

# **YFM125S** 3FA-AE2

# SUPPLEMENTARY SERVICE MANUAL

# FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the YFM125S. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

#### YFA1W SERVICE MANUAL: 3FA-ME1 YFA1(P) 2002 SUPPLEMENTARY SERVICE MANUAL: 3FA-AE1

#### YFM125S

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# NOTICE

This manual was produced by the Yamaha Motor Company primarily for use by Yamaha 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 machine has a basic understanding of the mechanical ideas and the procedures of machine repair. Repairs attempted by anyone without this knowledge are likely to render the machine 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 dealers and will appear in future editions of this manual where applicable.

#### NOTE:

Designs and specifications are subject to change without notice.

#### EBS00003

#### **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!
	Failure to follow WARNING instructions <u>could result in severe injury or death</u> to the machine operator, a bystander or a person checking or repairing the machine.
CAUTION:	A CAUTION indicates special precautions that must be taken to avoid damage to the machine.
NOTE:	A NOTE provides key information to make procedures easier or clearer.

EBS00004

# HOW TO USE THIS MANUAL

## MANUAL ORGANIZATION

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

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

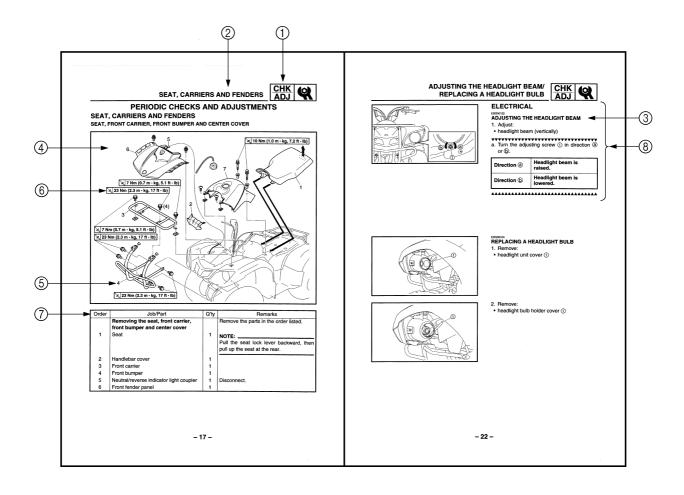
2nd title ②: This title indicates the section of the chapter and only appears on the first page of each section. It is located in the upper left corner of the page.

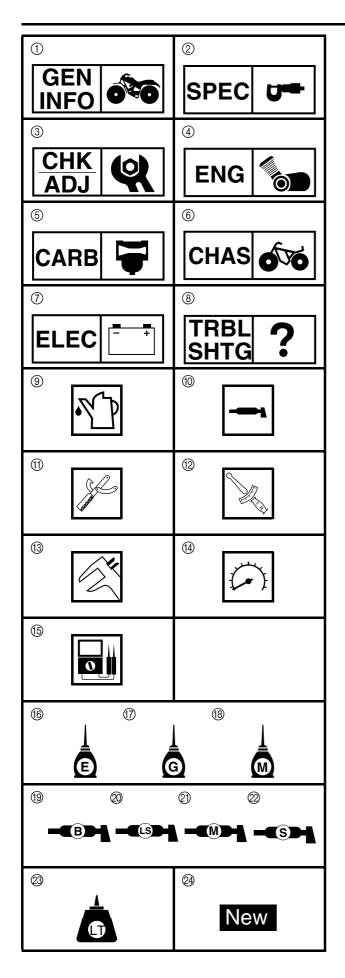
3rd title ③: This title indicates a sub-section that is followed by step-by-step procedures accompanied by corresponding illustrations.

# **EXPLODED DIAGRAMS**

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

- 1. An easy-to-see exploded diagram ④ is provided for removal and disassembly jobs.
- 2. Numbers (5) are given in the order of the 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 marks⑥. 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 (a) are given in addition to the exploded diagram and the job instruction chart.





#### EB003000 ILLUSTRATED SYMBOLS

Illustrated symbols ① to ⑧ are printed on the top right of each page and indicate the subject of each chapter.

- ① General information
- ② Specifications
- 3 Periodic checks and adjustments
- ④ Engine
- ⑤ Carburetion
- 6 Chassis
- ⑦ Electrical
- (8) Troubleshooting

Illustrated symbols (9) to (5) are used to identify the specifications appearing in the text.

- ③ Filling fluid
- 1 Lubricant
- ① Special tool
- 12 Torque
- (13) Wear limit, clearance
- (1) Engine speed
- 15Ω, V, A

Illustrated symbols (6) to (2) in the exploded diagrams indicate the types of lubricants and lubrication points.

- 16 Apply engine oil
- Apply gear oil
- (B) Apply molybdenum disulfide oil
- (19) Apply wheel bearing grease
- ② Apply lightweight lithium soap base grease
- 0 Apply molybdenum disulfide grease
- ② Apply silicon grease

Illustrated symbols 2 to 2 in the exploded diagrams indicate where to apply a locking agent 2 and when to install a new part 2.

- ② Apply the locking agent (LOCTITE<sup>®</sup>)
- **29** Replace

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YFM125S WIRING DIAGRAM



# **SPECIFICATIONS**

# **GENERAL SPECIFICATIONS**

Model	YFM125S
Model code number	1C51: (for Oceania)
	1C53: (for CDN)
	1C54: (for Europe)
Dimensions	
Overall length	1,710 mm (67.3 in)
Overall width	990 mm (39.0 in)
Overall height	980 mm (38.6 in)
Seat height	705 mm (27.8 in)
Wheelbase	1,080 mm (42.5 in)
Minimum ground clearance	145 mm (5.7 in)
Basic weight	
Wet (with oil and a full fuel tank)	152 kg (335 lb)
Dry (without oil and fuel)	144 kg (317 lb)
Maximum load (except vehicle)	100 kg (220 lb)
Fuel	
Туре	Regular unleaded gasoline only (for CDN and
	Europe)
	Unleaded gasoline only (for Oceania)
Fuel tank capacity	7.6 L (1.67 Imp gal, 2.01 US gal)
Reserve amount	1.3 L (0.28 Imp gal, 0.34 US gal)
Spark plug	
Type/manufacturer	CR7HS/NGK
Spark plug gap	0.6 ~ 0.7 mm (0.024 ~ 0.028 in)
Electrical	
Ignition system	DC C.D.I.
Generator system	A.C. magneto generator
Battery capacity	12V 12Ah
Battery type	12N12C-4A-2
Headlight type	Bulb type
Headlight bulb type	Krypton
Bulb wattage (quantity)	
Headlight	12 V 30 W/30 W (2 pc.)
Tail/brake light	12 V 5 W/21 W (1 pc.)
Neutral indicator light	12 V 1.7 W (1 pc.)
Reverse indicator light	12 V 1.7 W (1 pc.)



### MAINTENANCE SPECIFICATIONS ENGINE

Model		YFM125S
Carburetor		
I.D. mark		5VJ2 10
Main jet	(M.J)	# 77.5
Main air jet	(M.A.J)	ø 1.3
Jet needle	(J.N)	4HPY46-1
Needle jet	(N.J)	O-1M
Cutaway	(C.A)	2.5
Pilot air jet	(P.A.J)	# 130
Pilot outlet	(P.O)	ø 0.7
Pilot jet	(P.J)	# 12.5
Bypass 1	(B.P.1)	1.1
Pilot screw	(P.S)	2 and 1/2 turns out (for Europe and Oceania)
Valve seat size	(V.S)	1.8
Starter jet	(G.S)	# 45
Fuel level	(F.L)	3.5 ~ 4.5 mm (0.14 ~ 0.18 in)
		With special tool
Engine idling speed		1,650 ~ 1,750 r/min
Intake vacuum		26.7 kPa (200 mmHg, 7.88 inHg)

#### CHASSIS Tightening torques

Part to be tightened	Thread size	Tight	ening to	Remarks		
Fait to be lightened	Thead Size	Nm	m · kg	ft · lb	Temarks	
Footrest board and footrest bracket	M5	7	0.7	5.1		
Footrest and footrest bracket	M6	10	1.0	7.2		
Front fender and frame	M6	7	0.7	5.1		
Front carrier and front grill	M6	7	0.7	5.1		
Fuel tank	M6	10	1.0	7.2		



