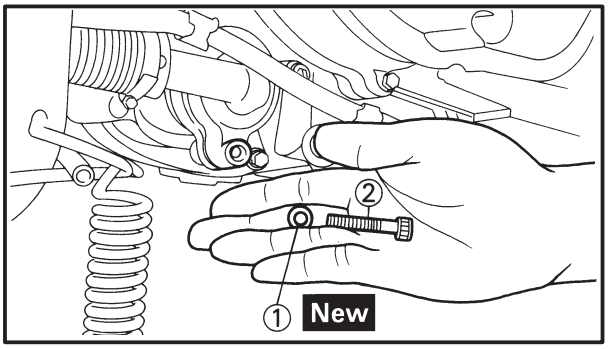
NOTE:

- Remove the radiator cap after removing the drain bolt.
- Place the scooter upright on a level surface when draining the coolant completely.



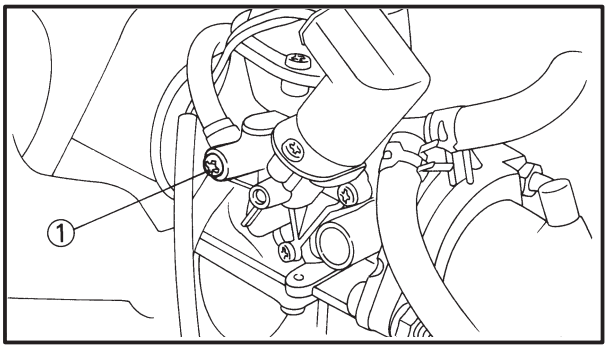
4. Clean:
   - Radiator

   Fill soft water into the filler neck support ① (reservoir tank).

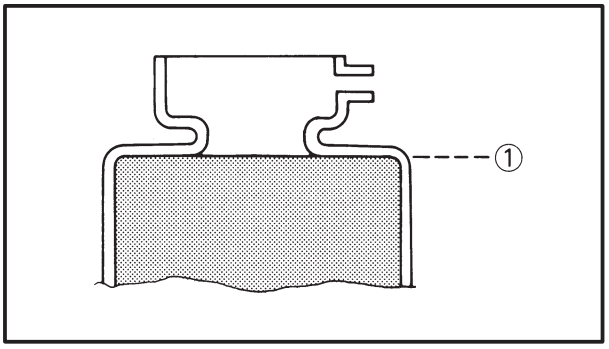


5. Install:
   - Gasket ① New
   - Drain bolt ②

10 Nm (1.0 m·kg)

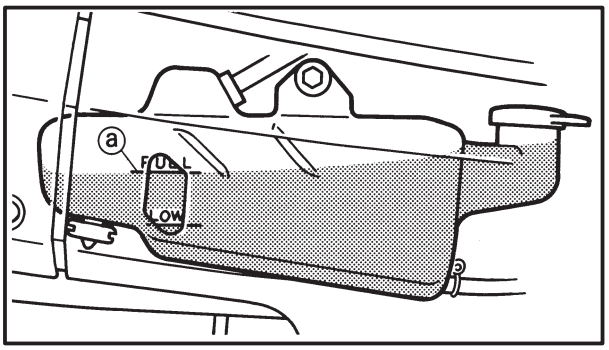


6. Loosen:
   - Screw ① (carburetor bleed)
7. Connect:
   - Hose (reservoir tank)

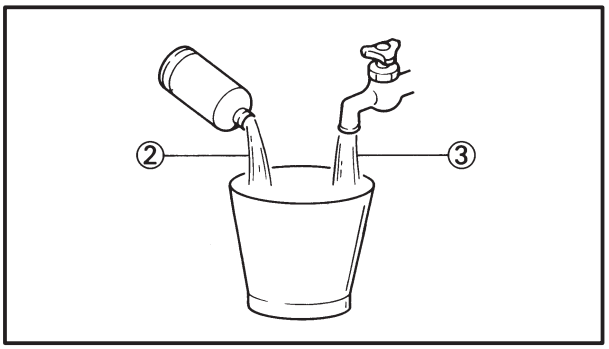


8. Fill:
   - Radiator
     (to specified level ①)
     Fill the coolant slowly, until the coolant comes out from the carburetor drain pipe.
   - Reservoir tank
     (to maximum level ⓐ)

Recommended coolant:
High quality ethylene glycol anti-freeze containing corrosion inhibitors for aluminium engine.



Coolant ② and water ③ (soft water):
Mixed ratio: 50%/50%
Total amount:
1.4 L
Reservoir tank capacity:
0.4 L



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Handling notes for coolant:
Coolant is potentially harmful and should be handled with special care.

⚠ WARNING

- If coolant splashes in your eyes:
thoroughly wash your eyes with water and consult a doctor.
- If coolant splashes on your clothes:
quickly wash it away with water and then with soap and water.
- If coolant is swallowed:
quickly make the person who has swallowed it vomit and then take him to a doctor.

CAUTION:

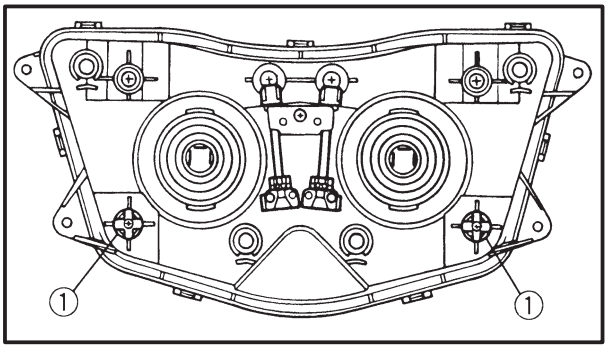
- Hard water or salt water is harmful to engine parts. Use only distilled water if soft water is not available.
- If you use tap water, make sure it is soft water.
- Do not use water containing impurities or oil.
- Take care that no coolant splashes onto painted surfaces. If it does, wash them straightaway with water.
- Do not mix different types of ethylene glycol antifreeze containing corrosion inhibitors for aluminum engines.

9. Tighten:
   - Screw (carburetor bleed)
   Fill the coolant slowly to the specified level.
10. Install:
   - Radiator cap
11. Start the engine and let it warm up for several minutes.
12. Stop the engine and inspect the level.
   Refer to “COOLANT LEVEL INSPECTION” section.

NOTE:

Wait a few minutes until the coolant settles before inspecting the coolant level.

13. Install:
   - Side cover mole
   Refer to “COVER AND PANEL” section.

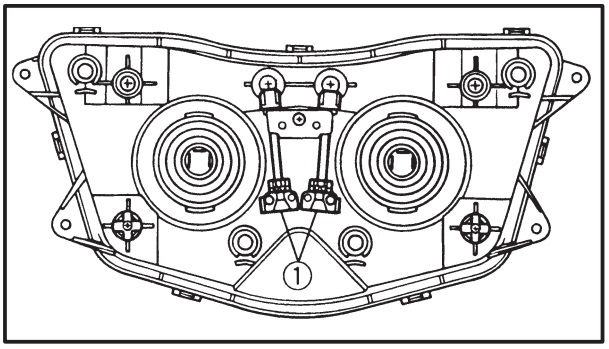


ELECTRICAL

HEADLIGHT BEAM ADJUSTMENT

1. Adjust
   ※Headlight beam (vertical)
   Turn the adjuster ① in or out.

Turning in →	**Headlight beam moves lower.**
Turning out →	**Headlight beam moves higher.**



2. Adjust
   ※Headlight beam (horizontal)
   Turn the adjuster ① in or out.

Left headlight

Turning in →	**Headlight beam moves left.**
Turning out →	**Headlight beam moves right.**

Right head light

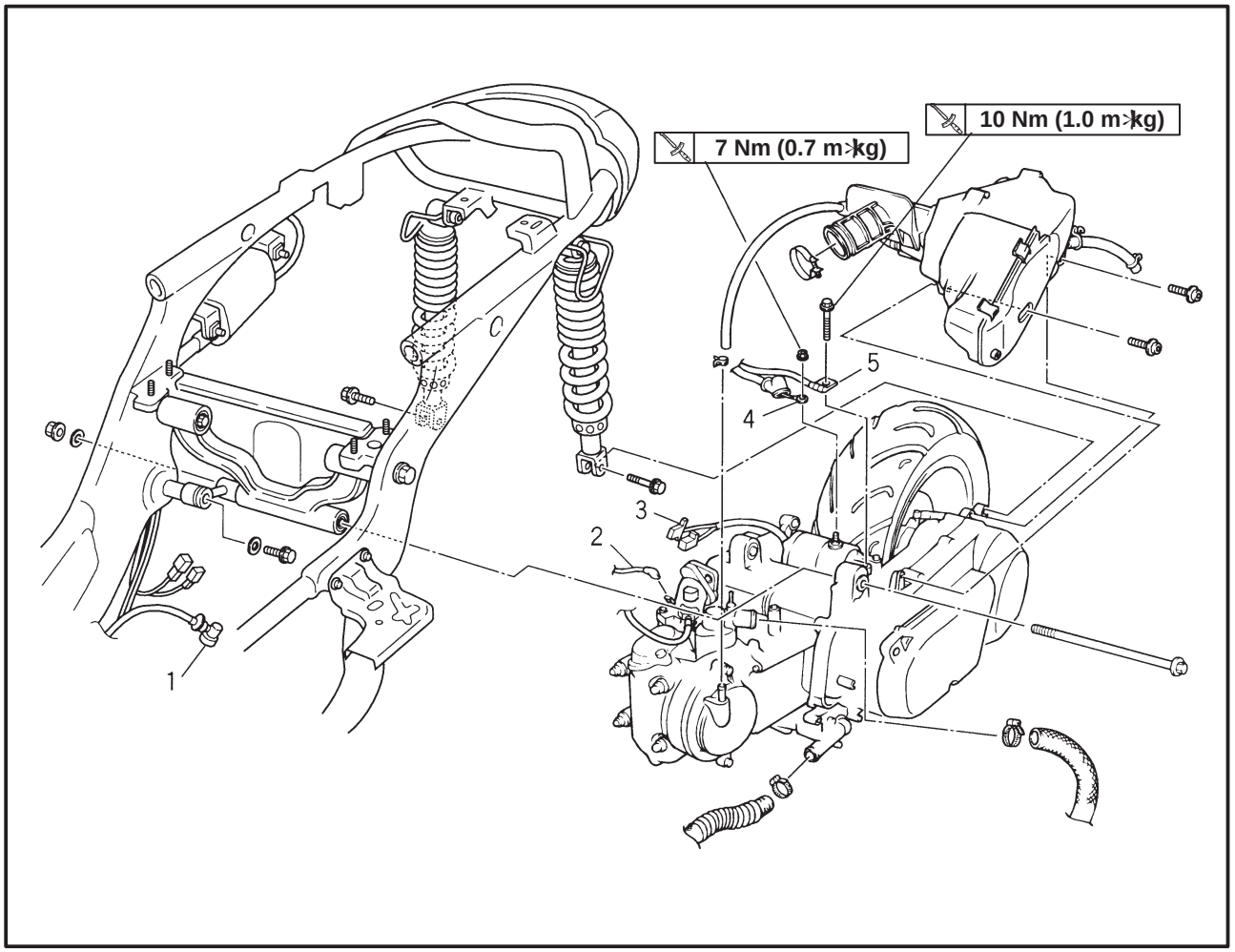
Turning in →	**Headlight beam moves right.**
Turning out →	**Headlight beam moves left.**

EB400000

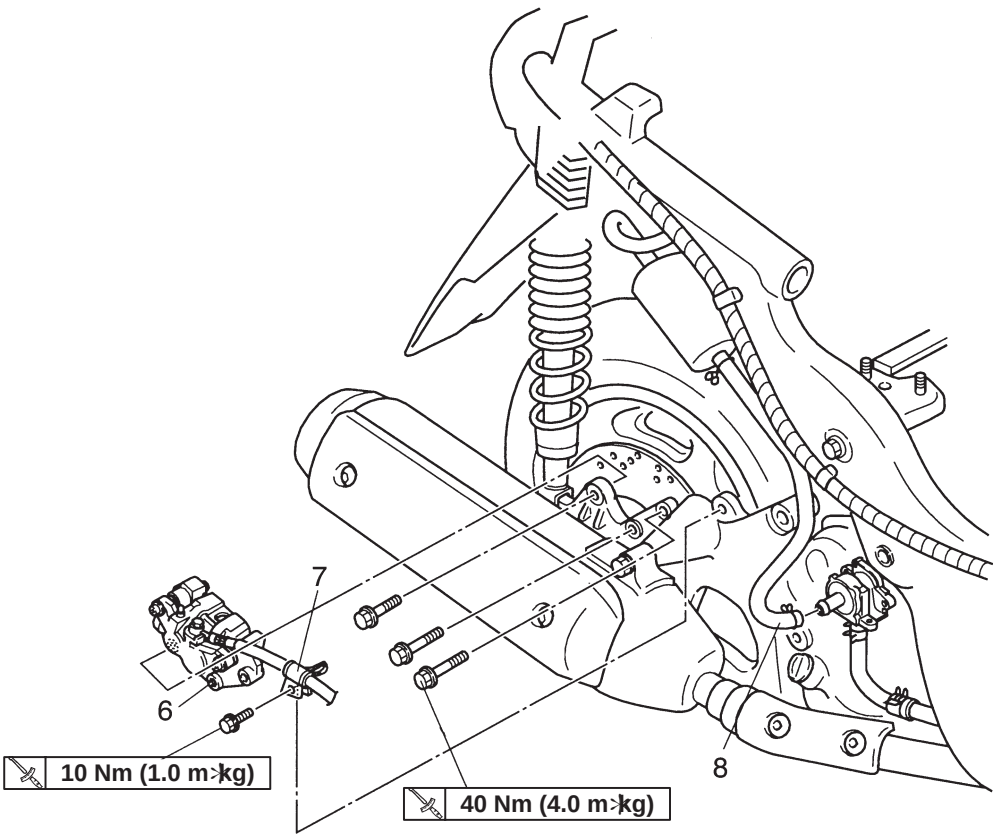
ENGINE OVERHAUL

ENGINE REMOVAL

WIREHARNESS, CABLE, REAR BRAKE

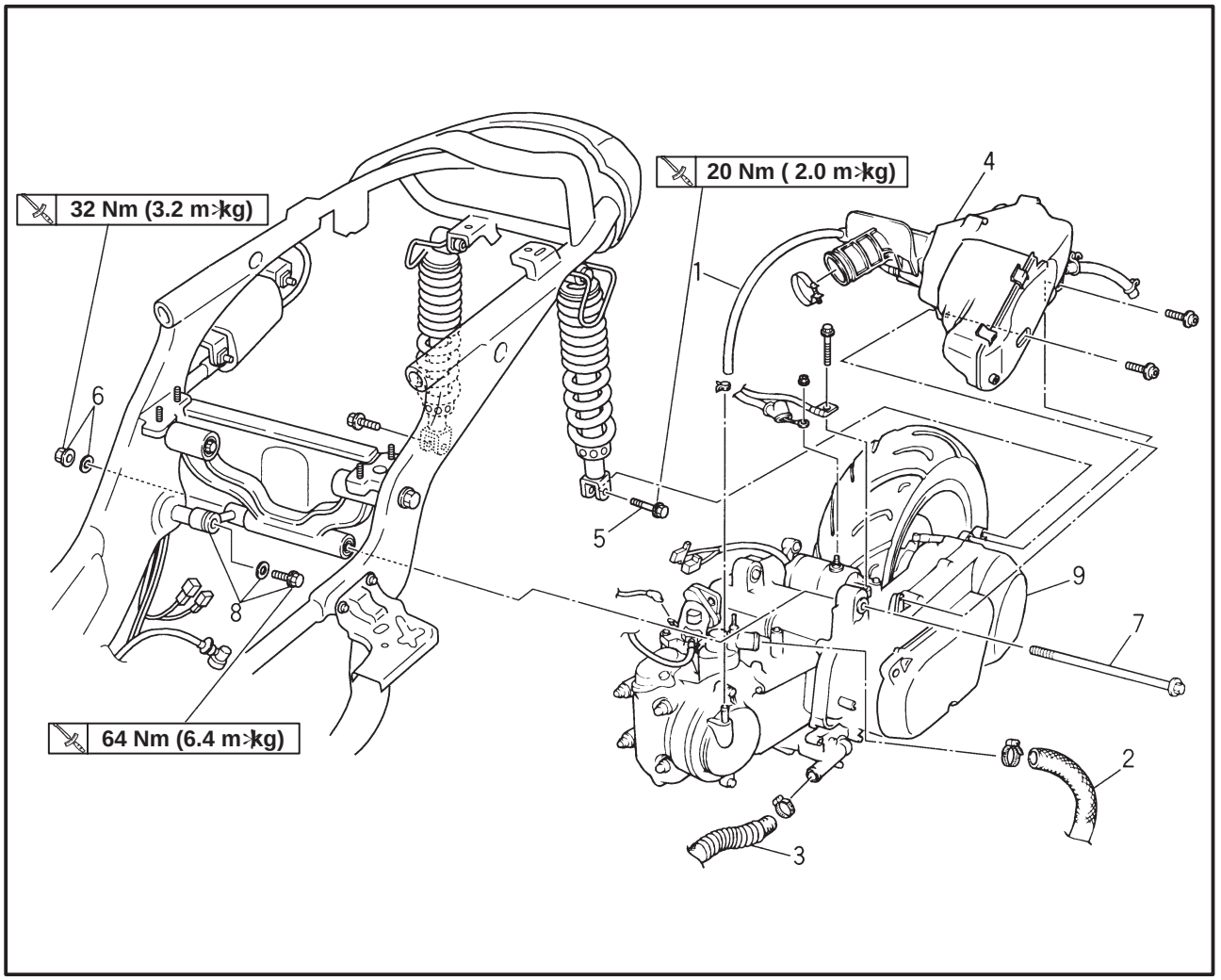


Order	Job name/Part name	Q'ty	Remarks
	Wireharness, cables and rear brake removal		Remove the parts in order.
	Side cover		Refer to "COVER AND PANEL" section.
	Main box		
	Footrest board		
	Drain the coolant.		Refer to "COOLANT REPLACEMENT" section.
	Carburetor		Refer to "CARBURETOR" section.
1	Spark plug cap	1	
2	Thermo unit lead	1	
3	Startor coil/Pick up coil lead	1/1	
4	Starting motor lead	1	
5	Earth lead	1	



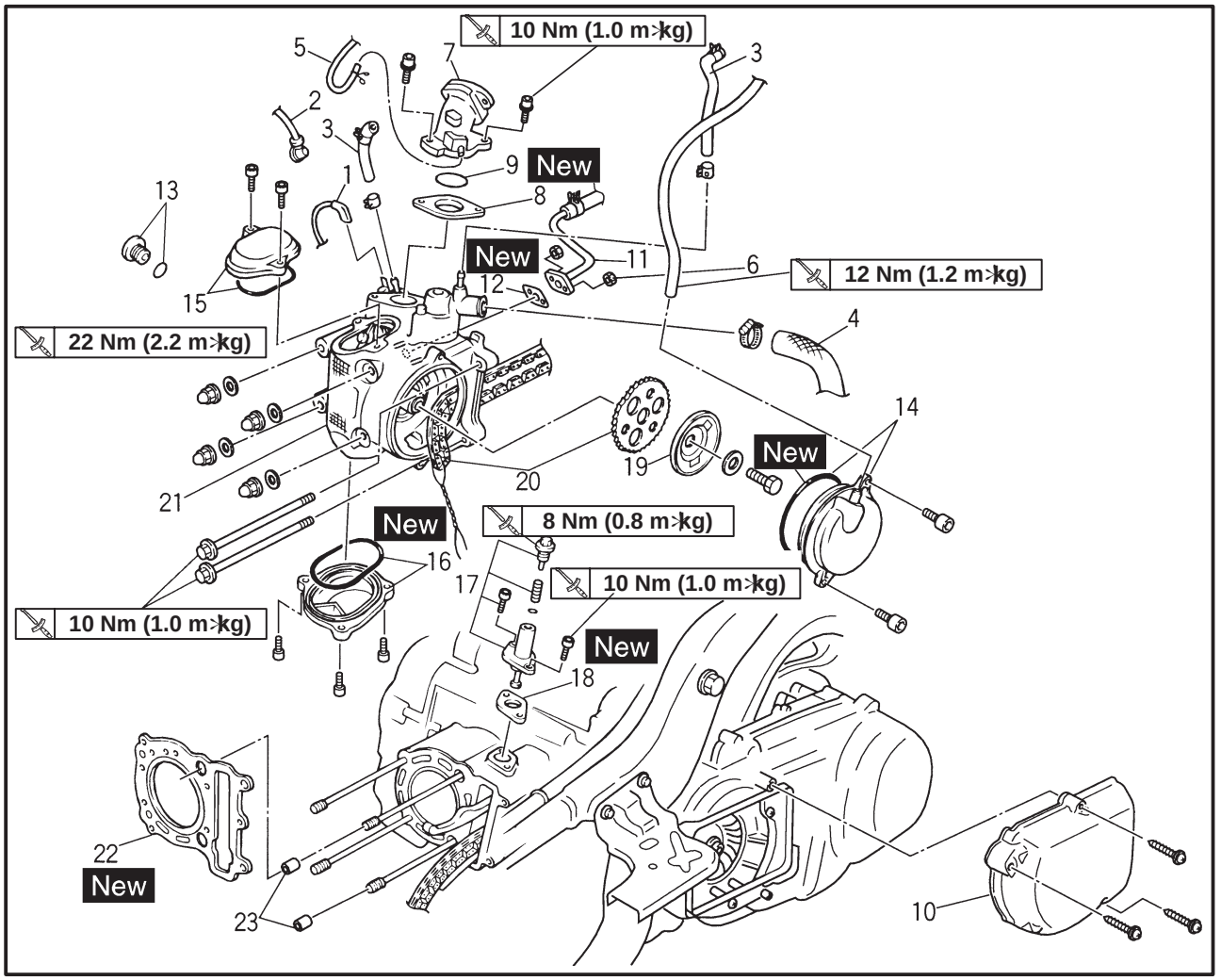
Order	Job name/Part name	Q'ty	Remarks
6	Caliper assembly	1	
7	Brake hose 1	1	
8	Air induction system hose	1	
			Reverse the removal procedure for installation.

