YAMAHA 2004

XJR1300(S)

5EA3-AE3

SUPPLEMENTARY SERVICE MANUAL

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the XJR1300(S) 2004. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

XJR1300 (L) '99 SERVICE MANUAL: 5EA3-AE1
XJR1300 (P) SUPPLEMENTARY SERVICE MANUAL: 5EA3-AE2

XJR1300(S) 2004
SUPPLEMENTARY
SERVICE MANUAL

First Edition, September 2003

EAS00002

NOTICE

This manual was produced by the Yamaha Motor Company, Ltd. 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. Therefore, anyone who uses this book to perform maintenance and repairs on Yamaha vehicles should have a basic understanding of mechanics and the techniques to repair these types of vehicles. Repair and maintenance work attempted by anyone without this knowledge is likely to render the vehicle 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.

EAS00004

IMPORTANT INFORMATION

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

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

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

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

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

EAS00007

HOW TO USE THIS MANUAL

This manual is intended as a handy, easy-to-read reference book for the mechanic. Comprehensive explanations of all installation, removal, disassembly, assembly, repair and check procedures are laid out with the individual steps in sequential order.

① The manual is divided into chapters. An abbreviation and symbol in the upper right corner of each page indicate the current chapter.
Refer to “SYMBOLS”.

② Each chapter is divided into sections. The current section title is shown at the top of each page, except in Chapter 3 (“PERIODIC CHECKS AND ADJUSTMENTS”), where the sub-section title(-s) appears.

③ Sub-section titles appear in smaller print than the section title.

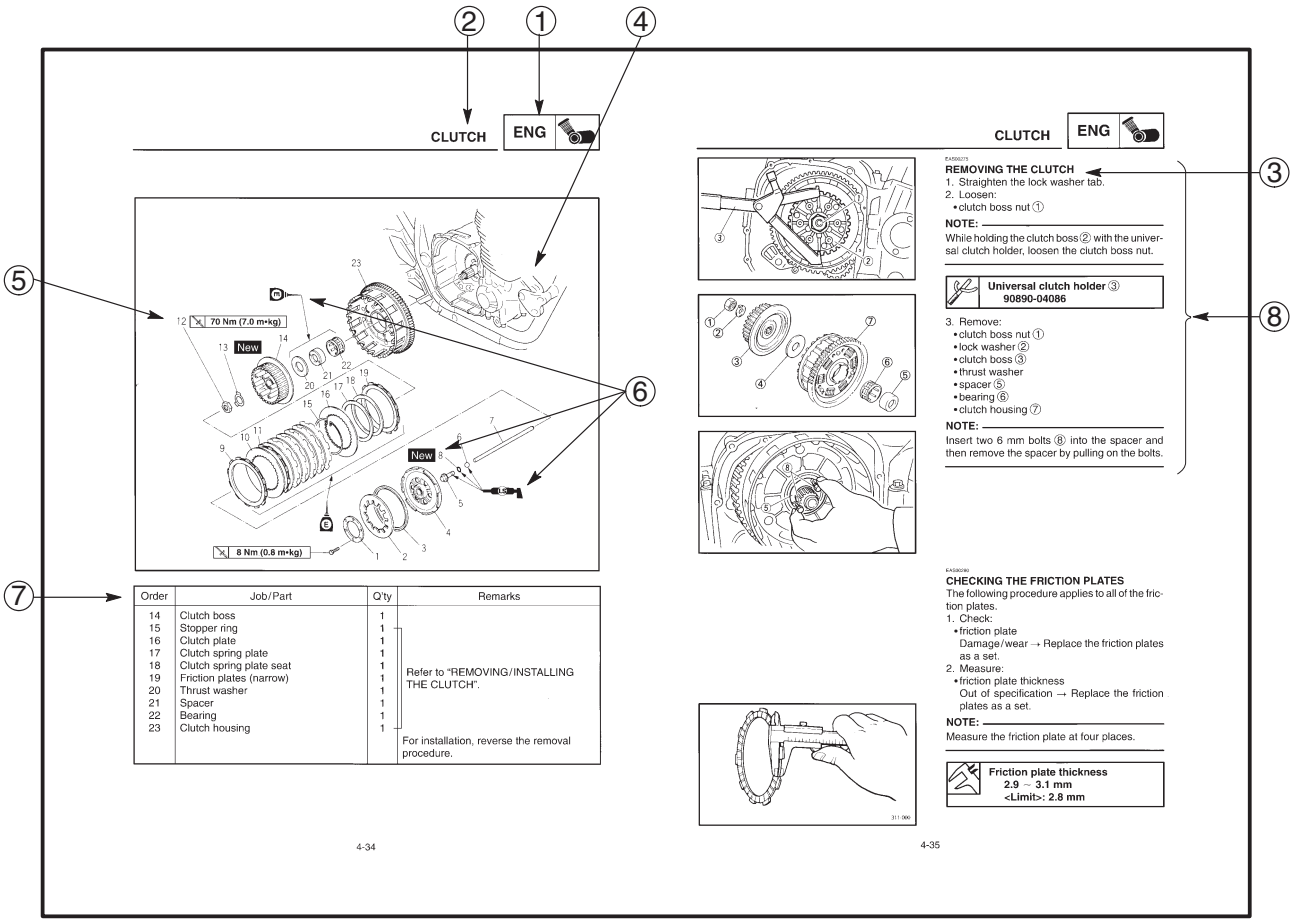
④ To help identify parts and clarify procedure steps, there are exploded diagrams at the start of each removal and disassembly section.

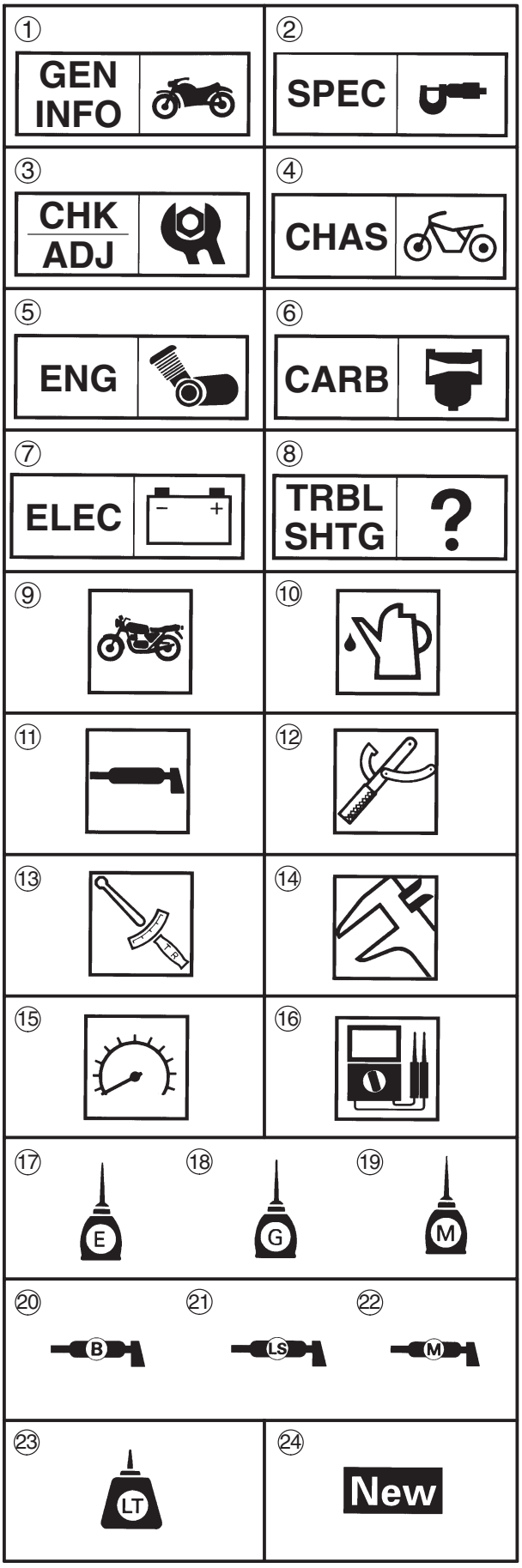
⑤ Numbers are given in the order of the jobs in the exploded diagram. A circled number indicates a disassembly step.

⑥ Symbols indicate parts to be lubricated or replaced.
Refer to “SYMBOLS”.

⑦ A job instruction chart accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc.

⑧ Jobs requiring more information (such as special tools and technical data) are described sequentially.





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SYMBOLS

The following symbols are not relevant to every vehicle.

Symbols ① to ⑧ indicate the subject of each chapter.

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

Symbols ⑨ to ⑯ indicate the following.

⑨ Serviceable with engine mounted
⑩ Filling fluid
⑪ Lubricant
⑫ Special tool
⑬ Tightening torque
⑭ Wear limit, clearance
⑮ Engine speed
⑯ Electrical data

Symbols ⑰ to ㉒ in the exploded diagrams indicate the types of lubricants and lubrication points.

⑰ Engine oil
⑱ Gear oil
⑲ Molybdenum disulfide oil
⑳ Wheel bearing grease
㉑ Lithium soap base grease
㉒ Molybdenum disulfide grease

Symbols ㉓ to ㉔ in the exploded diagrams indicate the following:

㉓ Apply locking agent (LOCTITE®)
㉔ Replace the part

CONTENTS

XJR1300(S) 2004 WIRING DIAGRAM

SPECIFICATIONS

GENERAL SPECIFICATIONS

Model		XJR1300(S)
Model code:		5WM7 (EUR)/5WM8 (DEU)/5WM9 (AUS)
Fuel:		
Type		Regular unleaded gasoline (EUR) Unleaded gasoline (AUS)
Tire:		
Size	front	120/70ZR17 M/C (58W)
	rear	180/55ZR17 M/C (73W)
Manufacturer	front	DUNLOP
	rear	DUNLOP
Type	front	D252FJ
	rear	D252J
Wheel travel:		
Rear wheel travel		120 mm
Bulb wattage × quantity:		
Auxiliary light		12 V 4 W × 1 (EUR)
Meter light		LED × 1
High beam indicator light		12 V 1.7 W × 1

ENGINE SPECIFICATIONS

Model		Standard	Limit
Clutch:			
Clutch spring height		6.78 mm (0.27 in)	•••
Quantity		1 pc	•••
Carburetor:			
I.D. mark		5WM7 00	•••
Main jet	(M.J)	#107.5	•••
Main air jet	(M.A.J)	#80	•••
Jet needle	(J.N)	5D139	•••
Needle jet	(N.J)	P-OM	•••
Pilot jet	(P.A.J.1)	#140	•••
Pilot outlet	(P.O)	ϕ1.0	•••
Pilot jet	(P.J)	#15	•••
Bypass 1	(B.P.1)	ϕ0.9	•••
Bypass 2	(B.P.2)	ϕ0.9	•••
Bypass 3	(B.P.3)	ϕ0.8	•••
Pilot screw	(P.S)	2.0	•••
Valve seat size	(V.S)	2.3	•••
Starter jet	(G.S.1)	#52.5	•••
Starter jet	(G.S.2)	0.8	•••
Throttle valve size	(Th.V)	#115	•••
Float height	(F.H)	13.0 mm (0.51 in)	•••
Fuel level (using special tool)		3.0 ~ 4.0 mm (0.12 ~ 0.16 in)	•••
Engine idle speed		950 ~ 1150 r/min	•••
Intake vacuum		30.7 kPa (230 mmHg, 9.1 inHg)	•••

CHASSIS SPECIFICATIONS

Model	Standard	Limit
Front suspension:		
Fork spring free length	357.3 mm (14.07 in)	346.6 mm (13.65 in)
Fitting length	337.3 mm (13.28 in)	•••
Collar length	195 mm (7.68 in)	•••
Spring rate (K1)	7.5 N/mm (0.76 kgf/mm, 42.83 lb/in)	•••
(K2)	13 N/mm (1.33 kgf/mm, 74.23 lb/in)	•••
Stroke (K1)	0 ~ 75 mm (0 ~ 2.95 in)	•••
(K2)	75 ~ 130 mm (2.95 ~ 5.12 in)	•••
Oil capacity	562 cm^3 (0.5 Imp qt, 0.59 us qt)	
Oil level	124 mm (4.88 in)	
Rear suspension:		
Spring rate (K1)	21.3 N/mm (2.17 kgf/mm, 121.62 lb/in)	•••
(K2)	27.8 N/mm (2.83 kgf/mm, 158.74 lb/in)	•••
(K3)	33.7 N/mm (3.44 kgf/mm, 192.43 lb/in)	•••
Stroke (K1)	0 ~ 37 mm (0 ~ 1.46 in)	•••
(K2)	37 ~ 58 mm (1.46 ~ 2.28 in)	•••
(K3)	58 ~ 93 mm (2.28 ~ 3.66 in)	•••
Front wheel:		
Rim size	17 M/C × MT3.50	•••
Rear wheel:		
Rim size	17 M/C × MT5.50	•••
Drive chain:		
Type/manufacturer	50VA8/DAIDO	•••
No. of links	112	•••
Front disc brake:		
Disc deflection limit	•••	0.1 mm (0.0039 in)
Master cylinder inside diameter	15 mm (0.59 in)	•••
T.C.I.:		
T.C.I. unit model/manufacturer	TNDF75/DENSO (except for DEU)	•••
	TNDF76/DENSO (DEU)	•••
Oil level switch:		
Model/manufacturer	5UX/DENSO	•••
Circuit breaker:		
Type	Fuse	•••
Amperage for individual circuit × Q'ty		
Main	40 A × 1	•••
Head Light	15 A × 1	•••
Signal	10 A × 1	•••
Ignition	15 A × 1	•••
Parking Light	10 A × 1	•••
Backup	10 A × 1	•••
Reserve	40 A × 1	•••
	15 A × 1	•••
	10 A × 1	•••

TIGHTENING TORQUES

ENGINE TIGHTENING TORQUES

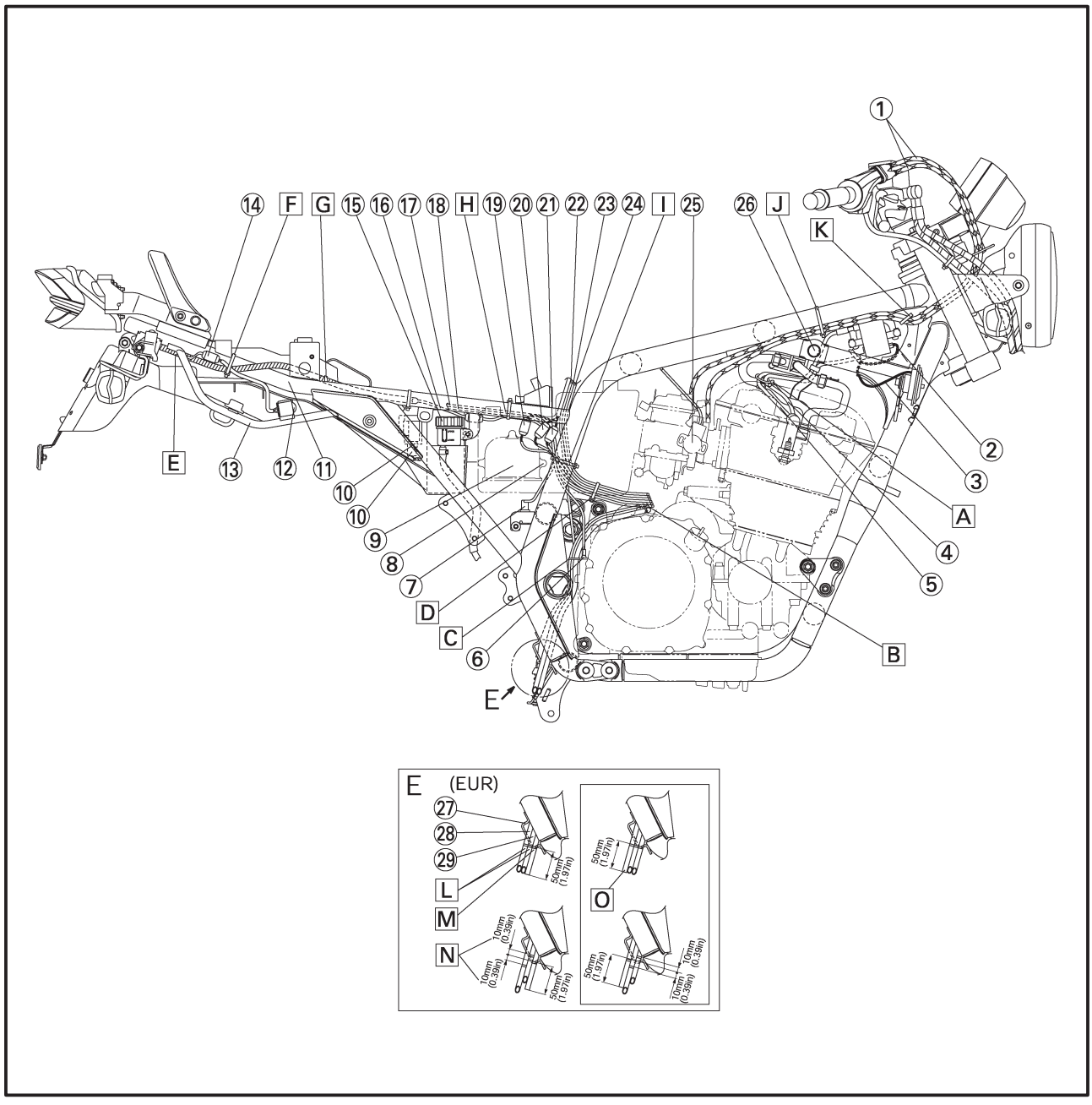
Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m•kg	ft•lb	
Cylinder	Nut	M6 × 1.0	4	12	1.2	8.7	
Exhaust pipe and exhaust chamber	Screw	M8 × 1.25	2	20	2.0	14	
Exhaust chamber and muffler	Bolt	M8 × 1.25	4	20	2.0	14	
Muffler protector	Screw	M6 × 1.0	4	15	1.5	11	
Crankcase cover (right)	Screw	M6 × 1.0	2	10	1.0	7.2	
Drive sprocket cover	Bolt	M6 × 1.0	2	10	1.0	7.2	
Crankcase	Bolt	M12 × 1.25	5	35	3.5	25	
Stopper plate (Starter clutch idle gear shaft)	Bolt	M6 × 1.0	1	10	1.0	7.2	LT
Stopper lever	Bolt	M8 × 1.0	1	10	1.0	7.2	LT
Neutral switch	Screw	M5 × 0.8	3	3.5	0.35	2.5	
Speed sensor	Bolt	M6 × 1.0	1	10	1.0	7.2	

CHASSIS TIGHTENING TORQUES

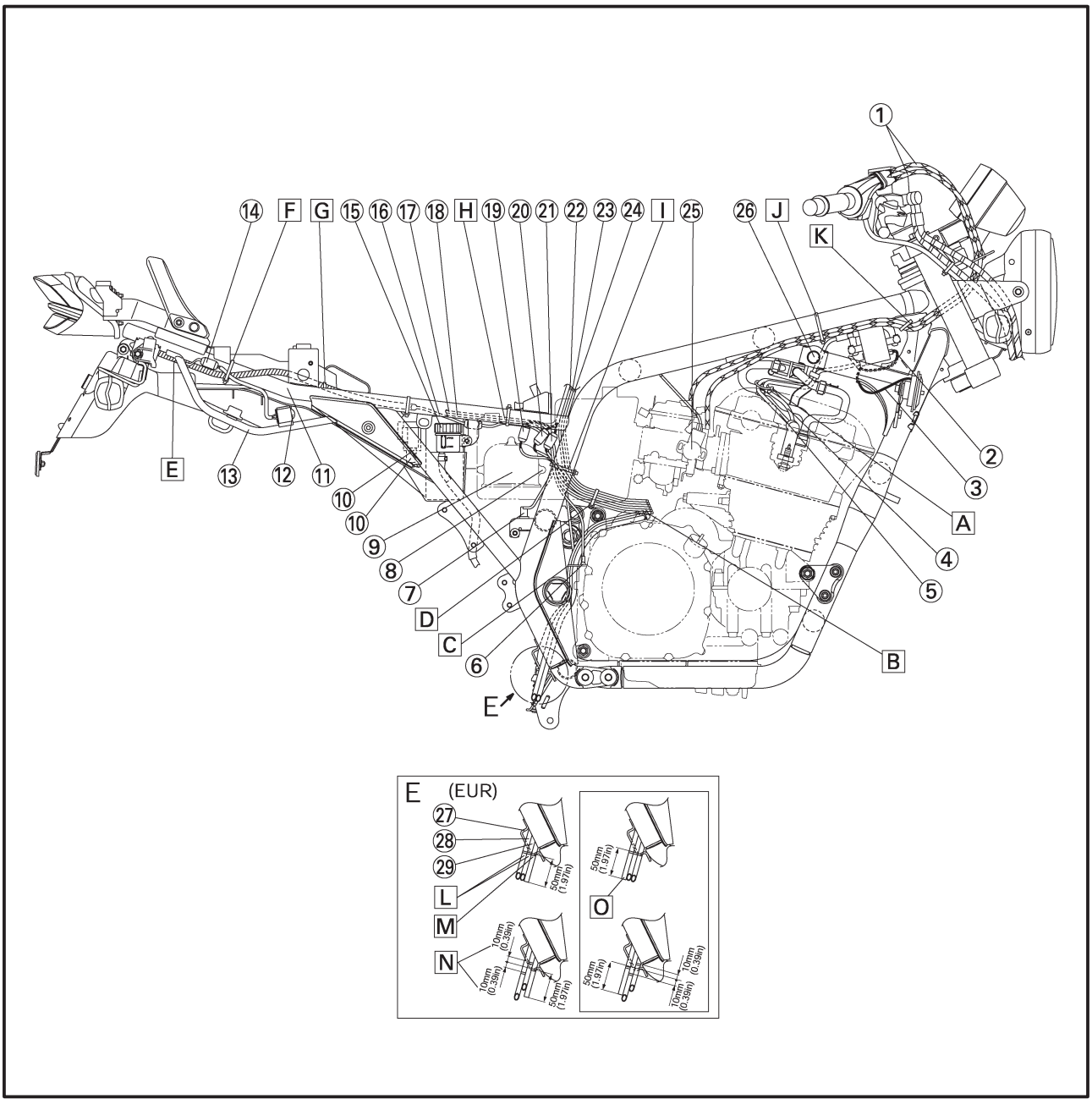
Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m•kg	ft•lb	
Rear fender cover and cover	Screw	M5 × 0.8	2	1.5	0.15	1.1	
Center stand	Nut and Bolt	M10 × 1.25	2	56	5.6	41	
Front wheel axle	–	M18 × 1.5	1	72	7.2	52	
Front brake disk and hub	Bolt	M8 × 1.25	12	18	1.8	13	LT
Driven sprocket and hub	Nut	M8 × 1.25	6	69	6.9	4.3	
Rear wheel axle	Nut	M24 × 1.5	1	150	15.0	108	
Rear brake disc and hub	Bolt	M8 × 1.25	6	23	2.3	17	LT

CABLE ROUTING

① Throttle cables
② Ignition coil lead (#1, #4)
③ Horn lead
④ Spark plug lead (#3)
⑤ Spark plug lead (#4)
⑥ Ground lead
⑦ Rear brake switch
⑧ Intake air filter screw
⑨ Air filter
⑩ Relay assembly
⑪ Seat rail
⑫ Thermo switch
⑬ Standing handle
⑭ Thermo switch coupler
⑮ Rear brake fluid reservoir tank
⑯ Speed sensor lead
⑰ Starter motor lead
⑱ Battery negative lead
⑲ Carburetor heater coupler
⑳ A.C.magneto
㉑ Rear brake light switch coupler
㉒ Neutral switch lead
㉓ Pickup coil lead
㉔ Sidestand switch lead
㉕ Throttle position sensor
㉖ Fuel tank fitting
㉗ Guide wire
㉘ Fuel tank drain hose
㉙ Fuel tank breather hose



A Clamp the #3 and #4 spark plug leads, on the head cover mounting bolt at the #3 spark plug lead, by use of clamp.
B Do not entangle the lead wires and the hosing.
Pass the clump of lead wires and that of hosing orderly as shown.
C Pass the air filter drain hose, fuel tank drain hose and fuel tank breather hose (total 3 hoses) through the guide wire of the engine.
D Clump the A.C.magneto lead, pickup lead, sidestand switch lead, starter motor cable and carburetor heater lead (total 5 wires), by use of this clamp.
E Pass the wire harness between the handle standing lug member and the rear fender.
F Fasten the wire harness, thermo switch lead to the seat rail at the front end of the seat rail bracket with a clamp. Point the tip of the clamp to the downward.
G Clamp the wire harness.
H Pass the starter motor cable, speed sensor lead and the battery negative lead through the inside of the seat rail.



[I] Secure the carburetor heater lead, starter motor cable, battery negative lead, A.C. magneto lead, neutral switch lead, sidestand switch lead, pickup lead and rear brake switch lead, speed sensor lead (total 9 wires), to the fuel tank rail, near the air filter intake port mounting screw, by use of this clamp.
The front end of the clamp must be directed towards the front of the vehicle.

[J] Clump the throttle cables to the fuel tank rail, on the tank fitting by use of this clamp. The front end of the clamp must be directed downward.

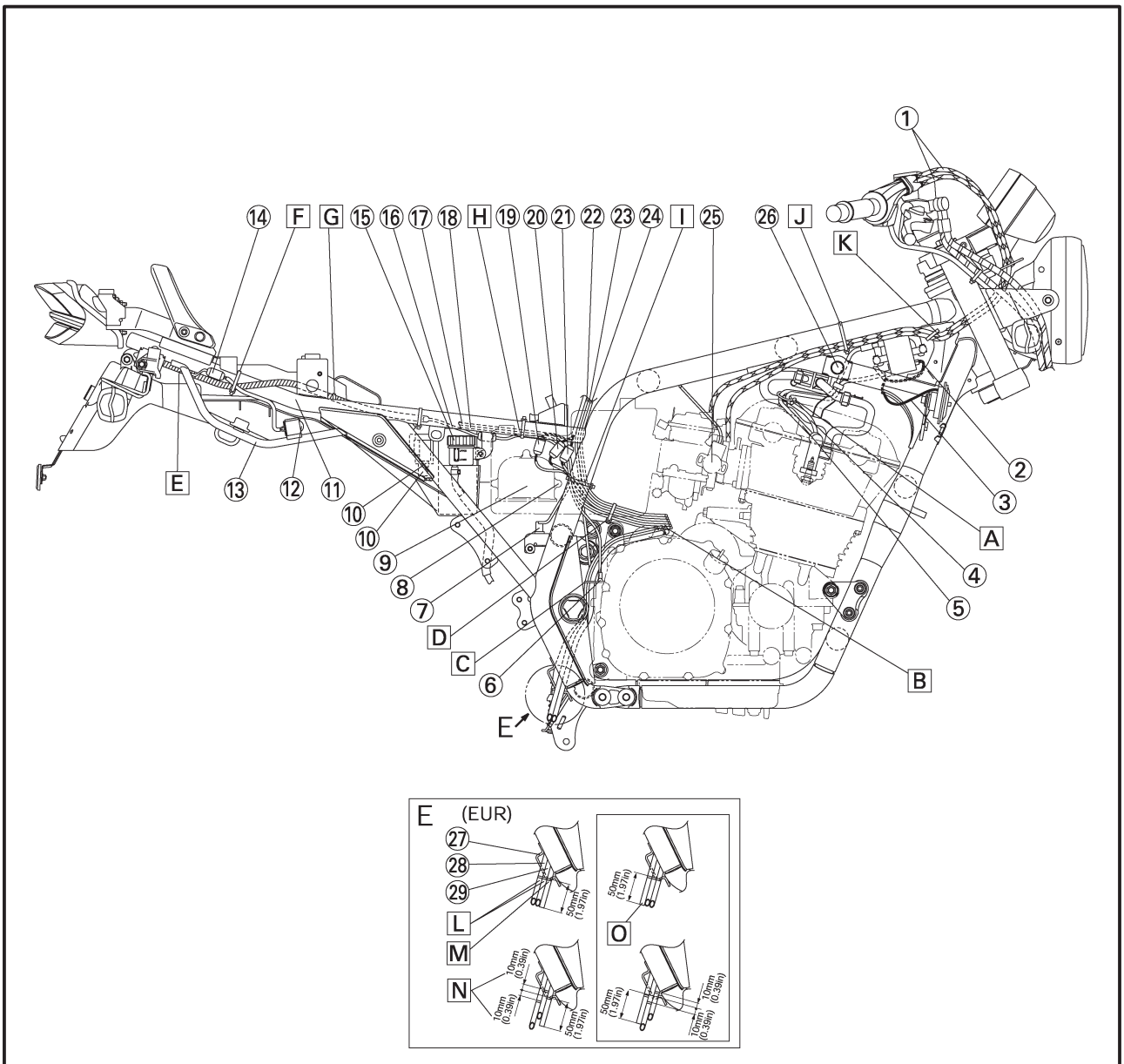
[K] Thread this clamp through the upper hole in the gusset and secure the two throttle cables. The front end of the clamp must be directed towards the inside of the vehicle.

[L] Match the marks of the fuel tank drain hose and fuel tank breather hose, and arrange the two types of hose properly.

[M] Match the paint mark of the air filter drain hose to the lower end of the guide wire.

[N] Make sure to pull out the hose sufficiently so that bending does not occur and it can be set within this range.

[O] Air filter drain hose can also be routed at the rear side (The middle position is prohibited).

