YFM250BT

SUPPLEMENTARY SERVICE MANUAL

LIT-11616-18-41 4XE-F8197-13

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the YFM250BT. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

YFM250XL(C) SERVICE MANUAL: LIT-11616-12-01 (4XE-F8197-10)
YFM250XN SUPPLEMENTARY SERVICE MANUAL: LIT-11616-14-17 (4XE-F8197-11)
YFM250XP SUPPLEMENTARY SERVICE MANUAL: LIT-11616-15-03 (4XE-F8197-12)

YFM250BT
SUPPLEMENTARY
SERVICE MANUAL

First edition, July 2004

Printed in U.S.A.
LIT-11616-18-41

EBS00002

NOTICE

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

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

NOTE:

Designs and specifications are subject to change without notice.

EBS00003

IMPORTANT INFORMATION

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

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

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

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

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

EBS00004

HOW TO USE THIS MANUAL

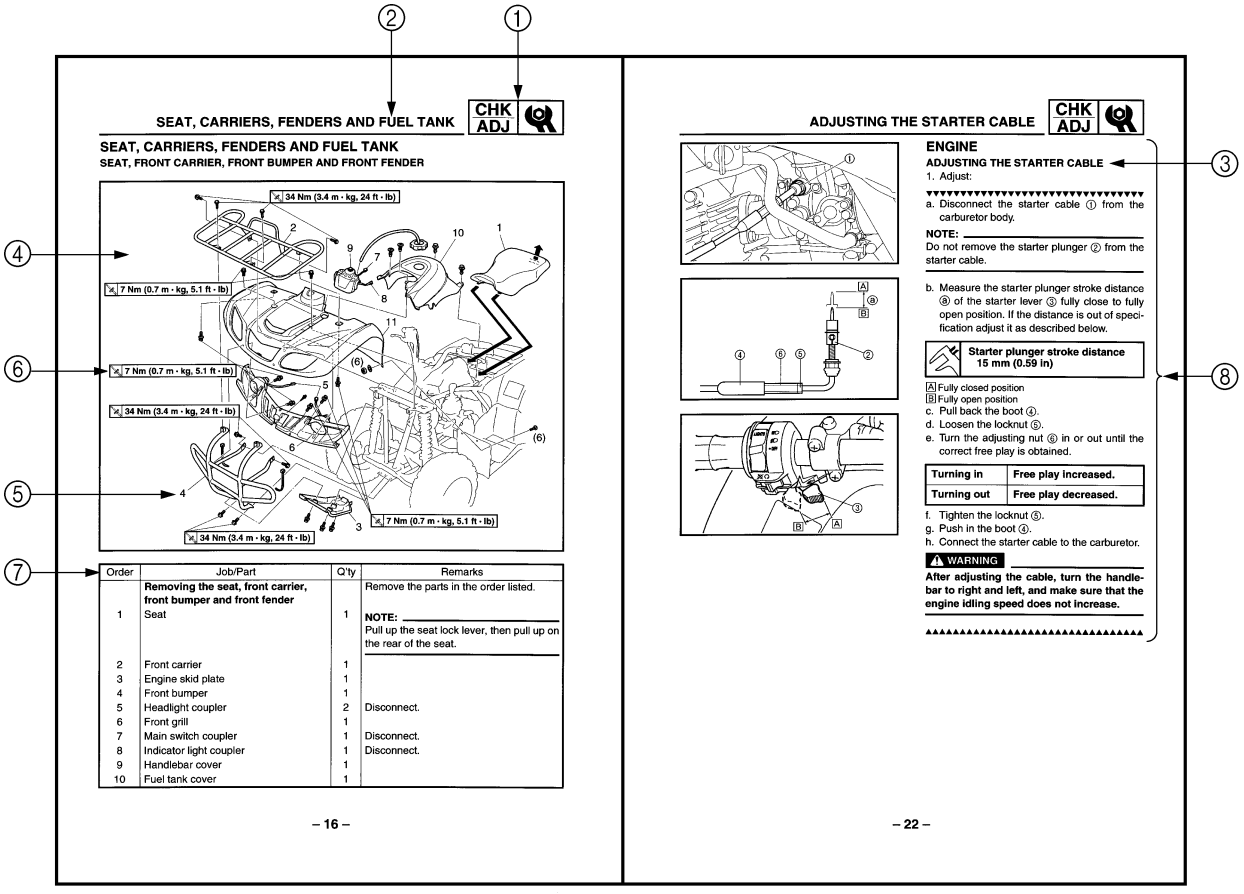
MANUAL ORGANIZATION

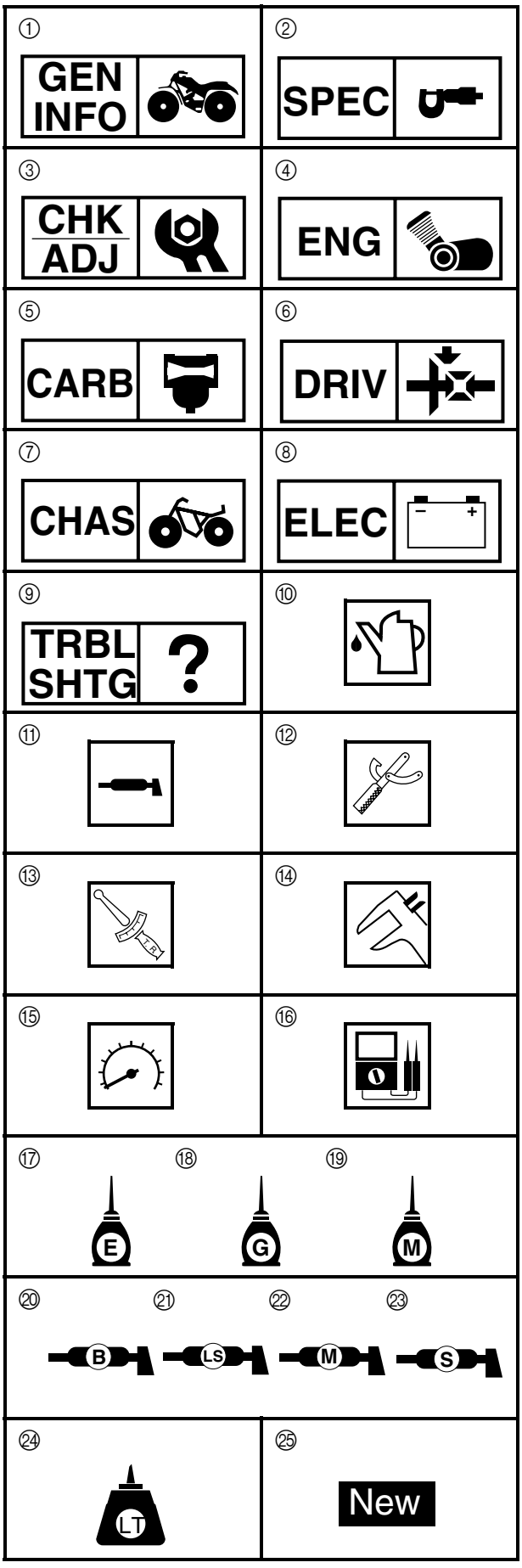
This manual consists of chapters for the main categories of subjects. (See “symbols”)
1st title ①: This is the title of the chapter with its symbol in the upper right corner of each page.
2nd title ②: This title indicates the section of the chapter and only appears on the first page of each section. It is located in the upper left corner of the page.
3rd title ③: This title indicates a sub-section that is followed by step-by-step procedures accompanied by corresponding illustrations.

EXPLODED DIAGRAMS

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

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





EBS00005

SYMBOLS

The following symbols are not relevant to every machine.

Symbols ① to ⑨ indicate the subject of each chapter.

① General information
② Specifications
③ Periodic checks and adjustments
④ Engine
⑤ Carburetion
⑥ Drive train
⑦ Chassis
⑧ Electrical
⑨ Troubleshooting

Symbols ⑩ to ⑯ indicate the following.

⑩ Filling fluid
⑪ Lubricant
⑫ Special tool
⑬ Torque
⑭ Wear limit, clearance
⑮ Engine speed
⑯ Electrical data (Ω, V, A)

Symbols ⑰ to ㉓ in the exploded diagrams indicate the types of lubricants and lubrication points.

⑰ Apply engine oil
⑱ Apply gear oil
⑲ Apply molybdenum disulfide oil
⑳ Apply wheel bearing grease
㉑ Apply lithium-soap-based grease
㉒ Apply molybdenum disulfide grease
㉓ Apply silicon 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

CONTENTS

YFM250BT WIRING DIAGRAM

SPECIFICATIONS

GENERAL SPECIFICATIONS

Item		Standard
Model code:		1P01
Dimensions:		
Overall length		1,916 mm (75.4 in)
Overall width		1,038 mm (40.9 in)
Overall height		1,118 mm (44.0 in)
Seat height		772 mm (30.4 in)
Wheelbase		1,170 mm (46.1 in)
Minimum ground clearance		150 mm (5.9 in)
Minimum turning radius		2,900 mm (114 in)
Basic weight:		
With oil and full fuel tank		216 kg (476 lb)
Carburetor:		
Type/quantity		BSR33/1
Manufacturer		MIKUNI
Tire:		
Type		Tubeless
Size	front	AT22 × 7-10
	rear	AT22 × 10-10
Manufacturer	front	MAXXIS
	rear	MAXXIS
Type	front	M905
	rear	M906
Electrical:		
Ignition system		DC C.D.I.
Generator system		A.C. magneto
Battery type		CB14A-A2
Battery capacity		12 V 14 AH
Bulb wattage × quantity:		
Headlight		12 V 30 W/30 W × 2
Tail/brake light		12 V 5 W/21 W × 1
Indicator lights:		
Neutral		12 V 1.7 W × 1
Reverse		12 V 1.7 W × 1

MAINTENANCE SPECIFICATIONS

ENGINE

Item		Standard	Limit
Carburetor:			
I. D. mark		1P01 00	----
Main jet	(M.J)	#93.8	----
Main air jet	(M.A.J)	#70	----
Jet needle	(J.N)	5EP17-2	----
Needle jet	(N.J)	P-2M (826)	----
Pilot air jet	(P.A.J.1)	#80	----
Pilot air jet	(P.A.J.2)	1.3	----
Pilot outlet	(P.O)	0.8	----
Pilot jet	(P.J)	#20	----
Bypass 1	(B.P.1)	0.8	----
Bypass 2	(B.P.2)	0.8	----
Bypass 3	(B.P.3)	0.8	----
Valve seat size	(V.S)	2.0	----
Starter jet	(G.S.1)	#62.5	----
Starter jet	(G.S.2)	0.9	----
Throttle valve size	(Th.V)	#100	----
Float height	(F.H)	12.0 ~ 14.0 mm (0.47 ~ 0.55 in)	----
Fuel level	(F.L)	4.0 ~ 5.0 mm (0.16 ~ 0.20 in)	----
Engine idle speed		1,400 ~ 1,500 r/min	----
Intake vacuum		30.7 kPa (230 mmHg, 9.06 inHg)	----

Tightening torques

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m · kg	ft · lb	
Starter motor holding bracket	Screw	M6	2	7	0.7	5.1	
Bearing retainer 1 (bearing housing)	Nut	M50	1	80	8.0	58	
Drive select lever unit and frame	Bolt	M8	2	23	2.3	17	
Drive select lever component:							
Lever component	Bolt	M6	1	14	1.4	10	
Middle drive pinion gear	Nut	M16	1	90	9.0	65	Stake
Shift guide stopper bolt	Bolt	M8	1	20	2.0	14	

CHASSIS

Item	Standard	Limit
Brake lever and brake pedal:		
Front brake lever free play (at lever pivot)	0 mm (0 in)	----
Rear brake lever free play (at lever pivot)	5 ~ 7 mm (0.20 ~ 0.28 in)	----
Brake pedal free play	20 ~ 30 mm (0.79 ~ 1.18 in)	----
Throttle lever free play	3 ~ 5 mm (0.12 ~ 0.20 in)	----

