



YFZ450V

SUPPLEMENTARY SERVICE MANUAL

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the YFZ450V. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

YFZ450S SERVICE MANUAL: LIT-11616-17-11 (5TG-28197-10)

**YFZ450V
SUPPLEMENTARY
SERVICE MANUAL**

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LIT-11616-19-32

NOTICE

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

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 vehicle operator, a bystander or a person checking or repairing the vehicle.

CAUTION:

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

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 “symbols”)

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

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

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

EXPLODED DIAGRAMS

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

1. An easy-to-see exploded diagram ④ is provided for removal and disassembly jobs.
2. Numbers ⑤ are given in the order of the jobs in the exploded diagram. A number that is enclosed by a circle indicates a disassembly step.
3. An explanation of jobs and notes is presented in an easy-to-read way by the use of symbol 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

④

⑤

⑥

⑦

Order	Job/Part	Qty	Remarks
Removing the clutch			
	Engine oil		Remove the parts in the order listed.
	Clutch cable		Drain.
			Refer to "LEADS, CABLES AND HOSES".
1	Clutch cover	1	Refer to "REMOVING THE CLUTCH" and "INSTALLING THE CLUTCH".
2	Gasket	1	
3	Dowel pin	2	
4	Clutch spring	6	Refer to "INSTALLING THE CLUTCH".
5	Pressure plate	1	
6	Push rod 1	1	
7	Circlip	1	
8	Plain washer	1	
9	Bearing	1	
10	Ball	1	

CLUTCH ENG

③

⑧

REMOVING THE CLUTCH

- Remove:
 - clutch cover ①

NOTE:
Loosen each bolt 1/4 of a turn at a time, in stages and in a crisscross pattern. After all of the bolts are fully loosened, remove them.

- Straighten the lock washer tab.
- Loosen:
 - clutch boss nut ①

NOTE:
While holding the clutch boss ② with the universal clutch holder ③, loosen the clutch boss nut.

Universal clutch holder
P/N, YM-91042, 90890-04086

CHECKING THE FRICTION PLATES
The following procedure applies to all of the friction plates.

- Check:
 - friction plate 1
 - friction plate 2
 Damage/wear → Replace the friction plates as a set.
- Measure:
 - friction plate 1 thickness
 - friction plate 2 thickness
 Out of specification → Replace the friction plates as a set.

NOTE:
Measure the friction plate at four places.

Friction plate 1 thickness
2.9 - 3.1 mm (0.114 - 0.122 in)
<Limit>: 2.8 mm (0.110 in)

Friction plate 2 thickness
2.9 - 3.1 mm (0.114 - 0.122 in)
<Limit>: 2.8 mm (0.110 in)

SYMBOLS

The following symbols are not relevant to every vehicle.

Symbols ① to ⑨ indicate the subject of each chapter.

- ① General information
- ② Specifications
- ③ Periodic checks and adjustments
- ④ Engine
- ⑤ Cooling system
- ⑥ Carburetor
- ⑦ Chassis
- ⑧ Electrical
- ⑨ Troubleshooting

Symbols ⑩ to ⑰ indicate the following








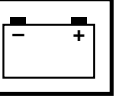


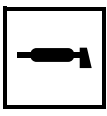



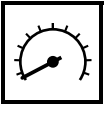
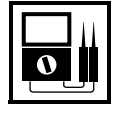







- ⑩ Serviceable with engine mounted
- ⑪ Filling fluid
- ⑫ Lubricant
- ⑬ Special tool
- ⑭ Tightening torque
- ⑮ Wear limit, clearance
- ⑯ Engine speed
- ⑰ Electrical data (Ω , V, A)

Symbols ⑱ to ⑳ indicate the types of lubricants and lubrication points.

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

Symbols ㉔ to ㉕ in the exploded diagrams indicate where to apply a locking agent ㉔ and when to install a new part ㉕.

- ㉔ Apply the locking agent (LOCTITE®)
- ㉕ Replace

① GEN INFO 	② SPEC 	
③ CHK ADJ 	④ ENG 	
⑤ COOL 	⑥ CARB 	
⑦ CHAS 	⑧ ELEC 	
⑨ TRBL SHTG ?	⑩ 	
⑪ 	⑫ 	
⑬ 	⑭ 	
⑮ 	⑯ 	⑰ 
⑱ 	⑲ 	⑳ 
㉑ 	㉒ 	㉓ 
㉔ 	㉕ New	

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YFZ450V WIRING DIAGRAM

EBS00021

GENERAL INFORMATION

SPECIAL TOOLS

The following special tools are necessary for complete and accurate tune-up and assembly. Use only the appropriate special tools; this will help prevent damage caused by the use of inappropriate tools or improvised techniques. Special tools may differ by shape and part number from country to country. In such a case, two types are provided.

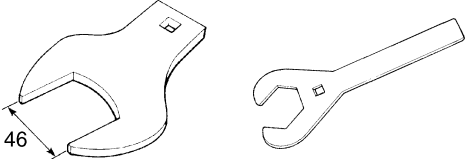
When placing an order, refer to the list provided below to avoid any mistakes.

For US and CDN

P/N. YM-, YU-, YS-, YK-, ACC-

Except for US and CDN

P/N. 90890-

Tool No.	Tool name/Function	Illustration
90890-01498 YM-37134	Rear axle nut wrench (46 mm) This tool is used to loosen or tighten the rear axle nut.	



EBS01001

SPECIFICATIONS

GENERAL SPECIFICATIONS

Item	Standard
Model code	5TGC
Dimensions	
Overall length	1,840 mm (72.4 in)
Overall width	1,170 mm (46.1 in)
Overall height	1,090 mm (42.9 in)
Seat height	810 mm (31.9 in)
Wheelbase	1,280 mm (50.4 in)
Minimum ground clearance	255 mm (10.04 in)
Minimum turning radius	3,500 mm (137.8 in)
Engine	
Engine type	Liquid-cooled 4-stroke, DOHC
Cylinder arrangement	Forward-inclined single cylinder
Displacement	449 cm ³ (27.40 cu in)
Bore × stroke	95.0 × 63.4 mm (3.74 × 2.50 in)
Compression ratio	11.2:1
Starting system	Electric starter
Carburetor	
Type/quantity	FCR39H × 1
Manufacturer	KEIHIN
Tire	
Type	Tubeless
Size	front AT21 × 7R-10
	rear AT20 × 10-9
Manufacturer	front DUNLOP
	rear DUNLOP
Type	front KT341 Radial
	rear KT355A Radial
Tire pressure (cold tire)	
Maximum load*	100 kg (220 lb)
Off-road riding	front 27.5 kPa (0.28 kg/cm ² , 4.0 psi)
	rear 30 kPa (0.30 kg/cm ² , 4.4 psi)
*Load is the total weight of cargo, rider and accessories	

GENERAL SPECIFICATIONS

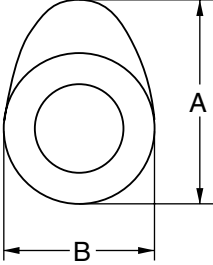
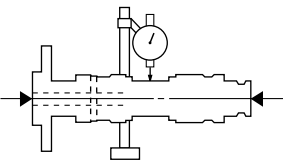
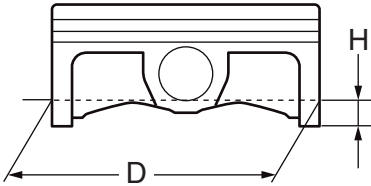
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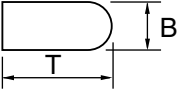
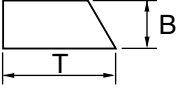

Item	Standard
Wheel travel Front wheel travel Rear wheel travel	230 mm (9.06 in) 270 mm (10.63 in)
Bulb voltage/wattage × quantity Headlight Tail/brake light Indicator and warning lights Neutral Coolant temperature	12 V 30 W/30 W × 2 12 V 0.5 W/3.9 W × 1 12 V 1.7 W × 1 12 V 1.7 W × 1

EBS01002

ENGINE SPECIFICATIONS

Item	Standard	Limit
Camshaft		
Drive method	Chain drive (Left)	
Camshaft cap inside diameter	22.000 ~ 22.021 mm (0.8661 ~ 0.8670 in)	----
Camshaft journal diameter	21.959 ~ 21.972 mm (0.8645 ~ 0.8650 in)	----
Camshaft-journal-to-camshaft-cap clearance	0.028 ~ 0.062 mm (0.0011 ~ 0.0024 in)	0.080 mm (0.0032 in)
Camshaft lobe dimensions		
		
Intake	“A”	31.200 ~ 31.300 mm (1.2283 ~ 1.2323 in)
	“B”	31.100 mm (1.2244 in)
	“B”	22.450 mm (0.8839 in)
Exhaust	“A”	30.950 ~ 31.050 mm (1.2185 ~ 1.2224 in)
	“B”	30.850 mm (1.2146 in)
	“B”	22.394 mm (0.8817 in)
Camshaft runout limit	----	0.03 mm (0.0012 in)
		
Piston		
Piston to cylinder clearance	0.040 ~ 0.065 mm (0.0016 ~ 0.0026 in)	0.15 mm (0.0059 in)
Piston size “D”	94.945 ~ 94.960 mm (3.7380 ~ 3.7386 in)	----
		
Measuring point “H”	10 mm (0.39 in)	----
Piston offset	1.0 mm (0.0394 in)	----
Offset direction	Intake side	----
Piston pin bore inside diameter	20.004 ~ 20.015 mm (0.7876 ~ 0.7880 in)	20.045 mm (0.789 in)



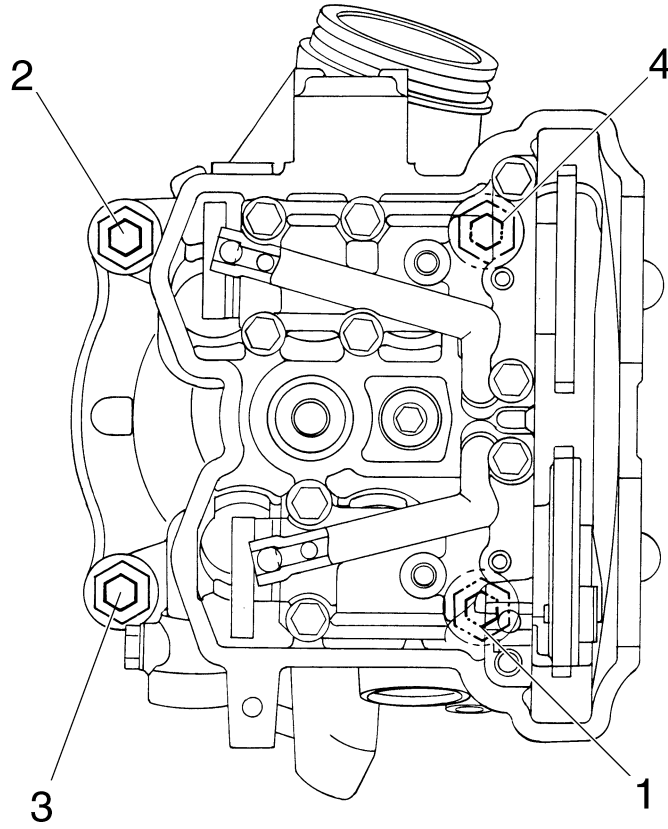
Item	Standard	Limit
Piston pin outside diameter	19.991 ~ 20.000 mm (0.7870 ~ 0.7874 in)	19.971 mm (0.786 in)
Piston-pin-to-piston-pin-bore clearance	0.004 ~ 0.024 mm (0.0002 ~ 0.0009 in)	0.074 mm (0.0029 in)
Piston rings		
Top ring 		
Type	Barrel	----
Dimensions (B × T)	1.2 × 3.5 mm (0.047 × 0.138 in)	----
End gap (installed)	0.20 ~ 0.30 mm (0.008 ~ 0.012 in)	0.55 mm (0.022 in)
Side clearance	0.030 ~ 0.065 mm (0.0012 ~ 0.0026 in)	0.12 mm (0.0047 in)
2nd ring 		
Type	Taper	----
Dimensions (B × T)	1.00 × 3.35 mm (0.039 × 0.132 in)	----
End gap (installed)	0.35 ~ 0.50 mm (0.014 ~ 0.020 in)	0.85 mm (0.034 in)
Side clearance	0.020 ~ 0.055 mm (0.0008 ~ 0.0022 in)	0.12 mm (0.0047 in)
Oil ring 		
Dimensions (B × T)	2.0 × 2.9 mm (0.079 × 0.114 in)	----
End gap (installed)	0.20 ~ 0.50 mm (0.008 ~ 0.020 in)	----
Side clearance	0.040 ~ 0.140 mm (0.0016 ~ 0.0055 in)	----



Item	Standard	Limit
Carburetor		
I. D. mark	5TGC 30	----
Main jet (M.J)	#155	----
Main air jet (M.A.J)	ø1.0	----
Jet needle (J.N)	NGNR	----
Cutaway (C.A)	1.5	----
Pilot air jet (P.A.J.1)	#70	----
Pilot outlet (P.O)	ø0.9	----
Pilot jet (P.J)	#42	----
Bypass 1 (B.P.1)	ø1.0	----
Valve seat size (V.S)	ø3.8	----
Starter jet (G.S.1)	#90	----
Float height (F.H)	8 mm (0.31 in)	----
Engine idle speed	1,750 ~ 1,850 r/min	----
Intake vacuum	More than 35.7 kPa (268 mmHg, 10.5 inHg)	----
Oil pump		
Oil pump type	Trochoid	----
Inner-rotor-to-outer-rotor-tip clearance	Less than 0.12 mm (0.0047 in)	0.20 mm (0.0079 in)
Outer-rotor-to-oil-pump-housing clearance	0.09 ~ 0.17 mm (0.0035 ~ 0.0067 in)	0.24 mm (0.0094 in)
Bypass valve setting pressure	40.0 ~ 80.0 kPa (300 ~ 602 mmHg, 11.8 ~ 23.7 inHg)	----



Cylinder head tightening sequence





EBS01003

CHASSIS SPECIFICATIONS

Item	Standard	Limit
Front suspension		
Shock absorber travel	110 mm (4.33 in)	----
Fork spring free length	265 mm (10.43 in)	----
Spring fitting length	255 mm (10.04 in)	----
Spring rate (K1)	15.0 N/mm (1.53 kg/mm, 86 lb/in)	----
Spring rate (K2)	35.0 N/mm (3.57 kg/mm, 200 lb/in)	----
Optional spring	No	----
Rear suspension		
Shock absorber travel	126 (4.96 in)	----
Spring free length	272 mm (10.71 in)	----
Spring fitting length	257 mm (10.12 in)	----
Spring rate (K1)	36.0 N/mm (3.67 kg/mm, 206 lb/in)	----
Stroke (K1)	0 ~ 126 mm (0 ~ 4.96 in)	----
Optional spring	No	----
Front disc brake		
Type	Dual	----
Disc outside diameter × thickness	161.0 × 3.5 mm (6.34 × 0.14 in)	----
Pad thickness inner	4.3 mm (0.17 in)	1.0 mm (0.04 in)
Pad thickness outer	4.3 mm (0.17 in)	1.0 mm (0.04 in)
Master cylinder inside diameter	12.7 mm (0.50 in)	----
Caliper cylinder inside diameter	25.4 mm (1.00 in)	----
Brake fluid type	DOT 4	----
Rear disc brake		
Type	Single	----
Disc outside diameter × thickness	200.0 × 3.6 mm (7.87 × 0.14 in)	----
Pad thickness inner	5.4 mm (0.21 in)	1.0 mm (0.04 in)
Pad thickness outer	5.4 mm (0.21 in)	1.0 mm (0.04 in)
Master cylinder inside diameter	12.7 mm (0.50 in)	----
Caliper cylinder inside diameter	25.4 mm (1.00 in)	----
Brake fluid type	DOT 4	----
Brake lever and brake pedal		
Brake pedal position	11.7 mm (0.46 in)	----
Parking brake cable end length	47 ~ 51 mm (1.85 ~ 2.01 in)	----
Clutch lever free play (lever end)	8 ~ 13 mm (0.31 ~ 0.51 in)	----
Throttle lever free play	2 ~ 4 mm (0.08 ~ 0.16 in)	----
Speed limiter length	Less than 12 mm (0.47 in)	----
Shift pedal height	25 mm (0.98 in)	----



EBS01004

ELECTRICAL SPECIFICATIONS

Item	Standard	Limit
Headlight relay		
Headlight relay 1		
Model/manufacture	G8HN-1C4T-DJ-Y52/OMRON	----
Coil resistance	94.5 Ω ~ 115.5 Ω	----
Headlight relay 2		
Model/manufacture	G8HN-1C4T-DJ-Y52/OMRON	----
Coil resistance	94.5 Ω ~ 115.5 Ω	----
Thermo switch		
Thermo switch 1		
Model/manufacture	5EB/NIPPON THERMOSTAT	----
Opening temperature	102 ~ 108 °C (215.6 ~ 226.4 °F)	----
Closing temperature	97 ~ 103 °C (206.6 ~ 217.4 °F)	----
Thermo switch 2		
Model/manufacture	5LP/NIPPON THERMOSTAT	----
Opening temperature	117 ~ 123 °C (242.6 ~ 253.4 °F)	----
Closing temperature	112 ~ 118 °C (233.6 ~ 244.4 °F)	----



EBS01005

TIGHTENING TORQUES

ENGINE TIGHTENING TORQUES

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m · kg	ft · lb	
Cylinder head blind plug screw	Screw	M12	1	28	2.8	20	
Cylinder head (exhaust pipe)	Stud bolt	M8	2	15	1.5	11	
Oil pump housing cover	Screw	M4	1	3	0.3	2.2	
Oil filter cover	Bolt	M6	3	10	1.0	7.2	
Exhaust pipe	Nut	M8	2	14	1.4	10	
Stator coil	Screw	M5	2	7	0.7	5.1	

EBS01006

CHASSIS TIGHTENING TORQUES

Part to be tightened	Thread size	Tightening torque			Remarks	
		Nm	m · kg	ft · lb		
Rear axle pinch bolt	M8	21	2.1	15		
Guide pin and swingarm	M12	55	5.5	40		
Front shock absorber and lower front arm	M10	48	4.8	35		
Front shock absorber and frame	M10	48	4.8	35		
Tie-rod end and locknut	M12	18	1.8	13		
Rear axle and rear wheel hub	M16	200	20.0	145		SEE NOTE.
Rear brake caliper and brake caliper bracket	M10	43	4.3	31		
Driven sprocket and sprocket bracket	M10	72	7.2	52		
Parking brake bracket, spring bracket and rear brake caliper	M8	23	2.3	17		
Rear axle ring nut	M36	240	24.0	175		
Rear brake disc and brake disc bracket	M8	33	3.3	24		
Rear brake hose holder and swingarm	M6	7	0.7	5.1		
Footrest and frame	M10	73	7.3	53		
Front brake pad retaining bolt	M10	17	1.7	12		
Rear brake pad retaining bolt	M10	17	1.7	12		

NOTE:

1. Apply a rust preventive lubricant to the threads on both sides of the rear axle and to the wheel hub surfaces that contact the rear axle washers.
2. Tighten the rear axle nuts 200 Nm (20.0 m · kg, 145 ft · lb).
3. Loosen the rear axle nuts completely.
4. Retighten the rear axle nuts 200 Nm (20.0 m · kg, 145 ft · lb). Do not loosen the axle nuts after tightening them. If an axle nut slot is not aligned with the cotter pin hole on either side of the axle, further tighten the axle nut until a slot is aligned with the hole.

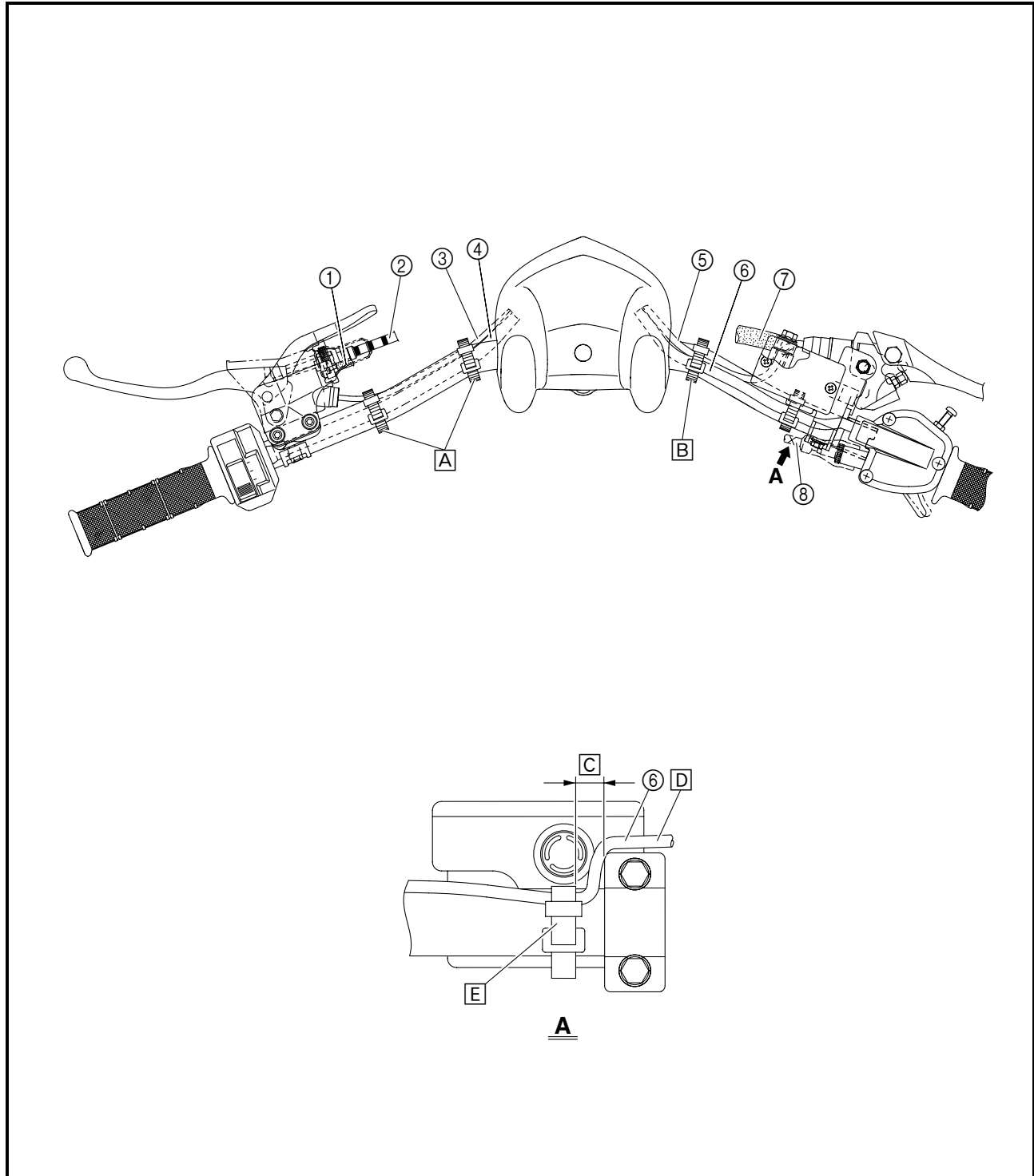


EBS00028

CABLE ROUTING

- ① Parking brake cable
- ② Clutch cable
- ③ Clutch switch lead
- ④ Handlebar switch lead
- ⑤ Front brake light switch lead
- ⑥ Throttle switch lead
- ⑦ Front brake hose
- ⑧ Throttle cable

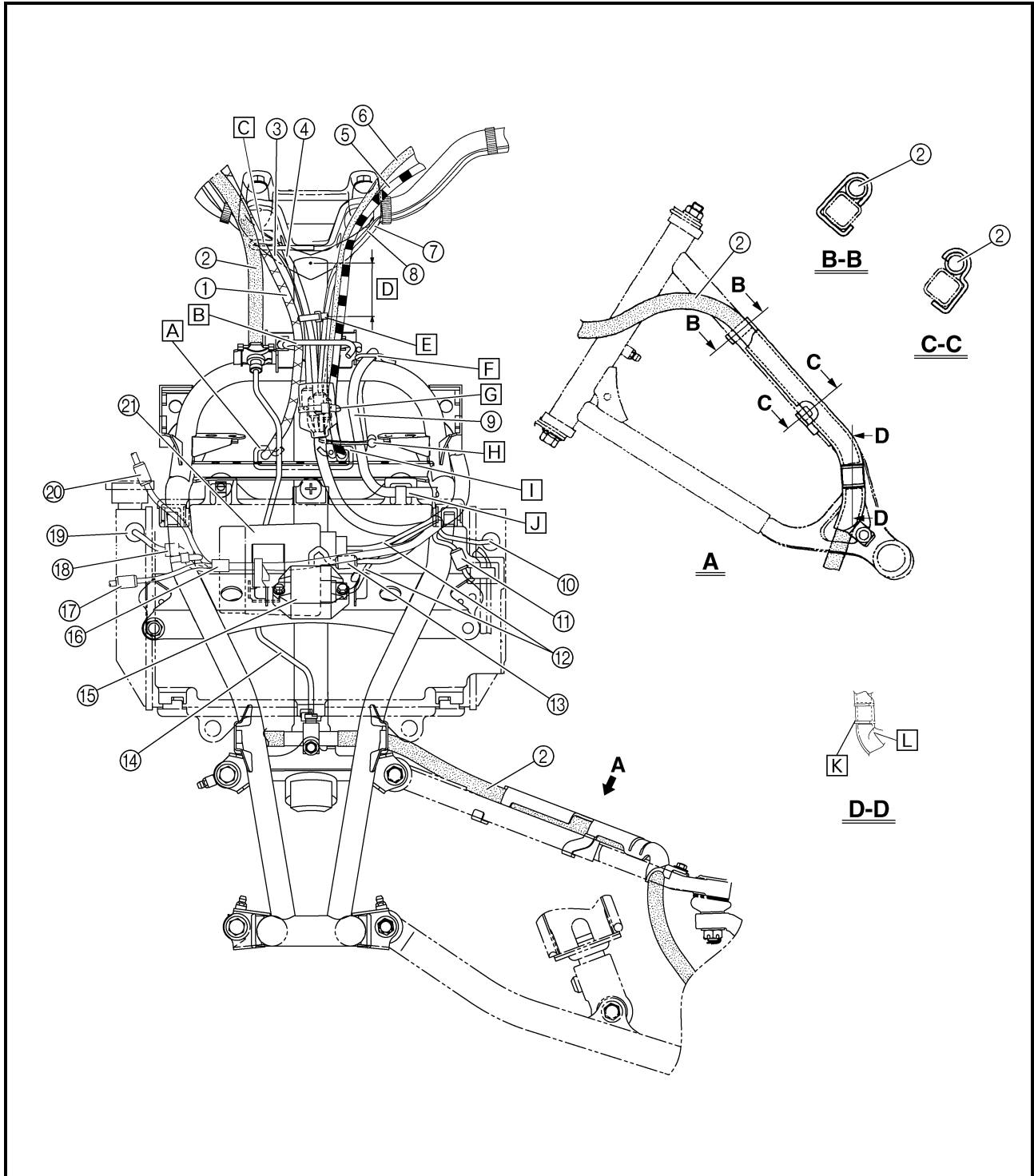
- [A] Fasten the clutch switch lead and handlebar switch lead with the plastic bands at the bends in the handlebar.
- [B] Fasten the front brake light switch lead and throttle switch lead with the plastic band at the bend in the handlebar.
- [C] Less than 10 mm (0.39 in)
- [D] Make sure that there is no slack in the throttle switch lead.
- [E] Fasten the throttle switch lead to the handlebar with the plastic band.





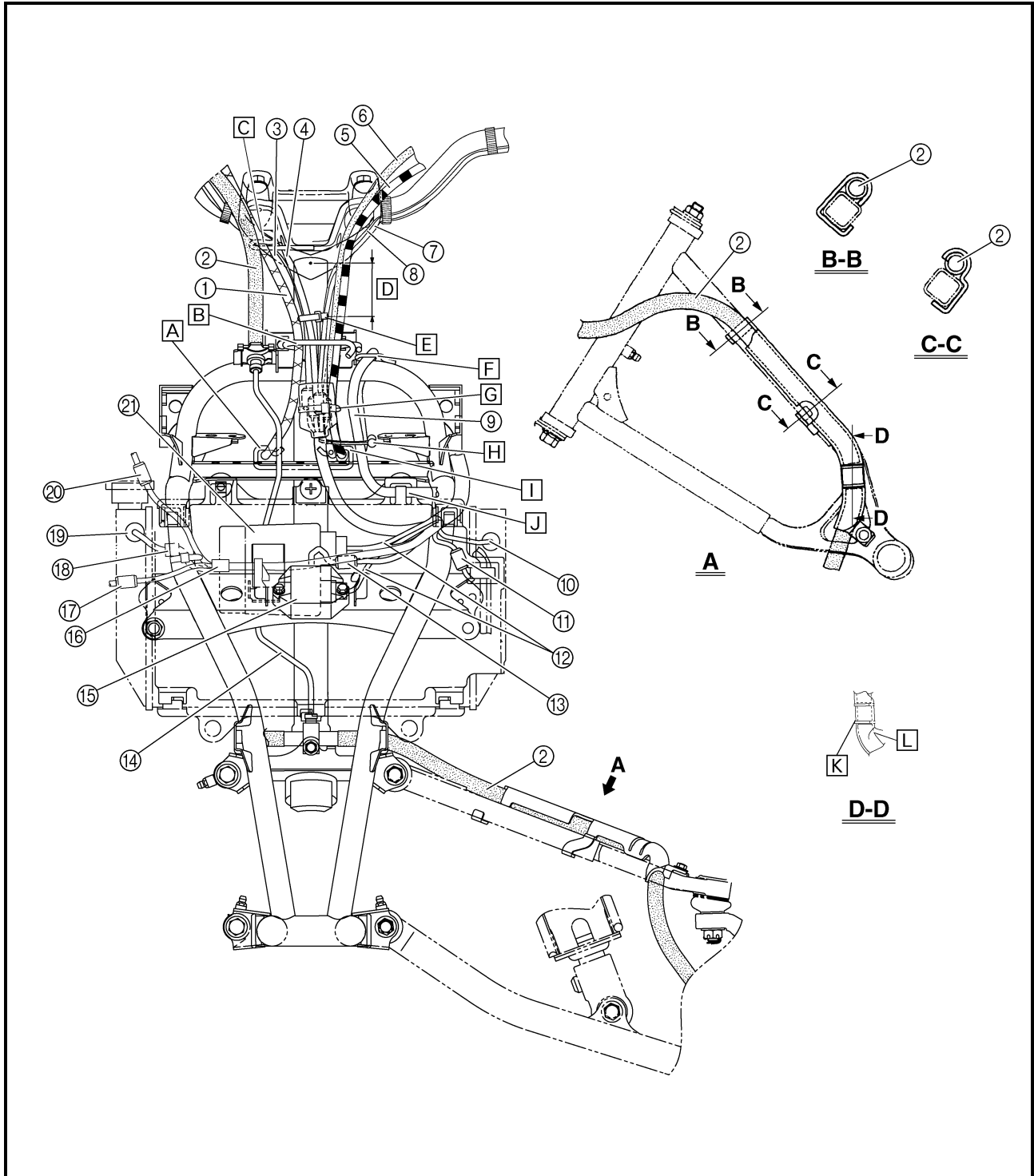
- ① Throttle cable
- ② Front brake hose
- ③ Front brake light switch lead
- ④ Throttle switch lead
- ⑤ Clutch cable
- ⑥ Parking brake cable
- ⑦ Clutch switch lead
- ⑧ Handlebar switch lead
- ⑨ Radiator fan breather hose
- ⑩ Thermo switch 2 lead
- ⑪ Headlight coupler (left)

- ⑫ C.D.I. unit leads
- ⑬ Rectifier/regulator coupler
- ⑭ Front brake pipe
- ⑮ Rectifier/regulator
- ⑯ Diode 1
- ⑰ Headlight coupler (right)
- ⑱ Diode 2
- ⑲ Thermo switch 1 lead
- ⑳ Main switch coupler
- ㉑ C.D.I. unit



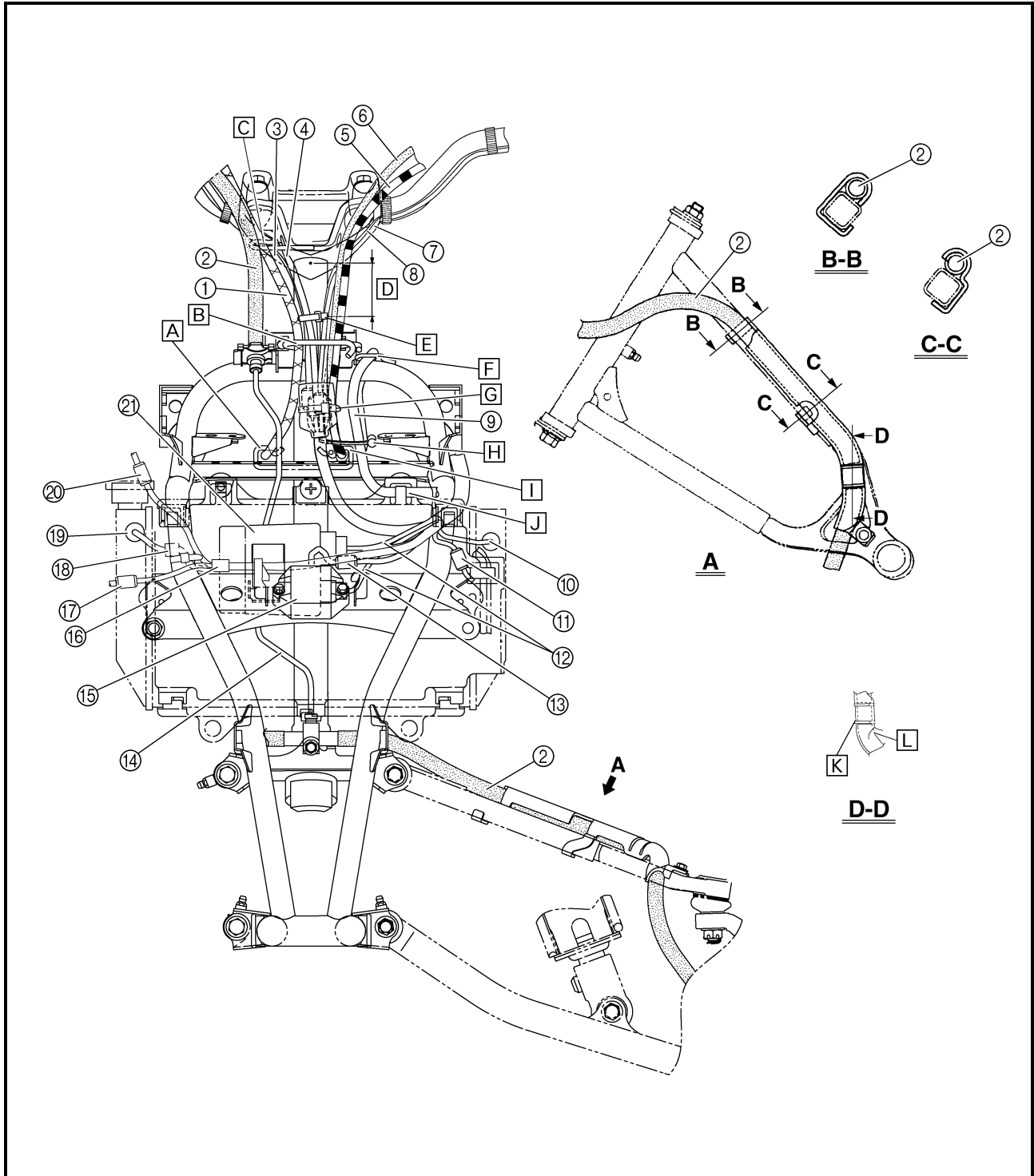


- A Pass the throttle cable through the cable guide.
- B Pass the throttle cable, leads (front brake light switch, throttle switch, clutch switch, and handlebar switch), parking brake cable, and clutch cable through the cable guide in the order listed.
- C Pass the throttle cable through the steering stem cable guide.
- D 50 ~ 70 mm (1.97 ~ 2.76 in)
- E Fasten the front brake light switch lead, throttle switch lead, clutch switch lead, and handlebar switch lead with the plastic band and then place the end of the band under the fuel tank cover.
- F Pass the radiator fan breather hose through the hose guide.
- G Slide the rubber cover over the couplers (front brake light switch, throttle switch, clutch switch, and handlebar switch) and fasten the center of the cover with the plastic band.