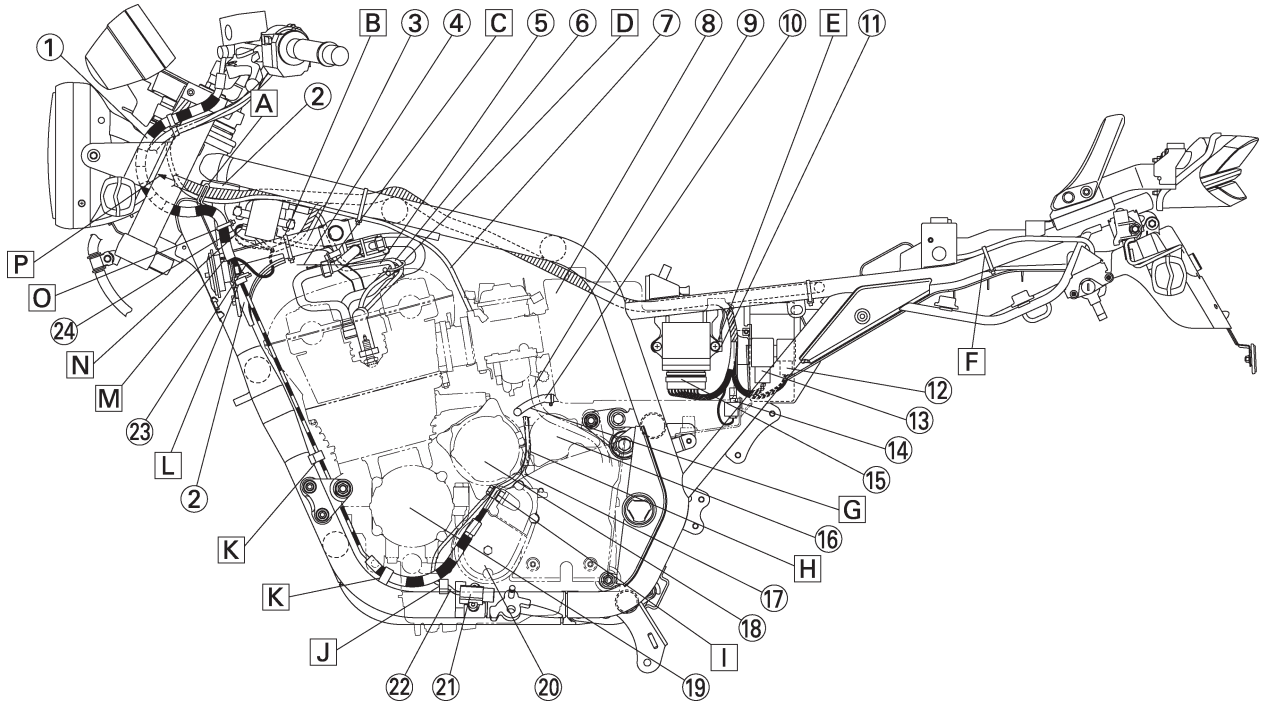


① Clutch cable
② Gusset
③ Tension pipe 1
④ Air induction system assembly
⑤ Spark plug lead (#2)
⑥ Spark plug lead (#1)
⑦ Starter cable
⑧ Air filter
⑨ Carburetor air vent hose
⑩ Air filter drain hose
⑪ Frame ground
⑫ Turn signal relay coupler
⑬ Carburetor heater relay coupler
⑭ Fuse box (for EUR)
⑮ Igniter unit coupler
⑯ Starter motor
⑰ Speed sensor lead
⑱ A.C.magneto
⑲ Pickup coil rotor cover
⑳ Oil filter cover
㉑ Sidestand switch
㉒ Sidestand switch lead
㉓ Horn lead
㉔ Ignition coil lead (#2, #3)

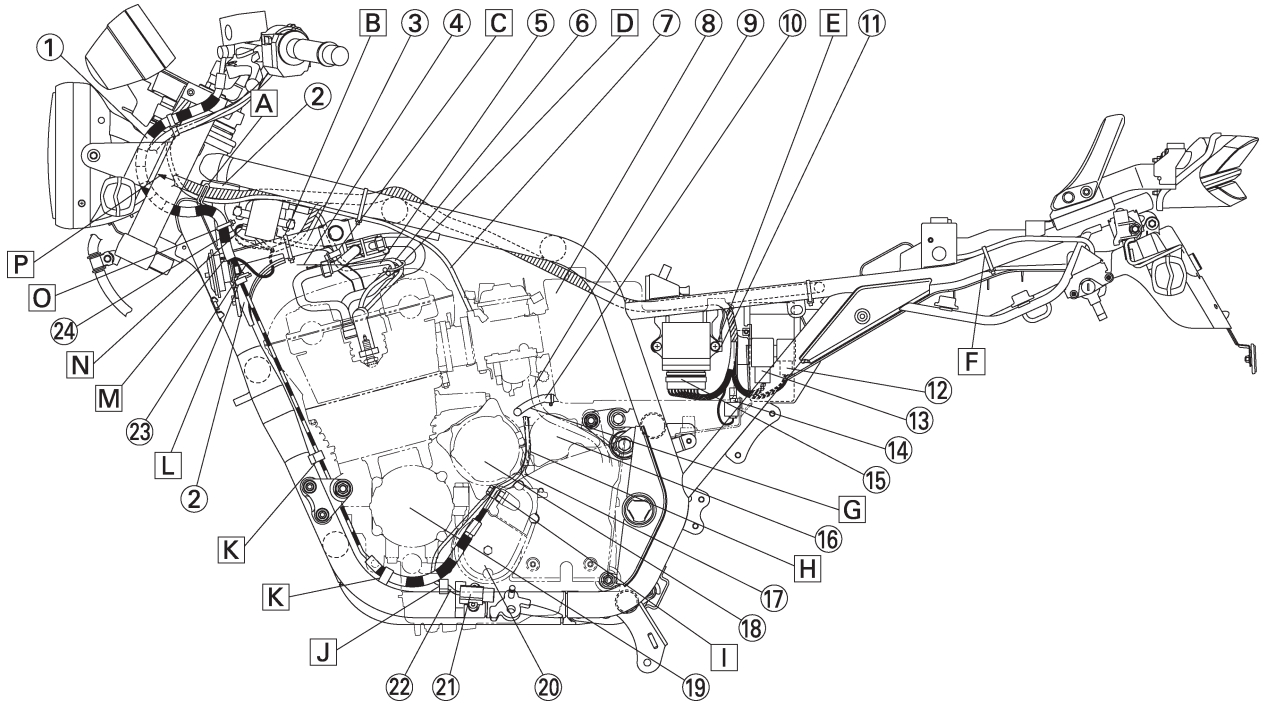
[A] Pass the wire harness and the starter cable through the holder wire of the gusset.
Pass the starter cable under the wire harness.

[B] Secure the lead wire branch of the main harness to tension pipe 1, at the immediate rear of the gusset, by use of this clamp.
The front end of the clamp must be directed downward.

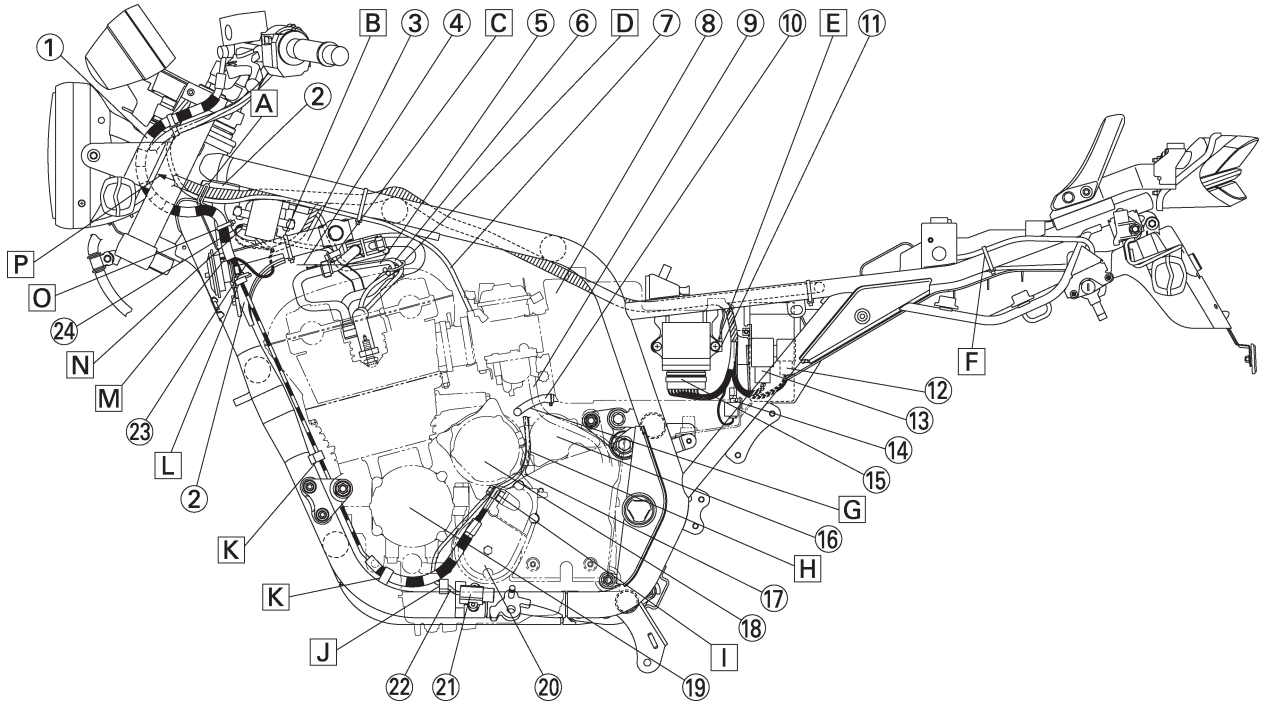
[C] Clamp the four spark plug leads, the #1 and #2 spark plug leads up and the #3 and #4 spark plug leads down, by use of this clamp.
Position the leading ends of the spark plug leads near, but not below, the lower front end of the air induction system assembly.



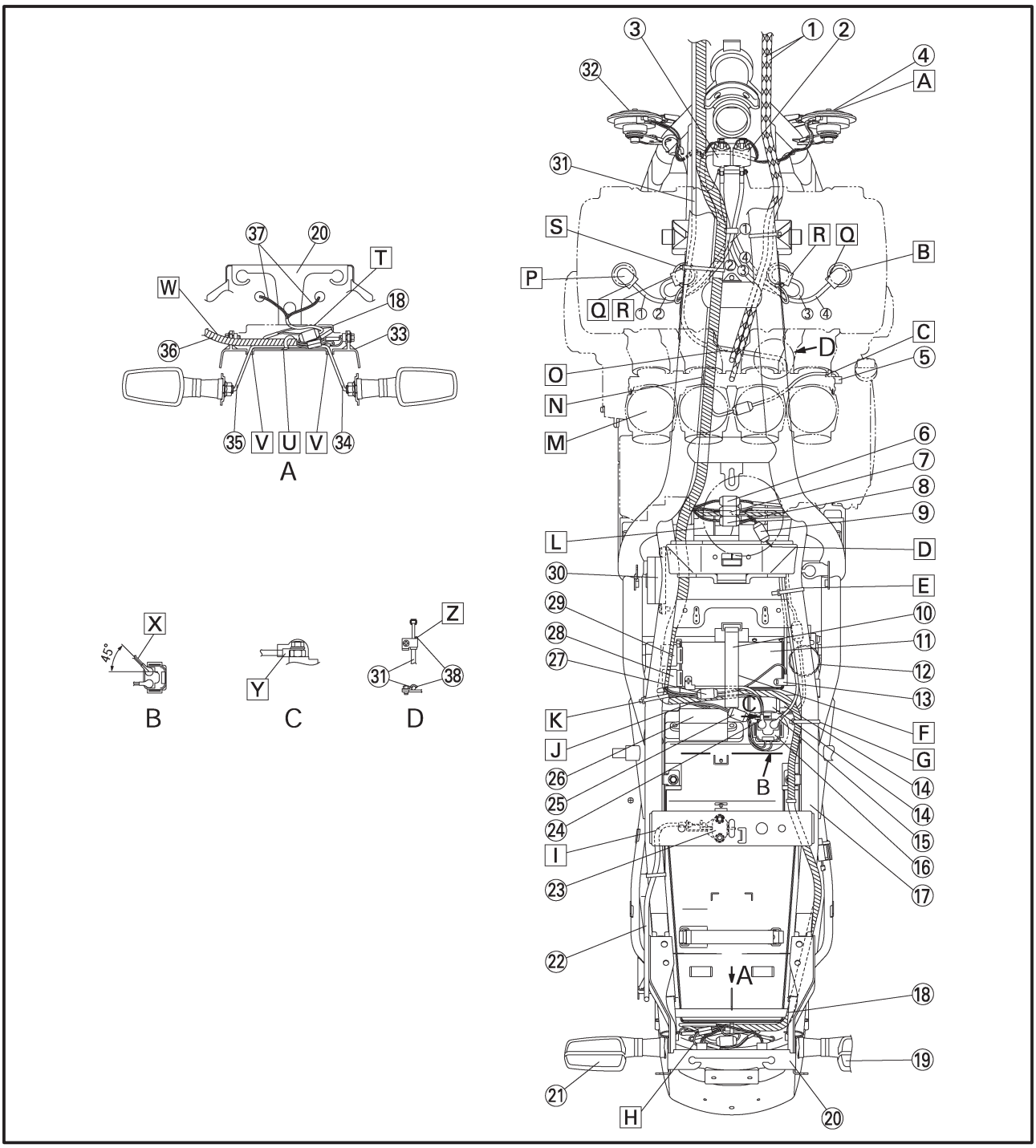
[D] Clamp the #1 and #2 spark plug leads using this clamp.
Clamp these cords above the #2 head cover mounting bolt.
[E] Make sure to tighten the frame ground together with the igniter unit attaching screw.
[F] Fasten the seat lock cable to the seat rail with a clamp.
Point the tip of the clamp to the downward.
[G] Route the air filter drain hose by the front side of the carburetor air vent hose and by the right side of the vehicle body. To route to the right side of the body, make sure to set between the starter motor and A.C.magneto.
[H] Route the speed sensor lead by the right side of the vehicle body along with the sidestand switch lead.
[I] Mount the square fixture of the clutch hose in parallel with the cover.
[J] After securing the side stand switch lead wire using this clamp, first route the lead wire between the pickup cover, the oil filter cover, the A.C. generator, and the starter motor. Next, as with the engine lead wire, route the lead wire through the right side of the vehicle.
[K] Clamp the clutch hose.
[L] Secure the grommet of the clutch hose by use of this holder wire of the gusset.



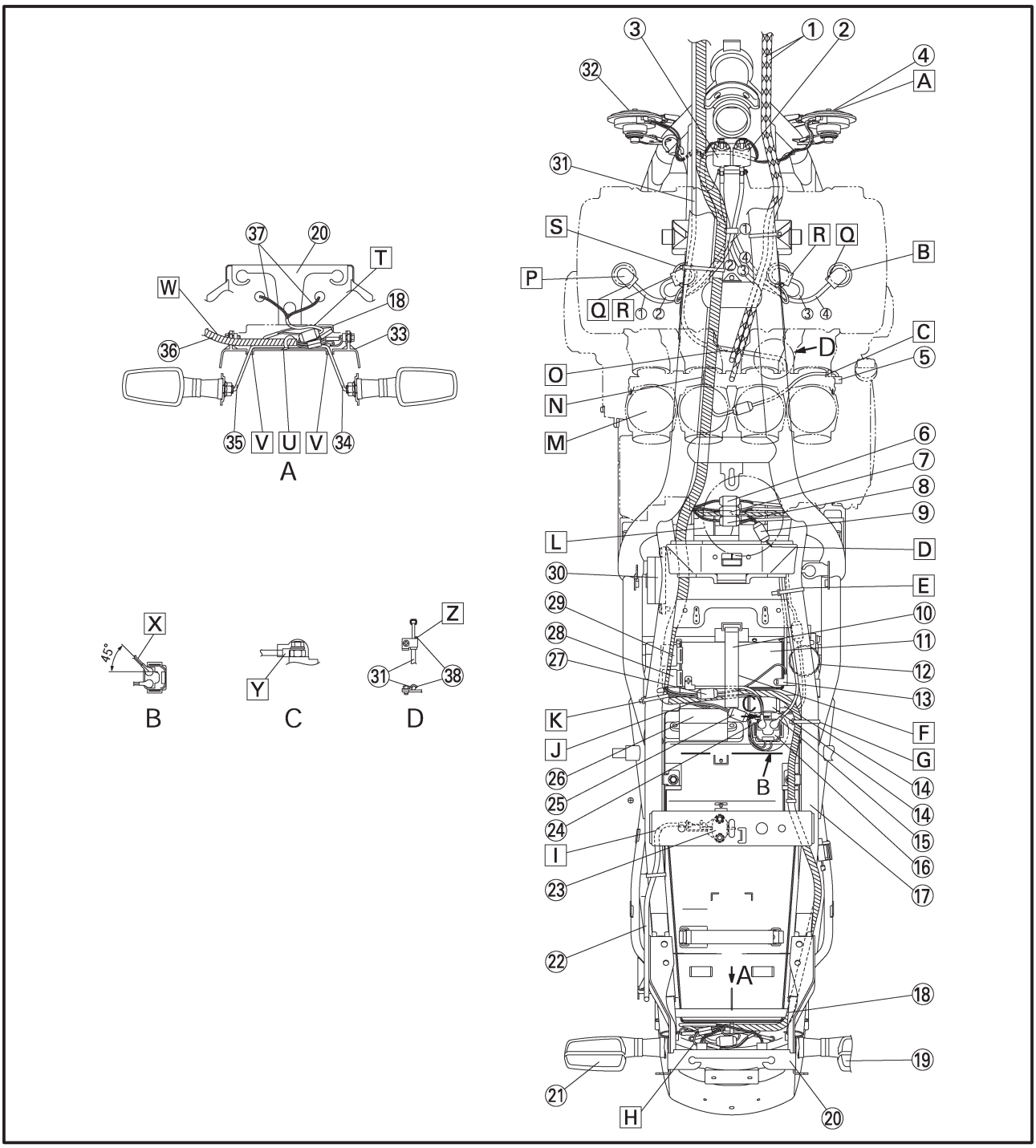
M Pass the horn lead wire between the clutch hose and the frame, then pull the lead wire out to the front, and connect the lead wire to the horn.
N Connect the black-coupler-equipped lead wire to the #1 and #4 ignition coils.
O Pass this clamp through the lower hole of the gusset and secure the clutch cable.
The front end of the clamp must be directed towards the inside of the vehicle.
P Pass the main harness through the inside of the clutch hose and insert the harness into the left of the headlight lower hole.



① Throttle cables
② Ignition coil (#1, #4)
③ Ignition coil (#2, #3)
④ Horn (right)
⑤ Throttle position sensor
⑥ Neutral switch coupler
⑦ Pickup coil coupler
⑧ Sidestand switch coupler
⑨ Fuel sender coupler
⑩ Battery band
⑪ Battery
⑫ Rear brake fluid reservoir tank
⑬ Battery negative lead
⑭ Relay assembly
⑮ Starter motor cable
⑯ Starter motor relay
⑰ Seat rail
⑱ Rear fender rib
⑲ Rear turn signal light (right)
⑳ Tail/brake light bracket
㉑ Rear turn signal light (left)
㉒ Seat lock wire
㉓ Seat lock
㉔ Battery positive lead
㉕ Starter relay coupler
㉖ Fuse box
㉗ Battery negative lead coupler
㉘ Turn signal relay
㉙ Carburetor heater relay coupler
㉚ Igniter unit
㉛ Starter cable
㉜ Horn (left)
㉝ Rear fender
㉞ Rear turn signal light lead (left)
㉟ Rear turn signal light lead (right)
㊱ Wire harness
㊲ Tail/brake light lead
㊳ Stopper



[A] Right horn.
Install the HI tone source (with H-marked label) at the right of the vehicle.
[B] Connect the #1-#4 spark plug leads in order of the cord number.
[C] Pass the T.P.S. lead wire through the clamp of the #4 carburetor.
[D] To the fuel sender.
[E] Fasten the starter motor cable, battery negative lead and speed sensor lead to the seat rail between the air filter and tank attaching brackets with a clamp.
[F] Fasten two battery positive leads, battery negative lead coupler and wire harness with the battery clamp.
[G] Clamp the wire harness to the seat rail at the immediate rear of the side cover mounting bracket on the seat rail.
The front end of the clamp must face downward and be positioned inside the back stay.



[H] Store the wire harness, the taillight lead wire, and the rear left and right flasher lead wires, into the space between the taillight bracket and the rib of the rear fender.

[I] The seat lock wire must not extend to the outside of the bracket.

[J] Pass the lead wire leading to the fuse box under the wire harness.

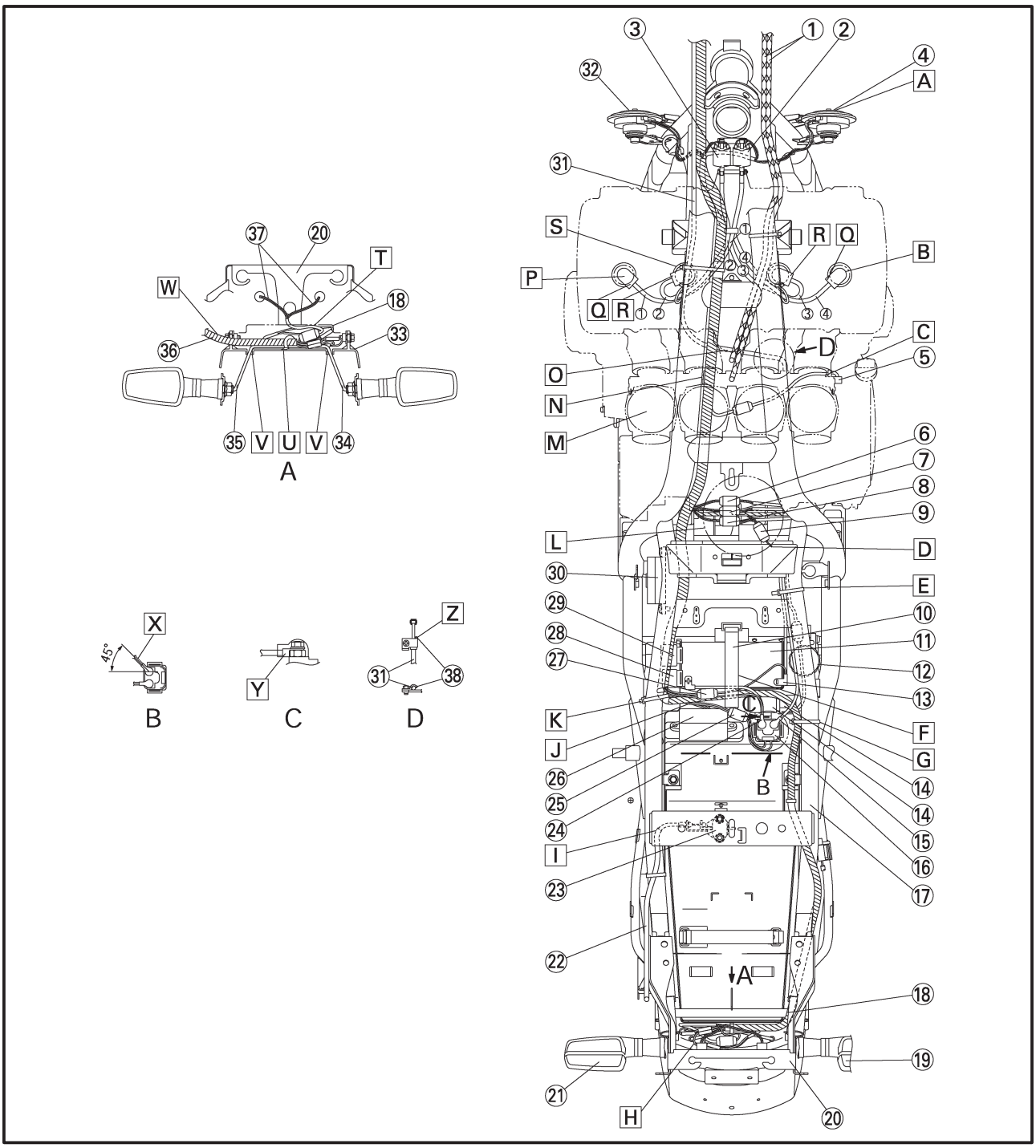
[K] Clamp the wire harness to the seat rail, on the wire harness positioning tape and at the immediate rear of the side cover mounting bracket on the seat rail.
The front end of the clamp must face downward and be positioned inside the back stay.

[L] Connect the fuel sender coupler, neutral switch coupler, pickup coupler, and side stand switch coupler wires above the air cleaner.

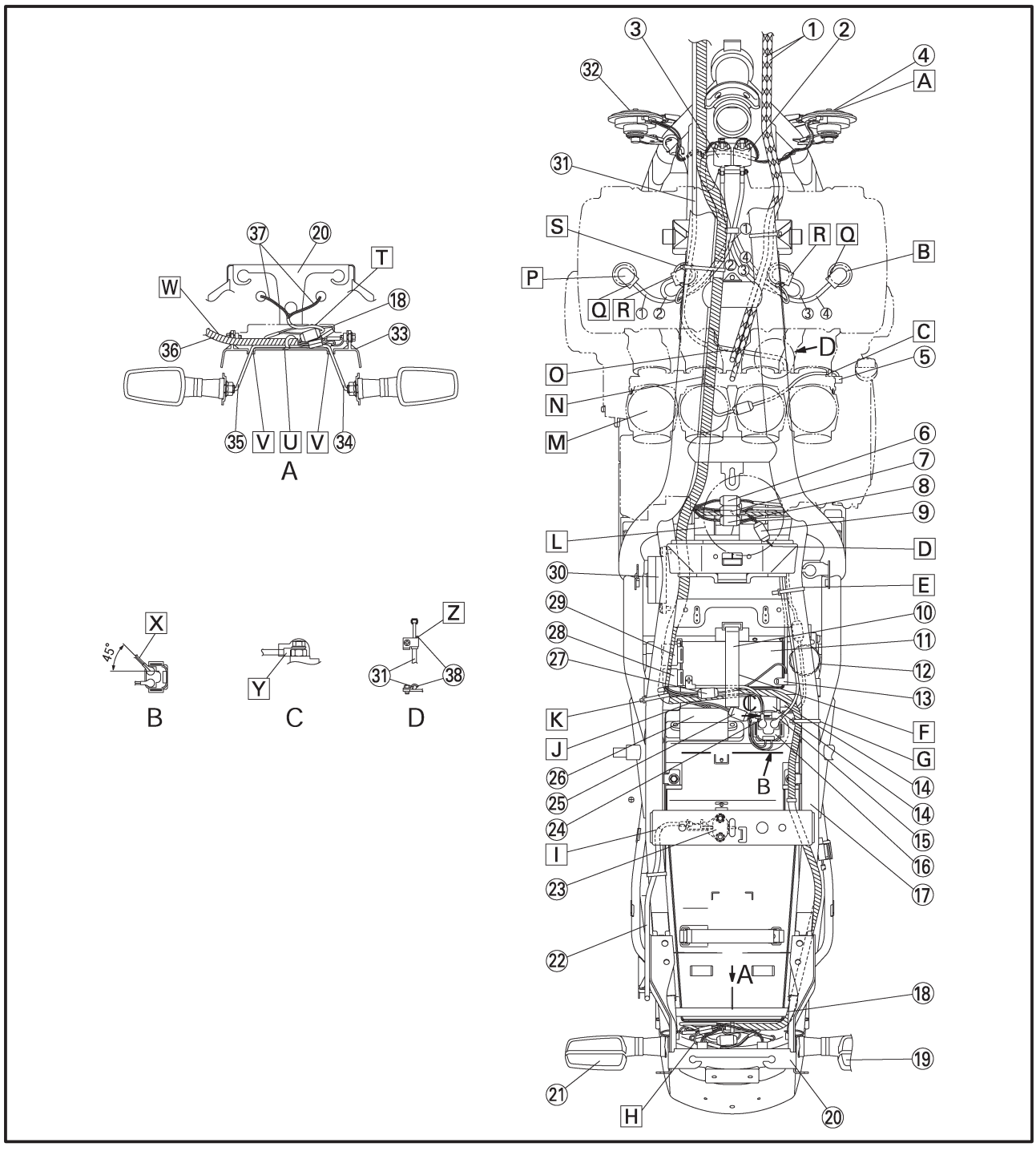
[M] Carburetors #1 to #4 in a left-to-right way.

[N] Thread the wire harness insertion clamp onto the T-stud of the frame.