Tightening torques

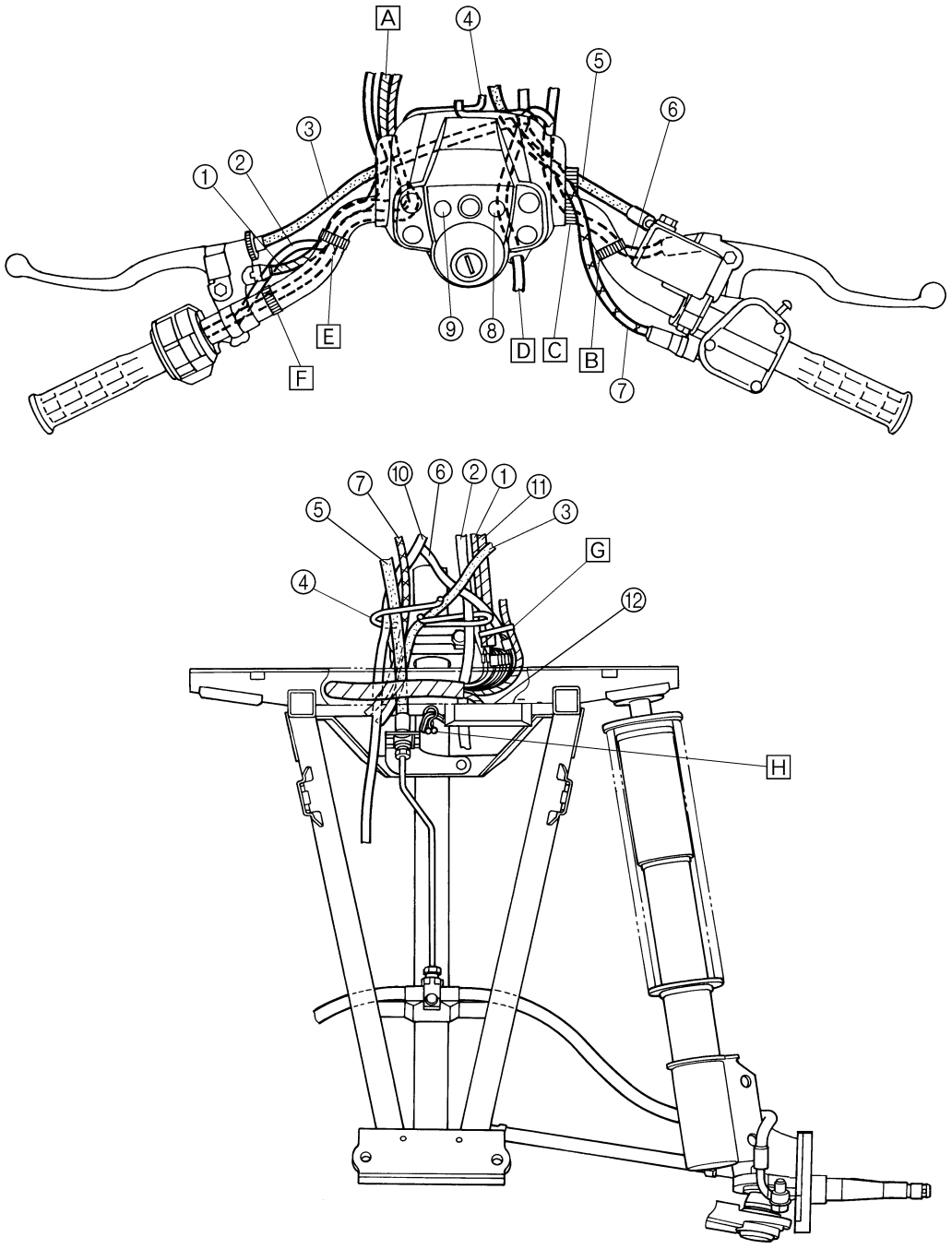
Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m · kg	ft · lb	
Steering knuckle and tie-rod end	Nut	M12 × 1.25	2	30	3.0	22	
Tie-rod and locknut	Nut	M12 × 1.25	4	40	4.0	29	
Steering shaft and tie-rod end	Nut	M12 × 1.25	2	30	3.0	22	
Front carrier and frame	Bolt	M8 × 1.25	4	34	3.4	24	
Front carrier and front fender	Bolt	M6 × 1.0	2	7	0.7	5.1	
Front carrier and front bumper	Bolt	M8 × 1.25	2	34	3.4	24	
Front bumper and frame	Bolt	M8 × 1.25	4	34	3.4	24	
Front bumper, front fender and front grill	Bolt	M6 × 1.0	2	7	0.7	5.1	
Front fender and front grill	Bolt	M6 × 1.0	2	7	0.7	5.1	
Rear carrier and frame	Bolt	M8 × 1.25	4	34	3.4	24	
Rear carrier and rear fender	Bolt	M6 × 1.0	2	7	0.7	5.1	
Rear fender, air filter case and frame	Bolt	M6 × 1.0	2	7	0.7	5.1	
Rear fender and frame	Bolt	M6 × 1.0	1	7	0.7	5.1	
Battery holding bracket	Bolt	M6 × 1.0	2	7	0.7	5.1	
Footrest bracket and frame (left and right)	Bolt	M10 × 1.25	4	65	6.5	47	
	Bolt	M8 × 1.25	4	34	3.4	24	
Footrest, footrest board and footrest bracket (left and right)	Bolt	M6 × 1.0	4	7	0.7	5.1	

ELECTRICAL

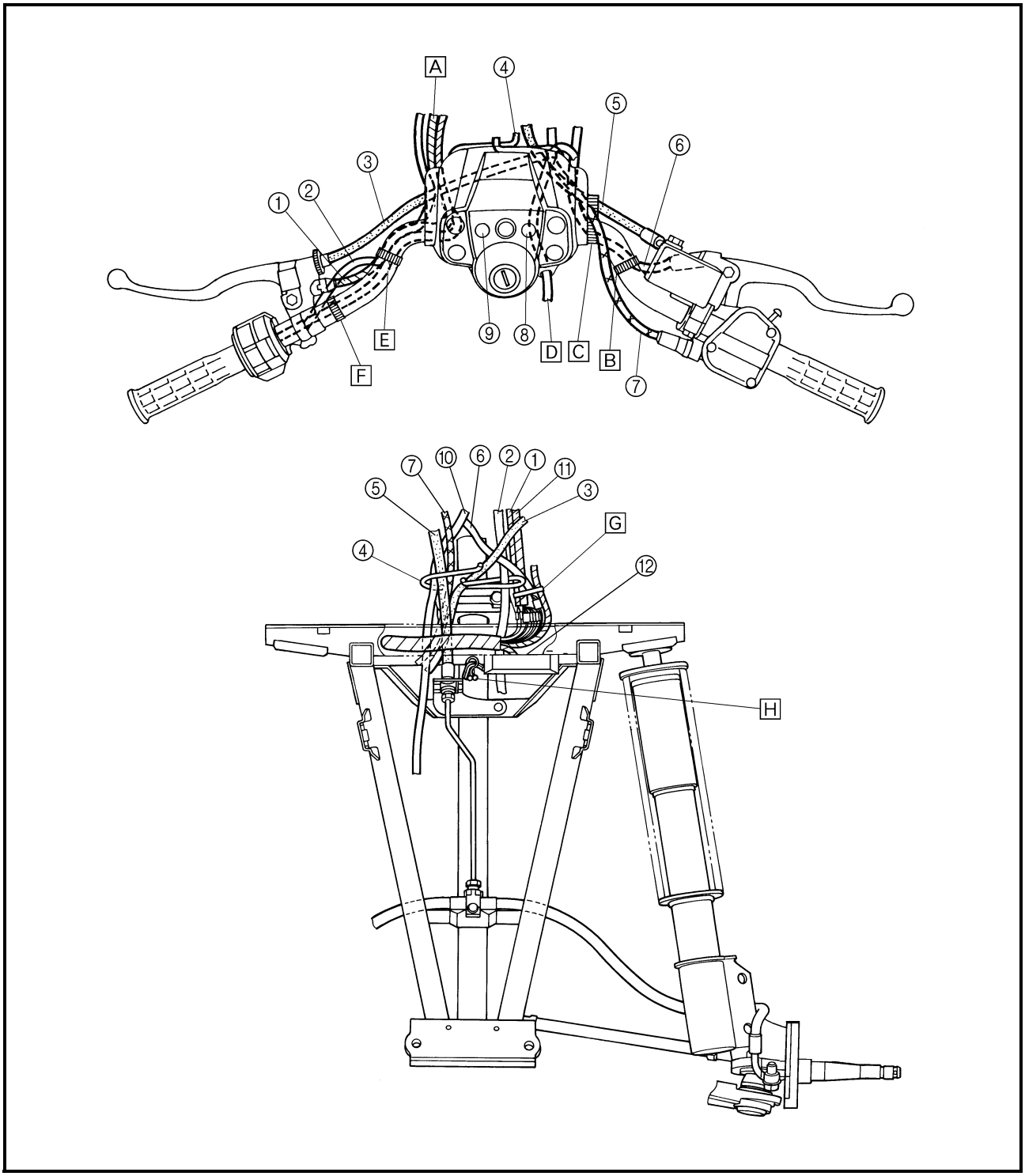
Item	Standard	Limit
C.D.I.:		
Magneto model/manufacturer	F4T259/MITSUBISHI	----
Pickup coil resistance/color	189 ~ 231 Ω at 20 °C (68 °F)/ White/Green – White/Red	----
Rotor rotation direction detection coil resistance/color	0.065 ~ 0.080 Ω at 20 °C (68 °F)/ Red – White/Blue	----
C.D.I. unit model/manufacturer	F8T38683/MITSUBISHI	----
Electric starter system:		
Type	Constant mesh type	----
Starter motor:		
Model/manufacturer	5XG/MORIC TAIWAN	----
Output	0.4 kW	----
Armature coil resistance	0.0144 ~ 0.0176 Ω at 20 °C (68 °F)	----
Brush overall length	10 mm (0.4 in)	3.5 mm (0.14 in)
Spring force	563 ~ 844 g (5.52 ~ 8.28 N)	----
Commutator diameter	22 mm (0.87 in)	21 mm (0.83 in)
Mica undercut	1.5 mm (0.059 in)	----
Starter relay:		
Model/manufacturer	MS5F-721/JIDECO	----
Amperage rating	180 A	----
Coil winding resistance/color	4.2 ~ 4.6 Ω at 20 °C (68 °F)/ Blue/Black – Blue/White	----

CABLE ROUTING

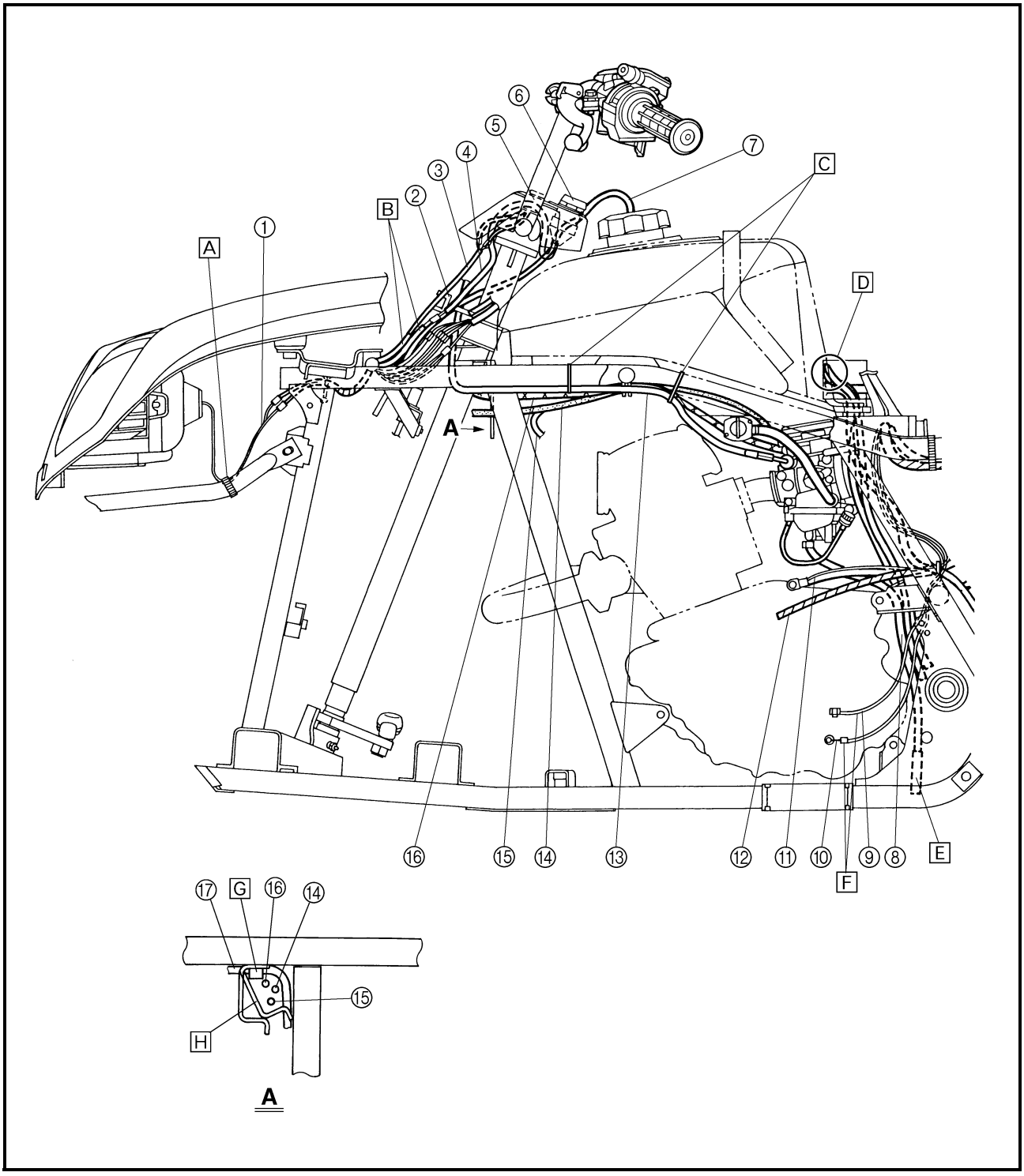
① Rear brake light switch lead
② Starter cable
③ Rear brake cable
④ Lower bracket cable guide
⑤ Front brake hose
⑥ Front brake light switch lead
⑦ Throttle cable
⑧ Reverse indicator light
⑨ Neutral indicator light
⑩ Fuel tank breather hose
⑪ Handlebar switch assembly lead
⑫ Rectifier/regulator