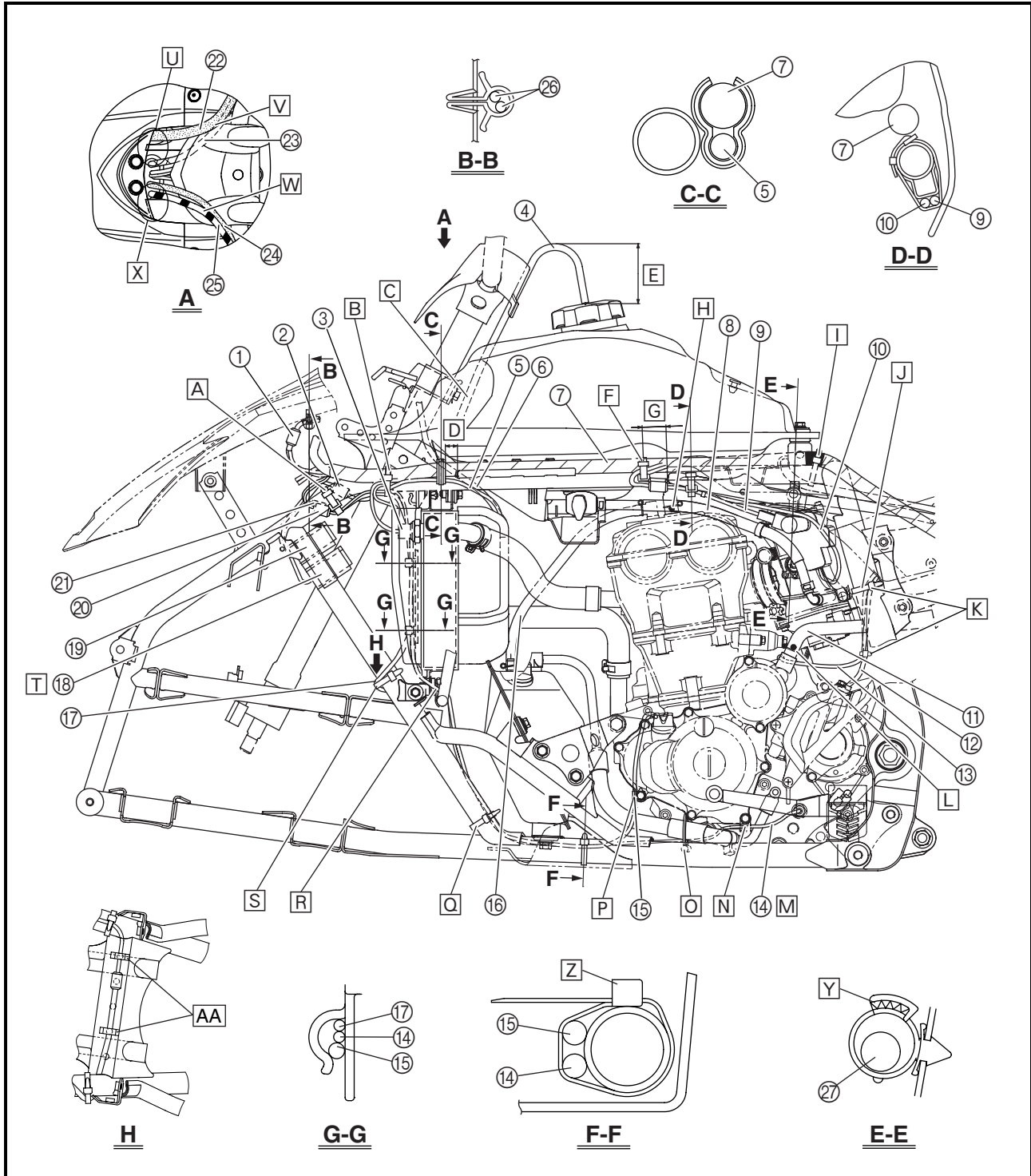


- H Fasten the radiator fan breather hose, clutch cable, and parking brake cable with the clamp.
- I Pass the clutch cable and parking brake cable through the cable guide in this order.
- J Fasten the radiator fan breather hose with the holder on the radiator grill.
- K Install the brake hose cover so that the slits in the cover fit over the brake hose grommet.
- L Install the brake hose cover, so that the bend in the cover aligns with the bend in the upper front arm.





- | | | |
|---------------------------------|--------------------------|-------------------------------|
| ① Indicator coupler | ⑫ Negative battery lead | ⑳ Throttle cable |
| ② Radiator fan motor coupler | ⑬ Starter motor lead | ㉑ Parking brake cable |
| ③ Thermo switch 2 | ⑭ Neutral switch lead | ㉒ Clutch cable |
| ④ Fuel tank breather hose | ⑮ A.C. magneto lead | ㉓ Indicator leads |
| ⑤ Radiator fan motor lead | ⑯ Oil tank breather hose | ㉔ Cylinder head breather hose |
| ⑥ Radiator fan breather hose | ⑰ Resistor lead | |
| ⑦ Wire harness | ⑱ Headlight relay 1 | |
| ⑧ Fuel hose | ⑲ Headlight relay 2 | |
| ⑨ Throttle position sensor lead | ㉕ A.C. magneto coupler | |
| ⑩ Carburetor switch lead | ㉖ Neutral switch coupler | |
| ⑪ Crankcase breather hose | ㉗ Front brake hose | |





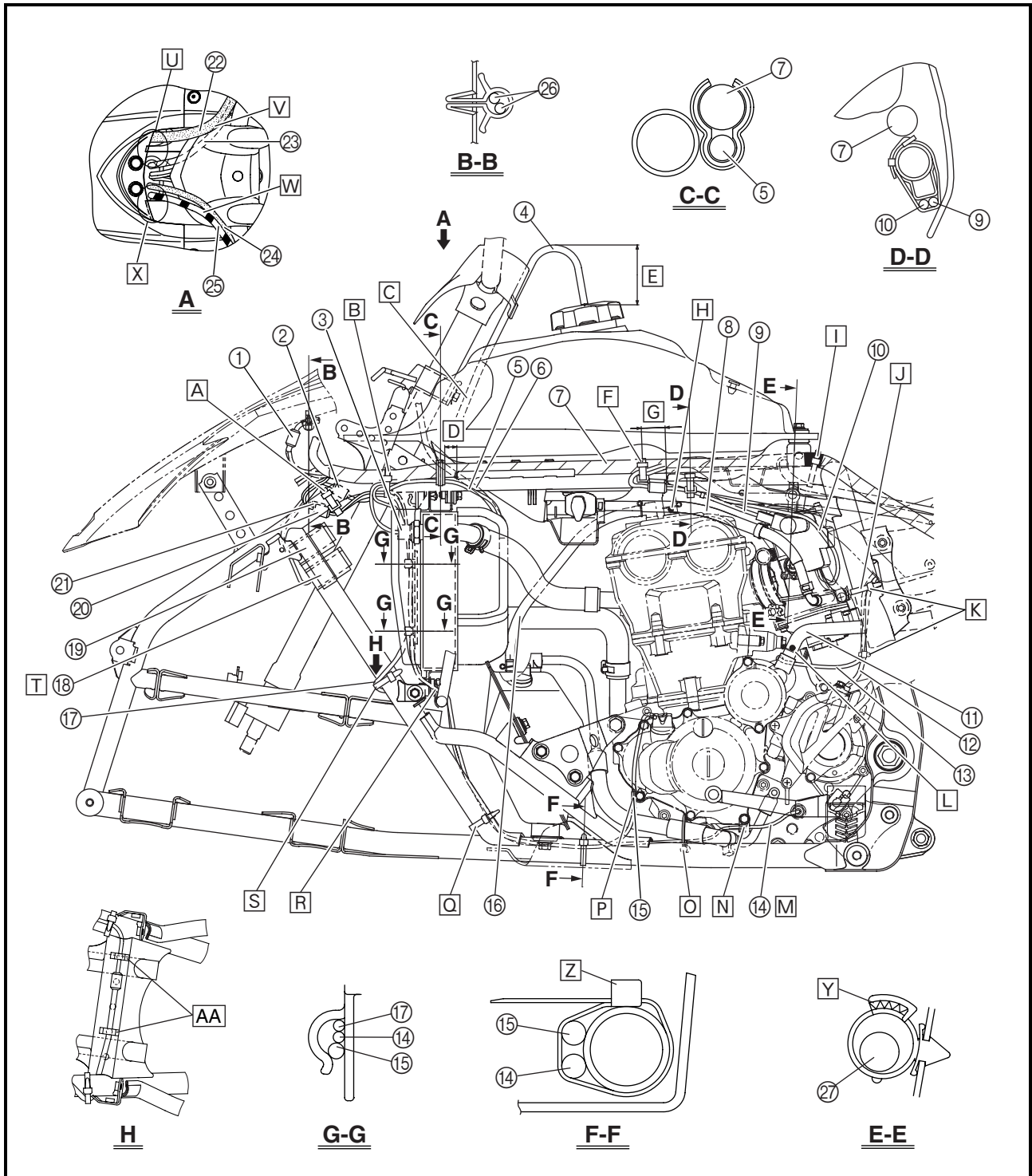
A Route the neutral switch lead, A.C. magneto lead, and radiator fan motor lead under the frame. Connect the neutral switch lead and the A.C. magneto lead, and then fasten the leads with the plastic band, making sure that they are routed under the frame and that they do not contact headlight relay 2.

B Fasten the wire harness, thermo switch 2 lead, A.C. magneto lead, resistor lead, neutral switch lead, and radiator fan motor lead with the plastic band and then face the end of the band inward between the frame tubes.

C Route the fuel tank breather hose behind the steering stem.

D 7 ~ 21 mm (0.28 ~ 0.83 in)

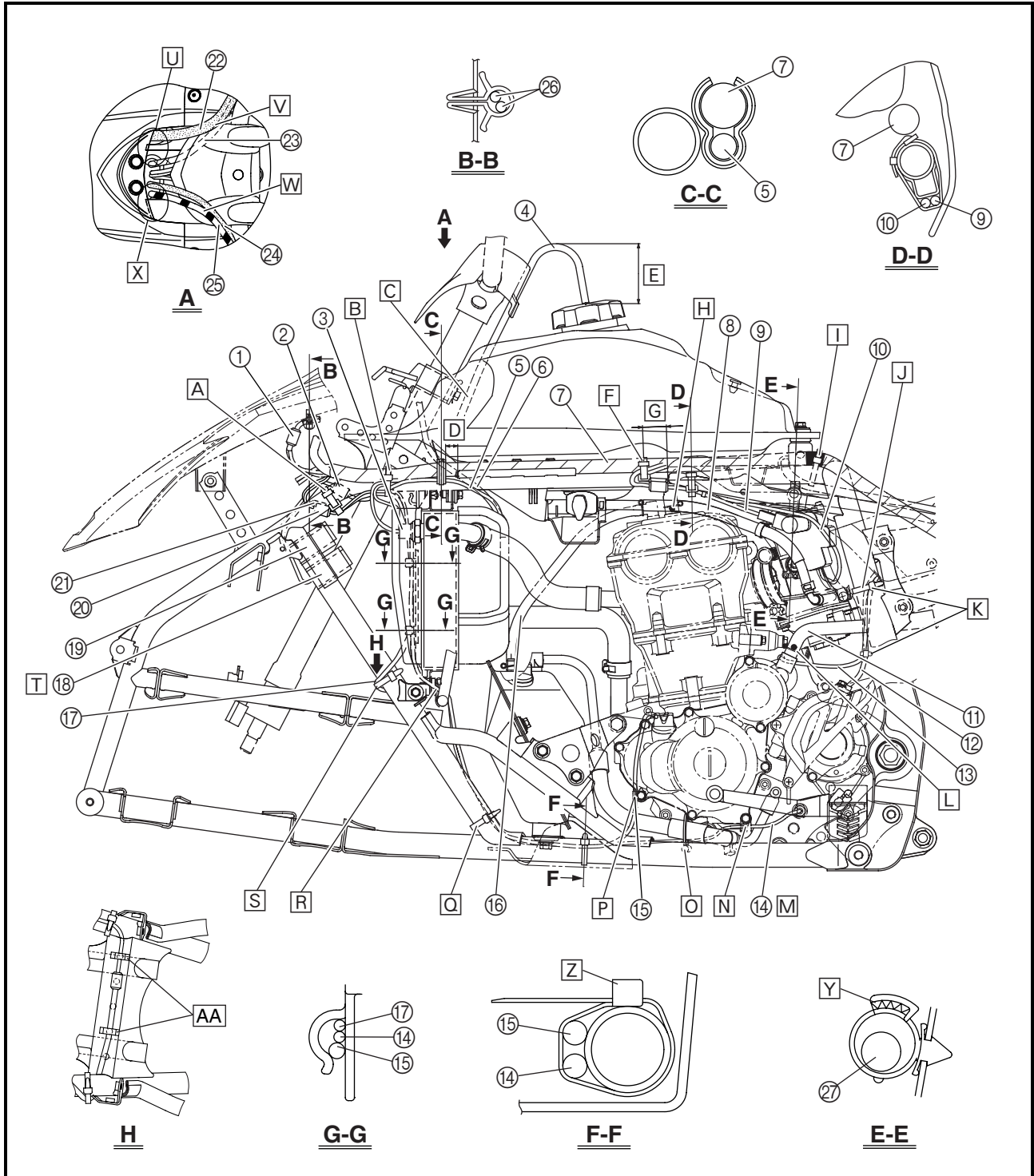
E 50 ~ 70 mm (1.97 ~ 2.76 in)





- F Fasten the wire harness, throttle position sensor lead, and carburetor switch lead with the plastic band. Make sure that there is no slack in the throttle position sensor lead and carburetor switch lead along the frame as shown.
- G More than 15 mm (0.59 in)
- H Install the cylinder head breather hose with the paint mark facing to the left.
- I Fasten the wire harness with the plastic band on the positioning tape and then face the end of the plastic band inward.

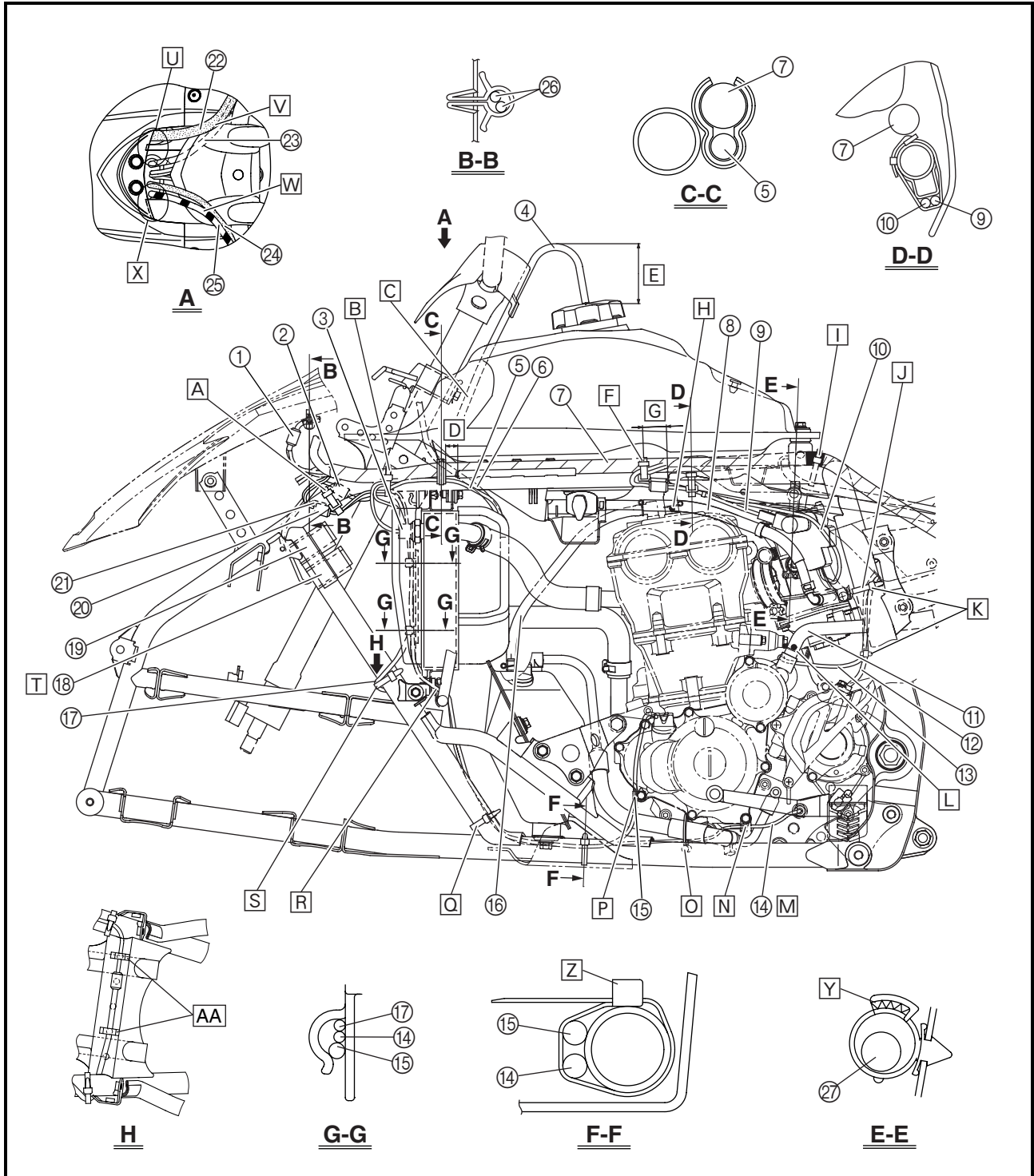
- J Fasten the negative battery lead and starter motor lead with the plastic band and then face the end of the plastic band inward.
- K Fasten the starter motor lead to the negative battery lead at the mark on the battery lead with the plastic band. Then, fasten the starter motor lead and negative battery lead to the frame with the plastic band and face the end of the band inward.
- L Install the crankcase breather hose with the paint mark facing to the left.





- M** Route the neutral switch lead so that it does not contact the edges of the joint on the end of the oil pipe 2.
- N** Fasten the neutral switch lead with the lead holder.
- O** Fasten the neutral switch lead with the clamp.
- P** Fasten the A.C. magneto lead with the lead holder.
- Q** Fasten the neutral switch lead and A.C. magneto lead with the plastic band. Face the end of the plastic band inward on top of the frame.

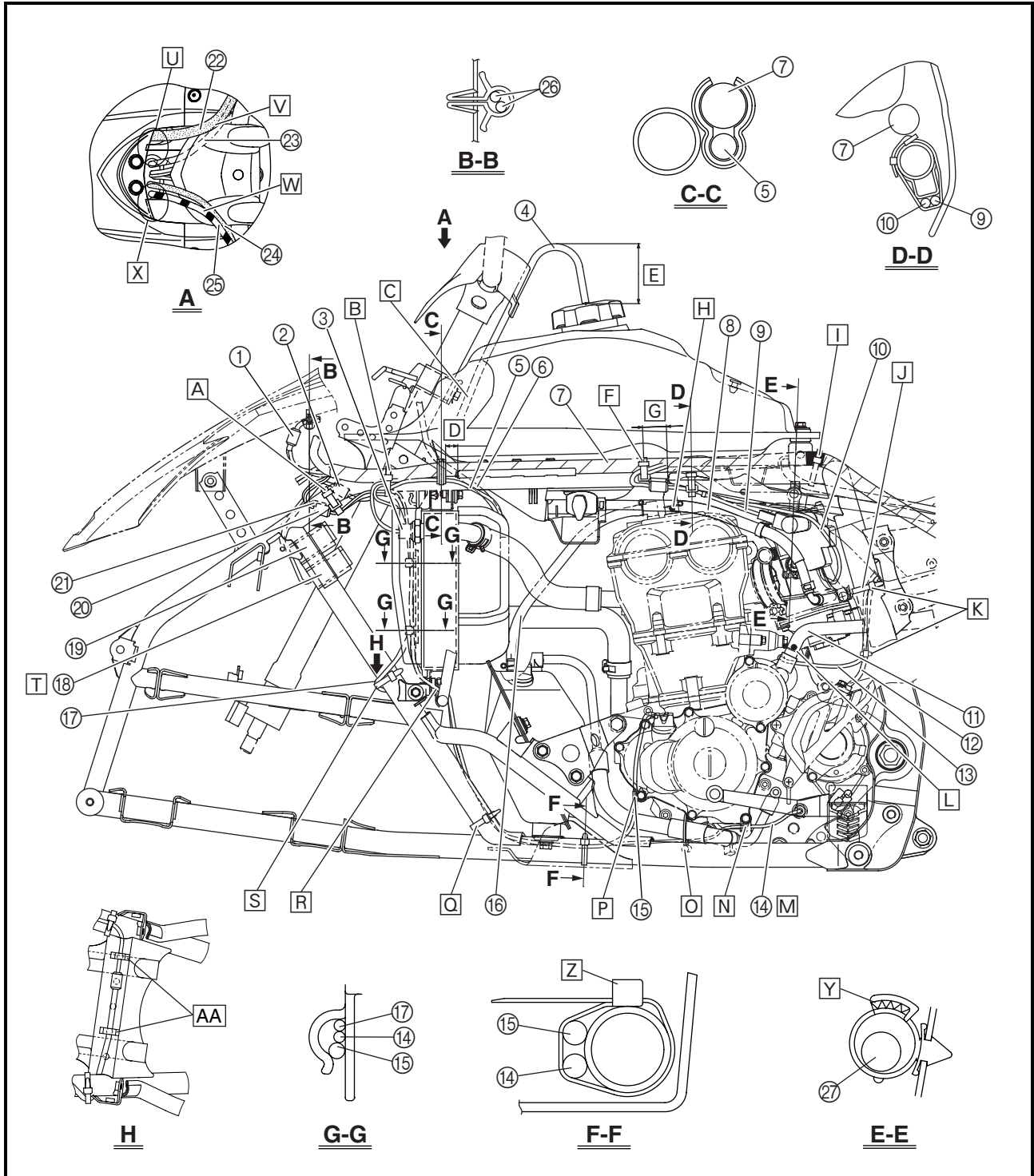
- R** Pass the neutral switch lead and A.C. magneto lead through the guide on the fender stay.
- S** Wrap the resistor lead around the frame as shown in the illustration, and then fasten it with the plastic band. Face the end of the plastic band inward.
- T** Install headlight relay 1 and headlight relay 2 to the inside of the frame, making sure to insert the tab on each relay completely into its rubber holder and to install the holders all the way onto the tabs on the stay.





- U When installing the fuel tank cover, do not pinch the front brake hose, throttle cable, front brake light switch lead, and throttle switch lead.
- V Route the front brake hose in front of the handlebar cover.
- W Route the clutch cable and parking brake cable in front of the handlebar cover.
- X When installing the fuel tank cover, do not pinch the clutch cable, parking brake cable, clutch switch lead, and handlebar switch lead.

- Y Fasten the cylinder head breather hose with the holder, making sure that the catch of the holder is facing upward.
- Z Fasten the A.C. magneto lead and neutral switch lead with the plastic band, making sure that the end of the band is on top of the frame, facing inward.
- AA Fasten the resistor lead with the holder.

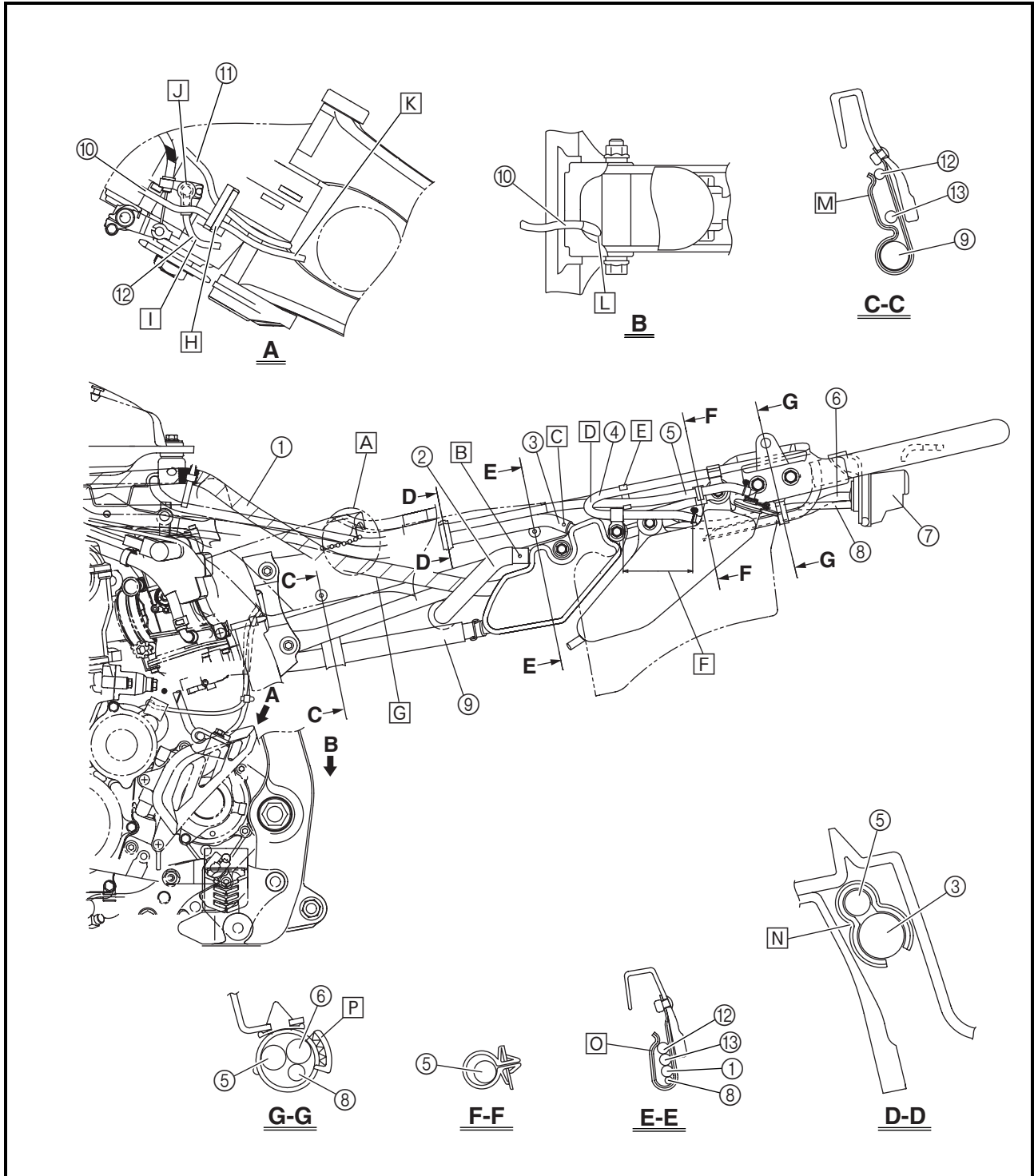




- ① Wire harness
- ② Air filter case breather hose
- ③ Cylinder head breather hose
- ④ Coolant reservoir breather hose
- ⑤ Coolant reservoir hose
- ⑥ Tail/brake light breather hose
- ⑦ Tail/brake light
- ⑧ Tail/brake light lead
- ⑨ Crankcase breather hose
- ⑩ Carburetor drain hose
- ⑪ Carburetor air vent hose

- ⑫ Battery negative lead
- ⑬ Starter motor lead

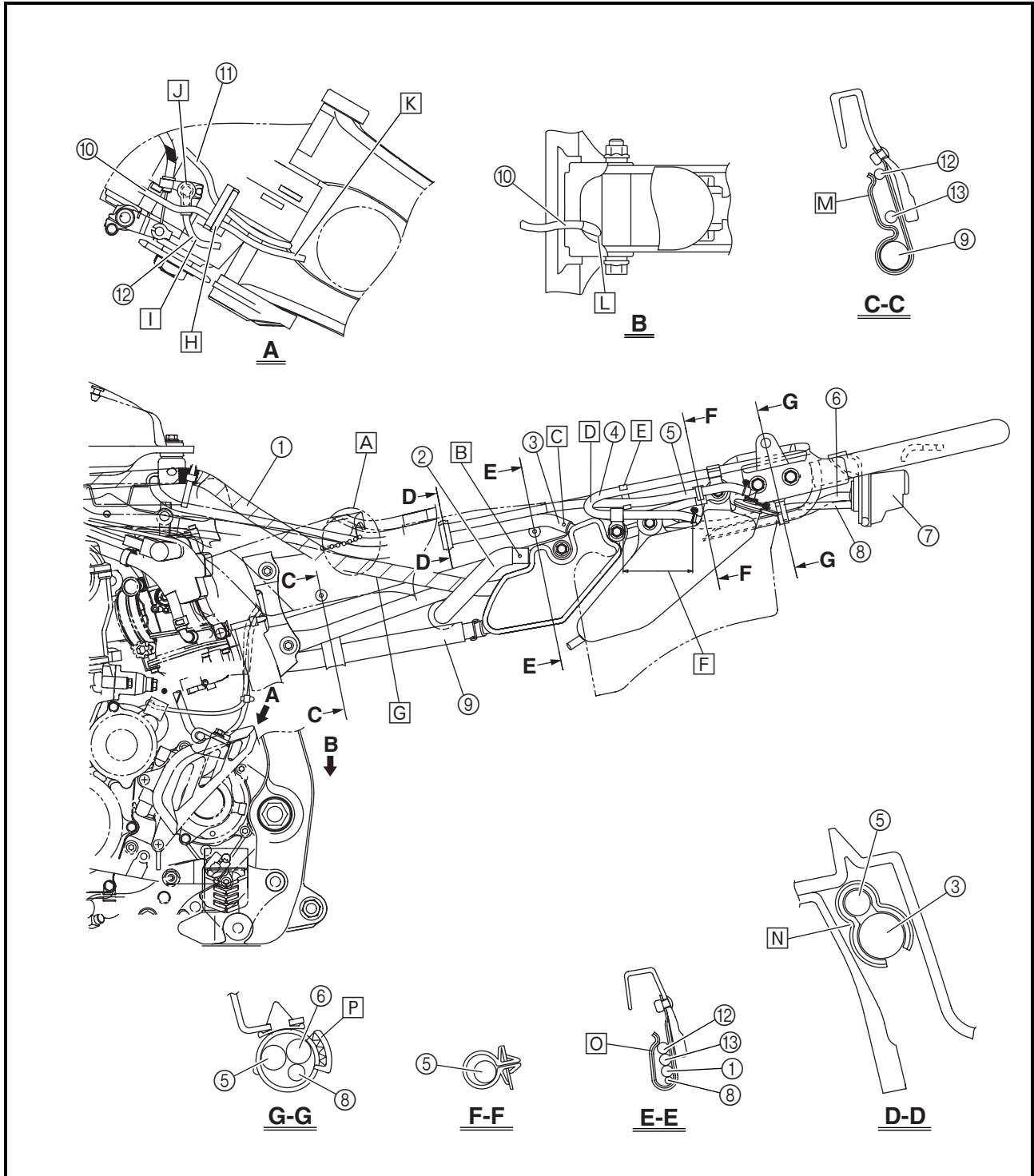
- A** When installing the rear fender, make sure that the rear fender does not overlap or pinch the cylinder head breather hose, coolant reservoir hose, or wire harness.
- B** Install the air filter case breather hose with the paint mark facing outward.
- C** Install the cylinder head breather hose with the paint mark facing outward.