HOSES, AIR FILTER CASE, ENGINE MOUNTING BOLT AND ENGINE

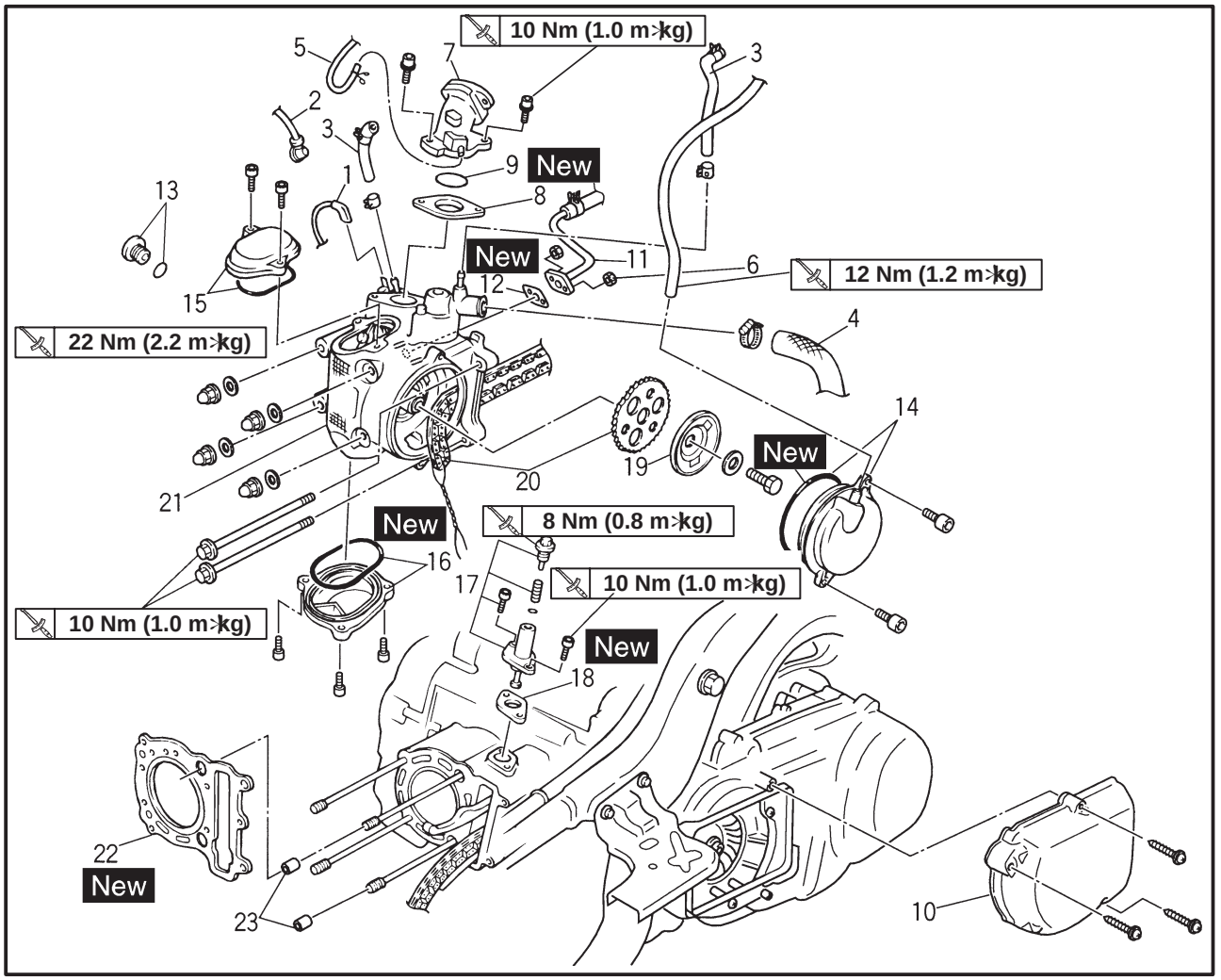


Order	Job name/Part name	Q'ty	Remarks
	Hoses, air filter case, engine mounting bolt and engine removal		Remove the parts in order.
1	Crankcase breather hose	1	
2	Inlet hose (water pump)	1	
3	Outlet hose (cylinder head)	1	
4	Air filter case assembly	1	
5	Bolt	2	(Rear shock absorber – lower)
6	Self locknut/Plane washer	1/1	Refer to "ENGINE REMOUNTING" section.
7	Bolt	1	
8	Bolt/Plane washer/Rod assembly	1/2/1	
9	Engine	1	
			Reverse the removal procedure for installation.

CYLINDER HEAD



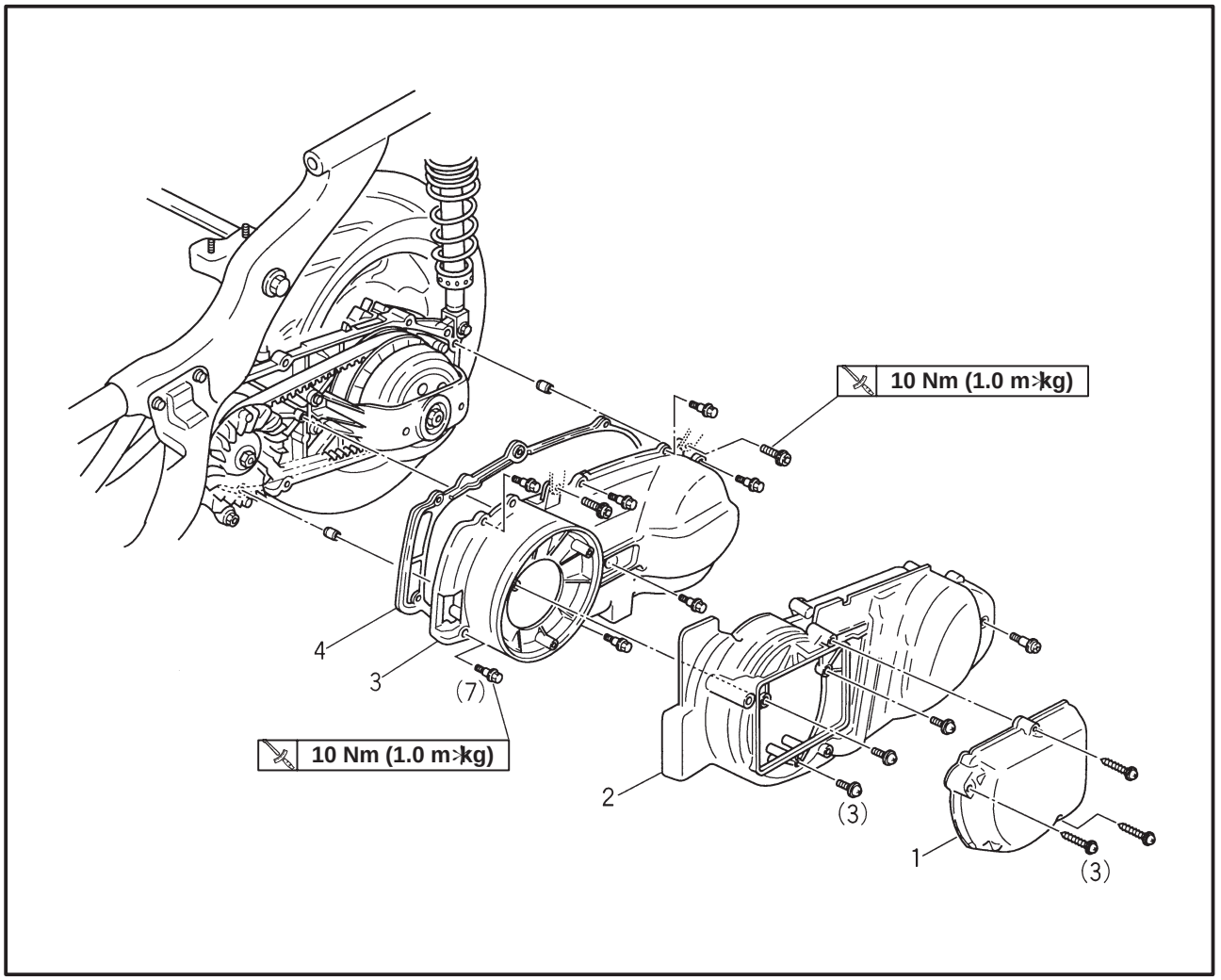
Order	Job name/Part name	Q'ty	Remarks
	Cylinder head removal		Remove the parts in the order.
	Drain the coolant.		
	Side cover		Refer to the "COVER AND PANELS" section.
	Main box		
	Footrest board		
	Carburetor		Refer to "CARBURETOR" section.
1	Thermo unit lead	1	
2	Plug cap	1	
3	Hose	2	
4	Outlet hose (cylinder head)	1	
5	Vacuum hose	1	
6	Breather hose (crankcase)	1	
7	Carburetor joint	1	
8	Joint	1	
9	O-ring	2	



Order	Job name/Part name	Q'ty	Remarks
10	Crankcase filter cover	1	
11	Pipe 1	1	
12	Gasket	1	
13	Plug/O-ring	1/1	
14	Cam sprocket cover/O-ring	1/1	
15	Valve cover (intake side)/O-ring	1/1	
16	Valve cover (exhaust side)/O-ring	1/1	
17	Timing chain tensioner assembly	1	Refer to "CYLINDER HEAD REMOVAL AND INSTALLATION" section.
18	Timing chain tensioner gasket	1	
19	Breather plate	1	
20	Cam sprocket/Timing chain	1/1	
21	Cylinder head	1	
22	Cylinder head gasket	1	
23	Dowel pin	2	
			Reverse the removal procedure for installation.

V-BELT, CLUTCH AND SECONDARY/PRIMARY SHEAVE

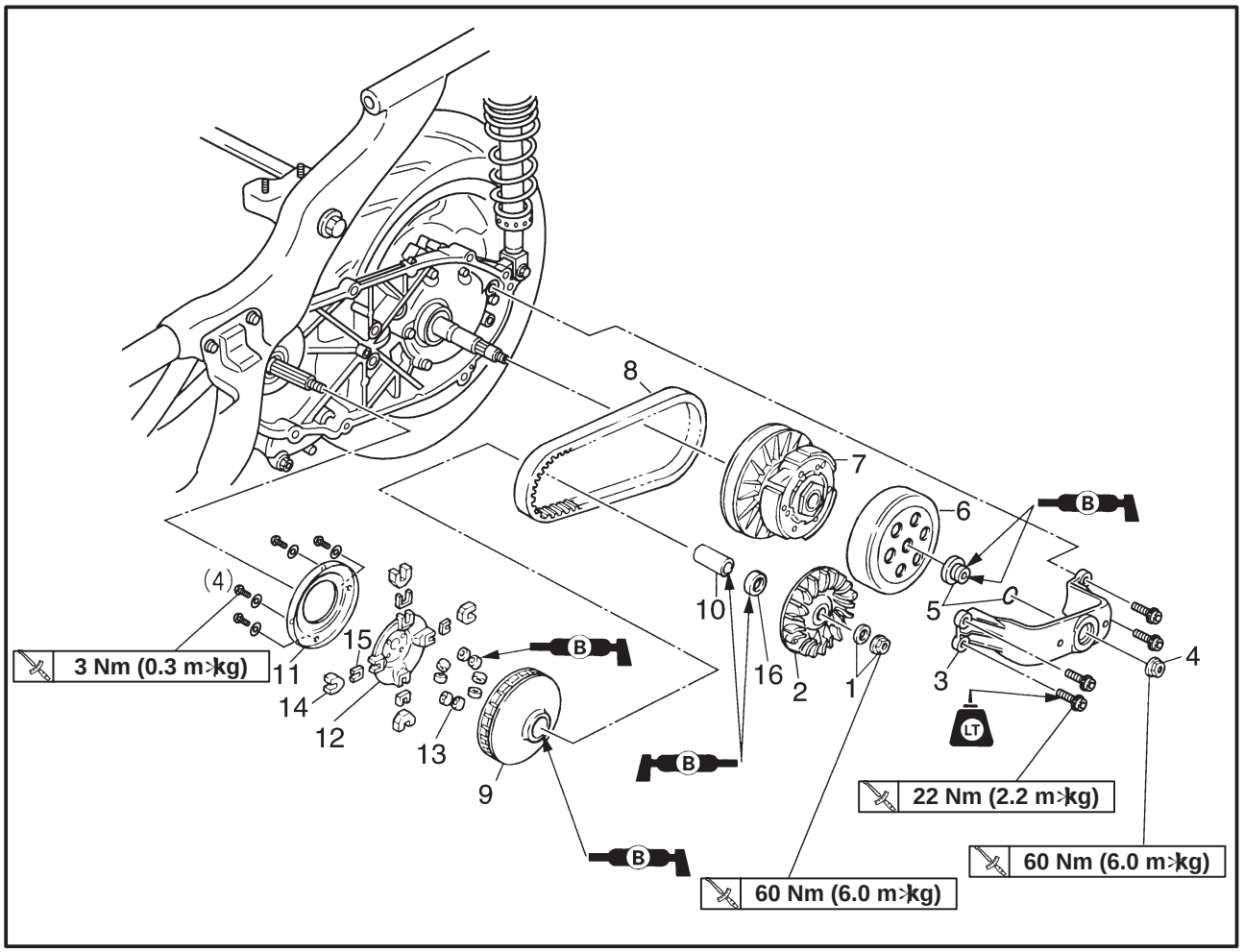
CRANKCASE FILTER COVER AND CRANKCASE COVER (LEFT)



Order	Job name/Part name	Q'ty	Remarks
	Crankcase filter cover and crankcase cover (left) removal		Remove the parts in order
	Side cover panel		Refer "COVER AND PANEL" section.
1	Crankcase filter cover	1	
2	Crankcase cover protector	1	
3	Crankcase cover (left)	1	
4	Crankcase cover gasket	1	
			Reverse the removal procedure for installation.

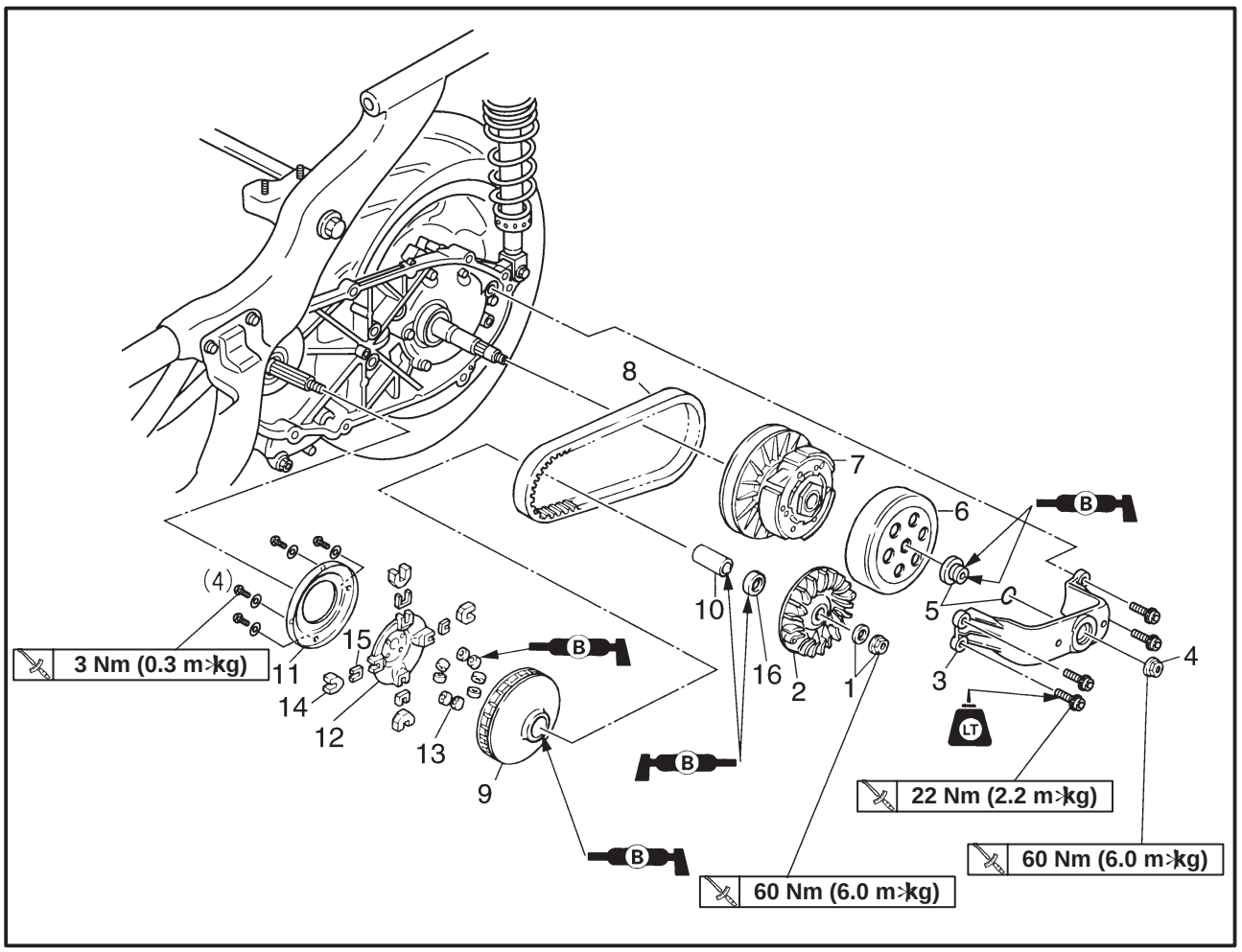
V-BELT, CLUTCH AND SECONDARY/PRIMARY SHEAVE

*Shell BT grease No. 3 (90890-69927)



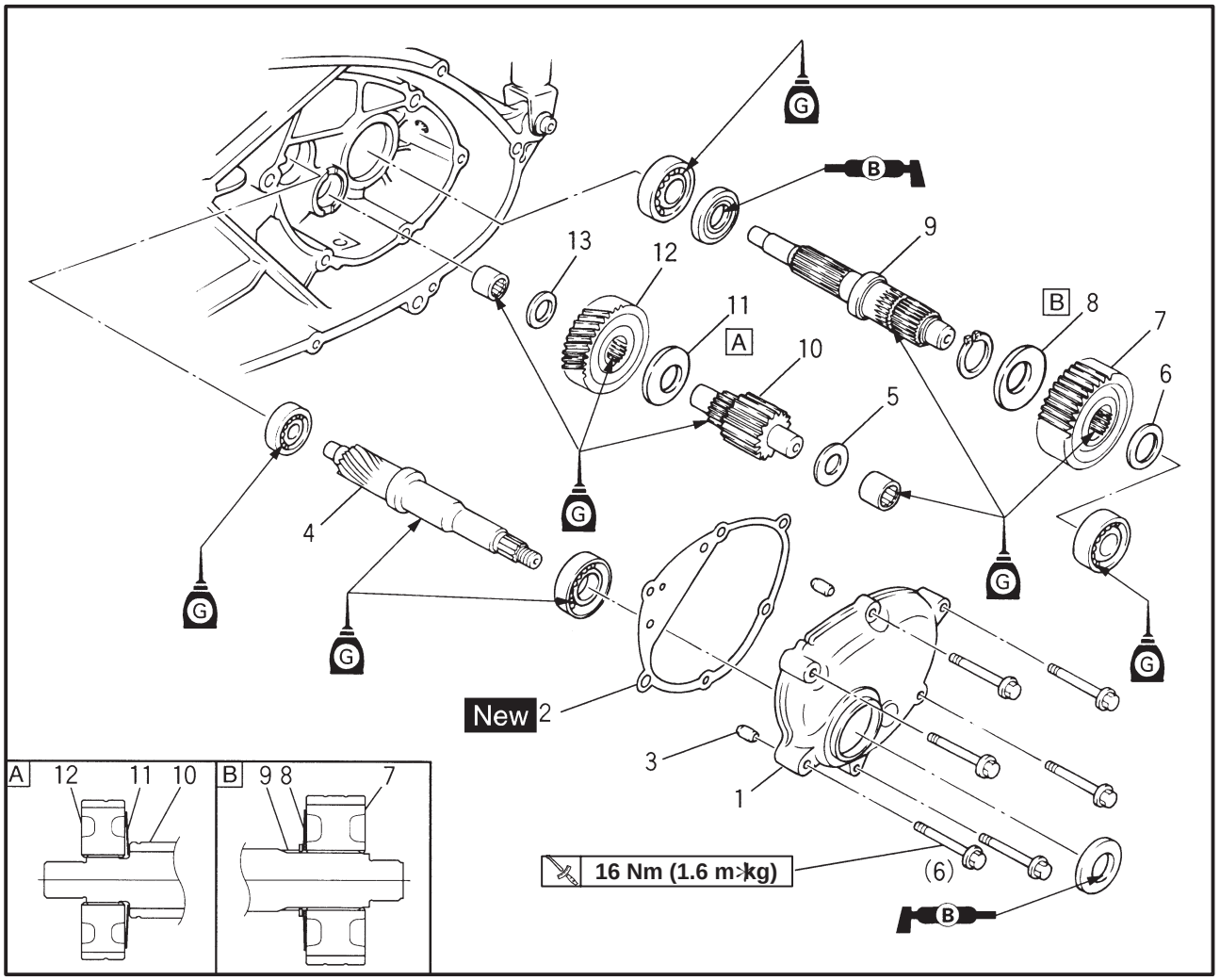
Order	Job name/Part name	Q'ty	Remarks
	V-belt, clutch and secondary/ primary sheave removal		Remove the parts in order.
1	Nut/Plain washer	1/1	Refer to "PRIMARY SHEAVE REMOVAL" section.
2	Primary fixed sheave	1	
3	Bracket	1	
4	Nut	1	Refer to "SECONDARY SHEAVE AND V-BELT REMOVAL" section. Refer to "SECONDARY SHEAVE INSTALLATION" section.
5	Spacer/O-ring	1/1	
6	Clutch housing	1	
7	Clutch assembly	1	
8	V-belt	1	
9	Primary sliding sheave	1	Refer to "PRIMARY SHEAVE ASSEMBLY" section.
10	Collar	1	
11	Primary sheave cap	1	