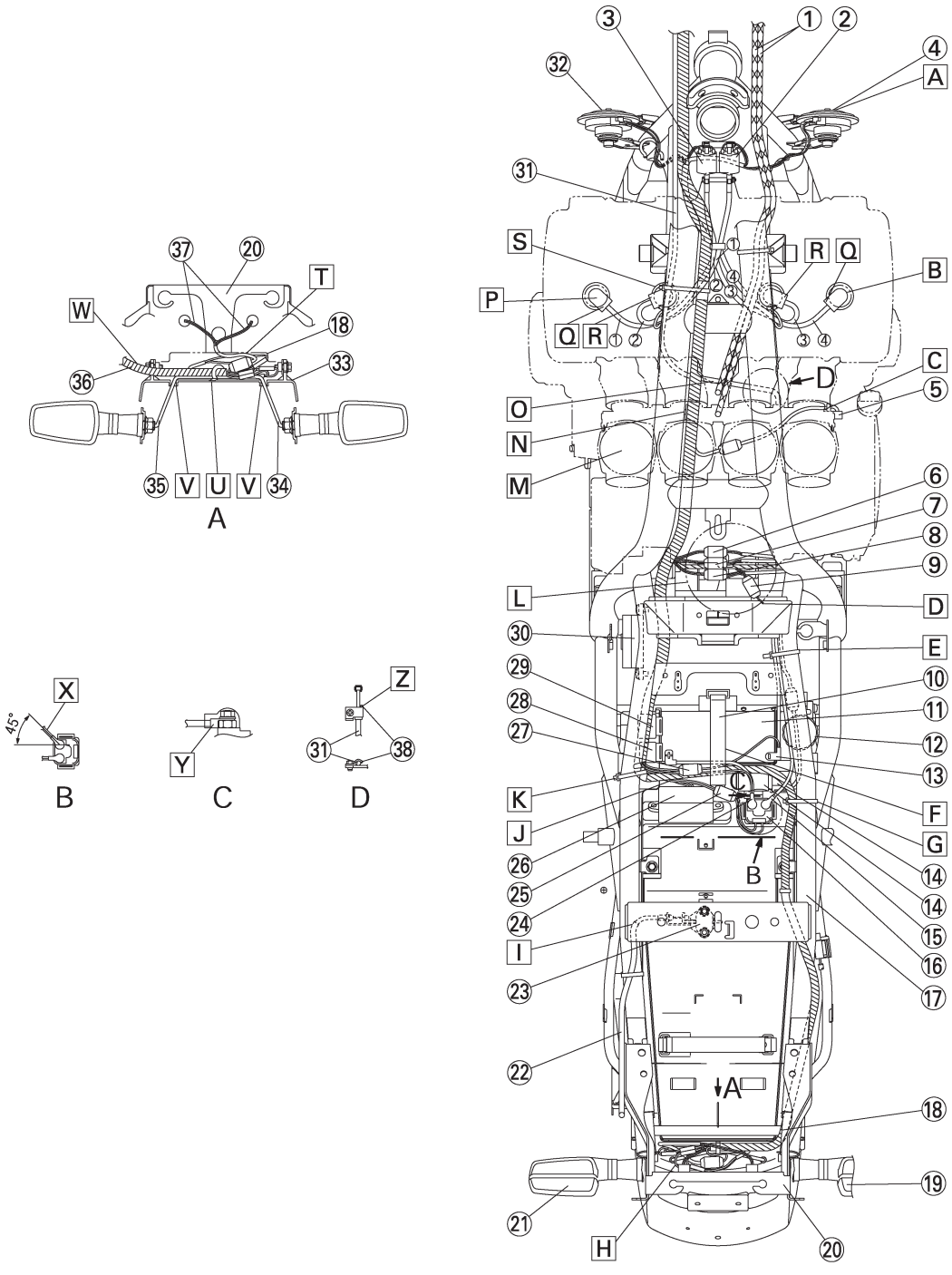
[O] Pass the starter cable through the front of the throttle cable.



P From left: #1, #2, #3, and #4 spark plug leads.
Q Point inward.
R Point outward.
S Secure the wire harness and the starter cable, on the harness positioning tape, by use of this clamp. The front end of the clamp must be directed downward.
The harness must not deflect between the T-stud and the clamp.
T Position of the wire harness, tail brake light lead, left rear turn signal light lead, right rear turn signal lead should be not higher than the rib height of the rear fender.
U Clamp the wire harness, left rear turn signal light lead and right rear turn signal light lead.
Point the tip of the clamp to the front side.
V Pass the left rear turn signal light lead and right rear turn signal light lead through the hole of the rear fender respectively.
W Pass the wire harness between the frame installation section and storage space rib of the rear fender.
X Connect the starter motor cable to face outward at an angle of about 45 degrees.

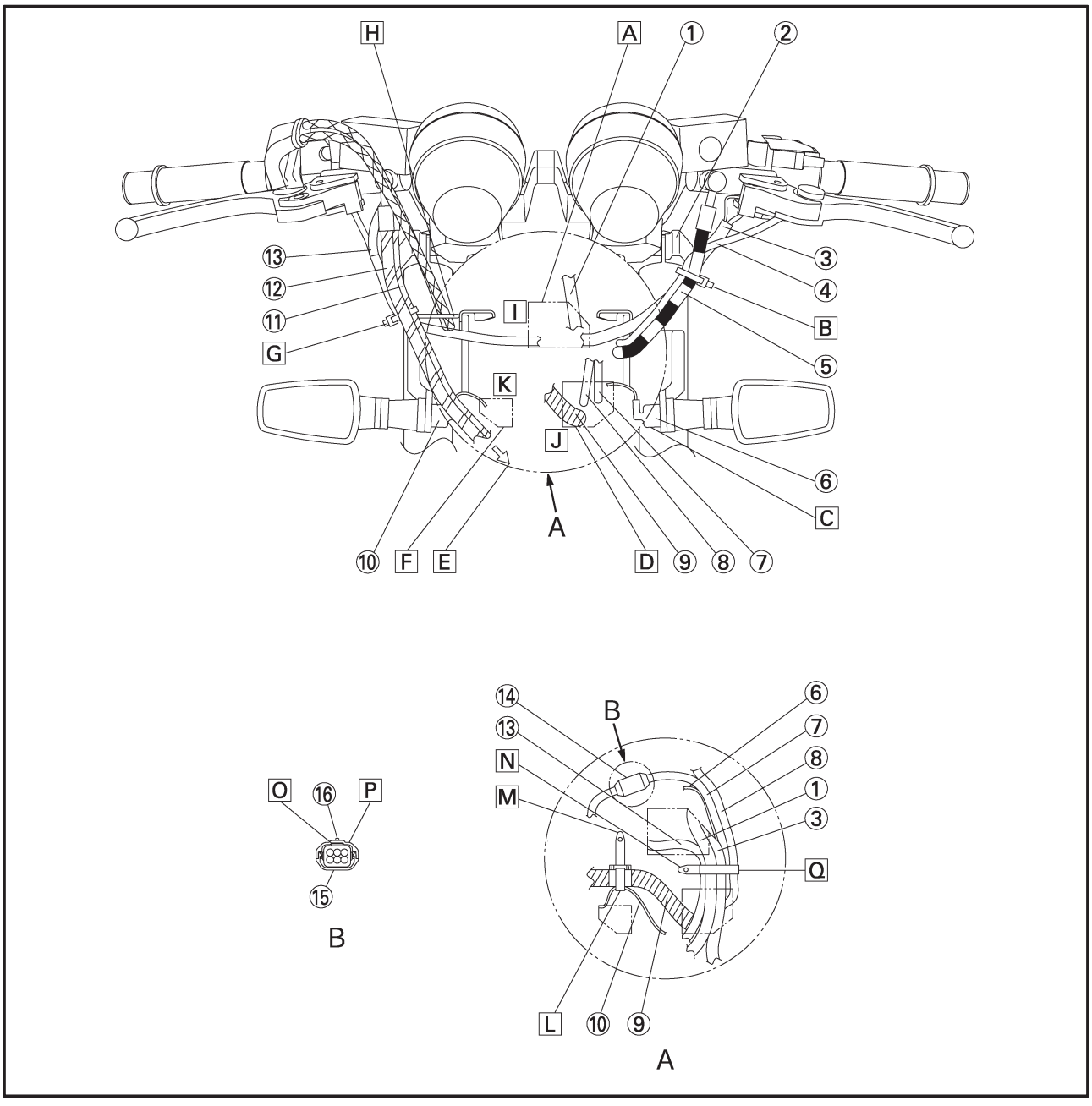


[Y] Direct the crimping side of the battery positive (+) lead wire downward and connect the lead wire.
[Z] Connect the starter cable to face at right angles to the vehicle body with contact with the stoppers.

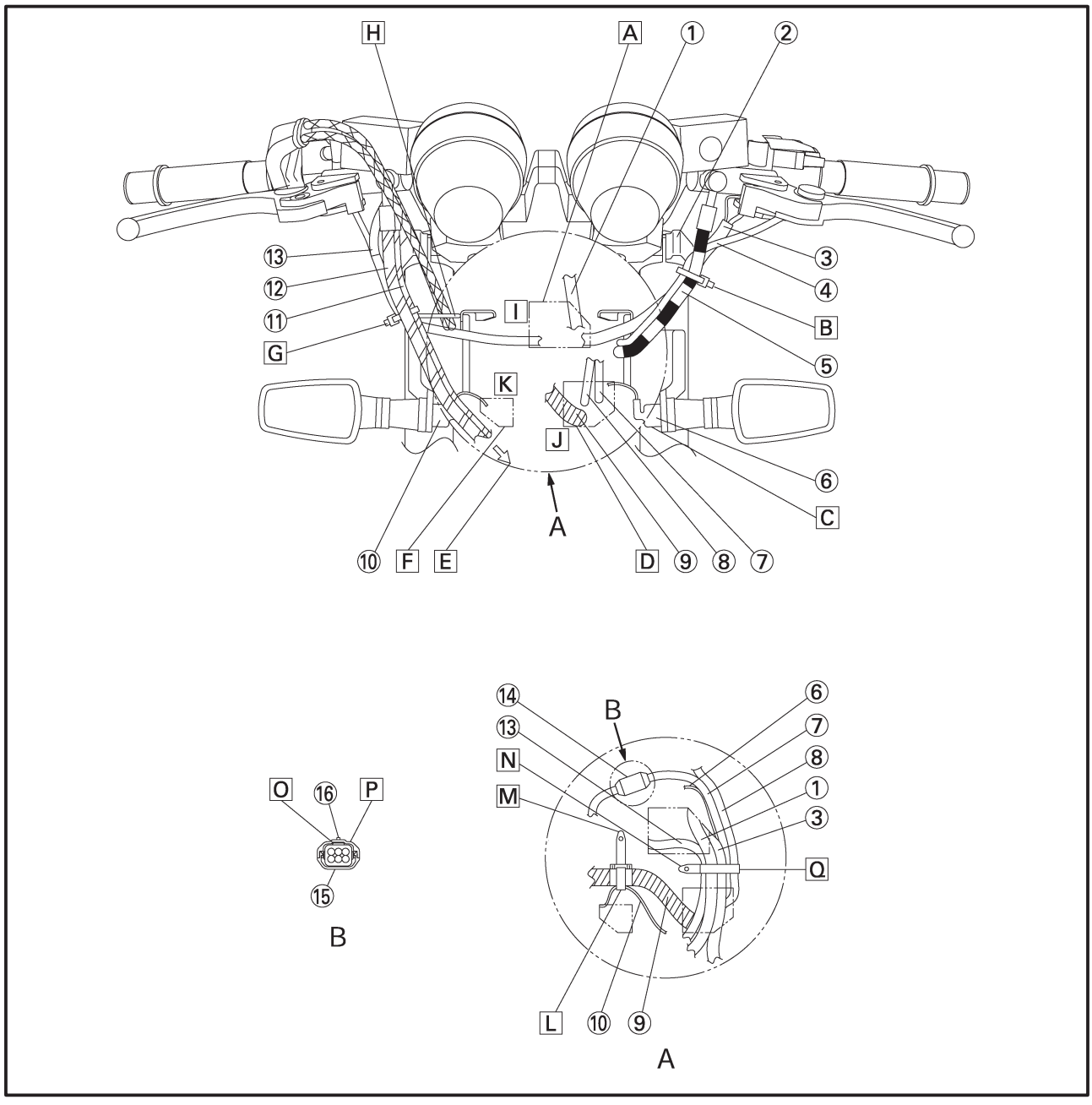


① Speedometer lead
② Crown handle
③ Left handlebar switch lead
④ Starter cable
⑤ Clutch cable
⑥ Front turn signal light lead (left)
⑦ Immobilizer unit lead
⑧ Main switch lead
⑨ Wire harness
⑩ Front turn signal light lead (right)
⑪ Brake hose 2
⑫ Brake hose 1
⑬ Right handlebar switch lead
⑭ Immobilizer unit coupler
⑮ Housing connector
⑯ Housing connector 2

A Pass the meter lead, left handle bar switch lead and right handlebar switch lead through the upper hole of the headlight.
B Bind the left handlebar switch lead, clutch cable and starter cable under the crown handle with a clamp.
Pass the left handlebar switch lead through the inside of the clutch cable.
Pass the starter cable through the frame side, then the inside of the clutch cable and the front side of the left handlebar switch lead.
C Route the turn signal light lead by the front side of the headlight stay (left and right).
Make sure to install the cap upward.
D Pass the left front turn signal light lead, main switch lead, immobilizer unit lead and wire harness through the lower left hole of the head light.
E To the front brake caliper
F Pass the right front turn signal light lead through the lower right hole of the head light.



G Bind the right handlebar switch lead and brake hose 2 by the side of the wire guide of the headlight stay with a clamp.
H Pass the throttle cables through the wire guide of the headlight stay.
I To the upper hole
J To the left side of the lower hole
K To the right side of the lower hole
L Clamp the right front turn signal light lead and wire harness.
Clamp the wire harness aligning with the positioning tape.
M Tighten the clamp pointing the tip to the upward.
N Tighten the clamp pointing the tip to the inward.
O Install the coupler locking section facing the housing connector 2.
P Place the cover onto the coupler for the immobilizer lead and wire harness.
Q Clamp the main switch lead, immobilizer lead, left handlebar switch lead, right handlebar switch lead, front turn signal light (left) and meter lead.



EAS00036

PERIODIC CHECKS AND ADJUSTMENTS

INTRODUCTION

This chapter includes all information necessary to perform recommended checks and adjustments. If followed, these preventive maintenance procedures will ensure more reliable vehicle operation, a longer service life and reduce the need for costly overhaul work. 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.

EAS00037

PERIODIC MAINTENANCE AND LUBRICATION INTERVALS

NOTE:

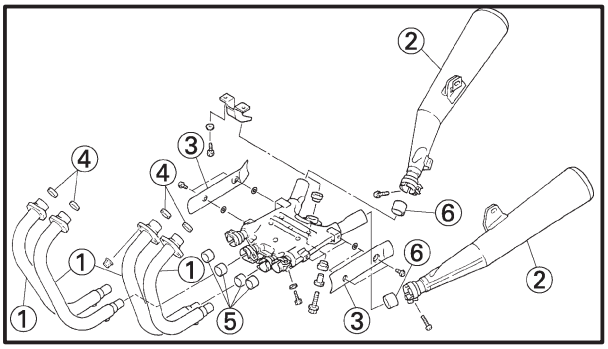
- The annual checks must be performed every year, except if a kilometer-based maintenance is performed instead.
- From 50,000 km, repeat the maintenance intervals starting from 10,000 km.
- Items marked with an asterisk should be performed by a Yamaha dealer as they require special tools, data and technical skills.

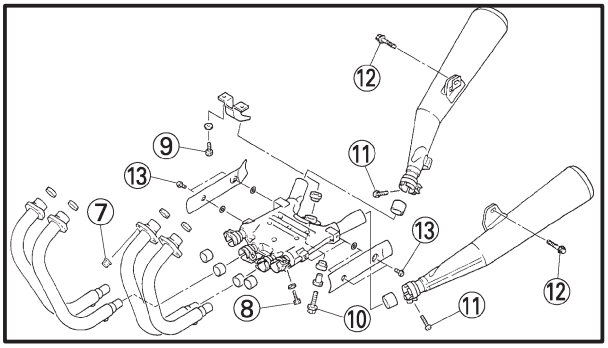
NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING (× 1,000 km)					ANNUAL CHECK
				1	10	20	30	40	
1	*	**Fuel line**	• Check fuel and vacuum hoses for cracks or damage.		√	√	√	√	√
2	*	**Fuel filter**	• Check condition.			√		√	
3		**Spark plugs**	• Check condition. • Clean and regap.		√		√		
			• Replace.			√		√	
4	*	**Valves**	• Check valve clearance. • Adjust.	Every 20000 km					
5		**Air filter element**	• Clean.		√		√		
			• Replace.			√		√	
6	*	**Clutch**	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	
7	*	**Front brake**	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
			• Replace brake pads.	Whenever worn to the limit					
8	*	**Rear brake**	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
			• Replace brake pads.	Whenever worn to the limit					
9	*	**Brake hoses**	• Check for cracks or damage.		√	√	√	√	√
			• Replace.	Every 4 years					
10	*	**Wheels**	• Check runout and for damage.		√	√	√	√	
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.		√	√	√	√	
13	*	**Swingarm**	• Check operation and for excessive play.		√	√	√	√	
			• Lubricate with lithium-soap-based grease.	Every 50000 km					
14		**Drive chain**	• Check chain slack. • Make sure that the rear wheel is properly aligned. • Clean and lubricate.	Every 1000 km and after washing the motorcycle or riding in the rain					
15	*	**Steering bearings**	• Check bearing play and steering for roughness.	√	√	√	√	√	
			• Lubricate with lithium-soap-based grease.	Every 20000 km					
16	*	**Chassis fasteners**	• Make sure that all nuts, bolts and screws are properly tightened.		√	√	√	√	√
17		**Sidestand, centerstand**	• Check operation. • Lubricate.		√	√	√	√	√
18	*	**Sidestand switch**	• Check operation.	√	√	√	√	√	√
19	*	**Front fork**	• Check operation and for oil leakage.		√	√	√	√	

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING (× 1,000 km)					ANNUAL CHECK
				1	10	20	30	40	
20	*	Shock absorber assemblies	• Check operation and shock absorbers for oil leakage.		√	√	√	√	
21	*	Carburetors	• Check starter (choke) operation. • Adjust engine idling speed and synchronization.	√	√	√	√	√	√
22		Engine oil	• Change. • Check oil level and vehicle for oil leakage.	√	√	√	√	√	√
23		Engine oil filter element	• Replace.	√		√		√	
24	*	Front and rear brake switches	• Check operation.	√	√	√	√	√	√
25		Moving parts and cables	• Lubricate.		√	√	√	√	√
26	*	Throttle grip housing and cable	• Check operation and free play. • Adjust the throttle cable free play if necessary. • Lubricate the throttle grip housing and cable.		√	√	√	√	√
27	*	Muffler and exhaust pipe	• Check the screw clamp for looseness.	√	√	√	√	√	
28	*	Lights, signals and switches	• Check operation. • Adjust headlight beam.	√	√	√	√	√	√

NOTE:

- The air filter needs more frequent service if you are riding in unusually wet or dusty areas.
- Hydraulic brake and clutch service
  - Regularly check and, if necessary, correct the brake and clutch fluid levels.
  - Every two years replace the internal components of the brake master cylinders and calipers as well as clutch master and release cylinders, and change the brake and clutch fluids.
  - Replace the brake and clutch hoses every four years and if cracked or damaged.





EAS00099

ENGINE

CHECKING THE EXHAUST SYSTEM

The following procedure applies to all of the exhaust pipes, mufflers and gaskets.

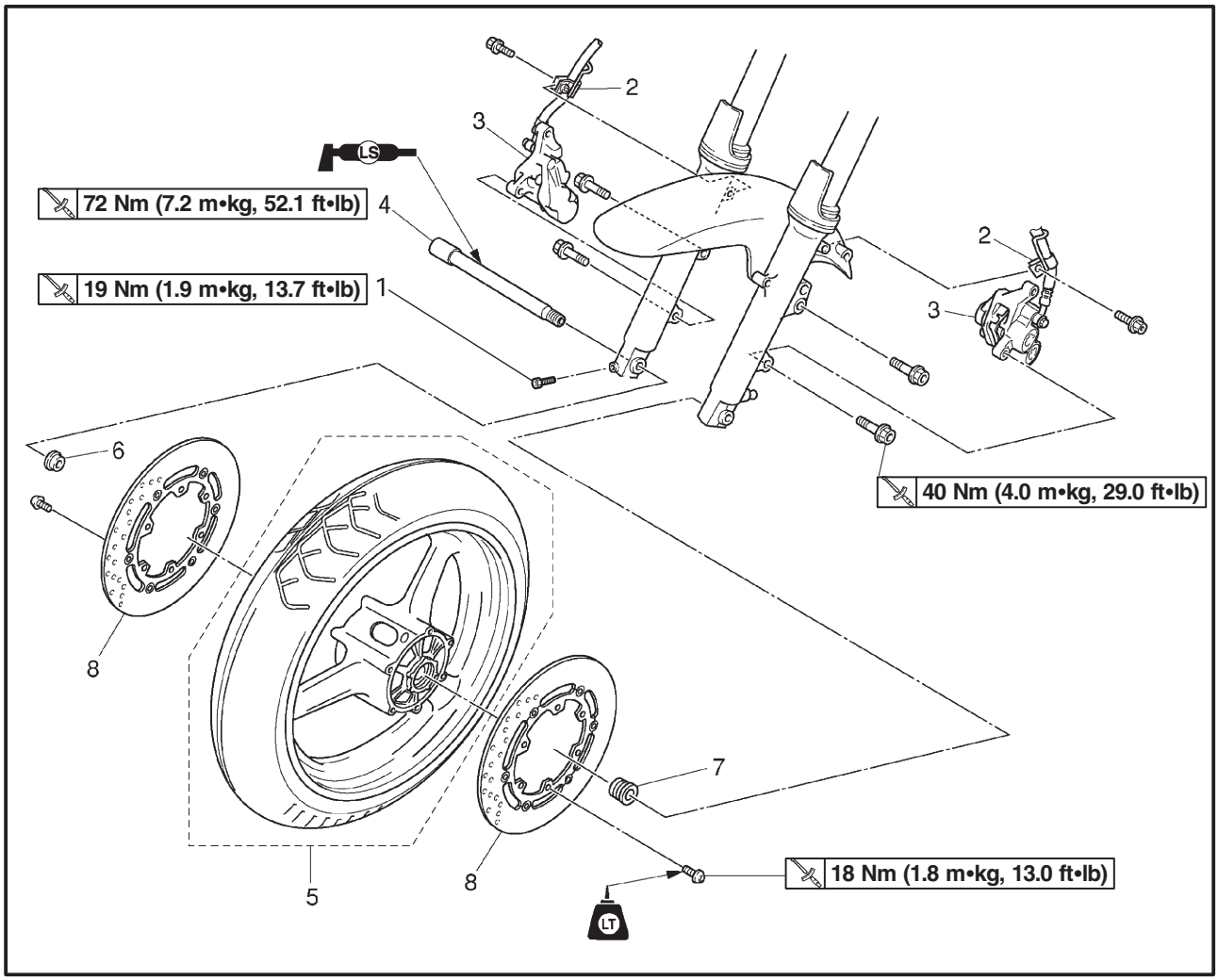
1. Check:
   - exhaust pipe ①
   - muffler ②
   - muffler protector ③
     Cracks/damage → Replace.
   - gasket ④, ⑤, ⑥
     Exhaust gas leaks → Replace.
2. Check:
   - tightening torque

Exhaust pipe nut ⑦
25 Nm (2.5 m•kg, 18.1 ft•lb)
Exhaust pipe and exhaust chamber screw ⑧
20 Nm (2.0 m•kg, 14.5 ft•lb)
Muffler bracket bolt ⑨
20 Nm (2.0 m•kg, 14.5 ft•lb)
Exhaust chamber bolt ⑩
25 Nm (2.5 m•kg, 18.1 ft•lb)
Exhaust chamber and muffler bolt ⑪
20 Nm (2.0 m•kg, 14.5 ft•lb)
Muffler and stay bolt ⑫
20 Nm (2.0 m•kg, 14.5 ft•lb)
Muffler protector screw ⑬
15 Nm (1.5 m•kg, 10.9 ft•lb)

EAS00514

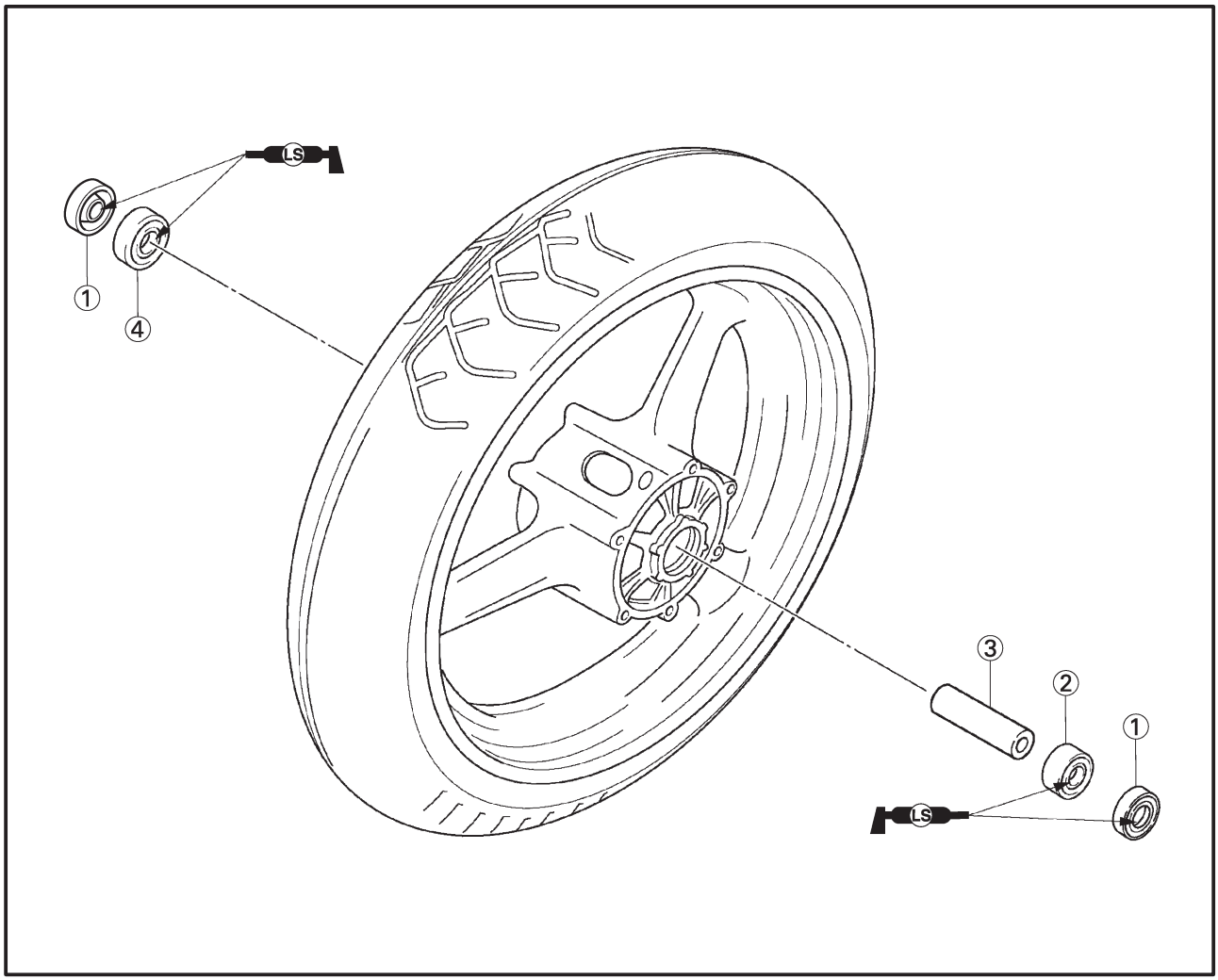
CHASSIS

FRONT WHEEL AND BRAKE DISCS

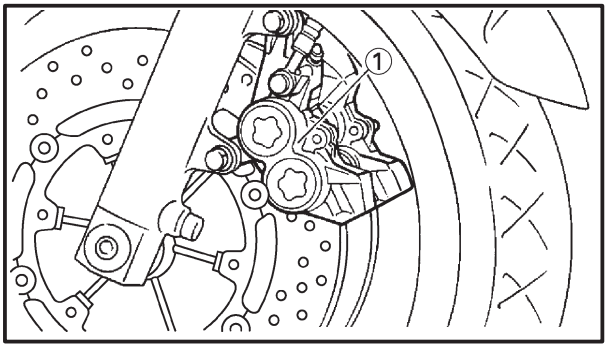


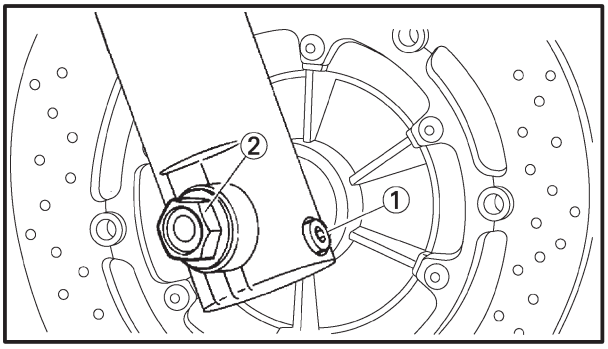
Order	Job/Part	Q'ty	Remarks
	Removing the front wheel and brake discs		Remove the parts in the order listed. **NOTE:** Place the motorcycle on a suitable stand so that the front wheel is elevated.
1	Wheel axle pinch bolt	1	
2	Brake hose holder (left/right)	1/1	
3	Caliper (left/right)	1/1	Refer to "REMOVING/INSTALLING THE FRONT WHEEL".
4	Wheel axle	1	
5	Front wheel	1	
6	Collar	1	
7	Collar	1	
8	Brake disc (left/right)	1/1	
			For installation, reverse the removal procedure.

EAS00518



Order	Job/Part	Q'ty	Remarks
	Disassembling the front wheel.		Disassembly the parts in the order listed.
①	Oil seal	2	
②	Bearing	1	
③	Spacer	1	
④	Bearing	1	
			For assembly, reverse the disassembly procedure.





EAS00521

REMOVING THE FRONT WHEEL

1. Stand the motorcycle on a level surface.

⚠ WARNING

Securely support the motorcycle so that there is no danger of it falling over.

NOTE:

Place the motorcycle on a suitable stand so that the front wheel is elevated.

2. Remove:
   - brake calipers ① (left and right)

NOTE:

Do not squeeze the brake lever when removing the brake calipers.

