



# **XVS1100AWR(C) XVS1100ATR(C)**

## **SUPPLEMENTARY SERVICE MANUAL**



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## FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the XVS1100A. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

**XVS1100L/XVS1100LC SERVICE MANUAL: LIT-11616-12-63 (5EL-28197-E0)**  
**XVS1100AM/XVS1100AMC SUPPLEMENTARY SERVICE MANUAL:**  
**LIT-11616-13-36 (5KS-28197-E0)**

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**XVS1100AWR(C)**  
**XVS1100ATR(C)**  
**SUPPLEMENTARY**  
**SERVICE MANUAL**

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## 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.

This model has been designed and manufactured to perform within certain specifications in regard to performance and emissions. Proper service with the correct tools is necessary to ensure that the vehicle will operate as designed. If there is any question about a service procedure, it is imperative that you contact a Yamaha dealer for any service information changes that apply to this model. This policy is intended to provide the customer with the most satisfaction from his vehicle and to conform with federal environmental quality objectives.

Yamaha Motor Company, Ltd. is continually striving to improve all of 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.

This Service Manual contains information regarding periodic maintenance to the emission control system. Please read this material carefully.

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**NOTE:**

Designs and specifications are subject to change without notice.

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## IMPORTANT INFORMATION

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



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



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

**CAUTION:**

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

**NOTE:**

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

# HOW TO USE THIS MANUAL

## MANUAL ORGANIZATION

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

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

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

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

## EXPLODED DIAGRAMS

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

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

② CLUTCH    ① ENG    ⑥

**CLUTCH CRANKCASE COVER (RIGHT)**

⑤

④

⑦

Order	Job name/Part name	Qty	Remarks
	<b>Crankcase cover (right) removal</b>		Remove the parts in the order below. Stand the motorcycle on a level surface.
			<b>WARNING</b> Securely support the motorcycle so there is no danger of it falling over.
	Engine oil		Refer to “ENGINE OIL REPLACEMENT” in CHAPTER 3.
	Muffler assembly 1,2		Refer to “ENGINE REMOVAL”.
1	Oil filter cover plate	1	
2	Oil filter cover	1	L=70 mm × 1,65 mm × 1,25 mm × 3
3	O-ring	1	
4	Oil filter	1	
5	Crankcase cover (right)	1	L=65 mm × 1,55 mm × 1,45 mm × 4,30 mm × 4

CLUTCH    ENG    ③

**CLUTCH REMOVAL**

1. Straighten:  
• Lock washer tab

2. Loosen:  
• Nut (clutch boss) ①

**NOTE:**  
Loosen the nut (clutch boss) ① while holding the clutch boss ② with the clutch holding tool ③.

**Clutch holding tool:**  
90890-04086

**PRIMARY DRIVE GEAR REMOVAL**

1. Straighten:  
• Lock washer tab

2. Loosen:  
• Nut (primary drive gear) ①

**NOTE:**  
Place a copper plate ② between the teeth of the primary drive gear ③ and primary driven gear to lock them.

**CLUTCH INSPECTION**

1. Inspect:  
• Friction plates  
Wear/damage → Replace the friction plates as a set.

2. Measure:  
• Friction plate thickness  
Out of specification → Replace the friction plates as a set.  
Measure at four places.

**Thickness (friction plate):**  
2.9 – 3.1 mm  
Wear limit: 2.6 mm
























3. Inspect:  
• Clutch plate  
Damage → Replace the clutch plates as a set.

4. Measure:  
• Clutch plate warpage  
Out of specification → Replace the clutch plates as a set.  
Use a surface plate and a feeler gauge ①.

**Warp limit (clutch plate):**  
Less than 0.2 mm

4-34

4-38

①	GEN INFO 	②	SPEC 		
③	CHK ADJ 	④	ENG 		
⑤	CARB 	⑥	CHAS 		
⑦	ELEC 	⑧	TRBL SHTG 		
⑨		⑩			
⑪		⑫			
⑬		⑭			
⑮		⑯			
⑰		⑱		㉑	
㉒		㉓		㉔	
㉕		㉖	New		

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## ILLUSTRATED 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 Engine
- ⑤ Carburetor
- ⑥ Chassis
- 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
- ㉑ Wheel bearing grease
- ㉒ Lithium soap base grease
- ㉓ Molybdenum disulfide grease

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

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

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## XVS1100AWR(C)/XVS1100ATR(C) WIRING DIAGRAM



## SPECIFICATIONS

## GENERAL SPECIFICATIONS

Item	Standard
<b>Model code</b>	XVS1100: 5KSJ (For U.S.A.) 5KSK (For CAL) 5KSU (For U.S.A.) 5KSV (For CAL)
<b>Dimensions</b> Overall length Overall width Overall height Seat height Wheelbase Minimum ground clearance Minimum turning radius	2460 mm (96.9 in) 945 mm (37.2 in) 1,095 mm (43.1 in) 710 mm (28 in) 1645 mm (64.8 in) 140 mm (5.5 in) 3400 mm (133.9 in)
<b>Basic weight</b> With oil and a full fuel tank	285 kg (628 lb)
<b>Tire</b> Type Size Size Manufacturer Manufacturer Type Type	Tubeless 130/90-16M/C 67S 170/80-15M/C 77S BRIDGESTONE/DUNLOP BRIDGESTONE/DUNLOP EXEDRA G703/D404F EXEDRA G702/D404G
<b>Tire pressure (cold tire)</b> 0 ~ 90 kg (0 ~ 198 lb) load* front rear 90 kg (198 lb) ~ Maximum load* front rear	225 kPa (2.25 kg/cm <sup>2</sup> , 32.6 psi) 250 kPa (2.5 kg/cm <sup>2</sup> , 36.3 psi)  225 kPa (2.25 kg/cm <sup>2</sup> , 32.6 psi) 250 kPa (2.5 kg/cm <sup>2</sup> , 36.3 psi) * Load is the total weight of the cargo, rider, passenger and accessories.





# MAINTENANCE SPECIFICATIONS

## ENGINE

Item	Standard	Limit
<b>Carburetor</b>		
I.D. mark	5EL5 40 (U.S.A.)	...
	5EL6 50 (CAL)	...
Main jet (M.J)	#1: #110, #2: #112.5	...
Main air jet (M.A.J)	#55	...
Jet needle (J.N)	5DL 43-53-1	...
Needle jet (N.J)	P-0M	...
Pilot air jet (P.A.J.1)	#63.8	...
	(P.A.J.2) #145	...
Pilot outlet (P.O)	1.0	...
Pilot jet (P.J)	#17.5	...
Bypass 1 (B.P.1)	0.8	...
Bypass 2 (B.P.2)	0.8	...
Bypass 3 (B.P.3)	0.8	...
Valve seat size (V.S)	1.2	...
Starter jet (G.S.1)	#42.5	...
Starter jet (G.S.2)	0.8	...
Throttle valve size (Th.V)	#125	...
Fuel level (above the line on the float chamber) (F.L)	4 ~ 5 mm (0.16 ~ 0.20 in)	...
Engine idle speed	950 ~ 1,050 r/min	...
Intake vacuum	34.7 ~ 37.3 kPa (260 ~ 280 mmHg)	...
Engine oil temperature	75 ~ 85°C (167 ~ 185°F)	...
<b>Fuel pump</b>		
Type	Electrical type	...
Model/manufacture	UC-Z61B/MITSUBISHI	...
Consumption amperage <max>	0.8 A	...
Output pressure	12 kPa (0.12 kg/cm <sup>2</sup> , 1.7 psi)	...

## CHASSIS

Item	Standard	Limit
<b>Front suspension</b>		
Front fork travel	140 mm (5.51 in)	...
Fork spring free length	371.9 mm (14.64 in)	350 mm (13.78 in)
Fitting length	334.4 mm (13.17 in)	...
Collar length	183 mm (7.20 in)	...
Spring rate (K1)	4.41 N/mm (0.45 kg/mm, 25.18 lb/in)	...
	(K2) 6.37 N/mm (0.65 kg/mm, 36.37 lb/in)	...
Stroke (K1)	0 ~ 77.5 mm (0 ~ 3.05 in)	...
	(K2) 77.5 ~ 140 mm (3.05 ~ 5.51 in)	...
Optional spring	No	...
Oil capacity	0.483 L (483 cm <sup>3</sup> , 17.01 Imp OZ, 16.34 US OZ)	...
Oil level	104 mm (4.09 in)	...
Oil grade	Fork oil 10WT or equivalent	...

# MAINTENANCE SPECIFICATIONS

**SPEC**



Item	Standard	Limit
<b>Rear suspension</b>		
Shock absorber travel	51 mm (2.01 in)	...
Spring free length	181 mm (7.13 in)	...
Fitting length	169 mm (6.65 in)	...
Spring rate (K1)	132.3 N/mm (13.49 kg/mm, 755.43 lb/in)	...
Stroke (K1)	0 ~ 51 mm (0 ~ 2.01 in)	...
Optional spring	No	...
<b>Front wheel</b>		
Type	Cast wheel	...
Rim size	16M/C × MT 3.00	...
Rim material	Aluminum	...
Rim runout limit radial	...	1.0 mm (0.04 in)
lateral	...	0.5 mm (0.02 in)
<b>Rear wheel</b>		
Type	Cast wheel	...
Rim size	15M/C × MT4.50	...
Rim material	Aluminum	...
Rim runout limit radial	...	1.0 mm (0.04 in)
lateral	...	0.5 mm (0.02 in)

## ELECTRICAL

Item	Standard	Limit
<b>T.C.I.</b>		
Pickup coil resistance/color	189 ~ 231 Ω at 20°C (68°F)/Gray – Black	...
T.C.I. unit model/manufacture	J4T142/MITSUBISHI	...
<b>Rectifier/regulator</b>		
Regulator type	Semi-conductor, short-circuit type	...
Model/manufacture	SH678-11/SHINDENGEN	...
No load regulated voltage	14.1 ~ 14.9 V	...
Rectifier capacity	22 A	...
Withstand voltage	200 V	...



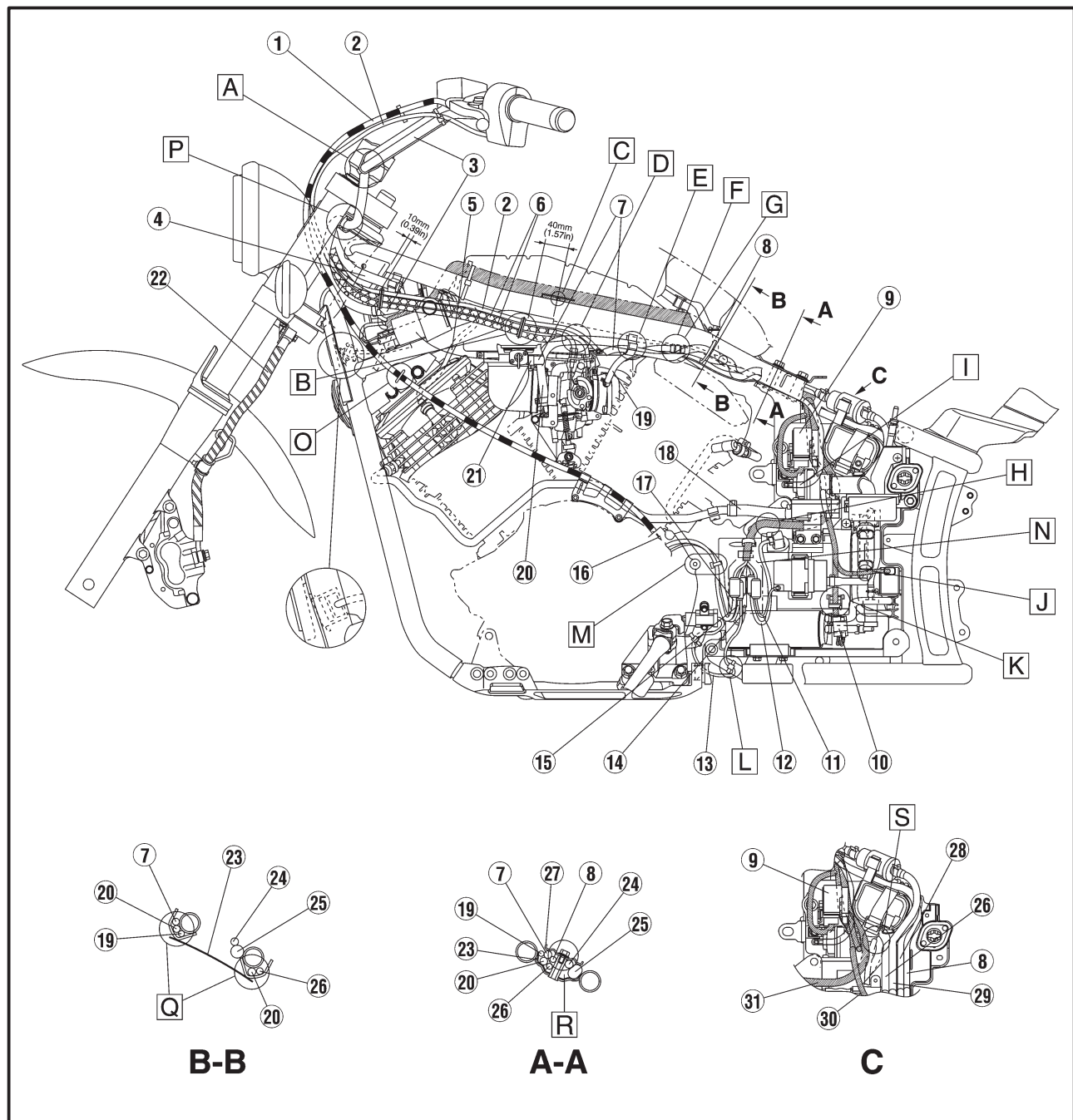
Item	Standard	Limit
<b>Electric starter system</b>		
Type	Constant mesh type	...
Starter motor:		
Model/manufacture	SM-13/MITSUBA	...
Output	0.6 kW	...
Armature coil resistance	0.025 ~ 0.035 Ω at 20°C (68°F)	...
Brush overall length	12.5 mm (0.49 in)	4 mm (0.16 in)
Brush spring pressure	7.65 ~ 10.01 N (780 ~ 1021 g, 27.51 ~ 36.01 OZ)	...
Commutator diameter	28 mm (1.10 in)	27 mm (1.06 in)
Mica undercut	0.7 mm (0.03 in)	...
Starter relay:		
Model/manufacture	MS5F-421/JIDECO	...
Amperage rating	180 A	...
<b>Starting circuit cut-off relay</b>		
Model/manufacture	G8R-30Y-U/OMRON	...
Coil resistance	202.5 ~ 247.5 Ω at 20°C (68°F)	
<b>Thermostat switch</b>		
Model/manufacture	5FU/NIPPON THERMOSTAT	...