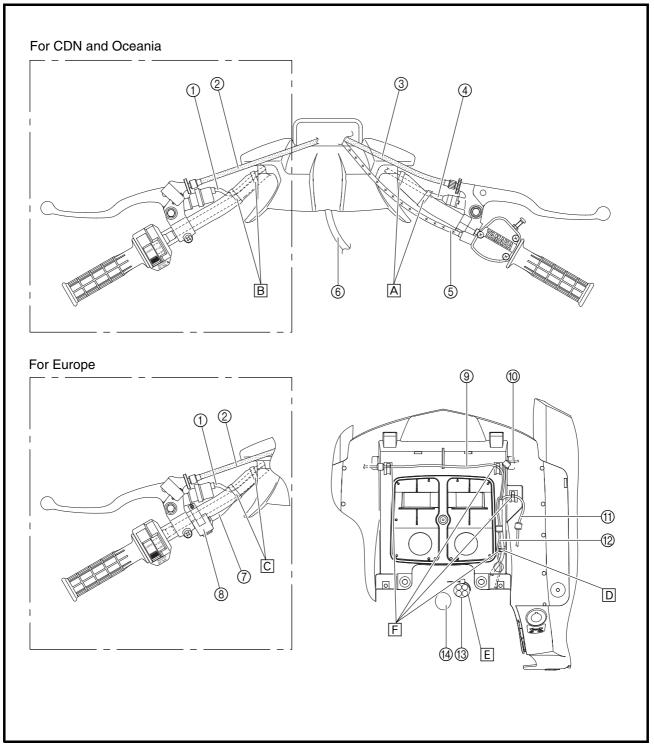
#### ELECTRICAL

Model		YFM125S
C.D.I.		
Magneto model/manufacturer		F1C5/YAMAHA
Pickup coil resistance		248 ~ 372 Ω at 20 °C (68 °F)
(lead color)		(white-red)
C.D.I. unit model/manufacturer		3FA/YAMAHA
Charging system		
Туре		A.C. magneto generator
Magneto model/manufacturer		F1C5/YAMAHA
Charging coil resistance		0.8 ~ 1.2 Ω at 20 °C (68 °F)
(lead color)		(white-white)
· · · ·	(Minimum)	6.2 A at 1,500 r/min
	(Maximum)	13 A at 5,000 r/min
Standard output	(	14 V 150 W at 5,000 r/min
Rectifier/regulator		
Model/manufacturer		SH640E-11/SHINDENGEN
Regulator type		Semi conductor short circuit type
No load regulated voltage (DC)		14.0 ~ 15.0 V
Rectifier capacity		14.0 A
Withstand voltage		200 V
Electric starting system		
Type		Constant mesh
Starter motor		
Model/manufacturer		ЗЕА/ҮАМАНА
Output		0.4 kW
Armature coil resistance		0.019 ~ 0.023 Ω at 20 °C (68 °F)
Overall length (brush)		10.0 mm (0.39 in)
<limit></limit>		<3.5 mm (0.14 in)>
Brush spring pressure		552 ~ 828 g
Commutator diameter		22.0 mm (0.87 in)
<wear limit=""></wear>		<21.0 mm (0.83 in)>
Mica undercut		1.5 mm (0.06 in)
Starter relay		
Model/manufacturer		MS5E-661/JIDECO
Amperage rating		100 A
Coil resistance		4.18 ~ 4.62 Ω at 20 °C (68 °F)
Starting circuit cut off relay		
Model/manufacturer		ACA12115-1/MATSUSHITA
Coil resistance		72 ~ 88 Ω at 20 °C (68 °F)
Diode		No
Circuit breaker		
Туре		Fuse
Amperage for individual circuit		
Main		15 A
man		1071



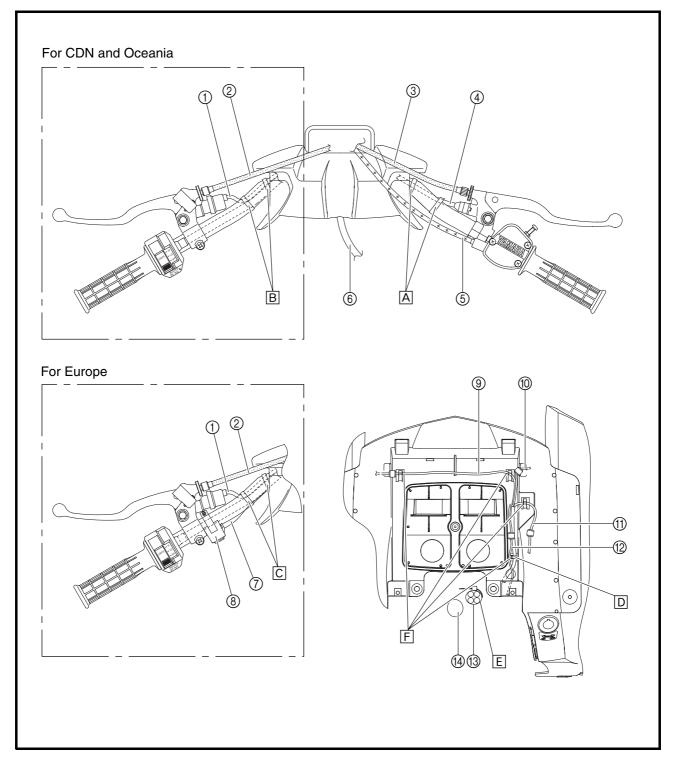
- ① Rear brake switch lead
- 2 Rear brake cable
- ③ Front brake cable
- 4 Front brake switch lead
- (5) Throttle cable
- 6 Fuel tank breather hose
- Horn switch lead (for Europe)
- (8) Horn switch (for Europe)
- (9) Headlight lead (left)

- 1 Headlight lead (right)
- (1) Neutral/reverse indicator light lead
- 12 Main switch lead
- 13 Coupler cover
- 14 Steering shaft





- A Fasten the front brake switch lead with two plastic bands.
- B Fasten the rear brake switch lead and handlebar switch lead with two plastic bands.
- C Fasten the rear brake switch lead, handlebar switch lead, and horn switch lead with two plastic bands. (for Europe)
- D Do not pull the wire harness after fastening it.
- E When installing the front fender, do not pinch the coupler cover.
- F Pass the leads and wire harness through the guides on the front fender as shown.