- D Install the coolant reservoir breather hose without twisting the hose.
- E Fasten the coolant reservoir hose and the coolant reservoir breather hose with the holder, making sure that there is no slack in the hose.
- F Install the coolant reservoir breather hose as shown so that there is no slack.
- G Install the wire harness so that it does not hang from the rear fender.

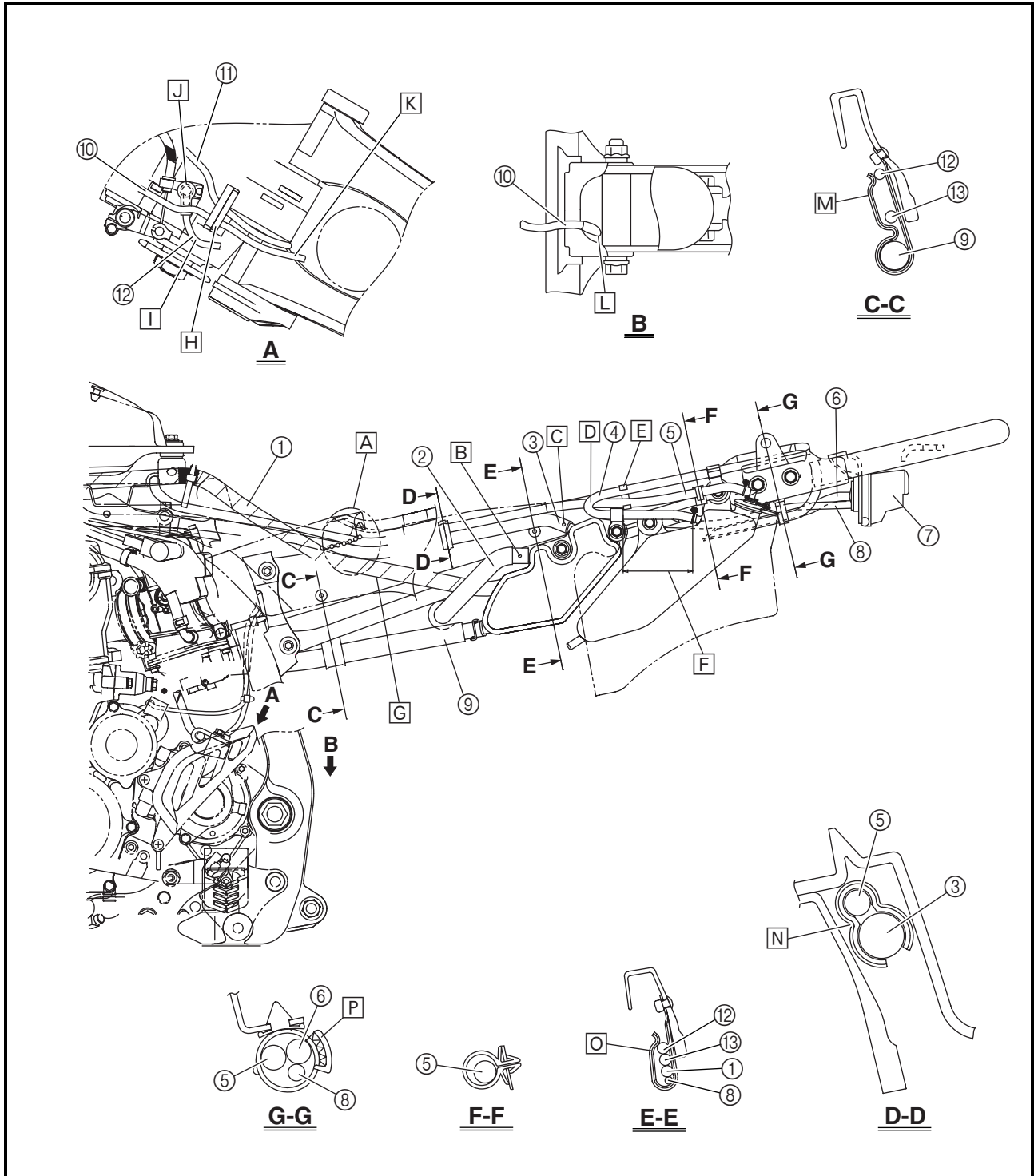
- H Pass the carburetor drain hose and carburetor air vent hoses through the hose guide on the engine from the left side of the vehicle in the order listed. Do not pinch the hoses.
- I Route the negative battery lead to the outside of the carburetor drain hose.
- J Make sure that the cover is installed securely on the negative battery lead terminal.





- K** Route the carburetor drain hose between the rear shock absorber and swingarm, and then under the frame.
- L** Route the carburetor drain hose between the frame and connecting arm and let it hang freely under the vehicle.
- M** Fasten the crankcase breather hose and starter motor lead with the holder in the order listed.

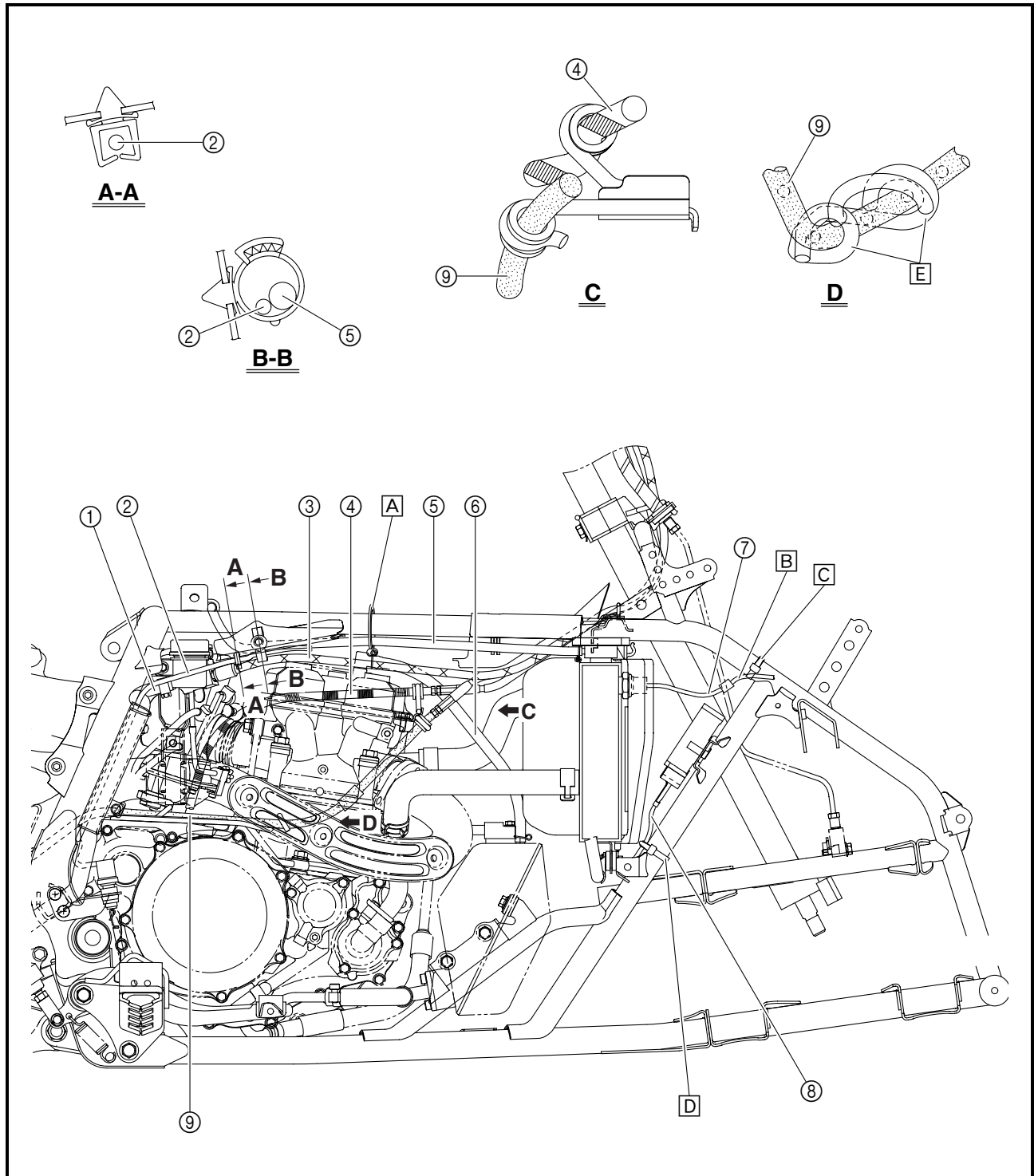
- N** Fasten the coolant reservoir hose on top of the cylinder head breather hose with the holder, and then route the hoses along the frame, making sure that they are not pinched or crushed.
- O** Fasten the tail/brake light lead, wire harness, starter motor lead, and negative battery lead with the holder in the order listed.
- P** Fasten the coolant reservoir hose, tail/brake light lead, and tail/brake light breather hose with the holder, making sure that the catch of the holder is facing inward.





- ① Brake fluid reservoir hose
- ② Rear brake light switch lead
- ③ Throttle cable
- ④ Clutch cable
- ⑤ Coolant reservoir hose
- ⑥ Oil tank breather hose
- ⑦ Thermo switch 1 lead
- ⑧ Resistor lead
- ⑨ Parking brake cable

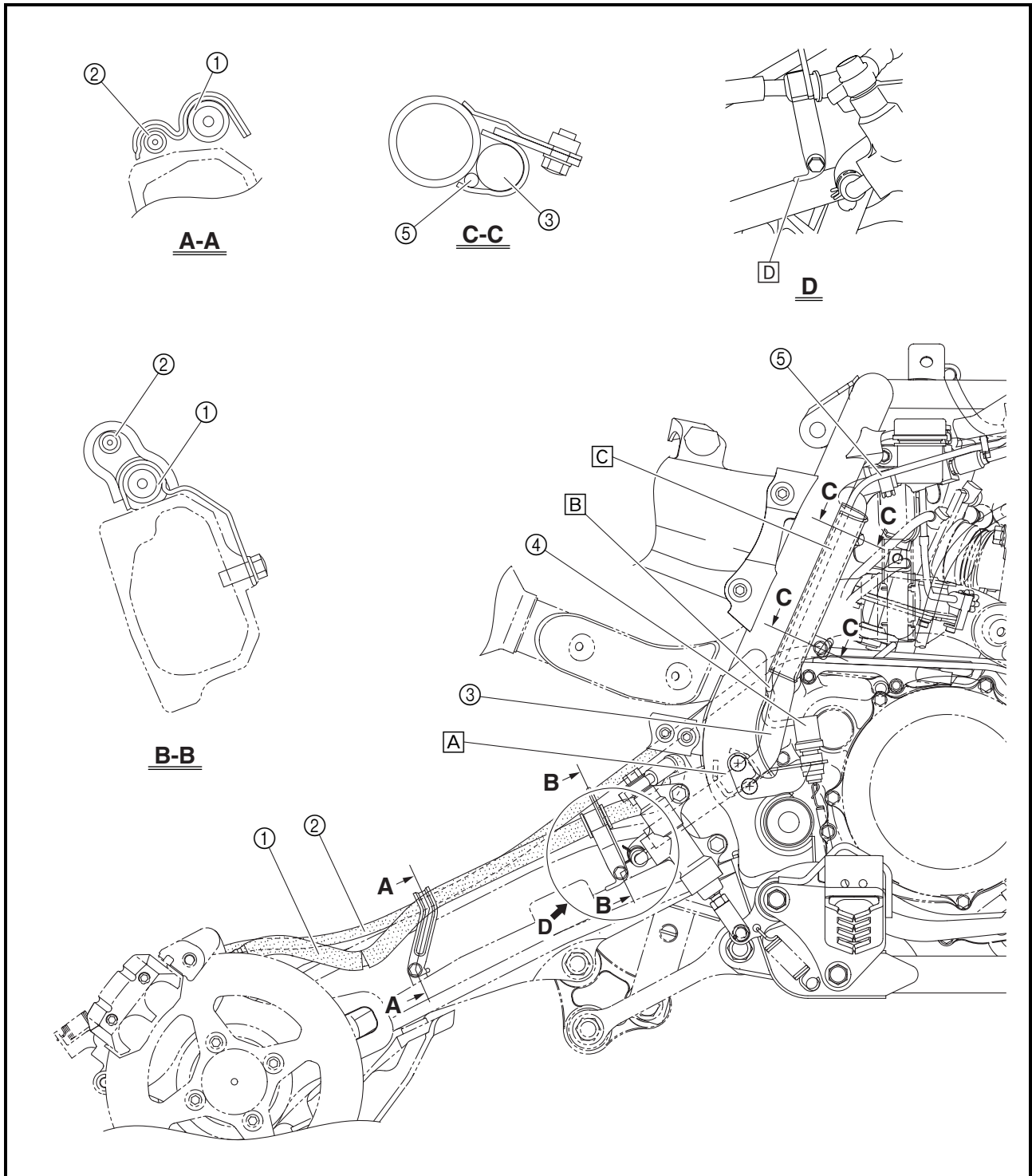
- A** Fasten the coolant reservoir hose with a clamp so that it is not pinched.
- B** Route the thermo switch 1 lead under the frame.
- C** Fasten the thermo switch 1 lead with a plastic band between the diode 1 and the diode 2 and then face the end of the band inward.
- D** Fasten the resistor lead with a plastic band and then face the end of the band inward.
- E** Pass the parking brake cable through the cable guide.





- ① Rear brake hose
- ② Parking brake cable
- ③ Brake fluid reservoir hose
- ④ Rear brake light switch
- ⑤ Rear brake light switch lead

- A** Pass the brake fluid reservoir hose through the guide.
- B** Route the rear brake light switch lead to the inside of the brake fluid reservoir hose so that it will not contact the rider's leg.
- C** Pass the brake fluid reservoir hose and rear brake light switch lead through the hose holder.
- D** Install the brake hose holder so that the projection on its end aligns with the line on the swing-arm as shown the illustration.

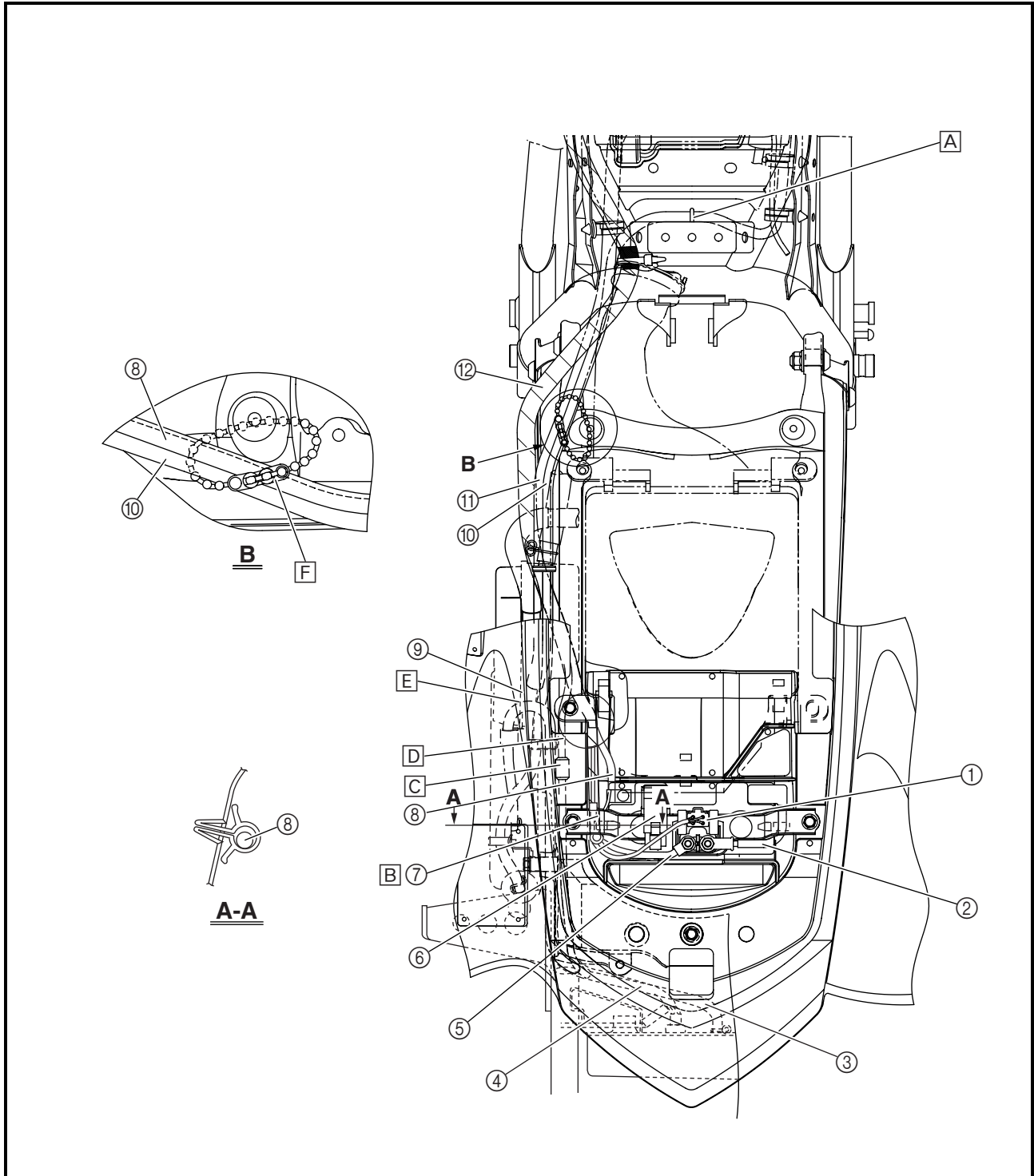




- ① Starter relay
- ② Positive battery lead
- ③ Tail/brake light breather hose
- ④ Tail/brake light lead
- ⑤ Starter motor lead
- ⑥ Starting circuit cut-off relay
- ⑦ Earth lead
- ⑧ Negative battery lead
- ⑨ Coolant reservoir breather hose
- ⑩ Coolant reservoir hose
- ⑪ Cylinder head breather hose

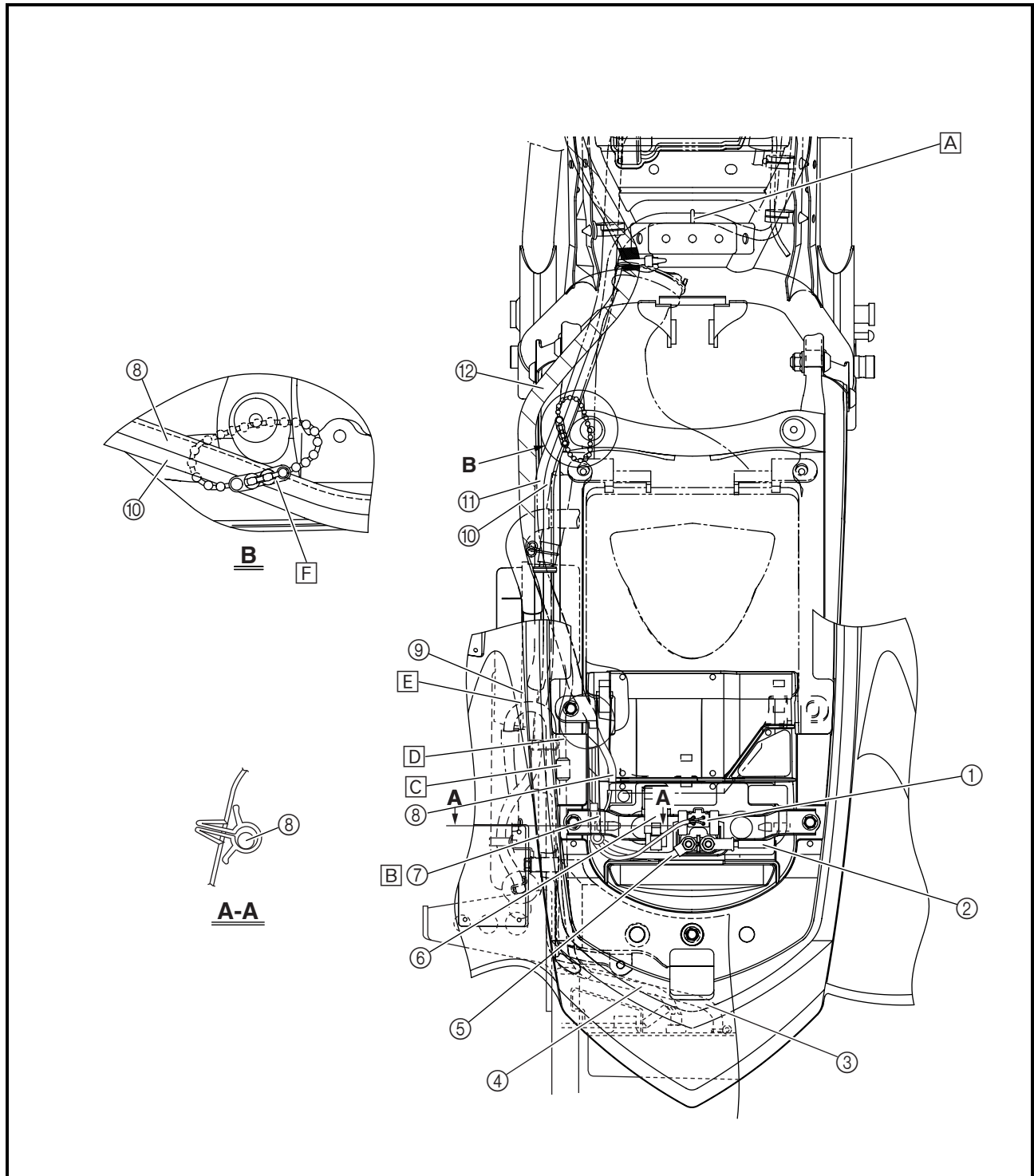
- ⑫ Wire harness

- A Pass the coolant reservoir hose through the hose guide.
- B Route the earth lead and wire harness under the battery bracket.
- C Connect the tail/brake light lead between the coolant reservoir and the rear fender.
- D Pass the wire harness through the notch in the rear fender. Be sure that the rear fender and air filter case do not pinch the wire harness.





- E Route the coolant reservoir breather hose so that it is not pinched by the rear fender.
- F Fasten the coolant reservoir hose and the cylinder head breather hose to the frame with the plastic beaded tie at its loosest position so that the hoses are not pinched.



INTRODUCTION/PERIODIC MAINTENANCE CHART FOR THE EMISSION CONTROL SYSTEM



EBS00029

PERIODIC CHECKS AND ADJUSTMENTS

INTRODUCTION

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

PERIODIC MAINTENANCE CHART FOR THE EMISSION CONTROL SYSTEM

NOTE:

- For ATVs not equipped with an odometer or an hour meter, follow the month maintenance intervals.
- For ATVs equipped with an odometer or an hour meter, follow the km (mi) or hours maintenance intervals. However, keep in mind that if the ATV isn't used for a long period of time, the month maintenance intervals should be followed.
- Items marked with an asterisk should be performed by a Yamaha dealer as they require special tools, data and technical skills.

ITEM	ROUTINE	Whichever comes first ⇒	INITIAL			EVERY		
			month	1	3	6	6	12
			km (mi)	320 (200)	1300 (800)	2500 (1600)	2500 (1600)	5000 (3200)
			hours	20	80	160	160	320
Fuel line*	<ul style="list-style-type: none"> • Check fuel hose for cracks or damage. • Replace if necessary. 				○	○	○	
Spark plug	<ul style="list-style-type: none"> • Check condition. • Adjust gap and clean. • Replace if necessary. 	○	○	○	○	○		
Valves*	<ul style="list-style-type: none"> • Check valve clearance. • Adjust if necessary. 	○		○	○	○		
Carburetor*	<ul style="list-style-type: none"> • Check starter (choke) operation. • Adjust engine idle speed. 	○	○	○	○	○		
Crankcase breather system*	<ul style="list-style-type: none"> • Check breather hose for cracks or damage. • Replace if necessary. 			○	○	○		
Exhaust system*	<ul style="list-style-type: none"> • Check for leakage. • Tighten if necessary. • Replace gasket if necessary. 			○	○	○		
Spark arrester	<ul style="list-style-type: none"> • Clean. 			○	○	○		

GENERAL MAINTENANCE AND LUBRICATION CHART



GENERAL MAINTENANCE AND LUBRICATION CHART

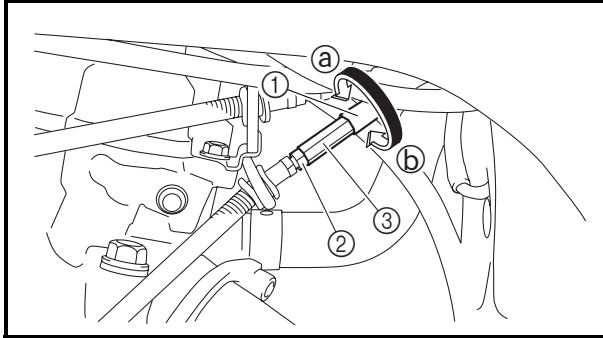
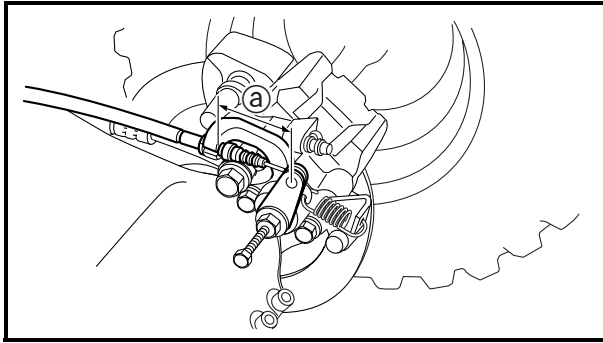
ITEM	ROUTINE	Whichever comes first ⇒	INITIAL			EVERY		
			month	1	3	6	6	12
			km (mi)	320 (200)	1300 (800)	2500 (1600)	2500 (1600)	5000 (3200)
			hours	20	80	160	160	320
Air filter element	<ul style="list-style-type: none"> Clean. Replace if necessary. 		Every 20–40 hours (more often in wet or dusty areas)					
Clutch*	<ul style="list-style-type: none"> Check operation. Adjust if necessary. 		○		○	○	○	
Front brake*	<ul style="list-style-type: none"> Check free play/operation/fluid leakage/ See NOTE. Correct if necessary. 		○	○	○	○	○	
Rear brake*	<ul style="list-style-type: none"> Check operation/fluid leakage/ See NOTE. Correct if necessary. 		○	○	○	○	○	
Wheels*	<ul style="list-style-type: none"> Check balance/damage/runout. Replace if necessary. 		○		○	○	○	
Wheel bearings*	<ul style="list-style-type: none"> Check bearing assemblies for looseness/damage. Replace if damaged. 		○		○	○	○	
Rear arm pivots*	<ul style="list-style-type: none"> Lubricate every 6 months with lithium-soap-based grease. 				○	○	○	
Upper and lower arm pivot and steering shaft*	<ul style="list-style-type: none"> Lubricate every 6 months with lithium-soap-based grease. 				○	○	○	
Drive chain	<ul style="list-style-type: none"> Check and adjust slack/alignment/clean/lube. 		○	○	○	○	○	
Fittings and fasteners*	<ul style="list-style-type: none"> Check all chassis fittings and fasteners. Correct if necessary. 		○	○	○	○	○	
Front and rear suspension*	<ul style="list-style-type: none"> Check operation. Correct if necessary. 				○		○	
Steering system*	<ul style="list-style-type: none"> Check operation. Repair if damaged. Check toe-in. Adjust if necessary. 		○	○	○	○	○	
Engine oil	<ul style="list-style-type: none"> Replace (Warm engine before draining). 		○		○	○	○	
Engine oil filter element	<ul style="list-style-type: none"> Replace. 		○		○		○	
Cooling system	<ul style="list-style-type: none"> Check coolant leakage. Repair if necessary. Replace coolant every 24 months. 		○	○	○	○	○	
Lights and switches*	<ul style="list-style-type: none"> Check operation. Adjust headlight beams. 		○	○	○	○	○	

NOTE:

- Recommended brake fluid: DOT 4
- Brake fluid replacement:
 - When disassembling the master cylinder or caliper cylinder, replace the brake fluid. Normally check the brake fluid level and add the fluid as required.
 - On the inner parts of the master cylinder and caliper cylinder, replace the oil seals every two years.
 - Replace the brake hoses every four years, or if cracked or damaged.



Indicates a potential hazard that could result in serious injury or death.



CHASSIS

ADJUSTING THE PARKING BRAKE

1. Check:
 - parking brake cable end length ①
Out of specification → Adjust.



Parking brake cable end length
47 ~ 51 mm (1.85 ~ 2.01 in)

2. Adjust:
 - parking brake cable end length



- a. Slide back the rubber cover ①.
- b. Loosen the locknut ②.
- c. Turn the adjusting nut ③ in direction ① or ② until the specified brake cable end length is obtained.
- d. Tighten the locknut ②.
- e. Slide the rubber cover to its original position.

WARNING

After this adjustment is performed, lift the rear wheels off the ground by placing a block under the engine, and spin the rear wheels to ensure there is no brake drag. If any brake drag is noticed perform the above steps again.



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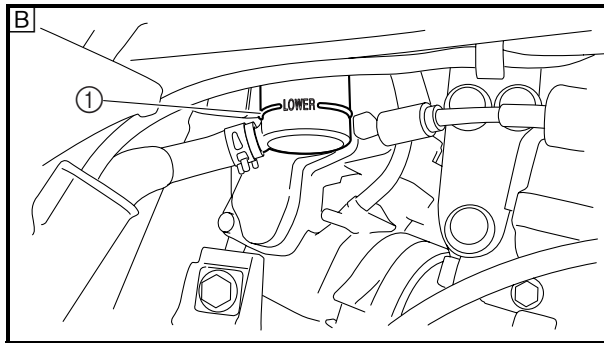
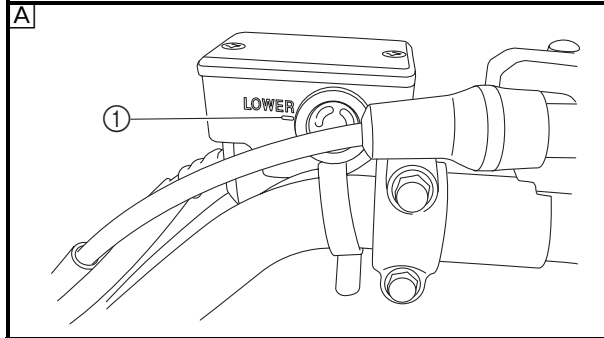
CHECKING THE BRAKE FLUID LEVEL

1. Place the vehicle on a level surface.

NOTE:

When checking the brake fluid level, make sure that the top of the brake master cylinder and brake fluid reservoir is horizontal.

2. Remove:
 - Right side cover
Refer to “SEAT, FENDERS AND FUEL TANK”. (Manual No.: 5TG-28197-10)



3. Check:
 - brake fluid level
Below the minimum level mark ① → Add the recommended brake fluid to the proper level.



- A Front brake
- B Rear brake

⚠ WARNING

- Use only the designated brake fluid. Other brake fluids may cause the rubber seals to deteriorate, causing leakage and poor brake performance.
- Refill with the same type of brake fluid that is already in the system. Mixing brake fluids may result in a harmful chemical reaction, leading to poor brake performance.
- When refilling, be careful that water does not enter the brake fluid reservoir. Water will significantly lower the boiling point of the brake fluid and could cause vapor lock.