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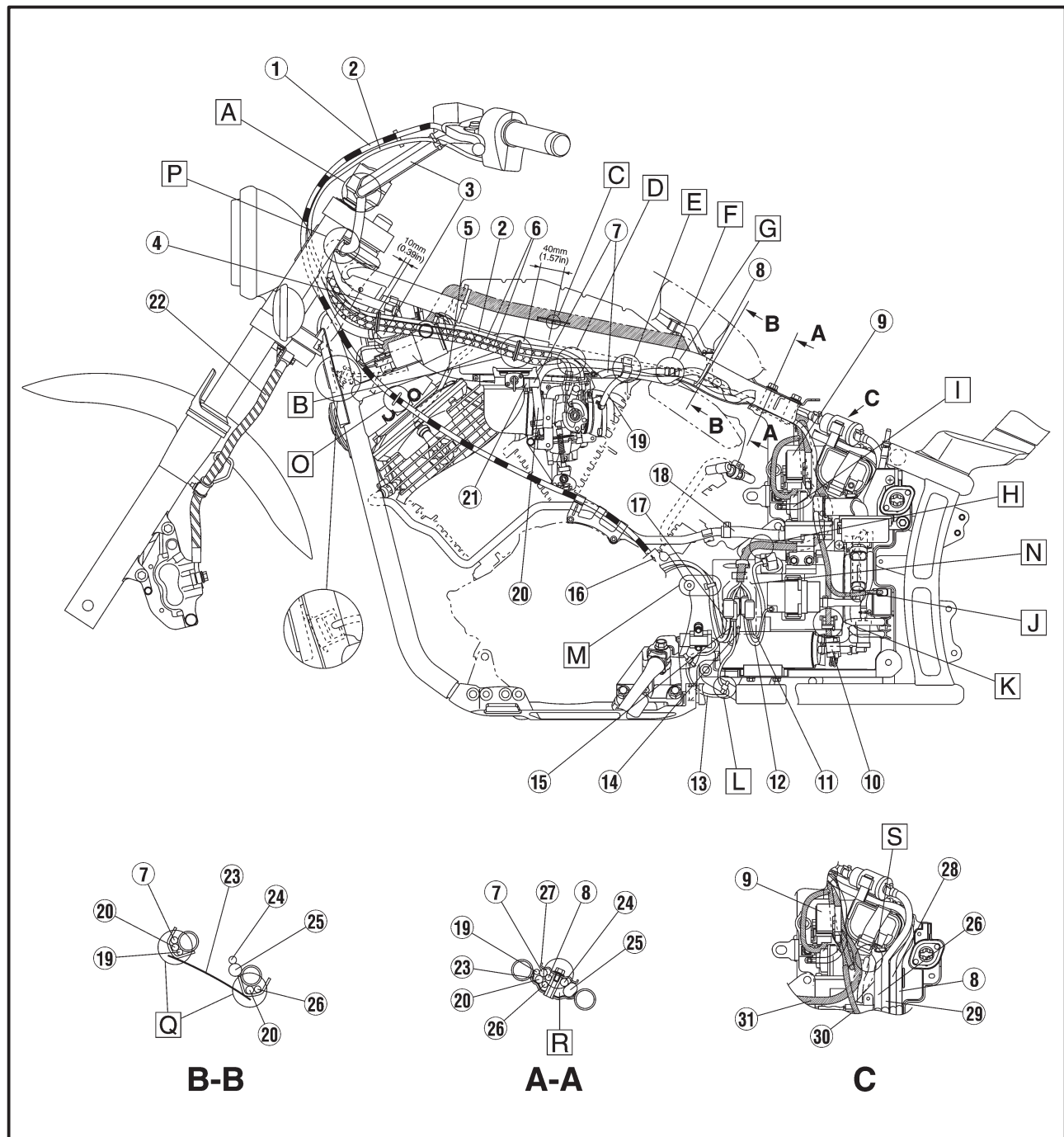
## CABLE ROUTING

- |  |  |   |
|--|--|---|
| ① Clutch cable   | ⑬ Sidestand switch lead                        | ⑳ Heat protector                                      |
| ② Starter cable  | ⑭ Neutral switch lead                          | ㉑ Speedometer lead                                    |
| ③ Handlebar switch lead (left)                             | ⑮ Pickup coil lead                             | ㉒ Wire harness  |
| ④ Handlebar switch lead (right)                            | ⑯ To engine                                    | ㉓ Purge hose (carburetor to solenoid valve) (for CAL) |
| ⑤ Spark plug lead  | ⑰ A.C. magneto lead                            | ㉔ Fitting plate                                       |
| ⑥ Throttle cable   | ⑱ Ventilation hose                             | ㉕ Fuel hose (inlet) (fuel filter to fuel pump)        |
| ⑦ Fuel hose (fuel cock to filter)                          | ㉖ Sensing hose (AI system to carburetor joint) | ㉗ Fuel hose (outlet) (fuel pump to carburetor)        |
| ⑧ Fuel breather hose (fuel tank roll over valve) (for CAL) | ㉘ Fuel hose (fuel pump to carburetor)          | ㉙ Alarm connector lead                                |
| ⑨ Fuse box   | ㉚ Clip   | ㉚ Wire harness  |
| ⑩ Alarm connector  | ㉛ Brake hose                                   |   |
| ⑪ Fuel pump lead   |  |   |
| ⑫ Speed sensor lead  |  |   |



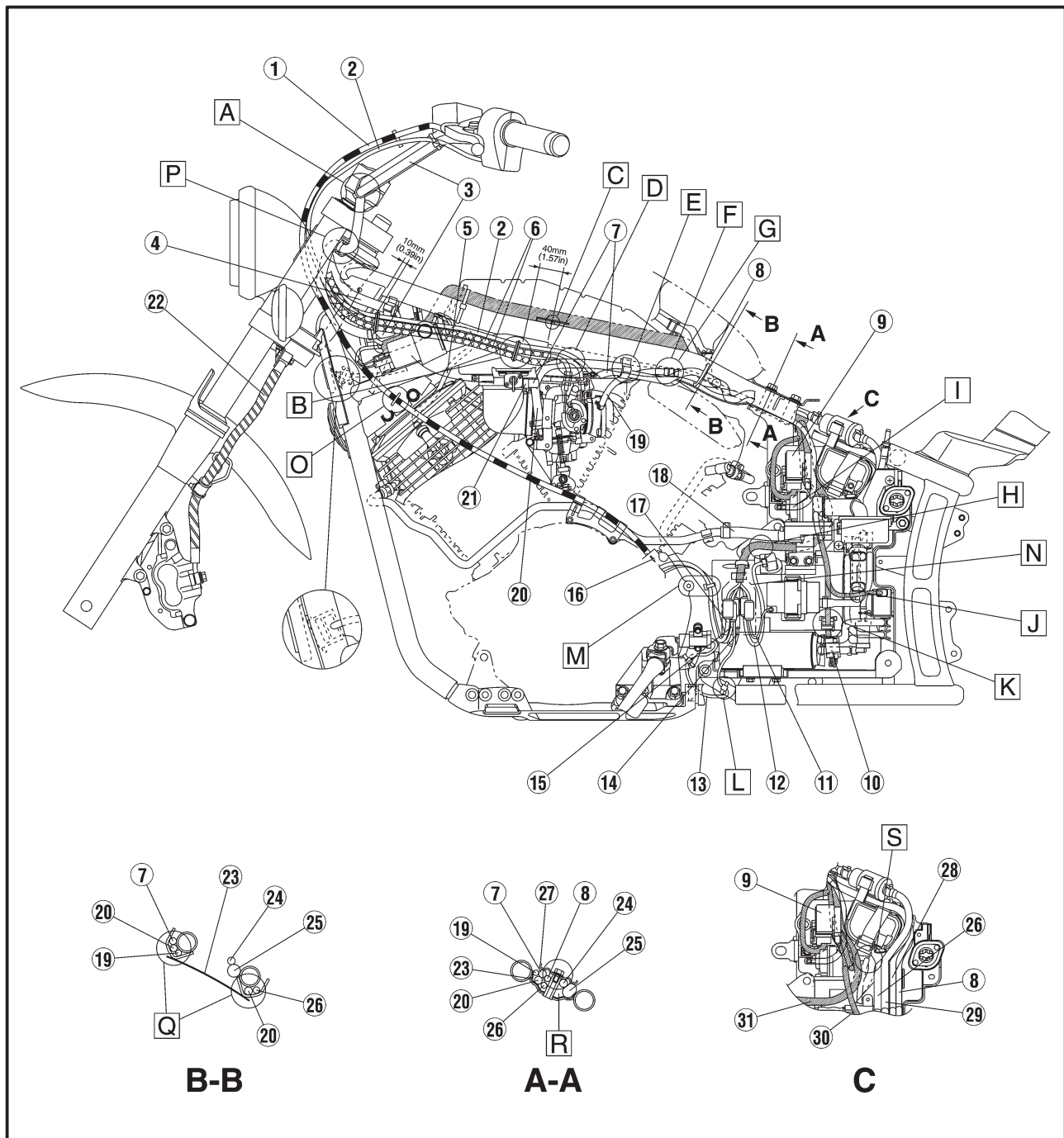


- A** Fasten the handlebar switch lead (left and right) to the handlebar with plastic locking tie and cut the end of tie.
- B** Lay out the throttle and starter cables in three rows and secure them with a clip. (Two points at the front and rear.) Care should be taken at this time so that the clip does not fall to the outside against the vertical face of the vehicle. Point the opening part of the clip to the inside of the vehicle.
- C** Clamp the wire harness with the hook of frame side.
- D** When installing the pipe of throttle cable press it inside.
- E** Clamp the fuel hoses to the frame with the clamp.
- F** Cross the fuel hose (fuel cock side) and fuel hose (carburetor side) between guide of frame and clamp. (carburetor side is upper)
- G** When connecting the sensing hose (carburetor joint to AI system) with a nozzle.
- H** Push the wire harness inside of the side cover.
- I** Push the sensing hose inside of the tool box plate and not bend the sensing hose.
- J** Through the wire harness of solenoid valve between AIS duct and fuel hose (for CAL).
- K** Fasten the alarm lead with a plastic band on the tool box plate.
- L** Fasten the sidestand switch lead to the bracket of tool box plate with plastic locking tie.





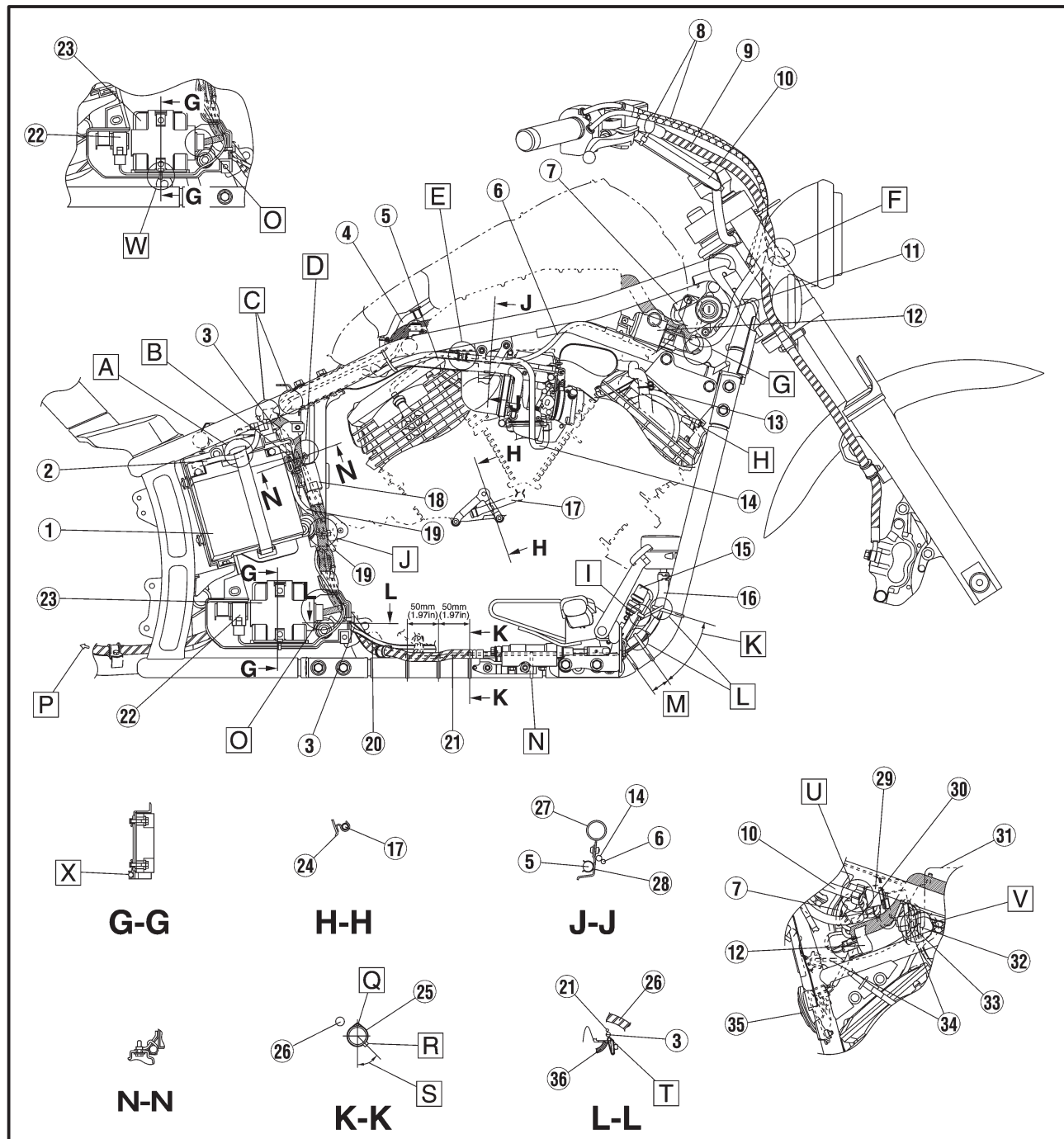
- M** Fasten the lead with locking tie near the side cover.
- N** Position the all connectors inside of the connector cover.
- O** Route the clutch cable through the cable guide.
- P** Fasten the handlebar switch leads (left and right) under the handle crown with a plastic band. Set the band at four notches and install it no slacking.
- Q** Route the each hoses through the frame guide and do not pinch it.
- R** When installing the fitting plate, do not pinch the each hoses and wireharness.
- S** When install the AI system push the wire harness to space of rear-side.