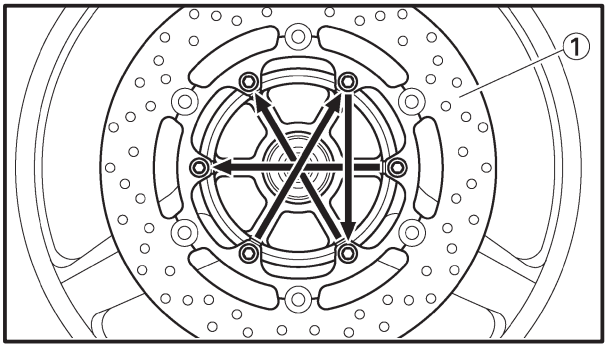
3. Loosen:
   - pinch bolt (front wheel axle) ①
   - front wheel axle ②
4. Elevate:
   - front wheel

NOTE:

Place the motorcycle on a suitable stand so that the front wheel is elevated.

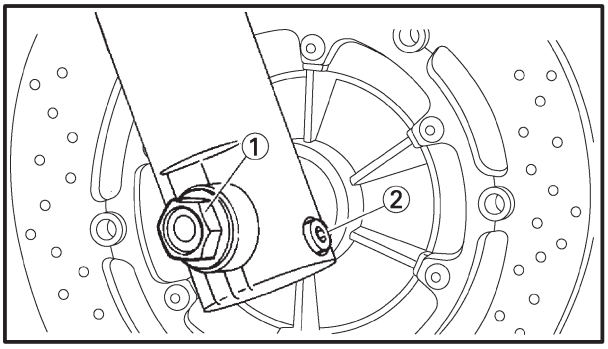
EAS00544
INSTALLING THE FRONT WHEEL
The following procedure applies to both brake discs.
1. Lubricate:
   • wheel axle
   • oil seal lips

	Recommended lubricant **Lithium soap base grease**



2. Install:
   • brake disc ①

NOTE:
- Apply LOCTITE® 648 to the threads of the brake disc bolts.
- Tighten the brake disc bolts in stages and in a crisscross pattern.



3. Install:
   • front wheel
4. Tighten:
   • wheel axle ①
   • wheel axle pinch bolt ②

	Wheel axle **72 Nm (7.2 m•kg, 52.1 ft•lb)** **Wheel axle pinch bolt** **19 Nm (1.9 m•kg, 13.7 ft•lb)**

CAUTION:

Before tightening the wheel axle nut, push down hard on the handlebar several times and check if the front fork rebounds smoothly.

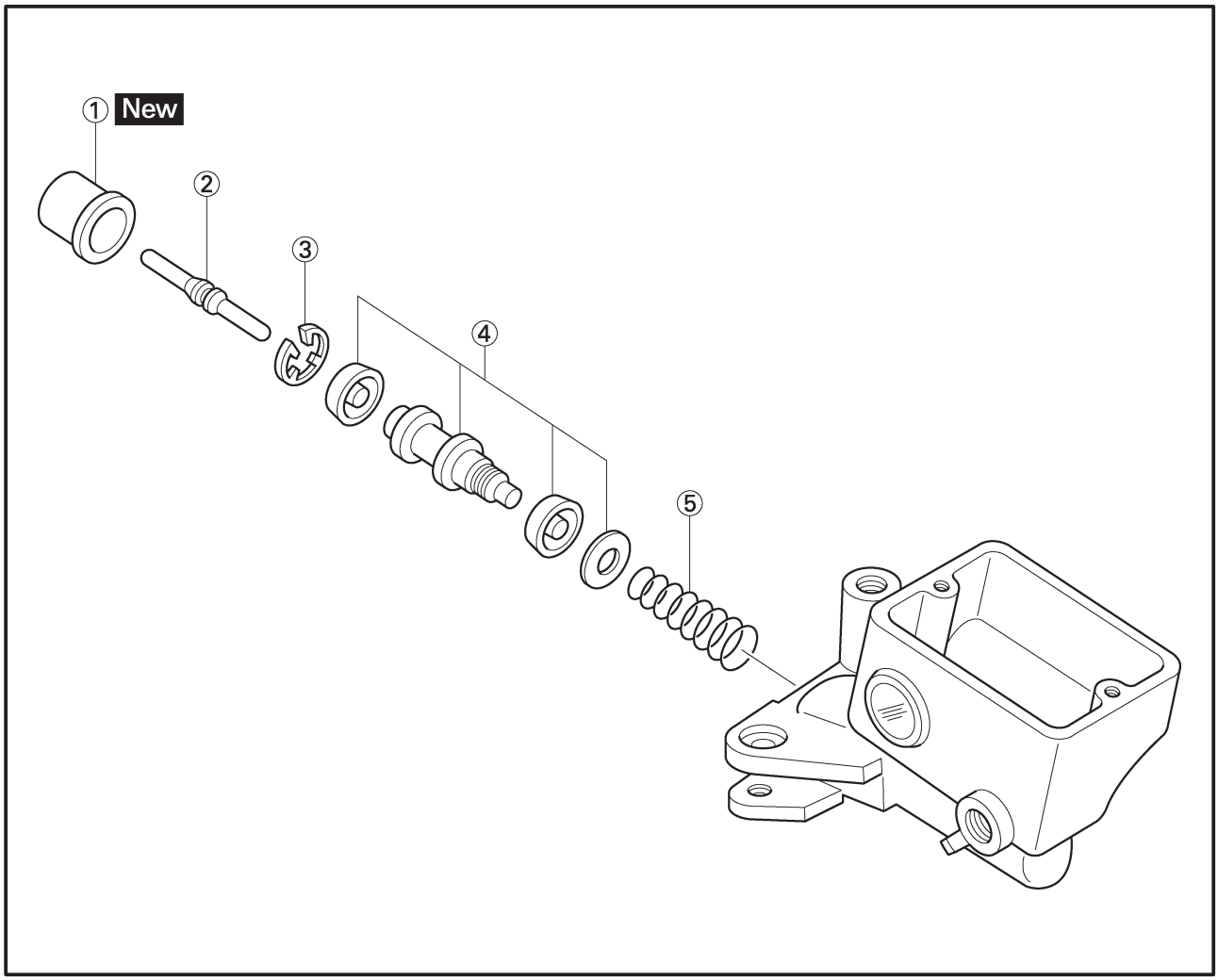
5. Install:
   • brake caliper

	Brake caliper bolt **40 Nm (4.0 m•kg, 28.9 ft•lb)**

⚠ WARNING

Make sure that the brake hose is routed properly.

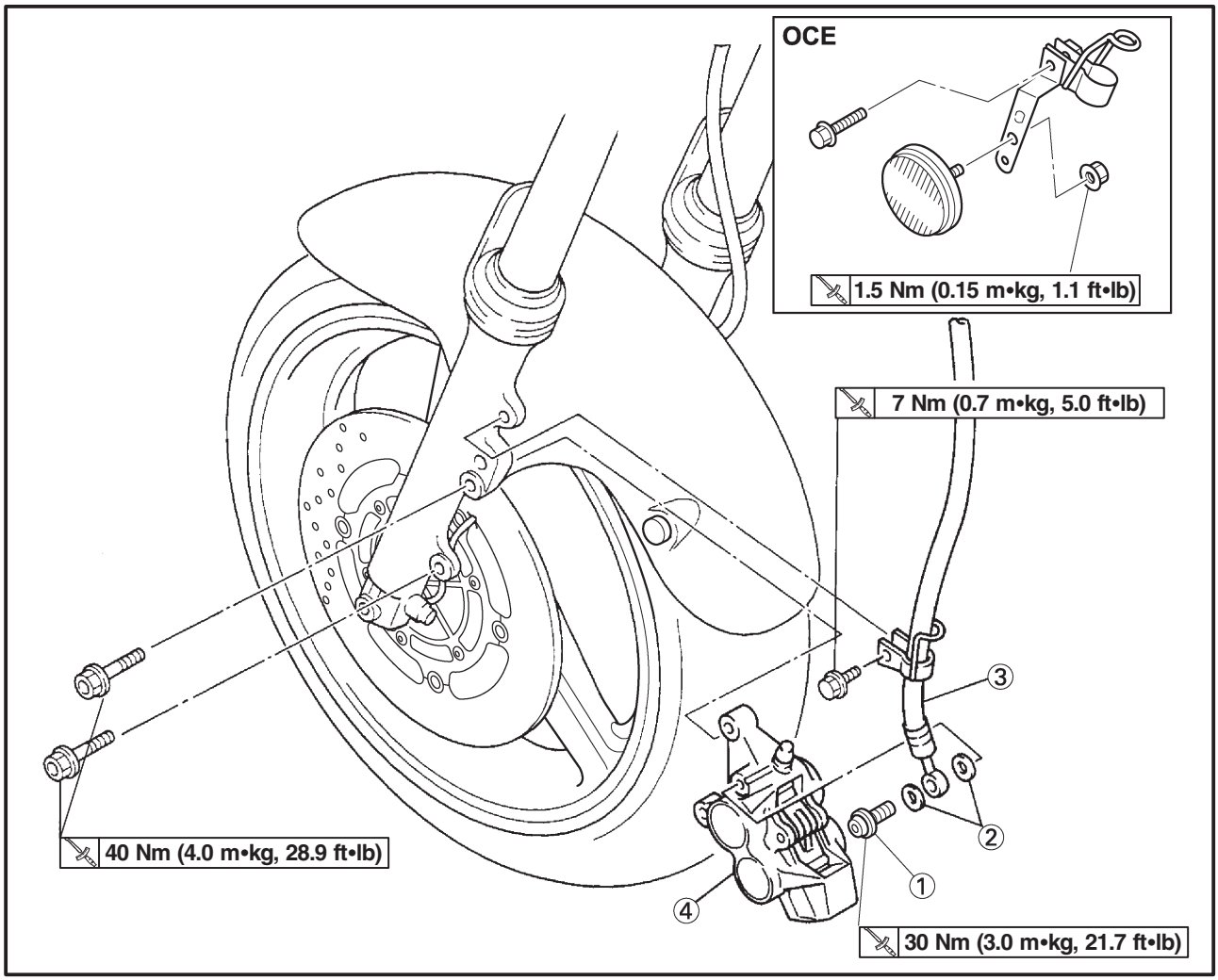
FRONT AND REAR BRAKES
FRONT BRAKE MASTER CYLINDER



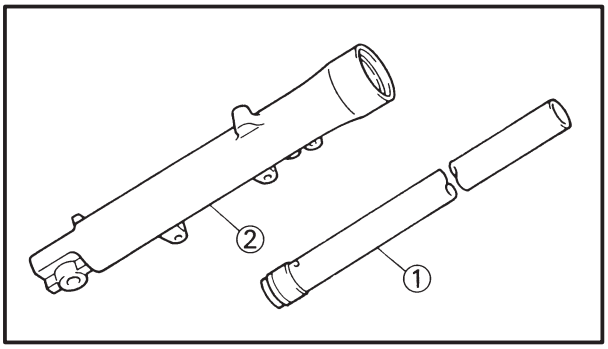
Order	Job/Part	Q'ty	Remarks
	Disassembling the front brake master cylinder		Disassembly the parts in the order listed.
①	Master cylinder boot	1	
②	Push rod	1	
③	Circlip	1	
④	Master cylinder kit	1	
⑤	Spring	1	
			For assembly, reverse the disassembly procedure.

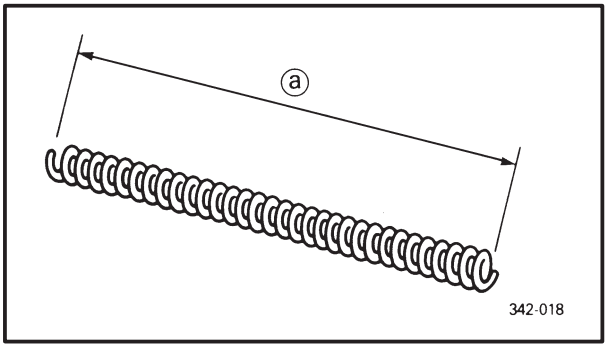
EAS00613

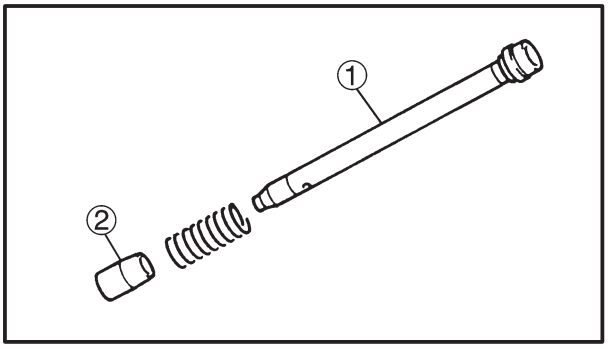
FRONT BRAKE CALIPER

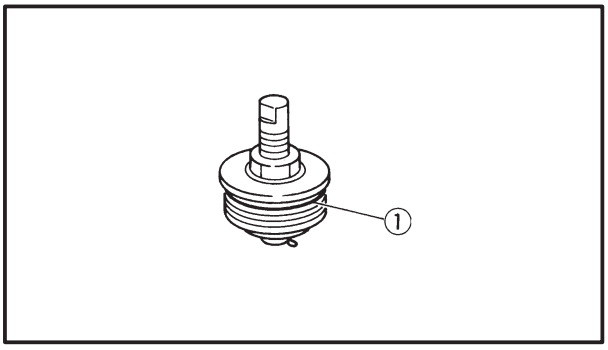


Order	Job/Part	Q'ty	Remarks
	Removing the front brake calipers		Remove the parts in the order listed.
	Brake fluid		Drain
1	Union bolts	2	Refer to "DISASSEMBLING/ ASSEMBLING AND INSTALLING THE FRONT BRAKE CALIPERS".
2	Copper washers	4	
3	Brake hoses	2	
4	Caliper assembly	2	
			For installation, reverse the removal procedure.









EAS00657
FRONT FORK
CHECKING THE FRONT FORK LEGS

The following procedure applies to both of the front fork legs.

1. Check:
   - inner tube ①
   - outer tube ②
   Bends/damage/scratches → Replace.

⚠ WARNING

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

2. Measure:
   - spring free length ⓐ
   Over the specified limit → Replace.

Spring free length limit
346.6 mm (13.65 in)

3. Check:
   - damper rod ①
   Damage/wear → Replace.
   Obstruction → Blow out all of the oil passages with compressed air.
   - oil flow stopper ②
   Damage → Replace.

CAUTION:

- **The front fork leg has a built-in damper adjusting rod and a very sophisticated internal construction, which are particularly sensitive to foreign material.**
- **When disassembling and assembling the front fork leg, do not allow any foreign material to enter the front fork.**

4. Check:
   - cap bolt O-ring ①
   Damage/wear → Replace.

EB703703

ASSEMBLING THE FRONT FORK LEGS

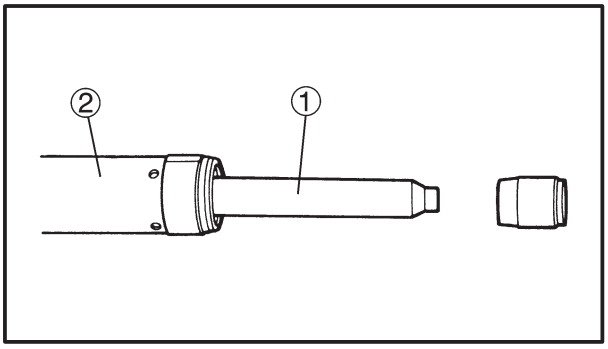
The following procedure applies to both of the front fork legs.

⚠ WARNING

- **Make sure that the oil levels in both front fork legs are equal.**
- **Uneven oil levels can result in poor handling and a loss of stability.**

NOTE:

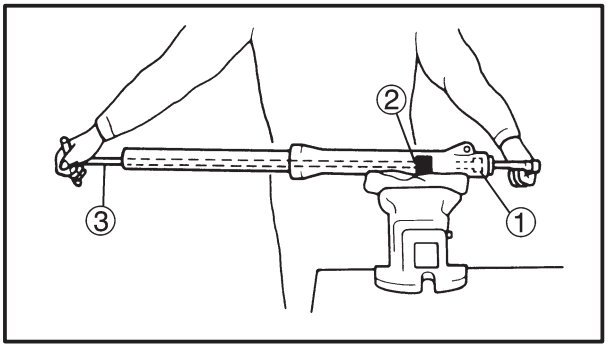
- When assembling the front fork leg, be sure to replace the following parts:
  -inner tube bushing
  -outer tube bushing
  -oil seal
  -dust seal
- Before assembling the front fork leg, make sure that all of the components are clean.



1. Install:
   - damper rod ①

CAUTION:

Allow the damper rod to slide slowly down the inner tube ② until it protrudes from the bottom of the inner tube. Be careful not to damage the inner tube.



2. Lubricate:
   - inner tube's outer surface

Recommended lubricant
Yamaha fork and shock oil 10W or equivalent

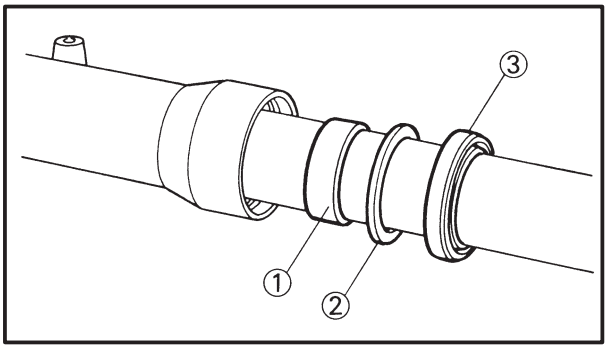
3. Tighten:
   - damper rod bolt ①

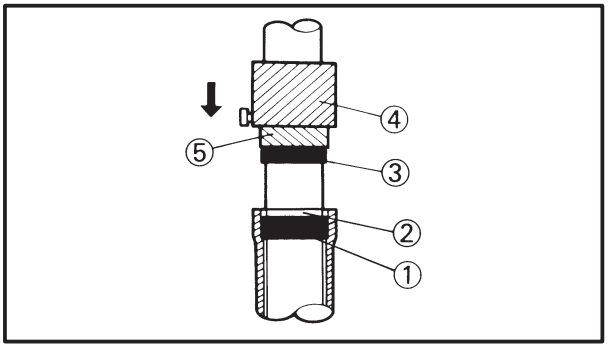
Damper rod bolt
30 Nm (3.0 m•kg, 21.7 ft•lb)
LOCTITE®

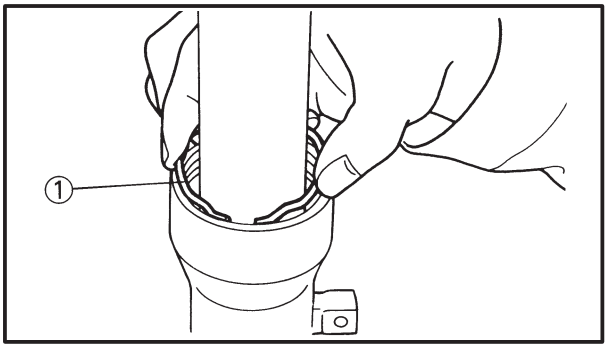
NOTE:

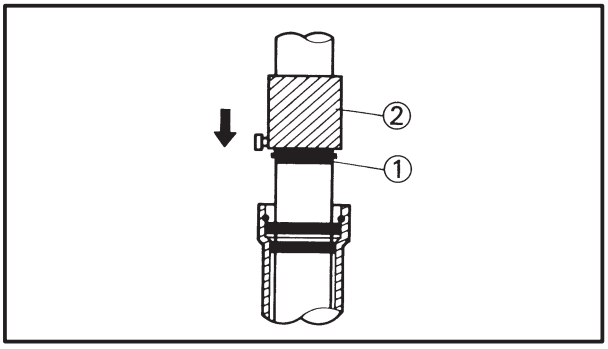
While holding the damper rod with the damper rod holder ② and T-handle ③, tighten the damper rod bolt.

Damper rod holder (30 mm, 1.18 in)
90890-01327
T-handle
90890-01326









4. Install:
   - outer tube bushing ①
   - seal spacer ②
   - oil seal ③
   (with the fork seal driver weight ④ and adapter ⑤)

Fork seal driver weight
90890-01367
Adapter
90890-01374

CAUTION:

Make sure that the numbered side of the oil seal faces up.

NOTE:
- Before installing the oil seal, apply lithium soap base grease onto its lips.
- Apply fork oil onto the outer surface of the inner tube.

5. Install:
   - oil seal clip ①

NOTE:
Adjust the oil seal clip so that it fits into the outer tube groove.

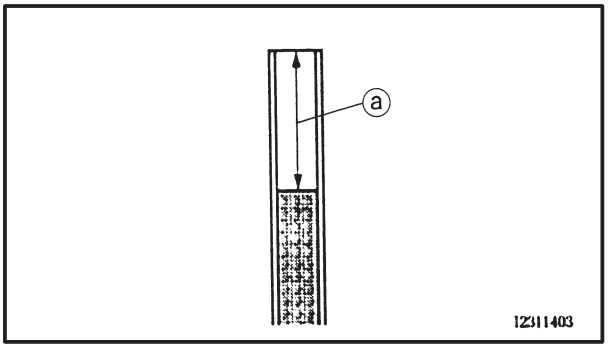
6. Install:
   - dust seal ①
   (with the fork seal driver weight) ②

7. Fully compress the front fork leg.
8. Fill:
   • front fork leg
   (with the specified amount of the recommended fork oil)

Quantity (each front fork leg)
562 cm³ (0.5 Imp qt, 0.59 us qt)
Recommended oil
Fork oil 10w
or equivalent

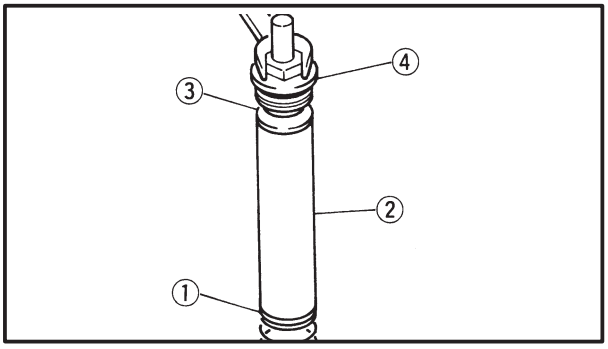
CAUTION:

- **Be sure to use the recommended fork oil. Other oils may have an adverse effect on front fork performance.**
- **When disassembling and assembling the front fork leg, do not allow any foreign material to enter the front fork.**



9. After filling up, slowly pump the fork up and down to distribute the fork oil
10. Measure:
    • Oil level ⓐ
    Out of specfication → Adjust.

Oil level:
124 mm (4.88 in)
(from the top of the inner tube fully compressed and without the fork spring)



NOTE:
Hold the fork in an upright position.

11. Install:
    • fork spring
    • spring seat ①
    • spacer ②
    • plate ③
    • cap bolt ④

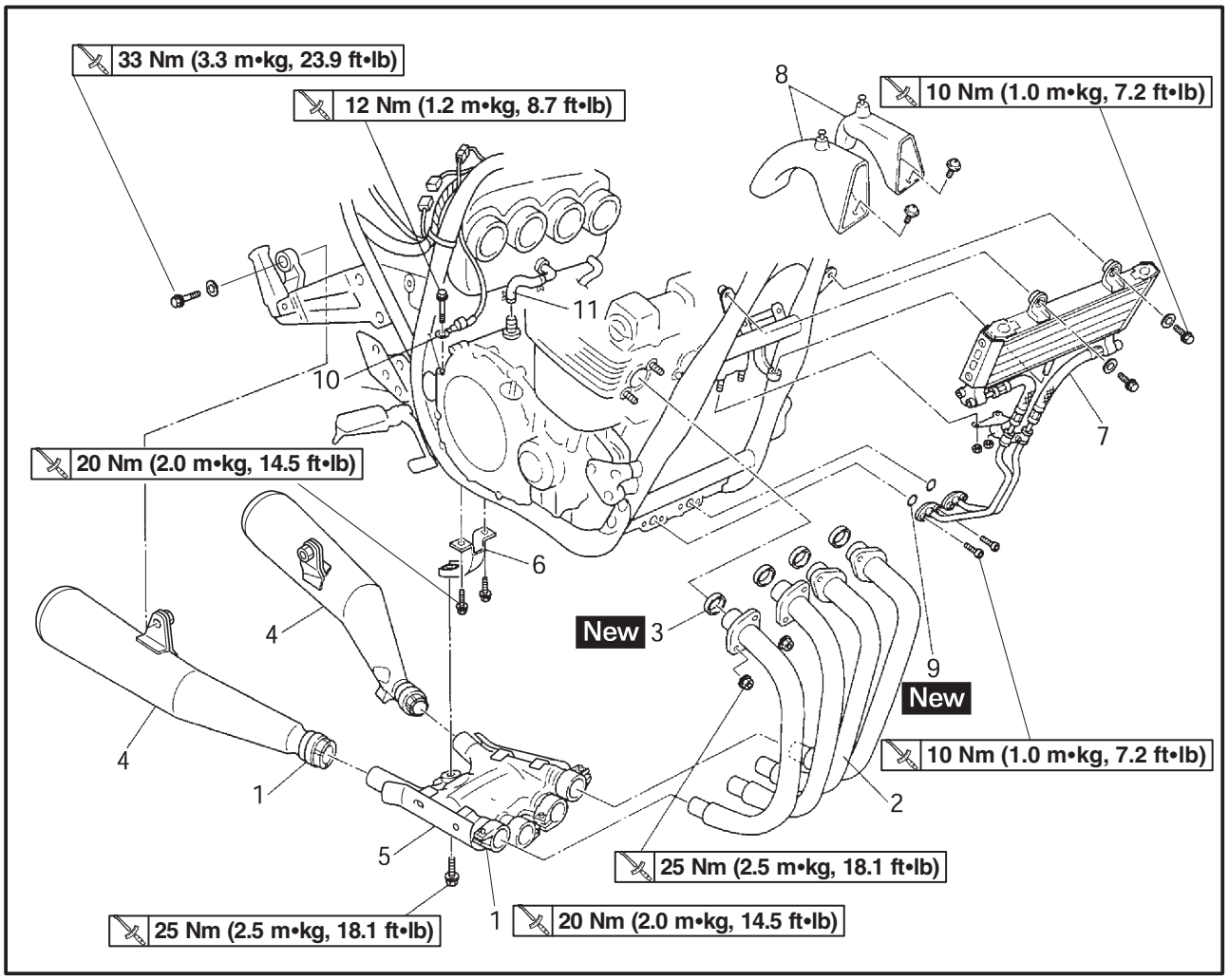
NOTE:
- Install the fork spring with its smaller pitch upward.
- Before installing the cap bolt, apply grease to the O-ring.
- Temporarily tighten the cap bolt.