CAUTION:

Brake fluid may damage painted surfaces and plastic parts. Therefore, always clean up any spilt brake fluid immediately.

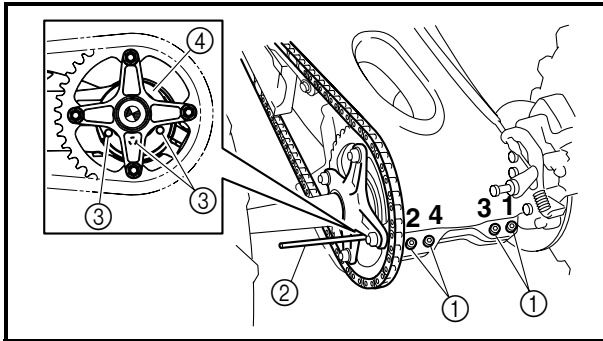
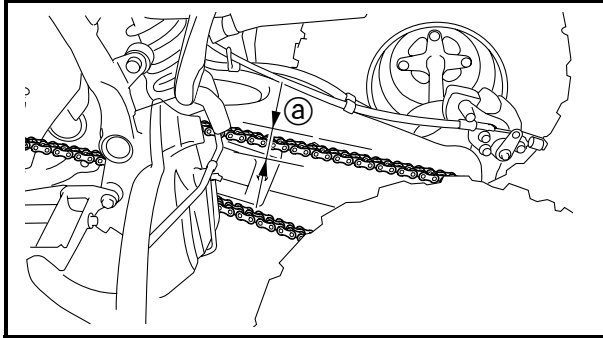
NOTE:

In order to ensure a correct reading of the brake fluid level, make sure that the top of the brake master cylinder and brake fluid reservoir is horizontal.

ADJUSTING THE DRIVE CHAIN SLACK

NOTE: _____

Measure the drive chain slack halfway between the drive axle and the rear axle.




CAUTION: _____

A drive chain that is too tight will overload the engine and other vital parts, and one that is too loose can skip and damage the swingarm or cause an accident. Therefore, keep the drive chain slack within the specified limits.

1. Measure:

- drive chain slack ①
- Out of specification → Adjust.

	Drive chain slack 25 ~ 35 mm (0.98 ~ 1.38 in)
---	---

2. Adjust:

- drive chain slack

NOTE: _____

The drive chain slack is adjusted by the rotation of the rear axle hub.

- a. Loosen the rear axle pinch bolts ①.

NOTE: _____

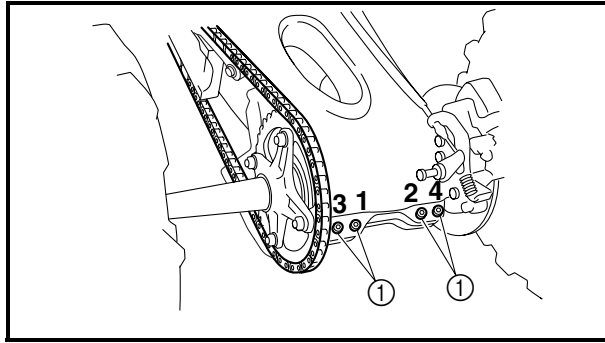
Loosen the rear axle pinch bolts in the proper sequence as shown.

- b. Insert an appropriate shaft ② in the hole ③ of rear axle hub ④.
- c. Shift the transmission into the neutral position.
- d. To loosen the drive chain, push the vehicle forward and to tighten the drive chain, pull the vehicle backward.

CAUTION: _____

Excessive chain slack will overload the engine and other vital parts; keep the slack within the specified limits.

ADJUSTING THE DRIVE CHAIN SLACK/ ADJUSTING THE FRONT SHOCK ABSORBERS



- e. If the chain slack cannot be adjusted, replace the sprockets and drive chain as a set.
- f. Tighten the rear axle pinch bolts ①.

	Rear axle pinch bolt 21 Nm (2.1 m · kg, 15 ft · lb)
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NOTE: _____

- Tighten the rear axle pinch bolts ① in the proper sequence as shown.
- The chain should be cleaned and lubricated after every use of the vehicle.

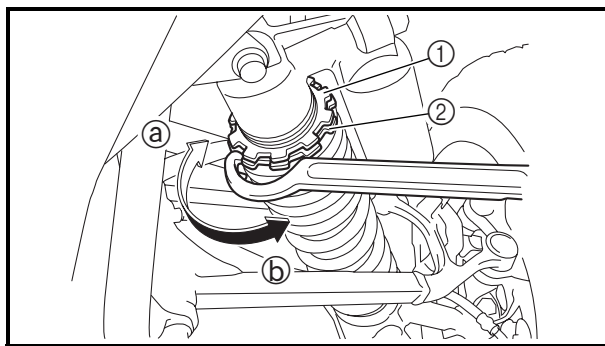


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ADJUSTING THE FRONT SHOCK ABSORBERS

⚠ WARNING _____

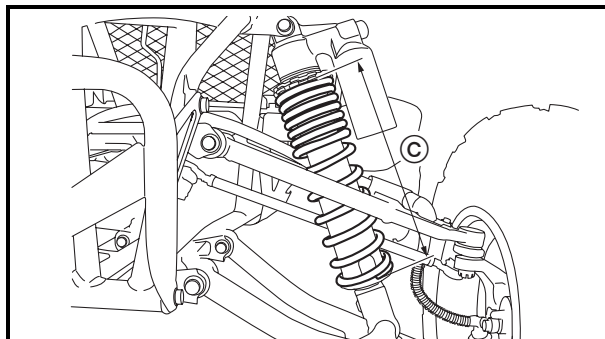
Always adjust the spring preload, rebound damping force and compression damping force of both front shock absorbers to the same setting. Uneven adjustment can result in poor handling and loss of stability.



1. Adjust:
 - spring preload



- a. Elevate the front wheels by placing a suitable stand under the frame.
- b. Loosen the locknut ①.
- c. Turn the adjusting ring ② in direction ③ or ④.



Direction ③	Spring preload is increased (suspension is harder).
Direction ④	Spring preload is decreased (suspension is softer).

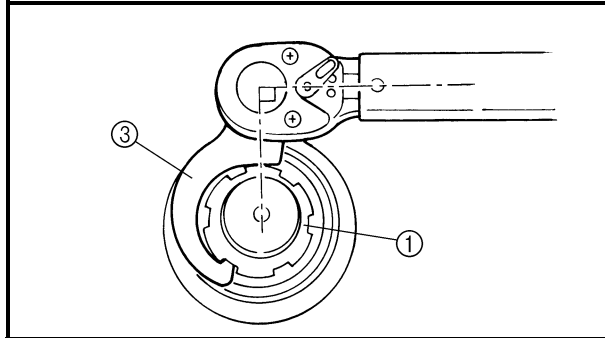
Adjusting length ⑤	
Standard: 255 mm (10.04 in)	
Minimum: 246.5 mm (9.70 in)	
Maximum: 261.5 mm (10.30 in)	

NOTE: _____

- Be sure to remove all dirt and mud from around the locknut and adjusting ring before adjustment.
- The length of the spring (installed) changes 1.5 mm (0.06 in) per turn of the adjuster.

CAUTION: _____

Never attempt to turn the adjusting ring beyond the maximum or minimum setting.




- d. Tighten the locknut ① with a steering nut wrench ③.

NOTE: _____

Set the torque wrench at a right angle to the steering nut wrench.

	Steering nut wrench P/N. YU-33975, 90890-01443
---	--

	Locknut 30 Nm (3.0 m · kg, 22 ft · lb)
--	--

NOTE: _____

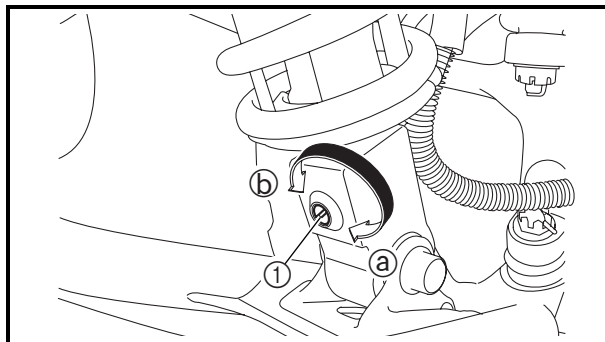
Always tighten the locknut against the adjusting ring, then torque it to specification.



2. Adjust:
- rebound damping force



- a. Turn the adjusting screw ① in direction ① or ②.



Direction ①	Rebound damping force is increased.
Direction ②	Rebound damping force is decreased.

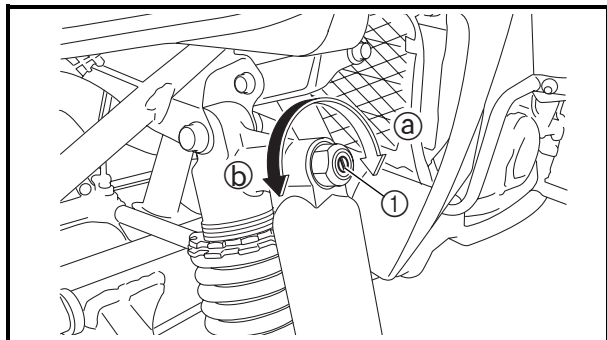
From the fully turned-in position	
Standard: 11 clicks out	
Minimum: 22 clicks out	
Maximum: 1 click out	

ADJUSTING THE FRONT SHOCK ABSORBERS/ ADJUSTING THE REAR SHOCK ABSORBER



CAUTION:

Do not force the adjuster past the minimum or maximum extent of adjustment. The adjuster may be damaged.



3. Adjust:
 - compression damping force



- a. Turn the adjusting screw ① in direction ① or ②.

Direction ①	Compression damping force is increased.
Direction ②	Compression damping force is decreased.

From the fully turned-in position
Standard: 11 clicks out
Minimum: 20 clicks out
Maximum: 1 click out

CAUTION:

Do not force the adjuster past the minimum or maximum extent of adjustment. The adjuster may be damaged.

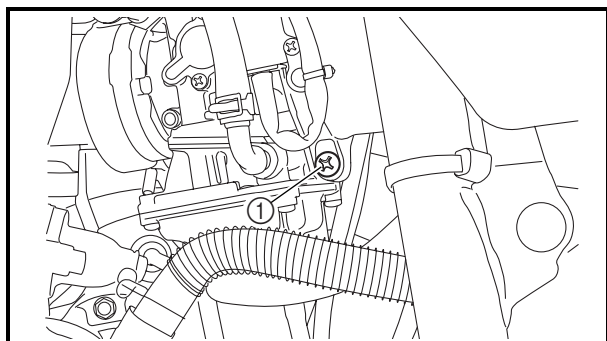


EBS00111

ADJUSTING THE REAR SHOCK ABSORBER

1. Remove:
 - seat


Refer to “SEAT, FENDERS AND FUEL TANK”. (Manual No.: 5TG-28197-10)




2. Loosen the clamp screw ①, and then disconnect the air intake duct.

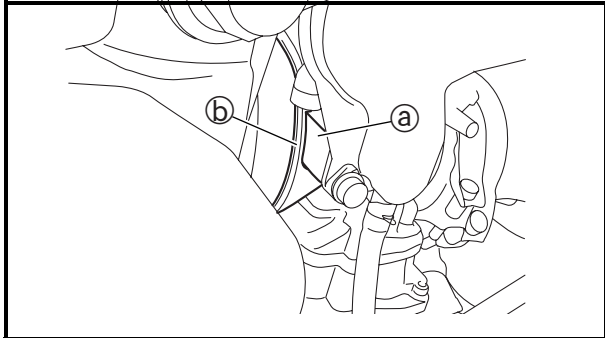
ADJUSTING THE REAR SHOCK ABSORBER



	Steering nut wrench P/N. YU-33975, 90890-01443
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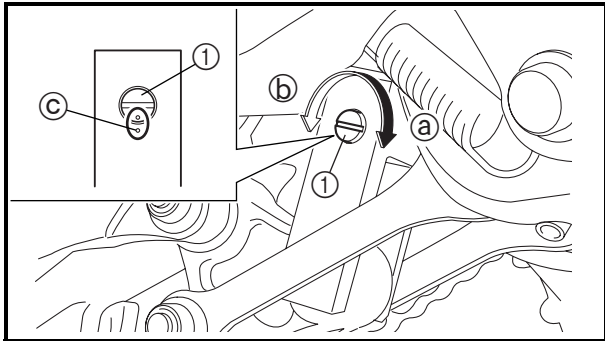
	Locknut 44 Nm (4.4 m · kg, 32 ft · lb)
---	--

NOTE: _____
Always tighten the locknut against the adjusting ring, then torque it to specification.



5. Install:
- air filter case with air intake duct

NOTE: _____
Align the projection (a) on the carburetor with the slot (b) in the air intake duct.



6. Adjust:
- rebound damping force



- a. Turn the adjusting screw (1) in direction (a) or (b).

Direction (a)	Rebound damping force is increased.
Direction (b)	Rebound damping force is decreased.

Minimum (soft): Adjusting screw fully turned out
Standard: Adjusting screw 1 1/4 turns out from the fully turned in position
Maximum (hard): Adjusting screw fully turned in

NOTE: _____
Make sure that the position indicator marks (c) are aligned when the shock absorber is set to the standard setting.

CAUTION: _____
Do not force the adjuster past the minimum or maximum extent of adjustment. The adjuster may be damaged.



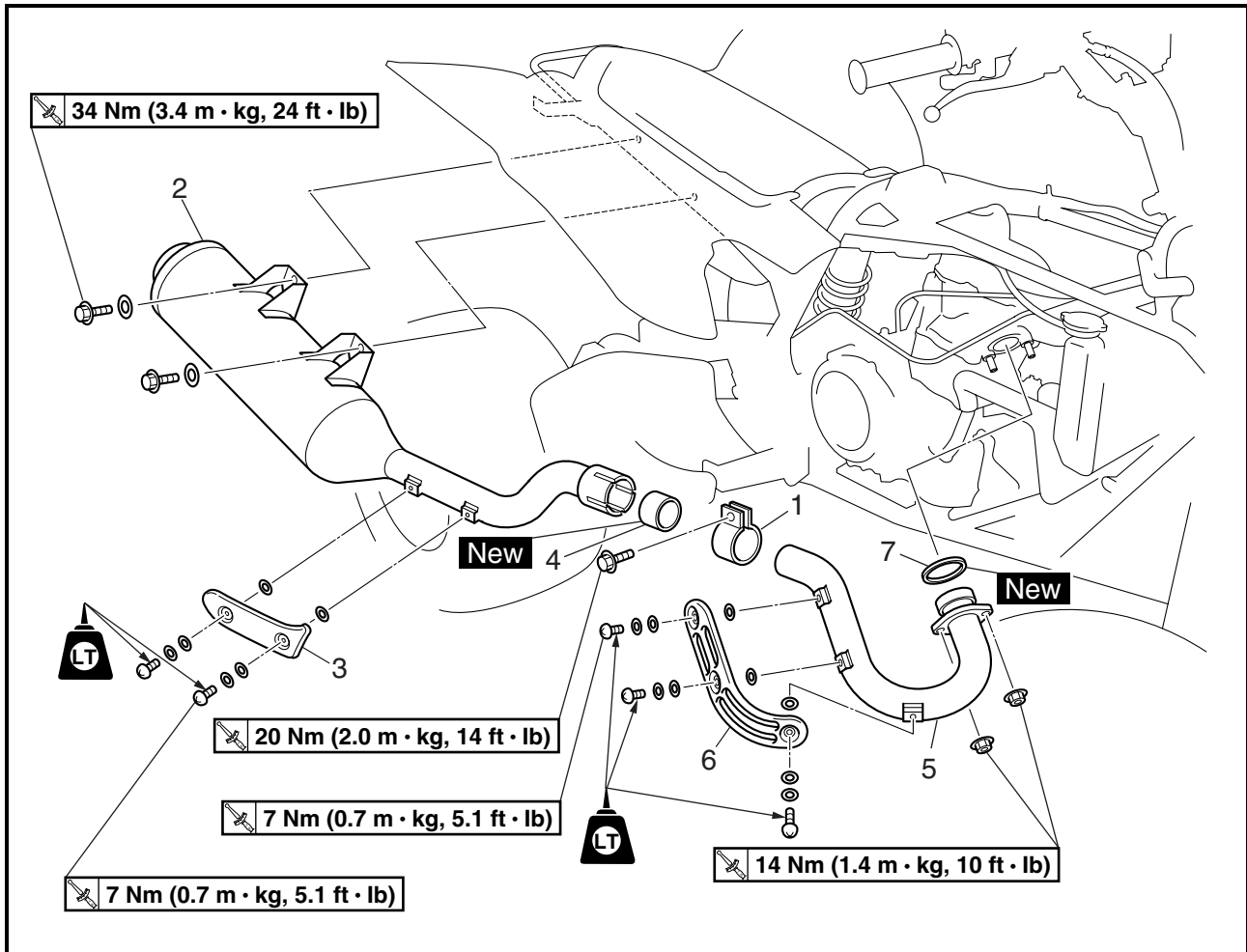


EBS00198

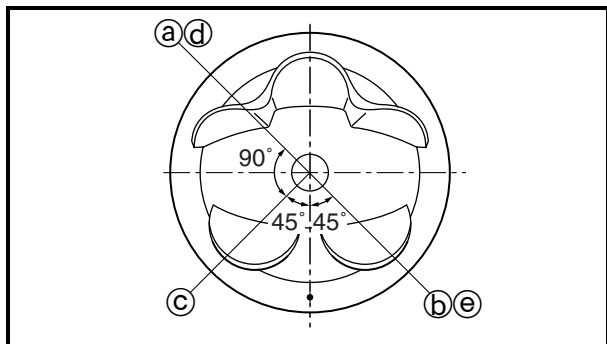
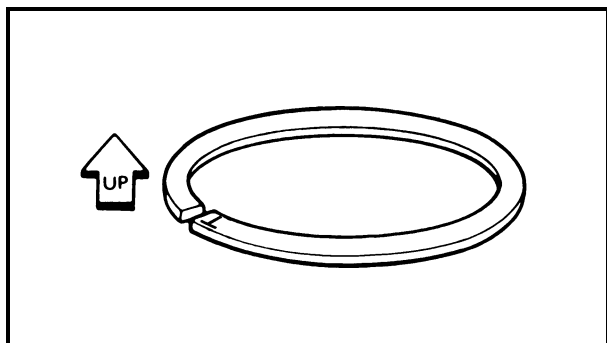
ENGINE

ENGINE REMOVAL

MUFFLER AND EXHAUST PIPE



Order	Job/Part	Q'ty	Remarks
	Removing the muffer and exhaust pipe		Remove the parts in the order listed.
	Seat/fuel tank cover/side covers (left and right)		Refer to "SEAT, FENDERS AND FUEL TANK" in chapter 3. (Manual No.: 5TG-28197-10)
	Fuel tank		
	Right foot protector/engine skid plate		
1	Clamp	1	
2	Muffer	1	Refer to "INSTALLING THE EXHAUST PIPE AND MUFFLER". (Manual No.: 5TG-28197-10)
3	Muffer protector	1	
4	Gasket	1	
5	Exhaust pipe	1	
6	Exhaust pipe protector	1	
7	Gasket	1	



EBS00252

INSTALLING THE PISTON

1. Install:
 - piston rings
(onto the piston)

NOTE:

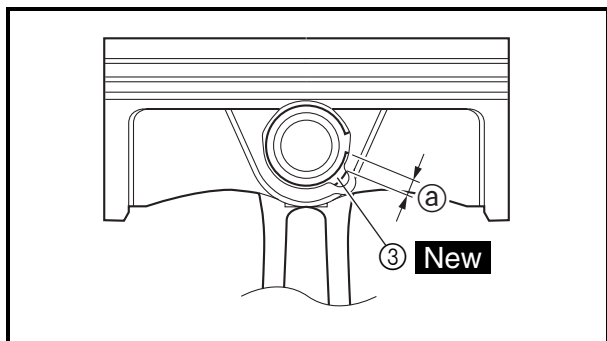
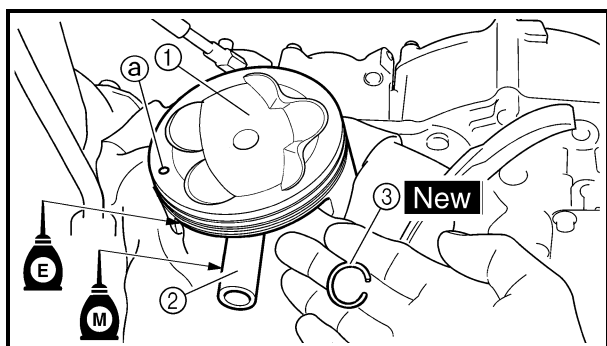
- Be sure to install the piston rings so that the manufacturer's marks or numbers are located on the upper side of the rings.
- Lubricate the piston and piston rings liberally with engine oil.

2. Position:

- top ring
- 2nd ring
- oil ring

Offset the piston ring end gaps as shown.

- Ⓐ Top ring end
- Ⓑ 2nd ring end
- Ⓒ Oil ring end (upper)
- Ⓓ Oil ring
- Ⓔ Oil ring end (lower)



3. Install:

- piston ①
- piston pin ②
- piston pin clips ③ **New**

NOTE:

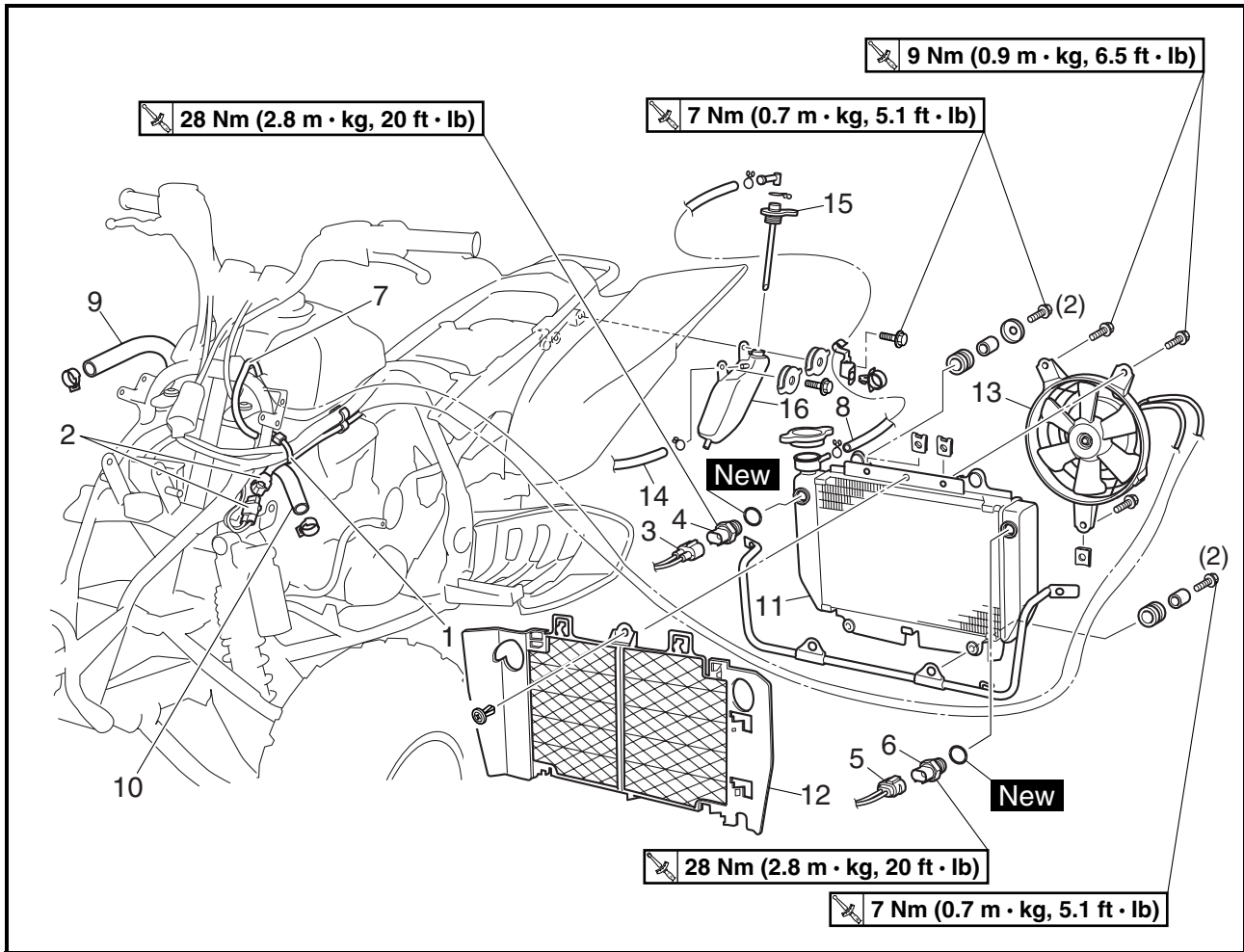
- Apply engine oil onto the piston pin, piston rings and piston.
- Be sure that the punch mark Ⓐ on the piston points to the exhaust side of the engine.
- Before installing the piston pin clips, cover the crankcase with a clean rag to prevent the piston pin clips from falling into the crankcase.
- When installing a piston pin clip, make sure that the clip ends are 3 mm (0.12 in) Ⓐ or more from the cutout in the piston.



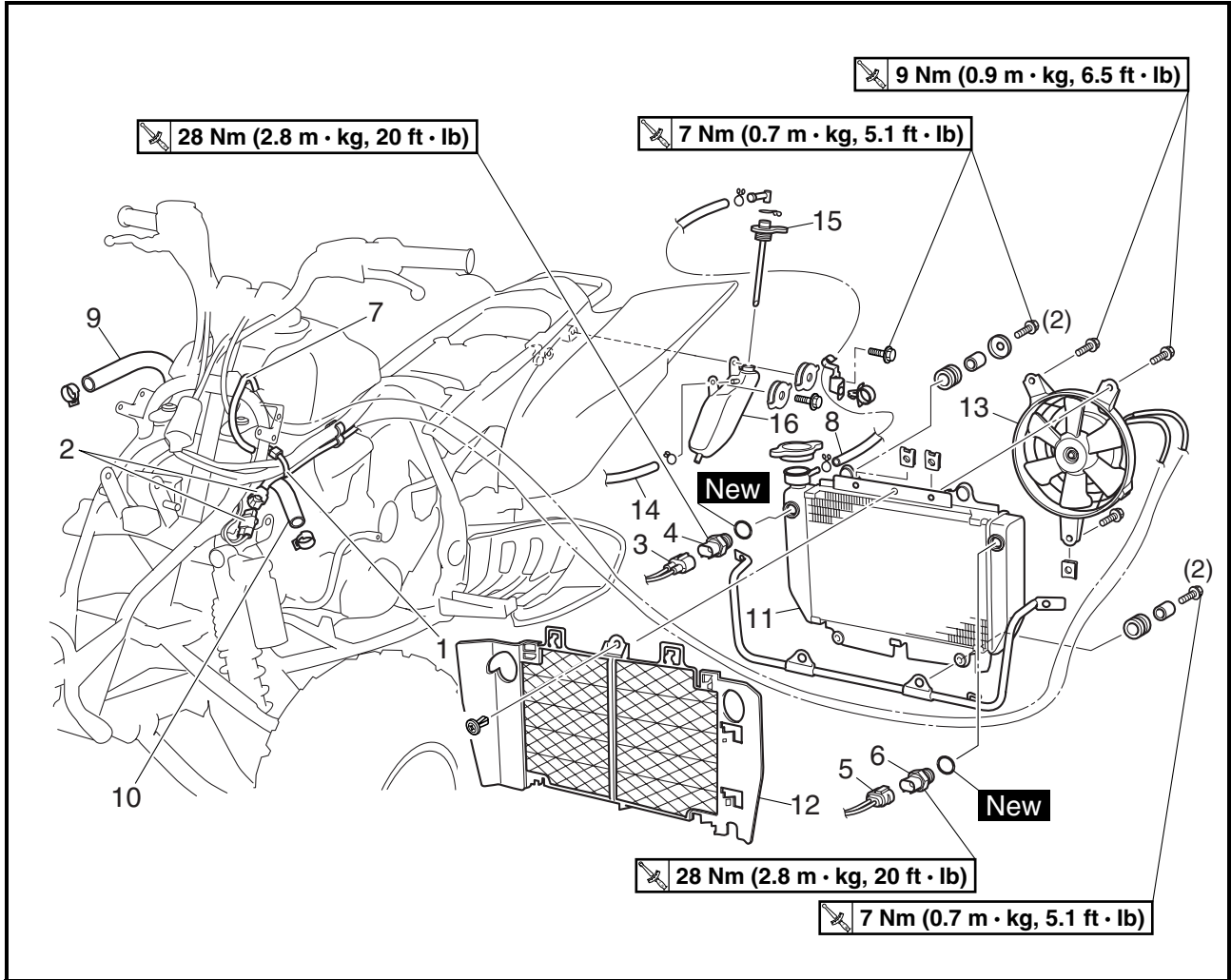
EBS00125

COOLING SYSTEM

RADIATOR



Order	Job/Part	Q'ty	Remarks
	Removing the radiator		Remove the parts in the order listed.
	Seat/fuel tank cover/side covers (left and right)/front fender		Refer to "SEAT, FENDERS AND FUEL TANK" in chapter 3. (Manual No.: 5TG-28197-10)
	Coolant		Drain.
1	Plastic band	1	
2	Radiator fan coupler	1	Disconnect.
3	Thermo switch 1 coupler	1	Disconnect.
4	Thermo switch 1	1	
5	Thermo switch 2 coupler	1	Disconnect.
6	Thermo switch 2	1	
7	Radiator fan breather hose	1	
8	Coolant reservoir hose	1	
9	Radiator outlet hose	1	
10	Radiator inlet hose	1	

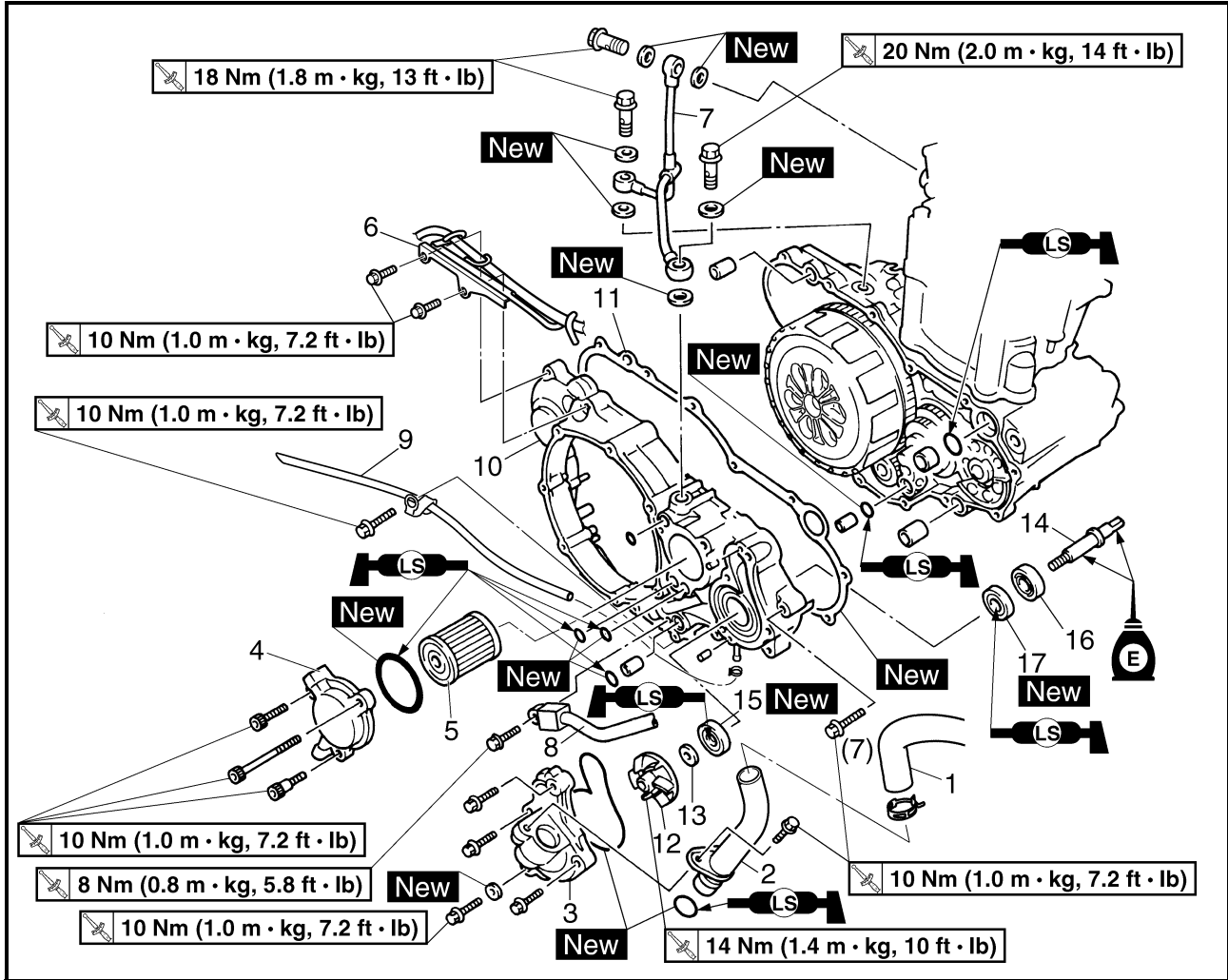


Order	Job/Part	Q'ty	Remarks
11	Radiator	1	For installation, reverse the removal procedure.
12	Radiator grill	1	
13	Radiator fan	1	
14	Coolant reservoir breather hose	1	
15	Coolant reservoir cap	1	
16	Coolant reservoir	1	