- |                                       |   |                                  |
|---------------------------------------|---|----------------------------------|
| ① Battery                             | ⑬ Breather hose                                       | ②⑤ Down tube                     |
| ② Battery positive (+) lead           | ⑭ Purge hose (carburetor to solenoid valve) (For CAL) | ②⑥ Rear brake hose               |
| ③ Starter motor positive (+) lead     | ⑮ Rear brake switch                                   | ②⑦ Frame                         |
| ④ Speedometer lead                    | ⑯ Reserve hose  | ②⑧ Stay 2                        |
| ⑤ Fuel hose (fuel pump to carburetor) | ⑰ Air filter drain hose                               | ②⑨ Turn signal relay             |
| ⑥ Spark plug lead                     | ⑱ Delay relay   | ③⑩ Handlebar switch lead (left)  |
| ⑦ Main switch lead                    | ⑲ Battery negative (-) lead                           | ③⑪ Silencer                      |
| ⑧ Throttle cable                      | ⑳ Oil level switch lead                               | ③⑫ Throttle position sensor lead |
| ⑨ Front brake hose                    | ㉑ Rear brake light switch lead                        | ③⑬ Carburetor heater lead        |
| ⑩ Handlebar switch lead (right)       | ㉒ Light reduce relay                                  | ③⑭ Thermo switch lead            |
| ⑪ Headlight lead                      | ㉓ Rectifier/regulator                                 | ③⑮ Horn                          |
| ⑫ Ignition coil                       | ㉔ Stay 1  |                                  |





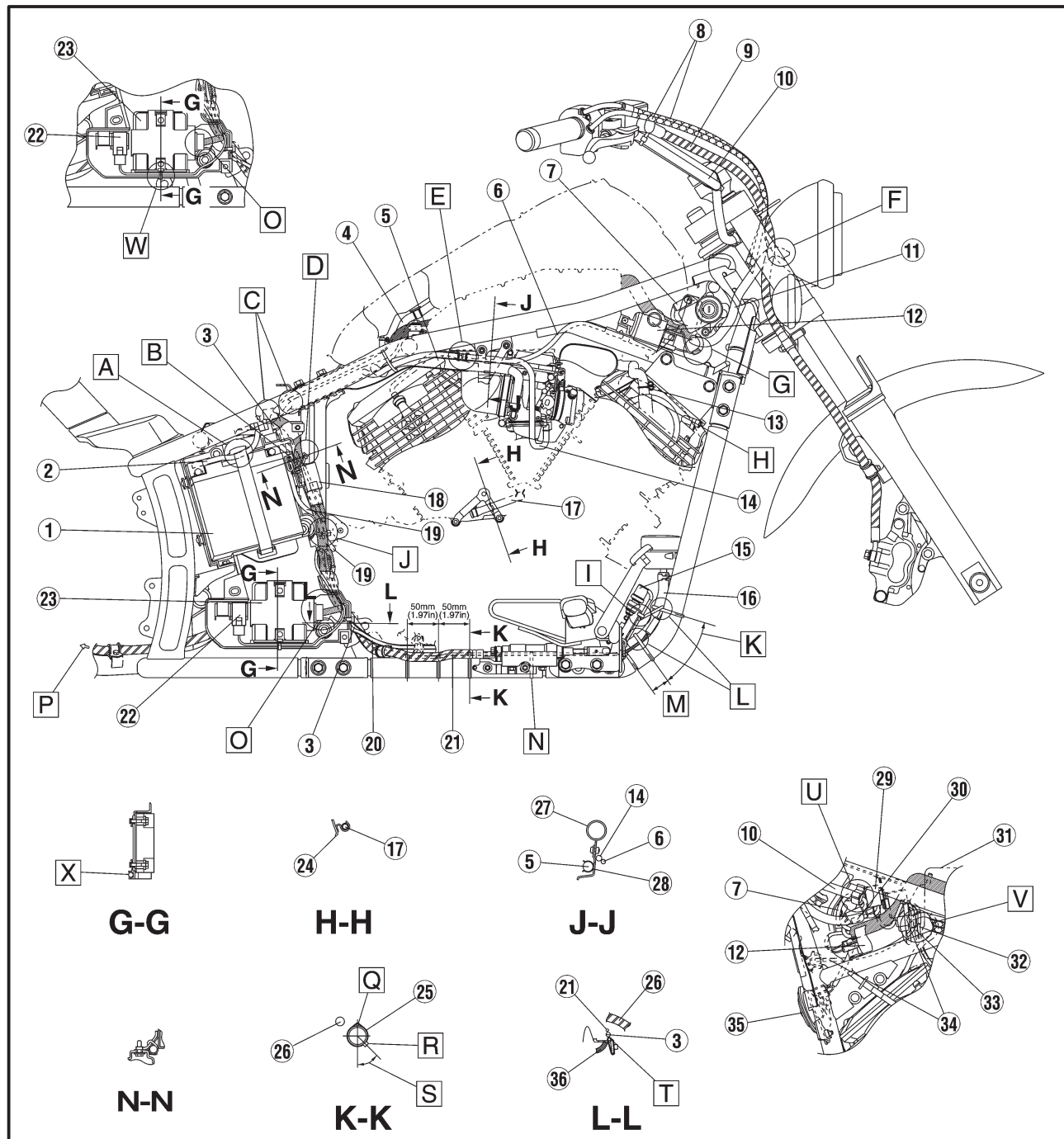
- ③⑥ Rectifier/regulator and light (reduce relay) lead

**A** Clamp the battery positive (+) lead to the battery with battery band.

**B** Connect the battery negative (-) lead and push it in to the space between battery box and battery.

**C** Push the wireharness into the space between frame and starter motor relay.

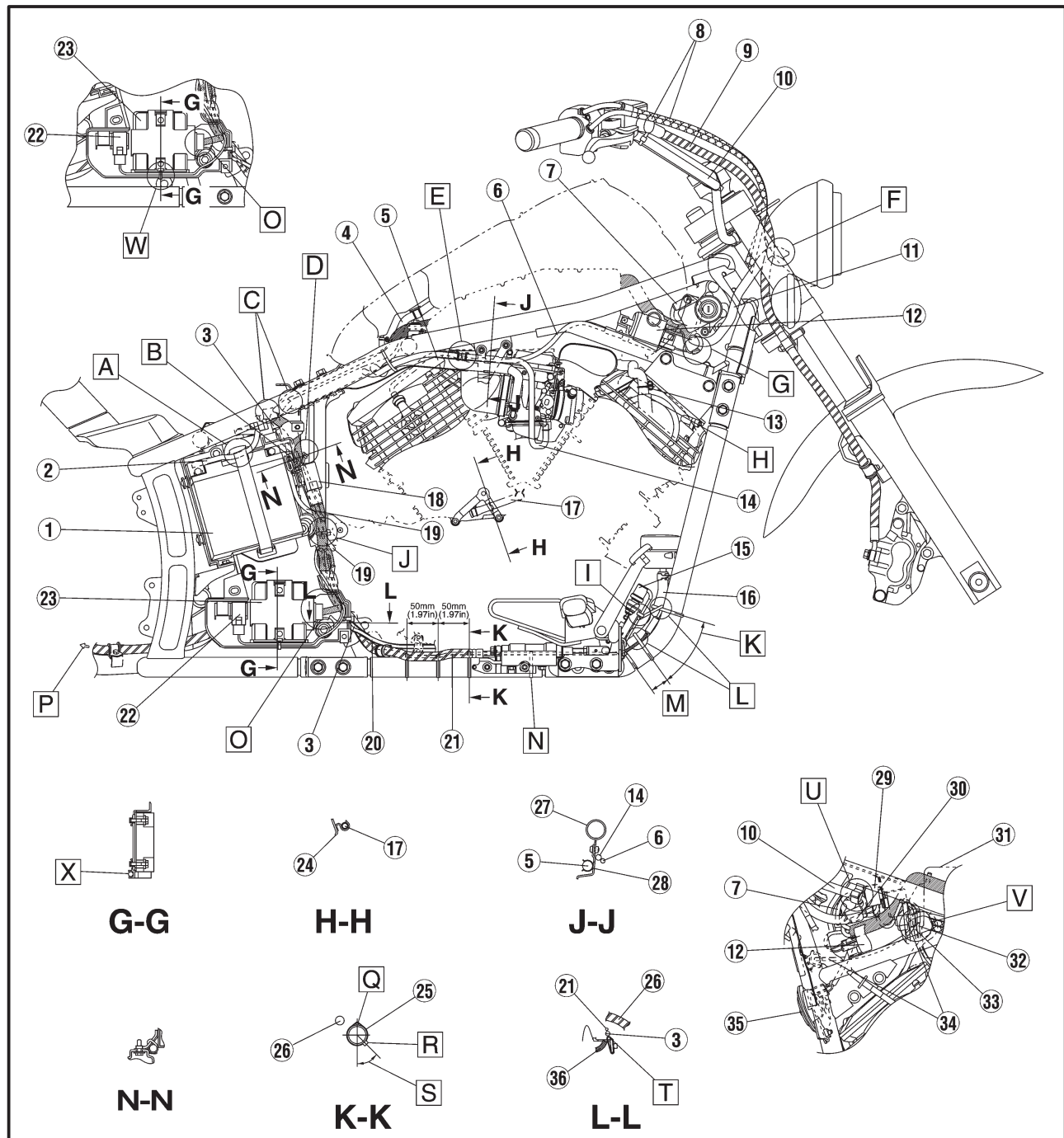
**D** Route the harness and starter motor (+) lead, that are connected to the rectifier regulator and other equipment, by the outside of the frame side bracket and then secure it by passing the band through the weight saving hole of the bracket. (The securing point should be within 0 to 10 mm (0 to 0.39 in) right above the junction point of harness side leads that are connected with the battery (-) lead.)





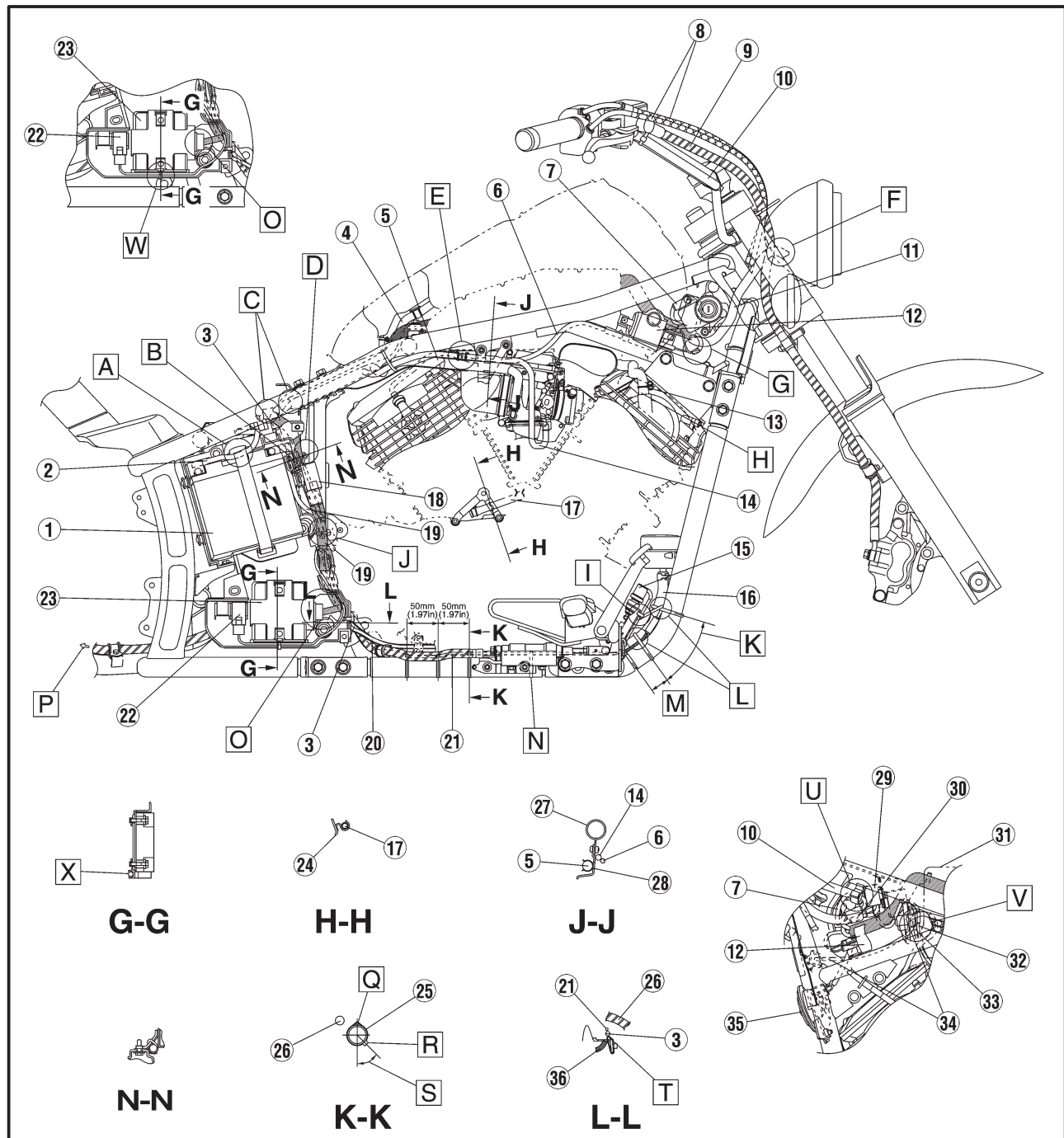


- E** Connect the purge hose (carburetor side-solenoid valve side) with joint, knob is out side of frame.
- F** Route the front turn signal/position light lead and headlight lead through the rear of headlight body hole.
- G** Connect the ignition coil lead at red tape to the right side.
- H** Knob of clip is rearside of body.
- I** Fasten the rear brake switch lead to the rear brake switch bracket with a plastic locking tie and cut of the end, inside of frame.
- J** Fasten the wire harness, starter motor positive (+) lead and battery negative (-) lead to the frame with a plastic locking tie.
- K** 70 mm (2.76 in)
- L** Fasten the rear brake switch lead and master cylinder reservoir hose to the down tube with a plastic locking tie, and cut the end of locking tie and position is inside of frame.
- M** 20 mm (0.79 in) (from bead end.)
- N** Locate the band to forward of down tube.
- O** Make sure to insert the rectifier regulator coupler sufficiently until the sound is heard.
- P** To rear brake.
- Q** Fasten the rear brake switch lead with a band to down tube. (four point)
- R** Cutting part at the edge of the band.
- S** 30° ~ 45°