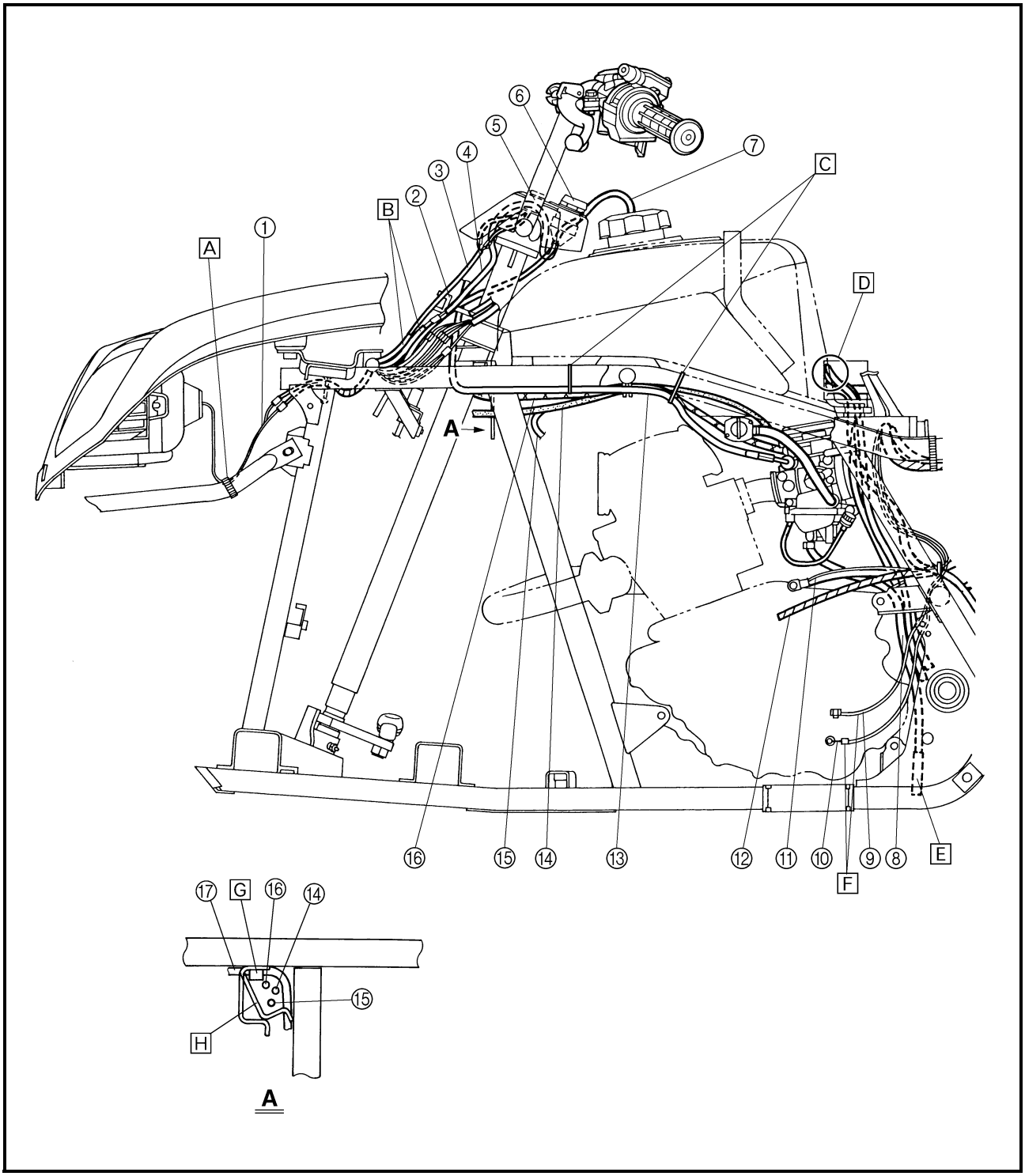
[A] Do not route the handlebar switch assembly lead through the lower bracket cable guide.
[B] Fasten the front brake light switch lead to the handlebar with the plastic band.
[C] Faster the front brake light switch lead and front brake hose to the handlebar with the plastic band.
[D] Route the fuel tank breather hose through the hole in the handlebar cover and then to the right of the handlebar (below the handlebar, not over it). Then, pass the hose through the cable guide.
[E] Fasten the handlebar switch assembly lead, rear brake light switch lead, and starter cable to the handlebar with the plastic bands.
[F] Fasten the handlebar switch assembly lead to the handlebar with the plastic band.
[G] Fasten the rear brake light switch lead, front brake light switch lead, and handlebar switch assembly lead with the plastic band.
[H] Fasten the headlight leads to the frame with the clamp.



① Headlight lead
② Lower bracket cable guide
③ Indicator light lead
④ Main switch lead
⑤ Indicator light
⑥ Main switch
⑦ Fuel tank breather hose
⑧ Carburetor overflow hose
⑨ Reverse switch lead
⑩ Neutral switch lead
⑪ Negative battery lead
⑫ A.C. magneto lead
⑬ Starter cable
⑭ Rear brake cable
⑮ Select lever control cable
⑯ Throttle cable
⑰ Starter motor lead

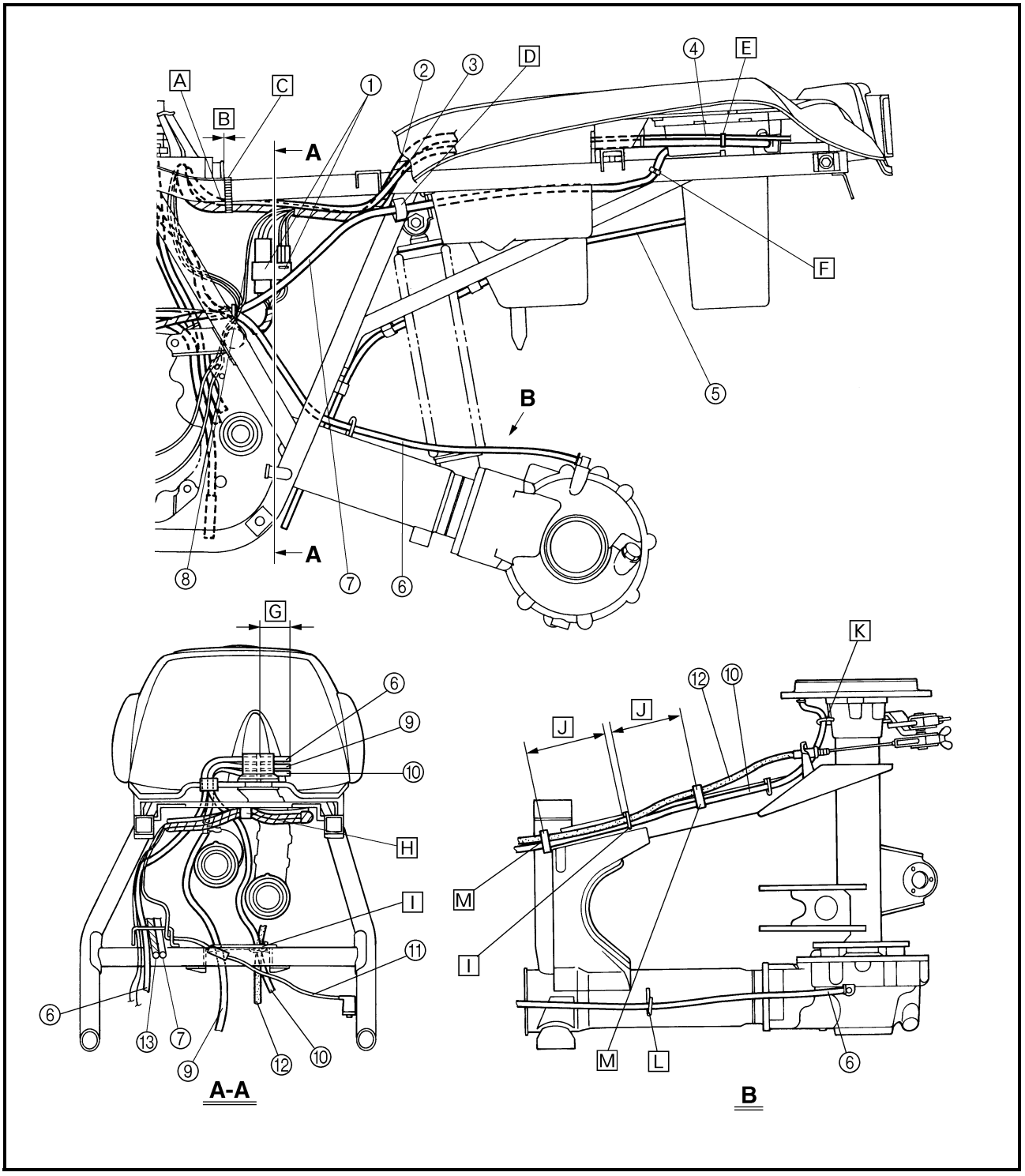


[A] Fasten the headlight lead to the front bumper with the plastic band.
[B] Route the main switch lead and indicator light lead to the side of the lower bracket cable guide.
[C] Fasten the starter cable to the frame with the plastic locking tie.
[D] Insert the carburetor air vent hose, rear brake breather hose, and final gear case breather hose into the air duct after routing them through the fuel tank grommet.
[E] Route the carburetor overflow hose between the engine and upper rear engine mount and then between the engine and swingarm. Make sure that the hose is not pinched.
[F] Route the reverse switch lead and neutral switch lead to the right of the rear arm boot.
[G] Fasten the starter motor lead to the frame with the plastic clamp. Route the starter motor lead over the throttle cable and rear brake cable.
[H] Bend the cable guide after routing the cables.