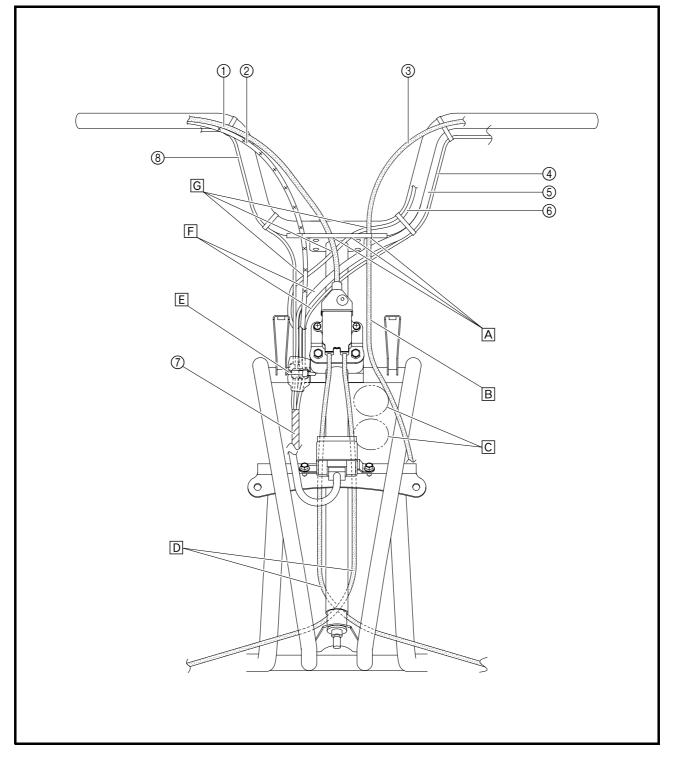






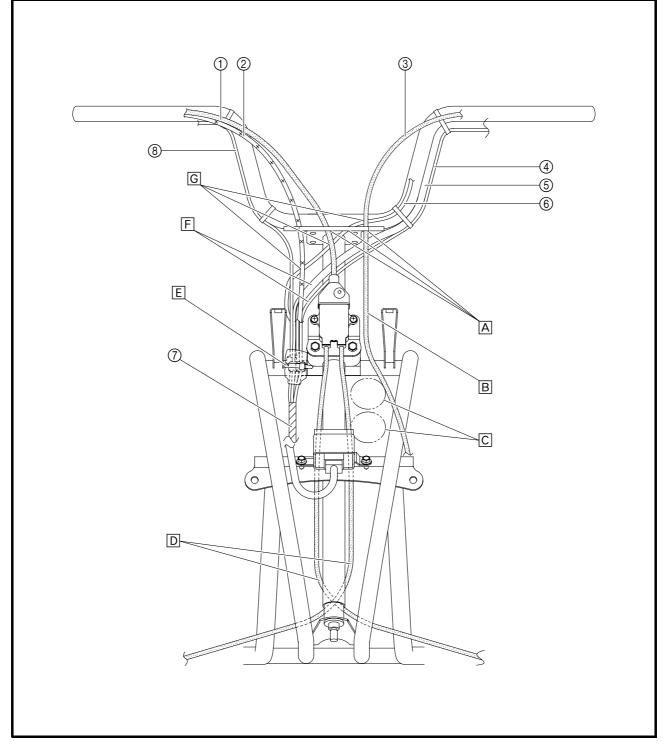
- 1 Front brake cable
- ② Throttle cable
- ③ Rear brake cable
- 4 Rear brake switch lead
- 5 Handlebar switch lead
- 6 Horn switch lead (for Europe)
- ⑦ Wire harness
- (8) Front brake switch lead

- A Pass the front brake cable and rear brake cable through the cable guide. (for CDN and Oceania) Pass the front brake cable, rear brake cable, and horn switch lead through the cable guide. (for Europe)
- B Route the rear brake cable to the inside of the front fender bracket.
- C Pass the air duct inlet and outlet hoses between the brake cables.





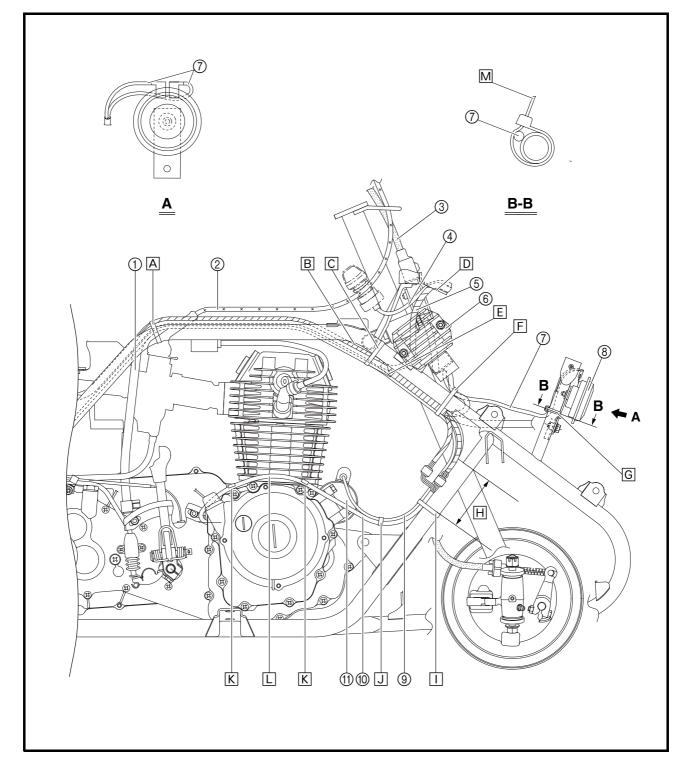
- Cross the front brake cables behind the steering shaft. Route the right front brake cable in front of the left front brake cable.
- E Put the cover on the couplers, and then fasten a plastic band around the middle of the cover.
- F Route the rear brake switch lead and the handlebar switch lead behind the throttle cable and the rear brake cable.
- G Route the horn switch lead behind the coupler cover, throttle cable, front brake cable, and rear brake cable. (for Europe)





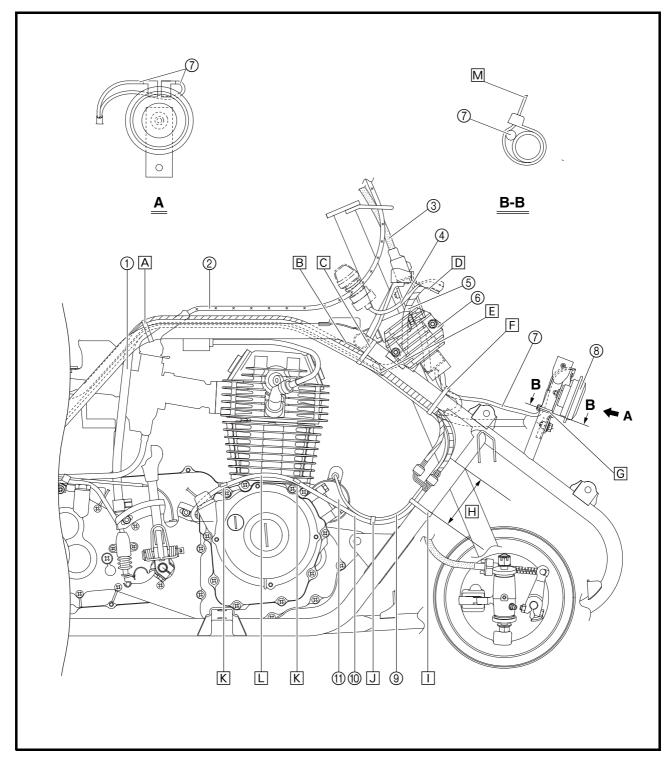
- ① Transmission case breather hose
- Throttle cable
- ③ Front brake cable
- 4 Main switch lead
- ⑤ Wire harness
- ⑥ Rectifier/regulator
- ⑦ Horn lead (for Europe)
- (8) Horn (for Europe)
- (9) Starter motor lead
- 1 A.C. magneto lead
- (1) Starter motor

- A Fasten the wire harness, starter motor lead, and transmission case breather hose to the frame with a plastic band.
- B Route the wire harness, starter motor lead, and the transmission case breather hose under the frame cross member.



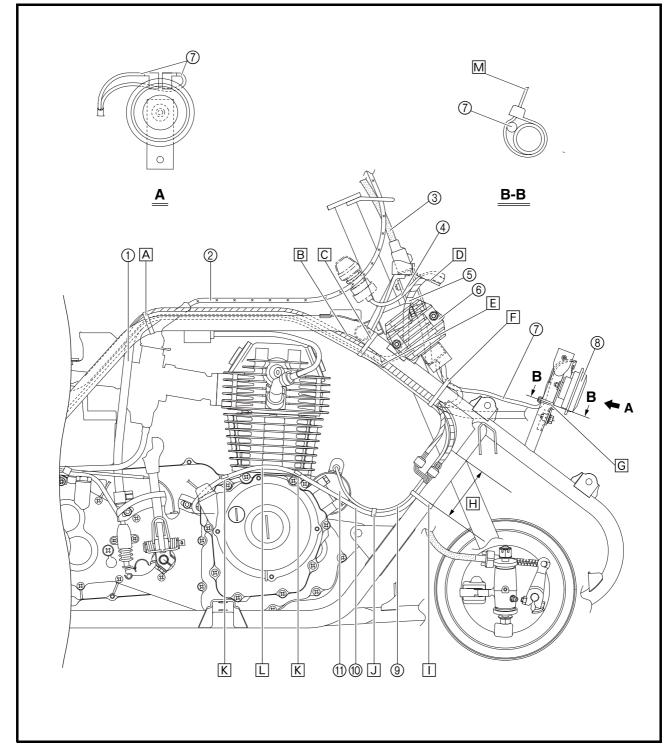


- C Fasten the wire harness, starter motor lead, and transmission case breather hose to the frame with a plastic band. Be sure not to pinch the transmission case breather hose. The end of the plastic band should be toward the front of the vehicle, facing inward.
- D Pass the main switch lead and wire harness through the hole in the front fender. Do not leave any slack in the main switch lead and wire harness under the front fender.
- E Face the end of the transmission case breather hose down.
- F Fasten the wire harness, starter motor lead, and rectifier/regulator lead to the frame with a plastic band. (for CDN and Oceania) Fasten the wire harness, starter motor lead, rectifier/regulator lead, and horn lead to the frame with a plastic band. (for Europe)
- G Fasten the horn lead to the front fender bracket with a plastic band just above the horn bracket. (for Europe)