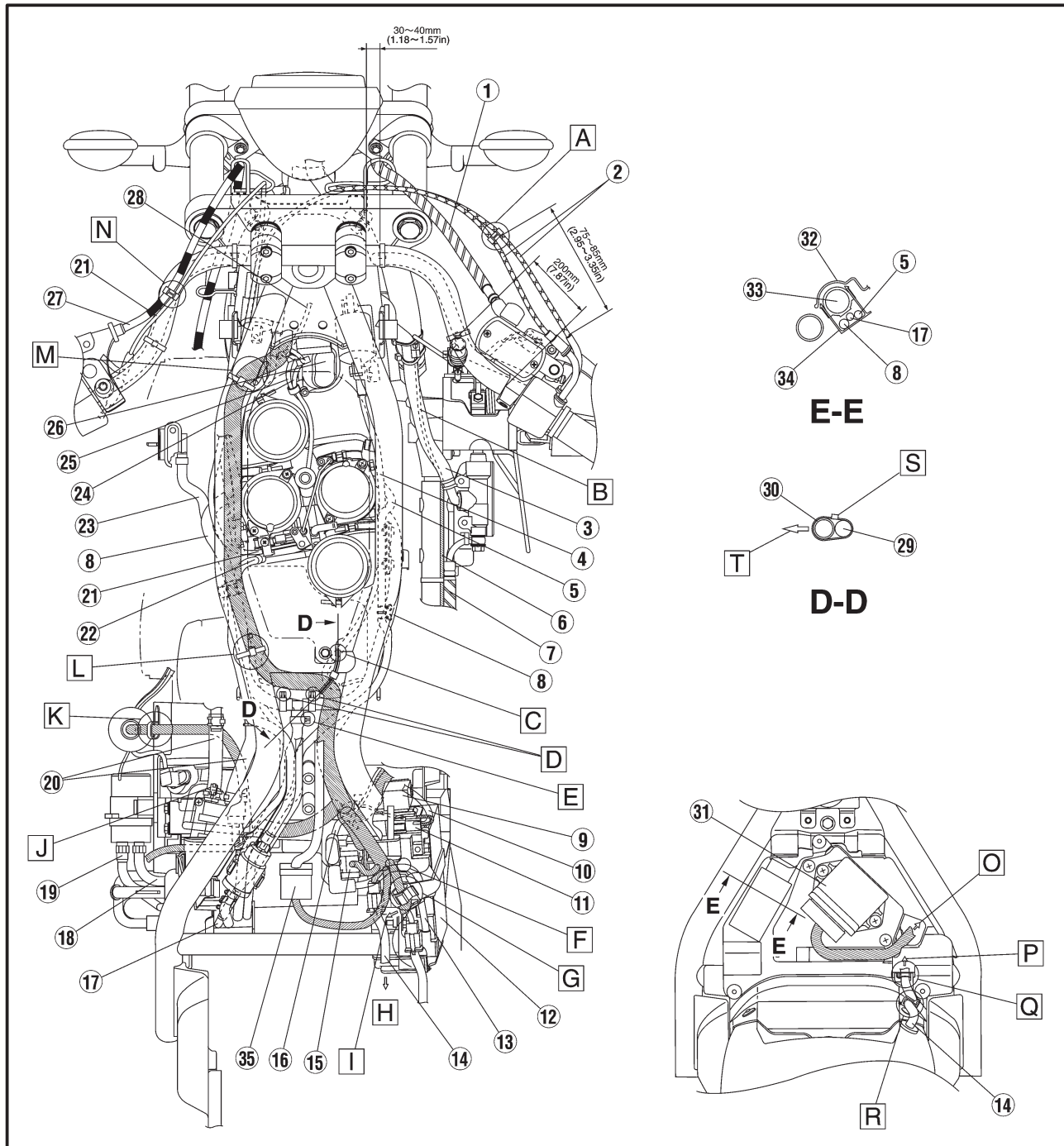


- T** Fasten the oil level sensor lead with a locking tie to battery box. Fix to the battery box with the band. To fix, align the band to the bottom of the box's hole while fixing the lead to the back of the box (inside the body). The cutting part at the edge of the band comes to the front side of the body.
- U** Clamp the handlebar switch lead (right) to the frame with a holder. The part to open and shut is outside of the body.
- V** Arrange the throttle position sensor connector, carburetor heater connector and thermo switch connector between the starting circuit cut off relay and high tension code.
- W** Secure to the battery box with the band, cut the surplus section and then point the locking section to the regulator side.
- X** Push the light reduce lead and the terminal-coupler lead for the carburetor heater into the deepest position in the groove of the battery box.



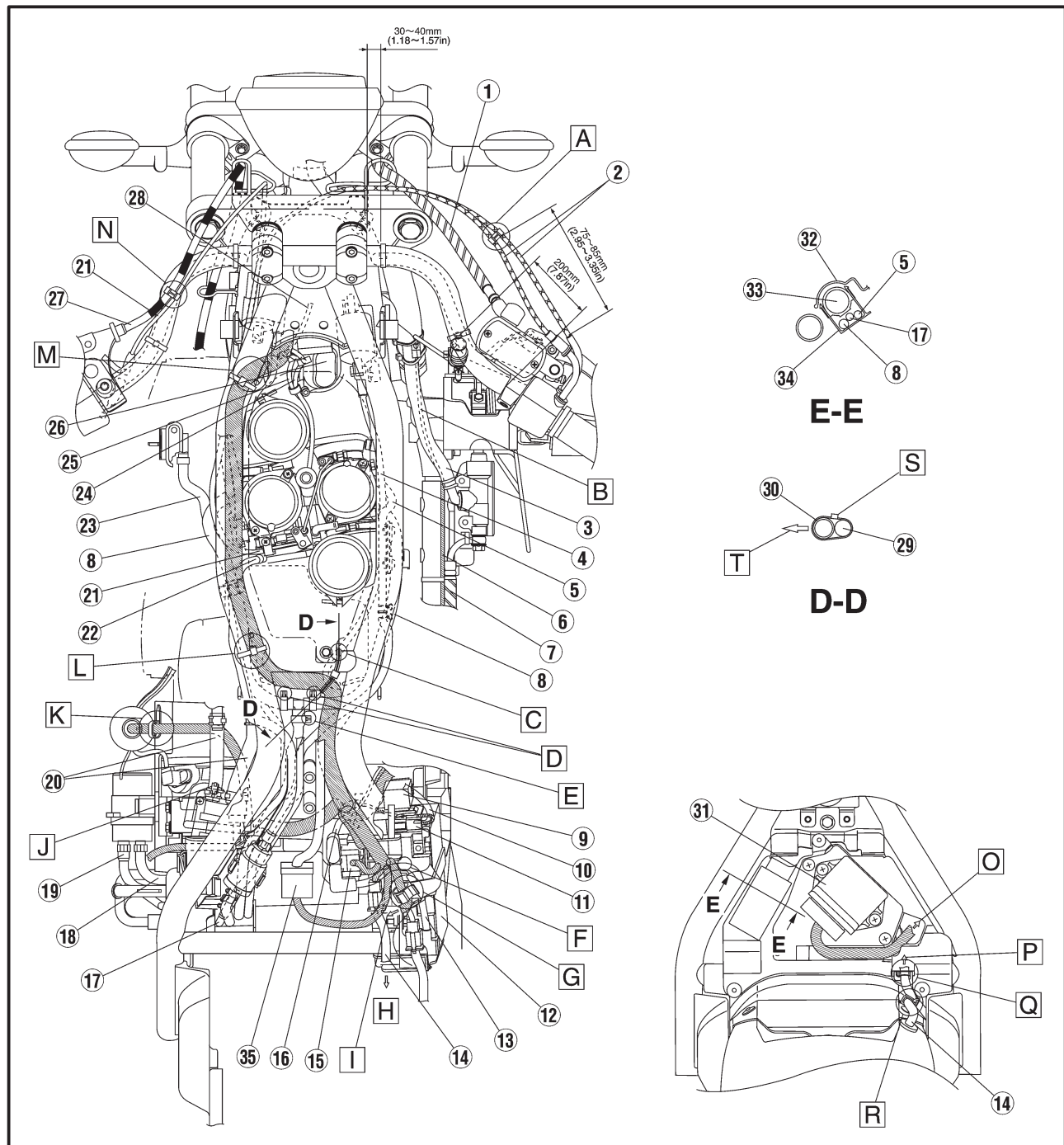


- |   |  |  |
|---|--|--|
| ① Front brake hose                                    | ⑫ Battery  | ⑳ Fuel hose (fuel cock to fuel filter) |
| ② Throttle cable                                      | ⑬ Battery positive (+) lead  | ㉑ Throttle position sensor lead        |
| ③ Master cylinder reservoir hose                      | ⑭ Tail/brake light lead  | ㉒ Carburetor heater lead               |
| ④ Spark plug lead                                     | ⑮ Starter relay  | ㉓ Tappet cover                         |
| ⑤ Purge hose (carburetor to solenoid valve) (for CAL) | ⑯ Starter motor positive (+) lead                                  | ㉔ Clutch cable                         |
| ⑥ Rear brake light switch lead                        | ⑰ Fuel tank breather hose (fuel tank to roll over valve) (for CAL) | ㉕ Thermo switch lead                   |
| ⑦ Rear brake hose                                     | ⑱ Fuel pump outlet hose  | ㉖ Wire harness                         |
| ⑧ Fuel hose (fuel pump to carburetor)                 | ⑲ Fuel pump inlet hose   | ㉗ Frame                                |
| ⑨ Delay relay   | ㉑ Ventilation hose   | ㉘ Igniter unit                         |
| ⑩ Battery negative (-) lead                           | ㉒ Starter cable  | ㉙ Igniter plate                        |
| ⑪ Battery negative (-) lead connector                 | ㉓ Sensing hose (AI system to carburetor joint)                     | ㉚ Fuel filter                          |
|   |  | ㉛ Tool box plate                       |
|   |  | ㉜ Speedometer lead connector           |





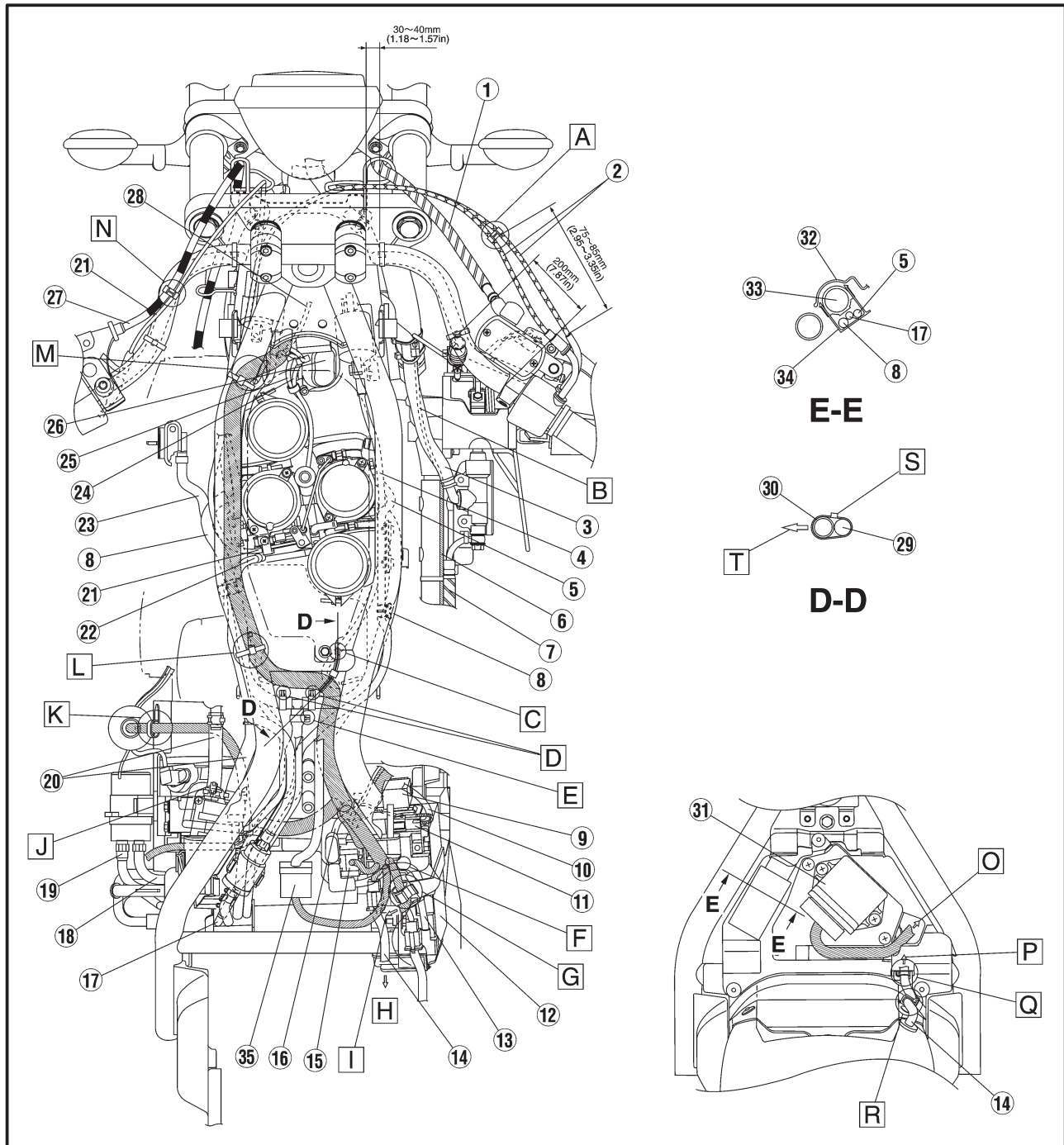
- A** Clamp the throttle cables with the holder. Position the end of clip downward.
- B** Route the rear brake switch lead under the master cylinder reservoir hose.
- C** Position the band end of right side bracket.
- D** Position the steel band end to forward.
- E** Position the steel band end to right side.
- F** Route the battery positive (+) lead through the slit of the battery box.
- G** Secure the igniter unit lead and tail brake light lead to the frame with a clamp. Point the open/close section to the upper side of the vehicle.
- H** To the rear fender.
- I** Connect the wire harness to the igniter unit through the hole of igniter plate.
- J** Position the mark on the steel band to forward.
- K** Fasten the wire harness with a band on the tool box plate.
- L** Fasten the wire harness to the frame with a plastic locking tie. Position the locking tie front of the holder.
- M** Route the wire harness outside of the guide on the frame.
- N** Clamp the clutch cable and starter cable with a holder. Position the end of holder down side.