*Shell BT grease No. 3 (90890-69927)

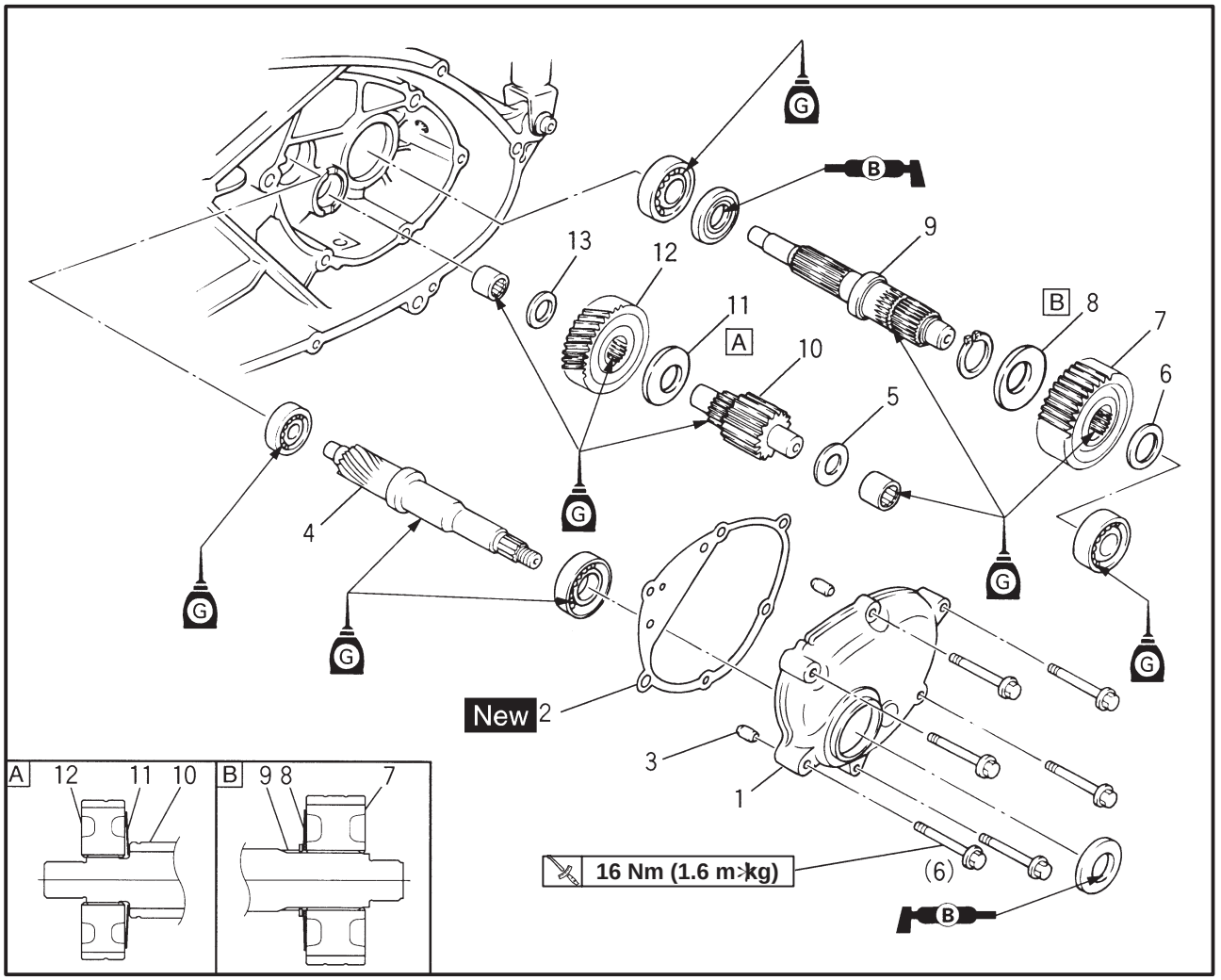


Order	Job name/Part name	Q'ty	Remarks
12	Cam	1	Refer to "PRIMARY SHEAVE ASSEMBLY" section.
13	Weight	8	
14	Slider	4	
15	Spacer	4	
16	Oil seal	1	
			Reverse the removal procedure for installation.

TRANSMISSION

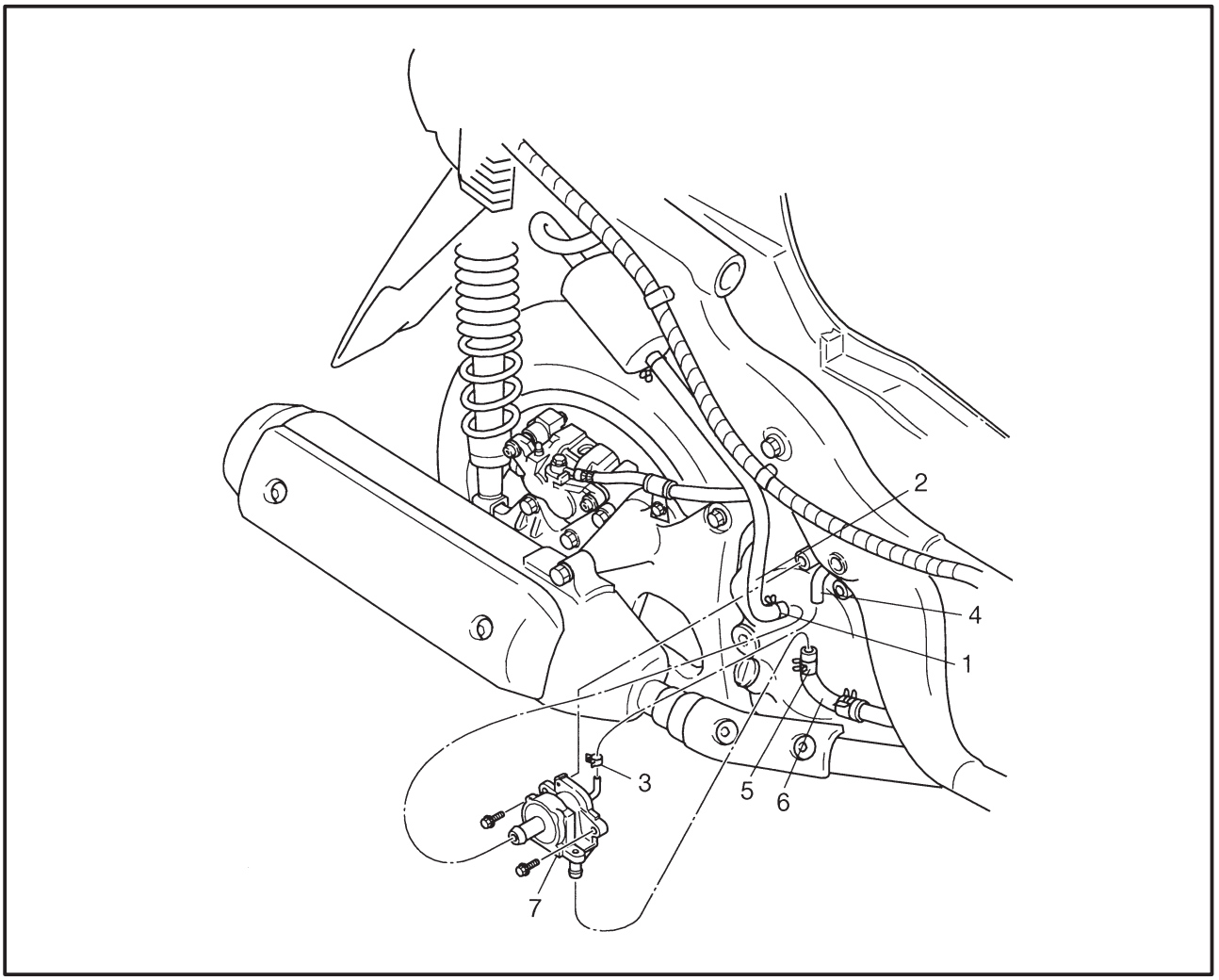


Order	Job name/Part name	Q'ty	Remarks
	Transmission removal		Remove the parts in order.
	Rear wheel		Refer to "REAR WHEEL/REAR BRAKE" section.
	Crankcase cover (left)		Refer to "V-BELT, CLUTCH, SECONDARY/PRIMARY SHEAVE" section.
	Drain the transmission oil.		Refer to "TRANSMISSION OIL REPLACEMENT" section.
1	Transmission case cover	1	
2	Gasket (transmission case cover)	1	
3	Dowel pin	2	
4	Primary drive gear	1	
5	Plain washer	1	
6	Plain washer	1	
7	1st wheel gear	1	

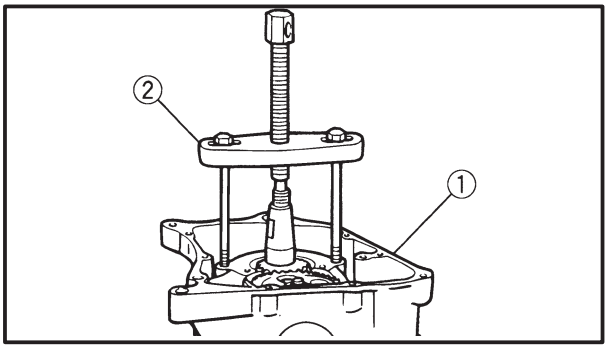


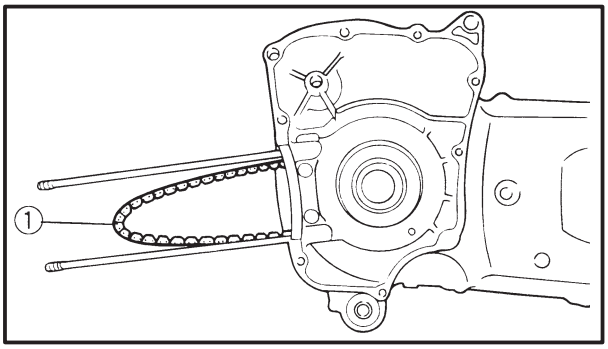
Order	Job name/Part name	Q'ty	Remarks
8	Conical spring washer	1	
9	Drive axle	1	
10	Main axle	1	
11	Conical spring washer	1	
12	Primary driven gear	1	
13	Plain washer	1	
			Reverse the removal procedure for installation.

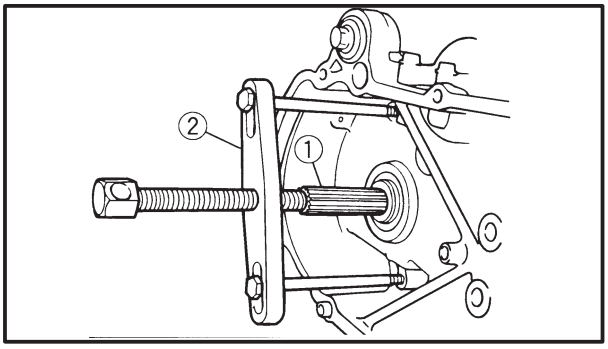
AIR INDUCTION SYSTEM

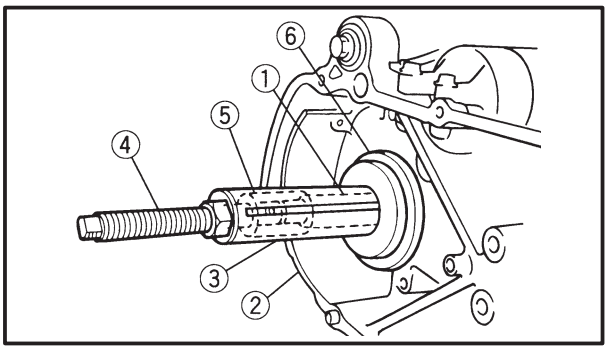


Order	Job name/Part name	Q'ty	Remarks
	Air induction system removal		Remove the parts in the order
1	Clip	1	
2	Hose 2	1	
3	Clip	1	
4	Vacuum hose	1	
5	Clip	1	
6	Hose 1	1	
7	Air induction system assembly	1	
			Reverse the removal procedure for installation









CRANKCASE AND CRANKSHAFT

CRANKCASE REMOVAL

1. Remove
   ⋇Crankcase 2 ①

NOTE:

⋇Remove the crankshaft assembly with the crankcase separating tool ②.
⋇Make sure that the crankcase separating tool is centered over the crankshaft assembly.

	Crankshaft separating tool 90890-01135

CRANKSHAFT REMOVAL

1. Remove:
   ⋇Timing chain ①

NOTE:

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

⋇crankshaft ①
Remove the crankshaft assembly with the crankcase separating tool ②

CAUTION:

Do not tap on the crankshaft.

	Crankshaft separating tool 90890-01135

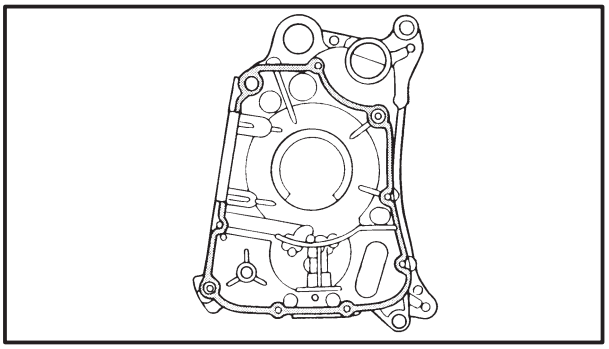
CRANKSHAFT INSTALLATION

1. Install:
   ⋇Crankshaft ①
   ⋇Crankcase ②
   Install the crankshaft assembly with the crankshaft installer pot ③, crankshaft installer bolt ④, adapter ⑤, spacer ⑥.

NOTE:

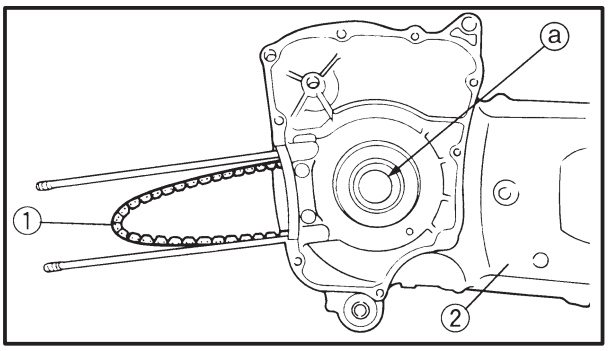
Hold the connecting rod at top dead center (TDC) with one hand while turning the nut of the crankshaft installing tool with the other.
Turn the crankshaft installing tool until the crankshaft assembly bottoms against the bearing.
Do not tap on the crankshaft.

Crankshaft installer pot ③
90890-01274
Crankshaft installer bolt ④
90890-01275
Adapter ⑤
90890-01478
Spacer ⑥
90890-01016



2. Clean all the gascket mating surface and crankcase surface thoroughly.
3. Apply:
   ⊁sealant
   (onto the left crankcase mating surface)

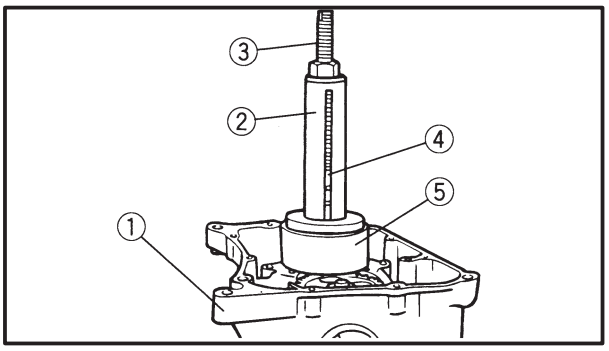
Yamaha bond No.1215



4. Install:
   ⊁Timing chain ①

NOTE:

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



5. Install:
   ⊁Crankcase 2 ①

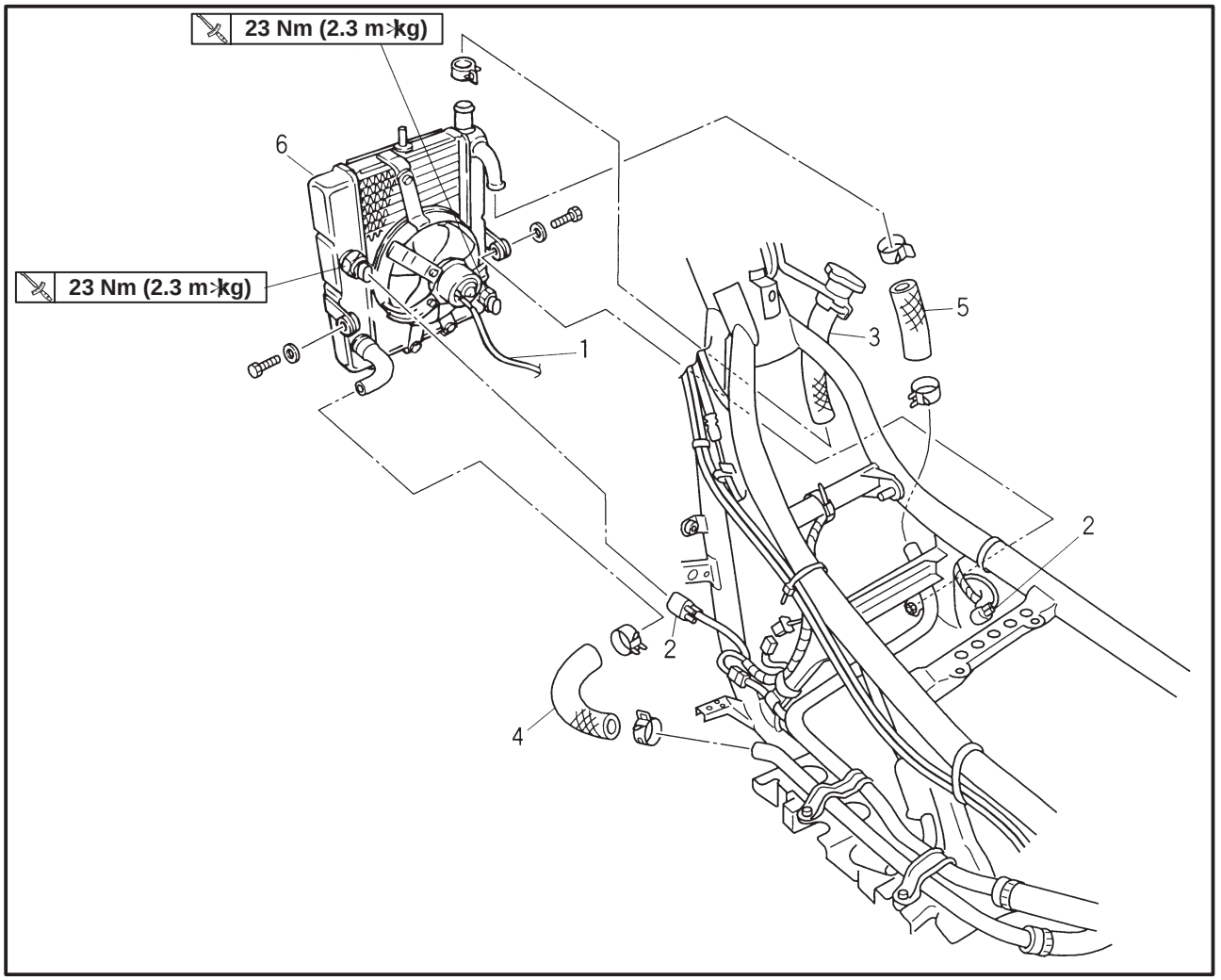
Install the crankshaft assembly with the crankshaft installer pot ②, crankshaft installer bolt ③, adapter ④, spacer ⑤.