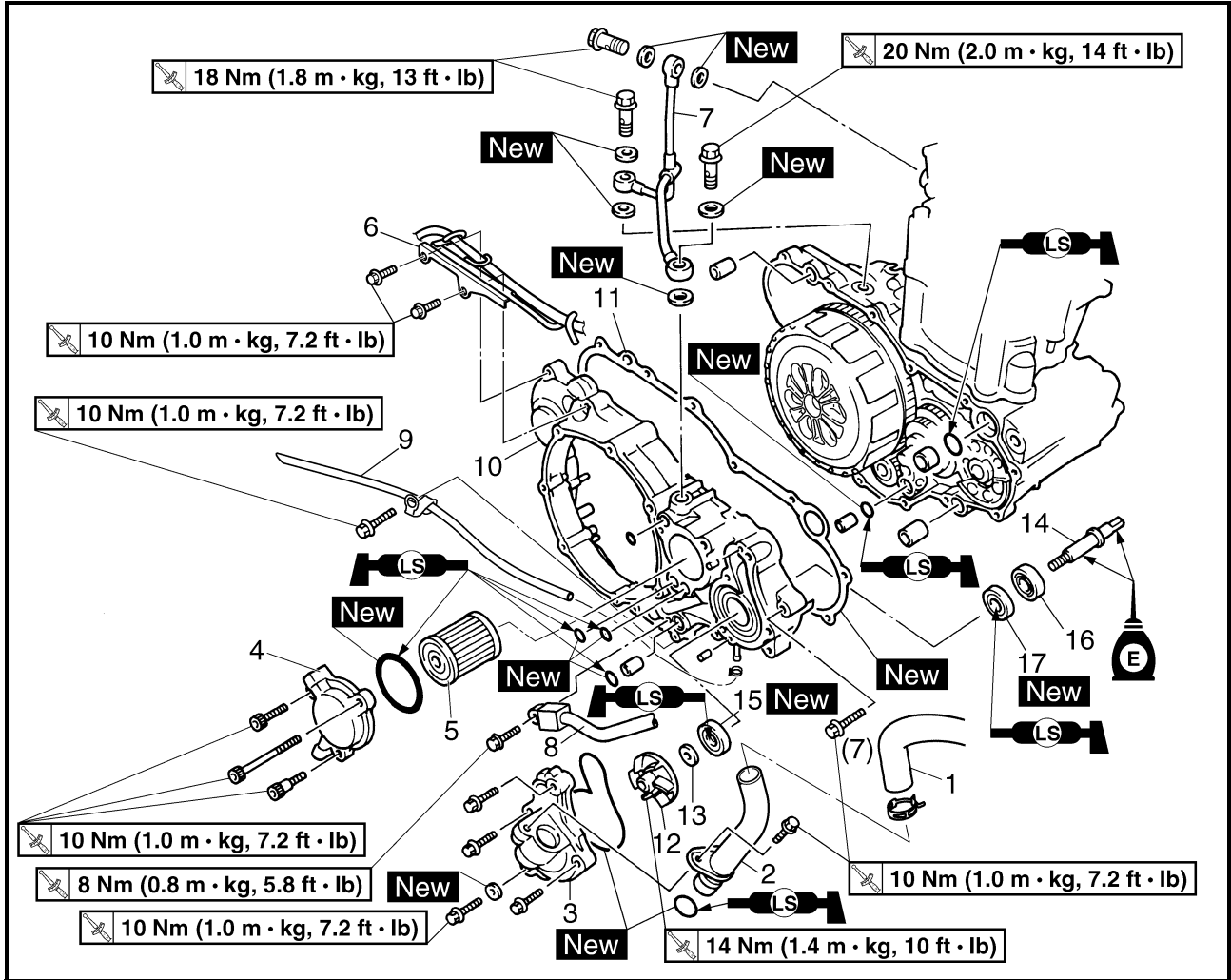


EBS00134

WATER PUMP



Order	Job/Part	Q'ty	Remarks
	Removing the water pump		Remove the parts in the order listed.
	Engine oil		Drain.
	Coolant		Drain.
	Exhaust pipe		Refer to "ENGINE REMOVAL" in chapter 4. (Manual No.: 5TG-28197-10)
	Rear brake light switch/footrest (right)		Refer to "FRONT AND REAR BRAKES" in chapter 7. (Manual No.: 5TG-28197-10)
	Clutch cover		Refer to "CLUTCH" in chapter 4. (Manual No.: 5TG-28197-10)
1	Radiator outlet hose	1	
2	Water pump inlet pipe	1	
3	Water pump housing	1	
4	Oil filter element cover	1	
5	Oil filter element	1	



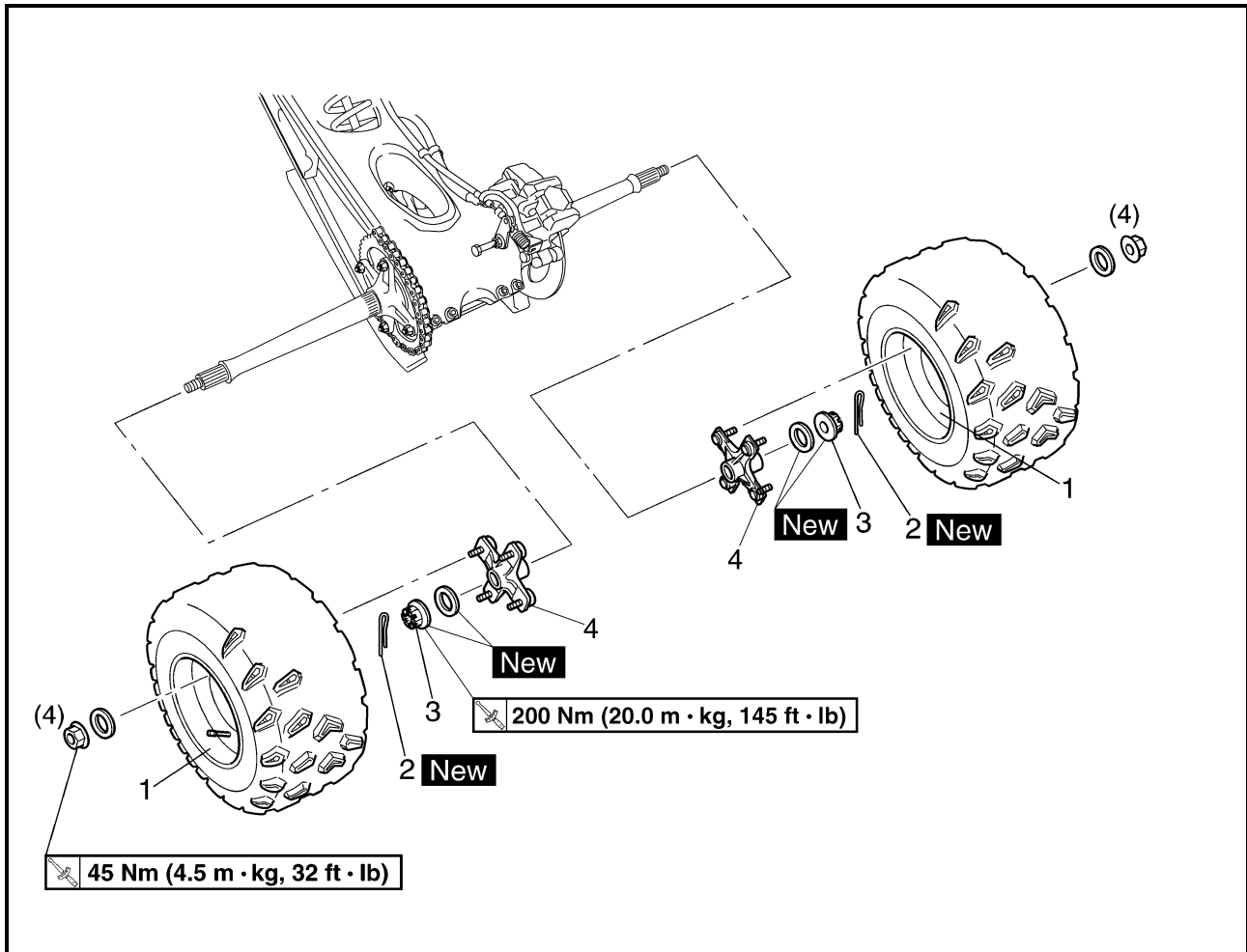
Order	Job/Part	Q'ty	Remarks
6	Parking brake holder	1	
7	Oil delivery pipe 1	1	
8	Oil pipe 1	1	
9	Water pump breather hose	1	
10	Right crankcase cover	1	
11	Gasket	1	
12	Impeller	1	
13	Washer	1	
14	Impeller shaft	1	
15	Oil seal	1	
16	Bearing	1	
17	Oil seal	1	
			For installation, reverse the removal procedure.



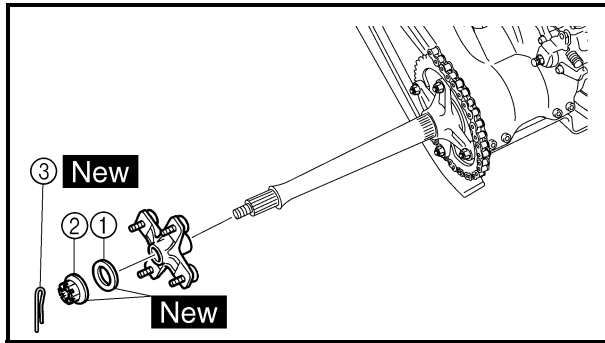
CHASSIS

FRONT AND REAR WHEELS

REAR WHEELS



Order	Job/Part	Q'ty	Remarks
	Removing the rear wheels		Remove the parts in the order listed. Place the vehicle on a level surface. ⚠ WARNING _____ Securely support the vehicle so there is no danger of it falling over.
1	Rear wheel	2] Refer to "INSTALLING THE REAR WHEEL HUBS". For installation, reverse the removal procedure.
2	Cotter pin	2	
3	Axle nut	2	
4	Wheel hub	2	




INSTALLING THE REAR WHEEL HUBS


1. Install:
- rear axle washers ① **New**
 - rear axle nuts ② **New**
 - cotter pins ③ **New**



- a. Apply a rust preventive lubricant to the threads on both sides of the rear axle and to the wheel hub surfaces that contact the rear axle washers.
- b. Tighten the rear axle nuts to specification.

	<p>Rear axle nut 200 Nm (20.0 m · kg, 145 ft · lb)</p>
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- c. Loosen the rear axle nuts completely.
- d. Retighten the rear axle nuts to specification.

	<p>Rear axle nut 200 Nm (20.0 m · kg, 145 ft · lb)</p>
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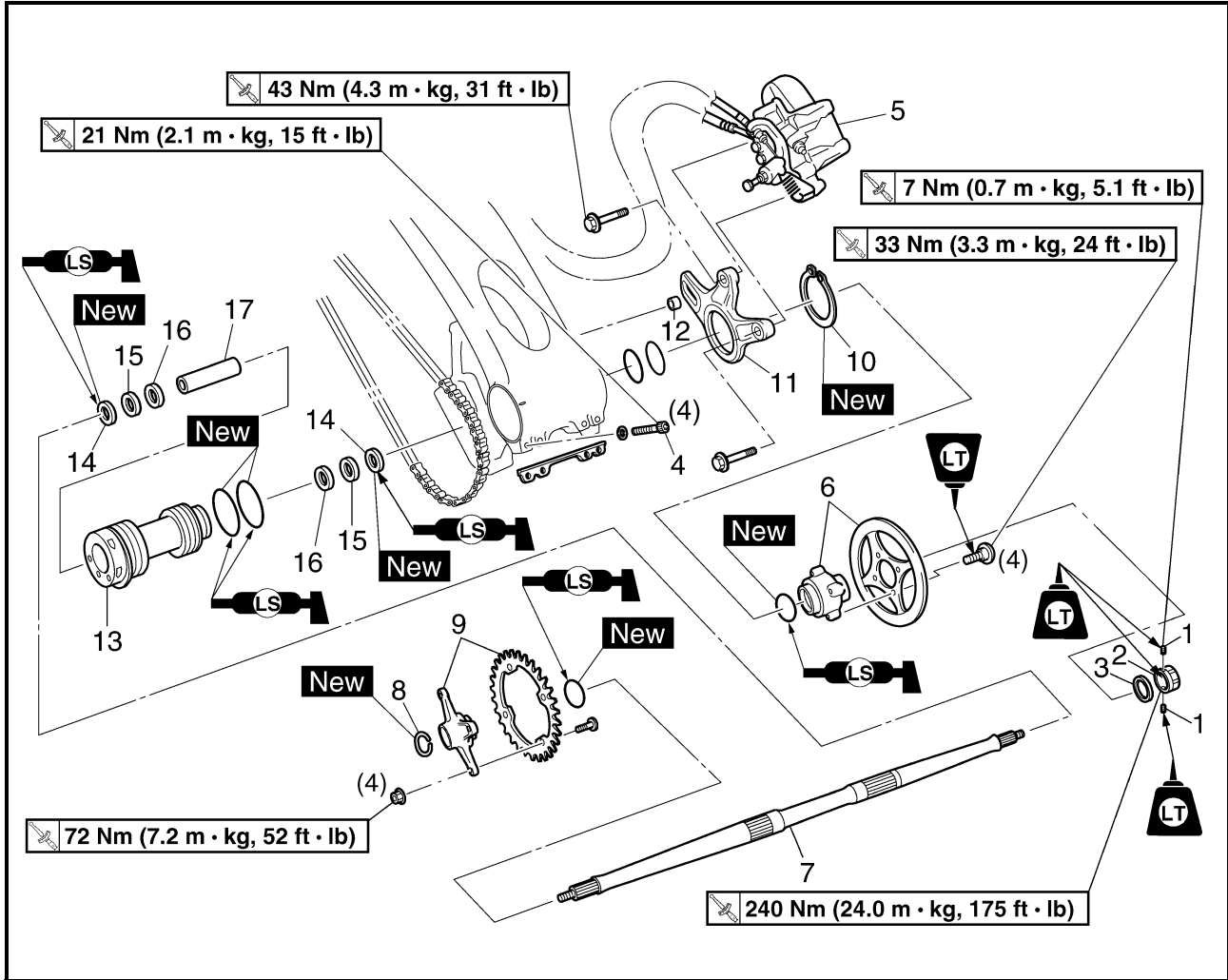


NOTE: _____
 Do not loosen the axle nuts after torquing them. If an axle nut slot is not aligned with the cotter pin hole on either side of the axle, further tighten the axle nut until a slot is aligned with the hole.

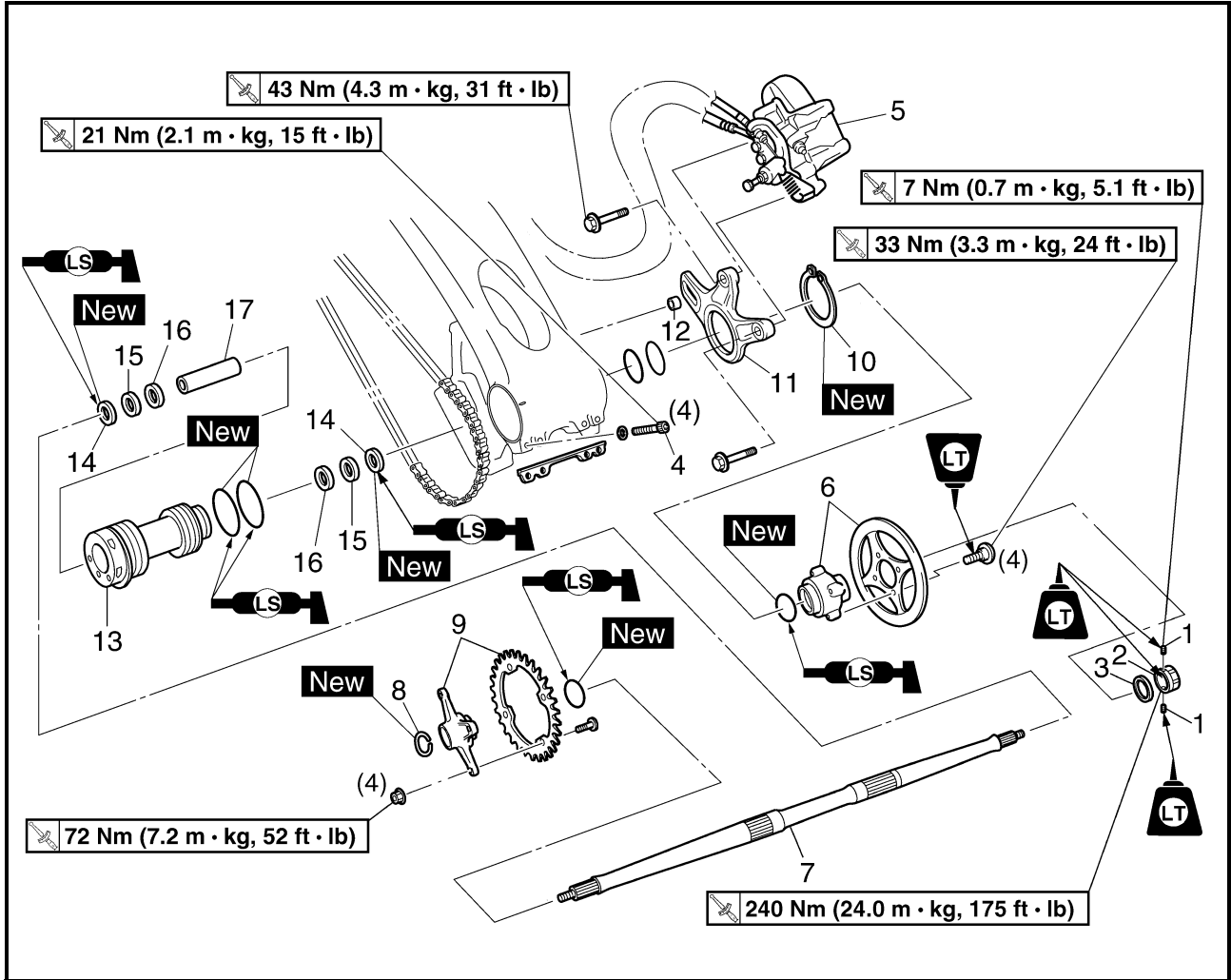


EBS00382

REAR AXLE AND REAR AXLE HUB



Order	Job/Part	Q'ty	Remarks
	Removing the rear axle and rear axle hub		Remove the parts in the order listed.
	Rear wheels/rear wheel hubs		Refer to "FRONT AND REAR WHEELS". (Manual No.: 5TG-28197-10)
1	Rear axle ring nut set bolt	2	Refer to "REMOVING THE REAR AXLE" and "INSTALLING THE REAR AXLE".
2	Rear axle ring nut	1	
3	Conical spring washer	1	
4	Rear axle pinch bolt	4	
5	Brake caliper	1	
			NOTE: _____ Do not apply the brake pedal and do not use the parking brake when the brake caliper is off of the brake disc as the brake pads will be force shut.



Order	Job/Part	Q'ty	Remarks
6	Brake disc/brake disc bracket	1/1	Refer to "REMOVING THE REAR AXLE".
7	Rear axle	1	
8	Circlip	1	Refer to "INSTALLING THE DRIVEN SPROCKET".
9	Driven sprocket/sprocket bracket	1/1	
10	Circlip	1	
11	Brake caliper bracket	1	
12	Spacer	1	
13	Rear axle hub	1	
14	Oil seal	2	
15	Bearing	2	
16	Bearing	2	
17	Spacer	1	
			For installation, reverse the removal procedure.

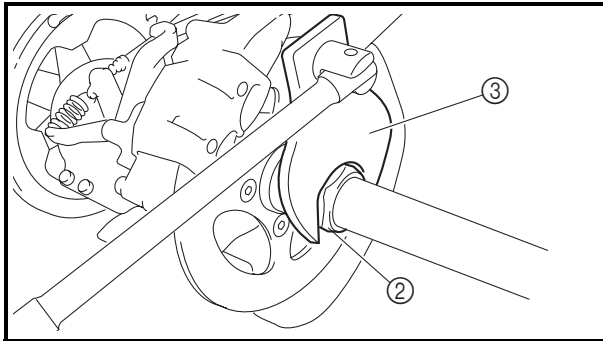
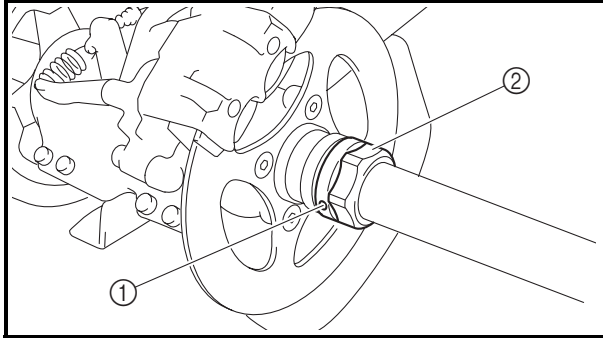


REMOVING THE REAR BRAKE CALIPER

1. Remove:
 - rear brake caliper mounting bolts

NOTE: _____

If the rear brake caliper can not be removed easily, first remove the brake pads and then remove the rear brake caliper.



EBS00393

REMOVING THE REAR AXLE

1. Place the vehicle on a level surface.
2. Remove:
 - rear axle ring nut set bolts (1)
3. Loosen:
 - rear axle ring nut (2)

NOTE: _____

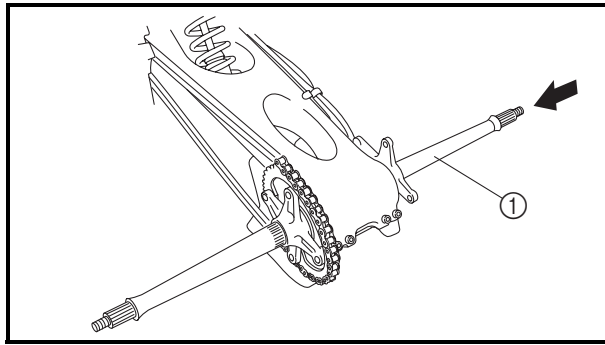
- Apply the brake pedal so that the rear axle does not turn, when loosening the rear axle ring nut.
- Use the rear axle nut wrench (46 mm) (3).



Rear axle nut wrench (46 mm)
P/N. YM-37134, 90890-01498

4. Loosen:
 - driven chain

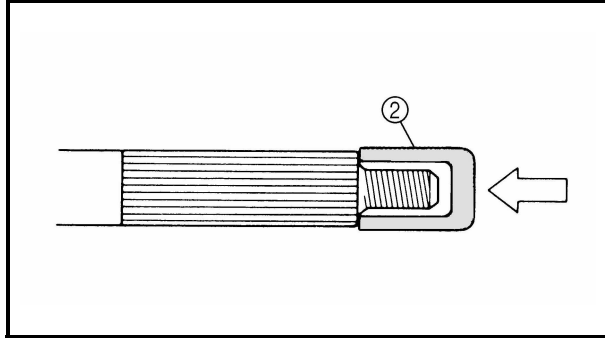
Refer to “ADJUSTING THE DRIVE CHAIN SLACK”.
5. Elevate the rear wheels by placing the suitable stand under the frame.
6. Remove:
 - rear wheels
 - wheel hubs
 - nuts
 - washers



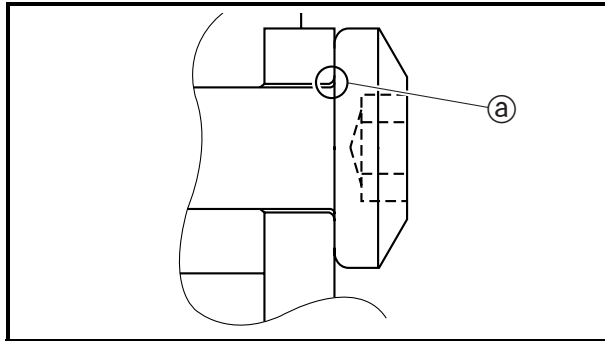
7. Remove:
- rear axle ①
(with driven sprocket)

CAUTION:

- Never directly tap the axle end with a hammer, since this will result in damage to the axle thread and spline.
- Attach a suitable socket ② on the axle end and tap it with a soft hammer, then pull out the rear axle to the left.



8. Remove:
- circlip
 - driven sprocket bracket

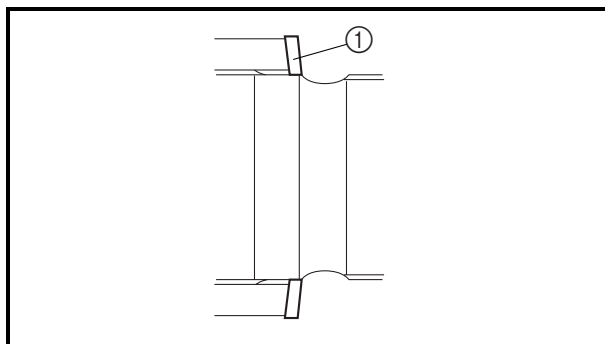


INSTALLING THE DRIVEN SPROCKET

1. Install:
- driven sprocket

NOTE:

Make sure that the blunt-edged corner ① of the driven sprocket is facing outward.



EBS00397

INSTALLING THE REAR AXLE

1. Install:
- conical spring washer ①

NOTE:

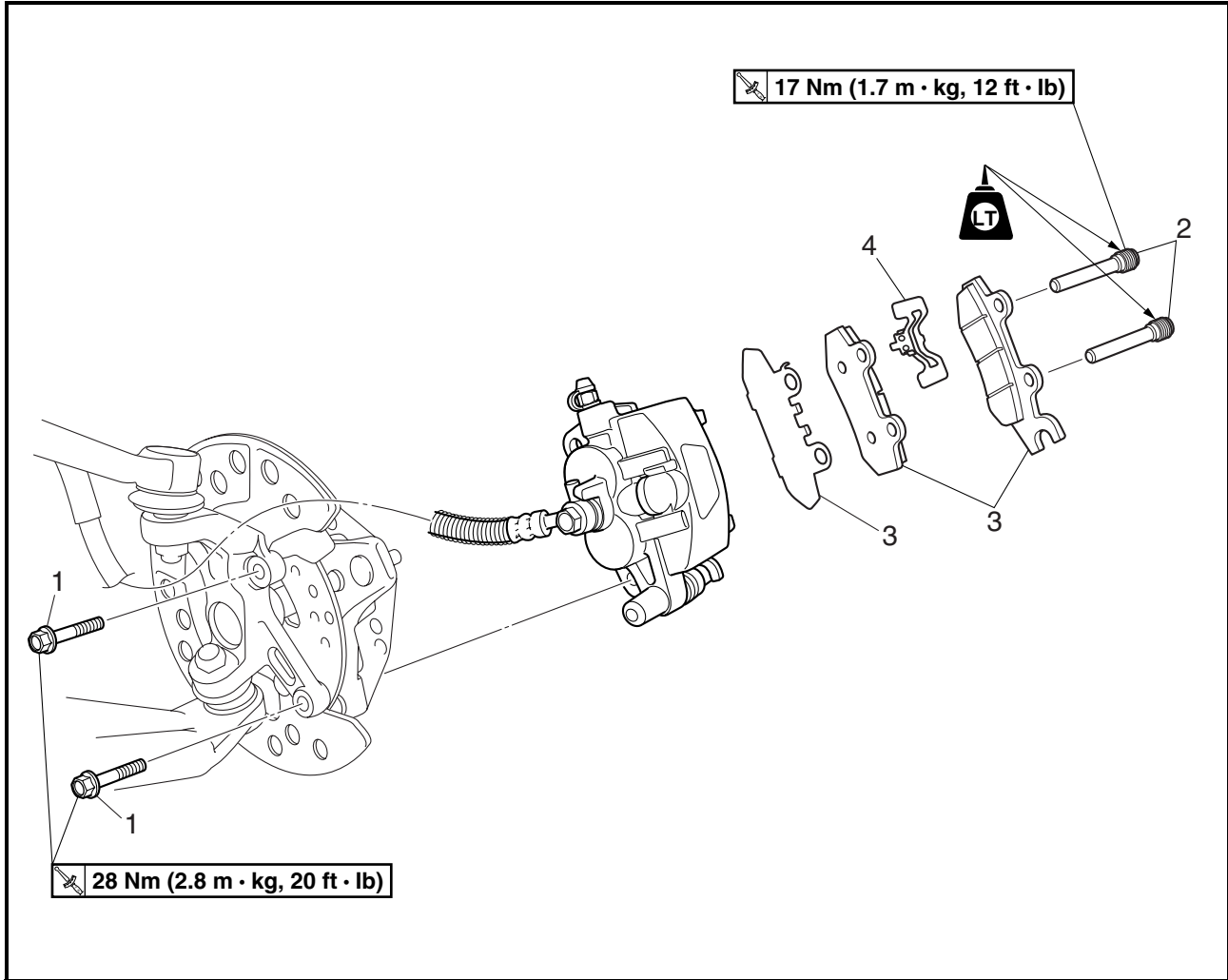
Install the conical spring washer with the convex side of the washer facing outward as shown.



EBS00400

FRONT AND REAR BRAKES

FRONT BRAKE PADS

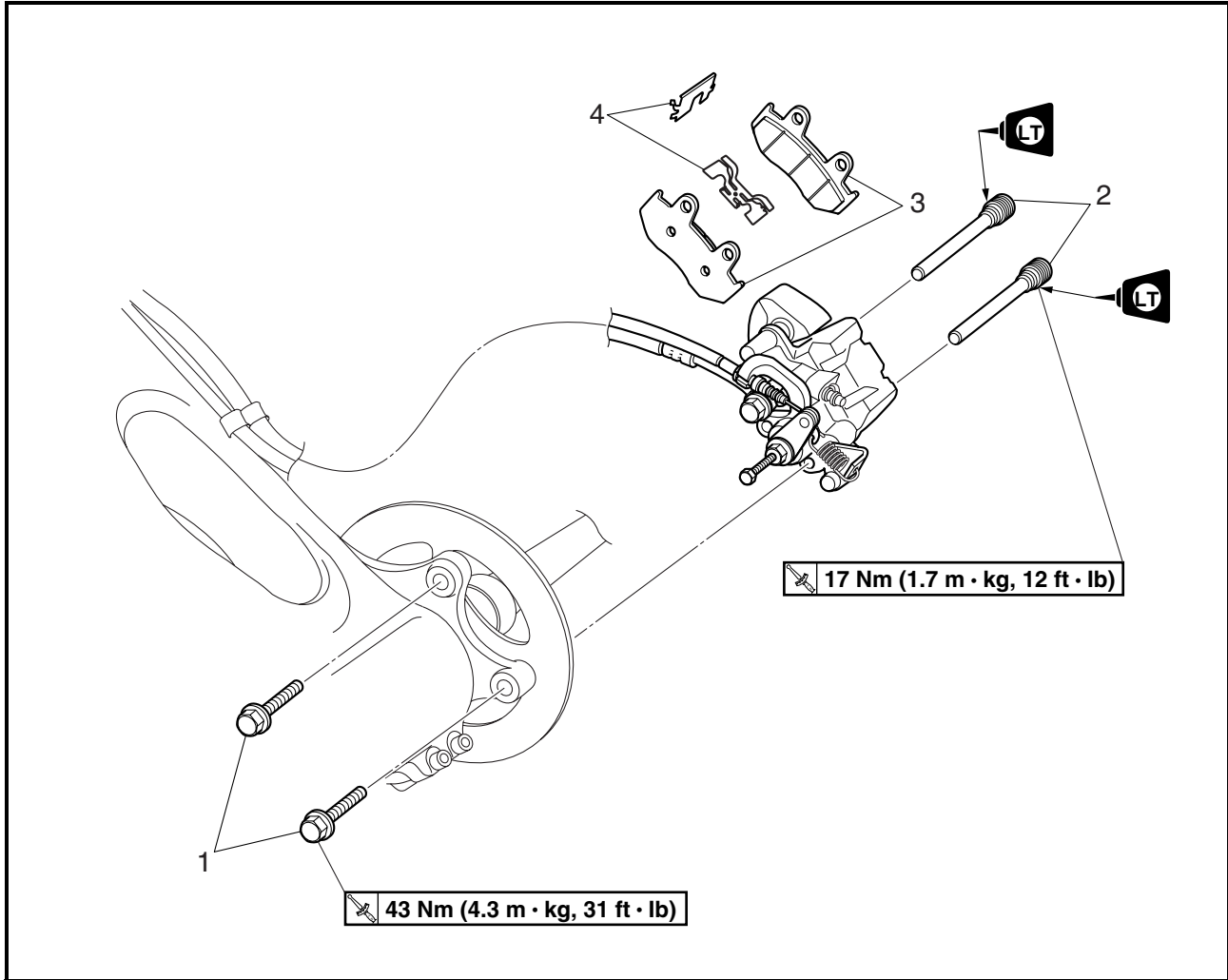


Order	Job/Part	Q'ty	Remarks
	Removing the front brake pads		Remove the parts in the order listed. The following procedure applies to both of the front brake calipers. Refer to "FRONT AND REAR WHEELS". (Manual No.: 5TG-28197-10)
	Front wheel		
1	Brake caliper mounting bolt	2	Refer to "REPLACING THE FRONT BRAKE PADS". (Manual No.: 5TG-28197-10)
2	Brake pad retaining bolt	2	
3	Brake pad/pad shim	2/1	
4	Brake pad spring	1	
			For installation, reverse the removal procedure.