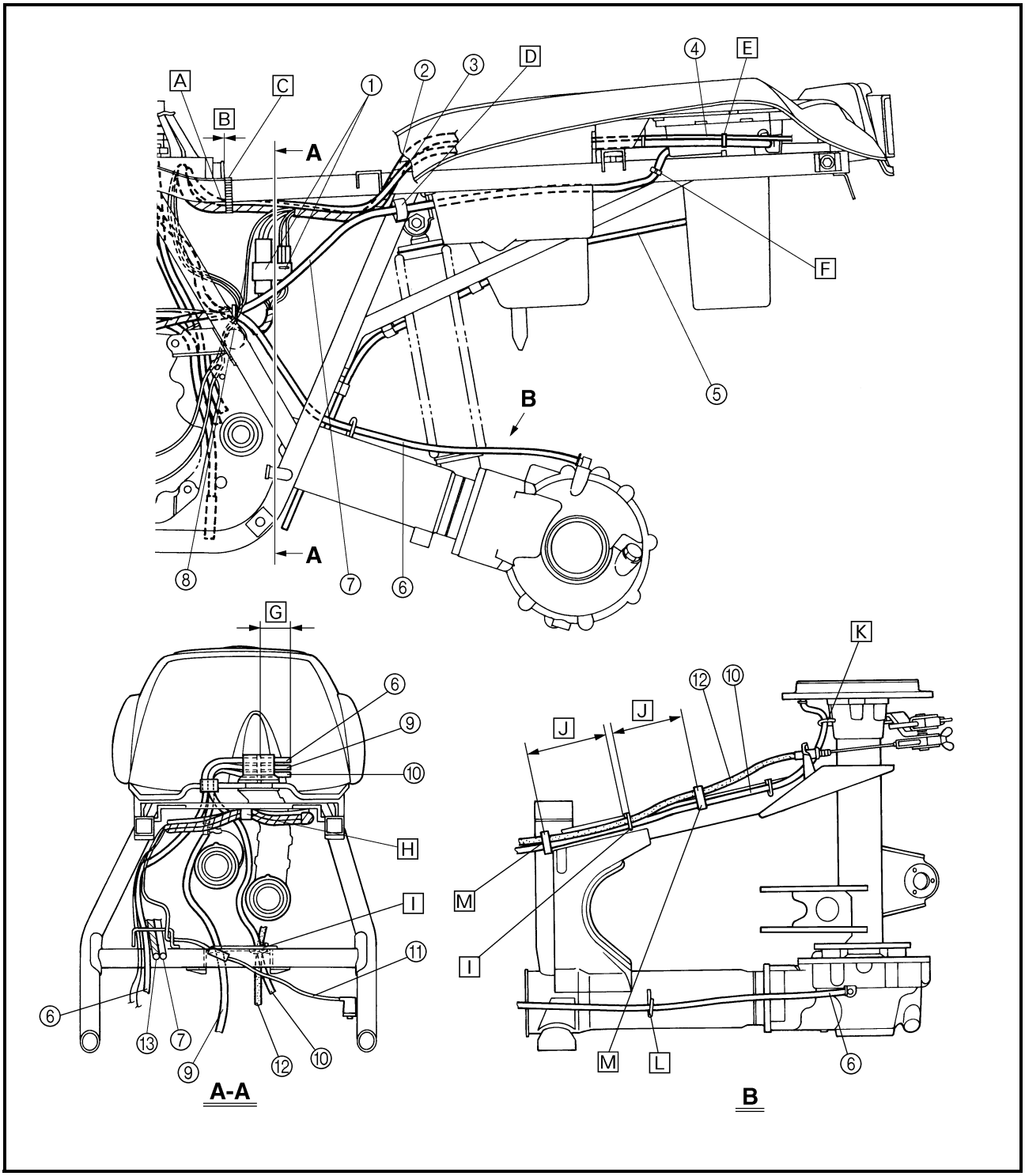


① A.C. magneto lead couplers
② Wire harness
③ Starter motor lead
④ Tail/brake light lead
⑤ Battery breather hose
⑥ Final gear case breather hose
⑦ Negative battery lead
⑧ Ground lead
⑨ Carburetor air vent hose
⑩ Rear brake breather hose
⑪ Rear brake light switch lead
⑫ Rear brake cable
⑬ A.C. magneto lead

A Make sure that the starter motor lead has no slack.
B 0 mm (0 in)
C Fasten the starter motor lead and wire harness to the frame with the plastic band.

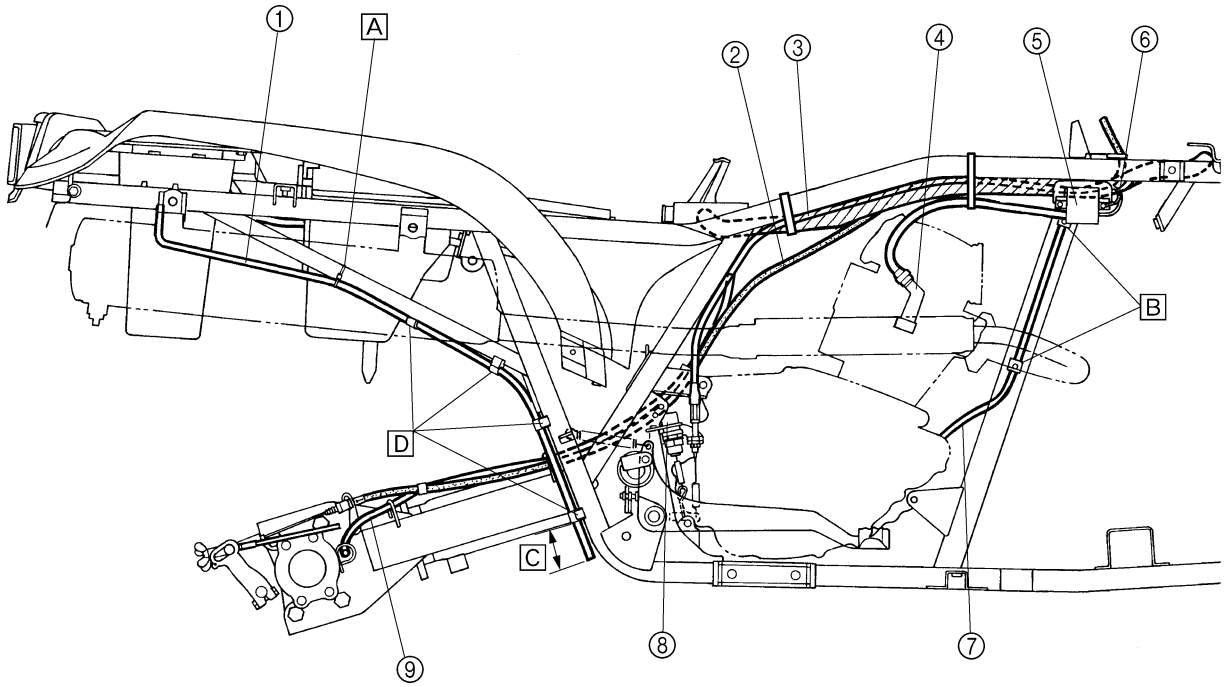


[D] Fasten the negative battery lead with the plastic clamp.
[E] Fasten the tail/brake light lead and negative battery lead with the plastic locking tie.
[F] Fasten the negative battery lead with the plastic clamp.
[G] 40 ~ 50 mm (1.6 ~ 2.0 in)
[H] Fasten the starter motor lead and wire harness to the frame with the plastic clamp.
[I] Route the rear brake cable and rear brake breather hose through the cable guide.
[J] 100 mm (4.0 in)
[K] Route the rear brake breather hose through the cable guide.
[L] Route the final gear case breather hose through the cable guide.
[M] Fasten the rear brake cable and rear brake breather hose to the swingarm with the plastic clips.



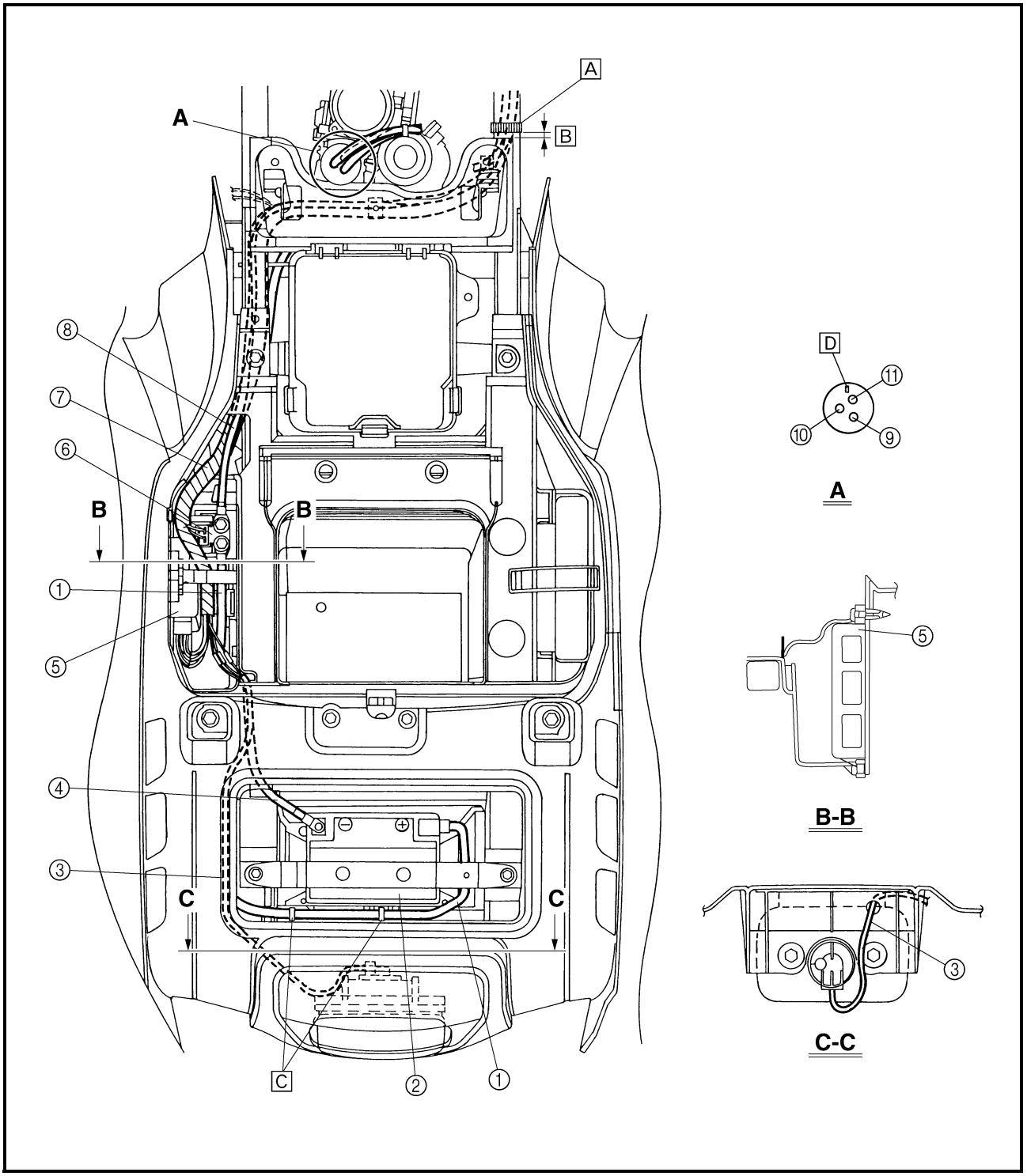
① Battery breather hose
② Rear brake cable
③ Select lever control cable
④ Spark plug cap
⑤ Ignition coil
⑥ Ignition coil leads
⑦ Starter motor lead
⑧ Rear brake light switch
⑨ Rear brake breather hose

A Fasten the battery breather hose to the frame with the plastic band.
B Fasten the starter motor lead to the frame with the plastic clamps.
C 50 ~ 60 mm (2.0 ~ 2.4 in)
D Fasten the battery breather hose to the frame with the plastic clamps.



① Positive battery lead
② Battery
③ Tail/brake light lead
④ Negative battery lead
⑤ CDI unit
⑥ Starter relay
⑦ Wire harness
⑧ Starter motor lead
⑨ Carburetor air vent hose
⑩ Final gear case breather hose
⑪ Rear brake breather hose

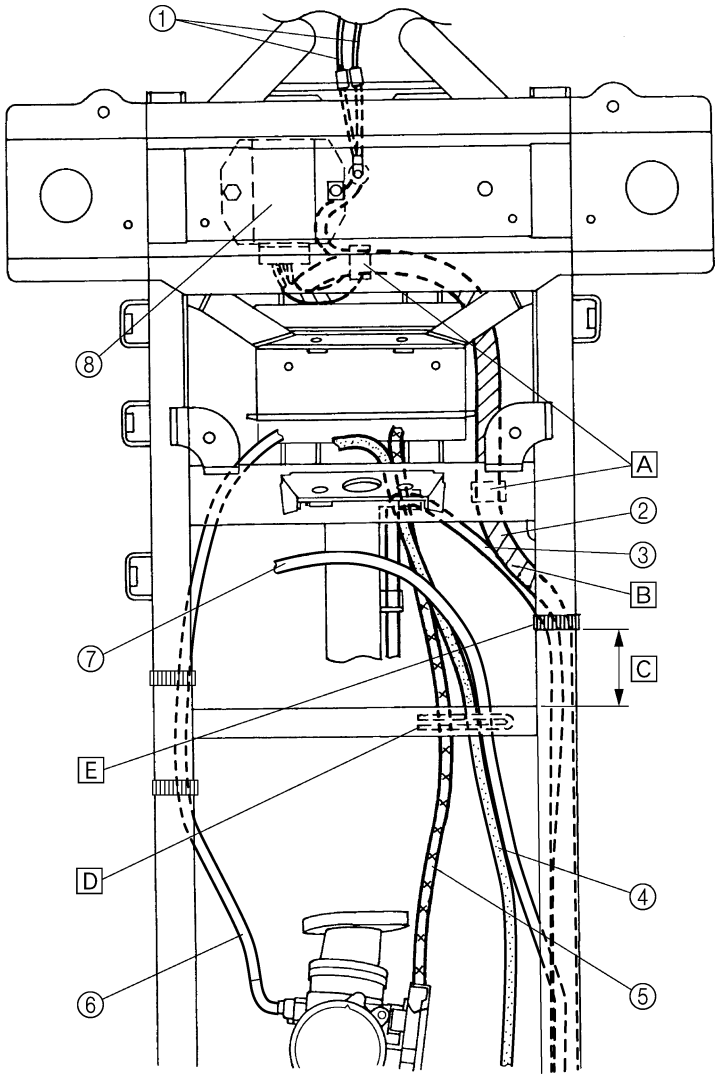
A Fasten the wire harness, starter motor lead, and select lever control cable to the frame with the plastic band.
B 5 mm (0.2 in)
C Fasten the positive battery lead to the rear fender with the plastic clamps.
D Make sure that the grommet is installed with the mark facing forward.