Crankshaft installer pot ②
90890-01274
Crankshaft installer bolt ③
90890-01275
Adapter ④
90890-01280
Spacer ⑤
90890-01288

YP500000

COOLING SYSTEM

RADIATOR

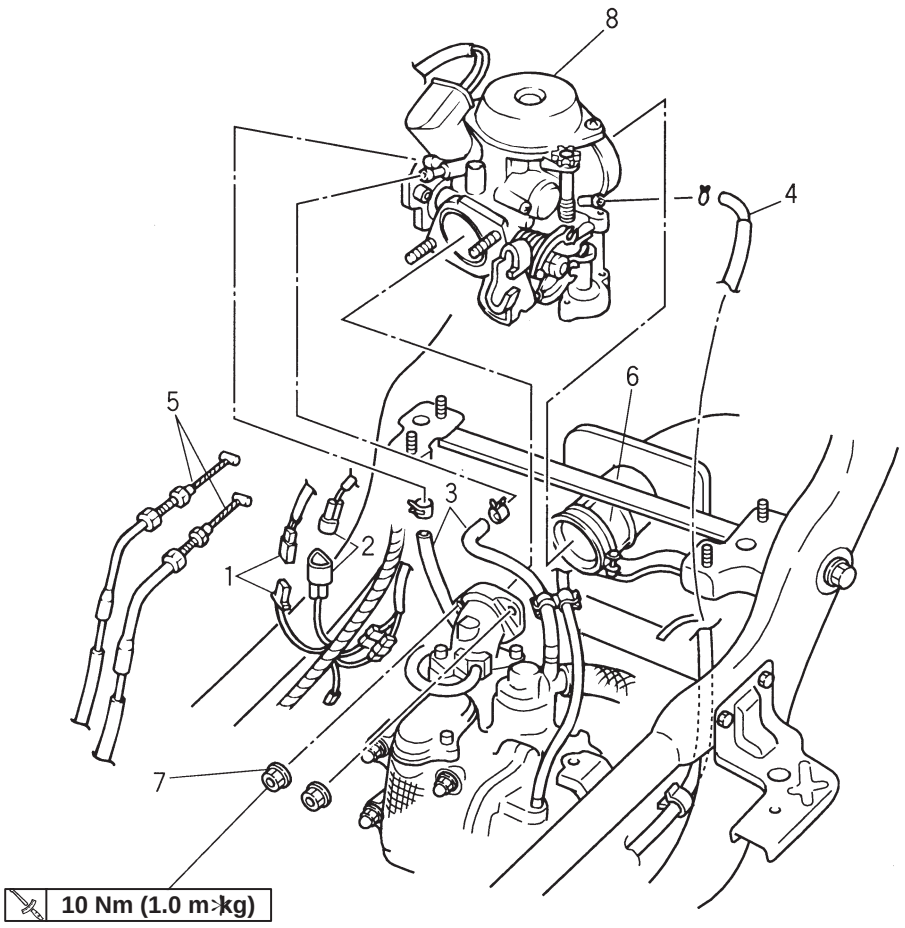


Order	Job name/Part name	Q'ty	Remarks
	Radiator removal		Remove the parts in order.
	Drain the coolant		Refer to "COOLANT REPLACEMENT" section.
	Fuel tank		Refer to "COVER AND PANEL" section.
	Footrest board, under cover		
	Cowling body, leg shield		
1	Fan motor leads	1	
2	Thermo switch leads	2	
3	Filler hose (radiator)	1	
4	Outlet hose (radiator)	1	
5	Inlet hose (radiator)	1	
6	Radiator	1	
			Reverse the removal procedure for installation.

EB600000

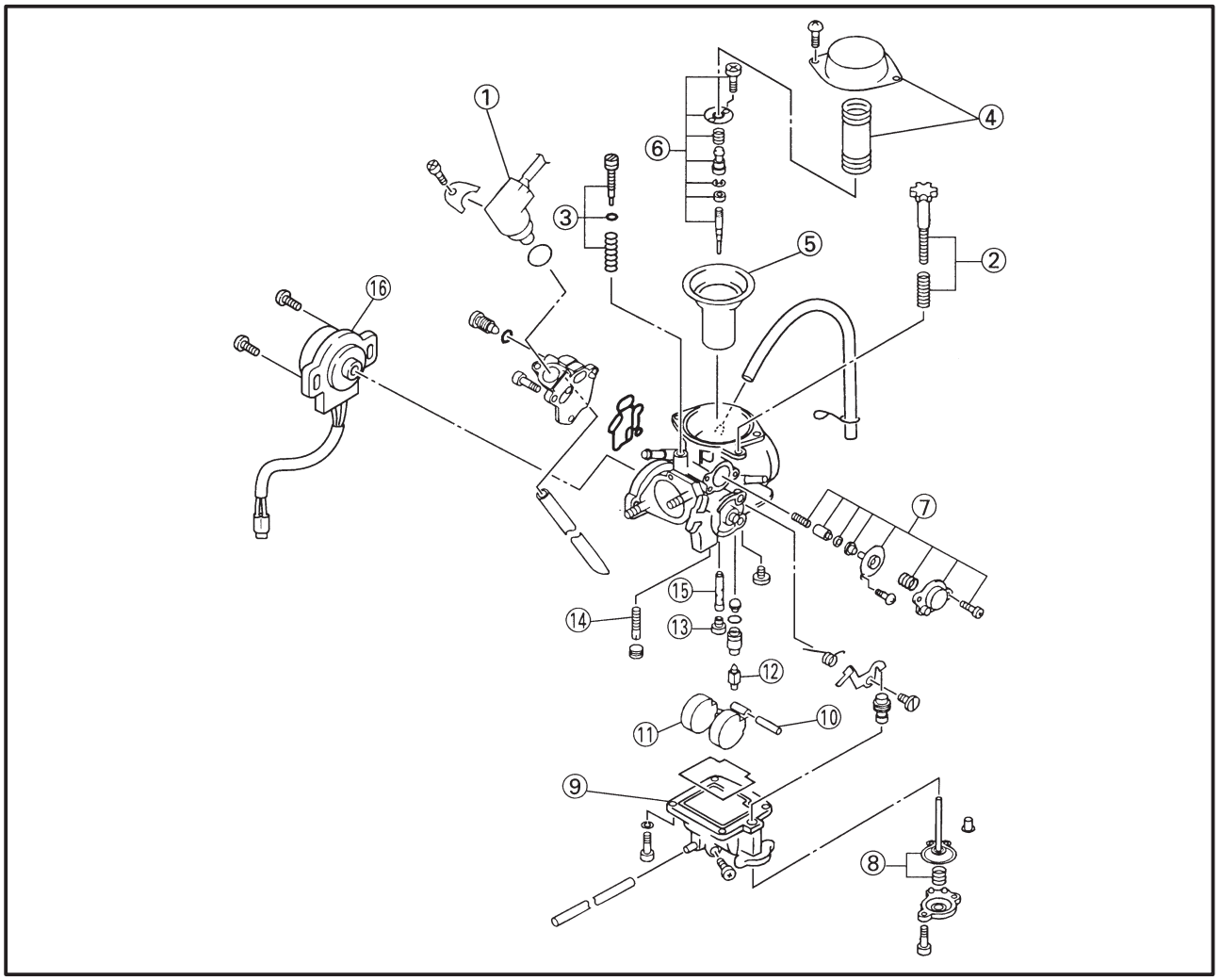
CARBURETOR

CARBURETOR

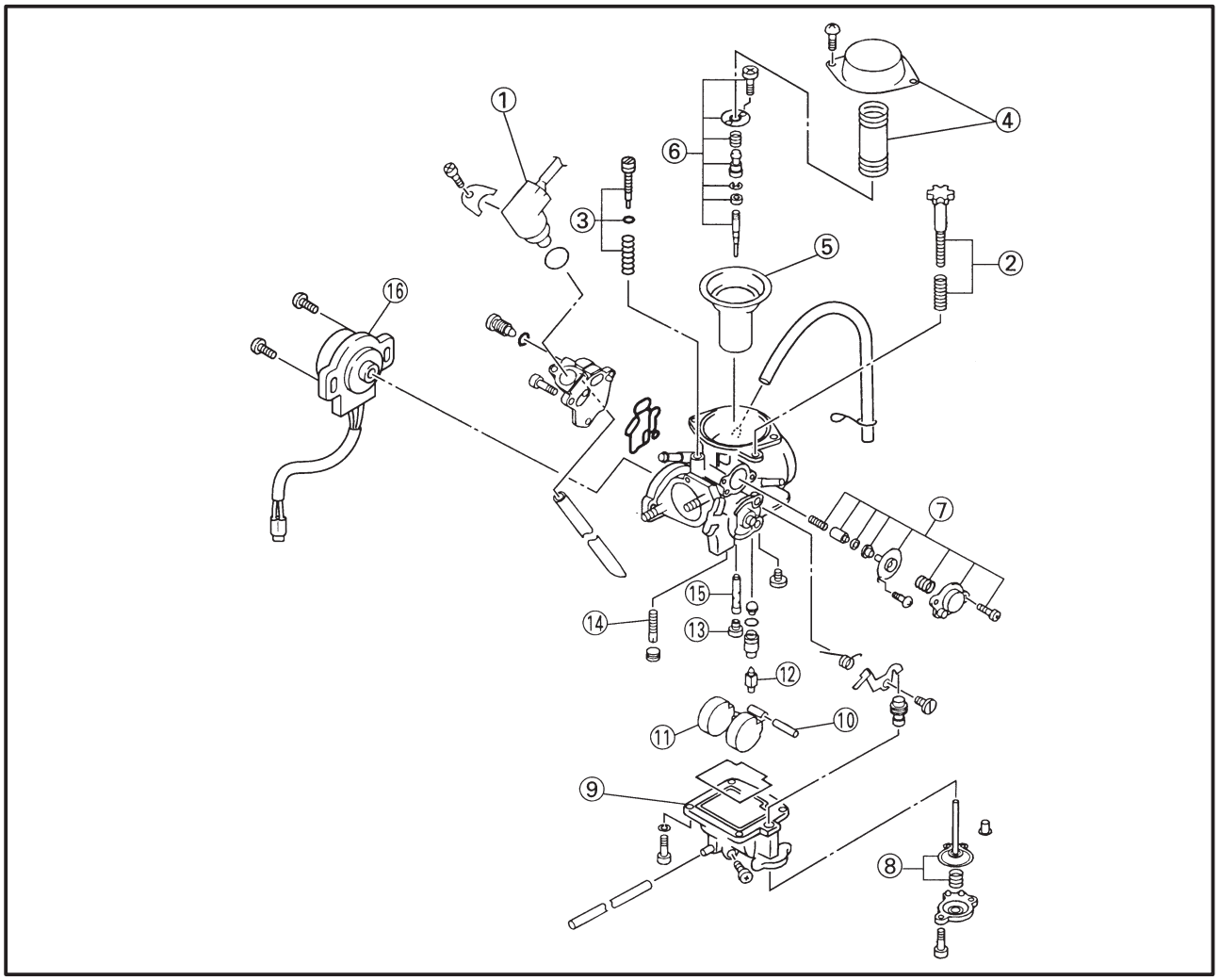


Order	Job name/Part name	Q'ty	Remarks
	Carburetor removal		Remove the parts in order.
	Side panel Main box		Refer to "COVER AND PANEL" section.
	Drain the coolant		Refer to "COOLANT REPLACEMENT" section.
1	Auto choke lead coupler	1	
2	Throttle position sensor lead	1	
3	Inlet/Outlet hose (carburetor)	1/1	
4	Fuel hose	1	**CAUTION:**
5	Throttle cable	2	
6	Air filter joint	1	**Do not bend the air filter joint clamp when installing the carburetor.**
7	Nut	2	
8	Carburetor assembly	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	Auto choke unit	1	
②	Throttle stop screw set	1	
③	Pilot screw set	1	
④	Cover/Diaphragm spring	1/1	
⑤	Piston valve	1	
⑥	Jet needle assembly	1	
⑦	Coasting enricher	1	
⑧	Accererating pump	1	Refer to "CARBURETOR ASSEMBLY" section.
⑨	Float chamber	1	
⑩	Float pin	1	Refer to "CARBURETOR ASSEMBLY" section.

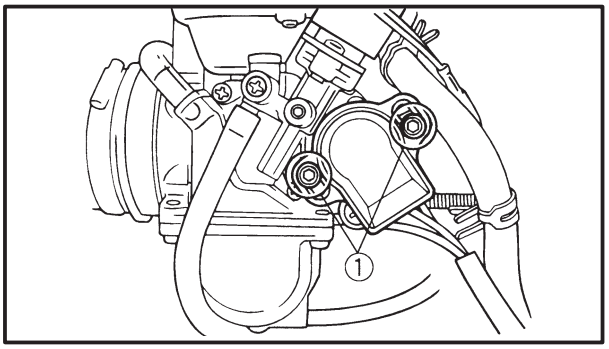


Order	Job name/Part name	Q'ty	Remarks
⑪	Float	1	Refer to "CARBURETOR ASSEMBLY" section.
⑫	Needle valve	1	
⑬	Main jet	1	
⑭	Pilot jet	1	
⑮	Main nozzle	1	
⑯	Throttle position sensor	1	
			Reverse the disassembly procedure for assembly.

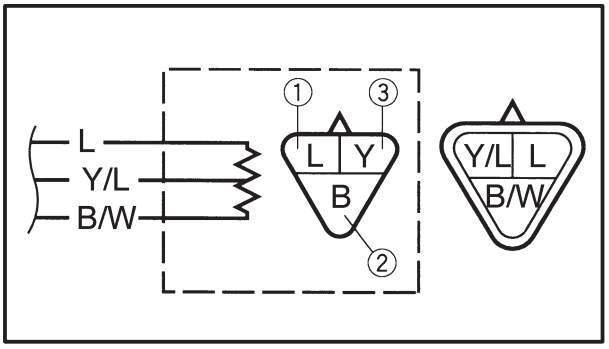
THROTTLE POSITION SENSOR ADJUSTMENT

NOTE:

- Before adjusting the throttle position sensor the engine idling speed should be properly adjusted.
- When installing the throttle position sensor, adjust its angle according to the RPM which is displayed on the tachometer, Refer to the adjustment procedure below.



1. Turn the main switch to “ON”
2. Loosen:
   - Throttle position sensor screws ①



3. Inspect:
   - Throttle position sensor input voltage.

   tester (+) lead → blue ①
   tester (–) lead → black ②

Throttle position sensor in put voltage
5 V

Out of specification → Check the wireharness between battery and igniter or igniter and throttle position sensor.

- Throttle position sensor output voltage

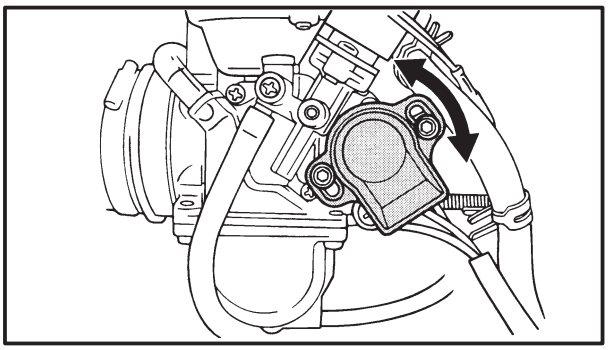
   tester (+) lead → yellow ③
   tester (–) lead → black ②

Throttle position sensor output voltage.
0.73 √ 0.63 V

Out of specification → Adjust or replace.

NOTE:

When check the throttle position sensor must be connect the throttle sensor coupler to the wireharness.

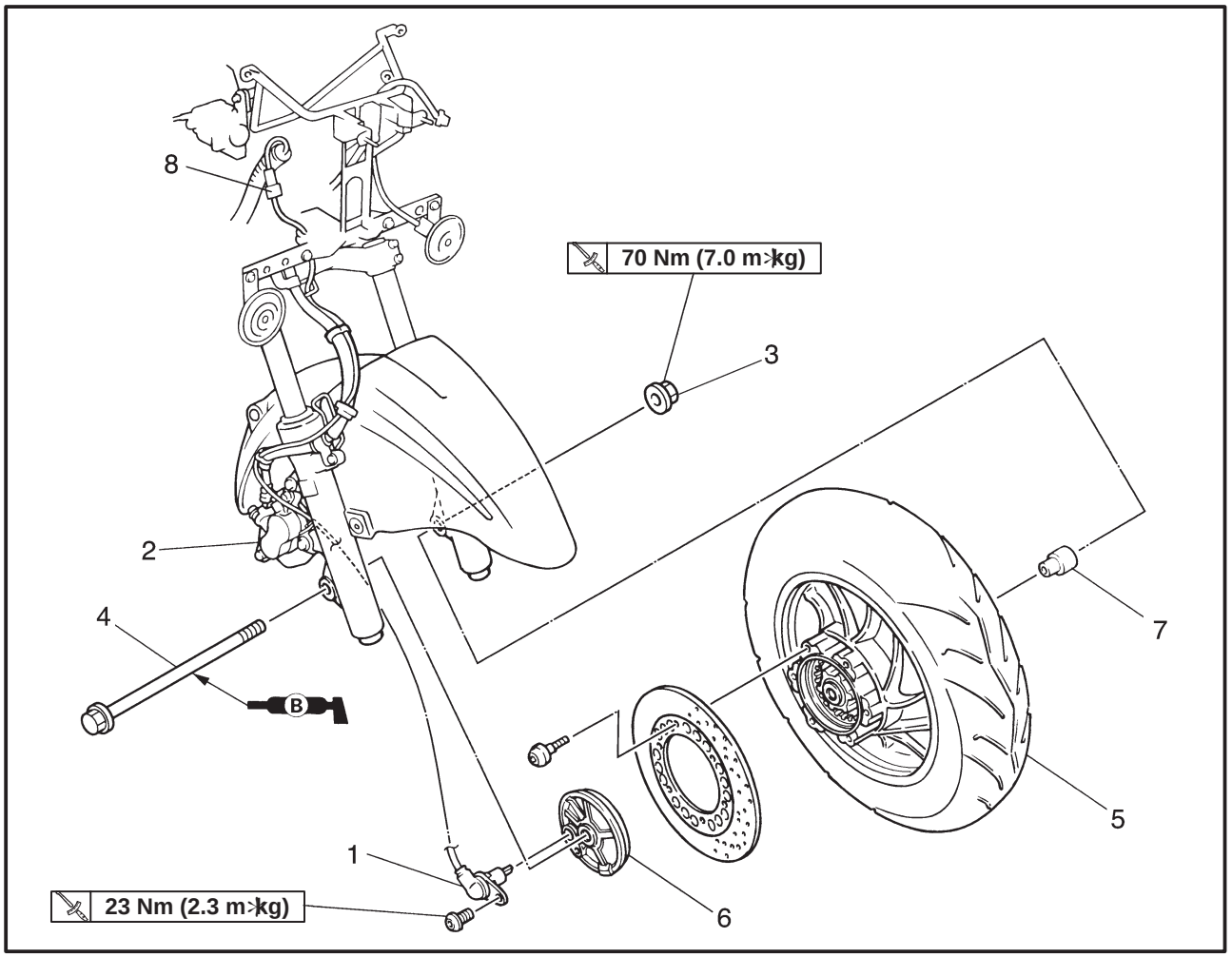


4. Tighten:
   - Throttle position sensor screws

CHASSIS

FRONT WHEEL

SPEED SENSOR AND SENSOR ROTOR

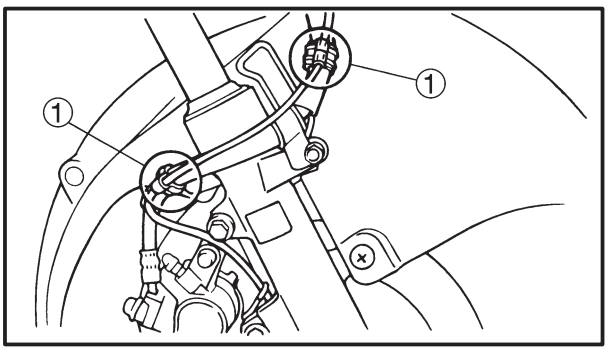


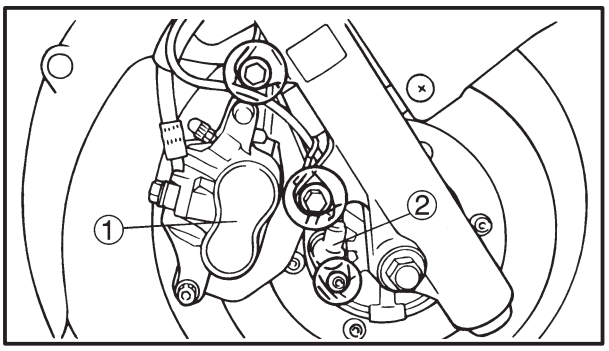
Order	Job name/Part name	Q'ty	Remarks
	Speed sensor and sensor rotor removal		Remove the parts in order.
	Cowling body		Refer to "COVER AND PANEL" section.
1	Speed sensor	1	
2	Brake caliper	1	
3	Axle nut	1	
4	Wheel axle	1	
5	Front wheel	1	
6	Sensor housing	1	
7	Collar	1	
8	Front wheel sensor lead connector	1	Disconnect the connecter. Reverse the removal procedure for installation.