EAS0018

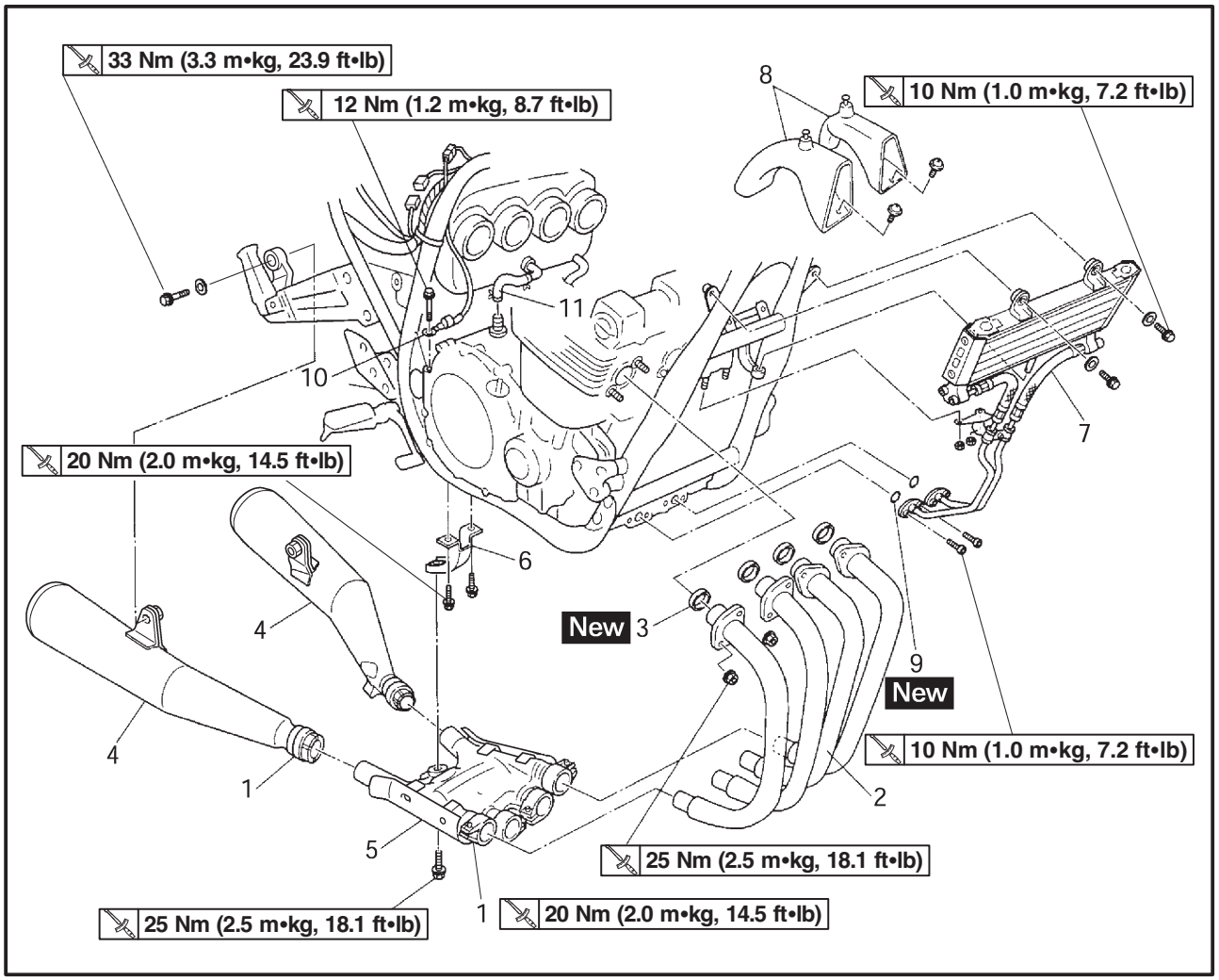
OVERHAULING THE ENGINE

ENGINE

LEADS, HOSES AND EXHAUST PIPES



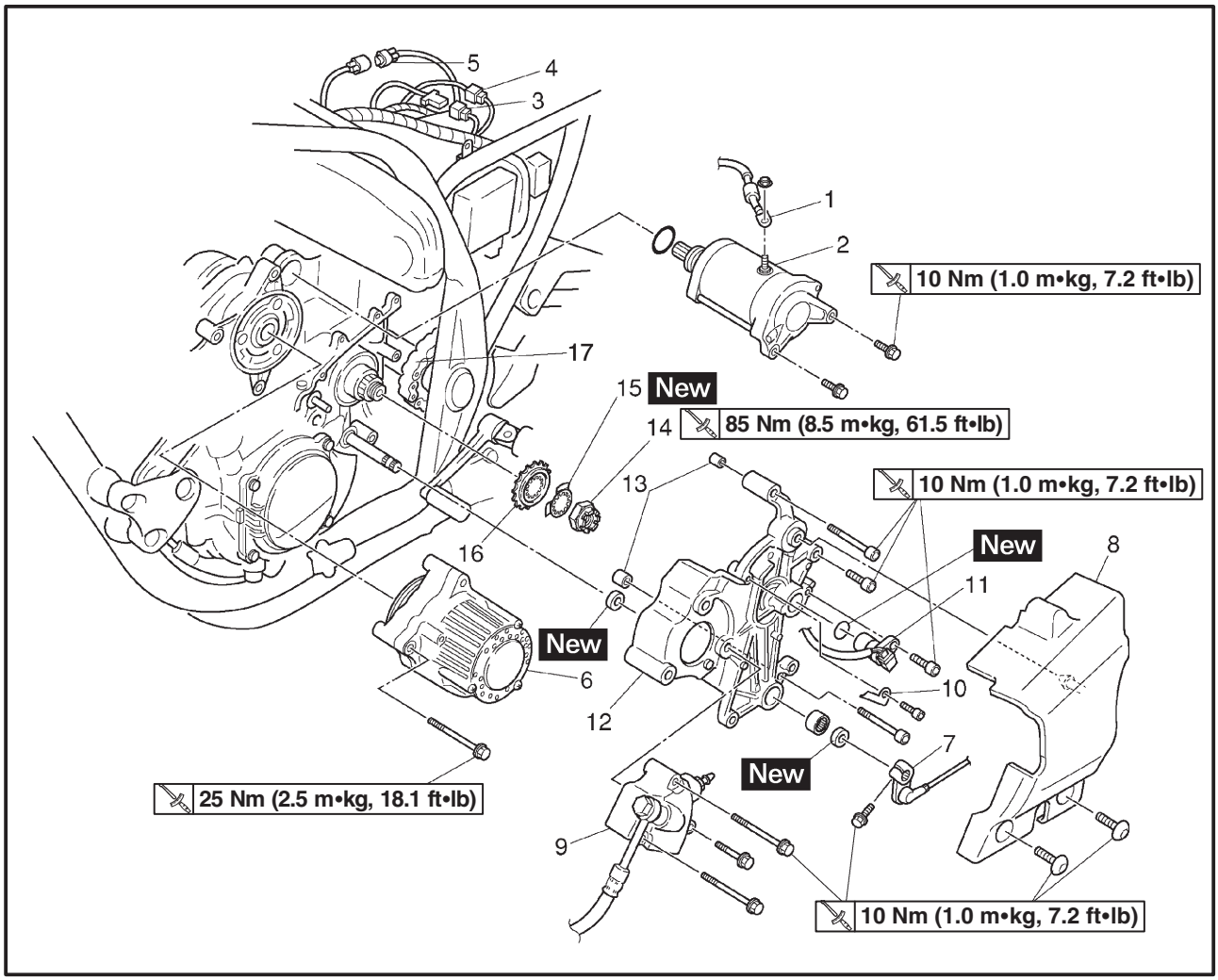
Order	Job/Part	Q'ty	Remarks
	Removing the leads, hoses and exhaust pipes		Remove the parts in the order listed.
	Seat, side cover, fuel tank		Refer to "SEAT, SIDE COVER AND FUEL TANK" in Chapter 3.
	Carburetor		Refer to "CARBURETOR" in Chapter 5.
	Engine oil		Drain
1	Exhaust band	6	
2	Exhaust pipe	4	
3	Gasket	4	
4	Muffler left/right	1/1	
5	Exhaust chamber	1	
6	Exhaust chamber bracket	1	
7	Oil cooler	1	
8	Air duct left/right	1/1	



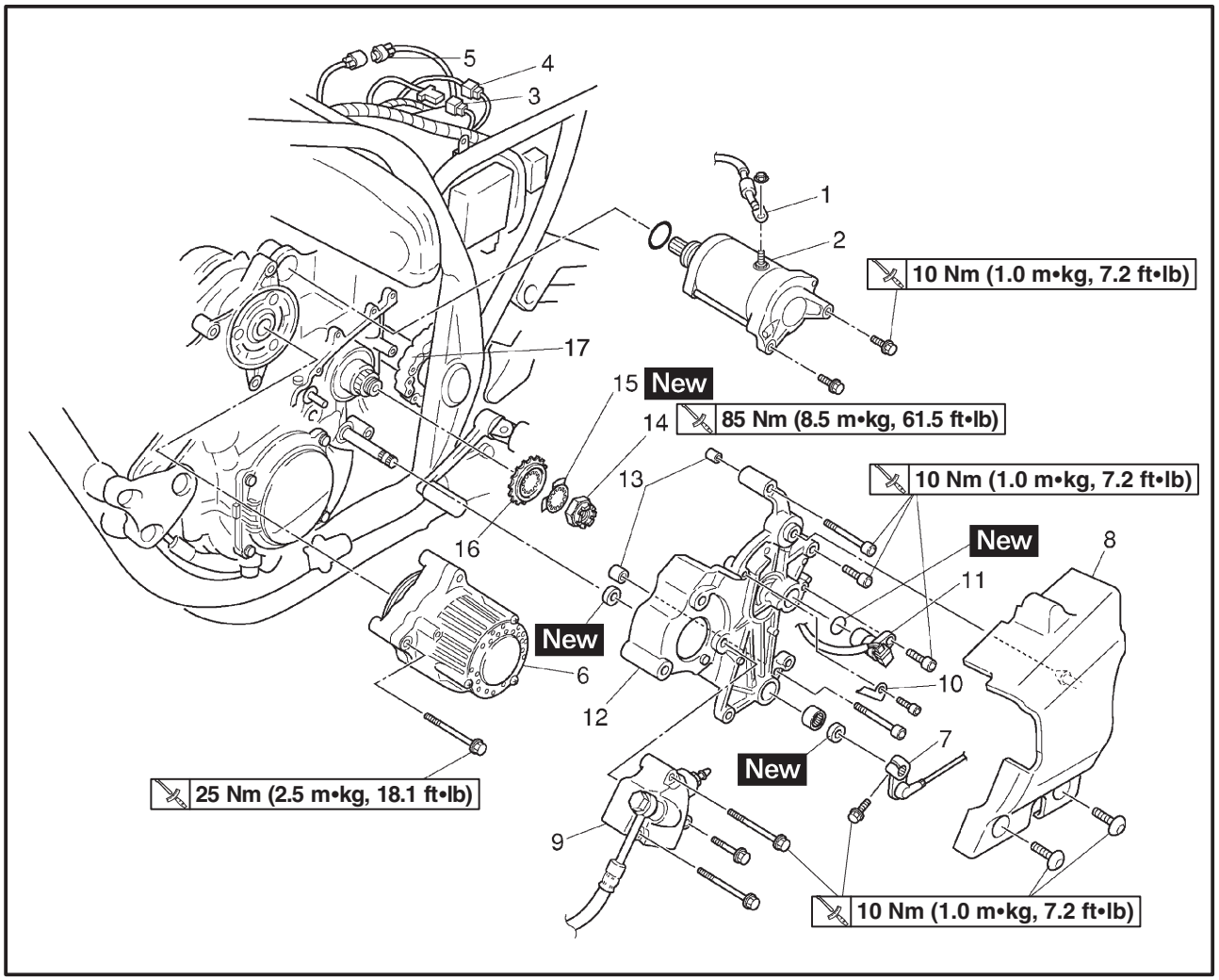
Order	Job/Part	Q'ty	Remarks
9	O-ring	2	
10	Ground lead	1	**NOTE:** Disconnect ground lead.
11	Crankcase breather hose	1	For installation, reverse the removal procedure.

EAS00190

LEADS AND DRIVE SPROCKET

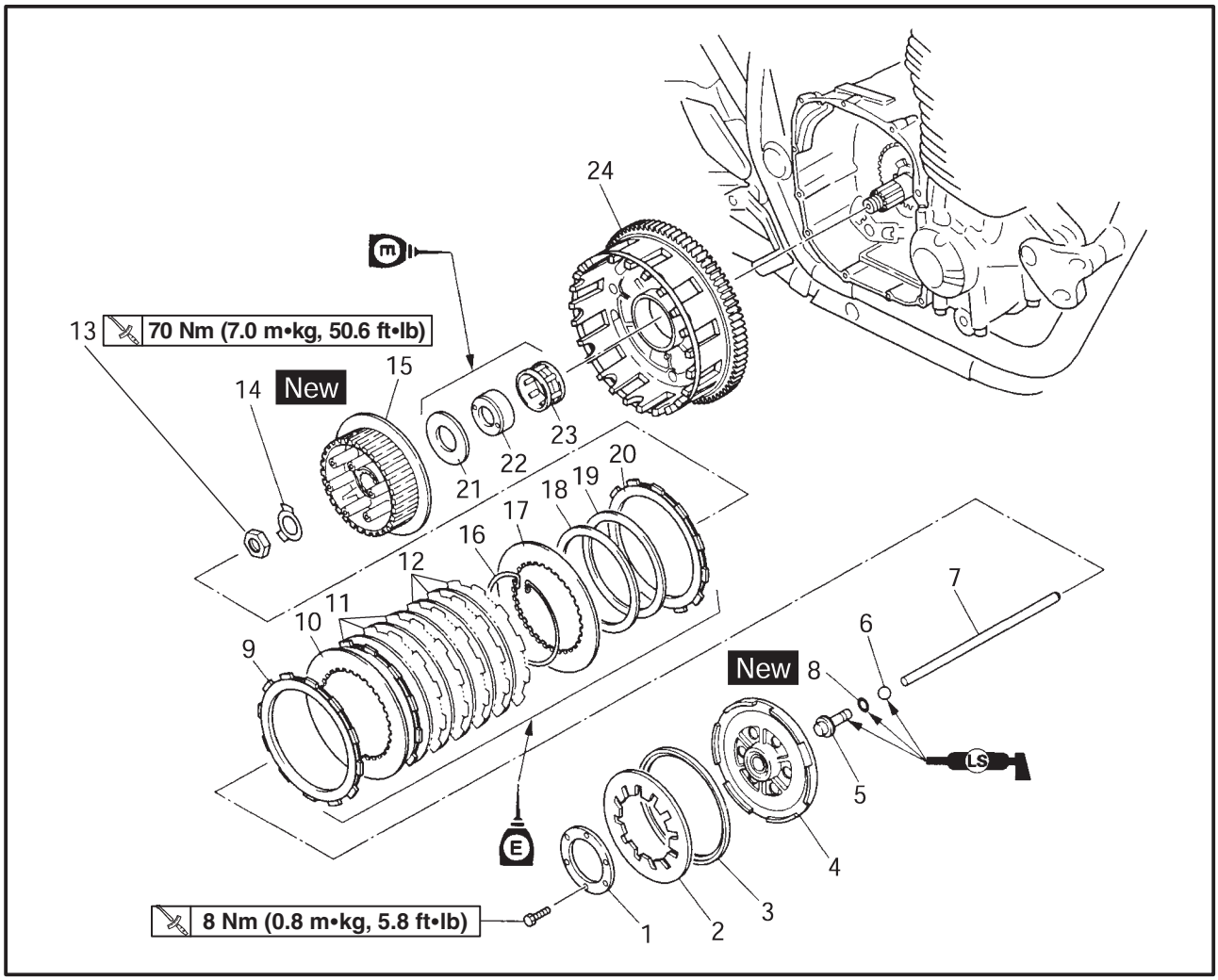


Order	Job/Part	Q'ty	Remarks
	Removing the leads and drive sprocket		Remove the parts in the order listed.
1	Starter motor lead	1	**NOTE:** Disconnect starter motor lead.
2	Starter motor	1	
3	Pickup/neutral switch lead	1	
4	A.C. generator lead	1	
5	Speed sensor lead	1	
6	A.C. generator	1	
7	Shift arm	1	Refer to "INSTALLING THE ENGINE"
8	Drive sprocket cover	1	
9	Clutch release cylinder comp.	1	
10	Speed sensor lead stay	1	
11	Speed sensor	1	
12	Crankcase cover	1	
13	Dowel pins	2	
14	Nut	1	

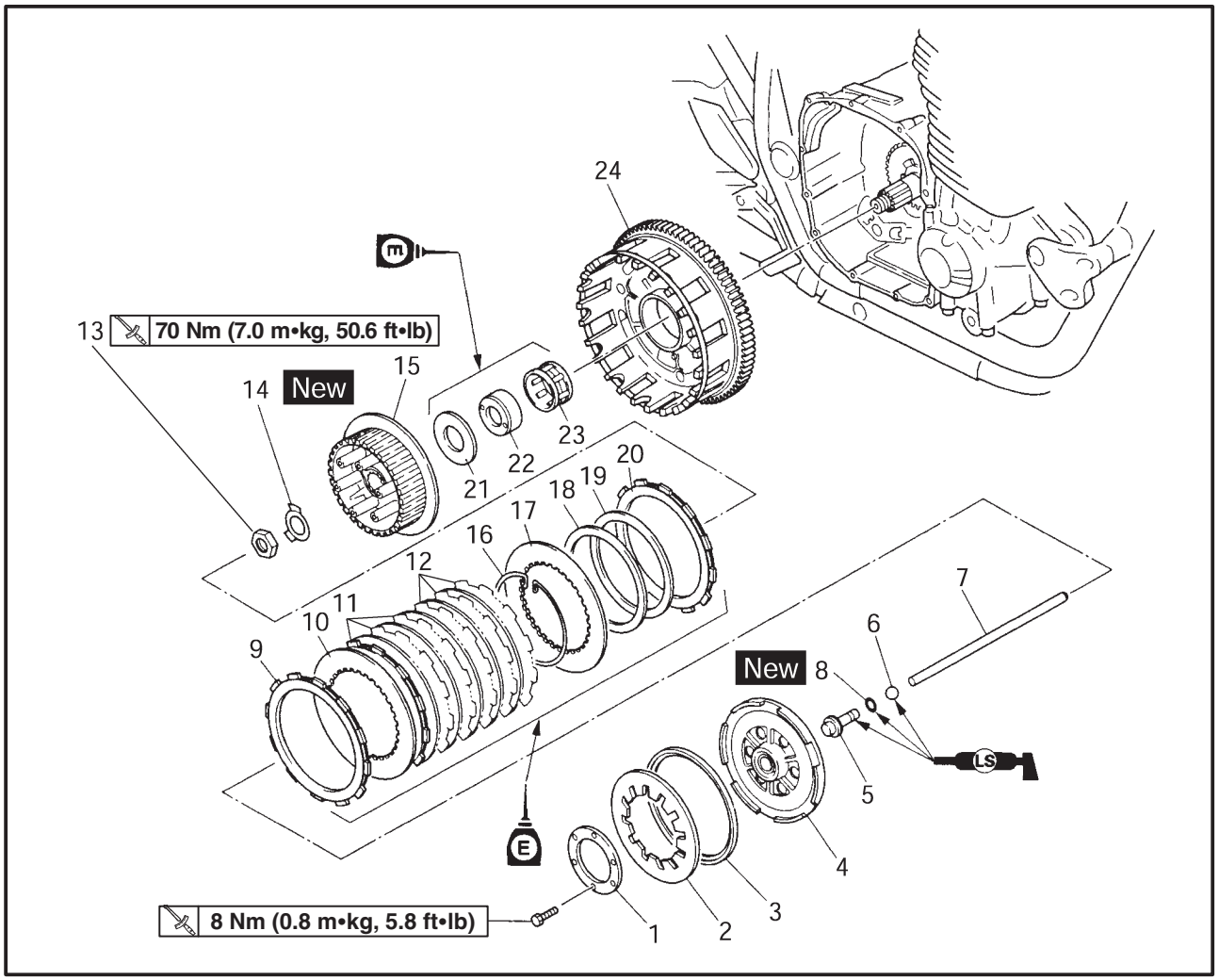


Order	Job/Part	Q'ty	Remarks
15	Lock washer	1	
16	Drive sprocket	1	
17	Drive chain	1	
			For installation, reverse the removal procedure.

EAS00274
CLUTCH
CLUTCH



Order	Job/Part	Q'ty	Remarks
	Removing the clutch		Remove the parts in the order listed.
1	Pressure plate	1	
2	Clutch spring	1	
3	Spring housing	1	
4	Pressure plate	1	
5	Clutch push rod (short)	1	
6	Ball	1	
7	Clutch push rod (long)	1	Refer to "INSTALLING THE CLUTCH".
8	O-ring	1	
9	Friction plates	1	
10	Clutch plates	6	
11	Friction plates 1	3	
12	Friction plates 2	3	
13	Clutch boss nut	1	Refer to "REMOVING/INSTALLING
14	Lock washer	1	THE CLUTCH".



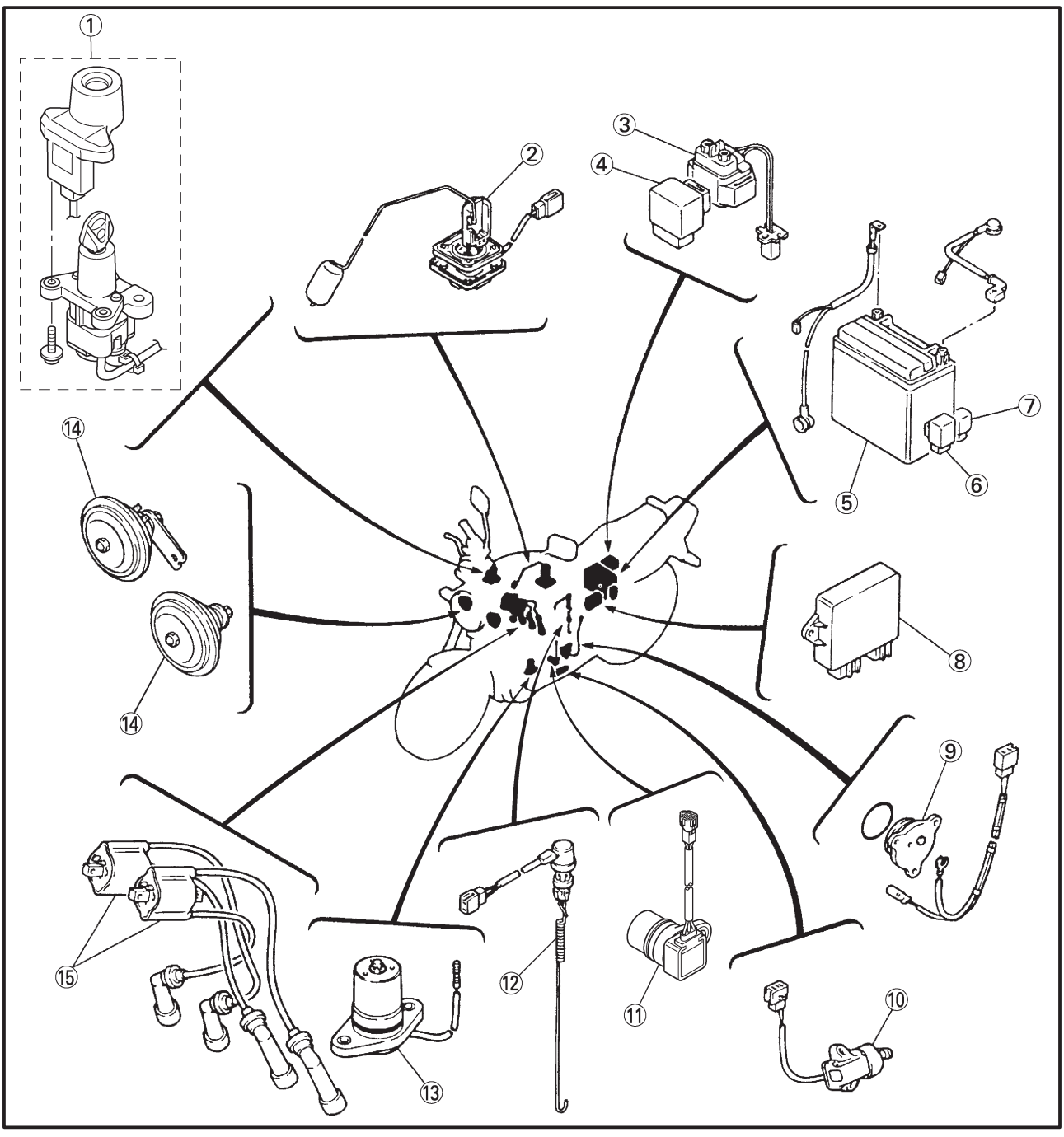
Order	Job/Part	Q'ty	Remarks
15	Clutch boss	1	
16	Stopper ring	1	Refer to "REMOVING/INSTALLING THE CLUTCH".
17	Clutch plate	1	
18	Clutch spring plate	1	
19	Clutch spring plate seat	1	
20	Friction plates (narrow)	1	
21	Thrust washer	1	
22	Spacer	1	
23	Bearing	1	
24	Clutch housing	1	
			For installation, reverse the removal procedure.

EAS00729

ELECTRICAL

ELECTRICAL COMPONENTS

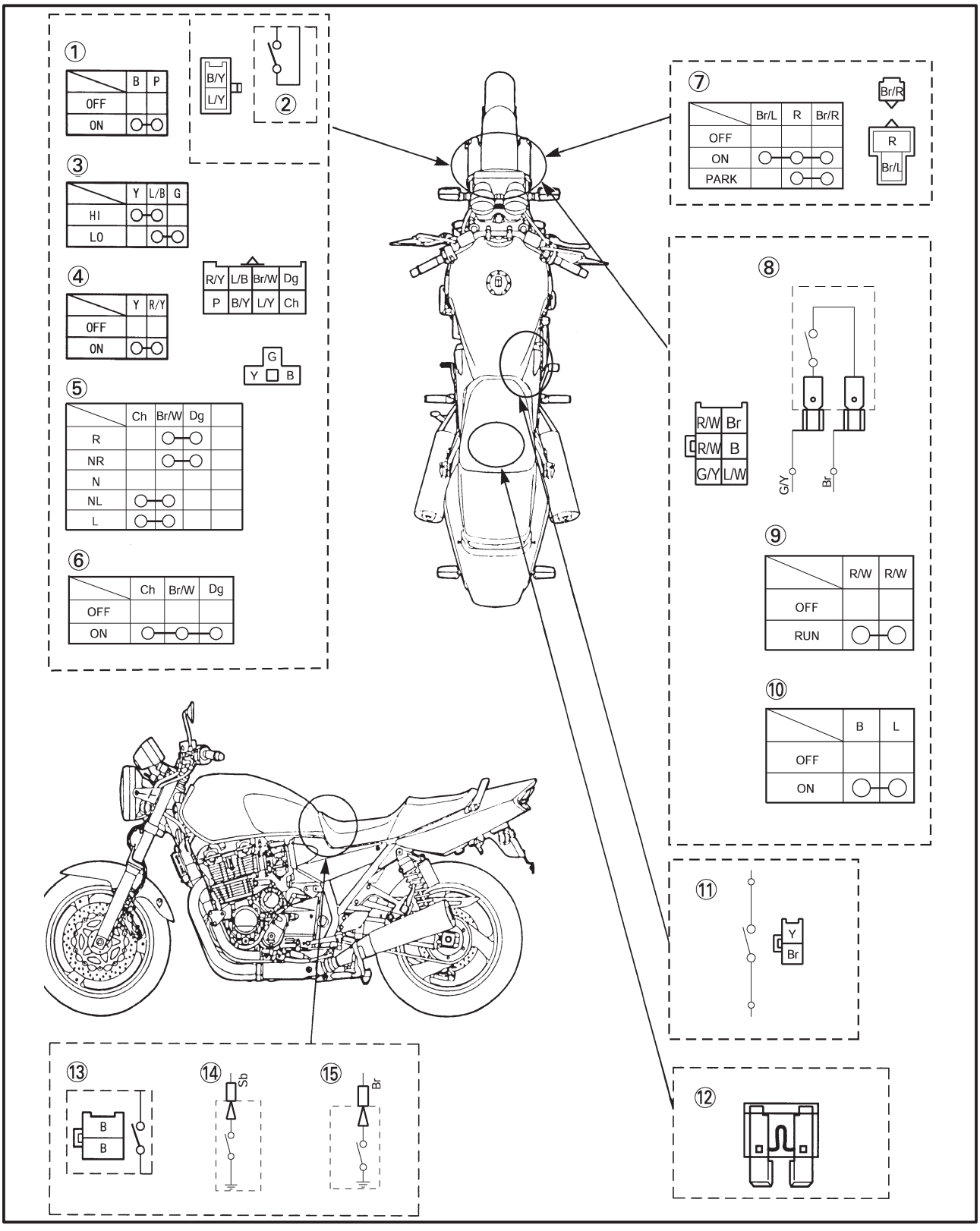
① Main switch (immobilizer unit)
② Fuel sender
③ Starter relay
④ Starting circuit cutoff relay
⑤ Battery
⑥ Oil level relay
⑦ Flasher relay
⑧ Ignitior unit
⑨ Neutral switch
⑩ Sidestand switch
⑪ Speed sensor
⑫ Rear brake switch
⑬ Oil level switch
⑭ Horns
⑮ Ignition coils



EAS00731
CHECKING THE SWITCHES

Check each switch for damage or wear, proper connections, and also for continuity between the terminals. Refer to “CHECKING SWITCH CONTINUITY”.

Damage/wear → Repair or replace the switch.
Improperly connected → Properly connect.
Incorrect continuity reading → Replace the switch.



① Horn switch
② Clutch switch
③ Dimmer switch
④ Pass switch
⑤ Turn signal switch
⑥ Hazard switch
⑦ Main switch
⑧ Front brake switch
⑨ Engine stop switch
⑩ Start switch
⑪ Rear brake switch
⑫ Fuse
⑬ Side stand switch
⑭ Neutral switch
⑮ Oil level switch

EAS00732
CHECKING THE BULBS AND BULB SOCKETS

Check each bulb and bulb socket for damage or wear, proper connections, and also for continuity between the terminals.
Damage/wear → Repair or replace the bulb, bulb socket or both.
Improperly connected → Properly connect.
No continuity → Repair or replace the bulb, bulb socket or both.

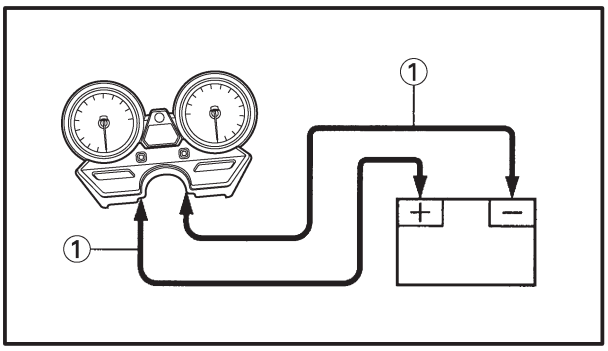
CHECKING THE LEDs

The following procedures applies to all of the LEDs.

1. Check:
   - LED (for proper operation)
     Improper operation → Replace.

▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼

a. Disconnect the meter assembly coupler (meter assembly side)
b. Connect two jumper leads ① from the battery terminals to the respective coupler terminal as shown.