EBS00401

REAR BRAKE PADS

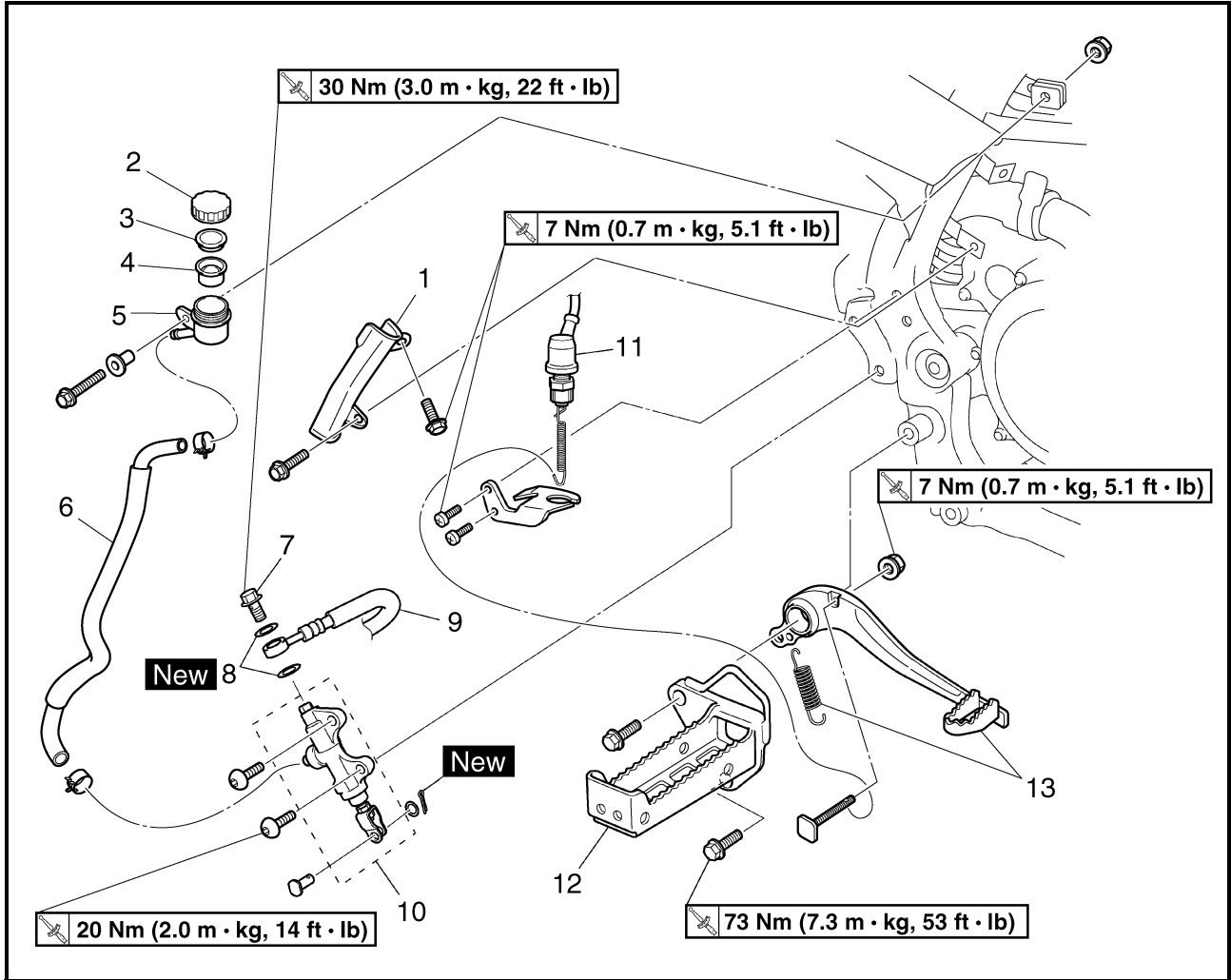


Order	Job/Part	Q'ty	Remarks
	Removing the rear brake pads		Remove the parts in the order listed.
1	Brake caliper mounting bolt	2	Refer to "REPLACING THE REAR BRAKE PADS". (Manual No.: 5TG-28197-10) For installation, reverse the removal procedure.
2	Brake pad retaining bolt	2	
3	Brake pad	2	
4	Brake pad spring	2	

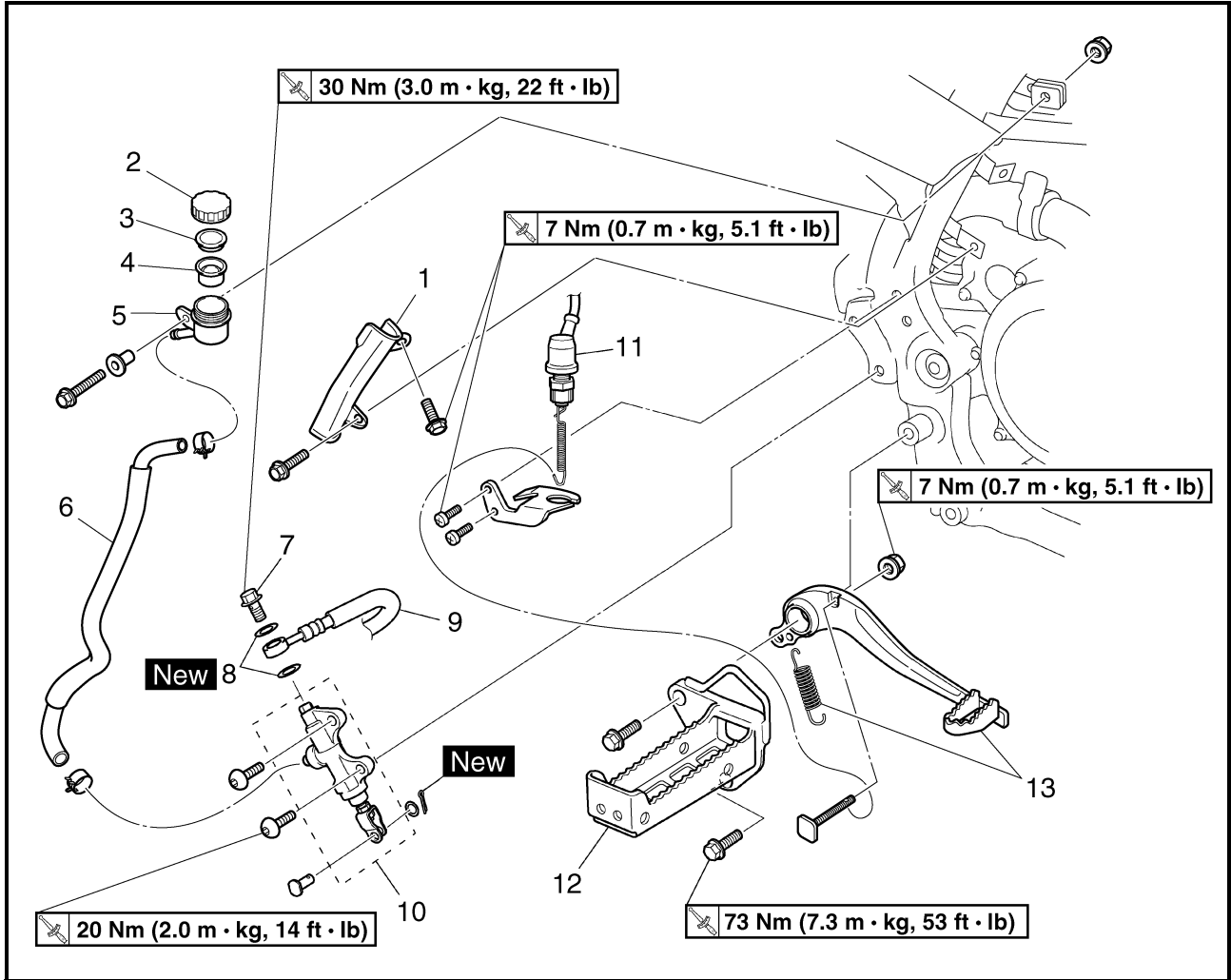


EBS00410

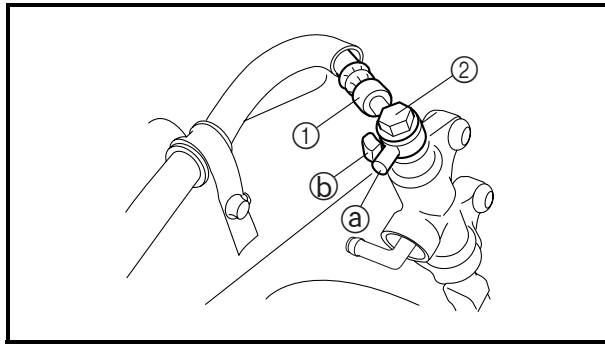
REAR BRAKE MASTER CYLINDER



Order	Job/Part	Q'ty	Remarks
	Removing the rear brake master cylinder		Remove the parts in the order listed.
	Right side cover/right foot protector		Refer to "SEAT, FENDERS AND FUEL TANK" in chapter 3. (Manual No.: 5TG-28197-10)
	Brake fluid		Drain.
1	Brake fluid reservoir hose cover	1	
2	Brake fluid reservoir cap	1	
3	Brake fluid reservoir diaphragm holder	1	
4	Brake fluid reservoir diaphragm	1	
5	Brake fluid reservoir	1	
6	Brake fluid reservoir hose	1	



Order	Job/Part	Q'ty	Remarks
7	Union bolt	1	Disconnect.] Refer to "INSTALLING THE REAR BRAKE MASTER CYLINDER".
8	Copper washer	2	
9	Brake hose	1	
10	Brake master cylinder	1	
11	Rear brake light switch	1	
12	Right footrest	1	
13	Brake pedal/spring	1/1	For installation, reverse the removal procedure.



EBS00419

INSTALLING THE REAR BRAKE MASTER CYLINDER

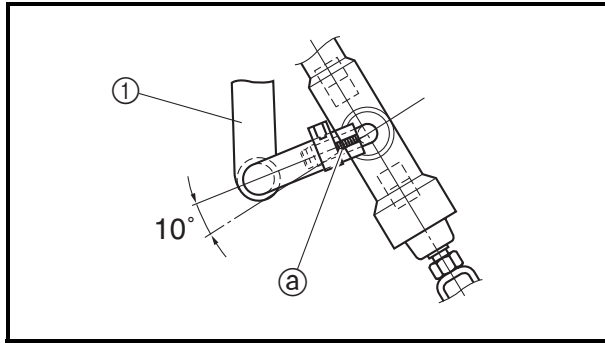
1. Install:
 - copper washers **New**
 - brake hose ①
 - union bolt ② 30 Nm (3.0 m · kg, 2.2 ft · lb)

CAUTION: _____

When installing the brake hose onto the brake master cylinder, make sure the brake pipe ① touches the projection ② as shown.

⚠ WARNING _____

Proper brake hose routing is essential to insure safe vehicle operation. Refer to “CABLE ROUTING” in chapter 2.



2. Install:
 - brake fluid reservoir hose ①

NOTE: _____

Install the brake fluid reservoir hose with the white paint mark ① facing up as shown.

3. Fill:
 - brake fluid reservoir

	Recommended brake fluid DOT 4
--	--

CAUTION: _____

Brake fluid may damage painted surfaces or plastic parts. Always clean up spilled brake fluid immediately.

⚠ WARNING _____

- Use only the designated quality brake fluid: other brake fluids may deteriorate the rubber seals, causing leakage and poor brake performance.
- Refill with the same type of brake fluid: mixing brake fluids may result in a harmful chemical reaction and lead to poor brake performance.



- Be careful that water does not enter the brake master cylinder when refilling. Water will significantly lower the boiling point of the brake fluid and may result in vapor lock.
-

4. Air bleed:

- brake system

Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM” in chapter 3.

(Manual No.: 5TG-28197-10)

5. Check:

- brake fluid level

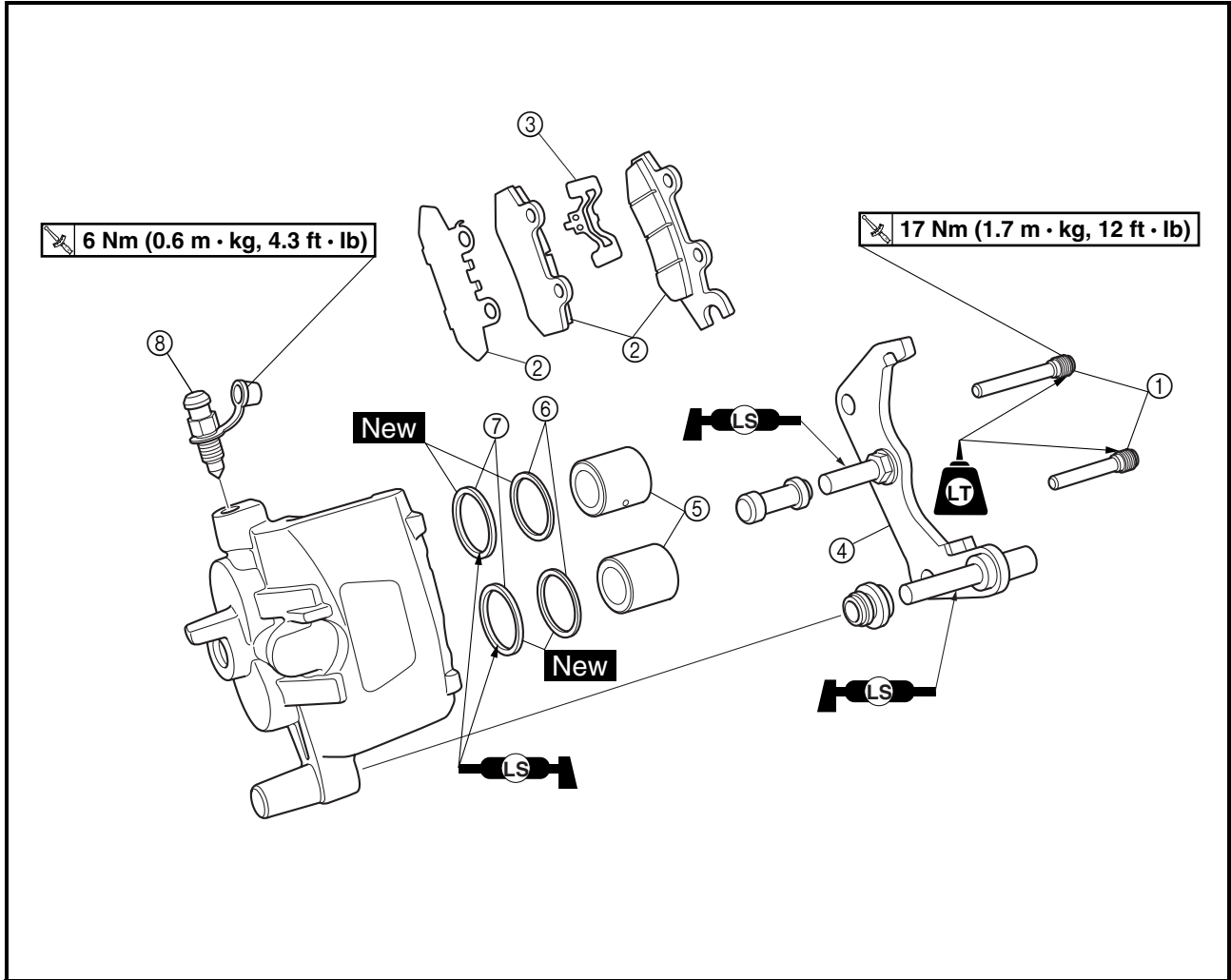
Brake fluid level is under the “LOWER” level line → Add the recommended brake fluid to the proper level.

Refer to “CHECKING THE BRAKE FLUID LEVEL” in chapter 3.



EBS00423

FRONT BRAKE CALIPER

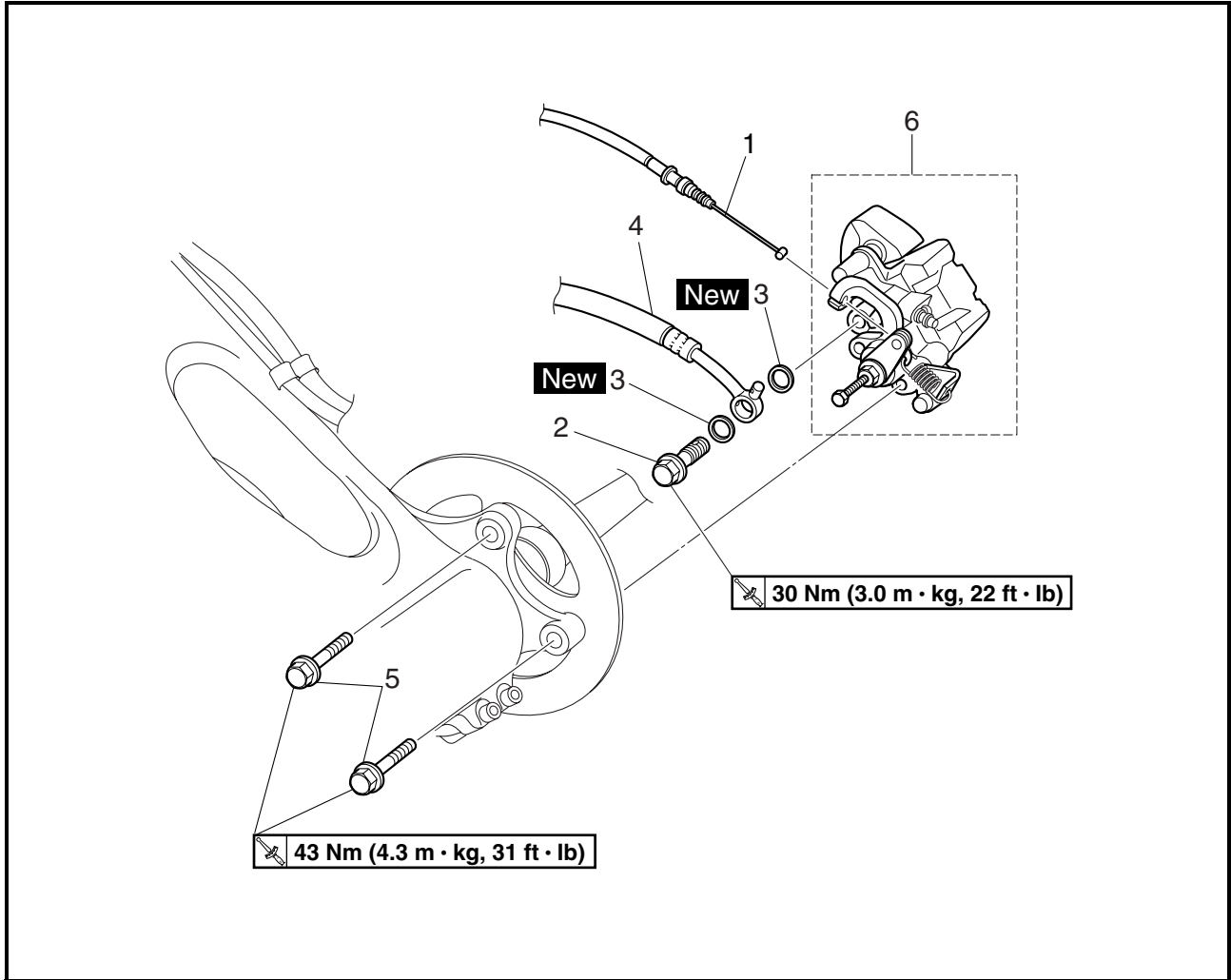


Order	Job/Part	Q'ty	Remarks
	Disassembling the front brake calipers		Remove the parts in the order listed.
			The following procedure applies to both of the front brake calipers.
①	Brake pad retaining bolt	2	Refer to "DISASSEMBLING THE FRONT AND REAR BRAKE CALIPERS" and "ASSEMBLING THE FRONT BRAKE CALIPERS". (Manual No.: 5TG-28197-10)
②	Brake pad/pad shim	2/1	
③	Brake pad spring	1	
④	Caliper bracket	1	
⑤	Caliper piston	2	
⑥	Dust seal	2	
⑦	Caliper piston seal	2	
⑧	Bleed screw	1	
			For assembly, reverse the disassembly procedure.



EBS00424

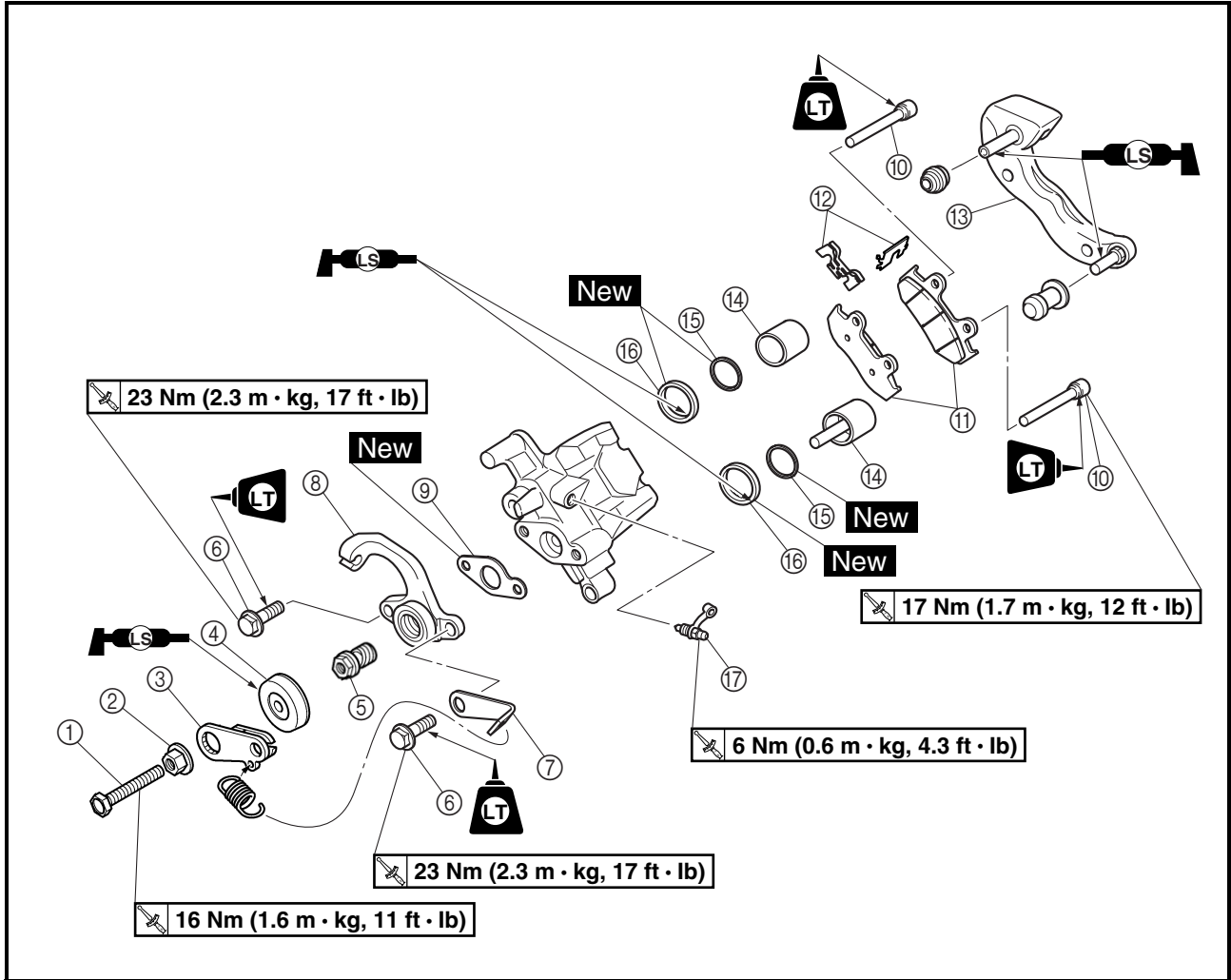
REAR BRAKE CALIPER



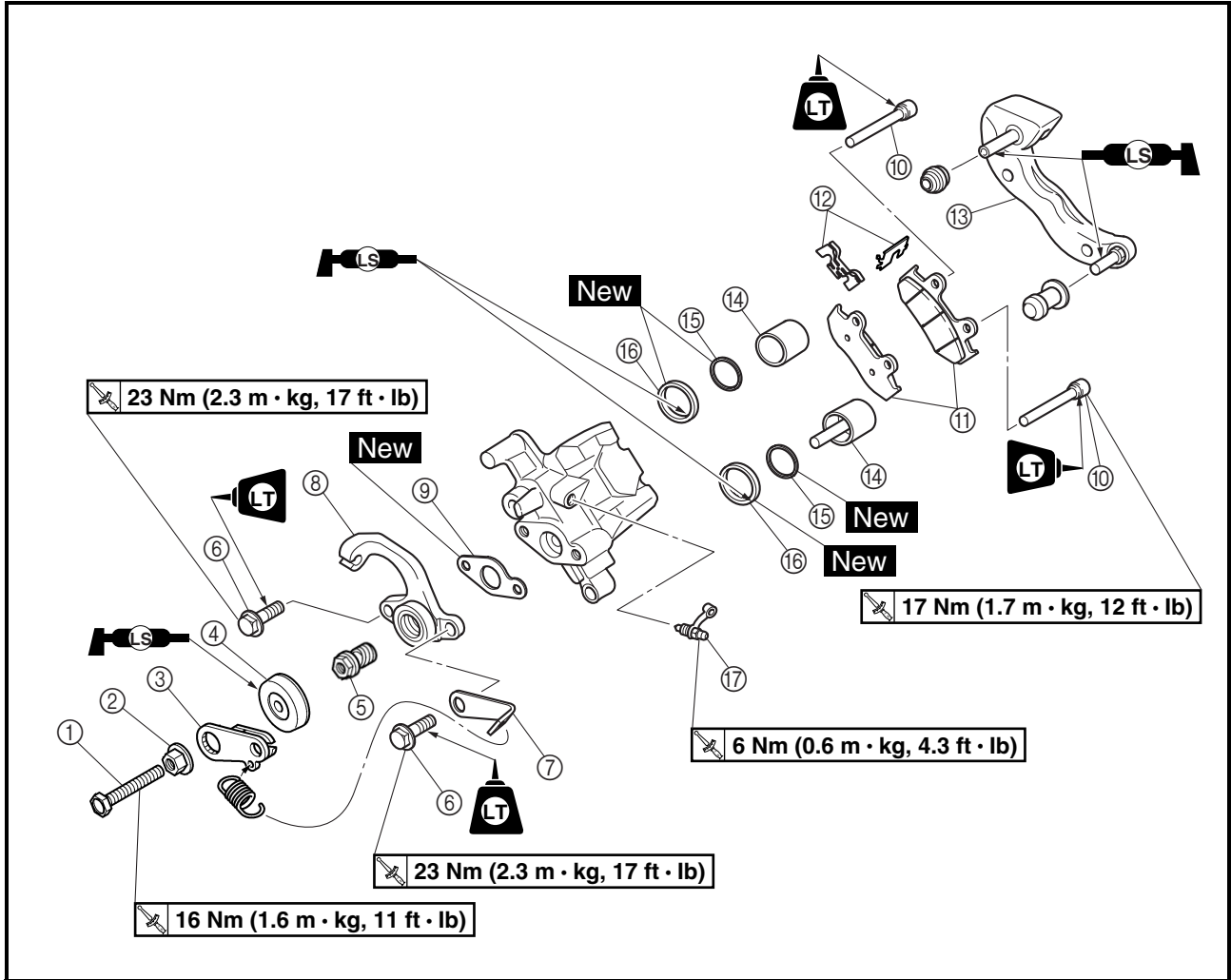
Order	Job/Part	Q'ty	Remarks	
	Removing the rear brake caliper			
1	Brake fluid Parking brake cable	1	Remove the parts in the order listed. Drain. Disconnect. Refer to "REMOVING THE PARKING BRAKE CABLE". (Manual No.: 5TG-28197-10)	
2	Union bolt	1] Refer to "INSTALLING THE REAR BRAKE CALIPER".	
3	Copper washer	2		
4	Brake hose	1		Disconnect.
5	Brake caliper mounting bolt	2		
6	Brake caliper assembly	1		
			For installation, reverse the removal procedure.	



EBS00425



Order	Job/Part	Q'ty	Remarks
	Disassembling the rear brake caliper		Remove the parts in the order listed.
①	Adjusting bolt	1	Refer to "DISASSEMBLING THE FRONT AND REAR BRAKE CALIPERS" and "ASSEMBLING THE REAR BRAKE CALIPER".
②	Locknut	1	
③	Parking brake arm	1	
④	Rubber boot	1	
⑤	Parking brake shaft	1	
⑥	Parking brake bracket bolt	2	
⑦	Parking brake case bracket	1	
⑧	Parking brake case	1	
⑨	Gasket	1	
⑩	Brake pad retaining bolt	2	



Order	Job/Part	Q'ty	Remarks
①	Brake pad	2	Refer to "DISASSEMBLING THE FRONT AND REAR BRAKE CALIPERS" and "ASSEMBLING THE REAR BRAKE CALIPER".
②	Brake pad spring	2	
③	Caliper bracket	1	
④	Brake caliper piston	2	
⑤	Dust seal	2	
⑥	Caliper piston seal	2	
⑦	Bleed screw	1	
			For assembly, reverse the disassembly procedure.



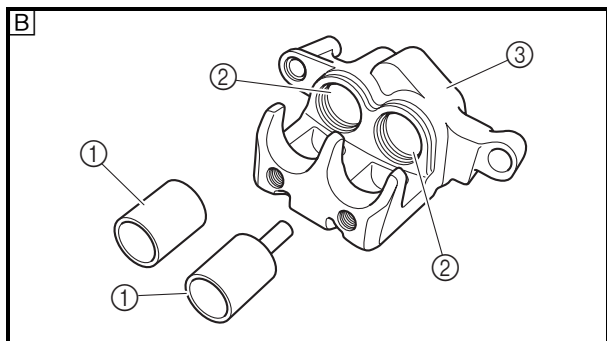
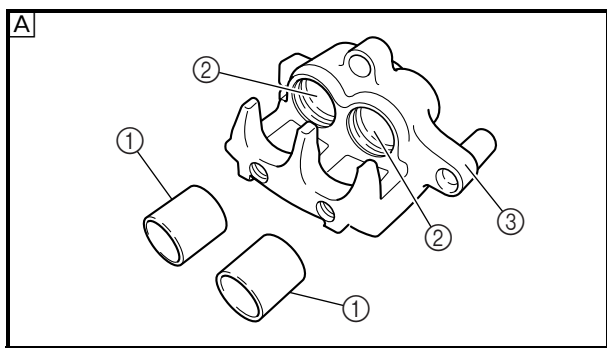
EBS00429

CHECKING THE FRONT AND REAR BRAKE CALIPERS

Recommended brake component replacement schedule	
Brake pads	As required
Piston seals, dust seals	Every two years
Brake hoses	Every four years
Brake fluid	Replace when brakes are disassembled.

⚠ WARNING

All internal brake components should be cleaned in new brake fluid only. Do not use solvents as they will cause seals to swell and distort.



1. Check:

- brake caliper pistons ①
Scratches/rust/wear → Replace the brake caliper assembly.
- brake caliper cylinders ②
Wear/scratches → Replace the brake caliper assembly.
- brake caliper body ③
Cracks/damage → Replace.
- brake fluid delivery passage (brake caliper body)
Blockage → Blow out with compressed air.

⚠ WARNING

Replace the caliper piston seals and dust seals whenever the brake caliper is disassembled.