SPEED SENSOR AND THE SENSOR ROTOR

CAUTION:

⁎Speed sensor cannot be disassembled. Never disassemble it. If failed, replace with a new one.





SPEED SENSOR REMOVAL

1. Remove:
   ⁎Clamp ①

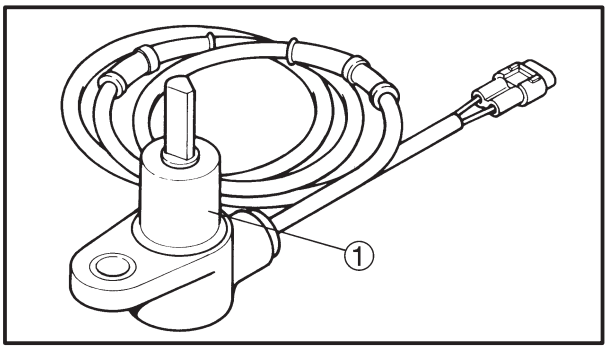
NOTE:

Clamp can be easily removed by moving the clamp tip of brake hose and speed sensor leads up and down.

2. Remove:
   ⁎caliper ①
   ⁎Speed sensor ②

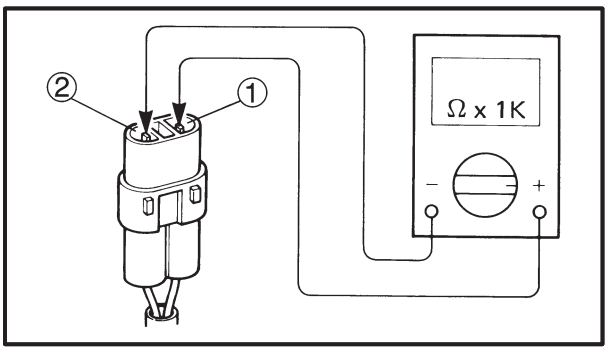
CAUTION:

⁎Care should be taken not to allow the sensor electrode to contact the metal parts when removing the speed sensor from the wheel hub.
⁎To remove the wheel, do not operate the brake lever.



SPEED SENSOR AND SENSOR ROTOR INSPECTION

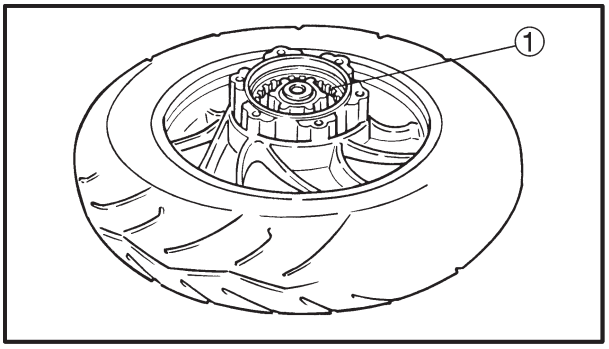
1. Check:
   ⁎Speed sensor ①
   Cracks, bending and distortion → Replace
   Iron powder and dust → Clean



2. Measure:
   ⊱Speed sensor resistance
   Connect the pocket tester (Ω × 1) to the terminal of speed sensor connector.
   Tester's positive (+) lead → Terminal ①
   Tester's negative (–) lead → Terminal ②

Regulated resistance:
1.19 to 2.21 kΩ at 20°C

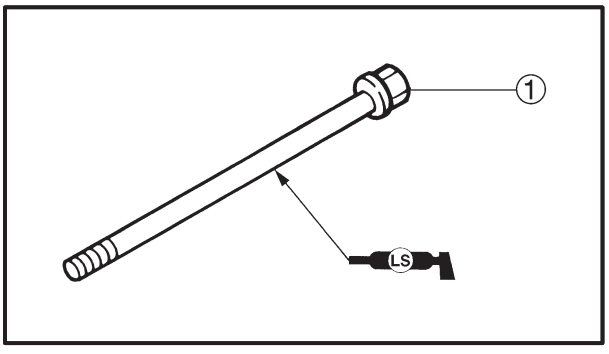
Out of specification → Replace



3. Check:
   ⊱Sensor rotor ①
   Cracks and damage → Replace the wheel assembly

NOTE:

Sensor rotor of YP250 is inserted under pressure by the special process and cannot be replaced as a single unit. To replace the sensor rotor, replace it as a wheel assembly.



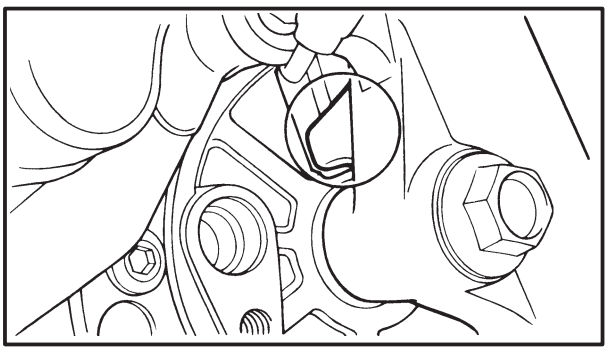
SPEED SENSOR ASSEMBLY

Proceed in the reverse order of disassembling paying attention to the following items.

1. Apply:
   ⊱Litium soap base grease

① Wheel axle

2. Install:
   - Sensor housing



3. Install:
   - Front wheel
   - Wheel axle
   - Axle nut

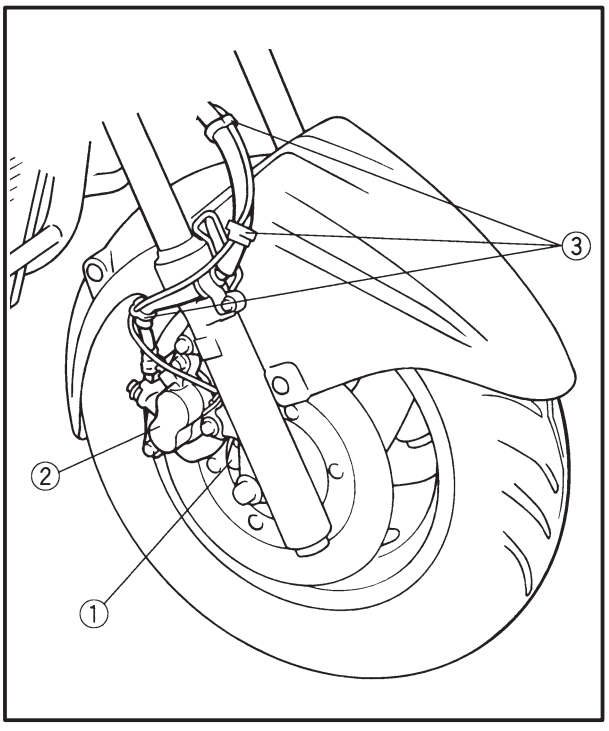
70 Nm (7.0 m·kg)

NOTE:

Align the slot of sensor housing with the projection part of front fork, then assemble them.

CAUTION:

Install after checking if foreign materials are mixed in the wheel hub. If foreign materials are mixed, it causes to damage the sensor rotor and speed sensor.



4. Install:
   - Speed sensor ①
   - Brake caliper ②
   - Clamp ③

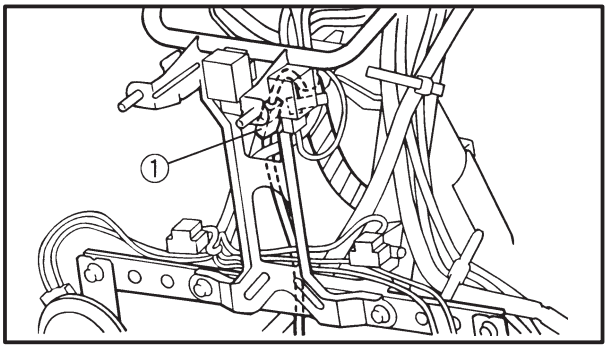
23 Nm (2.3 m·kg)
50 Nm (5.0 m·kg)

NOTE:

When installing the speed sensor, check if the speed sensor lead is twisted or foreign matters attached to the electrode.

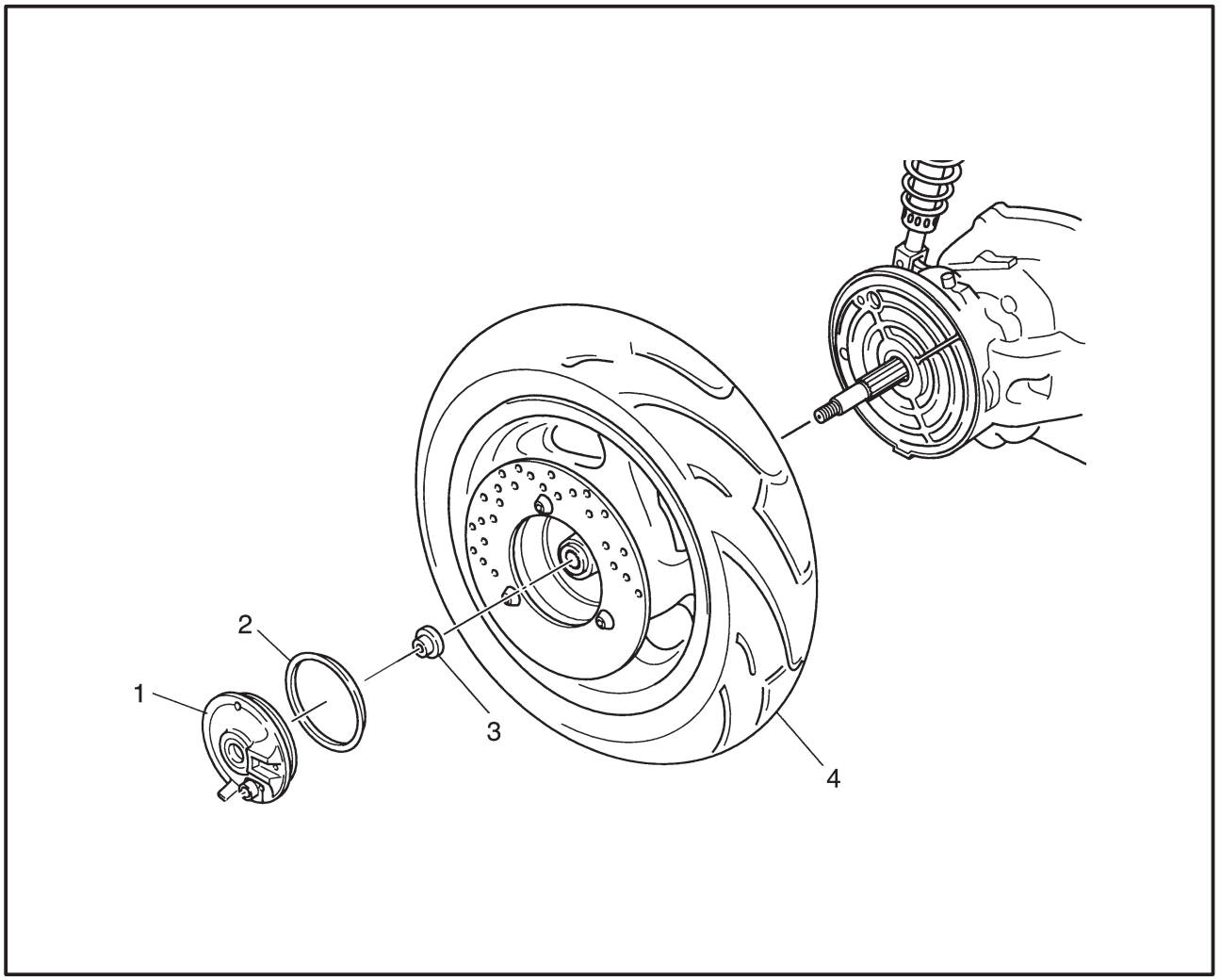
CAUTION:

To route the speed sensor lead, refer to the CABLE ROUTING.



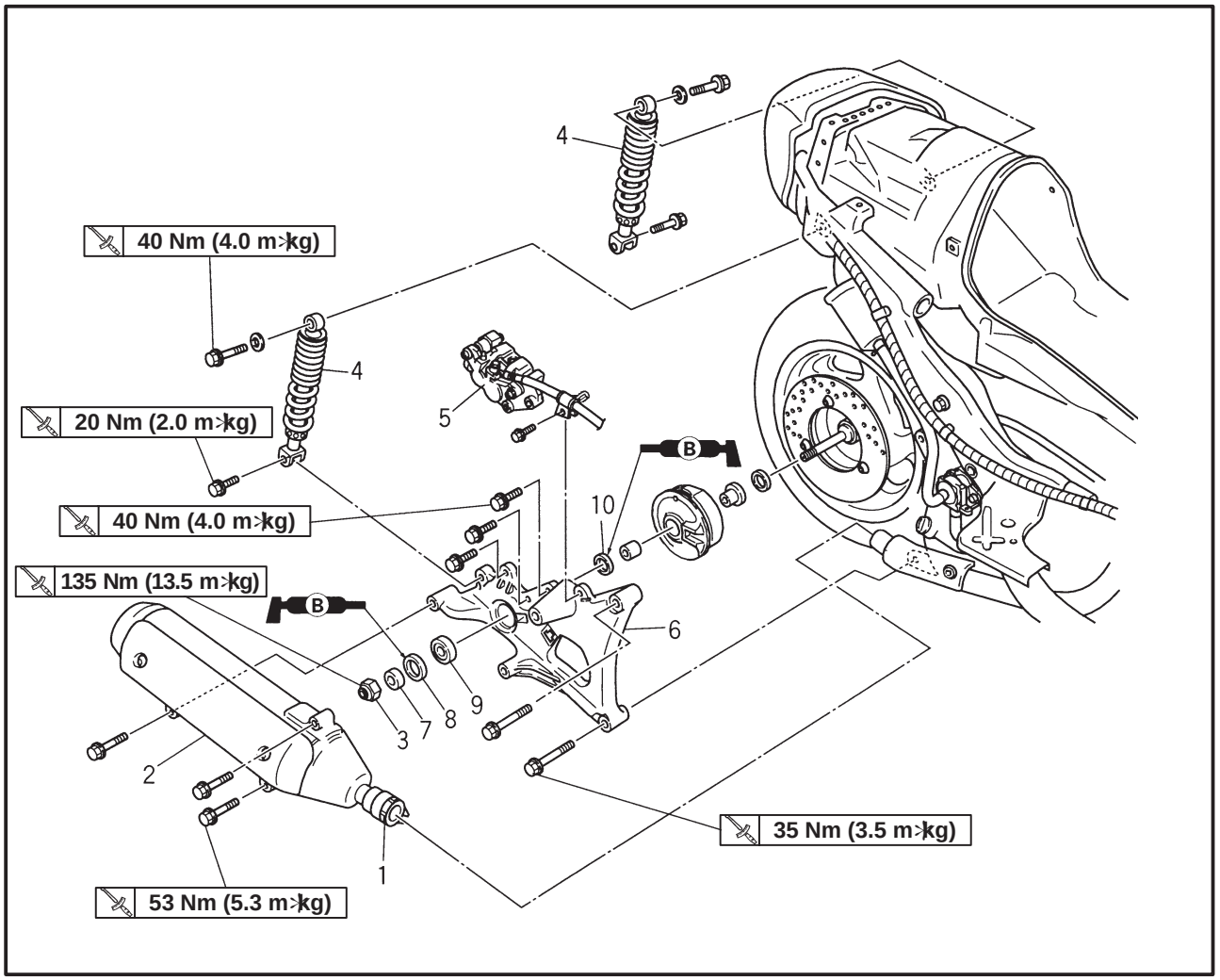
5. Install:
   - Speed sensor lead ①

REAR WHEEL



Order	Job name/Part name	Q'ty	Remarks
	Rear wheel and brake disc removal		
	Swingarm		Refer to "REAR SHOCK ABSORBER AND SWINGARM" section.
1	Plate	1	
2	O-ring	1	
3	Collar	1	
4	Rear wheel	1	
			Reverse the removal procedure for installation.

REAR SHOCK ABSORBER AND SWINGARM

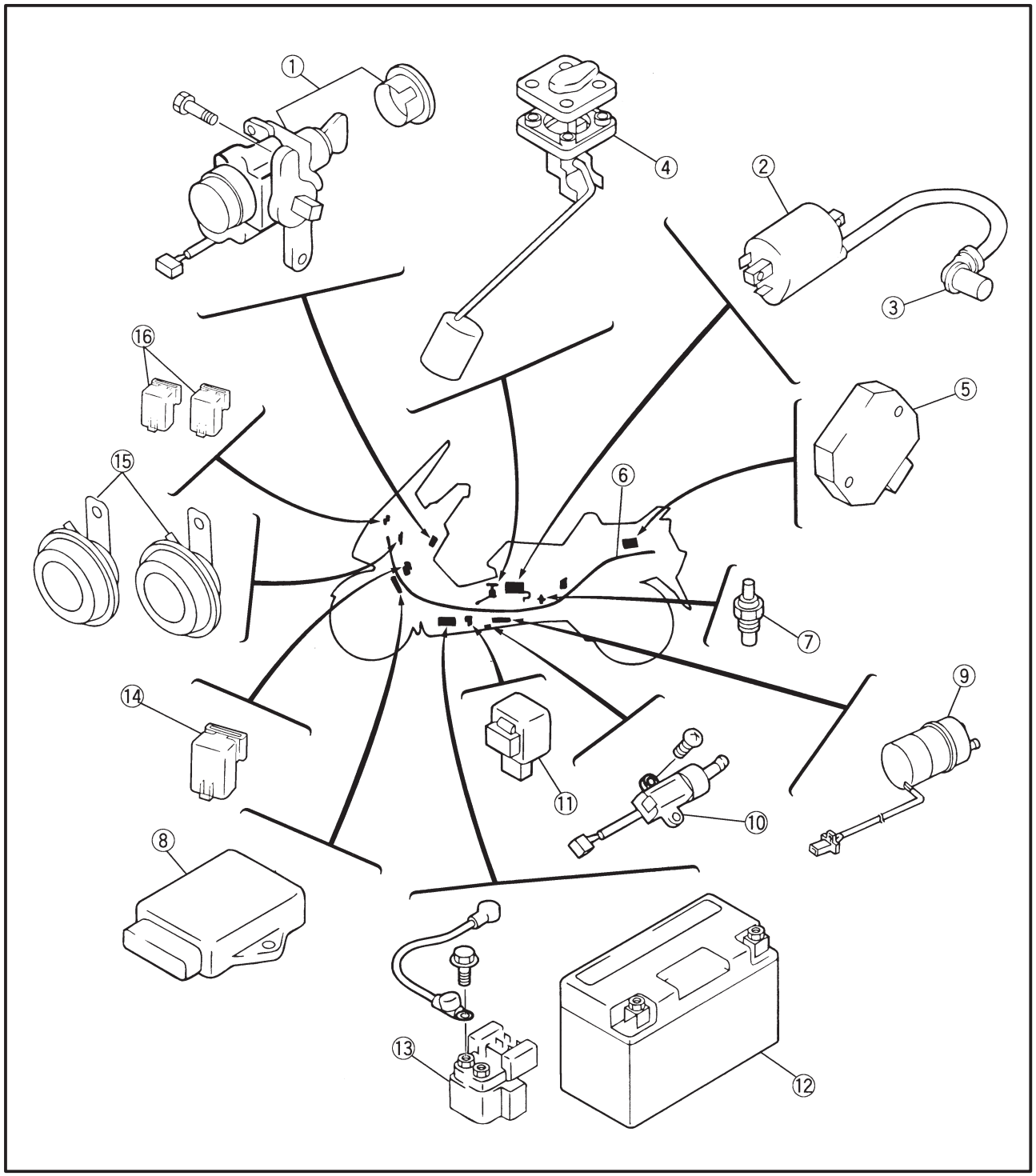


Order	Job name/Part name	Q'ty	Remarks
	Rear shock absorber and swingarm removal		Remove the parts in order.
	Side panels		Refer to "COVER AND PANEL" section.
			NOTE:
1	Nut	2	Loosen.
2	Muffler assembly	1	
			NOTE:
3	Axle nut	1	Remove with the rear brake applied.
4	Rear shock absorber	2	
5	Rear caliper assembly	1	
6	Swingarm	1	
7	Collar	1	
8	Oil seal	1	
9	Bearing	1	
10	Oil seal	1	
			Reverse the removal procedure for installation.