⚠ WARNING

- **A wire that is used as a jumper lead must have at least the same capacity of the battery lead, otherwise the jumper lead may burn.**
- **This check is likely to produce sparks, therefore, make sure no flammable gas or fluid is in the vicinity.**

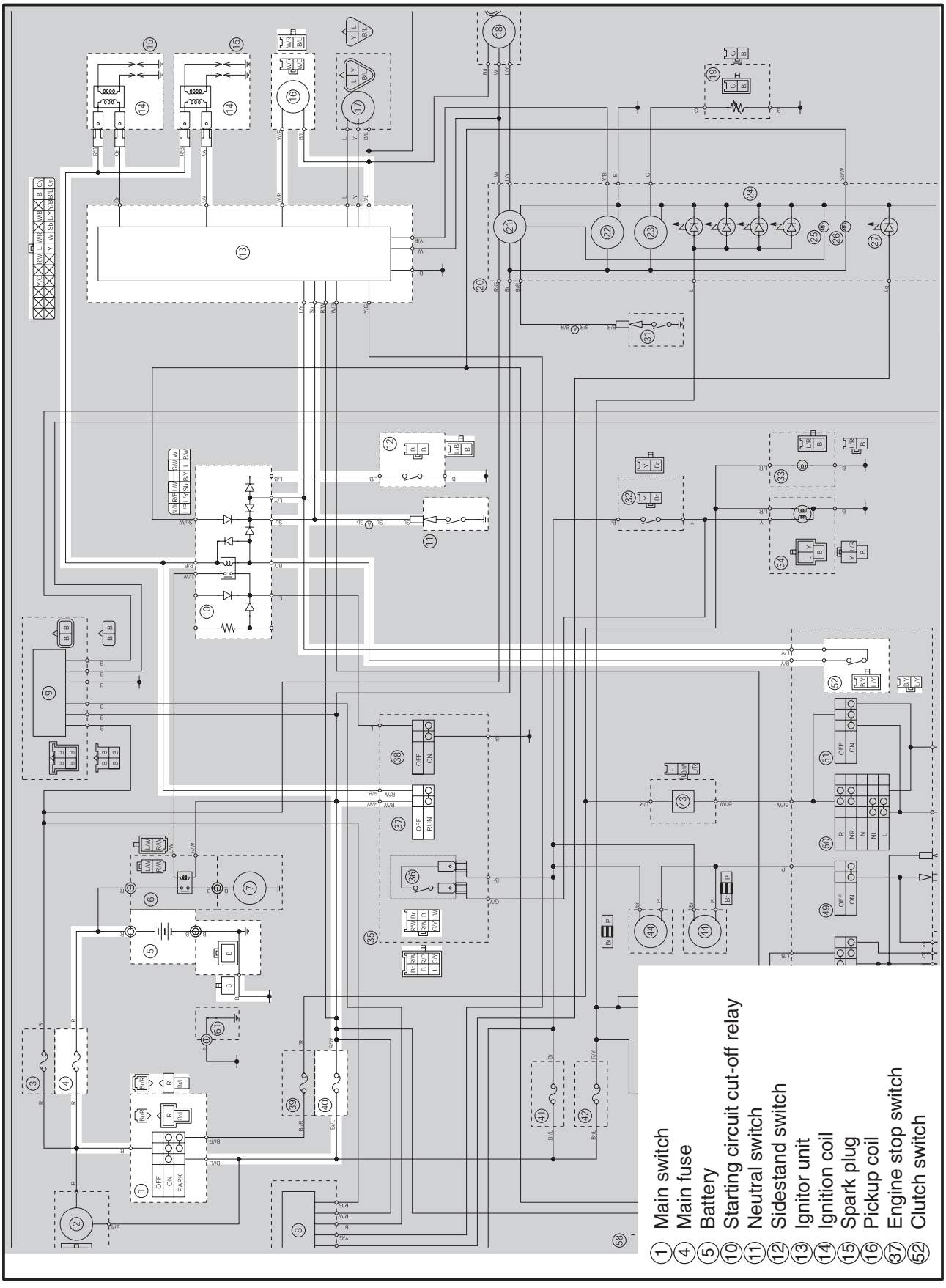
c. When the jumper leads are connected to the terminals the respective LED should illuminate.
   Does not light → Replace the meter assembly

▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲

EAS00735

IGNITION SYSTEM

CIRCUIT DIAGRAM



EAS00737
TROUBLESHOOTING

The ignition system fails to operate (no spark or intermittent spark).

Check:
1. main and ignition fuses
2. battery
3. spark plugs
4. ignition spark gap
5. spark plug cap resistance
6. ignition coil resistance
7. pickup coil resistance
8. main switch
9. engine stop switch
10. neutral switch
11. sidestand switch
12. clutch switch
13. starting circuit cut-off relay
14. wiring
    (of the entire ignition system)

NOTE:
- Before troubleshooting, remove the following part(-s):

1) seat
2) fuel tank
3) headlight unit
4) side cover (left)

- Troubleshoot with the following special tool(-s).

Dynamic spark tester
YM-34487
Ignition checker
90890-06754
Pocket tester
90890-03112, YU-3112

EAS00738
1. Main and ignition fuses
- Check the main and ignition fuses for continuity.
  Refer to "CHECKING THE FUSES" in chapter 3.
- Are the main and ignition fuses OK?

YES → NO

Replace the fuse(-s).

EAS00739
2. Battery
- Check the condition of the battery.
  Refer to "CHECKING AND CHARGING THE BATTERY" in chapter 3.

Min. open-circuit voltage
12.8 V or more at 20°C (68°F)

- Is the battery OK?

YES → NO

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

EAS00741
3. Spark plugs
The following procedure applies to all of the spark plugs.
- Check the condition of the spark plug.
- Check the spark plug type.
- Measure the spark plug gap.
  Refer to "CHECKING THE SPARK PLUGS" in chapter 3.

Standard spark plug
DPR 8EA-9 (NGK)
X24EPR-U9 (DENSO)
Spark plug gap
0.8 ~ 0.9 mm (0.0315 ~ 0.0354 in)

- Is the spark plug in good condition, is it of the correct type, and its gap within specification?

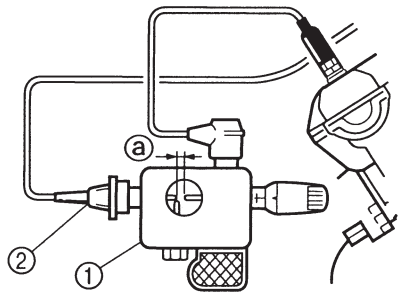
YES → NO

Re-gap or replace the spark plug.

EAS00743

4. Ignition spark gap

The following procedure applies to all of the spark plugs.
- Disconnect the spark plug cap from the spark plug.
- Connect the ignition checker ① as shown.
- ② Spark plug cap
- Set the main switch to "ON".
- Measure the ignition spark gap ⓐ.
- Crank the engine by pushing the start switch and gradually increase the spark gap until a misfire occurs.



I8110202

Min. ignition spark gap
6 mm (0.24 in)

- Is there a spark and is the spark gap within specification?

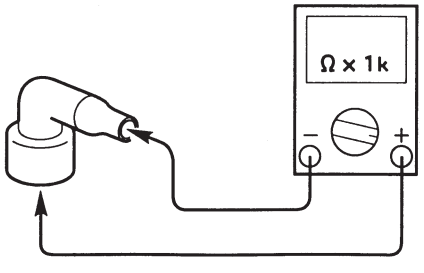
NO → The ignition system is OK.

YES

EAS00745

5. Spark plug cap resistance

The following procedure applies to all of the spark plug caps.
- Disconnect the spark plug cap from the spark plug.
- Connect the pocket tester (Ω × 1k) to the spark plug cap as shown.
- Measure the spark plug cap resistance.



I8040101

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

- Is the spark plug cap OK?

YES

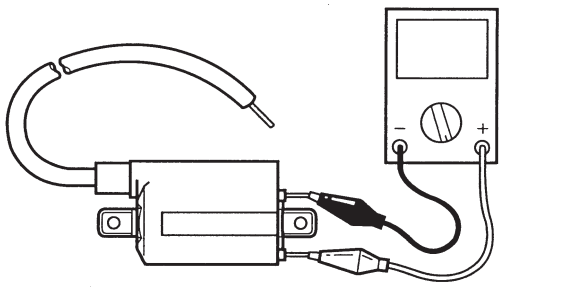
NO → Replace the spark plug cap.

EAS00747

6. Ignition coil resistance

The following procedure applies to all of the ignition coils.
- Disconnect the ignition coil connectors from the ignition coil terminals.
- Connect the pocket tester (Ω × 1) to the ignition coil as shown.

Tester positive probe → red/black
Tester negative probe → orange (gray)



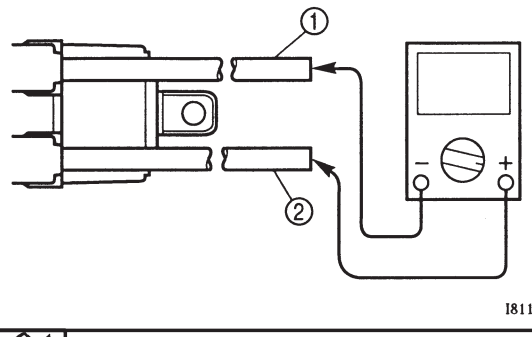
I8110104

- Measure the primary coil resistance.

Primary coil resistance
1.9 ~ 2.9 Ω at 20°C (68°F)

- Connect the pocket tester (Ω × 1k) to the ignition coil as shown.
- Measure the secondary coil resistance.

Tester positive probe →
spark plug lead ①
Tester negative probe →
spark plug lead ②



Secondary coil resistance
9.5 ~ 14.3 kΩ at 20°C (68°F)

• Is the ignition coil OK?

YES

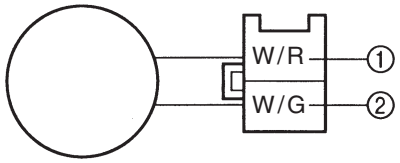
NO → Replace the ignition coil.

EAS00748

7. Pickup coil resistance

• Disconnect the pickup coil coupler from the wire harness.
• Connect the pocket tester (Ω × 100) to the pickup coil terminal.

Tester positive probe → white/red ①
Tester negative probe → white/green ②



• Measure the pickup coil resistance.

Pickup coil resistance
248 ~ 372 Ω at 20°C (68°F)
(between white/red and white/green)

• Is the pickup coil OK?

YES

NO → Replace the pickup coil.

EAS00749

8. Main switch

• Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".
• Is the main switch OK?

YES

NO → Replace the main switch.

EAS00750

9. Engine stop switch

• Check the engine stop switch for continuity. Refer to "CHECKING THE SWITCHES".
• Is the engine stop switch OK?

YES

NO → Replace the right handlebar switch.

EAS00751

10. Neutral switch

• Check the neutral switch for continuity. Refer to "CHECKING THE SWITCHES".
• Is the neutral switch OK?

YES

NO → Replace the neutral switch.

EAS00752

11. Sidestand switch

• Check the sidestand switch for continuity. Refer to "CHECKING THE SWITCHES".
• Is the sidestand switch OK?

YES

NO → Replace the side-stand switch.

EAS00763

12. Clutch switch

- Check the clutch switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the clutch switch OK?

YES

NO

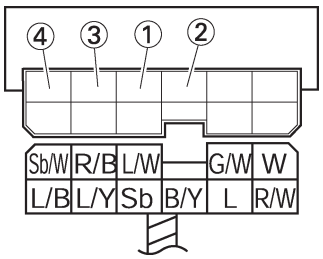
Replace the clutch switch.

EAS00753

13. Starting circuit cut-off relay

- Disconnect the starting circuit cut-off relay coupler from the wire harness.
- Connect the pocket tester (Ω × 1) to the starting circuit cut-off relay coupler as shown.
- Check the starting circuit cut-off relay for continuity.

Positive tester probe → sky blue ① **Negative tester probe → black/yellow ②**	**Continuity**
Positive tester probe → sky blue ① **Negative tester probe → blue/yellow ③**	
Positive tester probe → blue/black ④ **Negative tester probe → black/yellow ②**	
Positive tester probe → black/yellow ② **Negative tester probe → sky blue ①**	**No continuity**
Positive tester probe → blue/yellow ③ **Negative tester probe → sky blue ①**	
Positive tester probe → blue/yellow ③ **Negative tester probe → blue/black ④**	



NOTE:

When you switch the positive and negative tester probes, the readings in the above chart will be reversed.

- Are the tester readings correct?

YES

NO

Replace the starting circuit cut-off relay.

EAS00754

14. Wiring

- Check the entire ignition systems's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the ignition system's wiring properly connected and without defects?

YES

NO

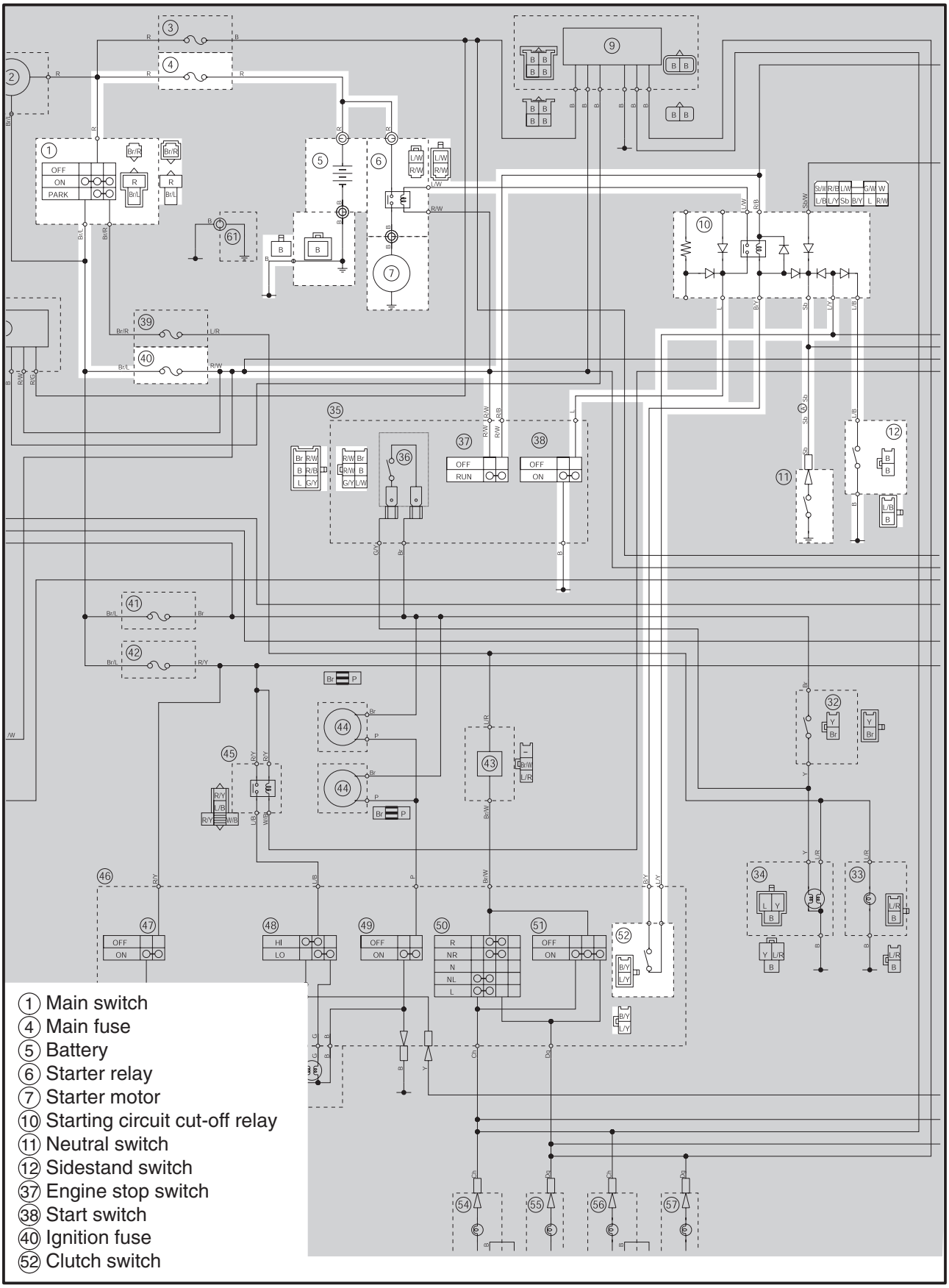
Replace the ignitor unit.

Properly connect or repair the ignition system's wiring.

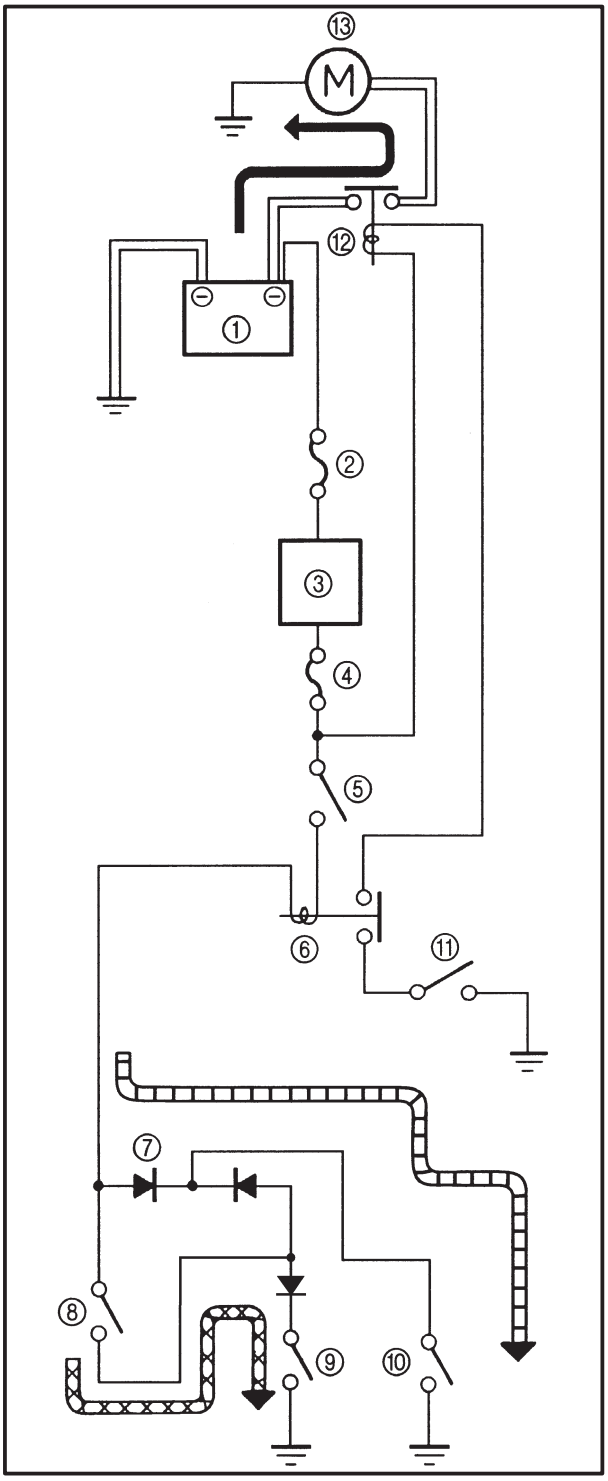
EAS00755

ELECTRIC STARTING SYSTEM

CIRCUIT DIAGRAM



① Main switch
④ Main fuse
⑤ Battery
⑥ Starter relay
⑦ Starter motor
⑩ Starting circuit cut-off relay
⑪ Neutral switch
⑫ Sidestand switch
㊲ Engine stop switch
㊳ Start switch
㊵ Ignition fuse
㊷ Clutch switch



EAS00756

STARTING CIRCUIT CUTOFF SYSTEM OPERATION

If the engine stop switch is set to "" and the main switch is set to "ON" (both switches are closed), the starter motor can only operate if at least one of the following conditions is met:

- The transmission is in neutral (the neutral switch is closed).
- The clutch lever is pulled to the handlebar (the clutch switch is closed) and the sidestand is up (the sidestand switch is closed).

The starting circuit cutoff relay prevents the starter motor from operating when neither of these conditions has been met. In this instance, the starting circuit cutoff relay is open so current cannot reach the starter motor. When at least one of the above conditions has been met the starting circuit cutoff relay is closed and the engine can be started by pressing the start switch.

WHEN THE TRANSMISSION IS IN NEUTRAL

WHEN THE SIDESTAND IS UP AND THE CLUTCH LEVER IS PULLED TO THE HANDLEBAR

① Battery
② Main fuse
③ Main switch
④ Ignition fuse
⑤ Engine stop switch
⑥ Starting circuit cutoff relay
⑦ Diode
⑧ Clutch switch
⑨ Sidestand switch
⑩ Neutral switch
⑪ Start switch
⑫ Starter relay
⑬ Starter motor

EAS00757
TROUBLESHOOTING

The starter motor fails to turn.

Check:
1. main and ignition fuses
2. battery
3. starter motor
4. starting circuit cutoff relay
5. diode
6. starter relay
7. main switch
8. engine stop switch
9. neutral switch
10. sidestand switch
11. clutch switch
12. start switch
13. wiring
(of the entire starting system)

NOTE:
- Before, troubleshooting, remove the following part(-s):

1) seat
2) fuel tank
3) headlight unit

- Troubleshoot with the following special tool(-s).

Pocket tester
90890-03112, YU-3112

EAS00738

1. Main and ignition fuses

- Check the main and ignition fuses for continuity.
Refer to "CHECKING THE FUSES" in chapter 3.
- Are the main and ignition fuses OK?

YES ⇩ NO ⇩

Replace the fuse(-s).

EAS00739

2. Battery

- Check the condition of the battery.
Refer to "CHECKING AND CHARGING THE BATTERY" in chapter 3.

Open-circuit voltage
12.8 V or more at 20°C (68°F)

- Is the battery OK?

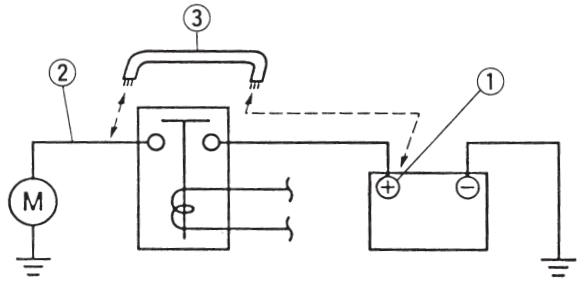
YES ⇩ NO ⇩

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

EAS00758

3. Starter motor

- Connect the battery positive terminal ① and starter motor lead ② with a jumper lead ③.



⚠ WARNING

- **A wire that is used as a jumper lead must have at least the same capacity of the battery lead, otherwise the jumper lead may burn.**
- **This check is likely to produce sparks, therefore make sure that no flammable gas or fluid is in the vicinity.**

- Does the starter motor turn?

YES ⇩ NO ⇩

Repair or replace the starter motor.

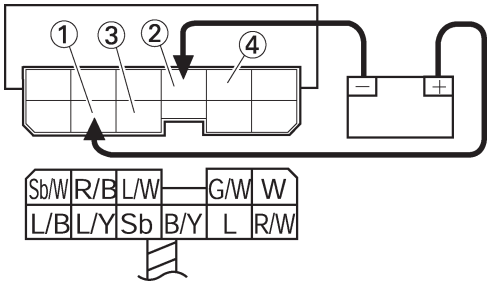
EAS00759

4. Starting circuit cutoff 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/black ①
Battery negative terminal → black/yellow ②

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



- Does the starting circuit cutoff relay have continuity between black and blue/white?

YES

NO

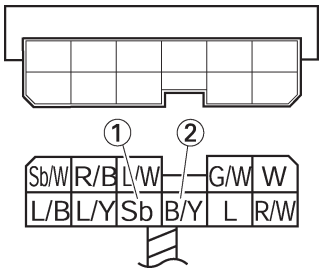
Replace the relay unit.

EAS00760

5. Diode

- Disconnect the starting circuit cutoff relay from the coupler.
- Connect the pocket tester (Ω × 1) to the starting circuit cutoff relay terminals as shown.
- Measure the starting circuit cutoff relay for continuity as follows.

Tester positive probe → sky blue ① **Tester negative probe → black/yellow ②**	**Continuity**
Tester positive probe → black/yellow ② **Tester negative probe → sky blue ①**	**No continuity**



NOTE:

When you switch the "–" and "+" leads of the digital pocket tester the readings in the above chart will be reversed.

- Are the tester readings correct?

YES

NO

Replace the relay unit.

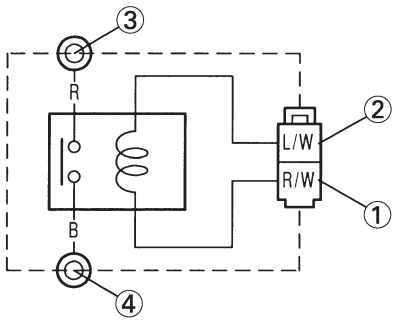
EAS00761

6. Starter relay

- Disconnect the starter relay from the coupler.
- Connect the pocket tester (Ω × 1) and battery (12 V) to the starter relay coupler as shown.

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

Tester positive probe → red ③
Tester negative probe → black ④



- Does the starter relay have continuity between red and black?

YES → NO

Replace the starter relay.

EAS00749

7. Main switch

- Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the main switch OK?

YES → NO

Replace the main switch.

EAS00750

8. Engine stop switch

- Check the engine stop switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the engine stop switch OK?

YES → NO

Replace the right handlebar switch.

EAS00751

9. Neutral switch

- Check the neutral switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the neutral switch OK?

YES → NO

Replace the neutral switch.

EAS00752

10. Sidestand switch

- Check the sidestand switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the sidestand switch OK?

YES → NO

Replace the sidestand switch.

EAS00763

11. Clutch switch

- Check the clutch switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the clutch switch OK?

YES → NO

Replace the clutch switch.

EAS00764

12. Start switch

- Check the start switch for continuity. Refer to “CHECKING THE SWITCHES”.
- Is the start switch OK?

YES

NO → Replace the right handlebar switch.

EAS00766

13. Wiring

- Check the entire starting system’s wiring. Refer to “CIRCUIT DIAGRAM”.
- Is the starting system’s wiring properly connected and without defects?

NO → Properly connect or repair the starting system’s wiring.

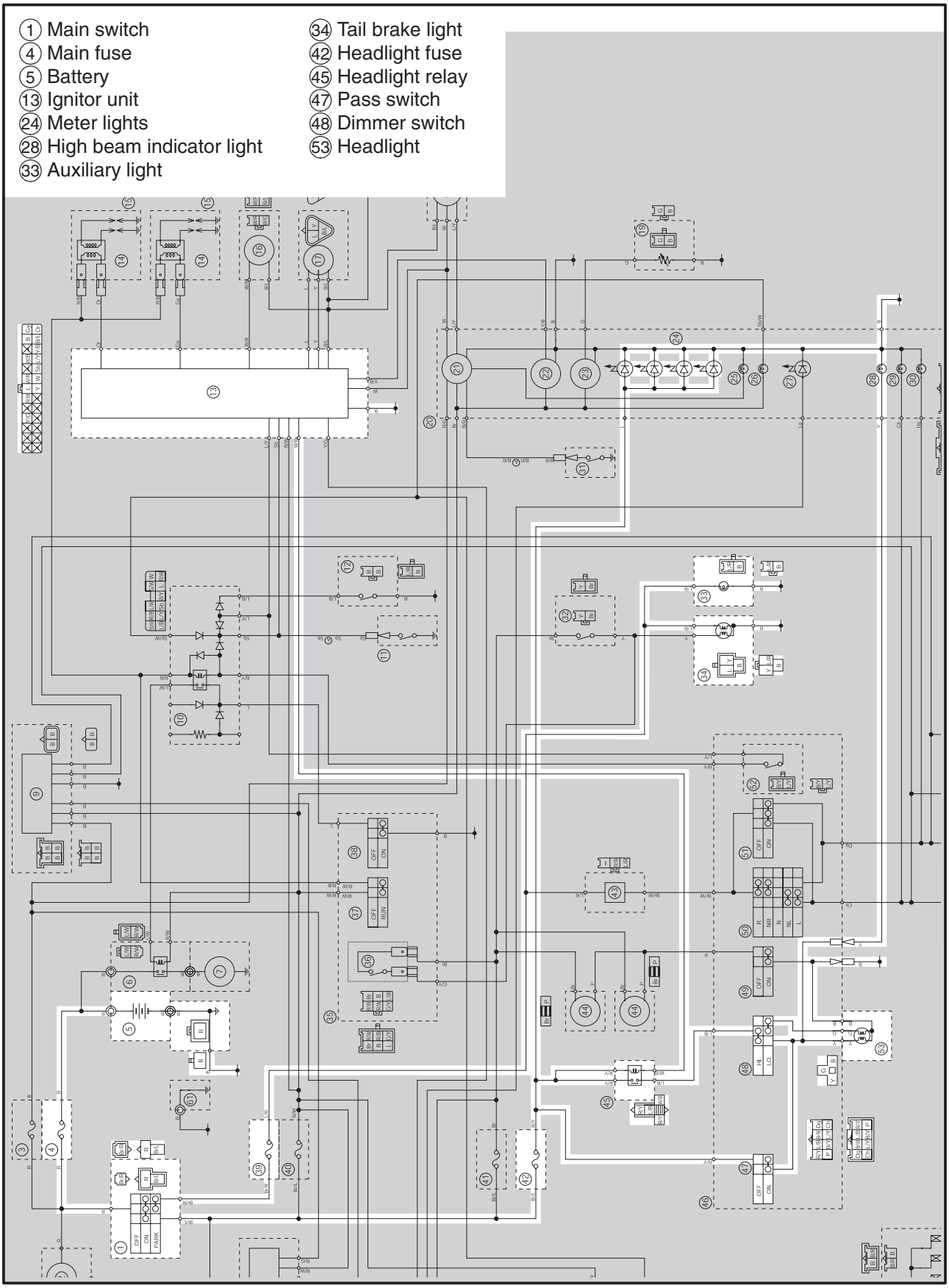
YES → The starting system circuit is OK.

EAS00780

LIGHTING SYSTEM

CIRCUIT DIAGRAM

① Main switch
④ Main fuse
⑤ Battery
⑬ Ignitor unit
㉔ Meter lights
㉘ High beam indicator light
㉝ Auxiliary light
㉞ Tail brake light
㊷ Headlight fuse
㊺ Headlight relay
㊼ Pass switch
㊽ Dimmer switch
㊸ Headlight



EAS00781
TROUBLESHOOTING

Any of the following fail to light: headlight, high beam indicator light, taillight, auxiliary light (for Europe) or meter light.