- Ⓐ Front
- Ⓑ Rear



EBS00432

ASSEMBLING THE REAR BRAKE CALIPER

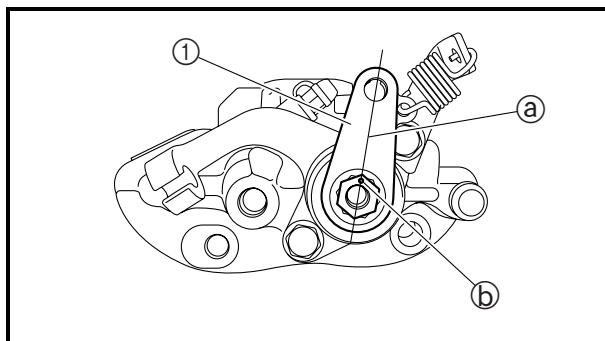
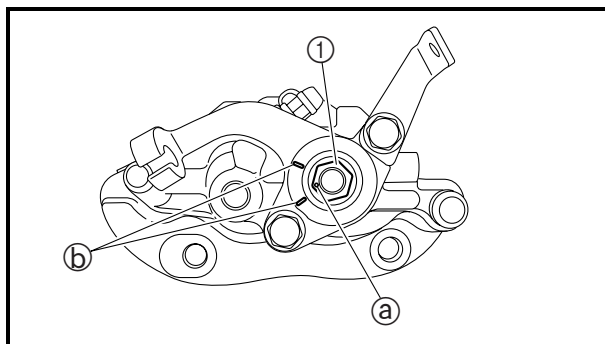
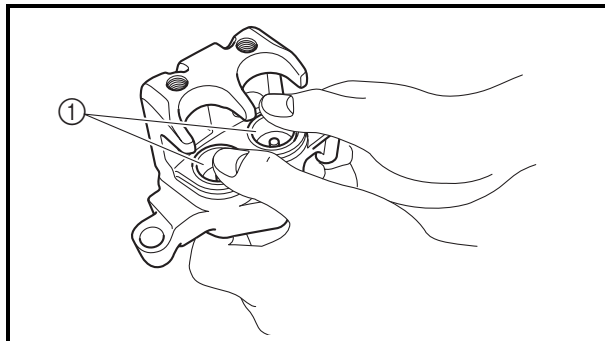
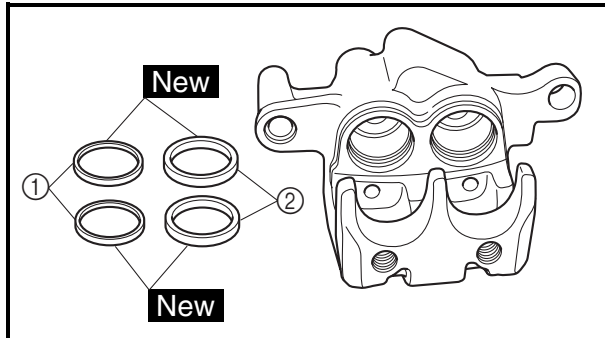
⚠ WARNING

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



**Recommended brake fluid
DOT 4**

- Replace the caliper piston seals and dust seals whenever the brake caliper is disassembled.



1. Install:
 - caliper piston seals ① **New**
 - dust seals ② **New**

2. Install:
 - brake caliper piston ①

3. Install:
 - parking brake shaft ①

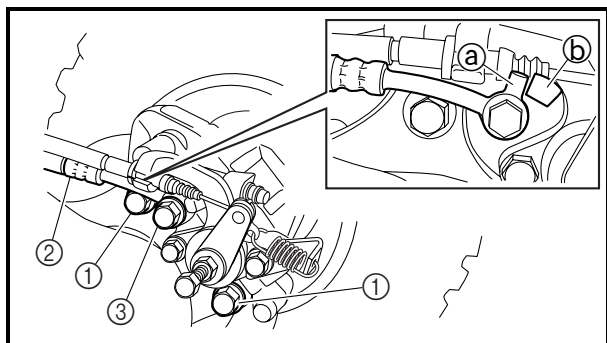
NOTE:

Screw the parking brake shaft all the way into the parking brake case, making sure that the punch mark (a) in the shaft is between the embossed marks (b) on the case.

4. Install:
 - parking brake arm ①

NOTE:

Align the center (a) of the parking brake arm with the punch mark (b) in the parking brake shaft as shown.



EBS00436

INSTALLING THE REAR BRAKE CALIPER

1. Install:

- brake caliper assembly
- brake caliper mounting bolts ①

43 Nm (4.3 m · kg, 31 ft · lb)

- brake hose ②

- copper washers **New**

- union bolt ③ **30 Nm (3.0 m · kg, 22 ft · lb)**

CAUTION:

When installing the brake hose on the brake caliper, make sure that the brake pipe ① touches the projection ② on the brake caliper.

⚠ WARNING

Proper brake hose routing is essential to insure safe vehicle operation. Refer to “CABLE ROUTING” in chapter 2.

2. Fill:

- brake reservoir



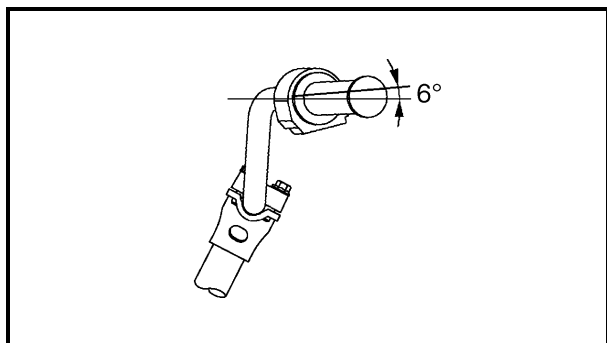
**Recommended brake fluid
DOT 4**

CAUTION:

Brake fluid may damage painted surfaces or plastic parts. Always clean up spilled brake fluid immediately.

⚠ WARNING

- Use only the designated quality brake fluid: other brake fluids may deteriorate the rubber seals, causing leakage and poor brake performance.
- Refill with the same type of brake fluid: mixing brake fluids may result in a harmful chemical reaction and lead to poor brake performance.
- Be careful that water does not enter the master cylinder when refilling. Water will significantly lower the boiling point of the brake fluid and may result in vapor lock.




STEERING SYSTEM

EBS00449

INSTALLING THE HANDLEBAR

1. Install:
 - handlebar
 - handlebar holders

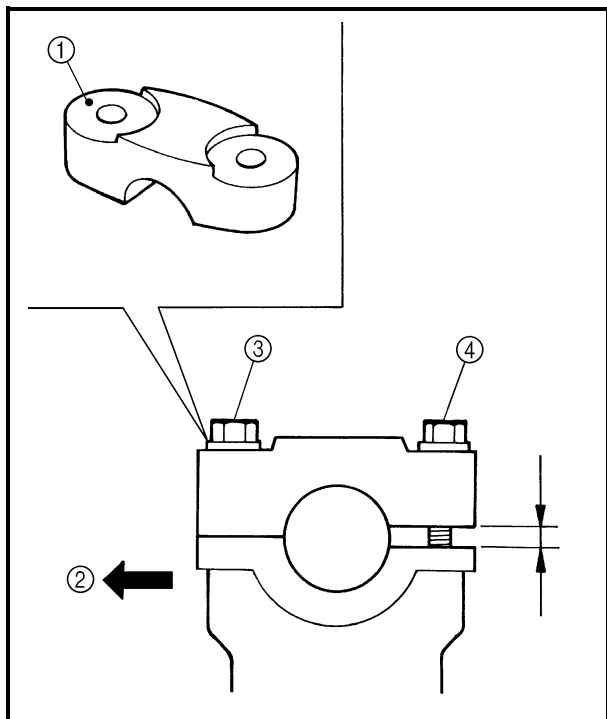
 **23 Nm (2.3 m · kg, 17 ft · lb)**

NOTE: _____

- Install the handlebar at a 6° angle to the horizontal line shown in the illustration.
- The upper handlebar holders should be installed with the punched mark ① forward ②.

CAUTION: _____

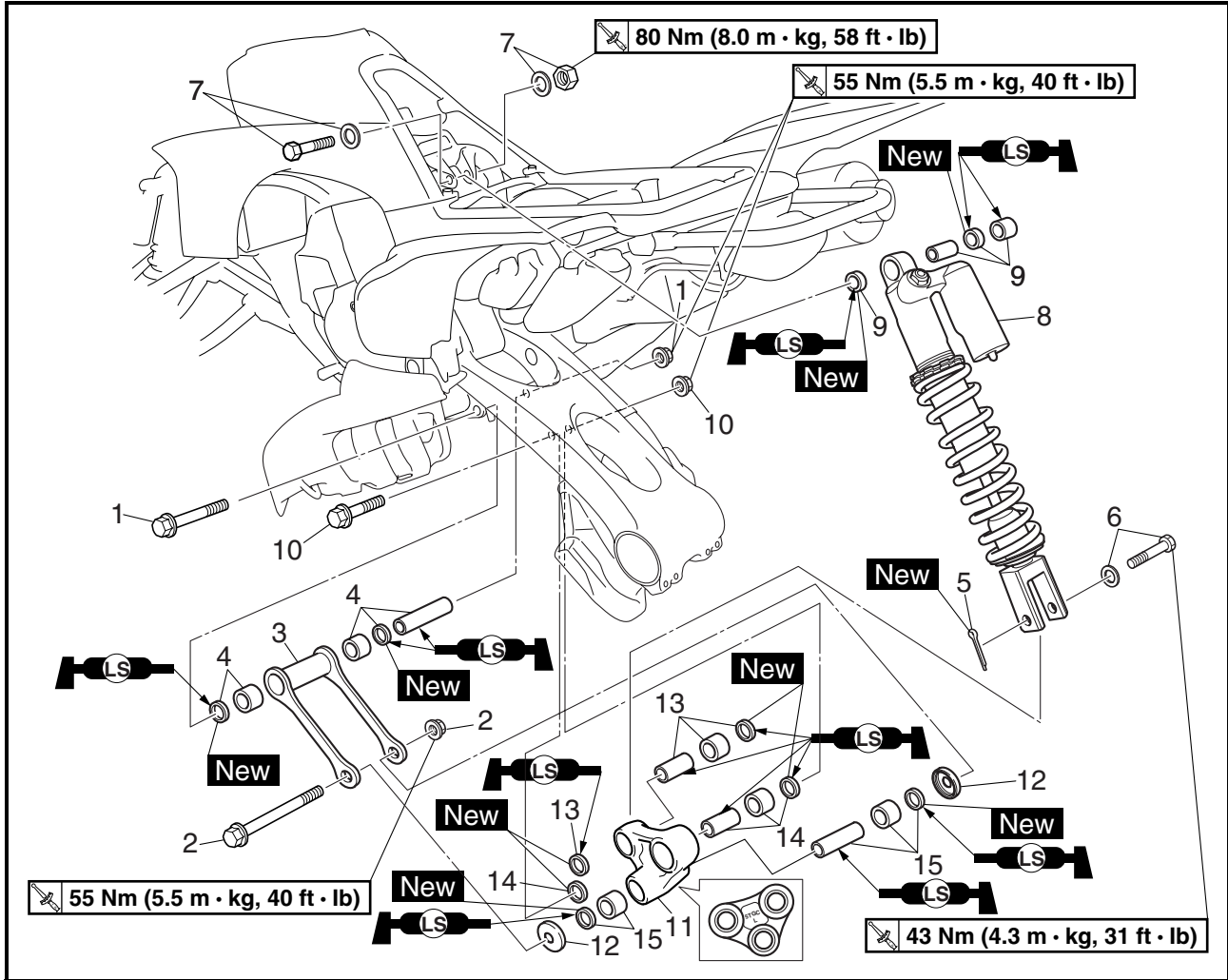
First tighten the bolt ③ on the front side of the handlebar holders, and then tighten the bolt ④ on the rear side.



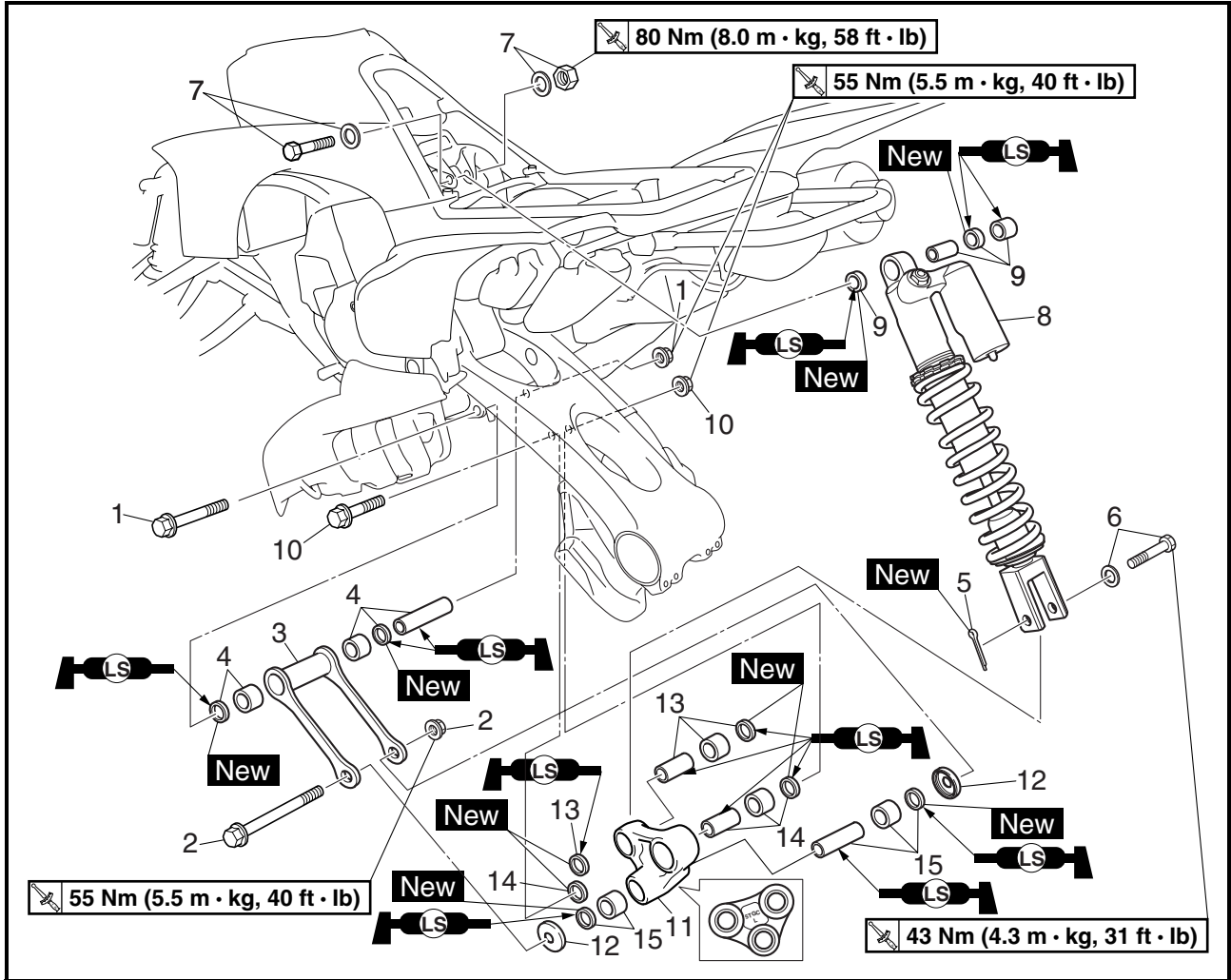


EBS00484

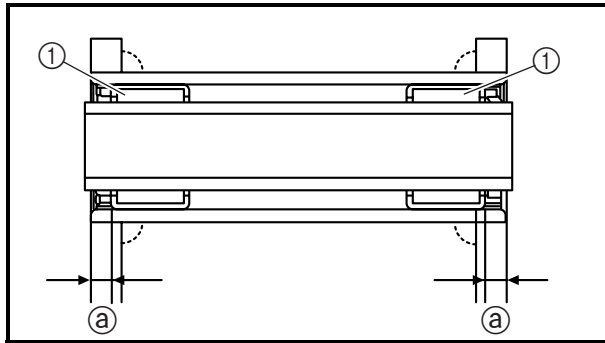
REAR SHOCK ABSORBER AND RELAY ARM



Order	Job/Part	Q'ty	Remarks
	Removing the rear shock absorber and relay arm		Remove the parts in the order listed.
	Seat		Refer to "SEAT, FENDERS AND FUEL TANK" in chapter 3. (Manual No.: 5TG-28197-10)
	Rear axle hub		Refer to "REAR AXLE AND REAR AXLE HUB".
1	Self-locking nut/bolt	1/1	
2	Self-locking nut/bolt	1/1	
3	Connecting arm	1	
4	Bearing/oil seal/spacer	2/2/1	Refer to "INSTALLING THE RELAY ARM AND CONNECTING ARM".
5	Cotter pin	1	



Order	Job/Part	Q'ty	Remarks
6	Bolt/washer	1/1	Refer to "REMOVING THE REAR SHOCK ABSORBER" and "INSTALLING THE REAR SHOCK ABSORBER". (Manual No.: 5TG-28197-10)
7	Self-locking nut/bolt/washer	1/1/2	
8	Rear shock absorber	1	
9	Dust seal/bearing/spacer	2/1/1	Refer to "INSTALLING THE RELAY ARM AND CONNECTING ARM". For installation, reverse the removal procedure.
10	Self-locking nut/bolt	1/1	
11	Relay arm	1	
12	Dust cover	2	
13	Spacer/bearing/oil seal	1/1/2	
14	Spacer/bearing/oil seal	1/1/2	
15	Spacer/bearing/oil seal	1/2/2	



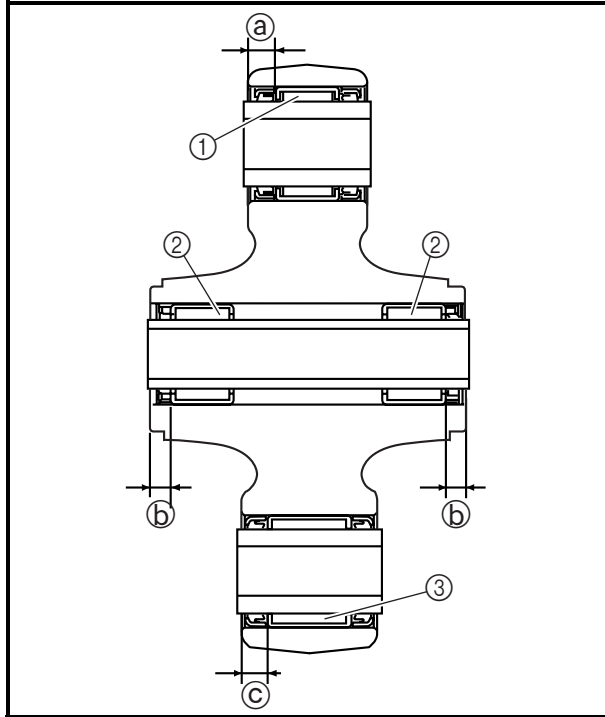
EBS00490

INSTALLING THE RELAY ARM AND CONNECTING ARM

1. Install:
 - bearings ①
(to connecting arm)



Installed depth of bearing ①
4 mm (0.16 in)



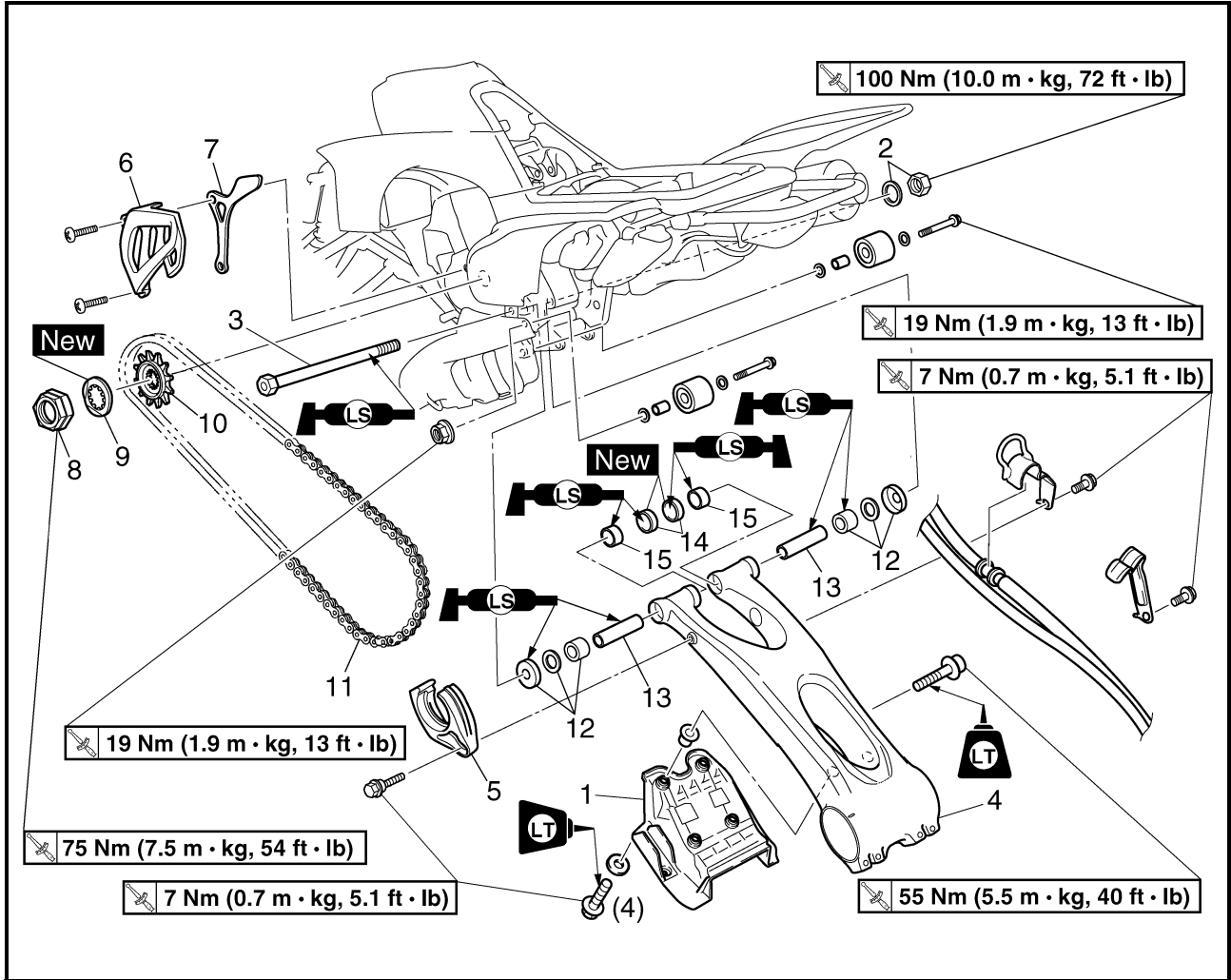
2. Install:
 - bearings ① to ③
(to relay arm)



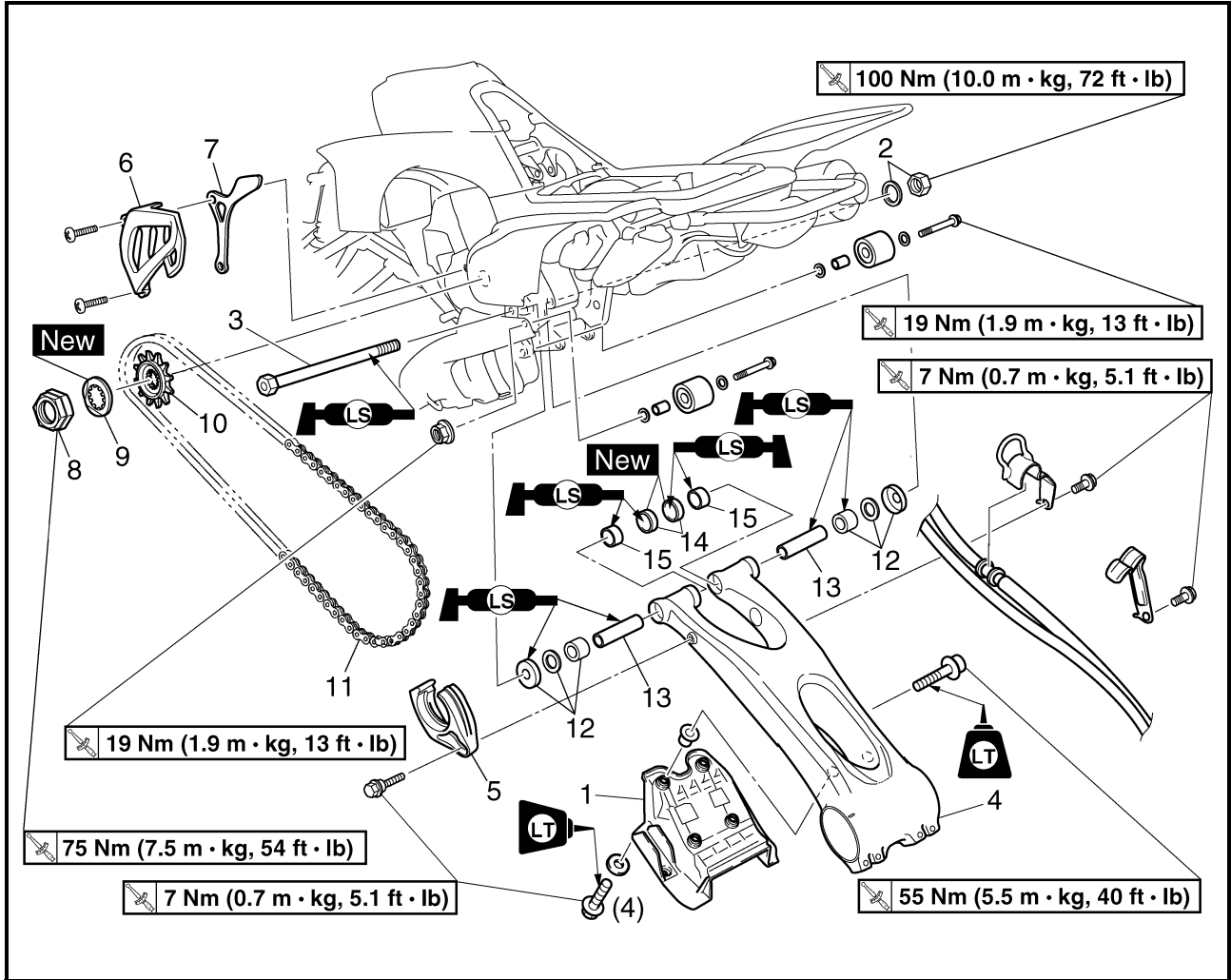
Installed depth of bearing ①
5.0 mm (0.20 in)
Installed depth of bearing ②
5.0 mm (0.20 in)
Installed depth of bearing ③
4.6 mm (0.18 in)

EBS00492

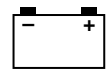
SWINGARM AND DRIVE CHAIN



Order	Job/Part	Q'ty	Remarks
	Removing the swingarm and drive chain		Remove the parts in the order listed.
	Rear axle hub		Refer to "REAR AXLE AND REAR AXLE HUB".
	Rear shock absorber		Refer to "REAR SHOCK ABSORBER AND RELAY ARM".
1	Swingarm skid plate	1	
2	Pivot shaft nut/washer	1/1	
3	Pivot shaft	1	
4	Swingarm	1	
5	Drive chain guide 1	1	
6	Drive sprocket cover	1	



Order	Job/Part	Q'ty	Remarks
7	Drive chain guide 2	1	Refer to "INSTALLING THE DRIVEN SPROCKET".
8	Nut	1	
9	Lock washer	1	
10	Drive sprocket	1	Refer to "INSTALLING THE SWING-ARM". (Manual No.: 5TG-28197-10)
11	Drive chain	1	
12	Dust cover/washer/bearing	2/2/2	
13	Spacer	2	
14	Oil seal	2	
15	Bushing	2	
			For installation, reverse the removal procedure.

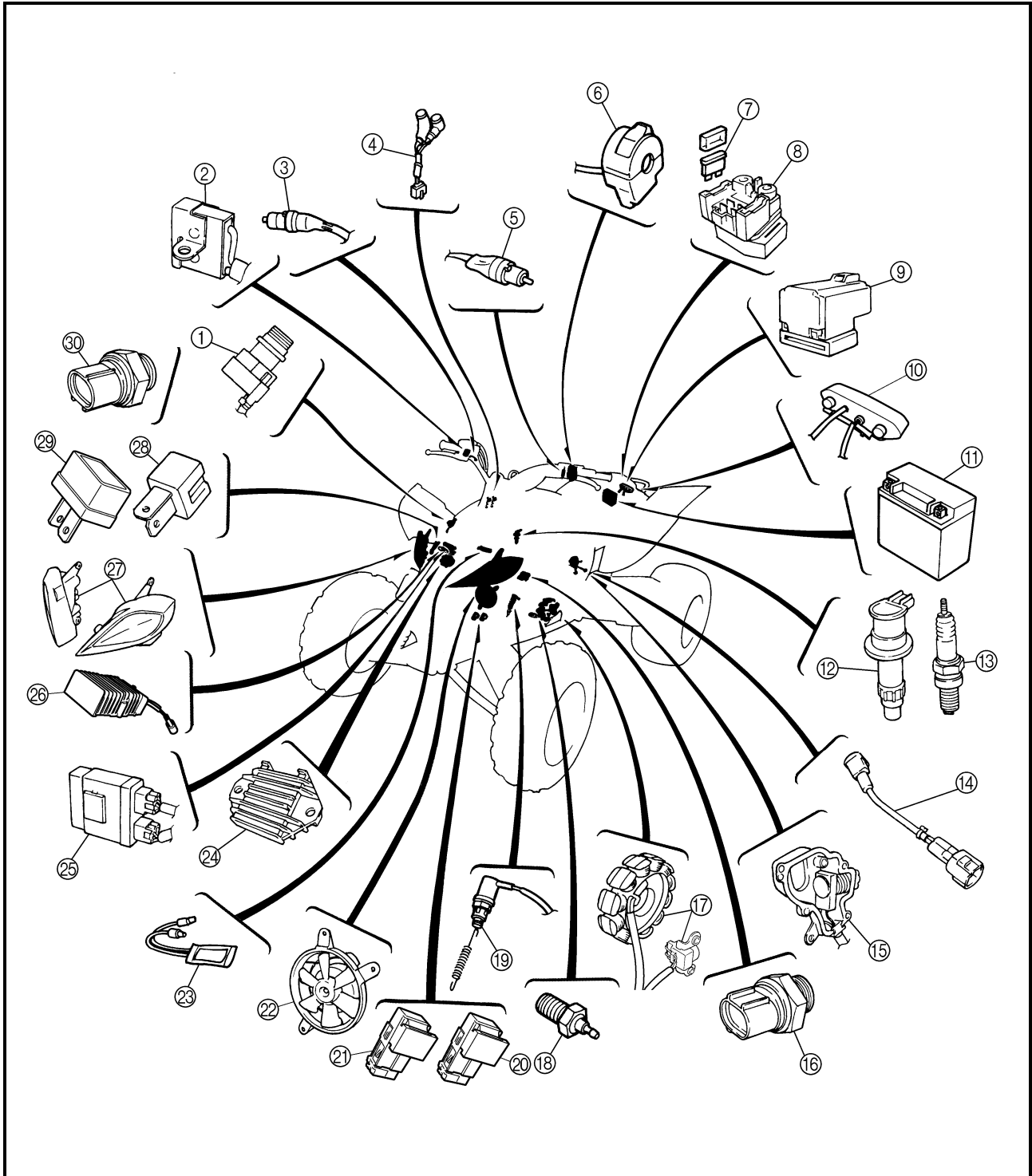


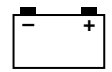
EBS00500

ELECTRICAL

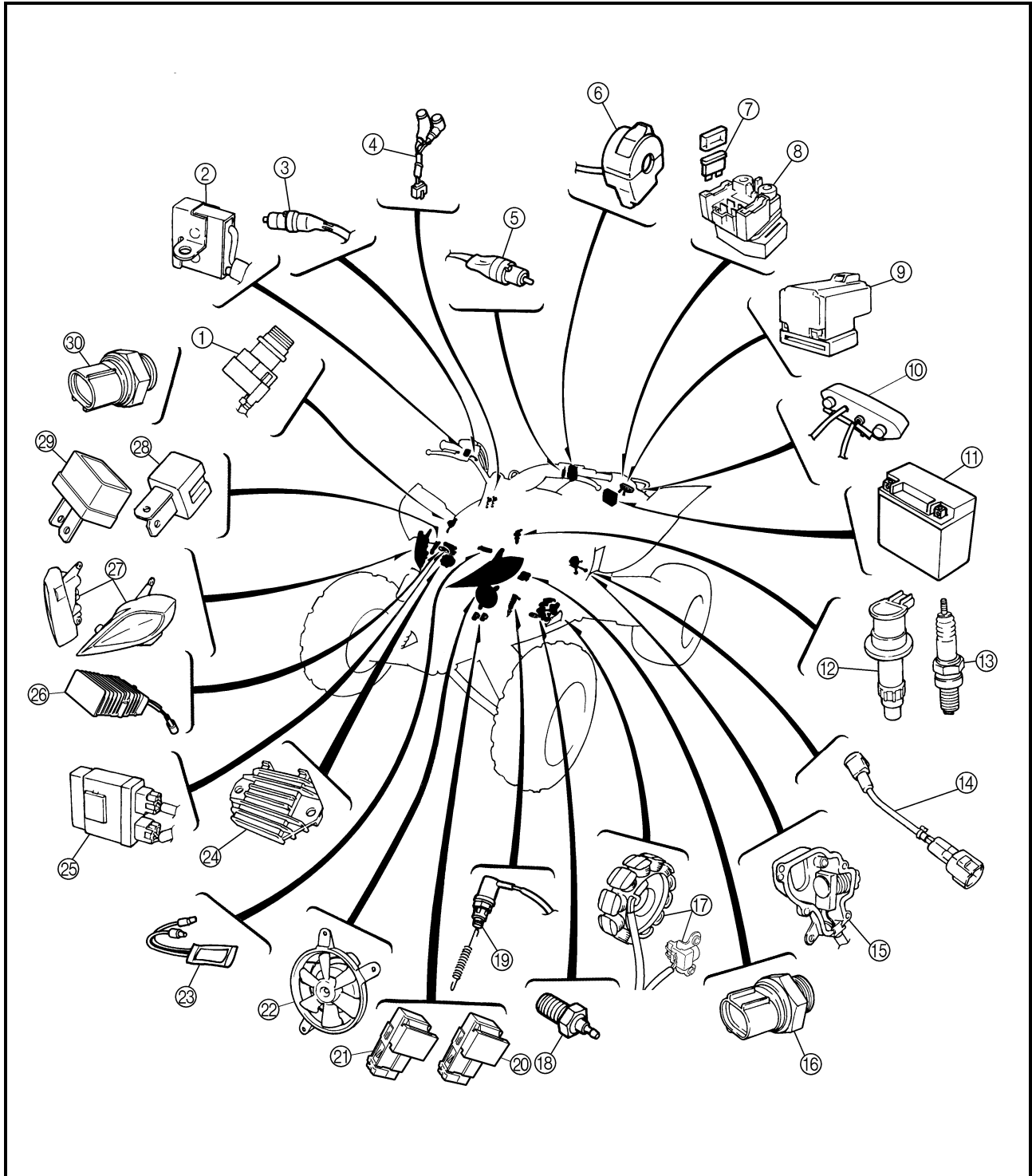
ELECTRICAL COMPONENTS

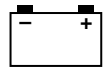
- | | |
|----------------------------|----------------------------------|
| ① Main switch | ⑧ Starter relay |
| ② Throttle switch | ⑨ Starting circuit cut-off relay |
| ③ Front brake light switch | ⑩ Tail/brake light |
| ④ Indicator lights | ⑪ Battery |
| ⑤ Clutch switch | ⑫ Ignition coil |
| ⑥ Handlebar switch | ⑬ Spark plug |
| ⑦ Fuse | ⑭ Throttle position sensor |