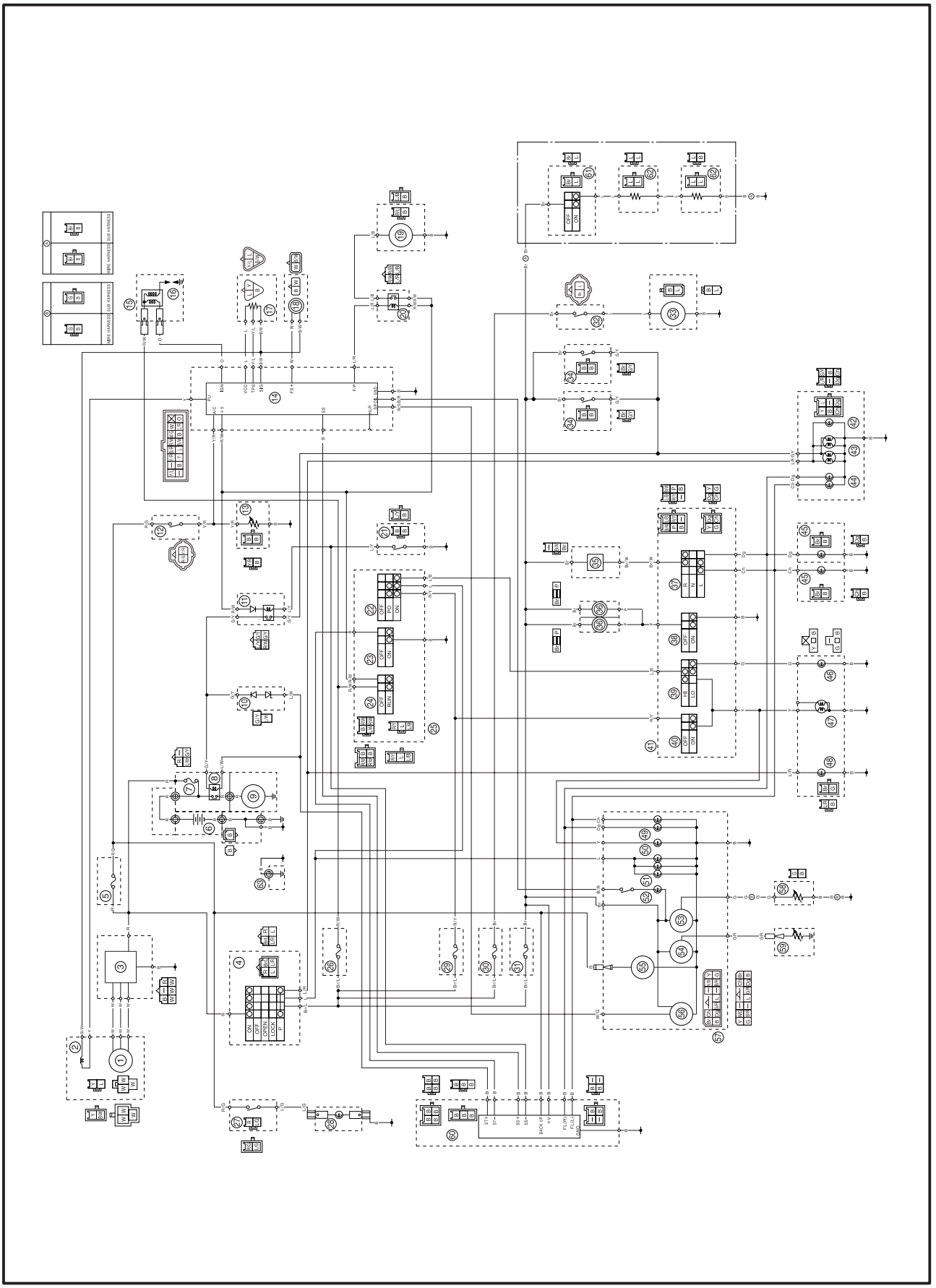
EB800000

ELECTRICAL
ELECTRICAL COMPONENTS

① Main switch
② Ignition coil
③ Spark plug cap
④ Fuel sender
⑤ Rectifier/Regulator
⑥ Wireharness
⑦ Thermo unit
⑧ Ignitor unit
⑨ Fuel pump
⑩ Sidestand switch
⑪ Flasher relay
⑫ Battery
⑬ Starter relay
⑭ Starting circuit cut-off relay
⑮ Horn
⑯ Fuel pump relay



CIRCUIT DIAGRAM



① A.C. magneto
② Pickup coil
③ Rectifier regulator
④ Main switch
⑤ Backup fuse
⑥ Battery
⑦ Main fuse
⑧ Starter relay
⑨ Starter motor
⑩ Diode
⑪ Starting circuit cut-off relay
⑫ Thermo switch (Auto choke)
⑬ Auto choke
⑭ Ignitor unit
⑮ Ignition coil
⑯ Spark pulg
⑰ Throttle position sensor
⑱ Speed sensor
⑲ Fuel pump
⑳ Fuel pump relay
㉑ Sidestand switch
㉒ Light switch
㉓ Start switch
㉔ Engine stop switch
㉕ Right handlebar switch
㉖ Ignition fuse
㉗ Seat switch
㉘ Box light
㉙ Head light fuse
㉚ Fan fuse
㉛ Signal fuse
㉜ Thermo switch (Fan)
㉝ Fan motor
㉞ Brake light switch
㉟ Flasher relay
㊱ Horn
㊲ Turn switch
㊳ Horn switch
㊴ Dimmer switch
㊵ Pass switch
㊶ Left handlebar switch
㊷ License plate light
㊸ Tail/brake light
㊹ Rear flasher light
㊺ Front flasher light
㊻ Head light (LO)
㊼ Head light (HI)
㊽ Auxiliary light
㊾ Trun signal indicator light
㊿ High beam indicator light
(51) Meter light
(52) Oil indicator light
(53) Fuel gauge
(54) Thermometer
(55) Clock
(56) Speedometer
(57) Meter assembly
(58) Fuel sender
(59) Thermo unit
(60) Alarm
(61) Grip warmer switch (OPUTION)
(62) Grip warmer (OPUTION)
(63) Ground

NOTE:

- Starter switch is closed while the button (switch) is pushed.
- Sidestand switch is closed while the side stand is upped.
- Brake switch is closed while the brake is applied.

COLOR CODE

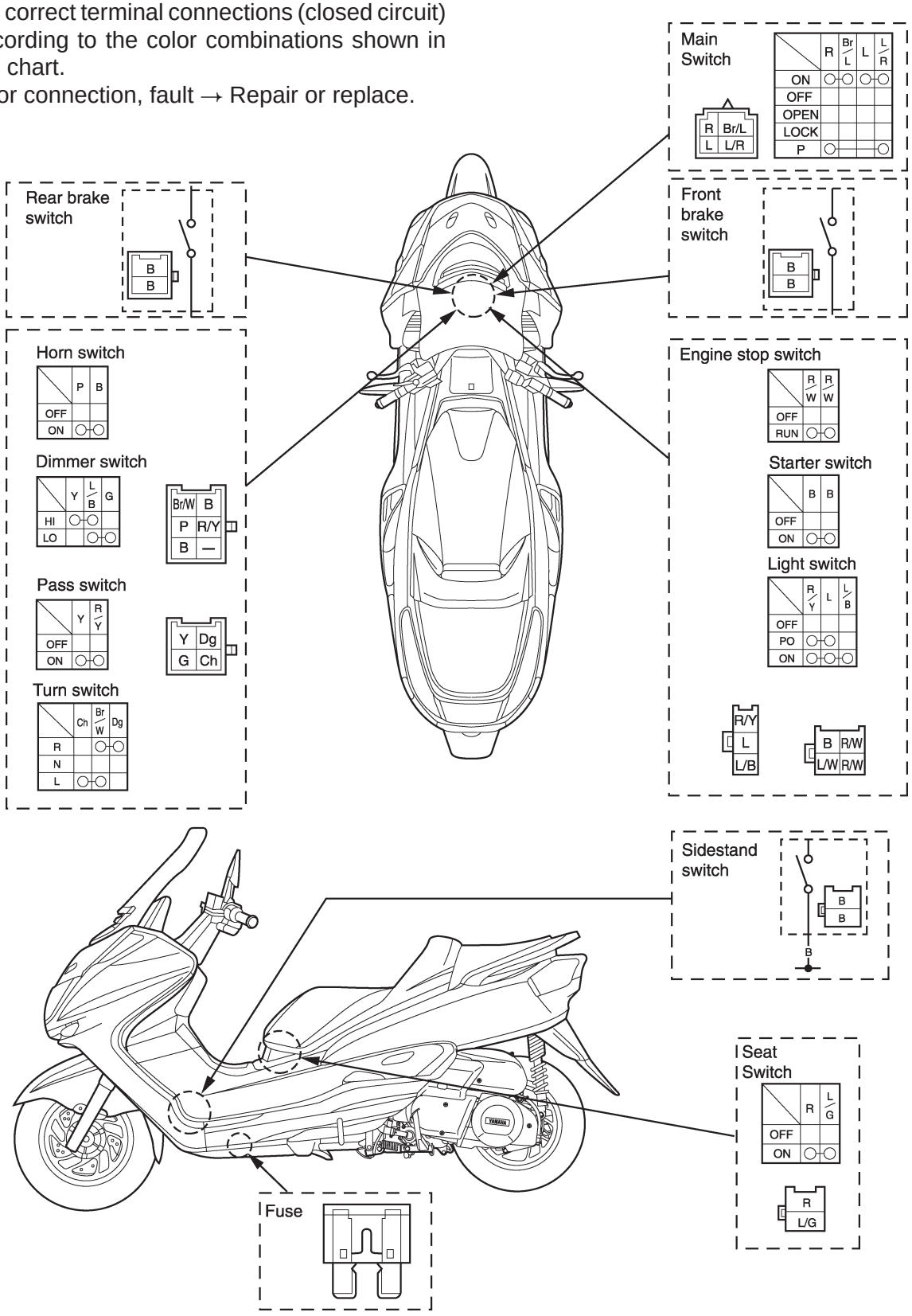
B	Black	W	White	L/Y	Blue/Yellow
Br	Brown	B/R	Black/Red	L/W	Blue/White
Ch	Chocolate	B/W	Black/White	R/G	Red/Green
Dg	Dark green	Br/L	Brown/Blue	R/Y	Red/Yellow
G	Green	Br/W	Brown/White	R/W	Red/White
L	Blue	G/R	Green/Red	Y/R	Yellow/Red
O	Orange	G/Y	Green/Yellow	Y/L	Yellow/Blue
P	Pink	L/B	Blue/Black	W/G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

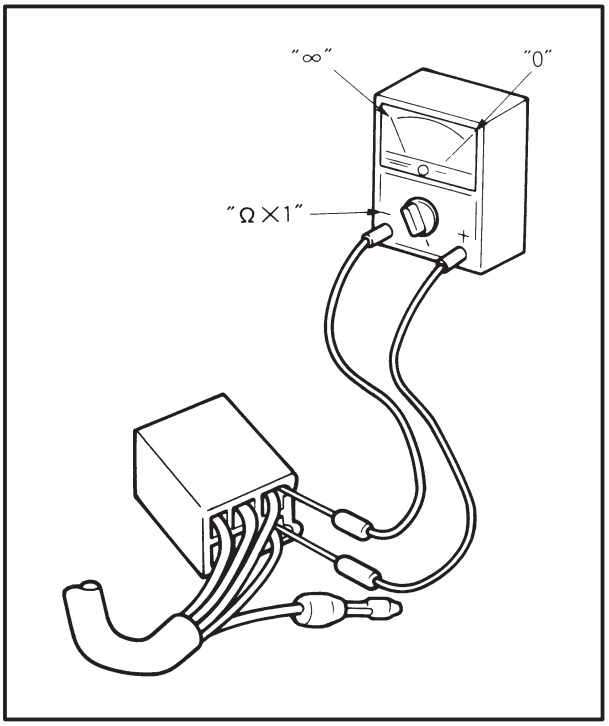
YP*****

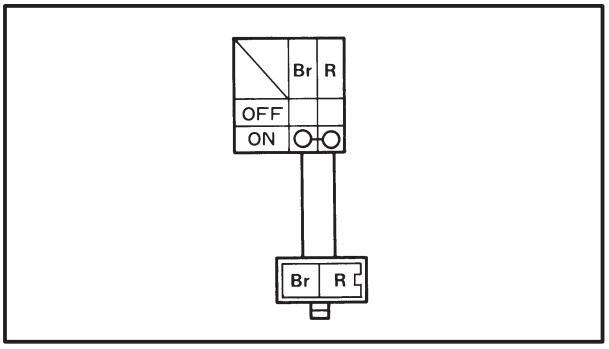
CHECKING SWITCHES

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.







YP-N

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.
- Set the pocket tester selector to "× 1" Ω.

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.

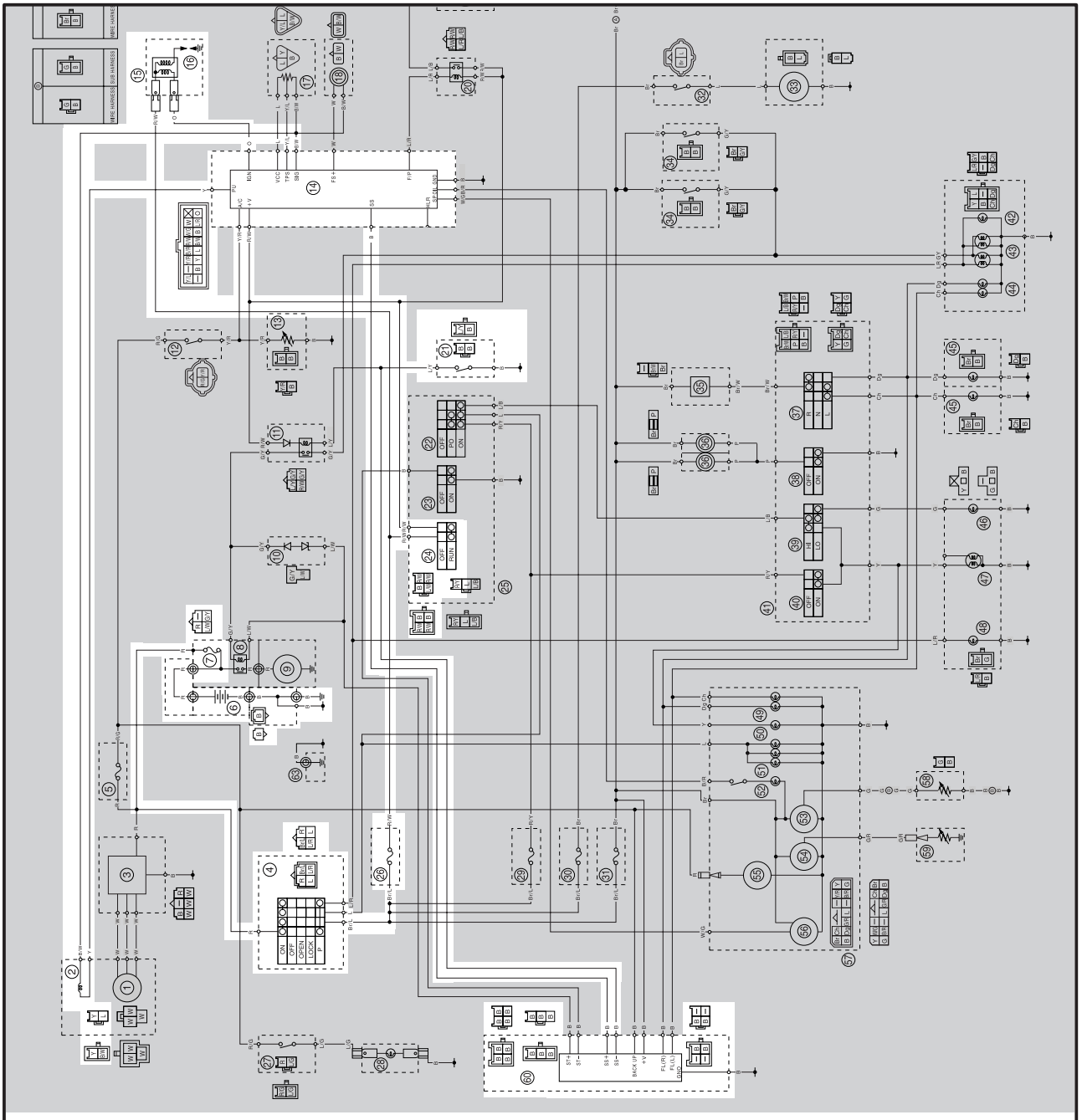
"○—○" indicates terminals between which there is continuity, i.e. a closed circuit, in the given switch position.

In this chart:
"Br and R" have continuity with the switch in the "ON" position.

EB802000

IGNITION SYSTEM

CIRCUIT DIAGRAM

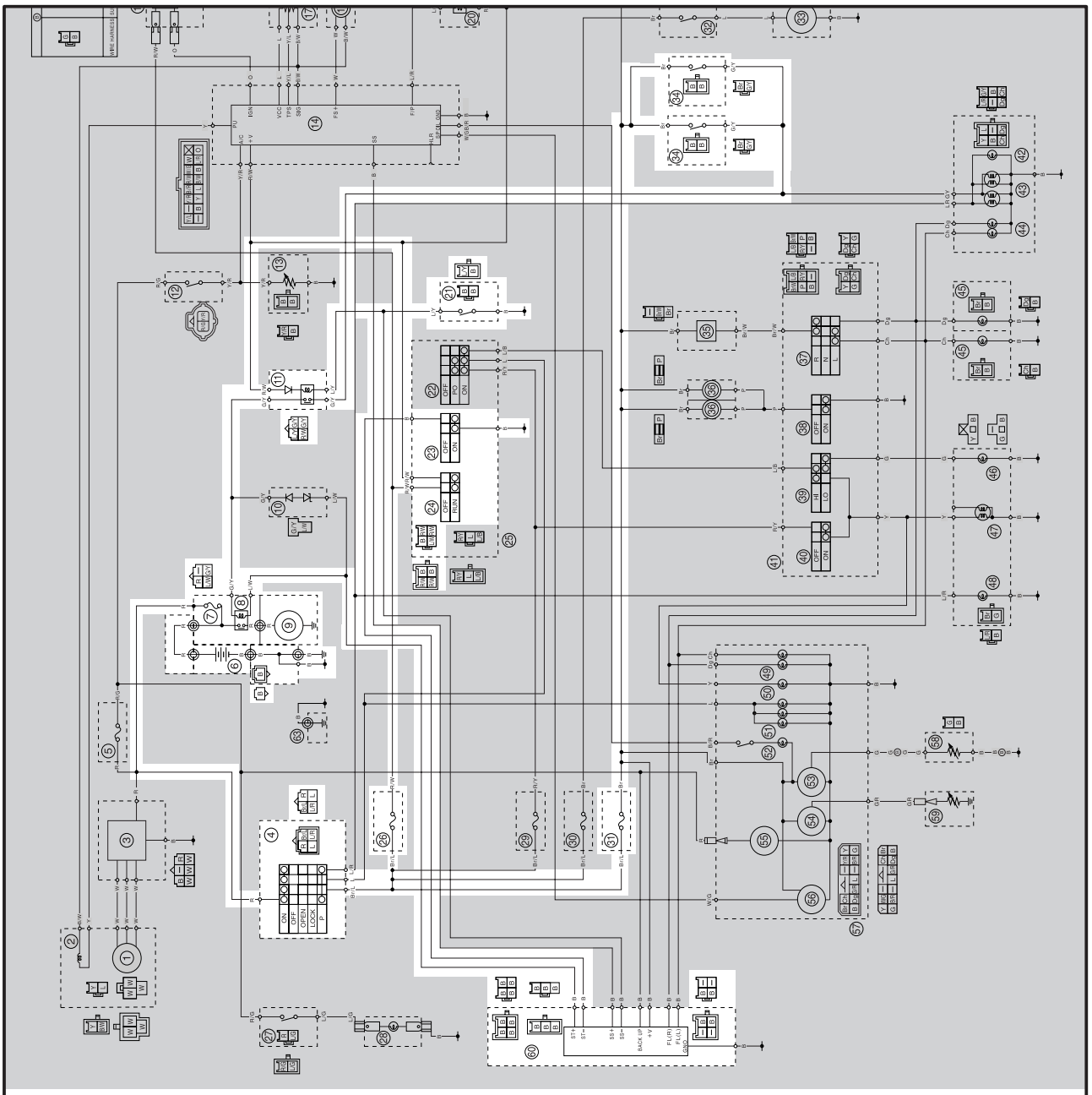


② Pickup coil
④ Main switch
⑥ Battery
⑦ Main fuse
⑭ Ignitor unit
⑮ Ignition coil
⑯ Spark plug
㉑ Sidestand switch
㉔ Engine stop switch
㊿ Alarm