① Headlight leads
② Wire harness
③ Starter motor lead
④ Rear brake cable
⑤ Throttle cable
⑥ Starter cable
⑦ Select lever control cable
⑧ Rectifier/regulator

A Fasten the wire harness to the frame with the plastic clamps.

B Make sure the starter motor lead and wire harness do not contact the ignition coil.
C 50 mm (2.0 in)
D Route the throttle cable, select lever control cable and rear brake cable through the cable guide. Make sure that the throttle cable is routed to the inside of the rear brake cable.
E Fasten the wire harness, starter motor lead, and ignition coil lead to the frame with the plastic band.



EB300000

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/LUBRICATION

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.

ITEM	ROUTINE	Whichever comes first ⇨		INITIAL			EVERY	
			month	1	3	6	6	12
			km (mi)	320 (200)	1,200 (750)	2,400 (1,500)	2,400 (1,500)	4,800 (3,000)
			hours	20	75	150	150	300
Valves*	• Check valve clearance. • Adjust if necessary.			○		○	○	○
Spark plug	• Check condition. • Adjust gap and clean. • Replace if necessary.			○	○	○	○	○
Air filter element	• Clean. • Replace if necessary.			Every 20–40 hours (more often in wet or dusty areas)				
Carburetor*	• Check starter (choke). • Adjust engine idling speed.				○	○	○	○
Cylinder head breather system*	• Check breather hose for cracks or damage. • Replace if necessary.					○	○	○
Exhaust system*	• Check for leakage. • Tighten if necessary. • Replace gasket(s) if necessary.					○	○	○
Spark arrester	• Clean.					○	○	○
Fuel line*	• Check fuel hose for cracks or damage. • Replace if necessary.					○	○	○
Engine oil	• Replace (Warm engine before draining).			○		○	○	○
Engine oil filter element	• Clean.			○		○		○
Engine oil strainer	• Clean.			○		○		○
Final gear oil	• Check oil level/oil leakage. • Replace.			○				○
Front brake*	• Check operation/fluid leakage/see NOTE page 15. • Correct if necessary.			○	○	○	○	○
Rear brake*	• Check operation. • Adjust if necessary.			○	○	○	○	○
Select lever safety system cable*	• Check operation. • Adjust if necessary.					○	○	○
Clutch*	• Check operation. • Adjust if necessary.			○		○	○	○

ITEM	ROUTINE	Whichever comes first ⇨		INITIAL			EVERY	
			month	1	3	6	6	12
			km (mi)	320 (200)	1,200 (750)	2,400 (1,500)	2,400 (1,500)	4,800 (3,000)
			hours	20	75	150	150	300
Wheels*	• Check balance/damage/runout. • Repair if necessary.			○		○	○	○
Wheel bearings*	• Check bearing assemblies for looseness/damage. • Replace if damaged.			○		○	○	○
Front and rear suspension*	• Check operation. • Correct if necessary.					○		○
Steering system*	• Check operation./Replace if damaged. • Check toe-in./Adjust if necessary.			○	○	○	○	○
Steering shaft*	• Lubricate every 6 months with lithium-soap-based grease (all-purpose grease).					○	○	○
Fittings and fasteners*	• Check all chassis fittings and fasteners. • Correct if necessary.			○	○	○	○	○
Battery*	• Check specific gravity. • Check that the breather hose is working properly. • Correct if necessary.			○	○	○	○	○
Lights and switches*	• Check operation. • Adjust headlight beams.			○	○	○	○	○

* It is recommended that these items be serviced by a Yamaha dealer.

NOTE:

- Recommended brake fluid: DOT 4
- Brake fluid replacement:

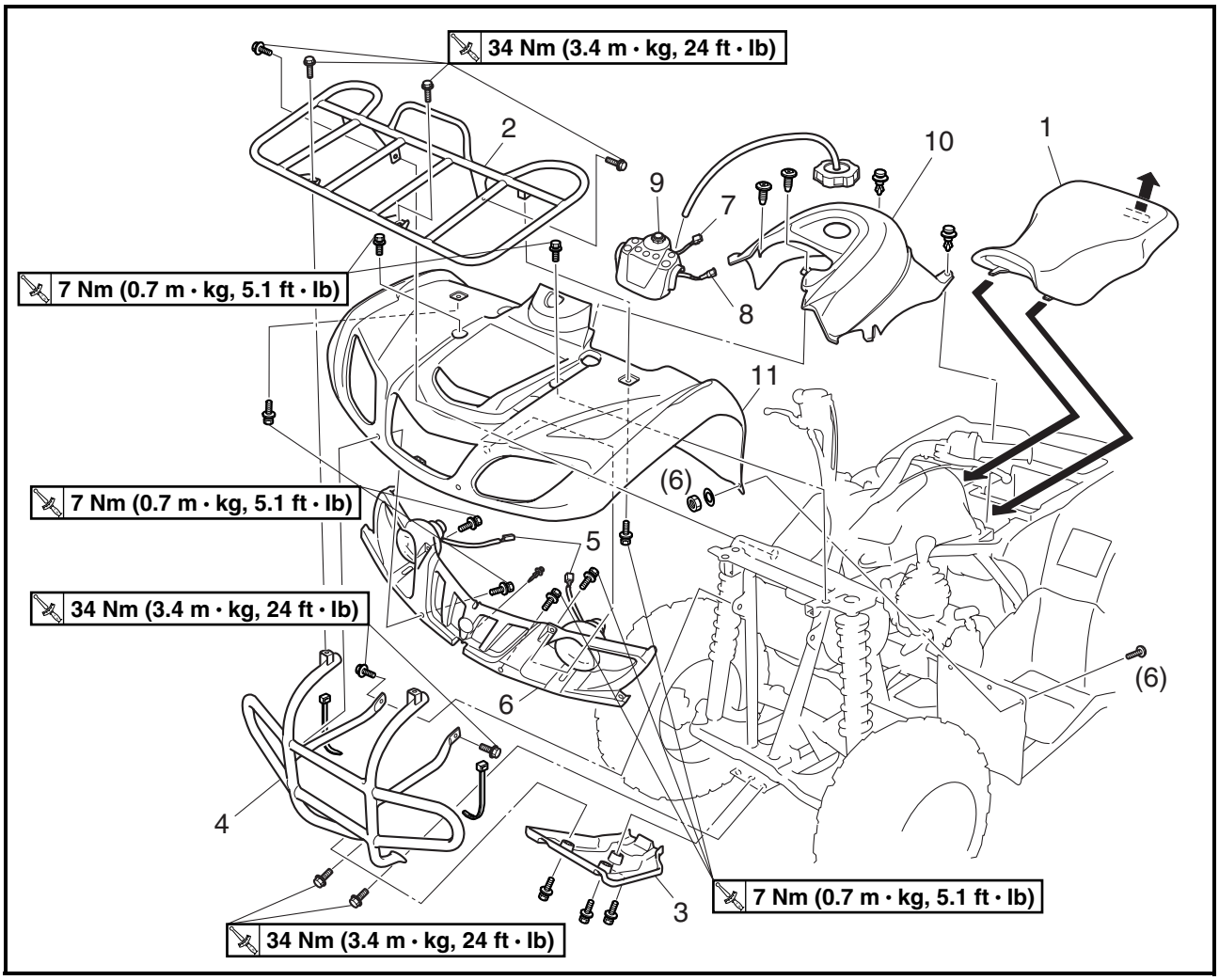
1. When disassembling the master cylinder or caliper, replace the brake fluid. Normally check the brake fluid level and add fluid as required.
2. On the inner parts of the master cylinder and caliper, replace the oil seals every two years.
3. Replace the brake hoses every four years, or if cracked or damaged.

⚠ WARNING

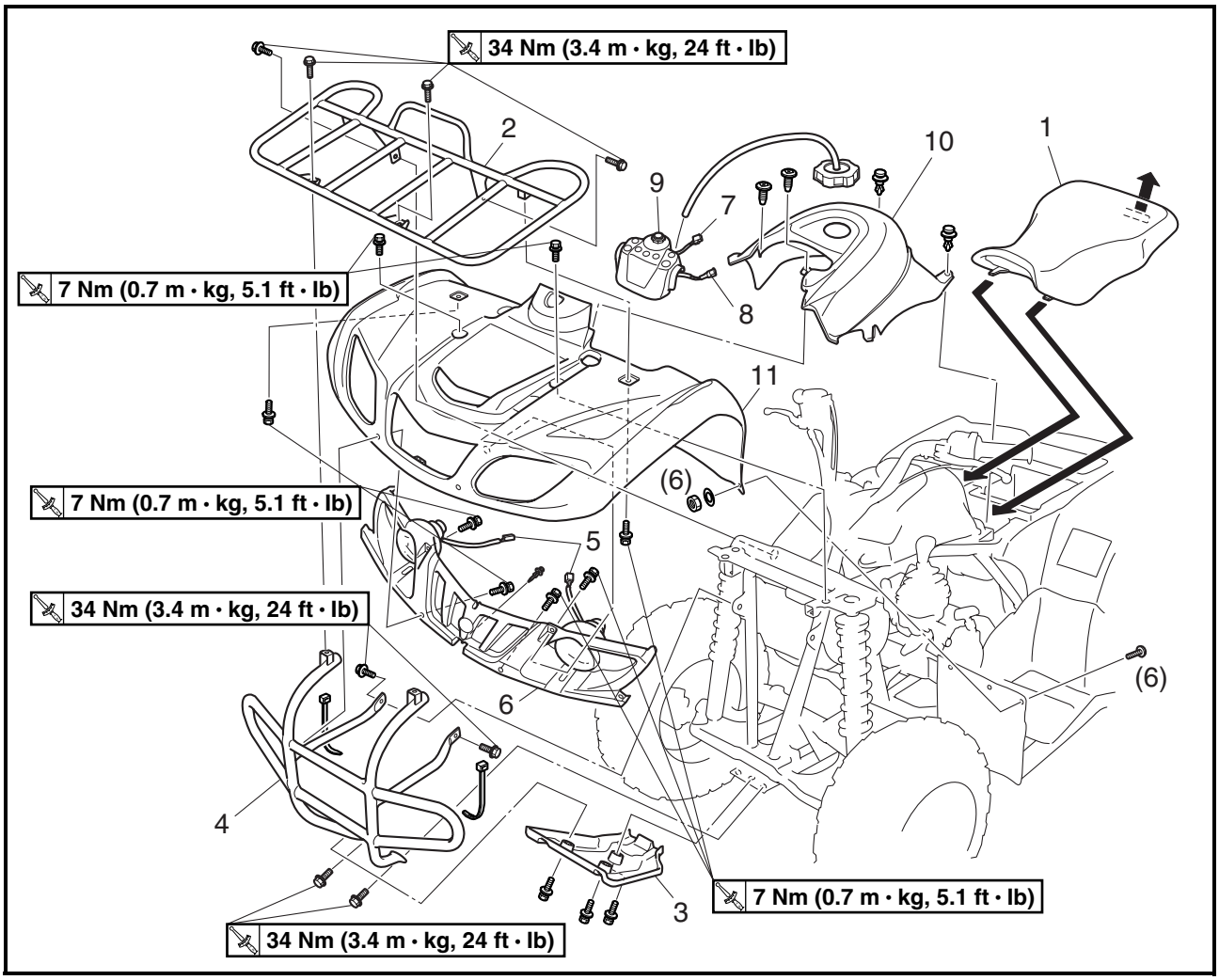
Indicates a potential hazard that could result in serious injury or death.