CABLE ROUTING SPEC

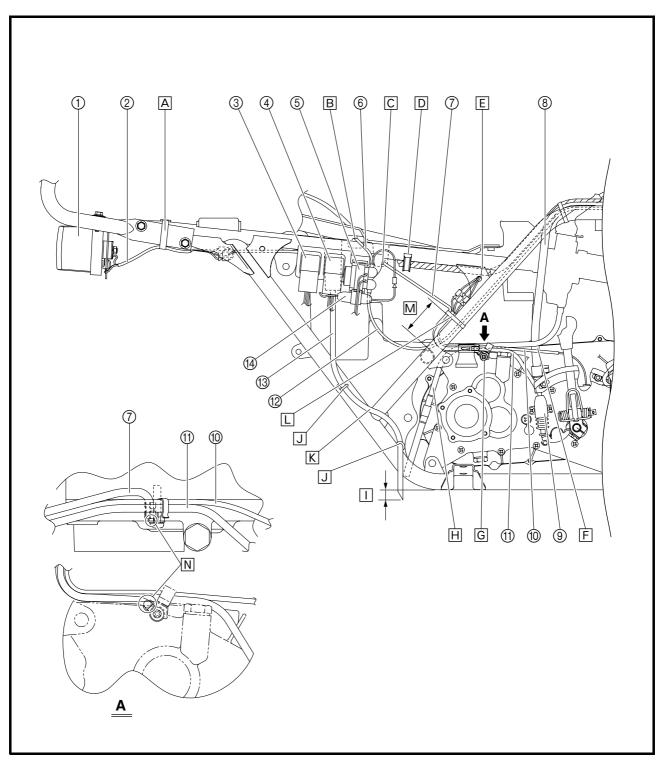
- H 80 mm (3.15 in)
- ☐ Fasten the starter motor lead and A.C. magneto lead to the frame with a plastic band. The end of the plastic band should be toward the rear of the vehicle, facing inward.
- J Fasten the starter motor lead and A.C. magneto lead with a plastic locking tie.
- K Fasten the A.C. magneto lead with the holders.
- L Route the A.C. magneto lead on top of the crankcase.
- M Face the end of the plastic band inward. (for Europe)



# CABLE ROUTING SPEC

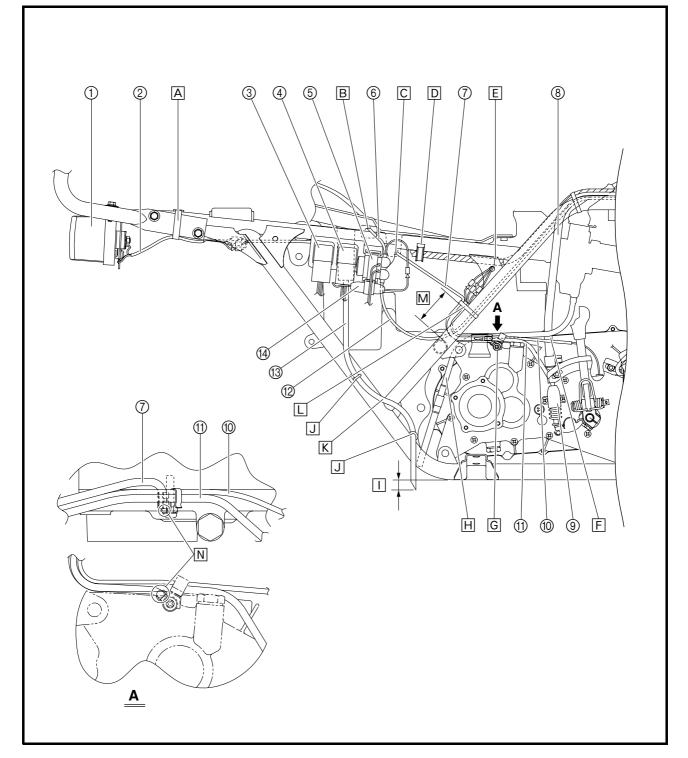
- ① Tail/brake light
- ② Tail/brake light lead
- ③ Reverse relay
- ④ Starting circuit cut-off relay
- ⑤ Starter relay
- 6 Positive battery lead
- ⑦ Negative battery lead
- (8) Transmission case breather hose
- (9) Reverse switch
- 1 Neutral switch lead
- (1) Reverse switch lead

- 12 Starter motor lead
- (13) Battery breather hose
- 4 Fuse holder





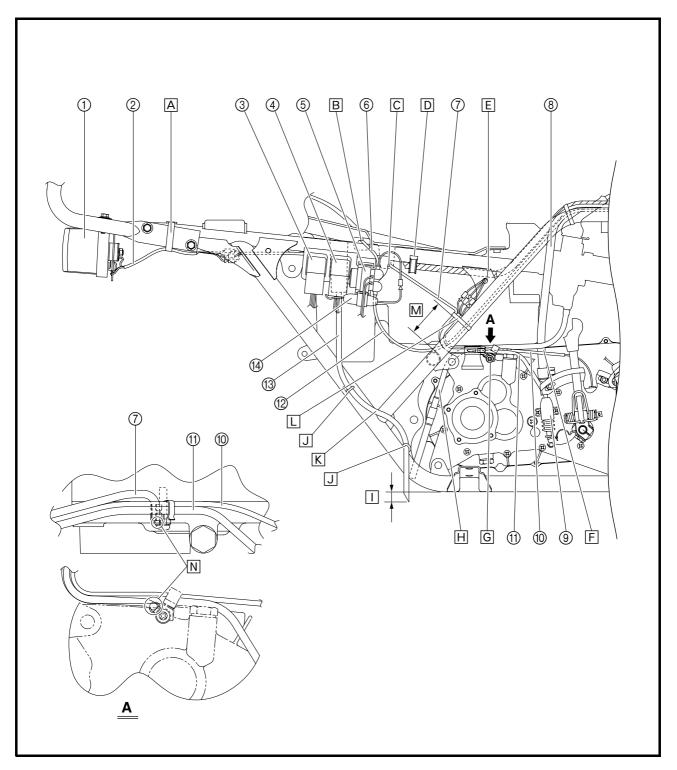
- A Fasten the tail/brake light lead to the rear carrier with a plastic band.
- B Pass the positive battery lead through the rear hole in the rear fender.
- C Pass the negative battery leads through the front hole in the rear fender.
- D Fasten the wire harness with the holder.
- E Align the white tape of the wire harness with the front end of the frame support as shown.
- F Route the fuel overflow hose in front of the transmission case breather hose.
- G Install both the holder and the negative battery lead terminal to the crankcase with the screw so that the holder is in front of the terminal. Fasten the neutral switch lead and reverse switch lead with the holder.
- H Pass the fuel overflow hose between the swingarm and crankcase.
- The end of battery breather hose should be lower than the frame.