EB80300

ELECTRIC STARTING SYSTEM

CIRCUIT DIAGRAM

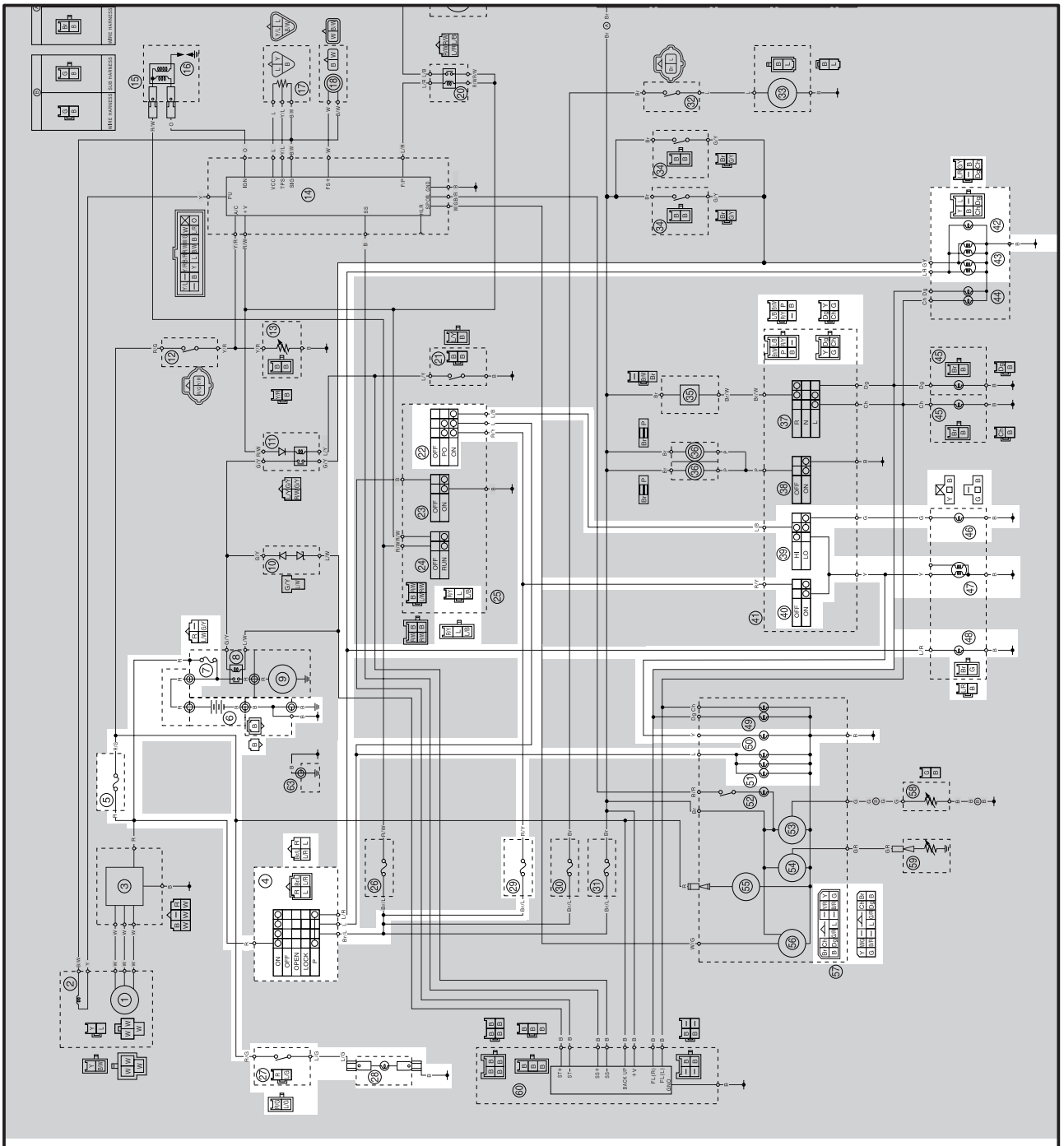


④ Main switch
⑥ Battery
⑦ Main fuse
⑧ Starter relay
⑨ Starter motor
⑪ Starting circuit cut-off relay
㉑ Sidestand switch
㉓ Starter switch
㉔ Engine stop switch
㉖ Ignition fuse
㉛ Signal fuse
㉞ Brake light switch
㊿ Alarm

EB804000

LIGHTING SYSTEM

CIRCUIT DIAGRAM



④ Main switch
⑤ Backup Fuse
⑥ Battery
⑦ Main fuse
㉒ Lights switch
㉗ Seat switch
㉘ Box light
㉙ Head light fuse
㊴ Dimmer switch
㊵ Pass switch
㊷ License plate light
㊺ Tail/Brake light
㊻ Head light (Lo)
㊼ Head light (HI)
㊽ Auxiliary light
㊿ High beam indicator light
(51) Meter lights

YP805010

TROUBLESHOOTING

IF THE HEADLIGHT, HIGH BEAM INDICATOR LIGHT, TAILLIGHT, BOX LIGHT, LICENSE PLATE LIGHT AND/ OR METER LIGHT FAIL TO COME ON.

Procedure

Check:
1. Fuse (Main, Backup)
2. Battery
3. Main switch
4. Lights switch
5. Dimmer switch and pass switch
6. Seat switch
7. Wiring connection (entire lighting system)

NOTE:

Remove the following parts before trouble-shooting.
1) Rider seat
2) Passenger seat
3) Box
4) Legshield
5) Cowling body

Use the special tools specified in the trouble-shooting section.

Pocket tester
90890-03112

YP******
1. Fuse
Refer to “CHECKING SWITCHES” section.

NO CONTINUITY → Replace the fuse.

CONTINUITY ↓

YP******
2. Battery
Check the battery condition.
Refer to “BATTERY INSPECTION” section in CHAPTER 3.

INCORRECT → Clean battery terminals. Recharge or replace battery.

CORRECT ↓

YP******
3. Main switch
Refer to “CHECKING SWITCHES” section.

NO CONTINUITY → Replace the main switch.

CONTINUITY ↓

YP******
4. Lights switch
Refer to “CHECKING SWITCHES” section.

NO CONTINUITY → Replace the right handlebar switch.

CONTINUITY ↓

✳

✻

YP******

5. Dimmer switch/Pass switch

Refer to “CHECKING SWITCHES” section.

NO CONTINUITY → Replace the left handlebar switch.

YP******

6. Seat switch

Refer to “CHECKING SWITCHES” section.

NO CONTINUITY → Replace the handlebar switch.

YP******

7. Wiring connection

Check the connections of the entire lighting system.
Refer to “WIRING DIAGRAM”.

POOR CONNECTIONS → Correct.

Check the condition of each of the lighting system’s circuits.
Refer to “LIGHTING SYSTEM CHECK”

YP805020

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.

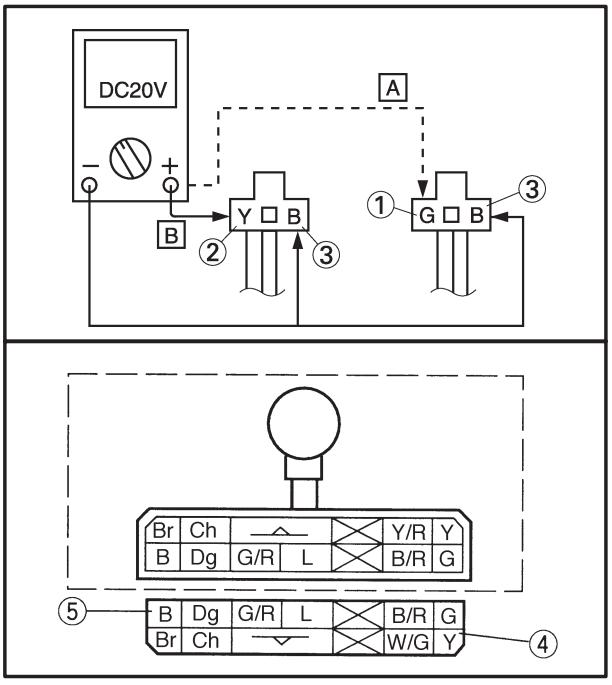
CONTINUITY

2. Voltage

Connect the pocket tester (DC20 V) 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 ①or Yellow ② lead
Tester negative (–) 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 (12 V) 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.

YP805021

2. If the meter light fails to come on.

1. Bulb and bulb socket

Refer to “CHECKING SWITCHES” section.

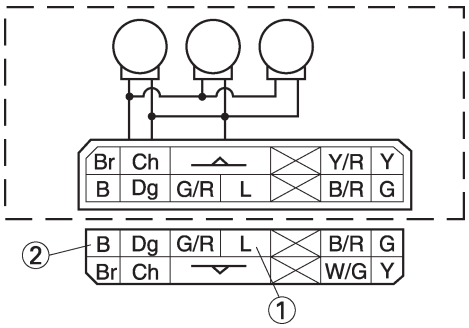
NO CONTINUITY → Replace the bulb and/or bulb socket.

CONTINUITY ↓

2. Voltage

Connect the pocket tester (DC20 V) 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 (12 V) of the 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.

YP805022

3. The taillight fails to come on.

1. Bulb and bulb socket

Refer to “CHECKING SWITCHES” section.

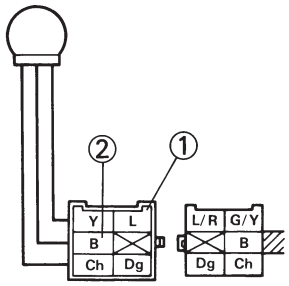
NO CONTINUITY → Replace the bulb and/or bulb socket.

CONTINUITY ⇩

2. Voltage

- Connect the pocket tester (DC20 V) to the bulb socket connector.

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



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

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

MEETS SPECIFICATION ⇩

This circuit is not faulty.

YP805022

3. The license plate light fails to come on.

1. Bulb and bulb socket

Refer to “CHECKING SWITCHES” section.

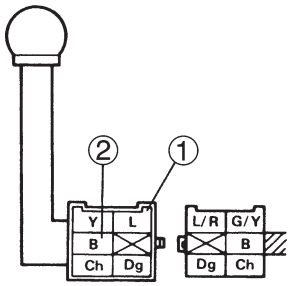
NO CONTINUITY → Replace the bulb and/or bulb socket.

CONTINUITY

2. Voltage

- Connect the pocket tester (DC20 V) to the bulb socket connector.

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



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

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

MEETS SPECIFICATION

This circuit is not faulty.

YP805023

4. If the auxiliary light fails to come on.

1. Bulb and bulb socket

Refer to “CHECKING SWITCHES” section.

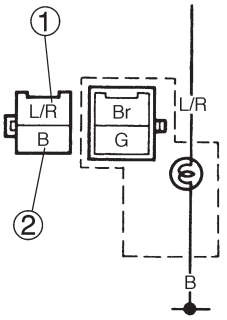
NO CONTINUITY → Replace the bulb and/or bulb socket.

CONTINUITY

2. Voltage

- Connect the pocket tester (DC20 V) to the bulb socket connector.

Tester (+) lead → Blue/Red 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 (12 V) on the bulb socket connector.

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

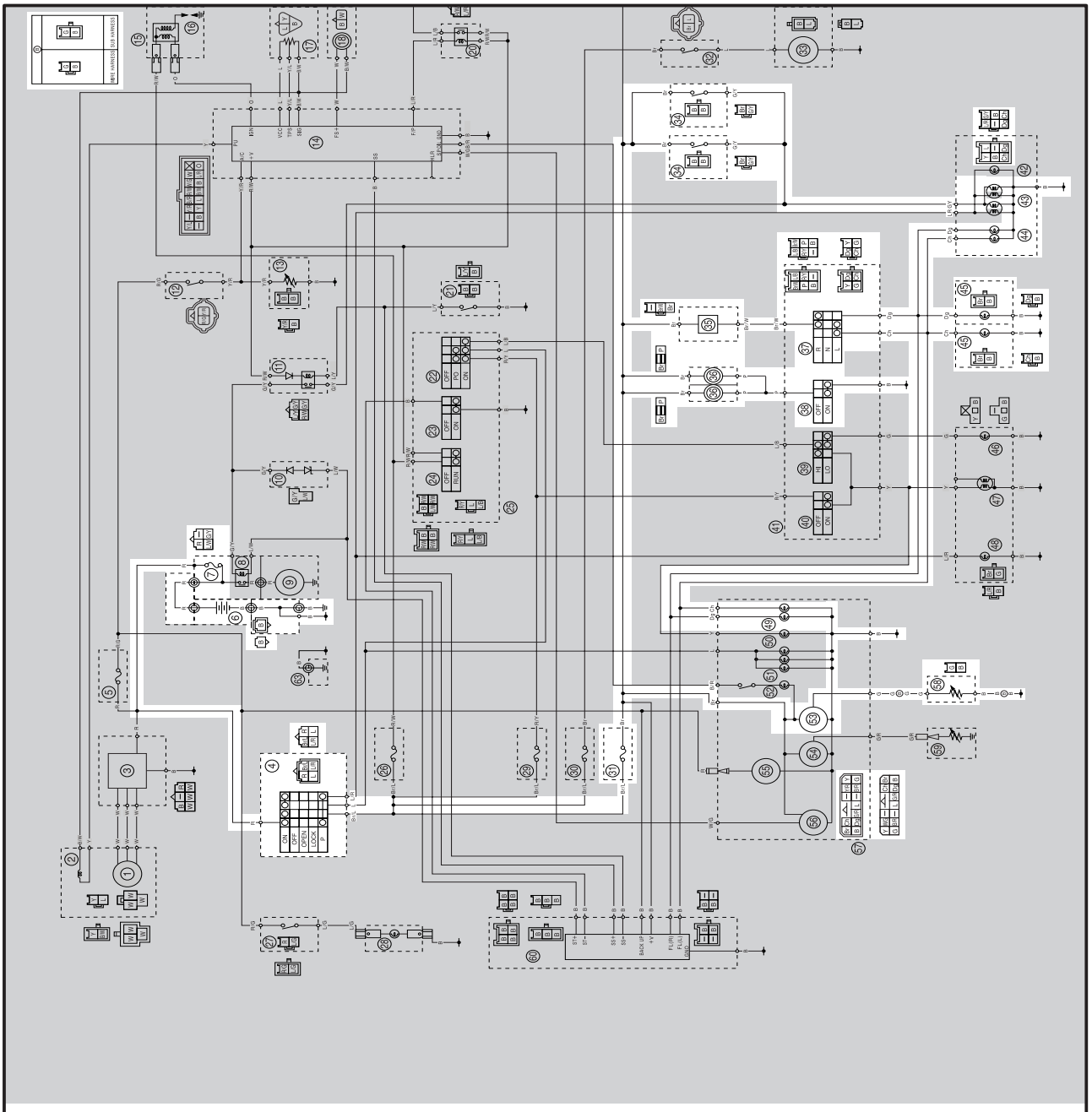
MEETS SPECIFICATION

This circuit is not faulty.

EB806000

SIGNAL SYSTEM

CIRCUIT DIAGRAM



④ Main switch
⑥ Battery
⑦ Main fuse
㉛ Signal fuse
㉞ Brak light switch
㉟ Flasher relay
㊱ Horn
㊲ Turn switch
㊳ Horn switch
㊸ Tail/Brake light
㊹ Rear flasher lights
㊺ Front flasher lights
㊾ Turn indicator lights
㊸ Fuel gauge
㊽ Fuel sender

YP806010

TROUBLESHOOTING

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

Procedure

Check:
1. Fuse (Main, signal)
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

YP******

1. Fuse

Refer to “CHECKING SWITCHES” section.

NO CONTINUITY → Replace the fuse.

CONTINUITY ⇩

YP******

2. Battery

Check the battery condition.
Refer to “BATTERY INSPECTION” section in CHAPTER 3.

INCORRECT → Clean battery terminals. Recharge or replace battery.

CORRECT ⇩

YP******

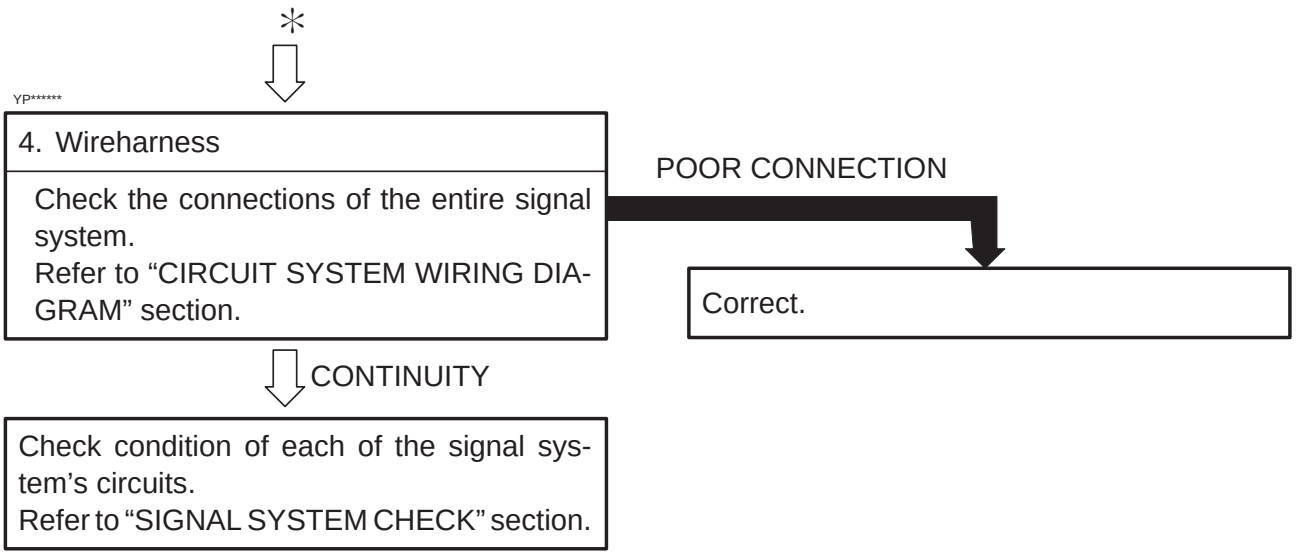
3. Main switch

Refer to “CHECKING SWITCHES” section.

NO CONTINUITY → Replace the main switch.

CONTINUITY ⇩

✳


*
YP******
4. Wireharness
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.

YP806020

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.

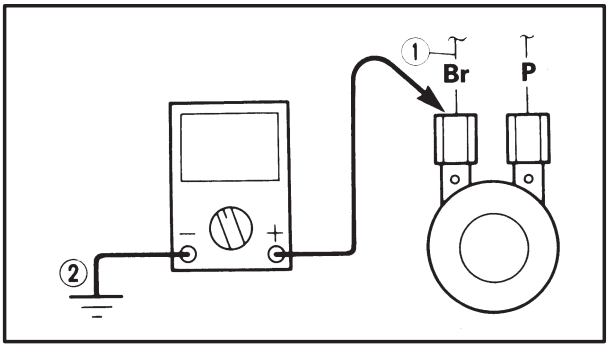
CONTINUITY ↓

2. Voltage

- Connect the pocket tester (DC20 V) to the horn lead.

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

- Turn the main switch to on.
- Check for voltage (12 V) on the “Brown” lead at the horn terminal.



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

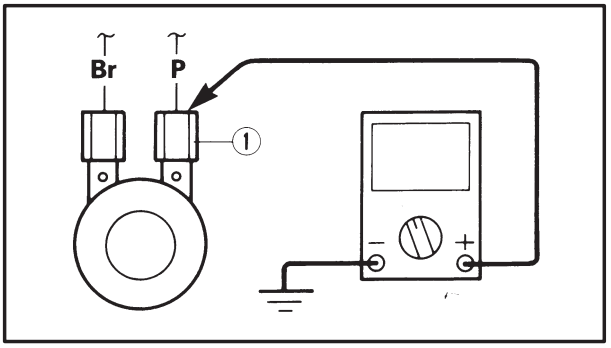
MEETS SPECIFICATION ↓

3. Horn

- Connect the pocket tester (DC20 V) 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.

YP806022

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.

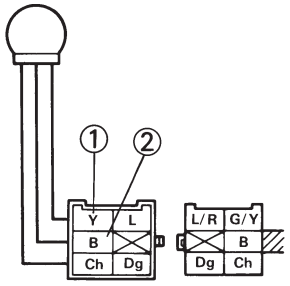
NO CONTINUITY → Replace brake switch.

CONTINUITY ⇩

3. Voltage

- Connect the pocket tester (DC20 V) 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 (12 V) 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”.

MEETS SPECIFICATION ⇩

This circuit is not faulty.

YP806023

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.

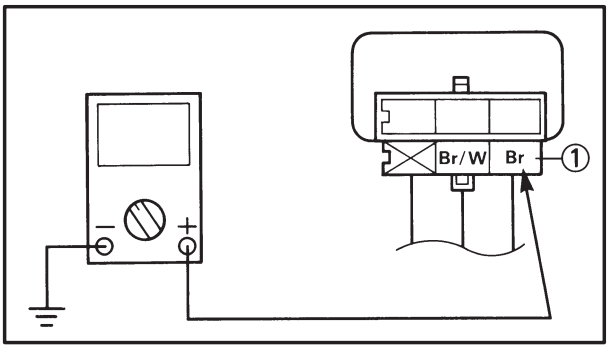
CONTINUITY

3. Voltage

Connect the pocket tester (DC20 V) to the flasher relay coupler.

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

Turn the main switch to on.
Check for voltage (12 V) 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.

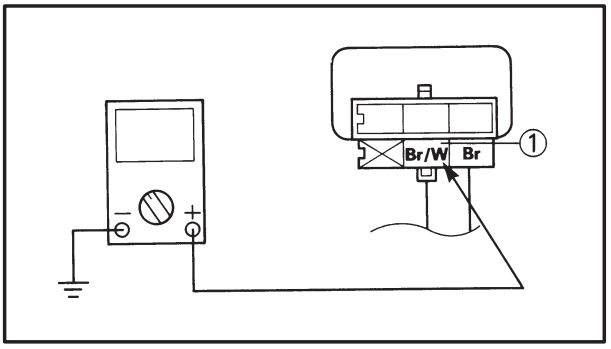
MEETS SPECIFICATION

4. Voltage

Connect the pocket tester (DC20 V) to the flasher relay coupler.