SEAT, CARRIERS, FENDERS AND FUEL TANK

SEAT, FRONT CARRIER, FRONT BUMPER AND FRONT FENDER

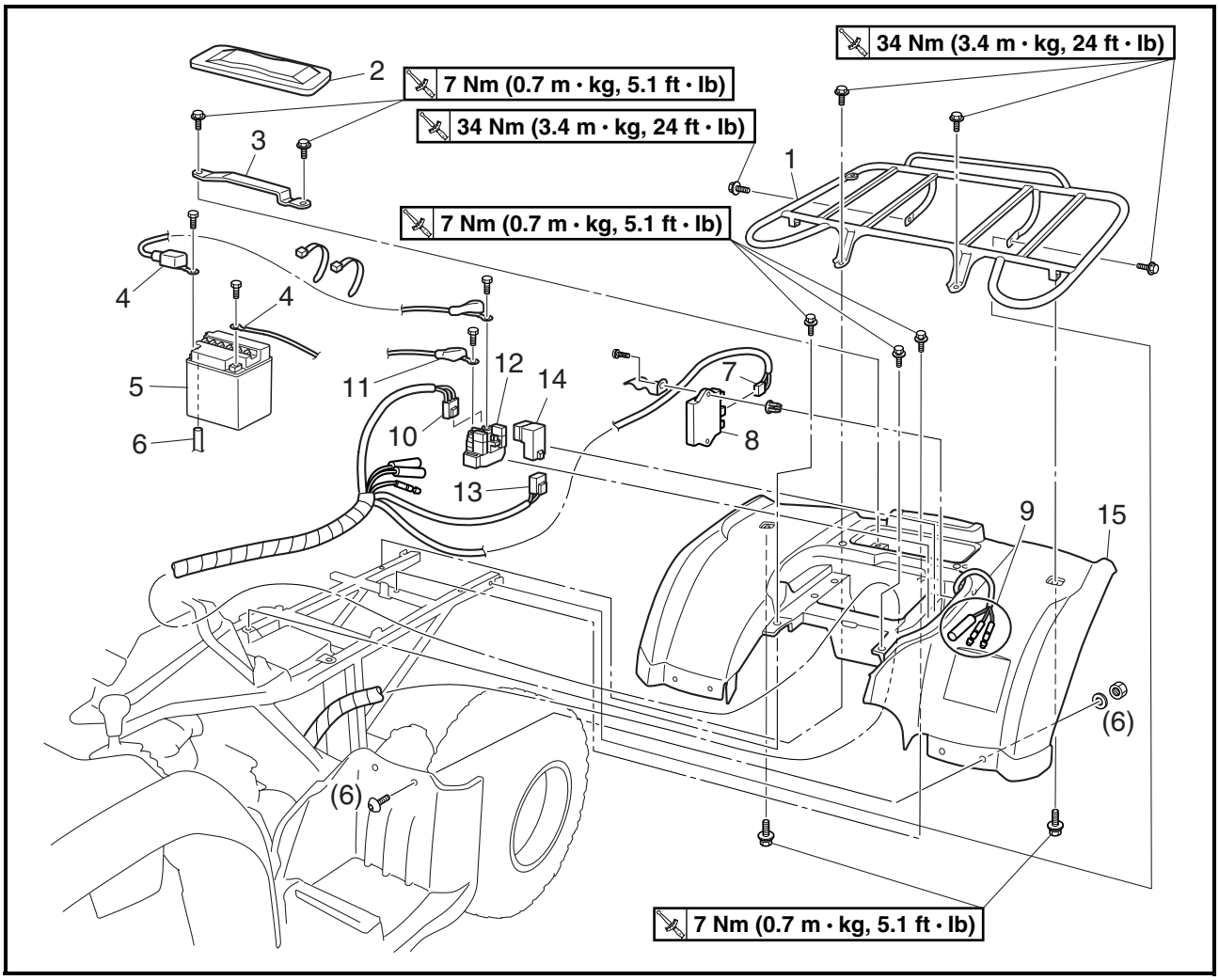


Order	Job/Part	Q'ty	Remarks
	Removing the seat, front carrier, front bumper and front fender		Remove the parts in the order listed.
1	Seat	1	**NOTE:** Pull up the seat lock lever, then pull up on the rear of the seat.
2	Front carrier	1	
3	Engine skid plate	1	
4	Front bumper	1	
5	Headlight coupler	2	Disconnect.
6	Front grill	1	
7	Main switch coupler	1	Disconnect.
8	Indicator light coupler	1	Disconnect.
9	Handlebar cover	1	
10	Fuel tank cover	1	

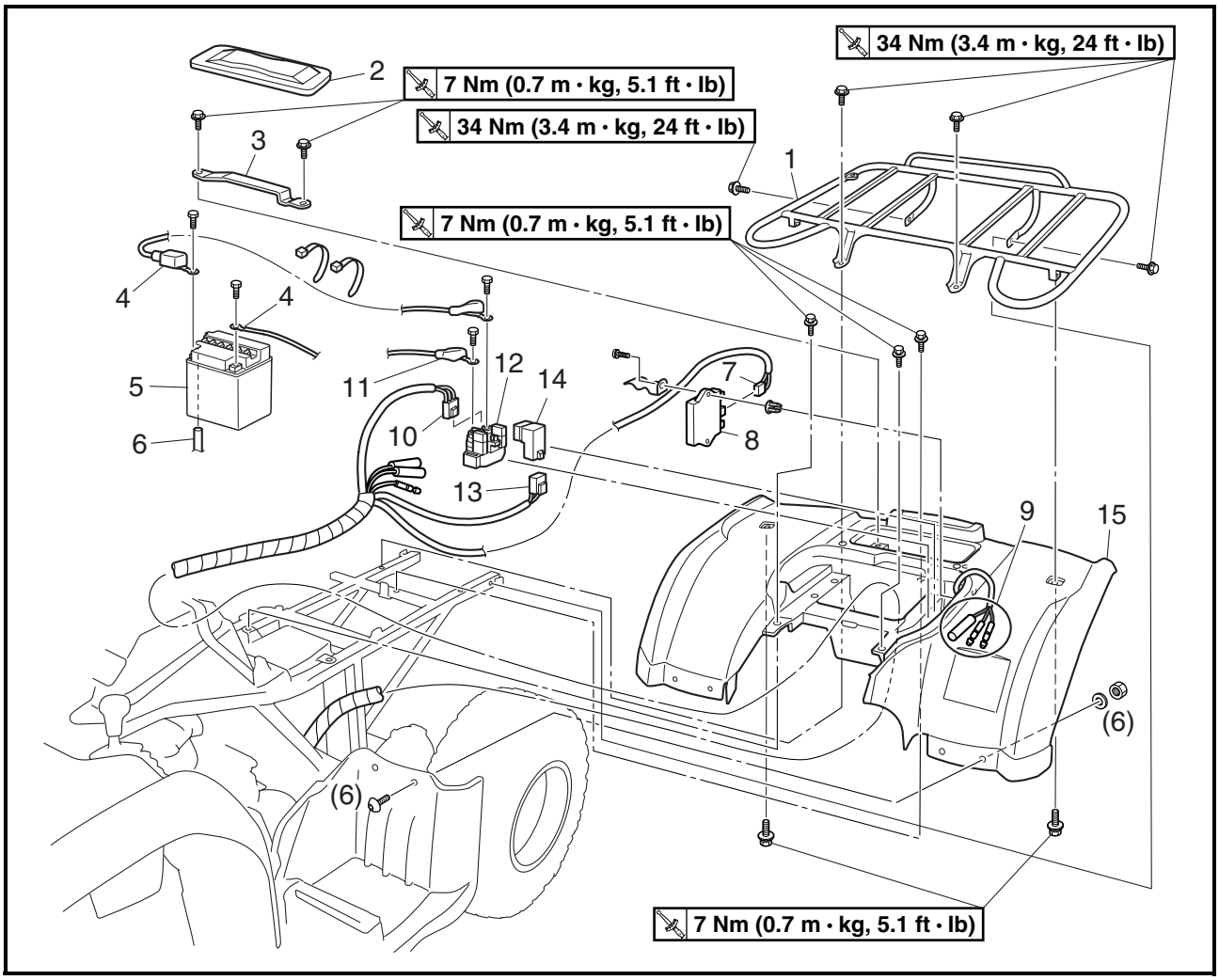


Order	Job/Part	Q'ty	Remarks
11	Front fender	1	For installation, reverse the removal procedure.

REAR CARRIER AND REAR FENDER

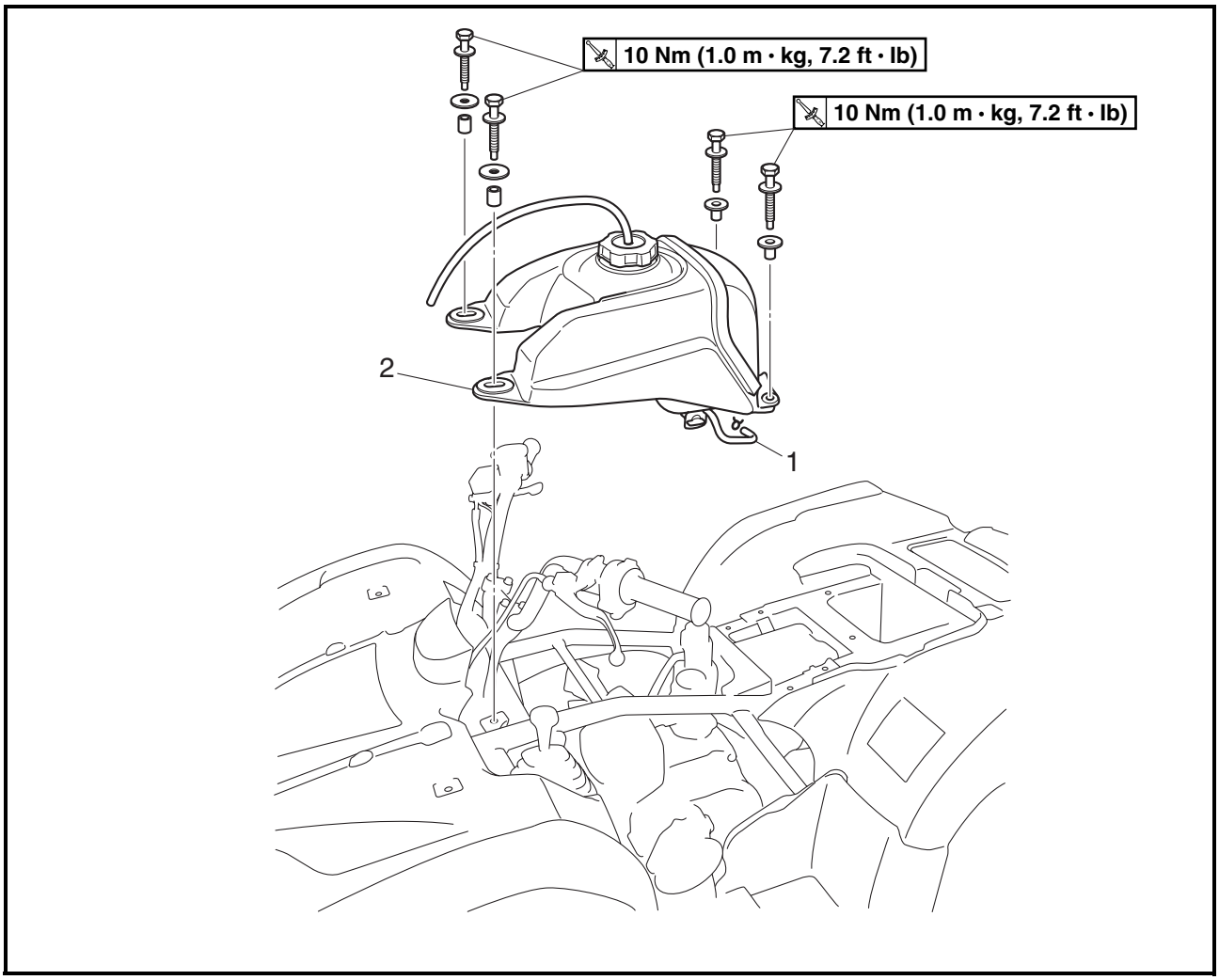


Order	Job/Part	Q'ty	Remarks
	Removing the rear carrier and rear fender		Remove the parts in the order listed.
	Seat and fuel tank cover		Refer to "SEAT, FRONT CARRIER, FRONT BUMPER AND FRONT FENDER".
1	Rear carrier	1	
2	Battery cover	1	
3	Battery holding bracket	1	
4	Battery lead	2	Disconnect. **CAUTION:** **First disconnect the negative lead, then disconnect the positive lead.**
5	Battery	1	
6	Battery breather hose	1	Disconnect.
7	CDI unit coupler	1	Disconnect.