- Route the igniter lead through the igniter plate hole to the wire-harness.
- To the wire harness.
- Clamp the tail/brake light lead with mud guard clamp.
- Clamp the tail/brake light lead with a holder on the mud guard.
- Position the locking tie upward.
- Forward.





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.

### PERIODIC MAINTENANCE CHART FOR THE EMISSION CONTROL SYSTEM

NO.		ITEM	REMARKS	INITIAL	ODOMETER READINGS					
				600 mi (1,000 km) or 1 month	4,000mi (7,000 km) or 6 months	8,000 mi (13,000 km) or 12 months	12,000 mi (19,000 km) or 18 months	16,000 mi (25,000 km) or 24 months	20,000 mi (31,000 km) or 30 months	
1	*	Valve clearance	• Check and adjust valve clearance when engine is cold.	✓	✓	✓	✓	✓	✓	
2		Spark plugs	• Check condition. • Adjust gap and clean. • Replace at 8,000 mi (13,000 km) or 12 months and thereafter every 8,000 mi (13,000 km) or 12 months.		✓	Replace.	✓	Replace.	✓	
3	*	Crankcase ventilation system	• Check ventilation hose for cracks or damage. • Replace if necessary.		✓	✓	✓	✓	✓	
4	*	Fuel line	• Check fuel hoses for cracks or damage. • Replace if necessary.		✓	✓	✓	✓	✓	
5	*	Fuel filter	• Replace initial 20,000 mi (31,000 km) and thereafter every 20,000 mi (31,000 km).						✓	
6	*	Exhaust system	• Check for leakage. • Tighten if necessary. • Replace gasket(s) if necessary.		✓	✓	✓	✓	✓	
7	*	Carburetor synchronization	• Adjust synchronization of carburetors.	✓	✓	✓	✓	✓	✓	
8	*	Idle speed	• Check and adjust engine idle speed. • Adjust cable free play.		✓	✓	✓	✓	✓	
9	*	Evaporative emission control system**	• Check control system for damage. • Replace if necessary.				✓		✓	

\* Since these items require special tools, data and technical skills, have a Yamaha dealer perform the service.

\*\* California only

### GENERAL MAINTENANCE AND LUBRICATION CHART

NO.		ITEM	REMARKS	INITIAL	ODOMETER READINGS					
				600 mi (1,000 km) or 1 month	4,000mi (7,000 km) or 6 months	8,000 mi (13,000 km) or 12 months	12,000 mi (19,000 km) or 18 months	16,000 mi (25,000 km) or 24 months	20,000 mi (31,000 km) or 30 months	
1		Engine oil	<ul style="list-style-type: none"><li>• Replace.</li><li>• Warm engine before draining.</li></ul>	✓	✓	✓	✓	✓	✓	
2	*	Engine oil filter element	<ul style="list-style-type: none"><li>• Replace.</li></ul>	✓		✓		✓		
3		Air filter element	<ul style="list-style-type: none"><li>• Clean or replace if necessary.</li></ul>		✓	✓	✓	✓	✓	
4	*	Brake system	<ul style="list-style-type: none"><li>• Check operation fluid level, and fluid leakage.</li><li>• Correct accordingly.</li><li>• Replace pads if necessary.</li></ul>	✓	✓	✓	✓	✓	✓	
5	*	Clutch	<ul style="list-style-type: none"><li>• Check operation.</li><li>• Adjust or replace cable.</li></ul>	✓	✓	✓	✓	✓	✓	
6	*	Final gear oil	<ul style="list-style-type: none"><li>• Check oil level and leakage.</li><li>• Replace at initial 600 mi (1,000 km) or 1 month and thereafter every 18,000 mi (25,000 km) or 24 months.</li><li>• Hypoid gear oil SAE 80 (API GL4)</li></ul>	Replace.		Check.		✓		
7	*	Control and meter cables	<ul style="list-style-type: none"><li>• Apply chain, lube thoroughly.</li><li>• Yamaha Chain and Cable Lube or engine oil SAE 10W-30 (API SE)</li></ul>	✓	✓	✓	✓	✓	✓	

# GENERAL MAINTENANCE AND LUBRICATION CHART

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NO.		ITEM	REMARKS	INITIAL	ODOMETER READINGS					
				600 mi (1,000 km) or 1 month	4,000mi (7,000 km) or 6 months	8,000 mi (13,000 km) or 12 months	12,000 mi (19,000 km) or 18 months	16,000 mi (25,000 km) or 24 months	20,000 mi (31,000 km) or 30 months	
8	*	Swingarm pivot shaft	<ul style="list-style-type: none"><li>• Check swingarm pivot for play.</li><li>• Correct if necessary.</li><li>• Moderately repack every 16,000 mi (25,000 km) or 24 months with lithium-soap-based grease.</li></ul>						Repack.	
9	*	Rear suspension link pivots	<ul style="list-style-type: none"><li>• Check operation.</li><li>• Correct if necessary.</li></ul>			✓			✓	
10		Brake and clutch lever pivot shafts	<ul style="list-style-type: none"><li>• Apply chain lube thoroughly.</li><li>• Lithium-soap-based grease.</li></ul>		✓	✓	✓	✓	✓	✓
11		Brake pedal and shift pedal shafts	<ul style="list-style-type: none"><li>• Apply chain lube thoroughly.</li><li>• Lithium-soap-based grease.</li></ul>		✓	✓	✓	✓	✓	✓
12		Sidestand pivot	<ul style="list-style-type: none"><li>• Check operation.</li><li>• Lubricate and repair if necessary.</li><li>• Lithium-soap-based grease.</li></ul>		✓	✓	✓	✓	✓	✓
13	*	Front fork	<ul style="list-style-type: none"><li>• Check operation and for oil leakage.</li><li>• Correct accordingly.</li></ul>		✓	✓	✓	✓	✓	✓
14	*	Steering bearings	<ul style="list-style-type: none"><li>• Check bearing play and steering for smooth operation.</li><li>• Correct if necessary.</li><li>• Moderately repack every 18,000 mi (25,000 km) or 24 months with lithium-soap-based grease.</li></ul>		✓	✓	✓		Repack.	✓
15	*	Wheel bearings	<ul style="list-style-type: none"><li>• Check bearings for looseness and damage.</li><li>• Replace if necessary.</li></ul>		✓	✓	✓	✓	✓	✓
16	*	Wheels	<ul style="list-style-type: none"><li>• Check runout and for damage.</li></ul>		✓	✓	✓	✓	✓	✓
17	*	Sidestand switch	<ul style="list-style-type: none"><li>• Check operation.</li><li>• Replace if necessary.</li></ul>	✓	✓	✓	✓	✓	✓	✓
18	*	Tires	<ul style="list-style-type: none"><li>• Check tire tread wear and for damage.</li><li>• Replace if necessary.</li></ul>		✓	✓	✓	✓	✓	✓
19	*	Shock absorber assembly	<ul style="list-style-type: none"><li>• Check operation and for oil leakage.</li><li>• Replace if necessary.</li></ul>		✓	✓	✓	✓	✓	✓
20	*	Chassis fasteners	<ul style="list-style-type: none"><li>• Make sure that all nuts, bolts and screws are properly tightened.</li><li>• Tighten if necessary.</li></ul>		✓	✓	✓	✓	✓	✓
21	*	Throttle grip housing and cable	<ul style="list-style-type: none"><li>• Check operation and free play.</li><li>• Adjust the throttle cable free play if necessary.</li><li>• Lubricate the throttle grip housing and cable.</li></ul>	✓	✓	✓	✓	✓	✓	✓

\* Since these items require special tools, data and technical skills, have a Yamaha dealer perform the service.

## NOTE:

From 24,000 mi (37,000 km) or 36 months, repeat the maintenance intervals starting from 4,000 mi (7,000 km) or 6 months.

## NOTE:

### ● Air filter

- This model's air filter is equipped with a disposable oil-coated paper element, which must not be cleaned with compressed air to avoid damaging it.
- The air filter element needs to be replaced more frequently when riding in unusually wet or dusty areas.

### ● Hydraulic brake service

- After disassembling the brake master cylinders and calipers, always change the fluid. Regularly check the brake fluid levels and fill the reservoirs as required.
- Every two years replace the internal components of the brake master cylinders and calipers, and change the brake fluid.
- Replace the brake hoses every four years and if cracked or damaged.

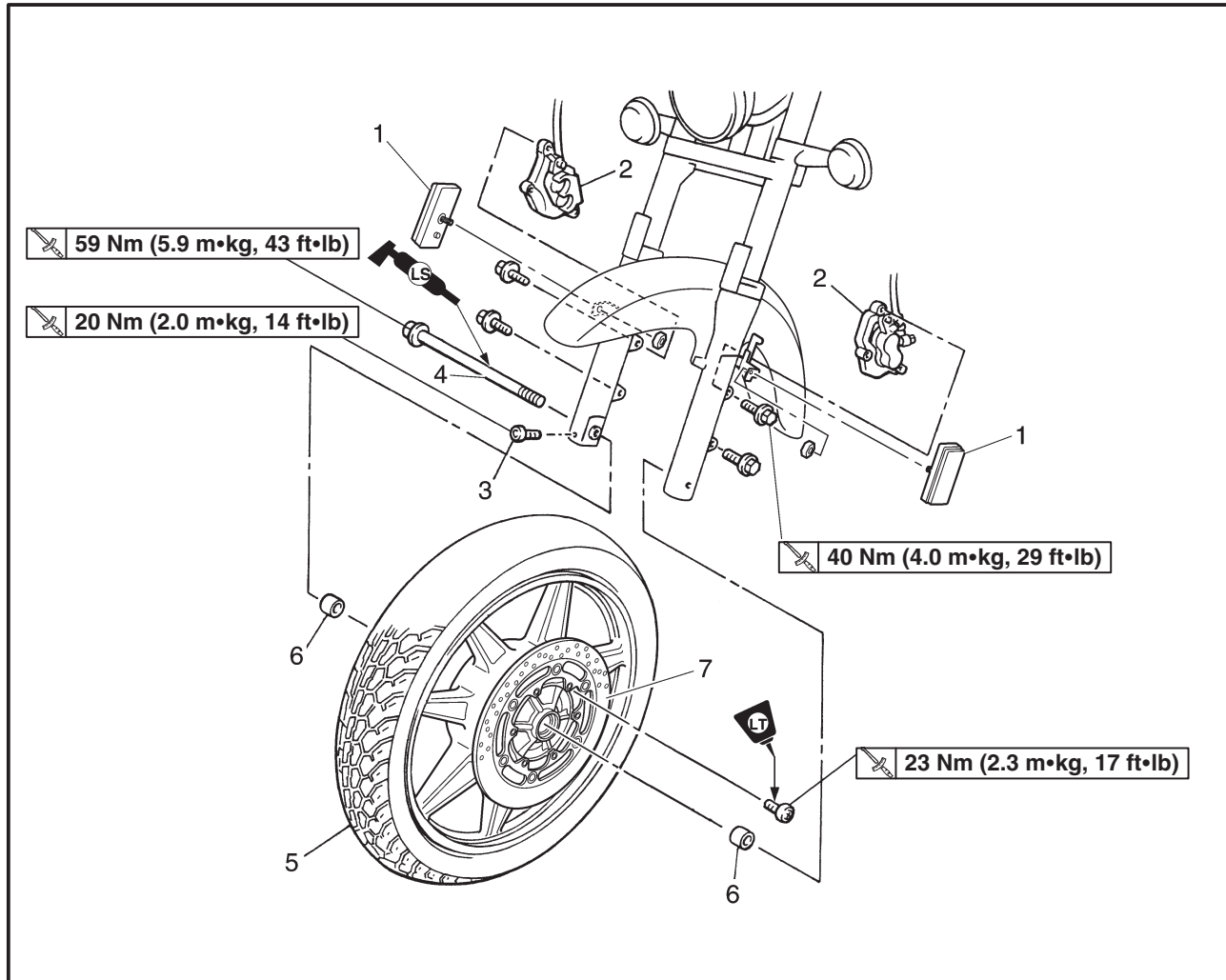
### ● Engine oil type

- Yamalube 4 (20W-40) or engine oil SAE 20W-40 (API SE) for temperatures of 5°C (40°F) or above.
- Yamalube 4 (10W-30) or engine oil SAE 10W-30 (API SE) for temperatures of 15°C (60°F) or below.