Check:
1. main, park and headlight fuses
2. battery
3. main switch
4. dimmer switch
5. pass switch
6. headlight relay
7. wiring
   (of the entire charging system)

NOTE:
- Before troubleshooting, remove the following part(-s):

1) seat
2) fuel tank
3) headlight unit

- Troubleshoot with the following special tool(-s).

Pocket tester
90890-03112, YU-3112

EAS00738
1. Main, park and headlight fuses
- Check the main, and headlight fuses for continuity.
  Refer to "CHECKING THE FUSES" in chapter 3.
- Are the main, and headlight fuses OK?

YES → NO → Replace the fuse(-s).

EAS00739
2. Battery
- Check the condition of the battery.
  Refer to "CHECKING AND CHARGING THE BATTERY" in chapter 3.

Open-circuit voltage
12.8 V or more at 20°C (68°F)

- Is the battery OK?

YES → NO → • Clean the battery terminals.
• Recharge or replace the battery.

EAS00749
3. Main switch
- Check the main switch for continuity.
  Refer to "CHECKING THE SWITCHES".
- Is the main switch OK?

YES → NO → Replace the main switch.

EAS00784
4. Dimmer switch
- Check the dimmer switch for continuity.
  Refer to "CHECKING THE SWITCHES".
- Is the dimmer switch OK?

YES → NO → The dimmer switch is faulty. Replace the left handlebar switch.

EAS00786

5. Pass switch

- Check the pass switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the pass switch OK?

YES

NO

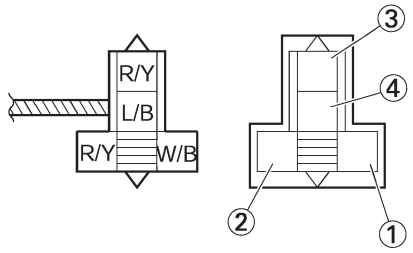
The pass switch is faulty. Replace the left hadlebar switch.

6. Headlight relay

- Disconnect the headlight relay from the coupler.
- Connect the pocket tester (Ω × 1) and battery (12 V) to the headlight relay coupler as shown.

Positive battery lead → red/yellow ①
Negative battery lead → white/black ②

Positive tester probe → red/yellow ③
Negative tester probe → blue/black ④



- Does the headlight relay have continuity between read/yellow and balck/lblue?

YES

NO

Replace the headlight relay.

EAS00787

7. Wiring

- Check the entire lighting system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the lighting system's wiring properly connected and without defects?

YES

NO

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

Properly connect or repair the lighting system's wiring.

EAS00788

CHECKING THE LIGHTING SYSTEM

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

1. Headlight bulb and socket

- Check the headlight bulb and socket for continuity. Refer to "CHECKING THE BULBS AND BULB SOCKETS".
- Are the headlight bulb and socket OK?

YES

NO

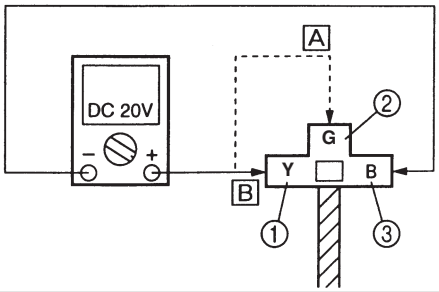
Replace the headlight bulb, socket or both.

2. Voltage

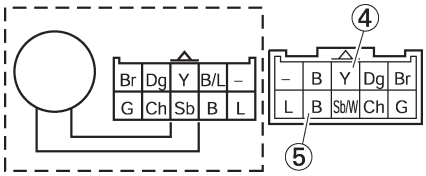
- Connect the pocket tester (DC 20 V) to the headlight and high beam indicator light couplers as shown.

A When the dimmer switch is set to "≡D"
B When the dimmer switch is set to "≡D"

Headlight coupler (wire harness side)



Headlight
Tester positive probe →
yellow ① or green ②
Tester negative probe → black ③
High beam indicator light
Tester positive probe → yellow ④
Tester negative probe → black ⑤



- Set the main switch to "ON".
- Start the engine.
- Set the dimmer switch to " ≣D " or " ≣D ".
- Measure the voltage (12 V) of yellow (green) ② on the headlight coupler (headlight side).
- Is the voltage within specification?

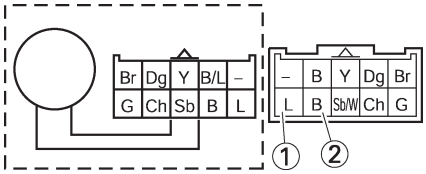
YES → This circuit is OK.

NO → The wiring circuit from the main switch to the headlight coupler is faulty and must be repaired.

2. Voltage

- Connect the pocket tester (20 V) to the meter assembly coupler (wire harness side) as shown.

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



- Set the main switch to "ON".
- Measure the voltage (12 V) of blue ① on the meter assembly coupler (wire harness side).
- Is the voltage within specification?

YES → This circuit is OK.

NO → The wiring circuit from the main switch to the meter assembly coupler is faulty and must be repaired.

EAS00789
2. A meter light fails to come on.

1. Meter light (LEDs)

- Check the meter light for continuity.
  Refer to "CHECKING THE LEDs".
- Are the meter light OK?

YES → NO → Replace the meter light bulb, socket or both.

EAS00790
3. A tail/brake light fails to come on.

1. Tail/brake light bulb and socket

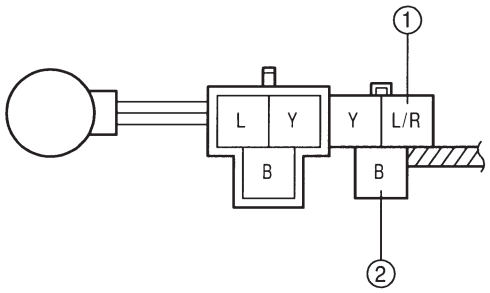
- Check the tail/brake light bulb and socket for continuity.
  Refer to "CHECKING THE BULBS AND BULB SOCKETS".
- Are the tail/brake light bulb and socket OK?

YES → NO → Replace the tail/brake light bulb, socket or both.

2. Voltage

- Connect the pocket tester (DC 20 V) to the tail/brake light coupler (wire harness side) as shown.

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



- Set the main switch to "ON".
- Measure the voltage (12 V) of blue/red ① on the tail/brake light coupler (wire harness side).
- Is the voltage within specification?

YES

This circuit is OK.

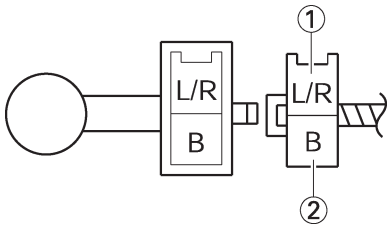
NO

The wiring circuit from the main switch to the tail/brake light coupler is faulty and must be repaired.

2. Voltage

- Connect the pocket tester (DC 20 V) to the auxiliary light couplers (wire harness side) as shown.

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



- Set the main switch to "ON".
- Measure the voltage (12 V) of blue/red ① on the auxiliary light couplers (wire harness side).
- Is the voltage within specification?

YES

This circuit is OK.

NO

The wiring circuit from the main switch to the auxiliary light connectors is faulty and must be repaired.

EB805413

4. The auxiliary light fails to come on. (for Europe)

1. Auxiliary light bulb and socket

- Check the auxiliary light bulb and socket for continuity.
  Refer to "CHECKING THE BULBS AND BULB SOCKETS".
- Are the auxiliary light bulb and socket OK?

YES

This circuit is OK.

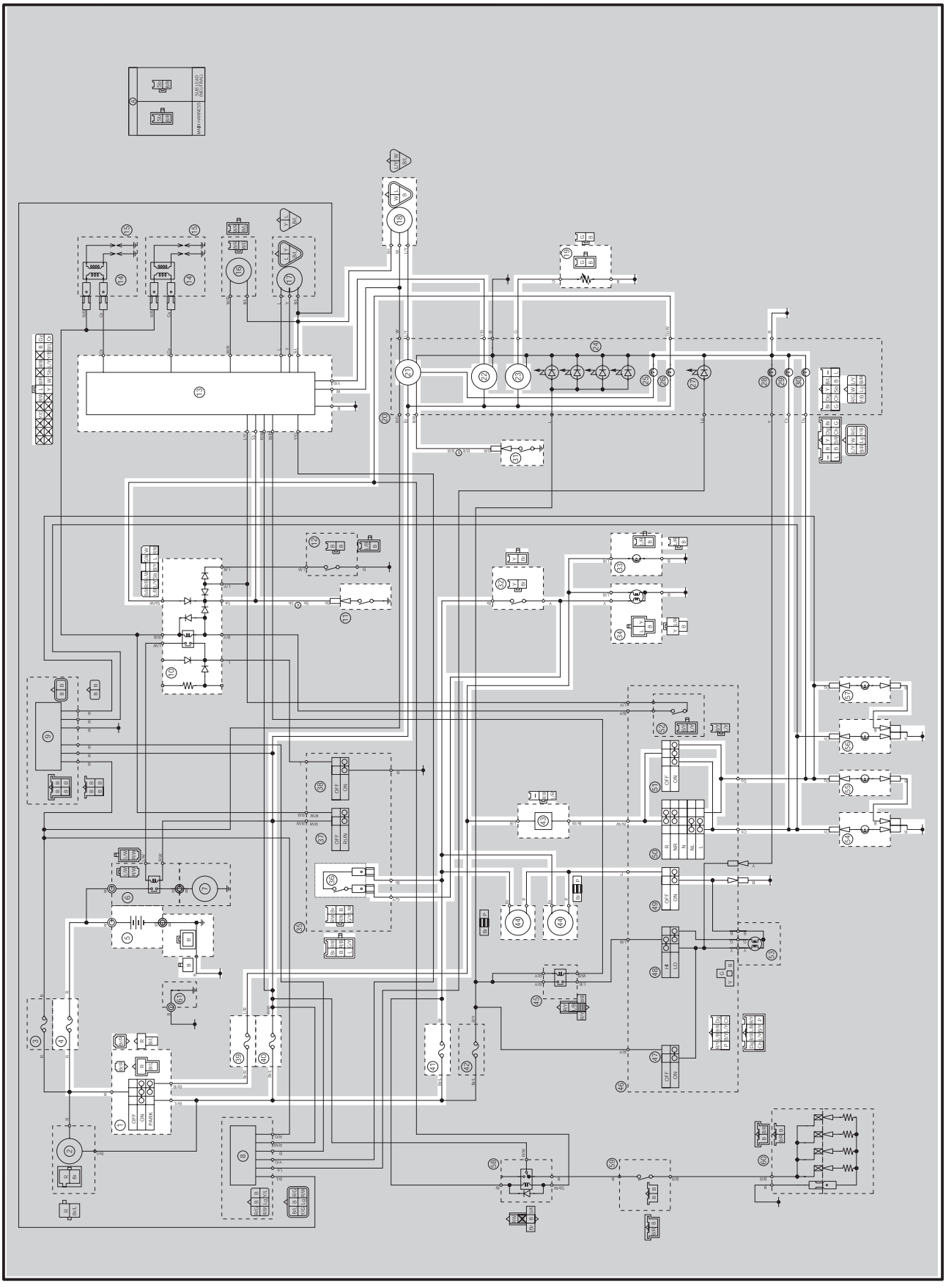
NO

Replace the auxiliary light bulb, socket or both.

EAS00793

SIGNALING SYSTEM

CIRCUIT DIAGRAM



① Main switch
④ Main fuse
⑤ Battery
⑩ Starting circuit cut-off relay
⑪ Neutral switch
⑬ Ignitor unit
⑱ Speed sensor
⑲ Fuel sender
㉑ Speedometer
㉒ Tachometer
㉓ Fuel gauge
㉕ Oil level warning light
㉖ Neutral indicator light
㉙ Turn signal indicator light (left)
㉚ Turn signal indicator light (right)
㉛ Oil level gauge
㉜ Rear brake light switch
㉝ Auxiliary light
㉞ Tail brake light
㊱ Front brake switch
㊴ Park fuse
㊵ Ignition fuse
㊶ Signal fuse
㊸ Turn signal relay
㊹ Horn
㊾ Horn switch
㊿ Turn signal switch
(51) Hazard switch
(54) Rear turn signal light (left)
(55) Rear turn signal light (right)
(56) Front turn signal light (left)
(57) Front turn signal light (right)

EB806010

TROUBLESHOOTING

• Any of the following fail to light: turn signal light, brake light or an indicator light.
• The horn fails to sound.

Check:
1. main, park, ignition and signal fuses
2. battery
3. main switch
4. wiring
   (of the entire signaling system)

NOTE:

• Before troubleshooting, remove the following part(-s):
1) seats
2) fuel tank
3) headlight unit
• Troubleshoot with the following special tool(-s).

Pocket tester
90890-03112, YU-3112

EAS00738

1. Main, park, ignition and signal fuses

• Check the main and signaling system fuses for continuity.
Refer to "CHECKING AND CHANGING THE FUSES" in chapter 3.
• Are the main and signaling system fuses OK?

YES ⇩ NO ⇩

Replace the fuse(-s).

EAS00739

2. Battery

• Check the condition of the battery.
Refer to "CHECKING THE BATTERY" in chapter 3.

Open-circuit voltage
12.8 V or more at 20°C (68°F)

• Is the battery OK?

YES ⇩ NO ⇩

• Clean the battery terminals.
• Recharge or replace the battery.

EAS00749

3. Main switch

• Check the main switch for continuity.
Refer to "CHECKING THE SWITCHES".
• Is the main switch OK?

YES ⇩ NO ⇩

Replace the main switch.

EAS00795

4. Wiring

• Check the entire signaling system's wiring.
Refer to "CIRCUIT DIAGRAM".
• Is the signaling system's wiring properly connected and without defects?

YES ⇩ NO ⇩

Check the condition of each of the signaling system's circuits. Refer to "CHECKING THE SIGNALING SYSTEM".

Properly connect or repair the signaling system's wiring.

EAS00796

CHECKING THE SIGNALING SYSTEM

1. The horn fails to sound.

1. Horn switch

- Check the horn switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the horn switch OK?

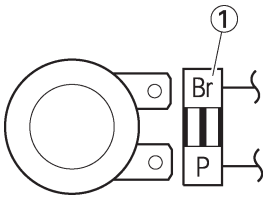
YES

NO → Replace the left handlebar switch.

2. Voltage

- Connect the pocket tester (DC 20 V) to the horn coupler (wire harness side) as shown.

Tester positive probe → brown ①
Tester negative probe → ground



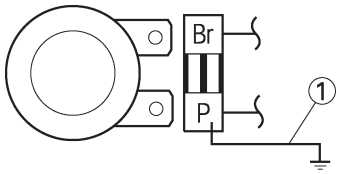
- Set the main switch to "ON".
- Measure the voltage (12 V) of brown at the horn coupler.
- Is the voltage within specification?

YES

NO → The wiring circuit from the main switch to the horn connector is faulty and must be repaired.

3. Horn

- Connect a jumper lead ① to the horn coupler (wire harness side) and ground the jumper lead.
- Set the main switch to "ON".
- Does the horn sound?



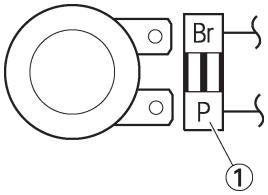
NO

YES → The horn is OK.

4. Voltage

- Connect the pocket tester (DC 20 V) to the horn coupler (wire harness side) as shown.

Tester positive probe → black ①
Tester negative probe → ground



- Set the main switch to "ON".
- Measure the voltage (12 V) of pink ① at the horn coupler (wire harness side).
- Is the voltage within specification?

YES → Repair or replace the horn.

NO → Replace the horn.

EAS00797
2. A tail/brake light fails to come on.

1. Tail/brake light bulb and socket
- Check the tail/brake light bulb and socket for continuity.
  Refer to "CHECKING THE BULBS AND BULB SOCKETS".
- Are the tail/brake light bulb and socket OK?

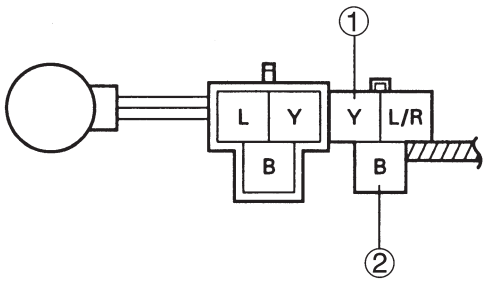
YES → 2. Brake light switches
NO → Replace the tail/brake light bulb, socket or both.

2. Brake light switches
- Check the brake light switches for continuity.
  Refer to "CHECKING THE SWITCHES".
- Is the brake light switch OK?

YES → 3. Voltage
NO → Replace the brake light switch.

3. Voltage
- Connect the pocket tester (DC 20 V) to the tail/brake light coupler (wire harness side) as shown.

Tester positive probe → yellow ①
Tester negative probe → black ②



- Set the main switch to "ON".
- Pull in the brake lever or push down on the brake pedal.
- Measure the voltage (12 V) of yellow at the tail/brake light coupler (wire harness side).
- Is the voltage within specification?

YES → This circuit is OK.
NO → The wiring circuit from the main switch to the tail/brake light coupler is faulty and must be repaired.

EAS00799
3. A turn signal light, turn signal indicator light or both fail to blink.

1. Turn signal light bulb and socket
- Check the turn signal light bulb and socket for continuity.
  Refer to "CHECKING THE BULBS AND BULB SOCKETS".
- Are the turn signal light bulb and socket OK?

YES
NO → Replace the turn signal light bulb, socket or both.

2. Turn signal switch

- Check the turn signal for continuity. Refer to "CHECKING THE SWITCHES".
- Is the turn signal switch OK?

YES

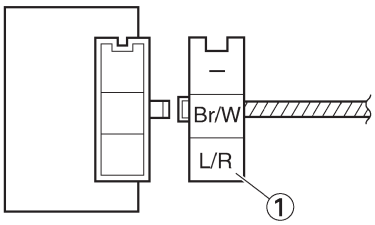
NO

Replace the left handlebar switch.

3. Voltage

- Connect the pocket tester (DC 20 V) to the flasher relay coupler (wire harness side) as shown.

Tester positive probe → blue/red ①
Tester negative probe → ground



- Set the main switch to "ON".
- Measure the voltage (12 V) of blue/red ① at the flasher relay coupler (wire harness side).
- Is the voltage within specification?

YES

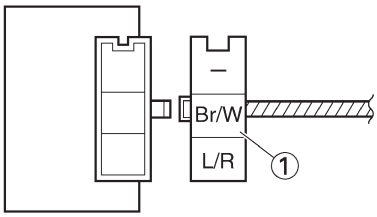
NO

The wiring circuit from the main switch to the flasher relay coupler (flasher relay side) is faulty and must be repaired.

4. Voltage

- Connect the tester (DC 20 V) to the flasher relay coupler (wire harness side) as shown.

Tester positive probe → brown/white ①
Tester negative probe → ground



- Set the main switch to "ON".
- Set the turn signal switch to " ⇦ " or " ⇨ ".
- Measure the voltage (12 V) or brown/white at the flasher relay coupler (wire harness side).
- Is the voltage within specification?

YES

NO

The flasher relay is faulty and must be replaced.

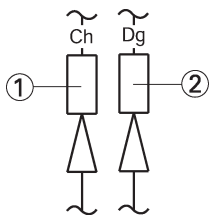
5. Voltage

- Connect the pocket tester (DC 20 V) to the turn signal light connectors or the meter assembly coupler (wire harness side) as shown.

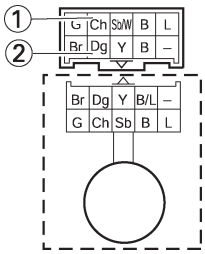
A Turn signal light
B Turn signal indicator light

Left turn signal light
Tester positive probe → chocolate ①
Tester negative probe → ground
Right turn signal light
Tester positive probe → dark green ②
Tester negative probe → ground

A



B



- Set the main switch to “ON”.
- Set the turn signal switch to “ ⇦ ” or “ ⇨ ”.
- Measure the voltage (12 V) of chocolate ① or dark green ② at the turn signal light connector (wire harness side).
- Is the voltage within specification?

YES

This circuit is OK.

NO

The wiring circuit from the turn signal switch to the turn signal light connector is faulty and must repaired.

EAS00800
4. The neutral indicator light fails to come on.

1. Neutral indicator light bulb and socket

- Check the neutral indicator light bulb and socket for continuity.
  Refer to “CHECKING THE BULBS AND BULB SOCKETS”.
- Are the neutral indicator light bulb and socket OK?

YES

NO

Replace the neutral indicator light bulb, socket or both.

2. Neutral switch

- Check the neutral switch for continuity.
  Refer to “CHECKING THE SWITCHES”.
- Is the neutral switch OK?

YES

NO

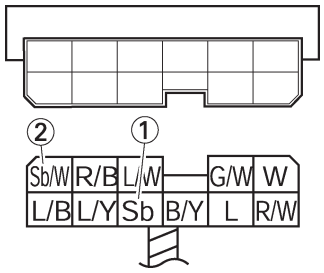
Replace the neutral switch.

EAS00760

3. Diode

- Disconnect the starting circuit cutoff relay from the coupler.
- Connect the pocket tester (Ω × 1) to the starting circuit cutoff relay terminals as shown.
- Measure the starting circuit cutoff relay for continuity as follows.

Tester positive probe → sky blue ① Tester negative probe → sky blue/white ②	**Continuity**
Tester positive probe → sky blue/white ② Tester negative probe → sky blue ①	**No continuity**



NOTE:

When you switch the “–” and “+” leads of the digital pocket tester the readings in the above chart will be reversed.

- Are the tester readings correct?

YES

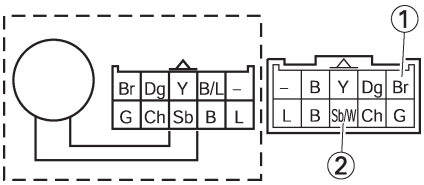
NO

Replace the relay unit.

4. Voltage

- Connect the pocket tester (DC 20 V) to the meter assembly coupler (wire harness side) as shown.

Tester positive probe → brown ①
Tester negative probe → sky blue/white ②



- Set the main switch to "ON".
- Measure the voltage (12 V) of brown ① and sky blue/white ② at the meter assembly coupler.
- Is the voltage within specification?

YES → This circuit is OK.

NO → The wiring circuit from the main switch to the meter light bulb coupler is faulty and must be repaired.

EAS00802
5. The oil level warning light fails to come on.

1. Oil level warning light bulb and socket

- Check the oil level warnig light bulb and socket for continuity.
  Refer to "CHECKING THE BULBS AND BULB SOCKETS"
- Are the oil level warnig light bulb and socket OK?

YES → NO → Replace the oil level warning light bulb, socket or both.

2. Oil level switch

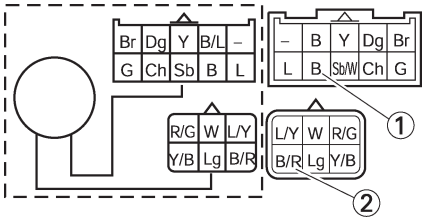
- Drain the engine oil and remove the oil level switch from the oil pan.
- Check the oil level switch for continuity.
  Refer to "CHECKING THE SWITCHES".
- Is the oil level switch OK?

YES → NO → Replace the oil level switch.

3. Voltage

- Connect the pocket tester (DC 20 V) to the meter assembly coupler (wire harness side) as shown.

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



- Set the main switch to "ON".
- Measure the voltage (12 V) of brown ① and black/red at the meter assembly coupler.
- Is the voltage within specification?

YES → This circuit is OK.

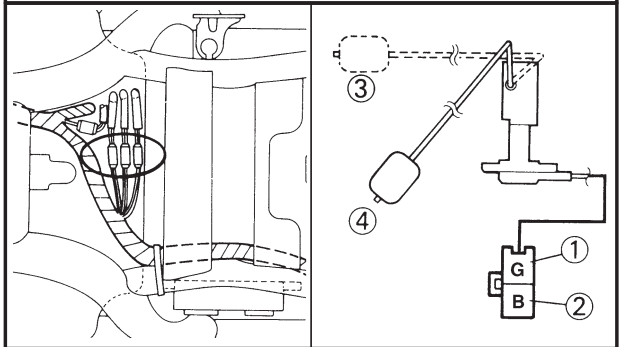
NO → The wiring circuit from the main switch to the meter assembly coupler is faulty and must be repaired.

EAS00804
6. The fuel level gauge fails to operate.

1. Fuel sender

- Disconnect the fuel sender coupler from the wire harness.
- Drain the fuel from the fuel tank and remove the fuel sender from the fuel tank.
- Connect the pocket tester to the fuel sender coupler as shown.

Tester positive probe → green ①
Tester negative probe → black ②



- Measure the fuel sender resistance.

Fuel sender resistance (up position)
4 ~ 10 Ω at 20°C (68°F)
Fuel sender resistance (down position)
90 ~ 100 Ω at 20°C (68°F)

- Is the fuel sender OK?

YES

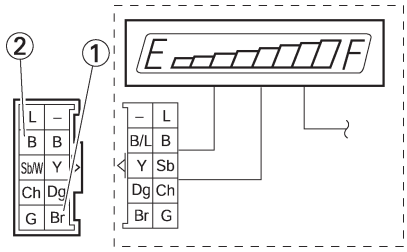
NO

Replace the fuel sender.

2. Voltage

Connect the pocket tester (DC 20 V) to the meter assembly coupler (wire harness side) as shown.

Tester positive probe → brown ①
Tester negative probe → black ②



- Set the main switch to "ON".
- Measure the voltage (12 V).
- Is the voltage within specification?

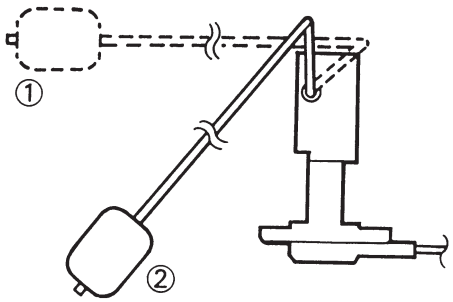
YES

NO

The wiring circuit from the main switch to the meter assembly coupler is faulty and must be repaired.

3. Fuel level gauge

- Set the main switch to "ON".
- Move the float up ① or down ②.



- Check that the fuel level gauge needle move to "F" to "E".

NOTE:

Before reading the fuel level gauge, leave the float in one position (either up or down) for at least three minutes.

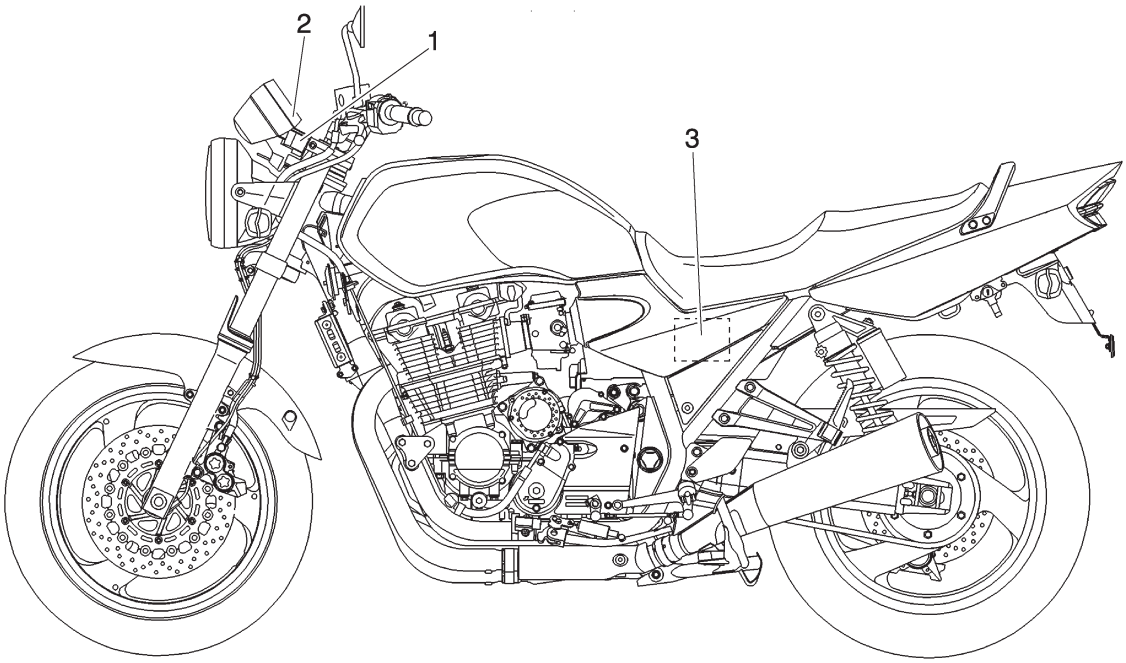
- Does the fuel level gauge needle move appropriately?

YES → This circuit is OK.