- J Pass the battery breather hose through the guide.
- K Route the battery breather hose so that there is no slack.
- □ Fasten the negative battery lead, neutral switch lead, reverse switch lead, and starter motor lead to the frame with a plastic band. The end of the plastic band should be toward the rear of the vehicle, facing inward.
- M 60 mm (2.36 in)

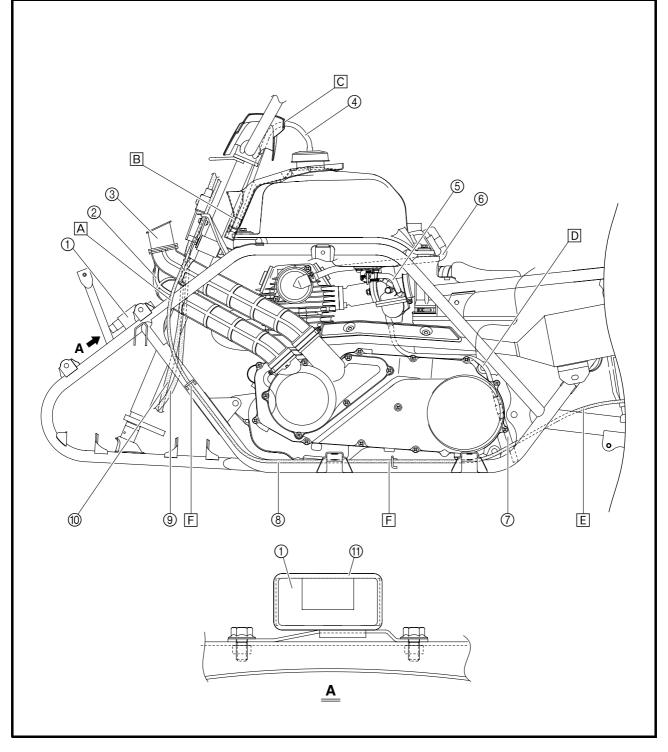
N Do not straighten the negative battery lead terminal. The negative battery lead should be bent as shown.





- 1 C.D.I. unit
- ② Air duct inlet hose
- 3 Air duct outlet hose
- 4 Fuel tank breather hose
- ⑤ Fuel hose
- 6 Crankcase breather hose
- O Fuel overflow hose
- ⑧ Rear brake cable
- ③ Front brake cable (left)
- 1 Front brake cable (right)
- (1) C.D.I. unit holder

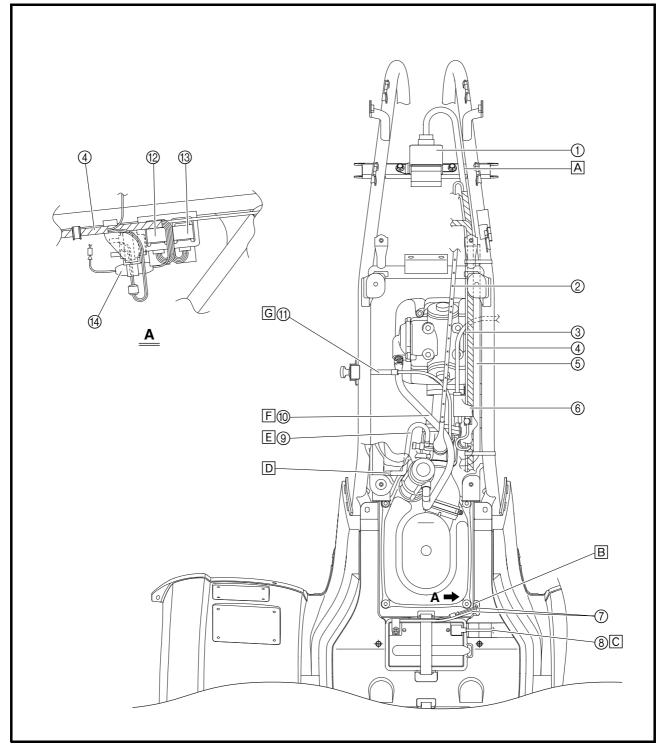
- A Route the rear brake cable to the outside of the frame.
- B Place the end of the fuel tank breather hose in the rubber fuel overflow tray.
- C Pass the fuel tank breather hose through the hole in the handlebar cover.
- D Route the fuel overflow hose to the outside of the engine bracket. Keep the hose as far away as possible from the exhaust pipe.
- E Pass the rear brake cable through the swingarm.
- $\ensuremath{\mathbb{F}}$  Pass the rear brake cable through the guide.





- 1 C.D.I. unit
- ② Throttle cable
- ③ Starter motor lead
- ④ Wire harness
- 5 Transmission case breather hose
- 6 Ignition coil
- ⑦ Negative battery leads
- 8 Positive battery lead
- (9) Air vent hose
- 0 Crankcase breather hose
- (1) Starter cable

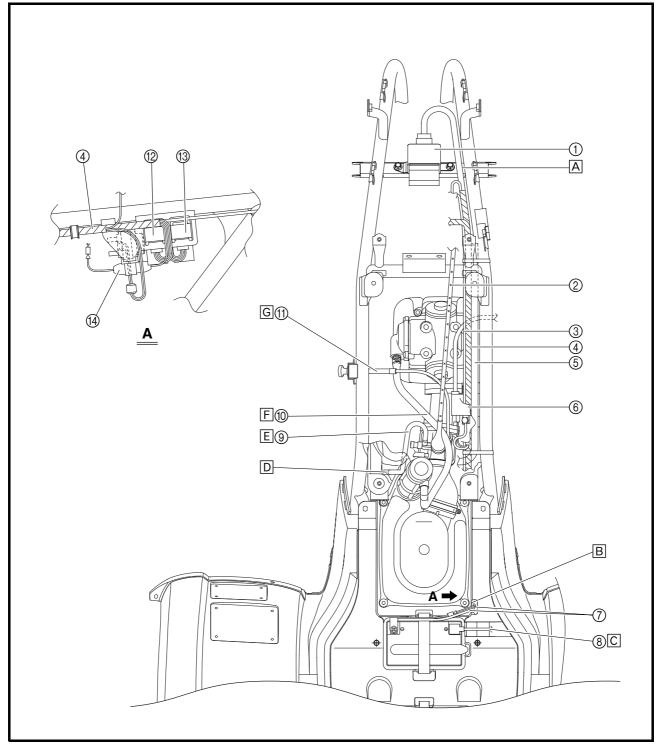
- 12 Starting circuit cut-off relay
- 13 Reverse relay
- (1) Fuse holder





- A Route the C.D.I. unit lead over the front shock absorber bracket.
- B Route the negative battery leads under the frame.
- C Route the positive battery lead over the frame.
- Pass the air vent hose through the hole in the fuel tank from the top. The end of the air vent hose should extend 15 ~ 20 mm (0.59 ~ 0.79 in) from the hole.
- E Do not kink the air vent hose.

- F Pass the crankcase breather hose between the starter cable and throttle cable.
- G Route the starter cable over the crankcase breather hose and under the throttle cable.