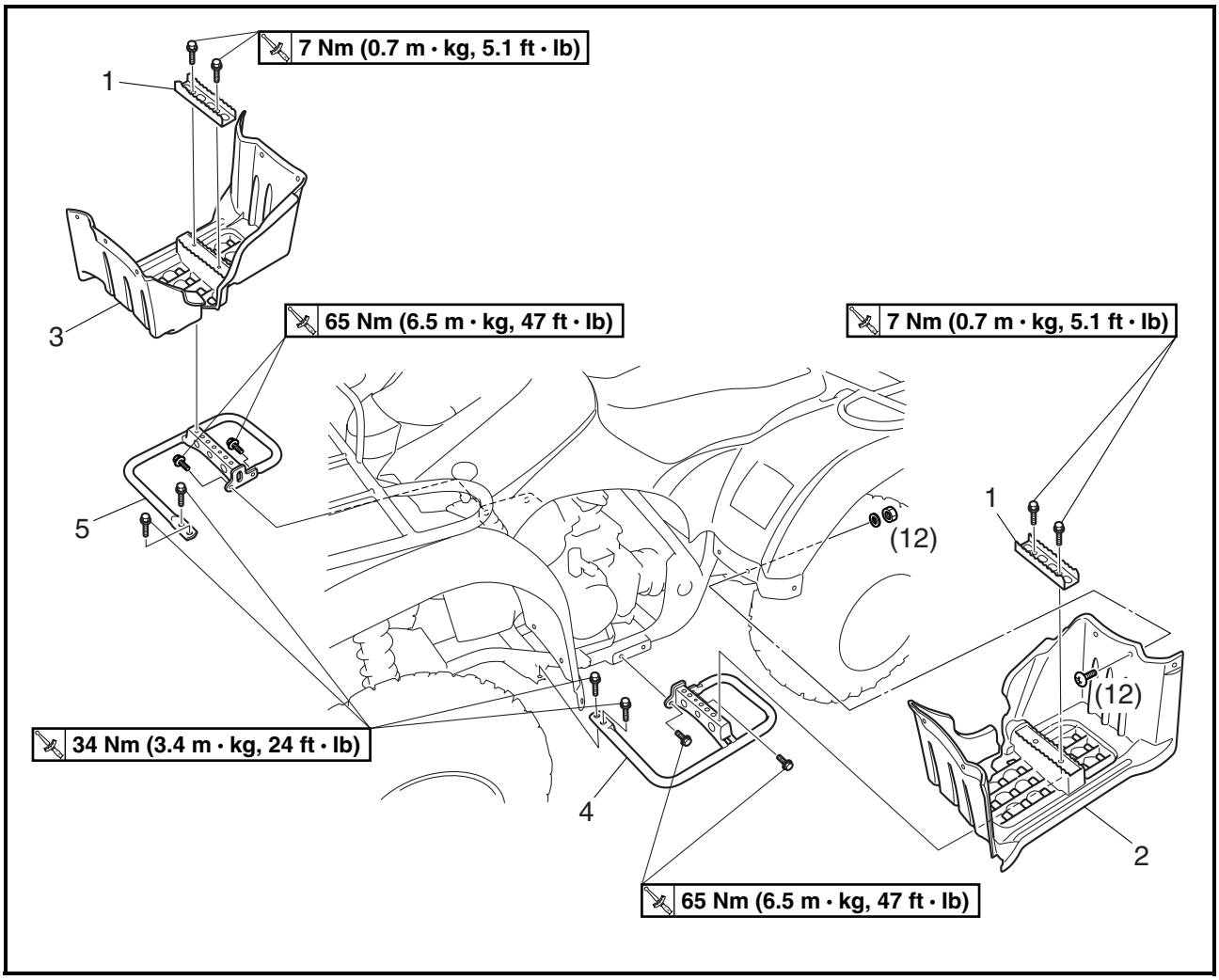
Order	Job/Part	Q'ty	Remarks
8	CDI unit	1	
9	Tail/brake light connector	3	Disconnect.
10	Starter relay coupler	1	Disconnect.
11	Starter motor lead	1	Disconnect.
12	Starter relay	1	
13	Starting circuit cut-off relay coupler	1	Disconnect.
14	Starting circuit cut-off relay	1	
15	Rear fender	1	
			For installation, reverse the removal procedure.

FUEL TANK

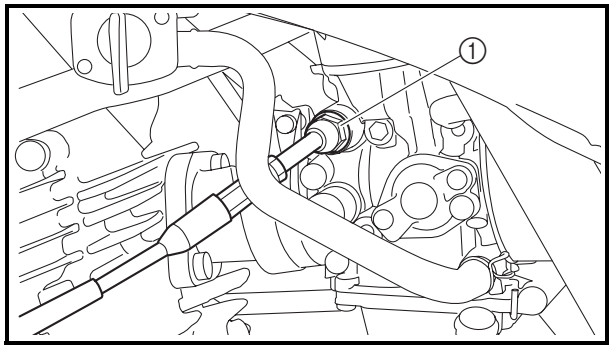


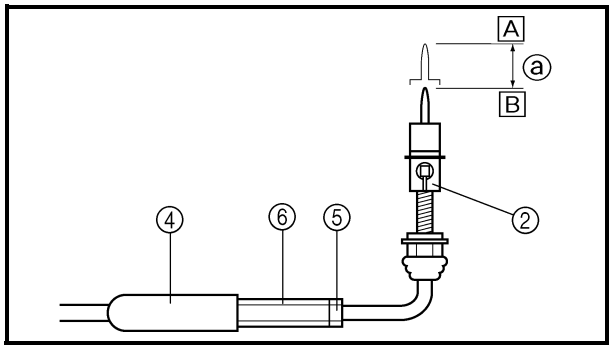
Order	Job/Part	Q'ty	Remarks
	Removing the fuel tank		Remove the parts in the order listed.
	Seat and fuel tank cover		Refer to "SEAT, FRONT CARRIER, FRONT BUMPER AND FRONT FENDER".
1	Fuel hose	1	**NOTE:** Before disconnecting the fuel hose, turn the fuel cock to "OFF".
2	Fuel tank	1	**NOTE:** When installing the fuel tank, pass the fuel tank breather hose through the hole of the handlebar cover.
			For installation, reverse the removal procedure.

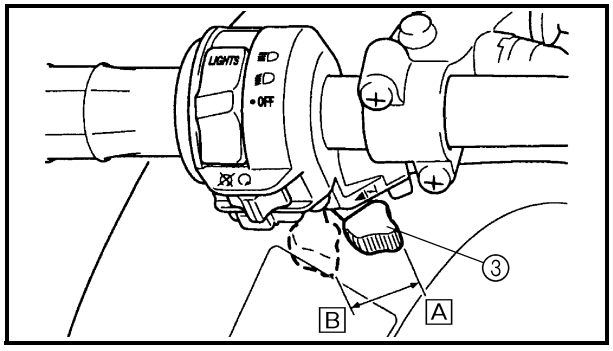
FOOTREST BOARDS



Order	Job/Part	Q'ty	Remarks
	Removing the footrest boards		Remove the parts in the order listed.
1	Footrest	2	
2	Left footrest board	1	
3	Right footrest board	1	
4	Left footrest bracket	1	
5	Right footrest bracket	1	
			For installation, reverse the removal procedure.







ENGINE

ADJUSTING THE STARTER CABLE

1. Adjust:

▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼

a. Disconnect the starter cable ① from the carburetor body.

NOTE:

Do not remove the starter plunger ② from the starter cable.

b. Measure the starter plunger stroke distance ⓐ of the starter lever ③ fully close to fully open position. If the distance is out of specification adjust it as described below.

Starter plunger stroke distance
15 mm (0.59 in)

A Fully closed position
B Fully open position

c. Pull back the boot ④.
d. Loosen the locknut ⑤.
e. Turn the adjusting nut ⑥ in or out until the correct free play is obtained.

Turning in	**Free play increased.**
Turning out	**Free play decreased.**

f. Tighten the locknut ⑤.
g. Push in the boot ④.
h. Connect the starter cable to the carburetor.

⚠ WARNING

After adjusting the cable, turn the handlebar to right and left, and make sure that the engine idling speed does not increase.

▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲

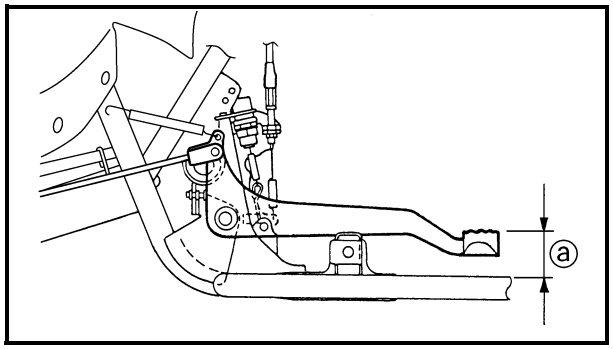
CHASSIS

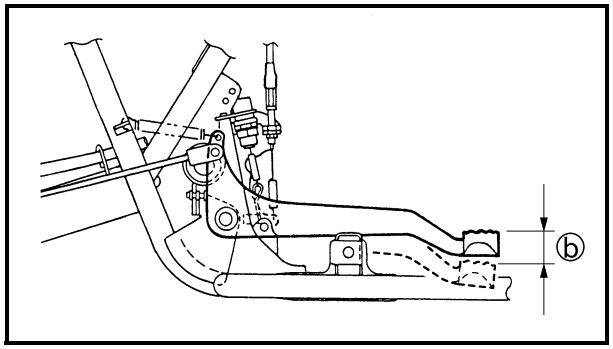
ADJUSTING THE REAR BRAKE

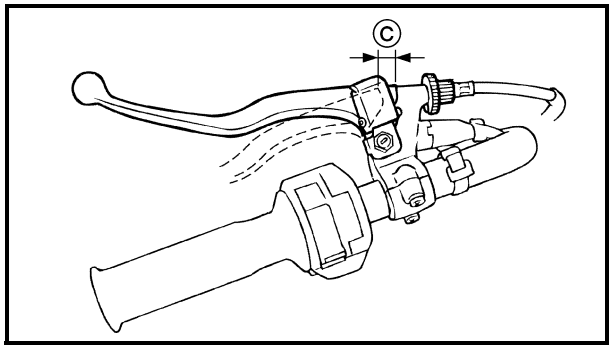
⚠ WARNING

Always adjust both the brake pedal and the rear brake lever whenever adjusting the rear brake.

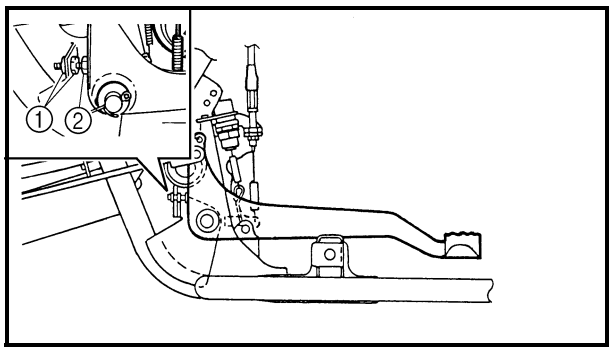
1. Remove:
   - right footrest board
     Refer to “FOOTREST BOARDS”.
2. Check:
   - brake pedal height ⓐ
   - brake pedal free play ⓑ
   - rear brake lever free play ⓒ
     Out of specification → Adjust.







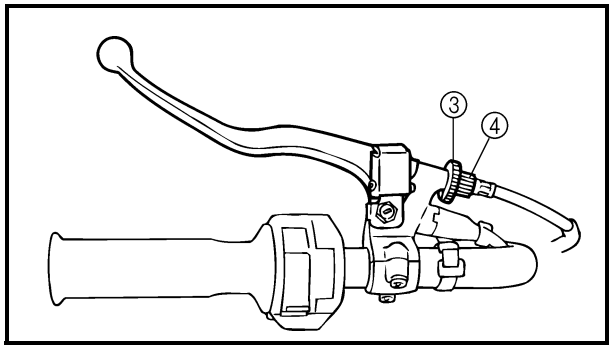
Brake pedal height
43 ~ 53 mm (1.69 ~ 2.09 in)
Brake pedal free play
20 ~ 30 mm (0.79 ~ 1.18 in)
Rear brake lever free play
5 ~ 7 mm (0.20 ~ 0.28 in)



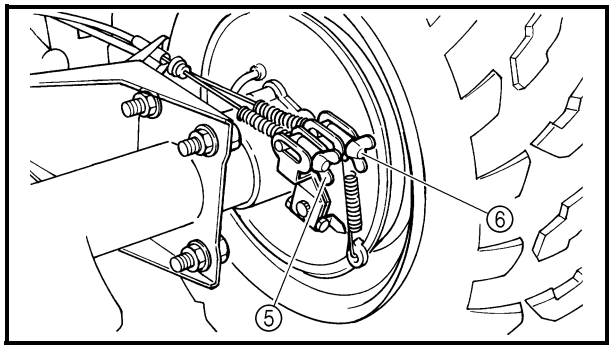
3. Adjust:
   - brake pedal height
   - brake pedal free play
   - rear brake lever free play

▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼

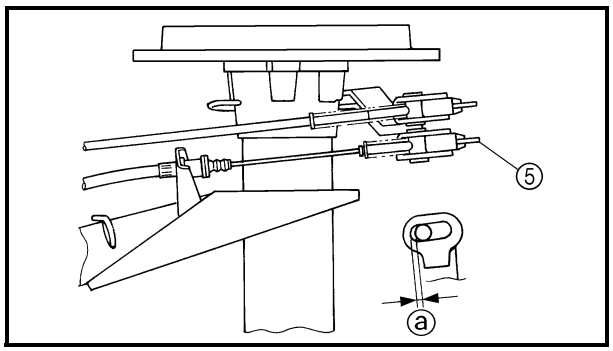
a. Loosen the locknuts ①.
b. Turn the adjusting bolt ② until the brake pedal height is within the specified limits.
c. Tighten the locknuts.



d. Loosen the locknut ③ and fully screw in the brake lever cable adjusting bolt ④.