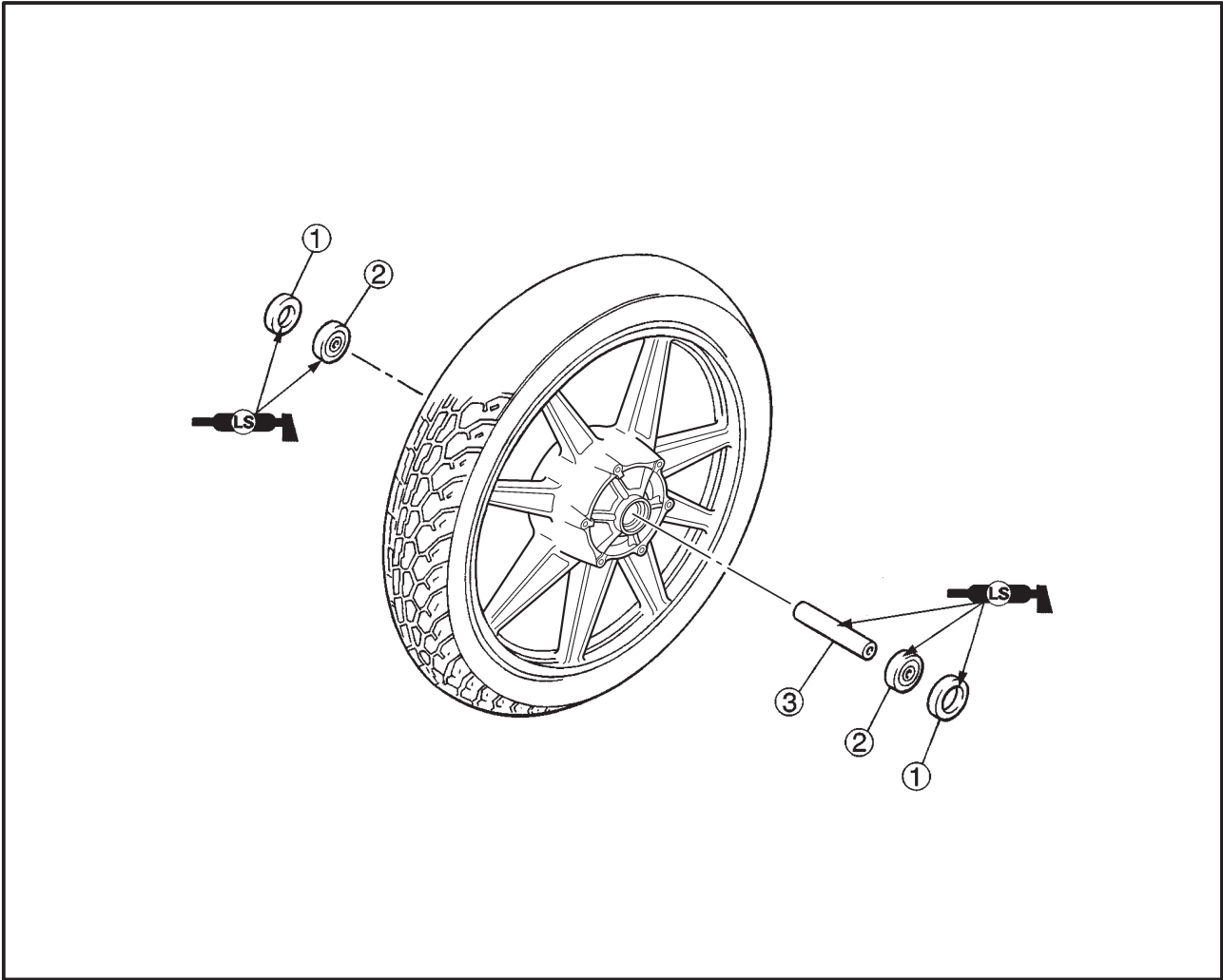
## CHASSIS

## FRONT WHEEL AND BRAKE DISCS



Order	Job name/Part name	Q'ty	Remarks
	<b>Removing the front wheel and brake discs</b>		<p>Remove the parts in the order listed. Stand the motorcycle on a level surface.</p> <p><b>⚠ WARNING</b></p> <p><b>Securely support the motorcycle so there is no danger of it falling over.</b></p>
1	Reflector	2	<p>Refer to "REMOVING/INSTALLING THE FRONT WHEEL".</p>
2	Brake calipers	2	
3	Front wheel axle pinch bolt	1	
4	Front wheel axle	1	
5	Front wheel assembly	1	
6	Collars	2	<p>Refer to "INSTALLING THE FRONT WHEEL".</p> <p>For installation, reverse the removal procedure.</p>
7	Brake discs	2	





Order	Job name/Part name	Q'ty	Remarks
①	<b>Disassembling the front wheel</b>	2	Disassemble the parts in the order listed.
②	Oil seals	2	
③	Bearings	1	
	Collar		For assembly, reverse the disassembly procedure.



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## REMOVING THE FRONT WHEEL

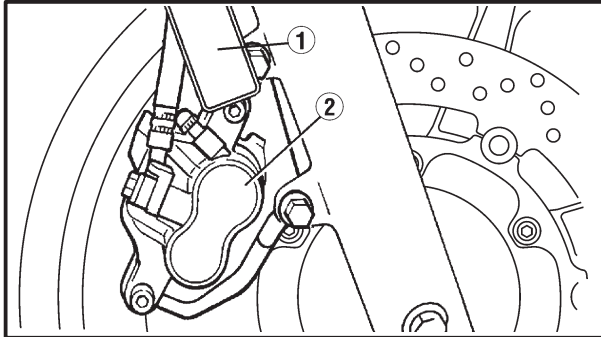
1. Stand the motorcycle on a level surface.

### **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.

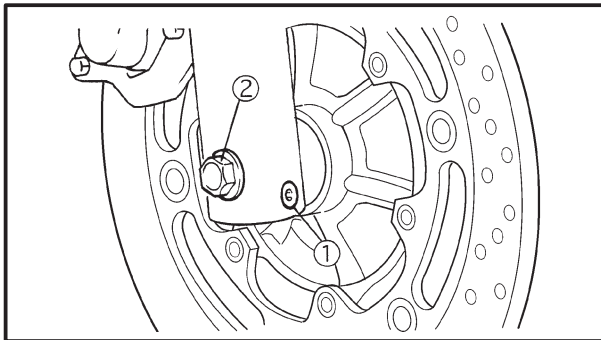


2. Remove:

- reflectors ① (left and right)
- brake calipers ② (left and right)

### **NOTE:**

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



3. Loosen:

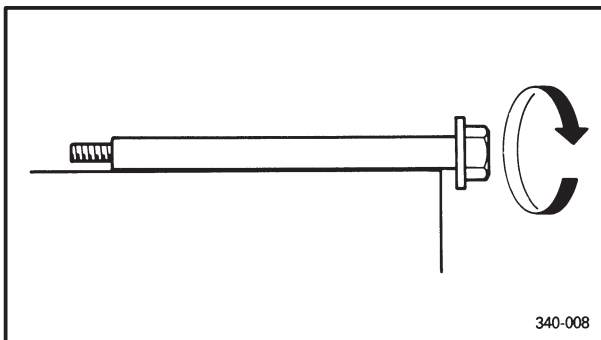
- pinch bolt (front wheel axle) ①
- front wheel axle ②

4. Elevate:

- front wheel

### **NOTE:**

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



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## CHECKING THE FRONT WHEEL

1. Check:

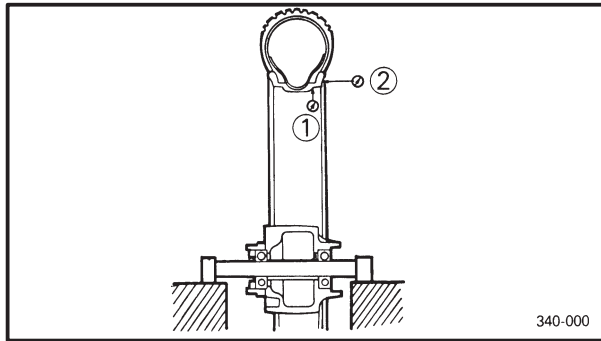
- wheel axle
- Roll the wheel axle on a flat surface.  
Bends → Replace.

### **WARNING**

**Do not attempt to straighten a bent wheel axle.**

2. Check:

- tire
  - front wheel
- Damage/wear → Replace.  
Refer to “CHECKING THE TIRES” and “CHECKING THE WHEELS” in chapter 3.



### 3. Measure:

- front wheel radial runout ①
- front wheel lateral runout ②

Over the specified limits → Replace.



**Front wheel radial runout limit**  
**1.0 mm (0.04 in)**

**Front wheel lateral runout limit**  
**0.5 mm (0.02 in)**

4. Check:

- collars  
Damage/wear → Replace.

**⚠ WARNING**

- **New tires have a relatively low grip on the road surface until they have been slightly worn.**

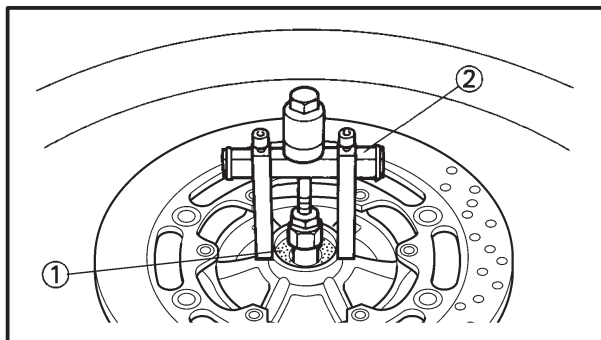
**Therefore, approximately 100 km (62 mi) should be traveled at normal speed before any highspeed riding is done.**

## 5. Check

- wheel bearings  
Front wheel turns roughly or is loose → Replace the wheel bearings.
- oil seals  
Damage/wear → Replace.

6. Replace:

- wheel bearings **New**
- oil seals **New**

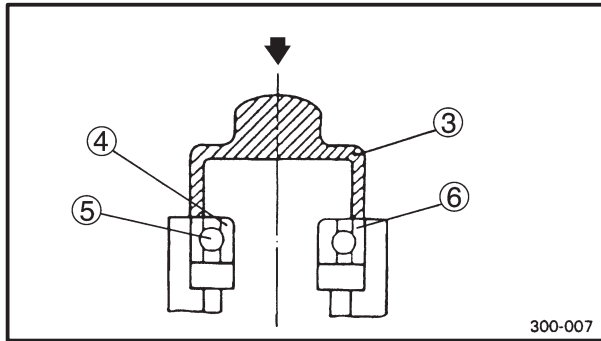


- a. Clean the outside of the front wheel hub.
- b. Remove the oil seals ① with a flat-head screwdriver.

**NOTE:**

To prevent damaging the wheel, place a rag between the screwdriver and the wheel surface.

- c. Remove the wheel bearings with a general bearing puller ②.
- d. Install the new wheel bearings and oil seals in the reverse order of disassembly.

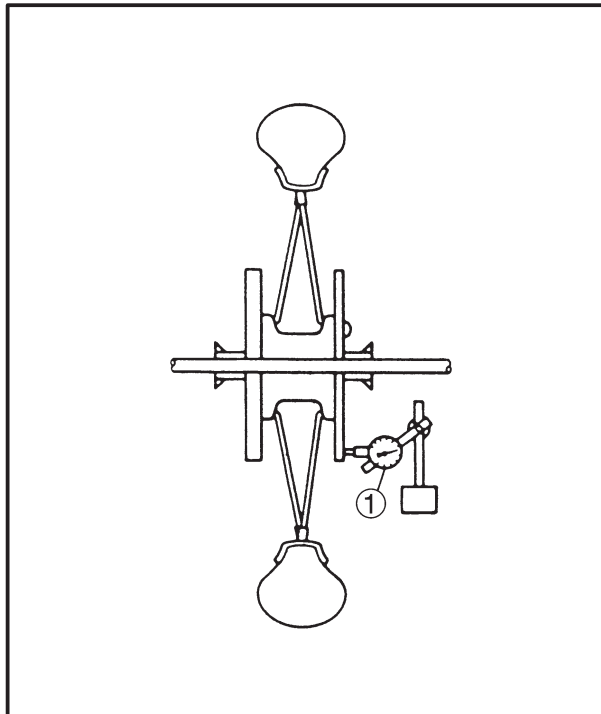


## CAUTION:

Do not contact the wheel bearing center race ④ or balls ⑤. Contact should be made only with the outer race ⑥.

## NOTE:

Use a socket ③ that matches the diameter of the wheel bearing outer race and oil seal.



EAS00531

## CHECKING THE BRAKE DISCS

The following procedure applies to all of the brake discs.

1. Check:
  - brake disc
  - Damage/galling → Replace.
2. Measure:
  - brake disc deflection ①
  - Out of specification → Correct the brake disc deflection or replace the brake disc.



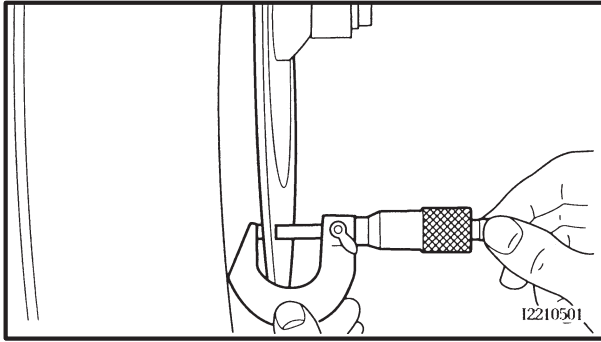
### Brake disc deflection limit (maximum)

Front: 0.15 mm (0.006 in)

Rear: 0.15 mm (0.006 in)

- a. Place the motorcycle on a suitable stand so that the wheel is elevated.
- b. Before measuring the front brake disc deflection, turn the handlebar to the left or right to ensure that the front wheel is stationary.
- c. Remove the brake caliper.
- d. Hold the dial gauge at a right angle against the brake disc surface.
- e. Measure the deflection 2 ~ 3 mm (0.078 ~ 0.12 in) below the edge of the brake disc.





## 3. Measure:

- brake disc thickness

Measure the brake disc thickness at a few different locations.

Out of specification → Replace.



## Brake disc thickness limit (minimum)

Front: 4.5 mm (0.18 in)

Rear: 5.5 mm (0.22 in)

## 4. Adjust:

- brake disc deflection



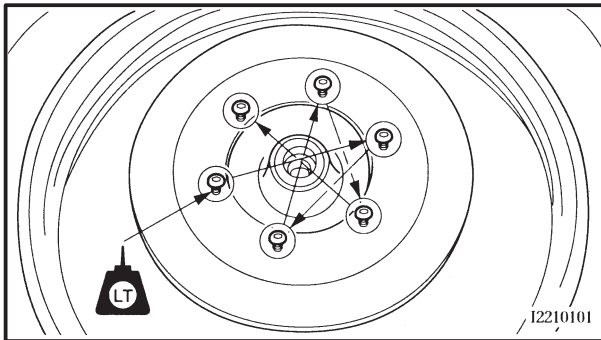
a. Remove the brake disc.

b. Rotate the brake disc by one bolt hole.

c. Install the brake disc.

## NOTE:

Tighten the brake disc bolts in stages and in a crisscross pattern.



## Brake disc bolt

23 Nm (2.3 m•kg, 17 ft•lb)

LOCTITE®

d. Measure the brake disc deflection.

e. If out of specification, repeat the adjustment steps until the brake disc deflection is within specification.

f. If the brake disc deflection cannot be brought within specification, replace the brake disc.





EAS00544

## INSTALLING THE FRONT WHEEL

The following procedure applies to both brake discs.

1. Lubricate:
  - wheel axle
  - oil seallips

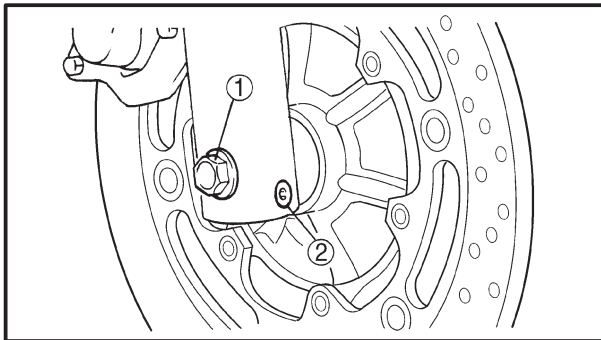
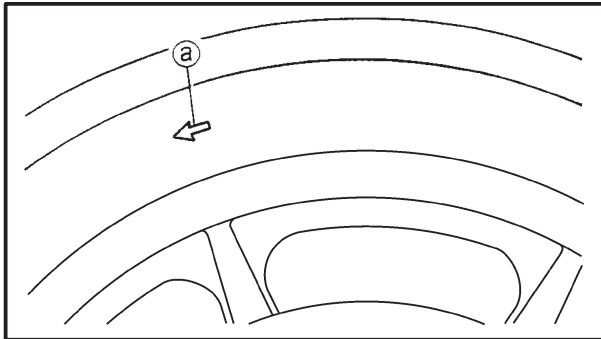


**Recommended lubricant**  
**Lithium soap base grease**


2. Install:
  - front wheel assembly


### NOTE:

The arrow mark (a) on the tire must point in the direction of the wheel.