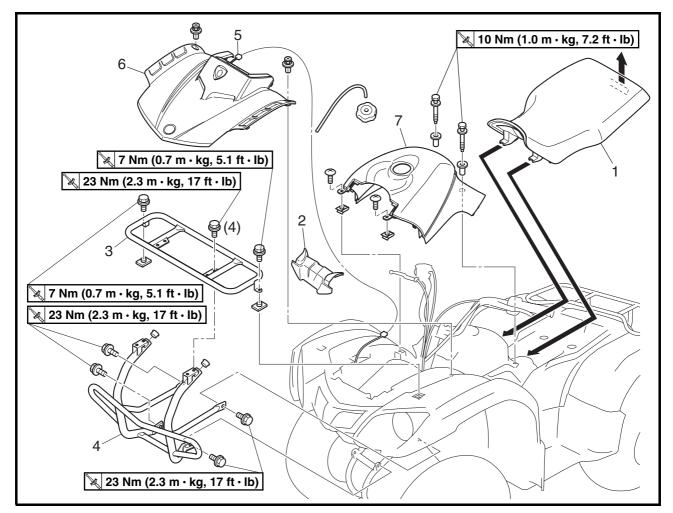




# PERIODIC CHECKS AND ADJUSTMENTS

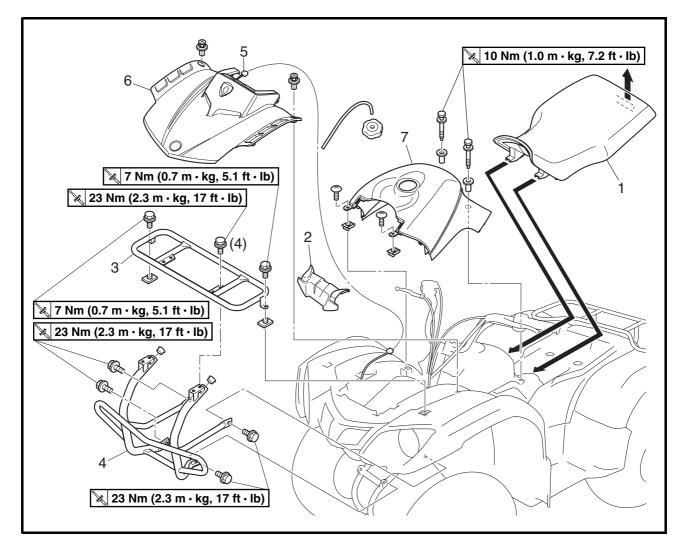
SEAT, CARRIERS AND FENDERS

SEAT, FRONT CARRIER, FRONT BUMPER AND CENTER COVER



Order	Job/Part	Q'ty	Remarks
	Removing the seat, front carrier,		Remove the parts in the order listed.
	front bumper and center cover		
1	Seat	1	NOTE:
			Pull the seat lock lever backward, then
			pull up the seat at the rear.
2	Handlebar cover	1	
3	Front carrier	1	
4	Front bumper	1	
5	Neutral/reverse indicator light coupler	1	Disconnect.
6	Front fender panel	1	

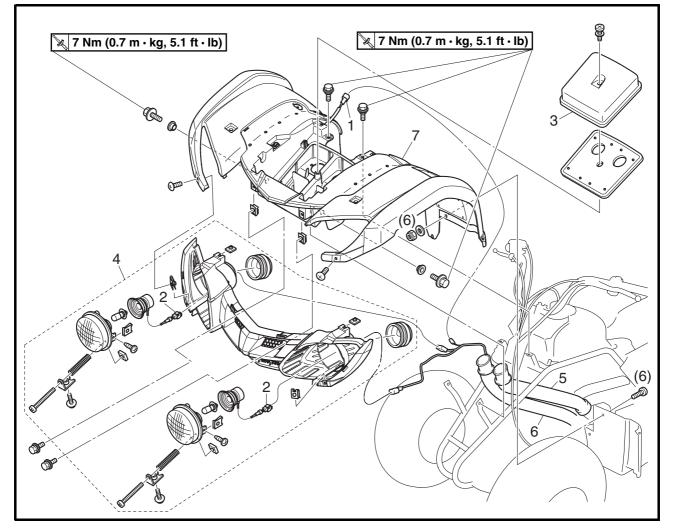




Order	Job/Part	Q'ty	Remarks
7	Center cover	1	<b>NOTE:</b> Install the fuel tank cap after removing the center cover to prevent dust, mud, etc., from entering the fuel tank.
			For installation, reverse the removal pro- cedure.



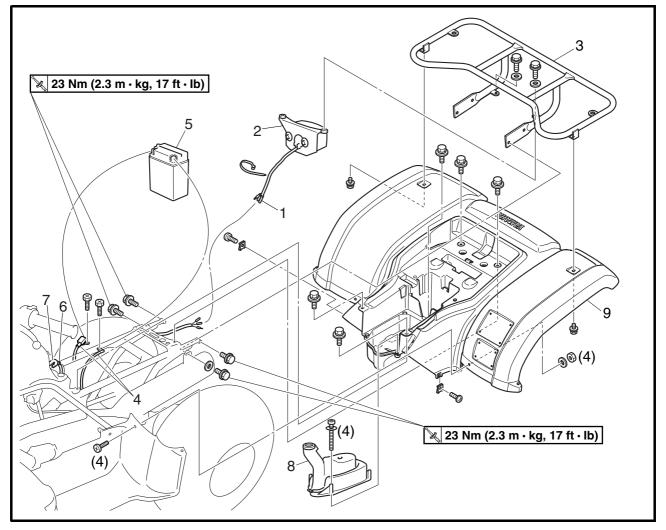
#### FRONT GRILL ASSEMBLY AND FRONT FENDER



Order	Job/Part	Q'ty	Remarks
	Removing the front grill assembly		Remove the parts in the order listed.
	and front fender		
	Seat/center cover		Refer to "SEAT, FRONT CARRIER,
			FRONT BUMPER AND CENTER
			COVER".
1	Main switch coupler	1	Disconnect.
2	Headlight coupler	2	Disconnect.
3	Air filter cover	1	
4	Front grill assembly	1	
5	Air duct outlet hose	1	Disconnect.
6	Air duct inlet hose	1	Disconnect.
7	Front fender	1	
			For installation, reverse the removal pro-
			cedure.

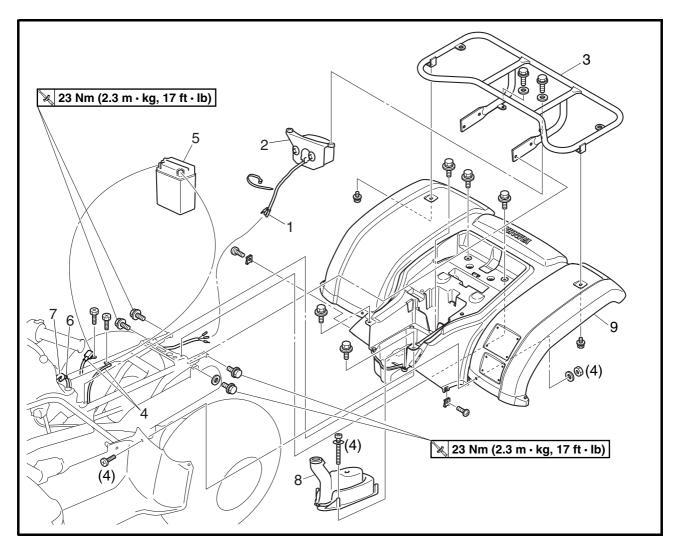


#### **REAR CARRIER AND REAR FENDER**

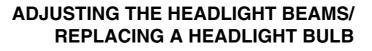


Order	Job/Part	Q'ty	Remarks
	Removing the rear carrier and rear fender		Remove the parts in the order listed.
	Seat/center cover		Refer to "SEAT, FRONT CARRIER, FRONT BUMPER AND CENTER COVER".
	Front grill assembly/front fender		Refer to "FRONT GRILL ASSEMBLY AND FRONT FENDER".
1	Tail/brake light connector	3	Disconnect.
2	Tail/brake light	1	
3	Rear carrier	1	
4	Battery lead	2	Disconnect.
			CAUTION:
			First disconnect the negative lead, then disconnect the positive lead.

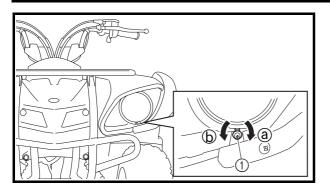




Order	Job/Part	Q'ty	Remarks
5	Battery	1	
6	Carburetor joint clamp screw	1	Loosen.
7	Crankcase breather hose	1	Disconnect.
8	Air filter case	1	
9	Rear fender	1	
			For installation, reverse the removal pro-
			cedure.







### ELECTRICAL

# ADJUSTING THE HEADLIGHT BEAMS

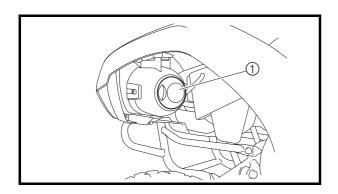
- 1. Adjust:
- headlight beam (vertically)

#### \*\*\*\*

a. Turn the adjusting screw ① in direction ③ or ⑤.

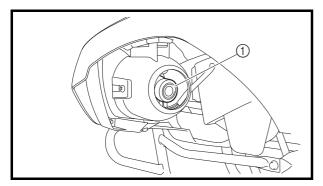
Direction (a)	Headlight beam is raised.
Direction (b)	Headlight beam is lowered.

\*\*\*\*\*



#### EBS00124 REPLACING A HEADLIGHT BULB

- 1. Remove:
- headlight unit cover ①

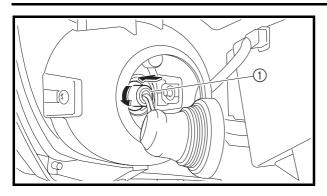


#### 2. Remove:

• headlight bulb holder cover (1)

# **REPLACING A HEADLIGHT BULB**





- 3. Remove:
- bulb holder ①
- bulb

#### NOTE:

Push the headlight bulb holder inward, turn it counterclockwise and remove the defective bulb.