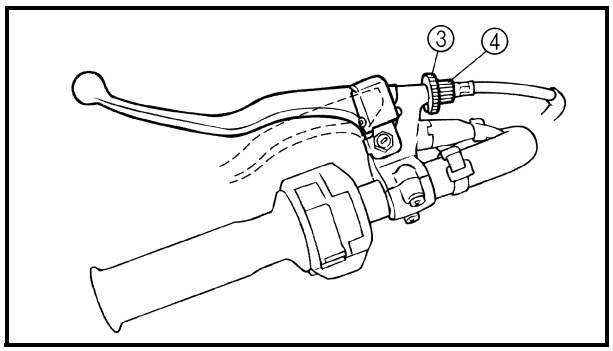
e. Fully loosen the brake lever cable adjusting nut ⑤.
f. Turn the brake pedal adjusting nut ⑥ until the brake pedal free play is within the specified limits.



g. Turn the brake lever cable adjusting nut ⑤ clockwise until the gap ⓐ is within the specified limits.

Gap
0 ~ 1 mm (0 ~ 0.04 in)

h. Checking the brake pedal free play to see whether or not it is within the specified limits. If not, perform the above steps again.

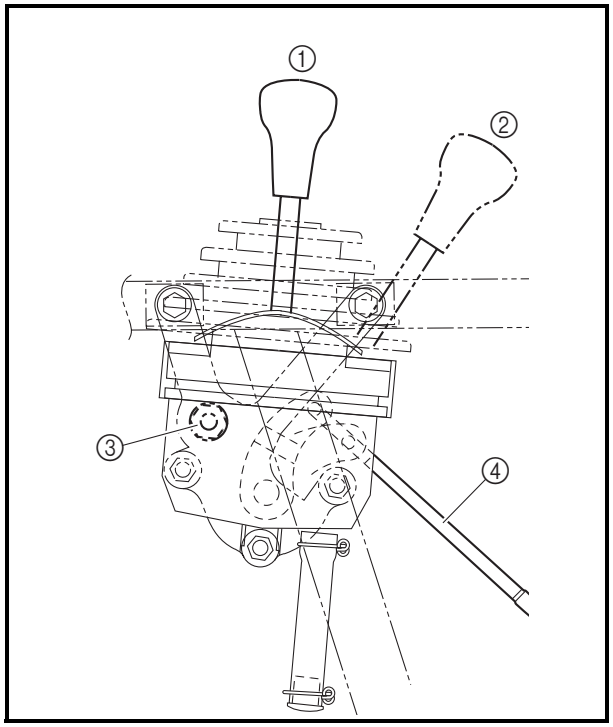


i. Turn the brake lever cable adjusting nut ④ until the rear brake lever free play is within the specified limits.
j. Tighten the locknut ③.
k. Adjust the select lever control cable.
Refer to “ADJUSTING THE SELECT LEVER CONTROL CABLE AND SHIFT ROD”.

⚠ WARNING

After this adjustment is performed, lift the front and 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.

▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲



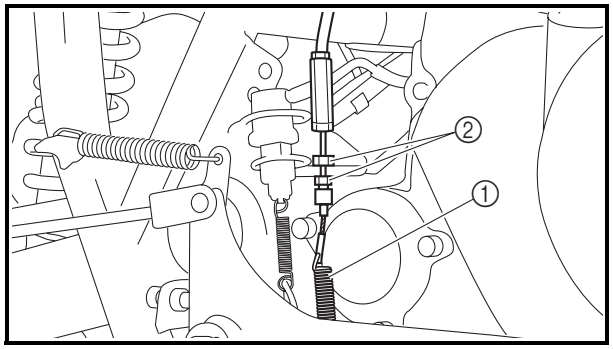
ADJUSTING THE SELECT LEVER CONTROL CABLE AND SHIFT ROD

① FORWARD
② REVERSE
③ Control cable
④ Select lever shift rod

⚠ WARNING

Before moving the select lever, bring the machine to a complete stop and return the throttle lever to its closed position. Otherwise the transmission may be damaged.

1. Adjust:
   • brake pedal free play
   Refer to "ADJUSTING THE REAR BRAKE".

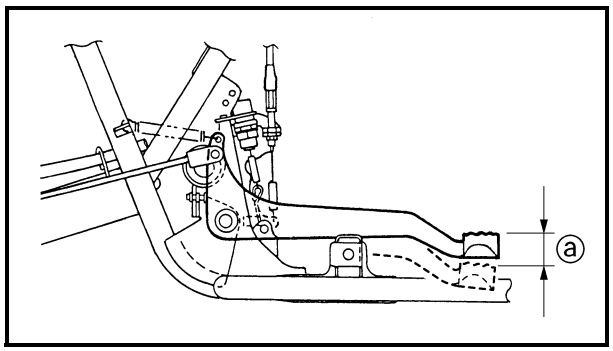


2. Adjust:
   • select lever control cable
   • select lever shift rod

▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼

Control cable:

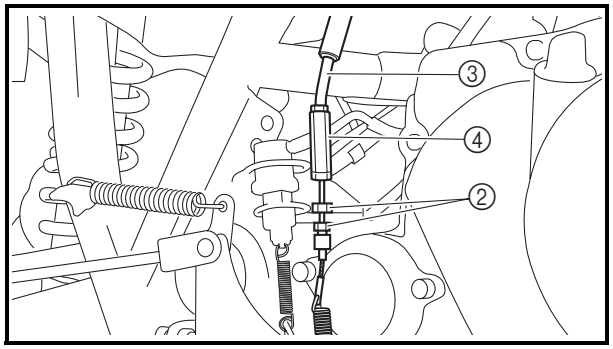
a. Make sure the select lever is in FORWARD.
b. Adjust the control cable so there is zero free play in the cable. When the adjustment is correct, slack in the return spring ① will be taken up.



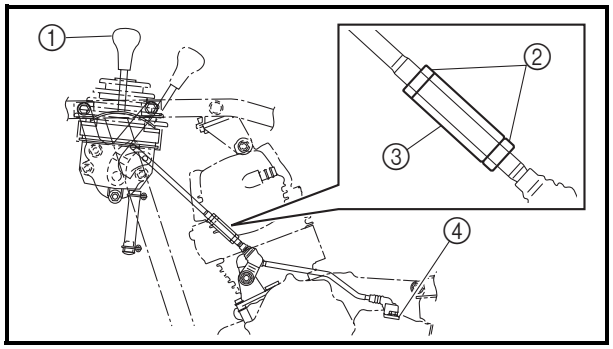
NOTE:

In some cases it will be necessary to further adjust the cable with the locknuts ② arrangement that holds the cable to its mount.

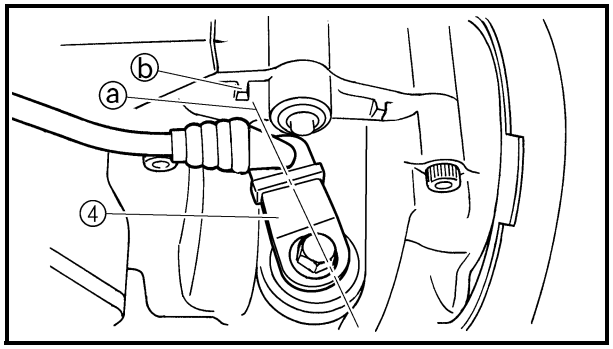
c. When the brake begins to work "ⓐ = 20 ~ 30 mm (0.79 ~ 1.18 in)", verify that the select lever can be shifted to REVERSE from FORWARD and to FORWARD from REVERSE.
d. Before the brake begins to work "ⓐ = 0 ~ 20 mm (0 ~ 1.18 in)", verify that the select lever cannot be shifted to REVERSE from FORWARD and to FORWARD from REVERSE.

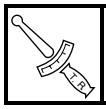


e. Check that locknuts ② are tightened correctly.
f. If the operation of the select lever is incorrect, adjust the select lever control cable ③ with the adjuster ④.



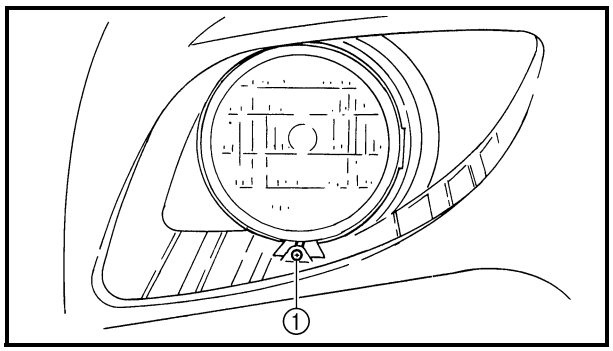
Select lever shift rod:
a. Make sure the select lever ① is in FORWARD.
b. Loosen the locknuts ②.
c. Turn the select lever adjusting nut ③ in or out until lever ④ center line ⓐ aligns with match mark ⓑ on the crankcase cover.
d. Tighten the locknuts ②.



	**Locknut (select lever adjuster) 15 Nm (1.5 m · kg, 11 ft · lb)**

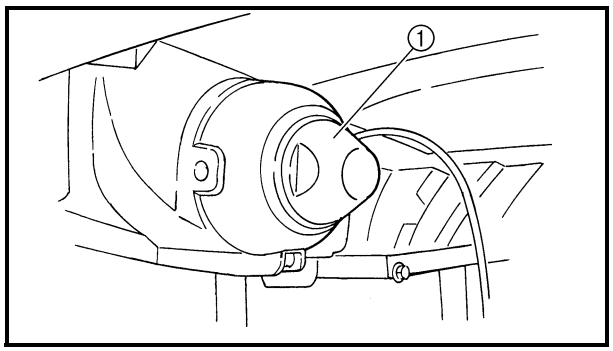
NOTE:
After adjusting the drive select lever, be sure the reverse indicator light comes on when the drive select lever is in reverse position.

▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲

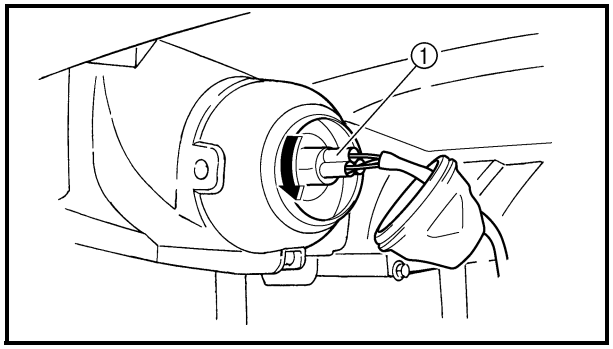


ADJUSTING THE HEADLIGHT BEAM
1. Adjust:
   • headlight beam (vertically)
   Turn the adjusting screw ① in or out.

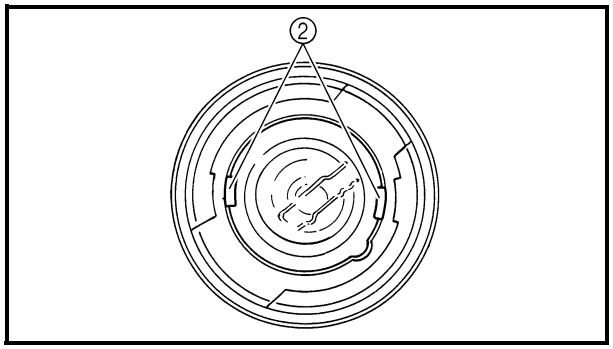
Turning in	**Headlight beam raised.**
Turning out	**Headlight beam lowered.**



REPLACING A HEADLIGHT BULB
1. Remove:
   • cover ①



2. Remove:
   - bulb holder ①
   - bulb



NOTE:
Turn the bulb holder counterclockwise and remove the defective bulb by unhooking the headlight bulb holder tabs ②.

⚠ WARNING

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

3. Install:
   - bulb New
     Secure the new bulb with the headlight unit.

CAUTION:

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

4. Install:
   - bulb holder
   - cover