3. Tighten:

• wheel axle ①  **59 Nm (5.9 m•kg, 29 ft•lb)**

• wheel axle pinch bolt ②  **20 Nm (2.0 m•kg, 14 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.**

4. Install:

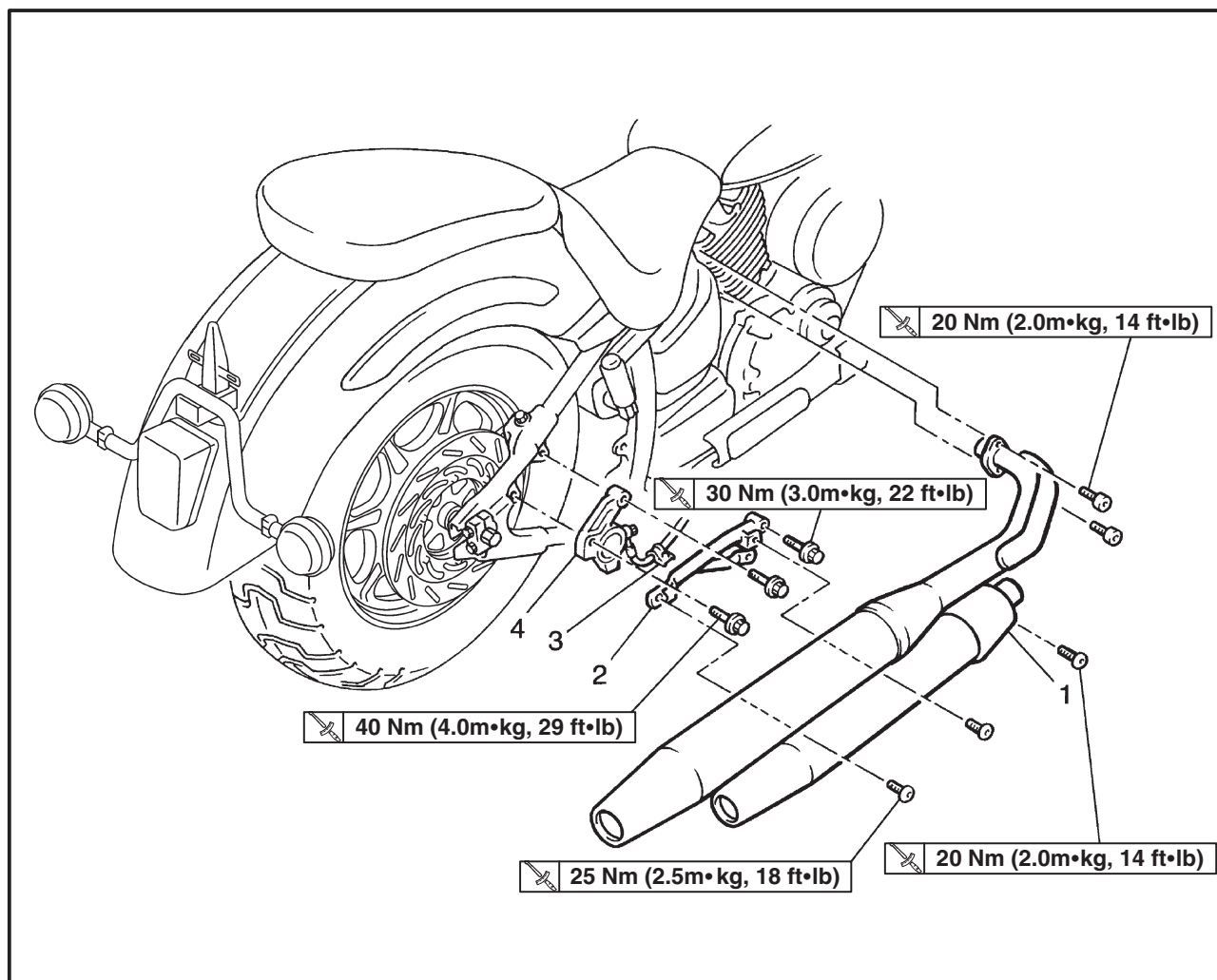
• brake calipers  **40 Nm (4.0 m•kg, 29 ft•lb)**  
• reflectors

### ⚠ WARNING

**Make sure that the brake hose is routed properly.**



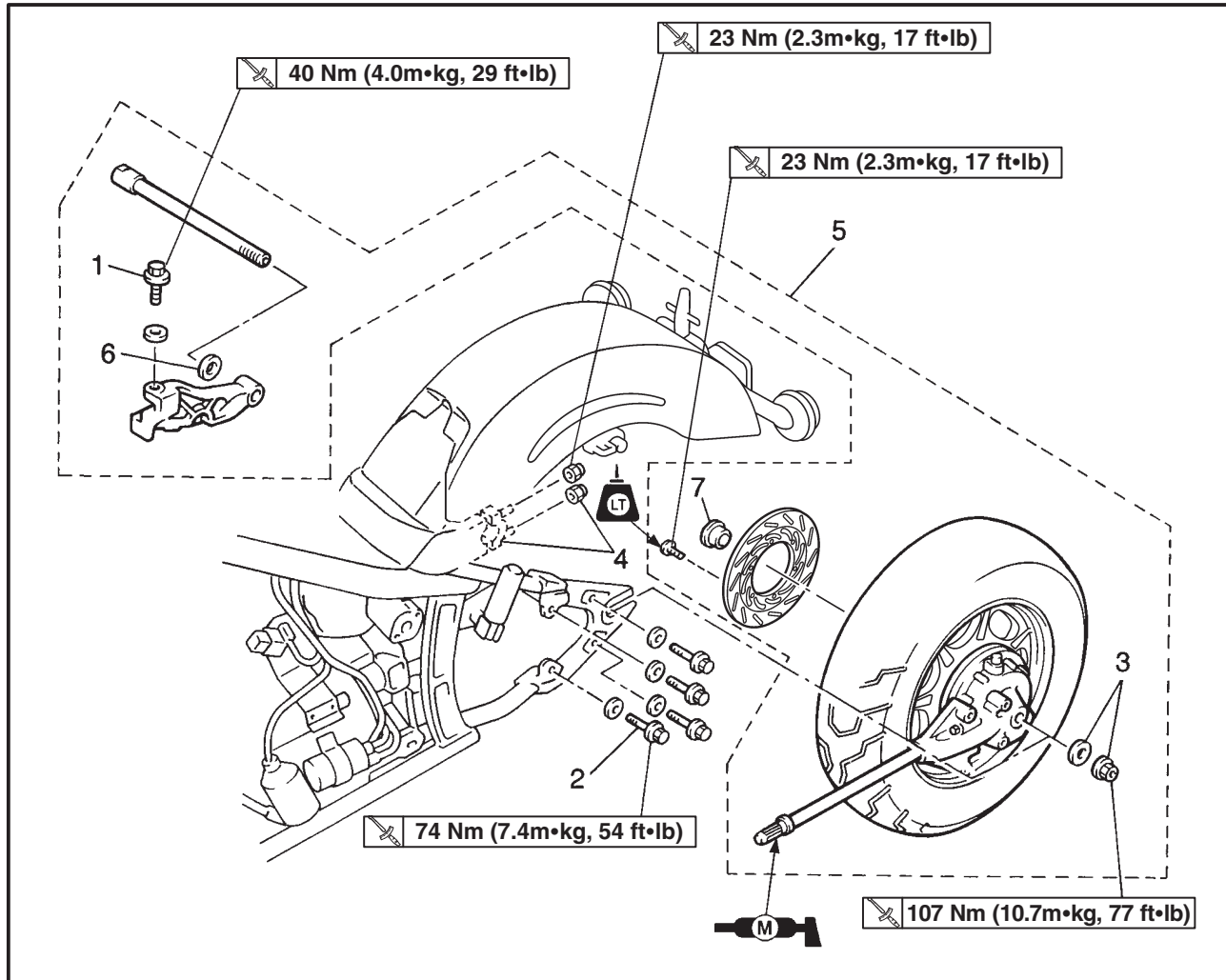
# REAR WHEEL AND BRAKE DISC MUFFLER AND BRAKE CALIPER



Order	Job name/Part name	Q'ty	Remarks
	<b>Removing the muffler and brake caliper</b>		Remove the parts in the order listed.
1	Muffler	1	
2	Muffler stay	1	
3	Brake hose holder	1	
4	Brake caliper	1	Refer to "REMOVING THE REAR WHEEL". For installation, reverse the removal procedure.

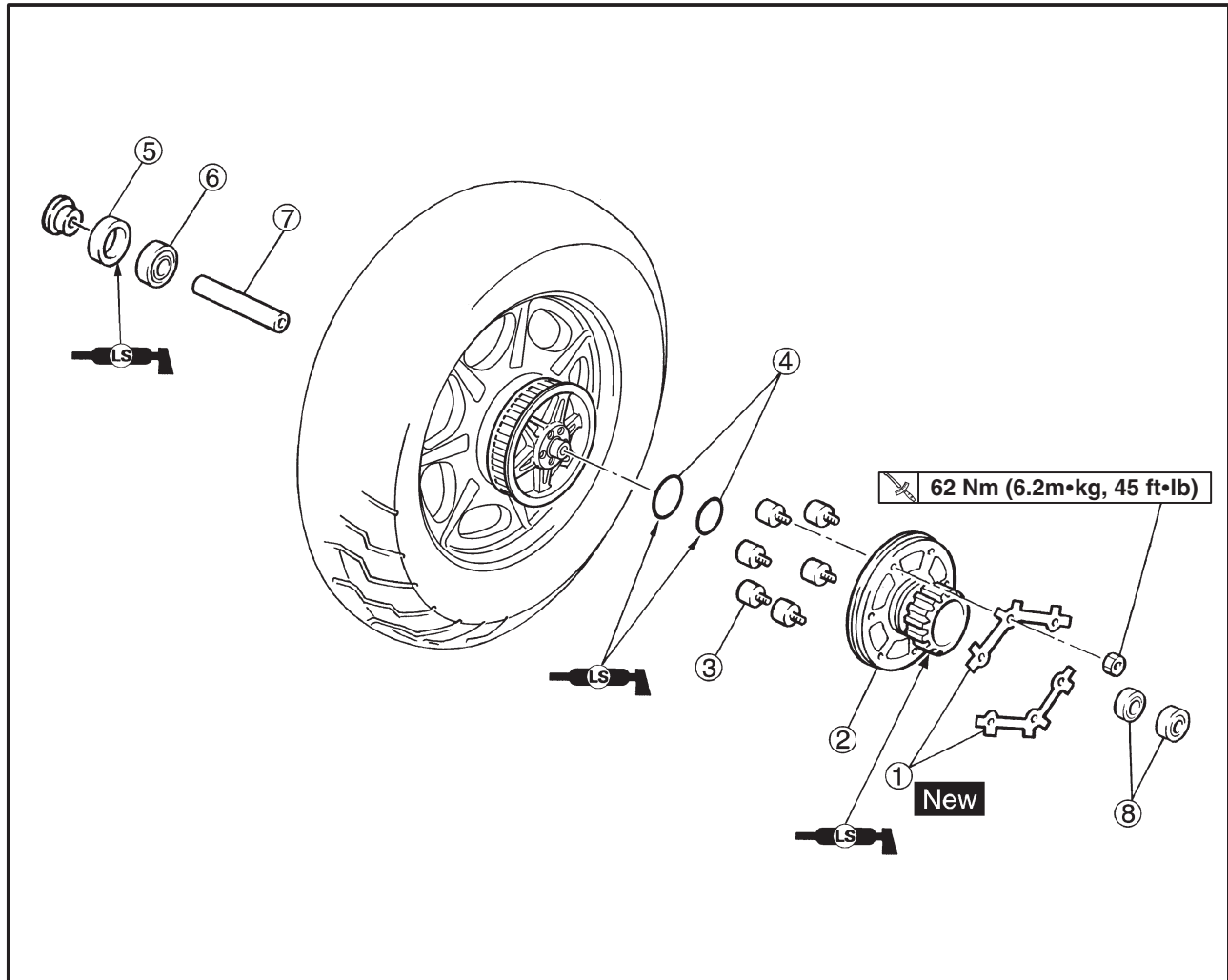


### REAR WHEEL



Order	Job name/Part name	Q'ty	Remarks
	<b>Removing the rear wheel</b>		Remove the parts in the order listed. <b>⚠ WARNING</b> <b>Securely support the motorcycle so there is no danger of it falling over.</b>
	Final gear oil		Drain Refer to "FINAL GEAR OIL REPLACEMENT" in CHAPTER 3.
	Fuel tank and seats		Refer to "FUEL TANK AND SEATS" in CHAPTER 3.
	Rear fender assembly		Loosen
1	Brake caliper bracket bolt	1	Refer to "REMOVING/INSTALLING THE REAR WHEEL".
2	Bolts	4	
3	Rear axle nut/washer	1/1	
4	Rear axle end nuts/axle holder	2/1	
5	Rear wheel assembly	1	
6	Washer	1	For installation, reverse the removal procedure.
7	Collar	1	





Order	Job name/Part name	Q'ty	Remarks
	<b>Rear wheel disassembly</b>		
	Disassembling the rear wheel		Remove the parts in the order listed.
①	Lock washers	2	
②	Clutch hub	1	
③	Dampers	6	
④	O-rings	2	
⑤	Oil seal	1	
⑥	Bearing	1	
⑦	Spacer	1	
⑧	Bearings	2	
			For assembly, reverse the disassembly procedure.



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## REMOVING THE REAR WHEEL

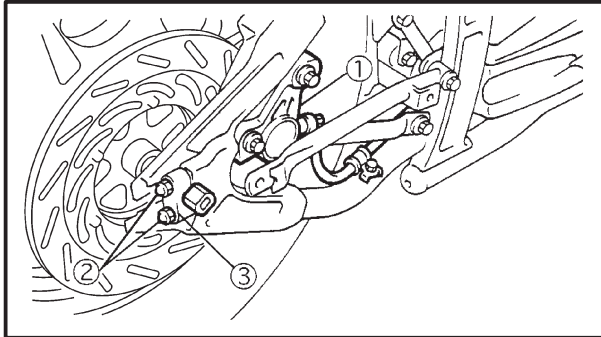
1. Stand the motorcycle on a level surface.