- | | |
|----------------------------------|-----------------------|
| ⑮ Carburetor switch | ⑳ Rectifier/regulator |
| ⑯ Thermo switch 2 | ㉑ C.D.I. unit |
| ⑰ Pickup coil/stator assembly | ㉒ Resistor |
| ⑱ Neutral switch | ㉓ Headlight |
| ⑲ Rear brake light switch | ㉔ Diode 2 |
| ㉑ Headlight relay 1 | ㉕ Diode 1 |
| ㉑ Headlight relay 2 | ㉖ Thermo switch 1 |
| ㉒ Radiator fan | |
| ㉓ Circuit breaker
(fan motor) | |





EBS01029

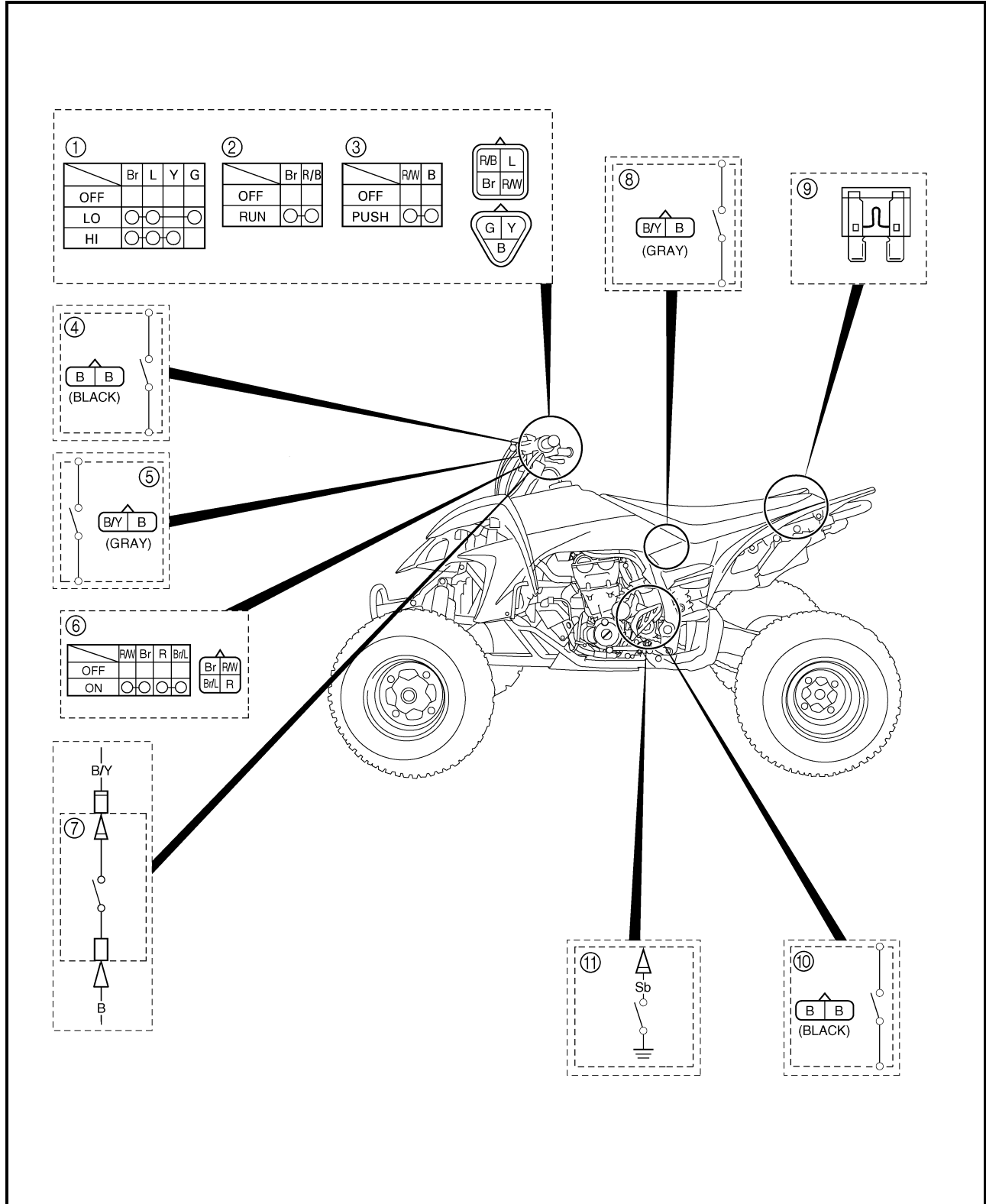
CHECKING THE SWITCHES

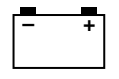
Check each switch for damage or wear, proper connections, and also for continuity between the terminals. Refer to "CHECKING SWITCH CONTINUITY". (Manual No.: 5TG-28197-10)

Damage/wear → Repair or replace.

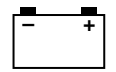
Improperly connected → Properly connect.

Incorrect continuity reading → Replace the switch.





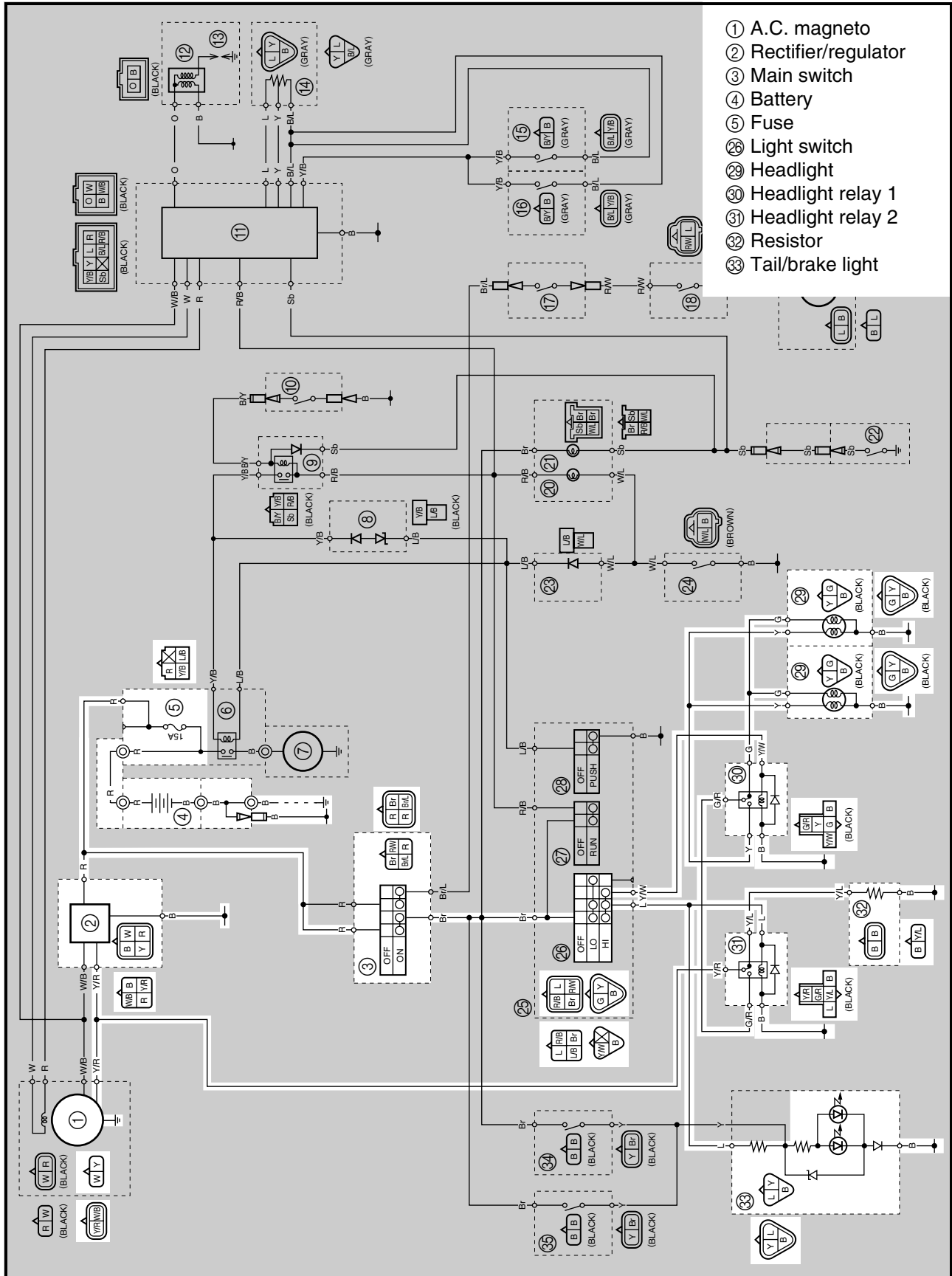
- ① Light switch
- ② Engine stop switch
- ③ Start switch
- ④ Front brake light switch
- ⑤ Throttle switch
- ⑥ Main switch
- ⑦ Clutch switch
- ⑧ Carburetor switch
- ⑨ Fuse
- ⑩ Rear brake light switch
- ⑪ Neutral switch



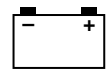
EBS00518

LIGHTING SYSTEM

CIRCUIT DIAGRAM



- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Battery
- ⑤ Fuse
- ⑥ Light switch
- ⑦ Headlight
- ⑧ Headlight relay 1
- ⑨ Headlight relay 2
- ⑩ Resistor
- ⑪ Tail/brake light



EBS01067

TROUBLESHOOTING

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

Check:

1. fuse
2. battery
3. main switch
4. light switch
5. lighting coil resistance
6. headlight relay 1
7. headlight relay 2
8. resistor resistance
9. wiring connections
(of the entire lighting system)

NOTE:




- Before troubleshooting, remove the following part(s):
 1. seat
 2. fuel tank cover
 3. side covers (left and right)
 4. front fender
- Troubleshoot with the following special tool(s).

	<p>Pocket tester P/N. YU-03112-C, 90890-03112</p>
---	--

<p>1. Fuse</p> <ul style="list-style-type: none"> • Check the fuse for continuity. Refer to “CHECKING THE SWITCHES”. • Is the fuse OK?
--



Replace the fuse.

<p>2. Battery</p> <ul style="list-style-type: none"> • Check the condition of the battery. Refer to “CHECKING AND CHARGING THE BATTERY” in chapter 3. (Manual No.: 5TG-28197-10) 		
<table border="1"> <tr> <td style="text-align: center;"></td> <td> <p>Minimum open-circuit voltage 12.8 V or more at 20 °C (68 °F)</p> </td> </tr> </table>		<p>Minimum open-circuit voltage 12.8 V or more at 20 °C (68 °F)</p>
	<p>Minimum open-circuit voltage 12.8 V or more at 20 °C (68 °F)</p>	
<ul style="list-style-type: none"> • Is the battery OK? 		



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

EAS00783

<p>3. Main switch</p> <ul style="list-style-type: none"> • Check the main switch for continuity. Refer to “CHECKING THE SWITCHES”. • Is the main switch OK?

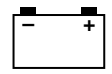


Replace the main switch.

<p>4. Light switch</p> <ul style="list-style-type: none"> • Check the light switch for continuity. Refer to “CHECKING THE SWITCHES”. • Is the light switch OK?
--



Replace the handle-bar switch.

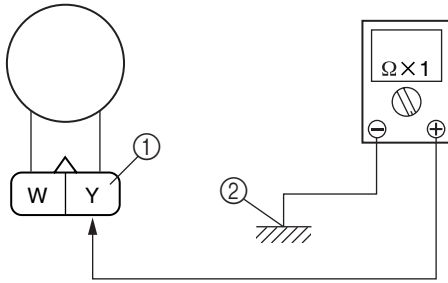


EAS00776

5. Lighting coil resistance

- Disconnect the A.C. magneto coupler from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) to the lighting coil terminals as shown.

Positive tester probe → yellow ①
 Negative tester probe → ground ②



- Measure the lighting coil resistance.



Lighting coil resistance
 0.224 ~ 0.336 Ω at 20 °C (68 °F)

- Is the lighting coil OK?

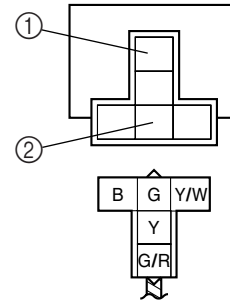


Replace the pickup coil/stator assembly.

6. Headlight relay 1

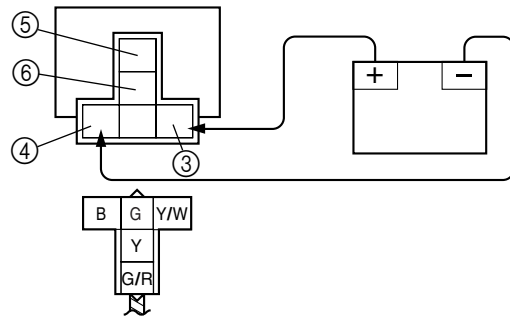
- Remove the headlight relay 1.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the headlight relay 1 terminal as shown.
- Check the headlight relay 1 for continuity.

Positive tester probe → green/red ①
 Negative tester probe → green ②

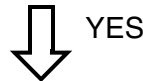


Positive battery terminal → yellow/white ③
 Negative battery terminal → black ④

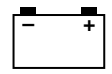
Positive tester probe → green/red ⑤
 Negative tester probe → yellow ⑥



- Does the headlight relay 1 have continuity between green/red and green or yellow?



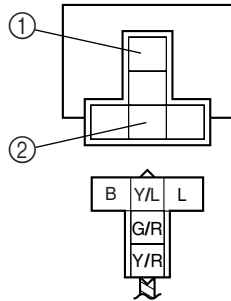
Replace the headlight relay 1.



7. Headlight relay 2

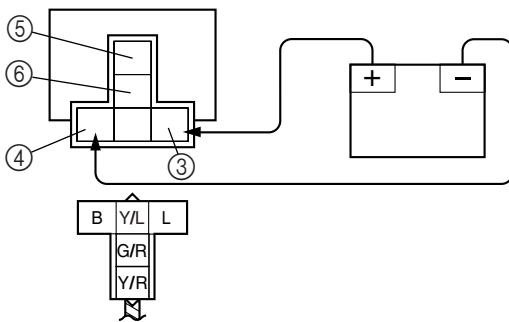
- Remove the headlight relay 2.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the headlight relay 2 terminal as shown.
- Check the headlight relay 2 for continuity.

Positive tester probe → yellow/red ①
 Negative tester probe → yellow/blue ②



Positive battery terminal → blue ③
 Negative battery terminal → black ④

Positive tester probe → yellow/red ⑤
 Negative tester probe → green/red ⑥



- Does the headlight relay 2 have continuity between yellow/red and yellow/blue or green/red?

↓ YES

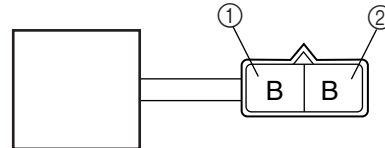
↓ NO

Replace the headlight relay 2.

8. Resistor resistance

- Disconnect the resistor coupler from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) to the resistor coupler as shown.

Positive tester probe → black ①
 Negative tester probe → black ②



- Measure the resistor resistance.



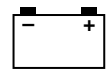
Resistor resistance
 2.755 ~ 3.045 Ω at 25 °C (77 °F)

- Is the resistor OK?

↓ YES

↓ NO

Replace the resistor.



EBS01069

9. Wiring

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



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.

EBS01070

CHECKING THE LIGHTING SYSTEM

1. The headlights fail to come on.

1. Headlight bulbs and sockets

- Check the headlight bulbs and sockets for continuity. Refer to "CHECKING THE BULBS AND BULB SOCKETS". (Manual No.: 5TG-28197-10)
- Are the headlight bulbs and sockets OK?



Replace the headlight bulb, socket or both.

2. Voltage

- Connect the pocket tester (AC 20 V) to the headlight couplers as shown.

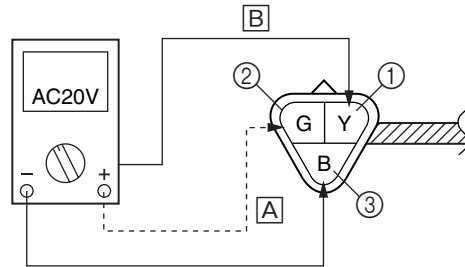
- Ⓐ When the light switch is set to "LO"
- Ⓑ When the light switch is set to "HI"

Headlight coupler (wire harness side)

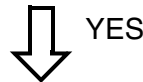
Headlight

Positive tester probe → yellow ① or green ②

Negative tester probe → black ③

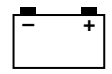


- Set the main switch to "ON".
- Start the engine.
- Set the light switch to "LO" or "HI".
- Measure the voltage (AC 12 V) of yellow ① or green ② on the headlight coupler (wire harness side).
- Is the voltage within specification?



This circuit is OK.

Replace the rectifier/regulator.



2. The taillight fails to come on.

1. Tail/brake light

- Disconnect the tail/brake light coupler.
- Connect the battery (12 V) to the tail/brake light coupler terminals as shown.
- When the jumper leads are connected to the terminals, the tail/brake light should illuminate.

Positive battery terminal → blue ①
Negative battery terminal → black ②

• Is the tail/brake light OK?

↓ YES

↓ NO

Replace the tail/brake light.

2. Voltage

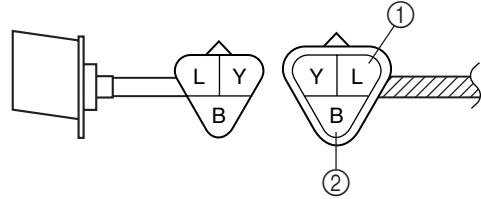
- Connect the pocket tester (DC 20 V) to the tail/brake light coupler as shown.

Tail/brake light coupler (wire harness side)

Tail/brake light

Positive tester probe → blue ①

Negative tester probe → black ②



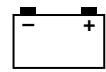
- Set the main switch to “ON”.
- Start the engine.
- Set the light switch to “LO” or “HI”.
- Measure the voltage (DC 12 V) of blue ① on the tail/brake light coupler (wire harness side).
- Is the voltage within specification?

↓ YES

↓ NO

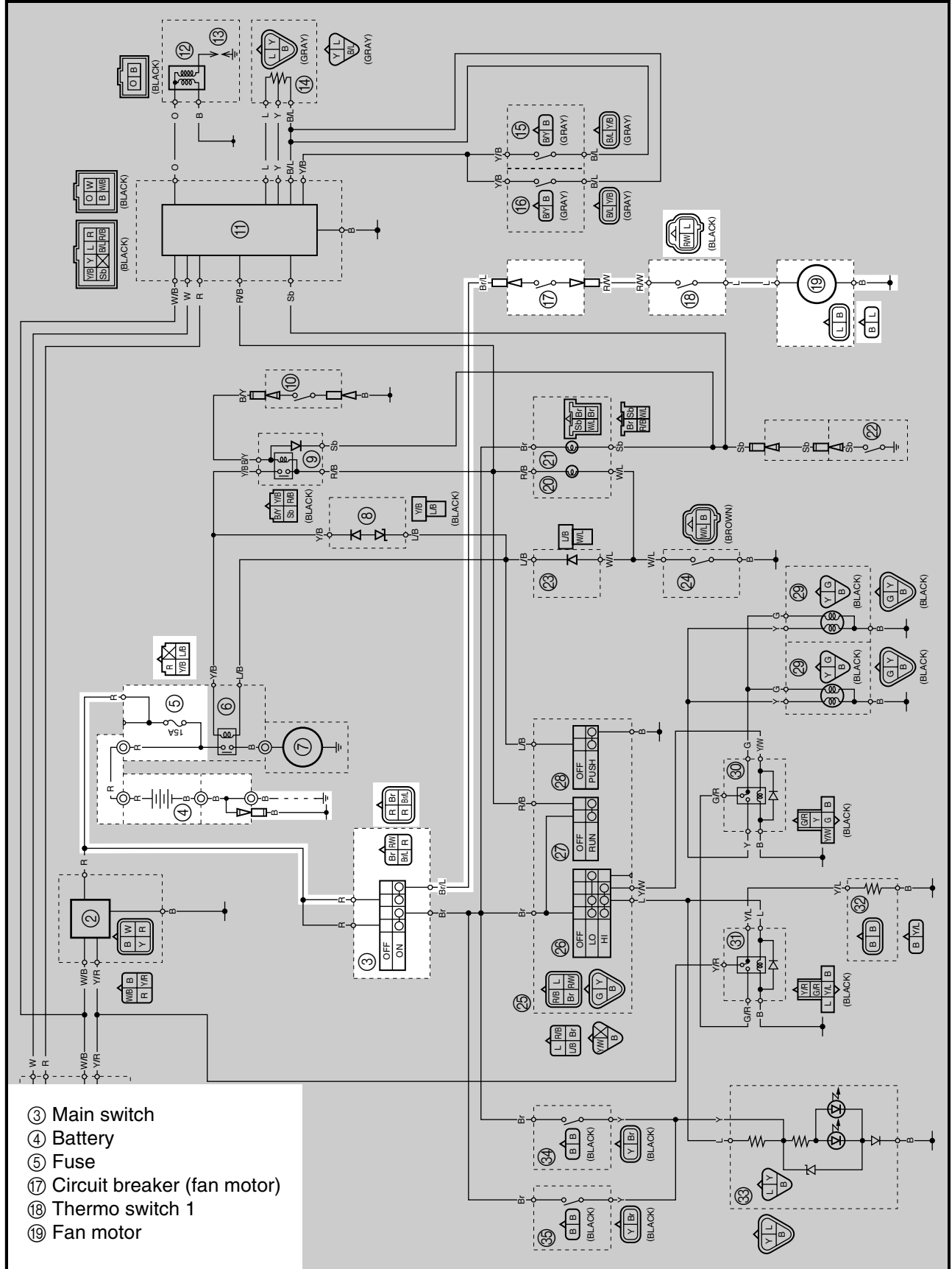
This circuit is OK.

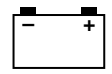
The wiring circuit from the main switch to the tail/brake light coupler is faulty and must be replaced.



EBS00532

COOLING SYSTEM CIRCUIT DIAGRAM





EBS01085

TROUBLESHOOTING

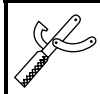
The radiator fan motor fails to turn.

Check:

1. fuse
2. battery
3. main switch
4. radiator fan motor
5. circuit breaker (fan motor)
6. thermo switch 1
7. wiring connections
(the entire cooling system)

NOTE:

- Before troubleshooting, remove the following part(s):
 1. seat
 2. fuel tank cover
 3. side covers (left and right)
 4. front fender
- Troubleshoot with the following special tool(s).



Pocket tester
P/N. YU-03112-C, 90890-03112

EBS01043

1. Fuse

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

↓ YES

↓ NO

Replace the fuse.

EBS01044

2. Battery

- Check the condition of the battery.
Refer to "CHECKING AND CHARGING THE BATTERY" in chapter 3.
(Manual No.: 5TG-28197-10)



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.

EBS01041

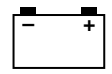
3. Main switch

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

↓ YES

↓ NO

Replace the main switch.



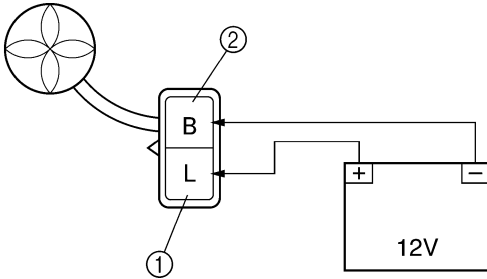
EBS01086

4. Radiator fan motor

- Disconnect the radiator fan motor coupler from the wire harness.
- Connect the battery (DC 12 V) as shown.

Positive battery lead → blue ①

Negative battery lead → black ②



- Does the radiator fan motor turn?

↓ YES

↓ NO

The radiator fan motor is faulty and must be replaced.

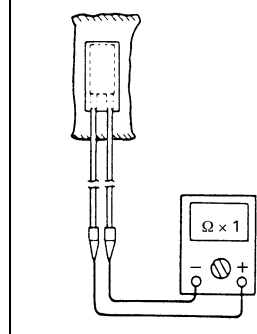
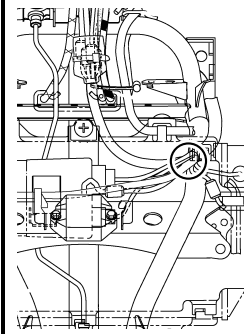
5. Circuit breaker (fan motor)

- Remove the circuit breaker from the wire harness.

NOTE:

The circuit breaker and its leads are attached to the wire harness with black tape at two locations.

- Connect the pocket tester ($\Omega \times 1$) to the circuit breaker.

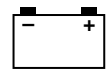


Circuit breaker resistance
Zero Ω at 20 °C (68 °F)

↓ YES

↓ NO

Replace the circuit breaker.



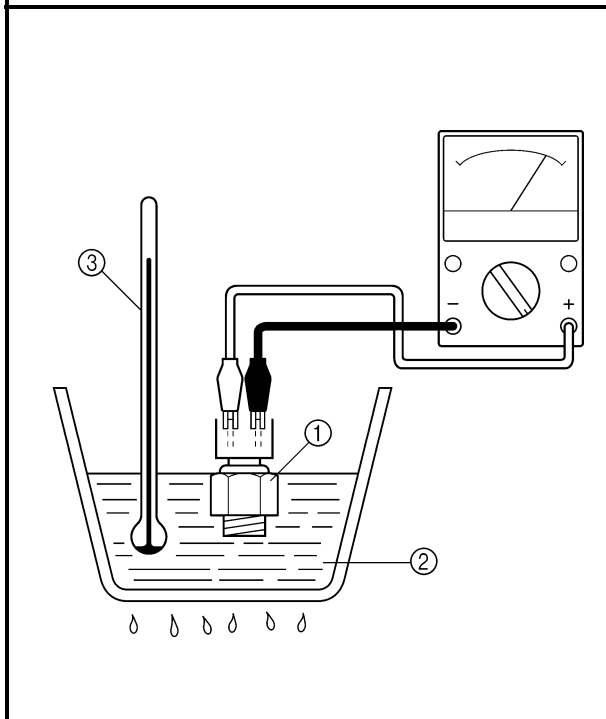
EBS01088

6. Thermo switch 1

- Remove the thermo switch 1 from the radiator.
- Connect the pocket tester ($\Omega \times 1$) to the thermo switch 1 ① as shown.
- Immerse the thermo switch 1 in a container filled with coolant ②.
- Place a thermometer ③ in the coolant.
- Slowly heat the coolant, then let it cool down to the specified temperature.
- Check the thermo switch 1 for continuity at the temperatures indicated below.

Test step	Coolant temperature	Continuity
	Thermo switch	
1	Less than $105 \pm 3^\circ\text{C}$ ($221.0 \pm 5.4^\circ\text{F}$)	NO
2	More than $105 \pm 3^\circ\text{C}$ ($221.0 \pm 5.4^\circ\text{F}$)	YES
3*	More than $100 \pm 3^\circ\text{C}$ ($212.0 \pm 5.4^\circ\text{F}$)	YES
4*	Less than $100 \pm 3^\circ\text{C}$ ($212.0 \pm 5.4^\circ\text{F}$)	NO

Steps 1 & 2: Heating phase
Steps 3* & 4*: Cooling phase



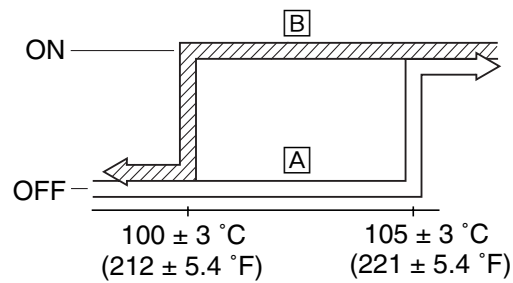
WARNING

- Handle the thermo switch with special care.
- Never subject the thermo switch to strong shocks. If the thermo switch is dropped, replace it.

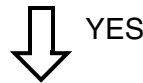


Thermo switch 1
28 Nm (2.8 m · kg, 20 ft · lb)

- [A] The thermo switch circuit is open and the radiator fan is off.
- [B] The thermo switch circuit is closed and the radiator fan is on.



- Does the thermo switch 1 operate properly as described above?

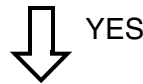


Replace the thermo switch 1.

EBS01090

7. Wiring

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



This circuit is OK.

Properly connect or repair the cooling system's wiring.

YFZ450V WIRING DIAGRAM

- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Battery
- ⑤ Fuse
- ⑥ Starter relay
- ⑦ Starter motor
- ⑧ Diode 1
- ⑨ Starting circuit cut-off relay
- ⑩ Clutch switch
- ⑪ C.D.I. unit
- ⑫ Ignition coil
- ⑬ Spark plug
- ⑭ Throttle position sensor
- ⑮ Throttle switch
- ⑯ Carburetor switch
- ⑰ Circuit breaker (fan motor)
- ⑱ Thermo switch 1
- ⑲ Fan motor
- ⑳ Coolant temperature warning light
- ㉑ Neutral indicator light
- ㉒ Neutral switch
- ㉓ Diode 2
- ㉔ Thermo switch 2
- ㉕ Handlebar switch
- ㉖ Light switch
- ㉗ Engine stop switch
- ㉘ Start switch
- ㉙ Headlight
- ㉚ Headlight relay 1
- ㉛ Headlight relay 2
- ㉜ Resistor
- ㉝ Tail/brake light
- ㉞ Rear brake light switch
- ㉟ Front brake light switch

COLOR CODE

- B..... Black
- Br..... Brown
- G Green
- L Blue
- O Orange
- R..... Red
- Sb..... Sky blue
- W White
- Y Yellow
- B/L..... Black/Blue
- B/Y Black/Yellow
- Br/L..... Brown/Blue
- G/R..... Green/Red
- L/B..... Blue/Black
- R/B Red/Black
- R/W Red/White
- W/B White/Black
- W/L..... White/Blue
- Y/B Yellow/Black
- Y/L..... Yellow/Blue
- Y/R Yellow/Red
- Y/W Yellow/White



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YFZ450V WIRING DIAGRAM