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

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



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

MEETS SPECIFICATION

✻

✳

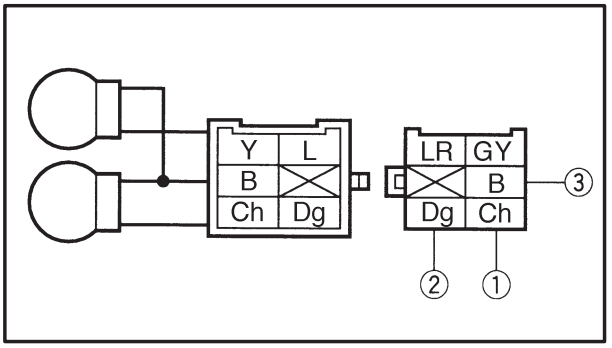
5. Voltage

Connect the pocket tester (DC20 V) 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 (12 V) 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”.

MEETS SPECIFICATION

This circuit is not faulty.

YP806027

4. If the fuel gauge fails to operate.

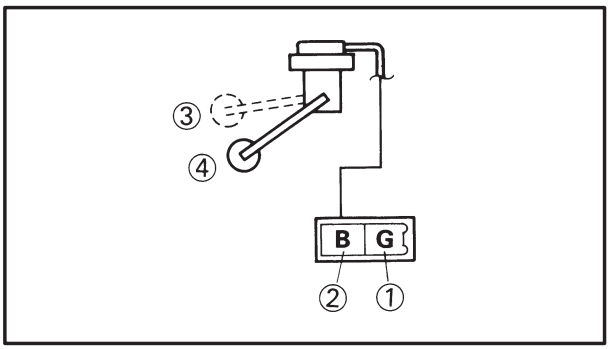
1. Fuel sender

Remove the fuel sender from the fuel tank.
Disconnect the fuel sender coupler from the wireharness.
Connect the pocket tester (Ω √ 10) to the fuel sender coupler lead.

Tester (+) lead → Green terminal ①
Tester (–) lead → Black terminal ②

Check the fuel sender for specificated resistance.

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



OUT OF SPECIFICATION

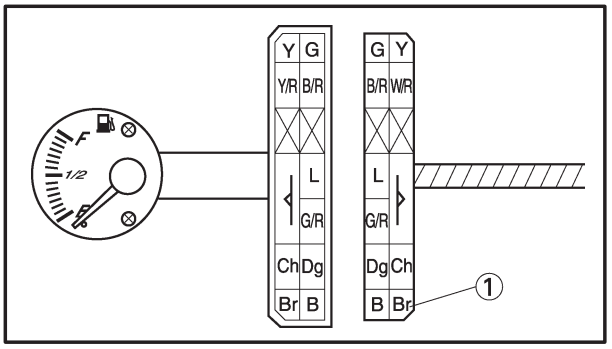
Replace the fuel sender.

BOTH MEET SPECIFICATION

2. Voltage

Connect the pocket tester (DC20 V) to the fuel gauge coupler.

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



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

OUT OF SPECIFICATION

Check the connection of the entire signal system.
Refer to “CHECKING OF CONNECTIONS”.
Refer to “CIRCUIT DIAGRAM”.

MEETS SPECIFICATION

✳

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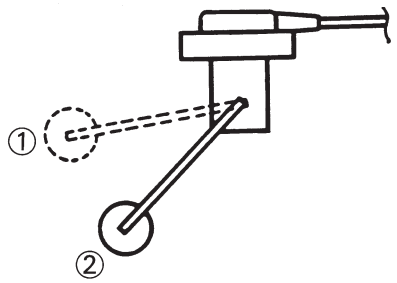
3. Fuel gauge

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

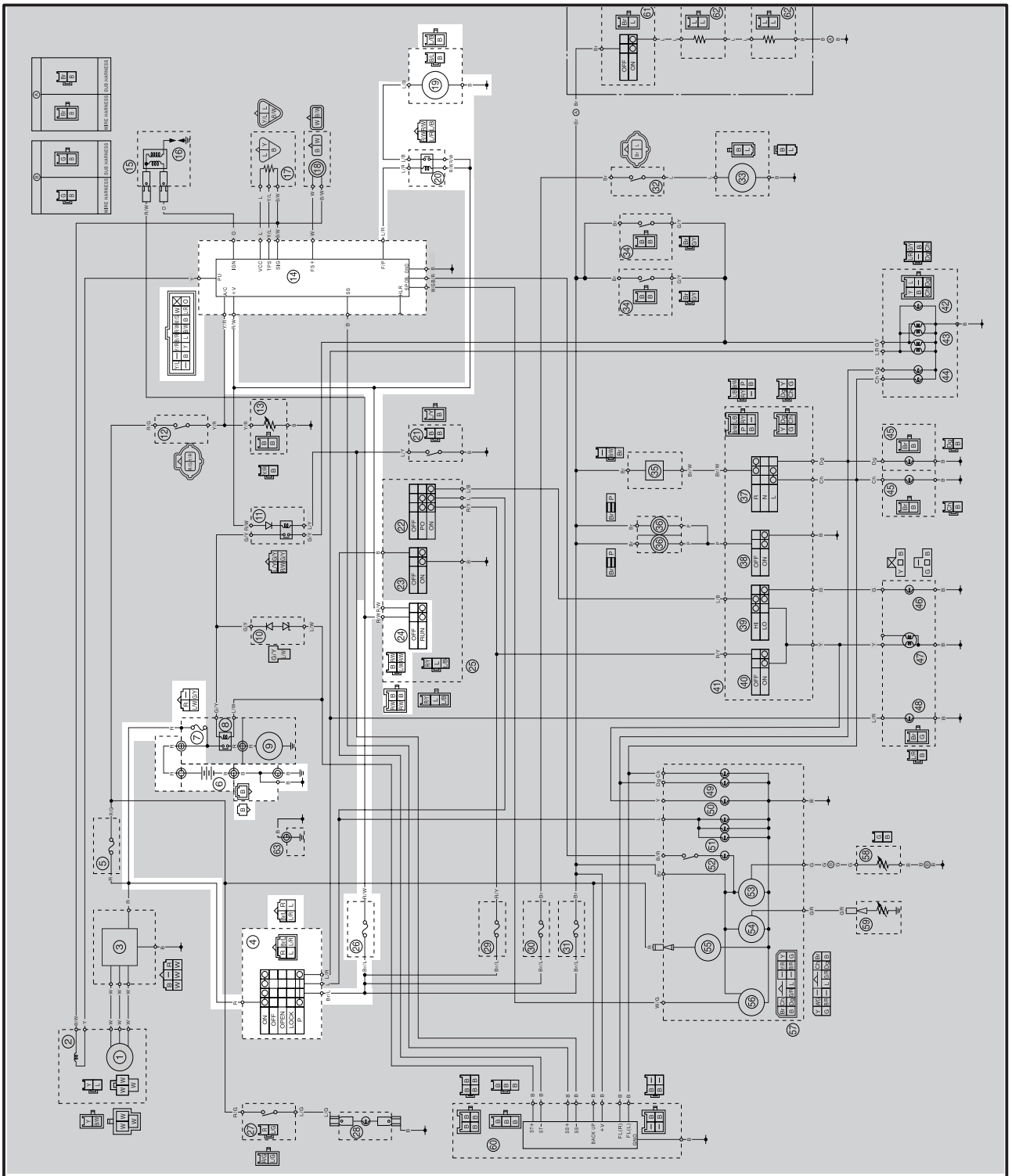
This circuit is not faulty.

NOTE:

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

EB808000

FUEL PUMP SYSTEM
CIRCUIT DIAGRAM



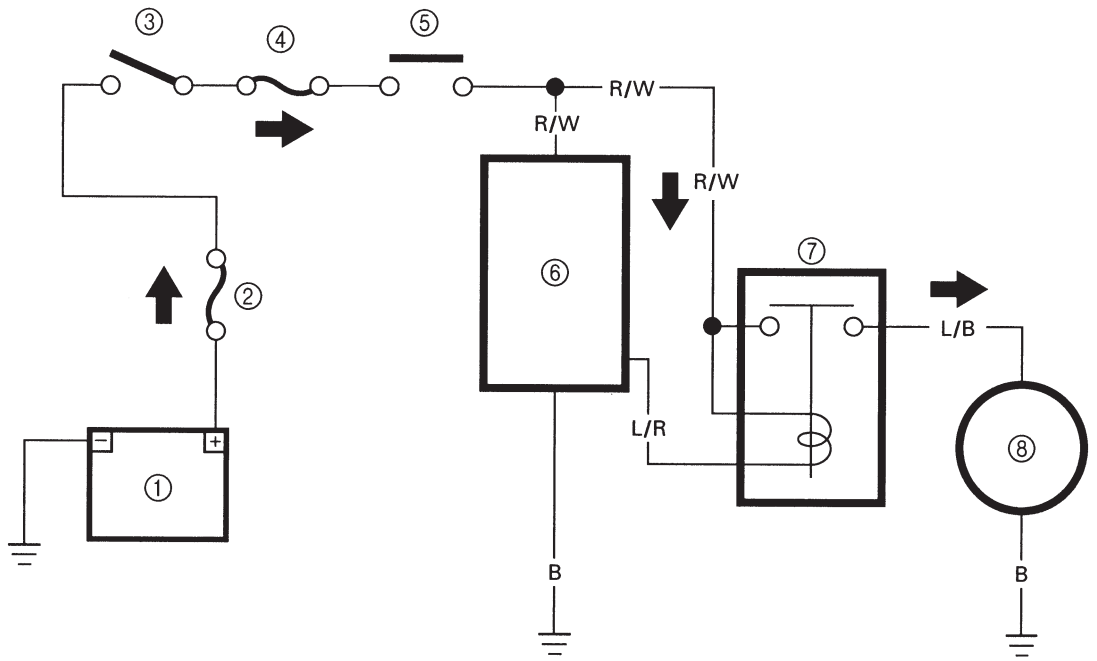
④ Main switch
⑥ Battery
⑦ Main fuse
⑭ Ignitor unit
⑲ Fuel pump
⑳ Fuel pump relay
㉔ Engine stop switch
㉖ Ignition fuse

EB808010

FUEL PUMP CIRCUIT OPERATION

The ignitor unit includes the control unit for the fuel pump.

① Battery
② Main fuse
③ Main switch
④ Ignition fuse
⑤ Engine stop switch
⑥ Ignitor unit
⑦ Fuel pump relay
⑧ Fuel pump



EB808020

TROUBLESHOOTING

The fuel pump fails to operate.

Procedure

Check:
1. Fuse (Main and Ignition)
2. Battery
3. Main switch
4. Engine stop switch
5. Relay unit (fuel pump relay)
6. Fuel pump
7. Wiring connection (engine fuel pump system)

NOTE:

Remove the following parts before troubleshooting.
1) Rider seat
2) Passenger seat
3) Box
4) Legshield

Use the special tools specified in the troubleshooting section.

Pocket tester
90890-03112

YP******

1. Fuse

Refer to “CHECKING SWITCHES” section.

NO CONTINUITY → Replace the fuse.

CONTINUITY ⇩

YP******

2. Battery

Check the battery condition.
Refer to “BATTERY INSPECTION” section in CHAPTER 3.

INCORRECT → Clean battery terminals. Recharge or replace battery.

CORRECT ⇩

YP******

3. Main switch

Refer to “CHECKING SWITCHES” section.

NO CONTINUITY → Replace the main switch.

CONTINUITY ⇩

YP******

4. Engine stop switch

Refer to “CHECKING SWITCHES” section.

NO CONTINUITY → Replace the right handlebar switch.

CONTINUITY ⇩

✳

✳

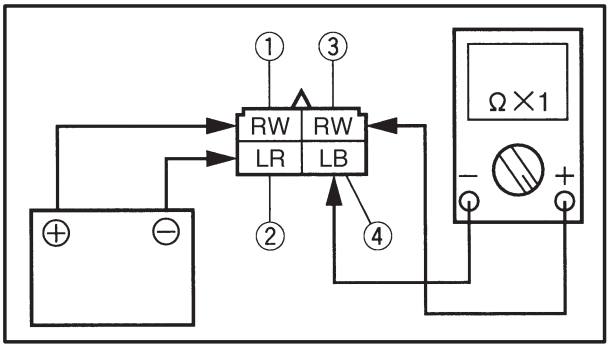
5. Relay unit (fuel pump relay)

Disconnect the relay unit from the coupler.
Connect the pocket tester (Ω √ 1) and battery (12 V) to the relay unit terminals as shown.

Battery positive terminal → red/white ①
Battery negative terminal → blue/red ②

Tester positive probe → red/white ③
Tester negative probe → blue/black ④

Turn the main switch to on.
Check the starter relay for continuity.



NO CONTINUITY

Replace the starter relay

CONTINUITY

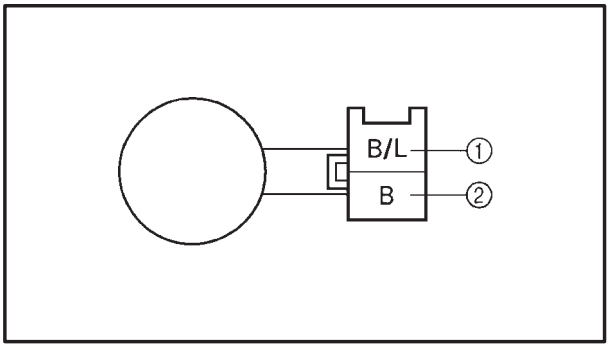
6. Fuel pump resistance

Disconnect the fuel pump coupler from the wire harness.
Connect the pocket tester (Ω √ 1) to the fuel pump coupler (fuel pump side) as shown.

Tester positive probe → black/blue ①
Tester negative probe → black ②

Measure the fuel pump resistance.

Fuel pump resistance
11 13 Ω at 20°C



OUT OF SPECIFICATION

Replace the fuel pump

CORRECT

7. Wiring connection

Check the entire fuel pump system's wiring.
Refer to "CIRCUIT DIAGRAM".

POOR CONNECTION

Correct.

CORRECT

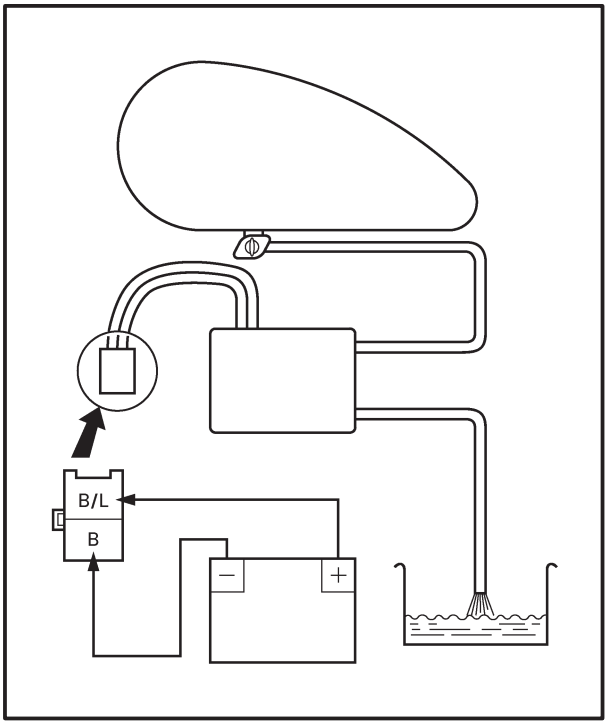
Replace the ignition unit

EB808410

CHECKING THE FUEL PUMP

⚠ WARNING

Gasoline is extremely flammable and under certain circumstances there can be a danger of an explosion or fire. Be extremely careful and note the following points:
- **Stop the engine before refuelling.**
- **Do not smoke and keep away from open flames, sparks or any other source of fire.**
- **If you do accidentally spill gasoline, wipe it up immediately with dry rags.**
- **If gasoline touches the engine when it is hot, a fire may occur. Therefore, make sure that the engine is completely cool before performing the following test.**



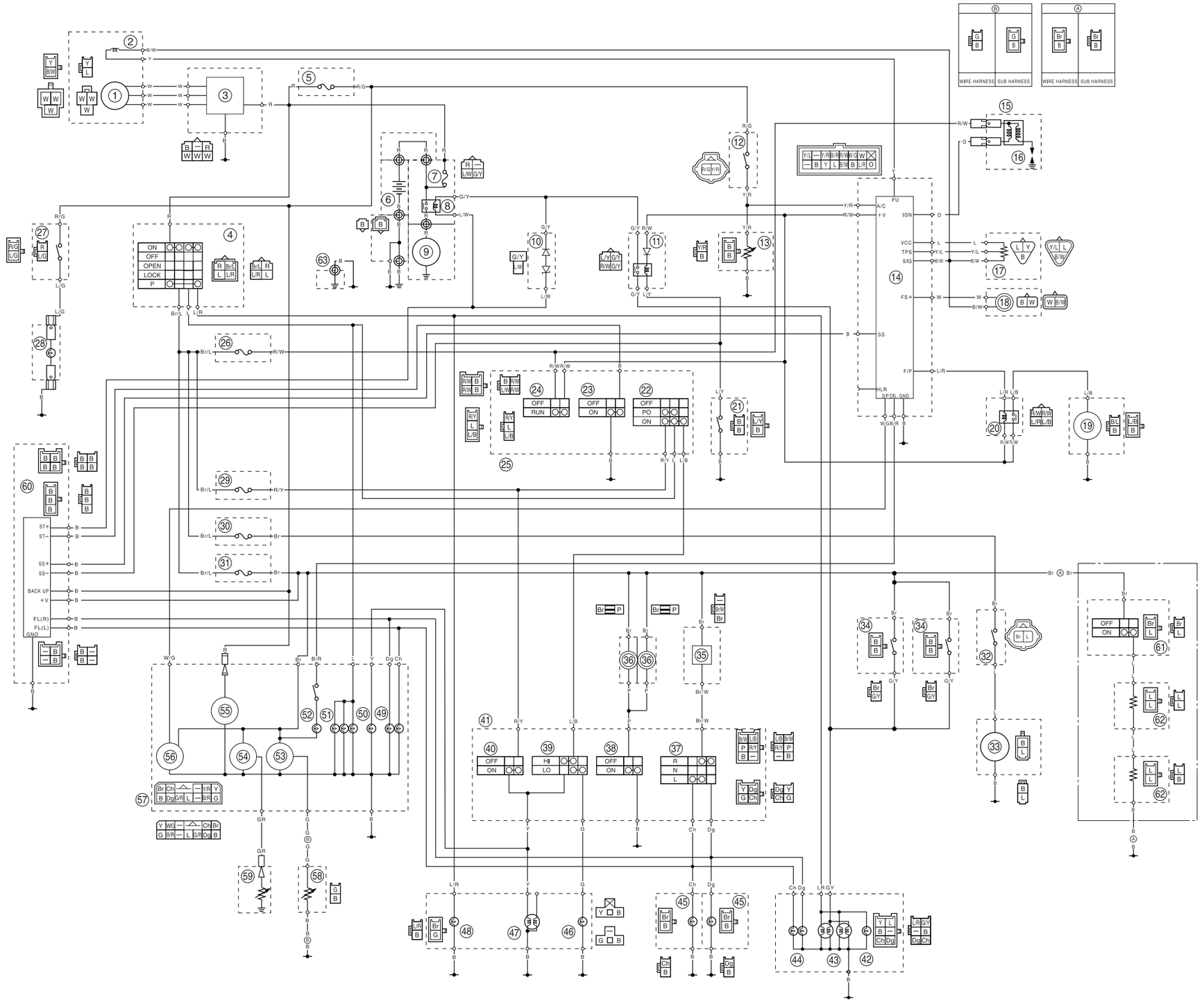
1. Check:
   - Fuel pump operation

a. Fill the fuel tank.
b. Put the end of the fuel hose into an open container.
c. Turn the fuel cock to “ON” or “RES”.
d. Connect the battery (12 V) to the fuel pump coupler as shown.

Battery positive lead → black/blue①
Battery negative lead → black②

e. If fuel flows out of the fuel hose, the fuel pump is OK. If fuel does not flow, replace the fuel pump.

YP250 2000 WIRING DIAGRAM



1. A. C. magneto
2. Pickup coil
3. Rectifier regulator
4. Main switch
5. Backup fuse
6. Battery
7. Main fuse
8. Starter relay
9. Starter motor
10. Diode
11. Starting circuit cut-off relay
12. Thermo switch (Auto choke)
13. Auto choke
14. Ignitor unit
15. Ignition coil
16. Spark pulg
17. Throttle position sensor
18. Speed sensor
19. Fuel pump
20. Fuel pump relay
21. Sidestand switch
22. Light switch
23. Start switch
24. Engine stop switch
25. Right handlebar switch
26. Ignition fuse
27. Seat switch
28. Box light
29. Head light fuse
30. Fan fuse
31. Signal fuse
32. Thermo switch (Fan)
33. Fan motor
34. Brake light switch
35. Flasher relay
36. Horn
37. Turn switch
38. Horn switch
39. Dimmer switch
40. Pass switch
41. Left handlebar switch
42. License plate light
43. Tail/brake light
44. Rear flasher light
45. Front flasher light
46. Head light (LO)
47. Head light (HI)
48. Auxiliary light
49. Trun signal indicator light
50. High beam indicator light
51. Meter light
52. Oil indicator light
53. Fuel gauge
54. Thermometer
55. Clock
56. Speedometer
57. Meter assembly
58. Fuel sender
59. Thermo unit
60. Alarm
61. Grip warmer switch (OPTION)
62. Grip warmer (OPTION)
63. Ground

COLOR CODE

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