#### A WARNING

Keep flammable products and your hands away from the bulb while it is on, since it will be hot. Do not touch the bulb until it cools down.

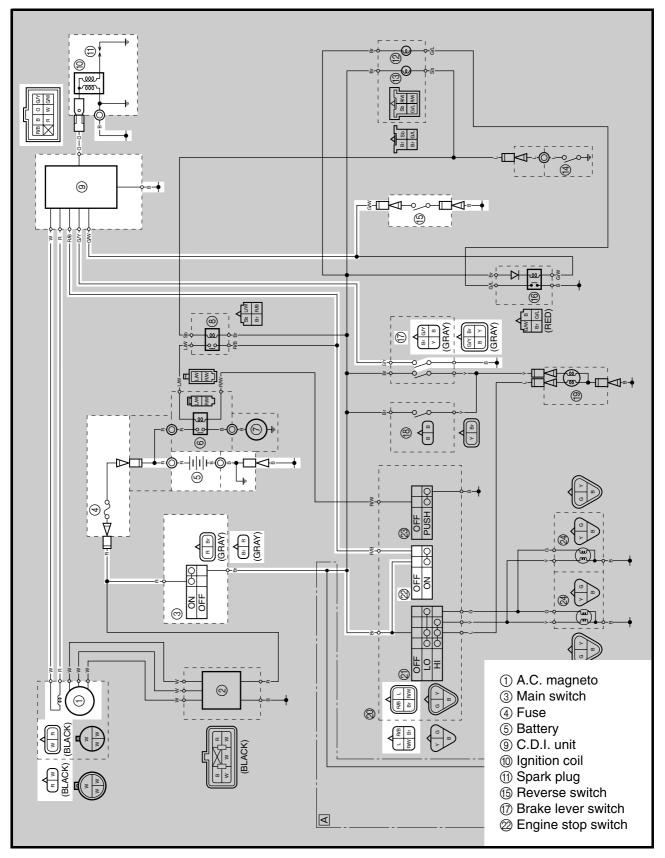
- 4. Install:
- bulb New
- CAUTION:

Avoid touching the glass part of the bulb. Keep it free from oil; otherwise, the transparency of the glass, life of the bulb, and luminous flux will be adversely affected. If oil gets on the bulb, thoroughly clean it with a cloth moistened with alcohol or lacquer thinner.



# ELECTRICAL

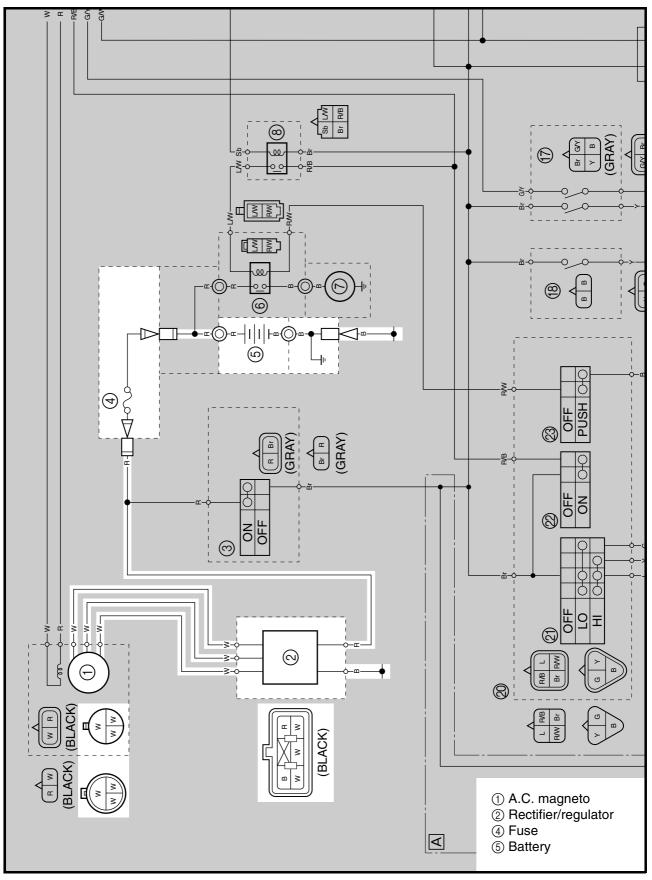
#### EBS00503 IGNITION SYSTEM CIRCUIT DIAGRAM



# **CHARGING SYSTEM**



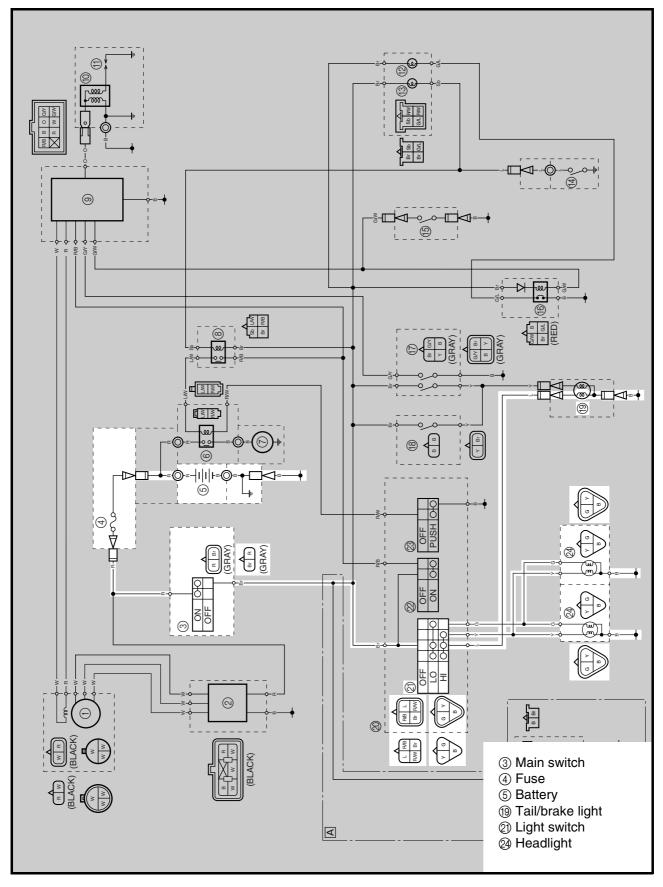
# CHARGING SYSTEM



# LIGHTING SYSTEM



#### EBS00518 LIGHTING SYSTEM CIRCUIT DIAGRAM



#### EBS01067 TROUBLESHOOTING

#### Any of the following fail to light: headlight or tail/brake light.

#### Check:

- 1. fuse
- 2. battery
- 3. main switch
- 4. light switch
- 5. wiring connections (of the entire lighting system)

#### NOTE:

- Before troubleshooting, remove the following part(s):
- 1. seat
- 2. front carrier
- 3. front fender panel
- Troubleshoot with the following special tool(s).