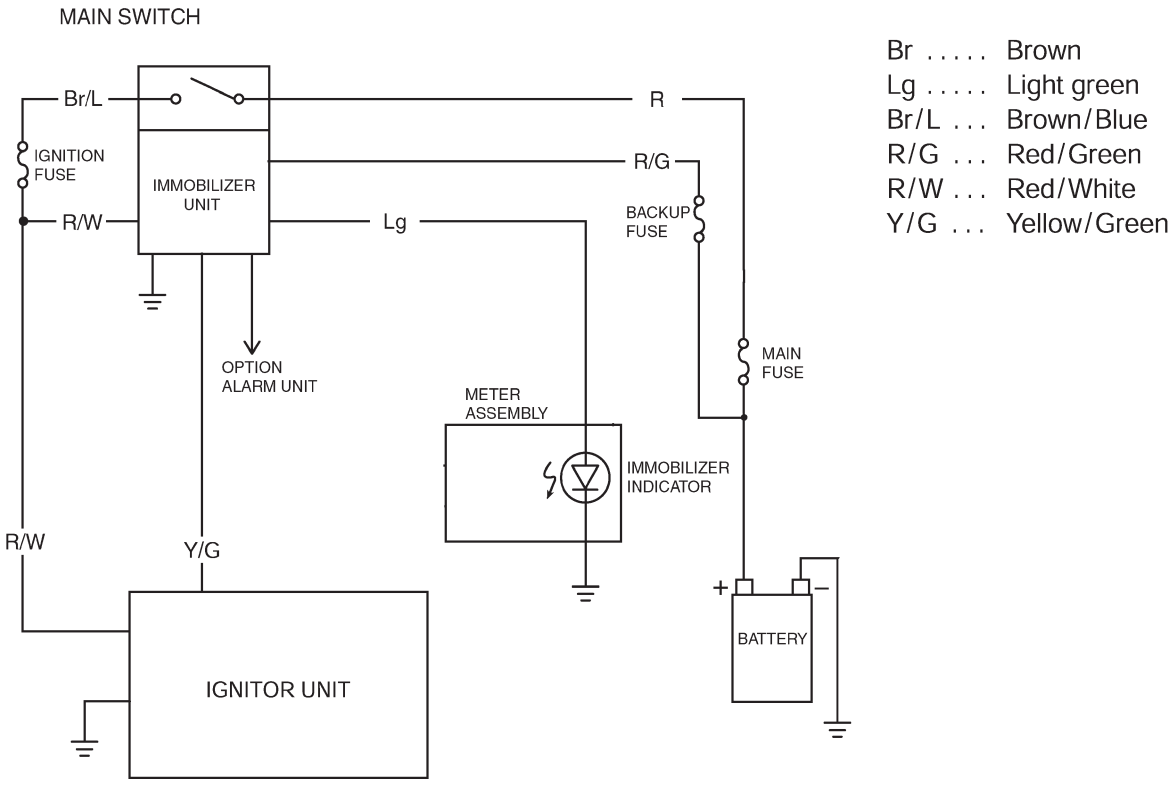
NO → Replace the fuel level gauge.

IMMOBILIZER SYSTEM

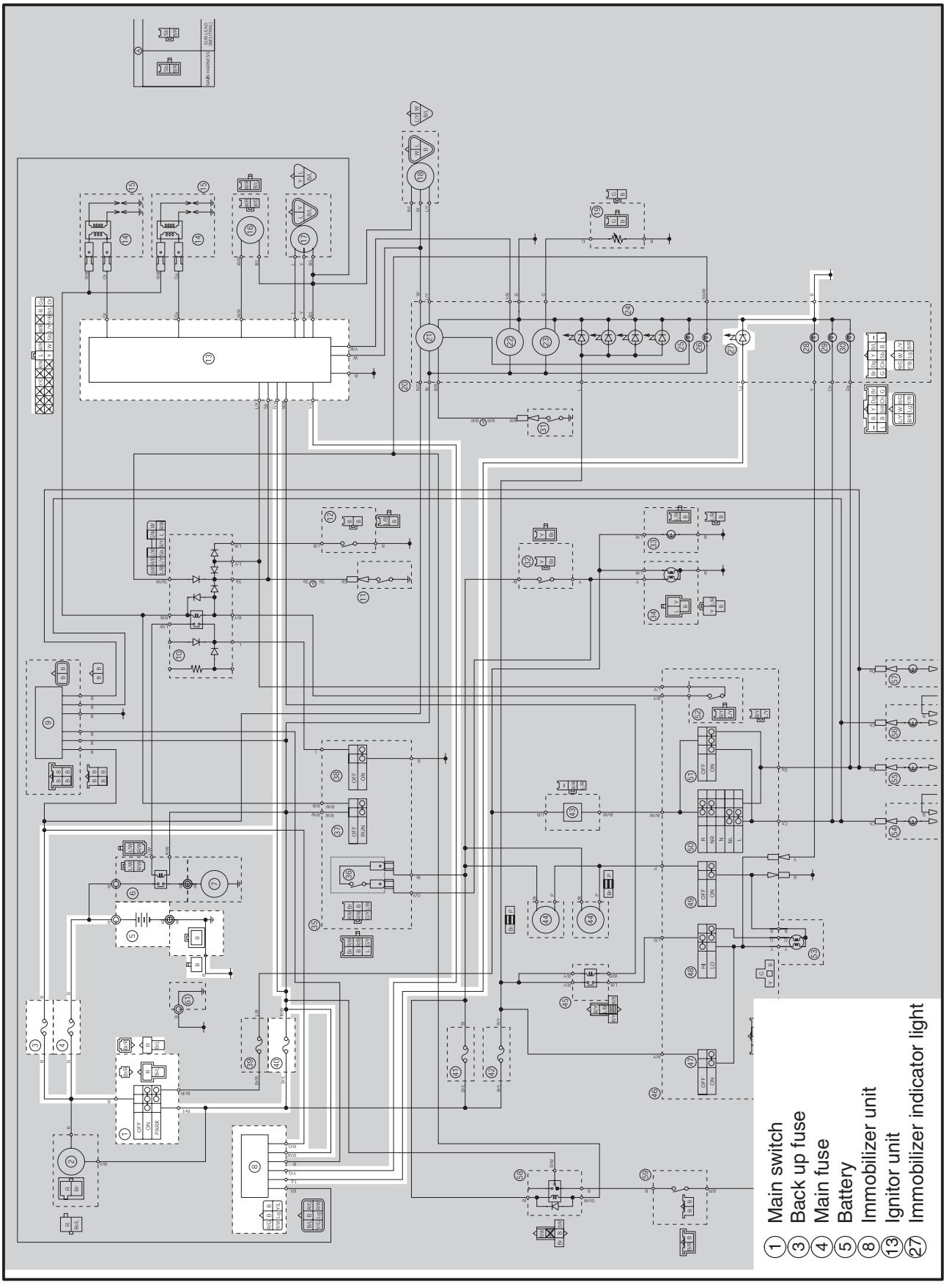
SYSTEM DIAGRAM



1 MAIN SWITCH AND IMMOBILIZER UNIT
2 INDICATOR
3 IGNITOR UNIT

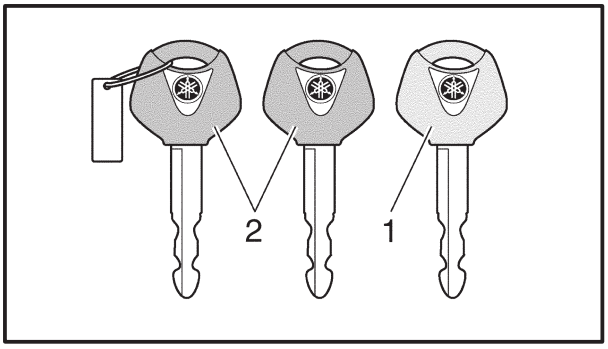


CIRCUIT DIAGRAM



GENERAL INFORMATION

- When the main switch is turned “ON” with the registered key, the immobilizer system indicator light comes on for about 0.5 second and then goes off.
- To check the immobilizer system, follow the steps in the troubleshooting chart.
- To use the immobilizer key, keep it away from other keys. Otherwise, the key code signal may not work or the correct action may be disturbed.
- The key contains the electronic component (transponder). Do not drop or hit it with a solid metal. Do not leave it on the dashboard of vehicle where the temperature may rise.
- Do not put it in the water. (when washing clothes for example)
- Do not place it near a magnet or a loud speaker.
- If all keys are missing, the ignitior unit is required to replace together with the keys and the immobilizer unit.
- Immobilizer unit cannot be operated with the copy key until the transponder code of the code re-registering key is registered to the immobilizer unit.
- Total three key codes are registered to the immobilizer unit, which are one code re-registering key code and two standard key codes.
- Among them, two of standard key codes can be registered to prepare for the case when the key is lost. To register, the code re-registering key is needed.



1. Code re-registering key (red bow)
2. Standard key (black bow)

KEY ID REGISTRATION METHOD

Initially one code re-registering key and two standard keys have been registered with the immobilizer system.
In the course of use, you may encounter the following case where re-registration of code re-registering/standard key is required.

Code re-registering key registration:

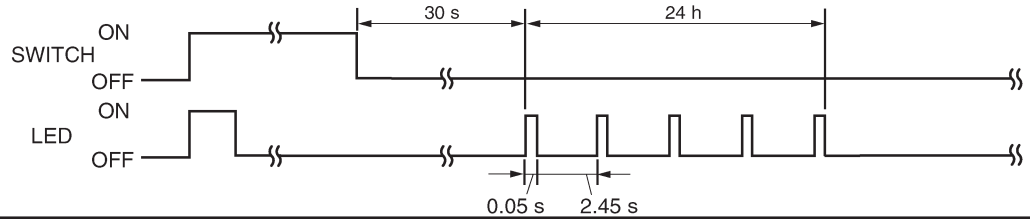
When the immobilizer unit or ignitor unit, failed and the unit was replaced, the unit cannot be used until the key ID is registered because it is not registered to the unit.

a. As usual steps, when the main switch is turned “ON”, the immobilizer indicator light goes on for about one second.
b. If the indicator light goes off, it shows that the code re-registering key registration is finished.
c. Check that the engine can be started.
d. Consequently, carry out the standard key registration, according the section below.

Standard key registration:

When you lost a standard key and need a new one. Or when the code re-registering key is re-registered after the immobilizer unit or the ignitor unit, are replaced.

a. Check that the indicator light shows the standby mode.
   To initiate the standby mode, turn “OFF” the main switch and then it will be the standby mode when it passes 30 seconds. When 24 hours passed, the standby mode ends and the indicator light stops flashing.

Standby mode	

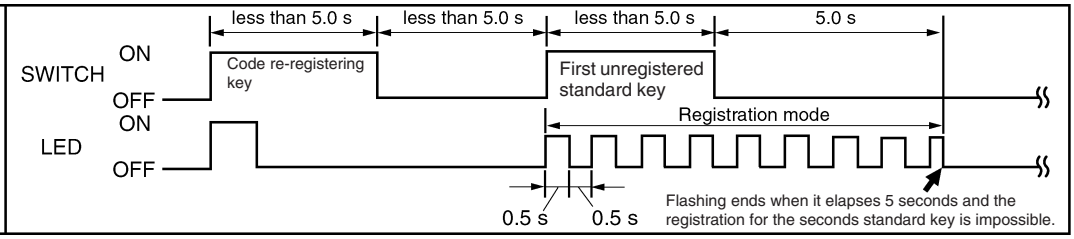
b. After the main switch is turned “ON” with the code re-registering key, within 5 seconds, turn “OFF” the main switch and then turn “ON” the main switch with the standard key (the first new key) that you want to register.
c. It becomes the key registration mode and two standard key IDs that have been stored in the memory are erased and the first new standard key ID will be registered. At this time, the indicator light quickly blinks (“OFF” for 0.5 sec. and “ON” for 0.5 sec.).
d. In the condition as mentioned above (while the indicator light continues quick flashing), after the main switch is turned “ON” with the first new standard key, turn “OFF” the main switch within 5 seconds, and then turn “ON” the main switch with the standard key that you want to register (which is the second new key or the standard key remained in hand).

NOTE:

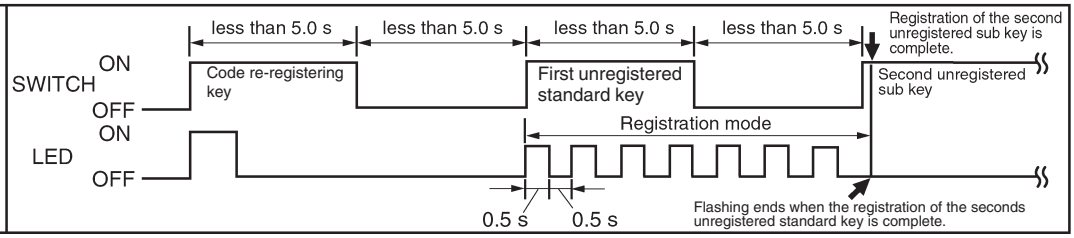
Fast flashing goes off when it elapses 5 seconds and the registration mode is finished. In this case, the second standard key cannot be registered and only the first standard key is registered.

e. When the registration is finished, the indicator light goes off.
f. Check that the engine can be started with the registered two standard keys.

When one standard key is registered.



When two standard keys are registered.



Important note:
If you lost a standard key, immediately re-register your code re-registering key and the remaining standard key (if any). This will delete the stored registration data, protecting the motorcycle against being started with the lost key.

SELF-DIAGNOSIS ERROR CODE INDICATION

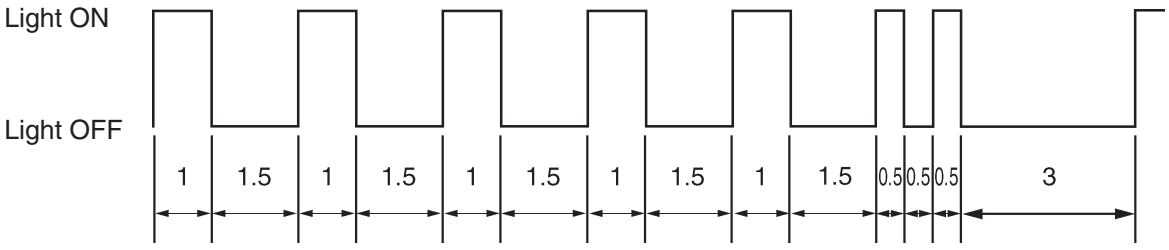
When the system failure occurred, the error code number is indicated in the immobilizer indicator light flashes at the same time. The pattern of flashing also shows the error code.

Error code	Detection	Symptoms	Trouble	Measures
51	Immobilizer unit	Cannot transmit code between the key and immobilizer unit.	1) Objects that may keep off radio waves exist around the keys and antennas. 2) Immobilizer unit failure 3) Key failure	1) Keep clear of magnets, metals and other keys from the surroundings of keys and antennas. 2) Replace the immobilizer unit. 3) Replace the key.
52	Immobilizer unit	Codes do not match between the key and immobilizer unit.	1) Disturbed by other transponder. Failed to verify continually for ten times. 2) Unregistered standard key was used.	1) Place the immobilizer unit away more than 50 mm from the transponder of other vehicle. 2) Register the standard key.
53	Immobilizer unit	Cannot transmit code between the ignitor unit and immobilizer unit.	Noise interference or disconnected lead/cable. 1) Obstruction due to radio wave noise. 2) Error by disconnection of the communication harness. 3) Immobilizer unit failure. 4) Ignitor unit failure.	1) Check the wire harness and connector. 2) Replace the immobilizer unit. 3) Replace the ignitor unit.
54	Immobilizer unit	Codes do not match between ignitor unit and immobilizer unit.	Noise interference or disconnected lead/cable. 1) Obstruction due to radio wave noise. 2) Error by disconnection of the communication harness. 3) Immobilizer unit failure 4) Ignitor unit failure (When the used parts from other vehicles are used, the code re-registering key ID is not registered to the ignitor unit.)	1) Register the code re-registering key ID. 2) Check the wire harness and connector. 3) Replace the immobilizer unit. 4) Replace the ignitor unit.
55	Immobilizer unit	Key code registration error.	Same standard key was attempted to continuously two times register.	Prepare the new standard key and register it.
56	Ignitor unit	Undefinition code is received.	Noise interference or disconnected lead/cable. 1) Obstruction due to radio wave noise. 2) Error by disconnection of the communication harness. 3) Immobilizer unit failure. 4) Ignitor unit failure.	1) Check the wire harness and connector. 2) Replace the immobilizer unit. 3) Replace the ignitor unit.

Immobilizer warning light code indication

Digit of 10 : Cycles of 1 sec. “ON” and 1.5 sec. “OFF”.
Digit of 1 : Cycles of 0.5 sec. “ON” and 0.5 sec. “OFF”.

<Example> 52



EAS00794
TROUBLESHOOTING

• When the main switch is turn "ON", the indicator light does not come on or flashing.

Check:
1. main, ignition, and back up fuses
2. battery
3. main switch
4. wiring connections
   (of the entire immobilizer system)

NOTE:
- Before troubleshooting, remove the following part(s):

1. seat
2. fuel tank
3. headlight unit

- Troubleshoot with the following special tool(s).

Pocket tester
90890-03112, YU-3112

EAS00738
1. Main, ignition and back up fuses

- Check the main, ignition and back up fuses for continuity.
  Refer to "CHECKING THE FUSES" in chapter 3.
- Are the main, ignition and back up fuses OK?

YES → NO

Replace the fuse(s).

EAS00739
2. Battery

- Check the condition of the battery.
  Refer to "CHECKING AND CHARGING THE BATTERY" in chapter 3.

Minimum open-circuit voltage
12.8 V or more at 20°C (68°F)

- Is the battery OK?

YES → NO

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

EAS00749
3. Main switch

- Check the main switch for continuity.
  Refer to "CHECKING THE SWITCHES".
- Is the main switch OK?

YES → NO

Replace the main switch.

EAS00787
4. Wiring

- Check the entire immobilizer system's wiring.
  Refer to "CIRCUIT DIAGRAM".
- Is the immobilizer system's wiring properly connected and without defects?

YES → NO

Check the condition of each of the immobilizer system's circuits.
Refer to "CHECKING THE IMMOBILIZER SYSTEM".

Properly connect or repair the immobilizer system's wiring.

EAS00788

CHECKING THE IMMOBILIZER SYSTEM

1. The immobilizer system indicator light does not come on.

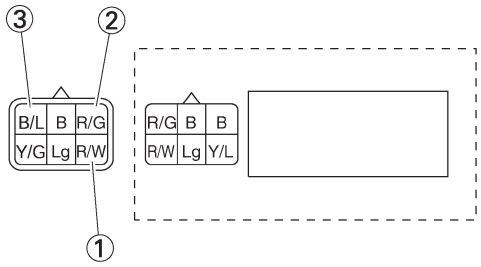
1. Indicator light bulb and socket
• Check the indicator light bulb and socket for continuity. Refer to “CHECKING THE BULBS AND BULB SOCKETS”. • Are the indicator light bulb and socket OK?

⇩ YES

⇓ NO

Replace the indicator light bulb, socket or both.

2. Voltage
• Connect the pocket tester (DC 20 V) to the immobilizer unit coupler as shown.



Positive tester probe → red/white ① or red/green ②
Negative tester probe → black/blue ③

- Turn the main switch to “ON”.
- Measure the voltage (DC 12 V) on the immobilizer unit coupler (wire harness side).
- Is the voltage within specification?

⇩ YES

⇓ NO

The wiring circuit from the main switch to the immobilizer unit coupler is faulty and must be repaired.

3. Wiring
• Disconnect the meter coupler and immobilizer unit coupler. • Check the immobilizer system indicator light lead (light green) continuity. (meter coupler – immobilizer unit coupler). • Is the immobilizer system indicator light lead OK?

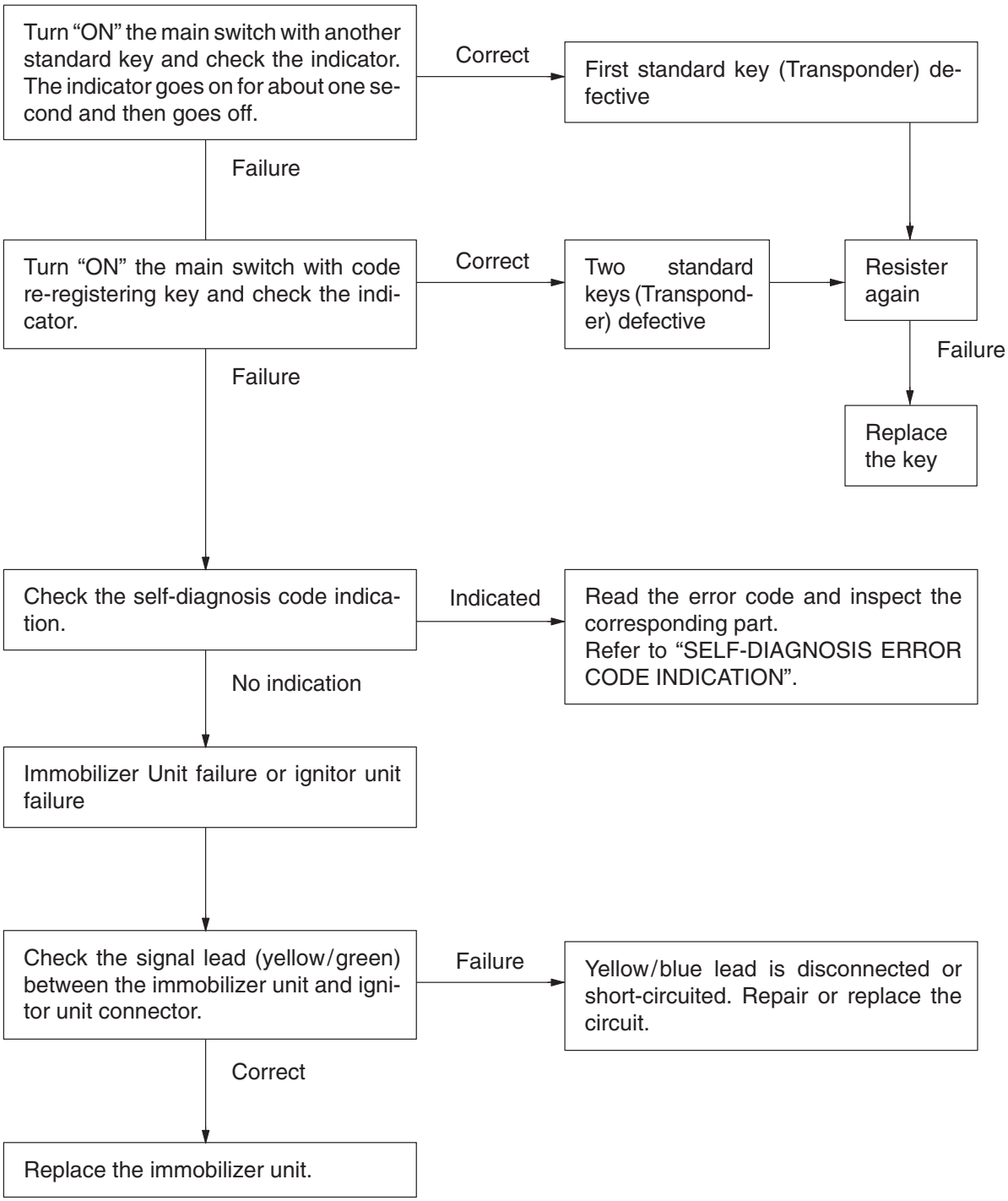
⇩ YES

⇓ NO

Replace the immobilizer unit.

The wiring circuit from the meter to immobilizer unit is faulty and must be repaired.

2. When the main switch is turned “ON”, the indicator light is flashing.
   • Check if the metallic obstacle or the transponder of other vehicle exists near the immobilizer unit. If it exists, eliminate it and recheck the condition.



REPLACEMENT PARTS ON TROUBLES

	Replacement parts				
	Transponder Key	Immobilizer Unit	Ignitor unit	*1Main Switch	*2Accessory Lock And Key
When standard key is missing and the replace standard key is required	○				
All keys have been lost (including code re-registering key)	○	○	○	○	○
Ignitor unit is defective			○		
When the immobilizer unit is defective		○			
When the main switch is defective	○	○	○	○	○
When the accessory lock is defective					○

*1 There is no parts setting as a single unit. It will be the replacement in a set with the IMMOBILIZER UNIT.
*2 Accessory lock means the seat lock, fuel filler cap or the helmet holder.

NOTE:

- To replace the single unit of ignitor unit, first turn “ON” the main switch with the code re-registering key. This operation allows the code re-registering key ID to be registered to the new ECU. Register the standard key subsequently.
- To replace the single unit of immobilizer unit, first turn “ON” the main switch with the code re-registering key. This operation allows the code re-registering key ID to be registered to the new immobilizer unit. Register the standard key subsequently.

XJR1300(S) 2004 WIRING DIAGRAM

① Main switch
② A.C. magneto
③ Fuse (back up)
④ Fuse (main)
⑤ Battery
⑥ Starter relay
⑦ Starter motor
⑧ Immobilizer unit
⑨ Alarm
⑩ Starting circuit cut-off relay
⑪ Neutral switch
⑫ Sidestand switch
⑬ Ignitor unit
⑭ Ignition coil
⑮ Spark plug
⑯ Pickup coil
⑰ Throttle position sensor
⑱ Speed sensor
⑲ Fuel sender
⑳ Meter assembly
㉑ Speedometer
㉒ Tachometer
㉓ Fuel gauge
㉔ Meter lights
㉕ Oil level warning light
㉖ Neutral indicator light
㉗ Immobilizer indicator light
㉘ High beam indicator light
㉙ Turn signal indicator light (left)
㉚ Turn signal indicator light (right)
㉛ Oil level switch
㉜ Rear brake light switch
㉝ Auxiliary light
㉞ Tail brake light
㉟ Right handlebar switch
㊱ Front brake switch
㊲ Engine stop switch
㊳ Start switch
㊴ Fuse (park)
㊵ Fuse (ignition)
㊶ Fuse (signal)
㊷ Fuse (headlight)
㊸ Turn signal relay
㊹ Horn
㊺ Headlight relay
㊻ Left handlebar switch
㊼ Pass switch
㊽ Dimmer switch
㊾ Horn switch
㊿ Turn signal switch
(51) Hazard switch
(52) Clutch switch
(53) Headlight
(54) Rear turn signal light (left)
(55) Rear turn signal light (right)
(56) Front turn signal light (left)
(57) Front turn signal light (right)
(58) Carburetor heater relay
(59) Thermo switch
(60) Carburetor heater
(61) Ground

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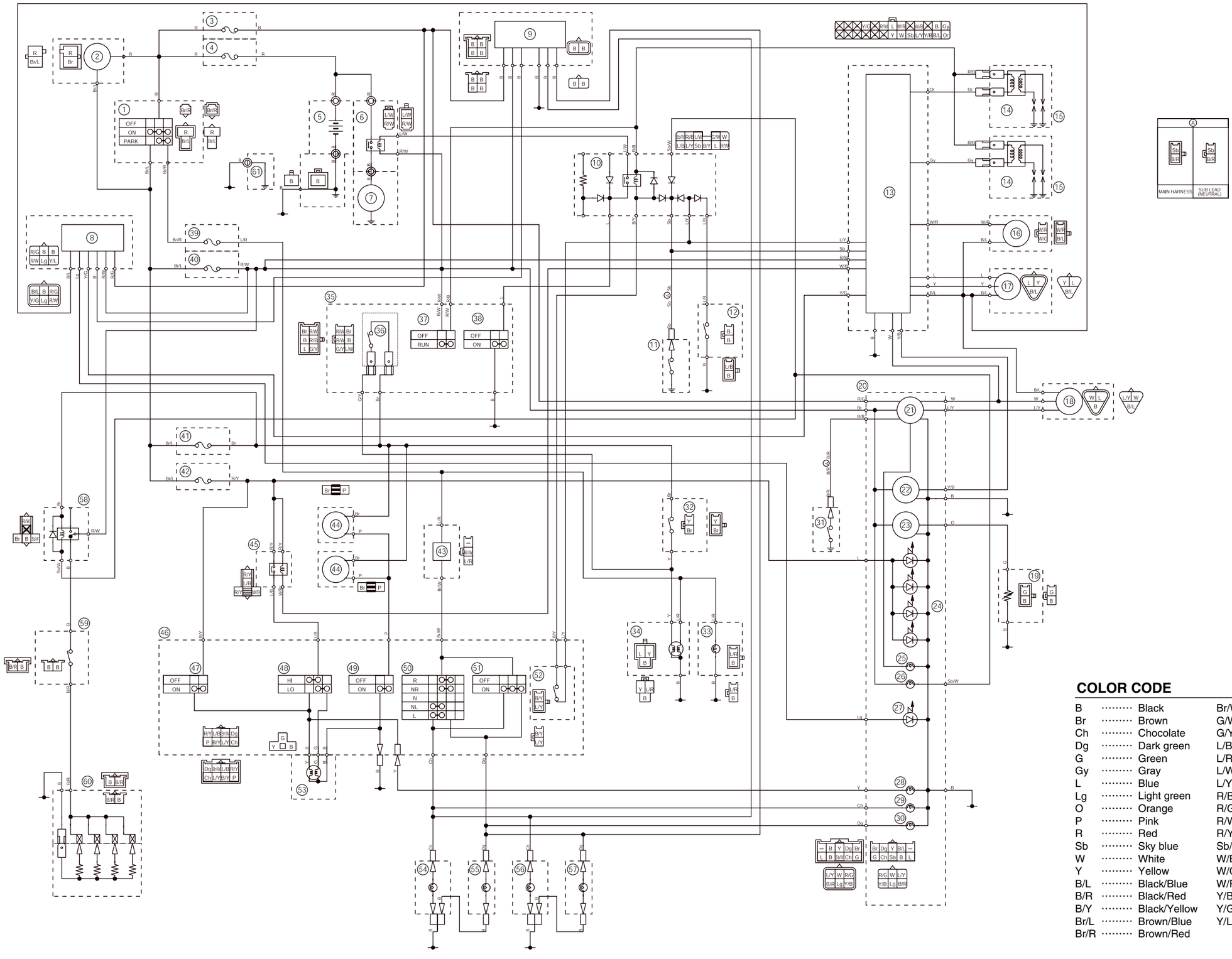
XJR1300(S) 2004 WIRING DIAGRAM



COLOR CODE

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