### **⚠ 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 rear wheel is elevated.



2. Remove:
  - rear gear case fitting bolts
3. Remove:
  - brake caliper ①
  - brake caliper bracket bolt

### **NOTE:**

Do not depress the brake pedal when removing the brake caliper.

4. Remove:
  - wheel axle nut
  - washer
5. Remove:
  - rear axle end nut ②
6. Remove:
  - rear axle holder ③
7. Remove:
  - rear wheel

EAS00566

## CHECKING THE REAR WHEEL

1. Check:
  - wheel axle
  - rear wheel
  - wheel bearings
  - oil sealsRefer to “FRONT WHEEL AND BRAKE DISCS”.
2. Check:
  - tireDamage/wear → Replace.  
Refer to “CHECKING THE TIRES” in chapter 3.
3. Measure:
  - rear wheel radial runout
  - rear wheel lateral runoutRefer to “FRONT WHEEL AND BRAKE DISCS”.



EAS00567

## CHECKING THE REAR WHEEL DRIVE HUB

1. Check:

- rear wheel drive hub  
Cracks/damage → Replace.
- rear wheel drive hub dampers  
Damage/wear → Replace.

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## INSTALLING THE REAR WHEEL

1. Lubricate:

- drive shaft splines



**Recommended lubricant**  
**Molybdenum disulfide grease**

## 2. Lubricate:

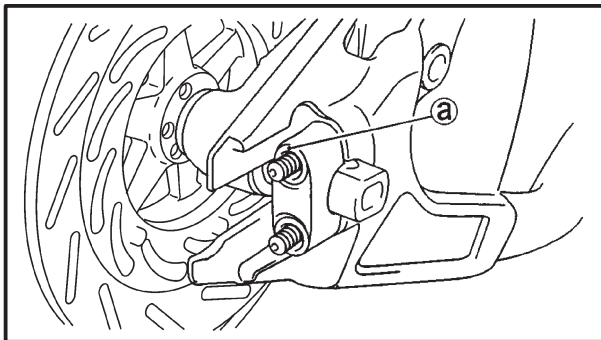
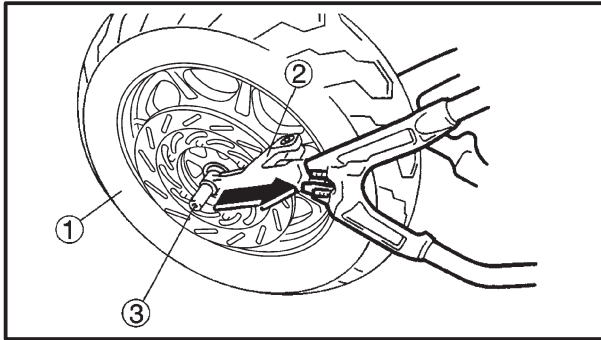
- wheel axle
- wheel bearings
- oil seal lips



**Recommended lubricant**  
**Lithium soap base grease**

### 3. Install:

- rear wheel assembly



- a. Install the rear wheel assembly ① with the rear brake caliper bracket ② and hold the bracket to keep the specified position.
- b. After installation of the rear axle shaft ③, slide the wheel assembly to forward direction.
- c. To make sure the caliper bracket mounts on the swingarm and then, fix the holder of swingarm temporarily.

**NOTE:**

The holder should be installed with the punch mark (a) facing upper.

- d. Tighten the rear gear housing bolts, with specified tightening torque.



**Rear gear housing bolt**  
**70 Nm (7.0 m•kg, 51 ft•lb)**

- e. Tighten the nut of rear axle shaft with specified torque.



**Wheel axle nut**  
**107 Nm (10.7 m•kg, 77 ft•lb)**



- f. Tighten the rear axle holder with specified torque.



**Rear axle end nut**  
**23 Nm (2.3 m•kg, 17 ft•lb)**

- g. Tighten the rear brake caliper bracket bolt with specified tightening torque.



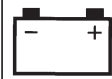
**Brake caliper bracket bolt**  
**40 Nm (4.0 m•kg, 29 ft•lb)**

- h. Install the rear brake caliper on the bracket and tighten the bolts with specified tightening torque.



**Brake caliper bolt**  
**40 Nm (4.0 m•kg, 29 ft•lb)**





## ELECTRICAL

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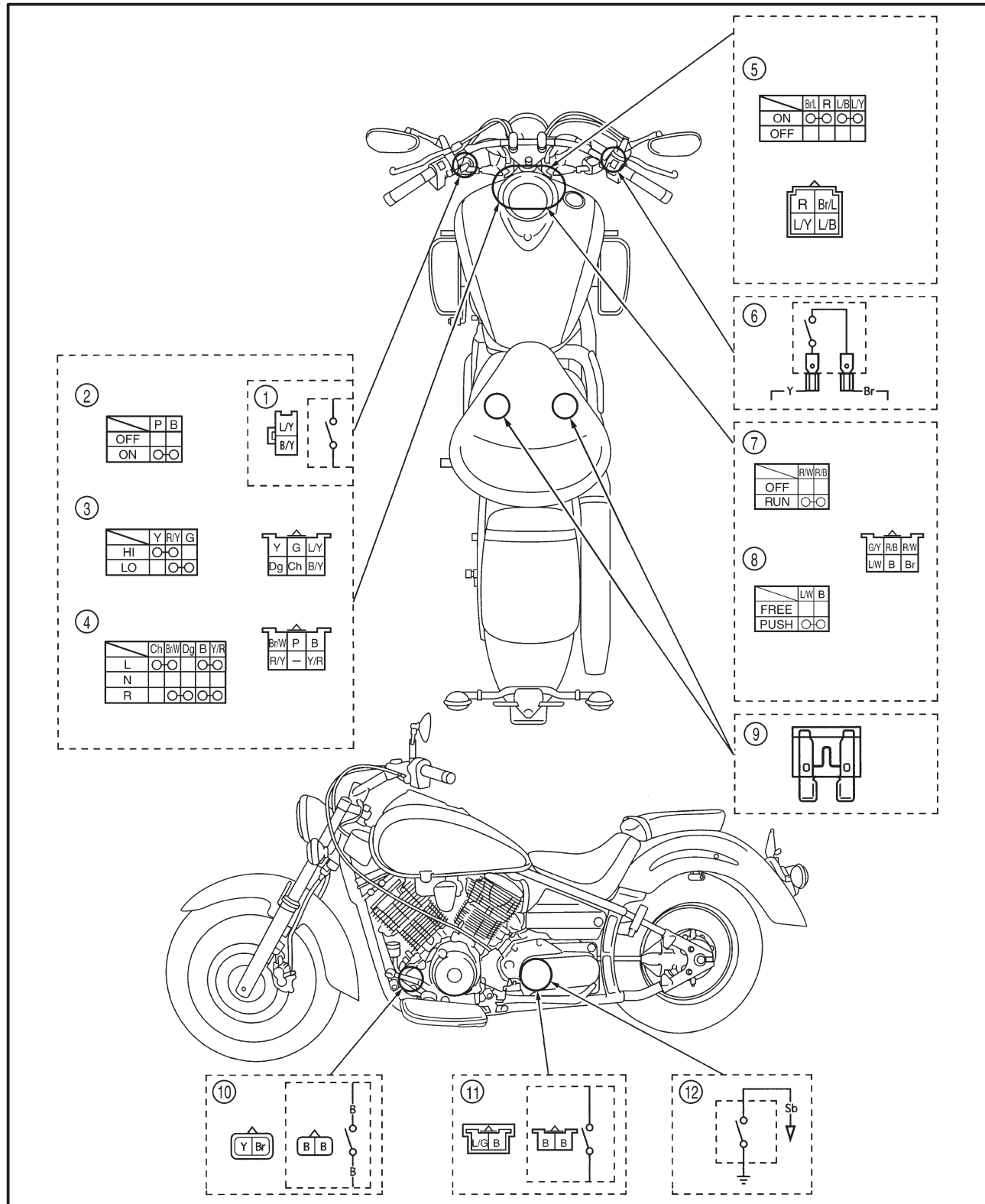
### CHECKING THE SWITCHES

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.



## CHECKING THE SWITCHES

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**ELEC**



- |                      |                      |
|----------------------|----------------------|
| ① Clutch switch      | ⑦ Engine stop switch |
| ② Horn switch        | ⑧ Start switch       |
| ③ Dimmer switch      | ⑨ Fuse               |
| ④ Turn signal switch | ⑩ Rear brake switch  |
| ⑤ Main switch        | ⑪ Sidestand switch   |
| ⑥ Front brake switch | ⑫ Neutral switch     |



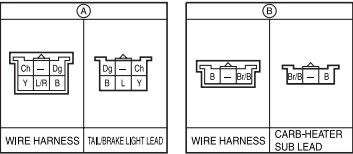
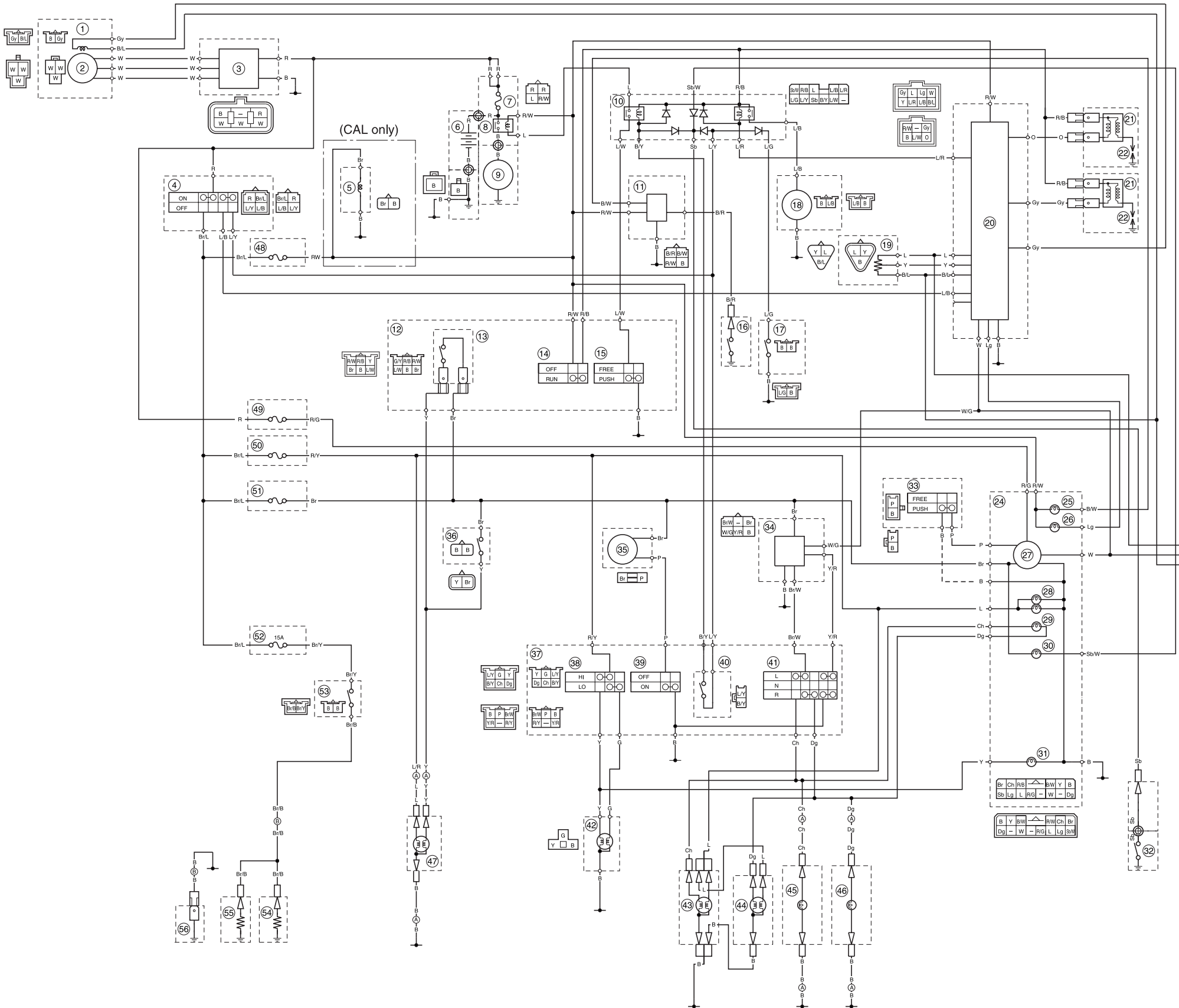


YAMAHA MOTOR CO., LTD.  
2500 SHINGAI IWATA SHIZUOKA JAPAN

PRINTED IN U.S.A.



XVS1100AWR(C)/XVS1100ATR(C) WIRING DIAGRAM



- ① Pickup coil
- ② A.C. magneto
- ③ Rectifier/regulator
- ④ Main switch
- ⑤ Solenoid
- ⑥ Battery
- ⑦ Main fuse
- ⑧ Starter relay
- ⑨ Starter motor
- ⑩ Starting circuit cut-off relay
- ⑪ Oil level warning light relay
- ⑫ Right handlebar switch
- ⑬ Front brake light switch
- ⑭ Engine stop switch
- ⑮ Start switch
- ⑯ Oil level gauge
- ⑰ Sidestand switch
- ⑱ Fuel pump
- ⑲ Throttle position sensor
- ⑳ Igniter unit
- ㉑ Ignition coil
- ㉒ Spark plug
- ㉓ Speed sensor
- ㉔ Meter assembly
- ㉕ Oil level warning light
- ㉖ Engine trouble warning light
- ㉗ Speedometer
- ㉘ Meter light
- ㉙ Turn signal indicator light

- ③⑩ Neutral indicator light
- ③⑪ High beam indicator light
- ③⑫ Neutral switch
- ③⑬ Trip switch
- ③⑭ Turn signal relay
- ③⑮ Horn
- ③⑯ Rear brake light switch
- ③⑰ Left handlebar switch
- ③⑱ Dimmer switch
- ③⑲ Horn switch
- ③⑳ Clutch switch
- ㉑① Turn signal switch
- ㉑② Headlight
- ㉑③ Front turn signal light (left)
- ㉑④ Front turn signal light (right)
- ㉑⑤ Rear turn signal light (left)
- ㉑⑥ Rear turn signal light (right)
- ㉑⑦ Tail/brake light
- ㉑⑧ Ignition fuse
- ㉑⑨ Backup fuse
- ㉑⑩ Headlight fuse
- ㉑⑪ Signal fuse
- ㉑⑫ Carburetor heater fuse
- ㉑⑬ Thermo switch
- ㉑⑭ Carburetor heater 1
- ㉑⑮ Carburetor heater 2
- ㉑⑯ Carburetor heater earth

COLOR CODE

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