Pocket tester YM-03112-C, 90890-03112

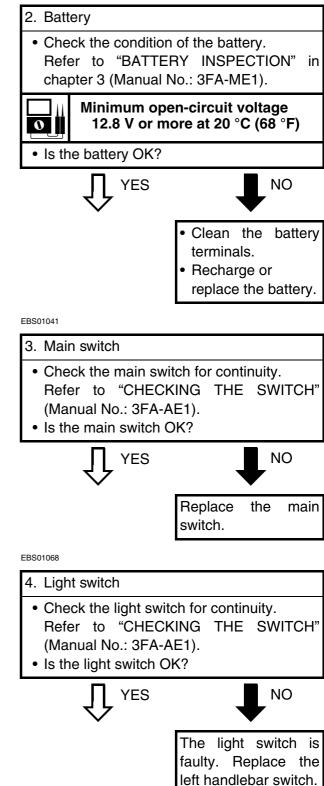
EBS01043

# Fuse Check the fuse for continuity. Refer to "CHECKING THE SWITCH" (Manual No.: 3FA-AE1). Is the fuse OK?

LIGHTING SYSTEM



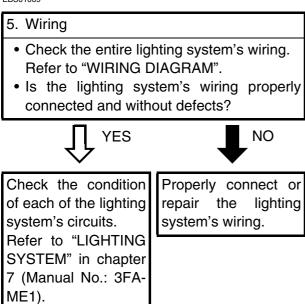
EBS01044



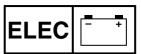
LIGHTING SYSTEM



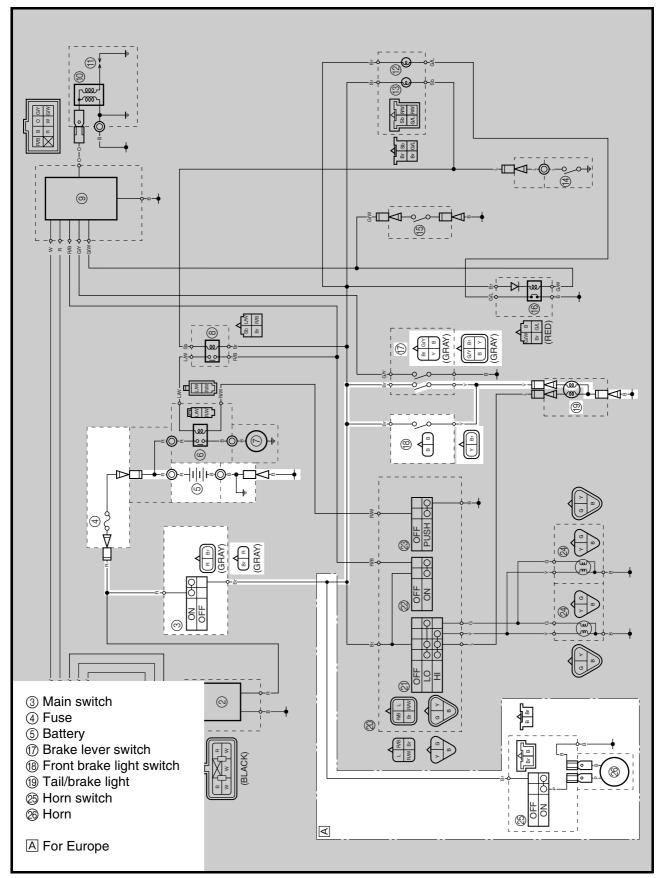
EBS01069



SIGNAL SYSTEM

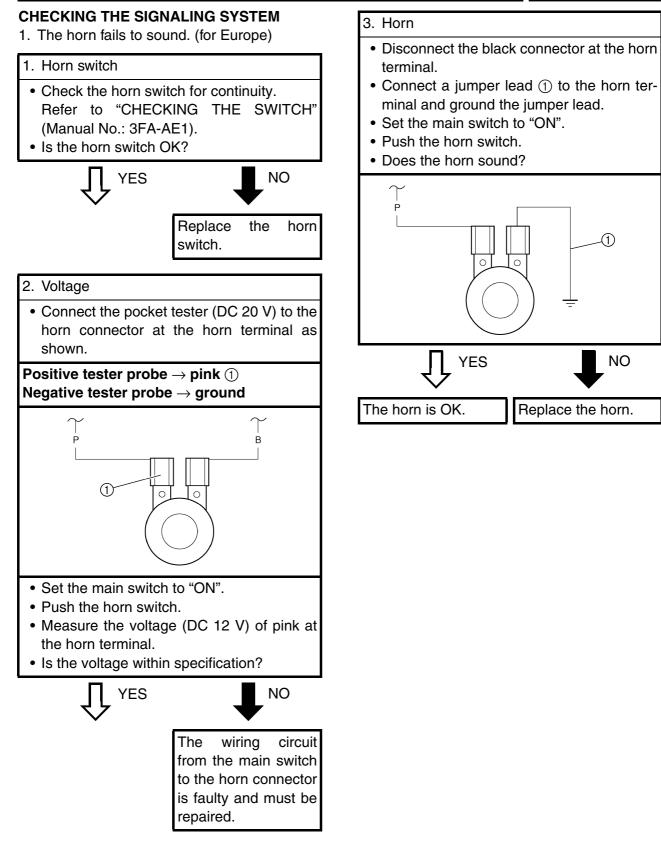


#### EB806000 SIGNAL SYSTEM CIRCUIT DIAGRAM



SIGNAL SYSTEM

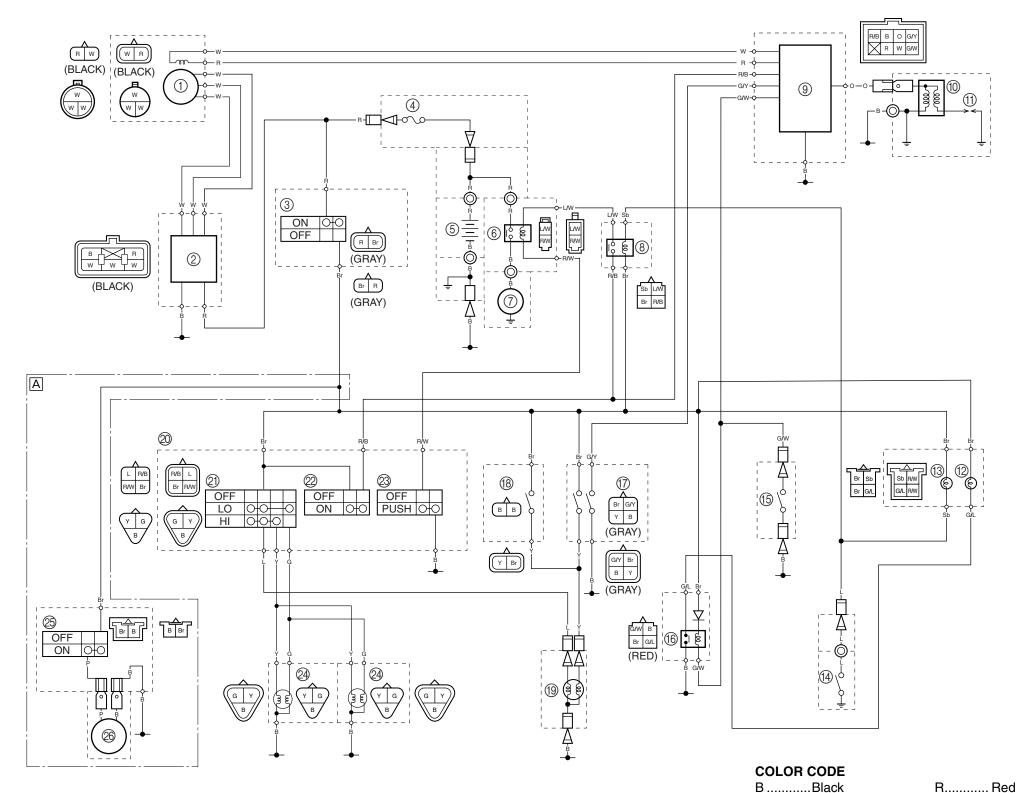






2500 SHINGAI IWATA SHIZUOKA JAPAN

#### **YFM125S WIRING DIAGRAM**



G/Y . L/W . R/B R/W.

Sb..... Sky blue

G/L ..... Green/Blue

G/W...... Green/White

W..... White

Y.....Yellow

Br.....Brown

G.....Green

O.....Orange P .....Pink

L.....Blue

 A.C. magneto
 Rectifier/regulator
 Main switch
 Fuse (a) Fuse
(b) Battery
(c) Starter relay
(c) Starter motor
(c) Starting circuit cut-off relay
(c) C.D.I. unit
(c) Listing circuit (9) C.D.I. unit
(10) Ignition coil
(11) Spark plug
(12) Reverse indicator light
(13) Neutral indicator light
(14) Neutral switch
(15) Reverse switch
(16) Reverse relation (i) Reverse relay
(ii) Brake lever switch
(iii) Front brake light switch (i) Front brake light switch
(i) Tail/brake light
(i) Handlebar switch (left)
(i) Light switch
(i) Engine stop switch
(ii) Start switch
(iii) Headlight
(iii) Horn switch
(iii) Horn

A For Europe

.....Green/Yellow .....Blue/White .....Red/Black .....Red/White