YAMAHA

YFM4FAT
YFM400FAT

5TE2-AE2

SUPPLEMENTARY SERVICE MANUAL

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the YFM4FAT/YFM400FAT. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

YFM4FAR/YFM400FAR SERVICE MANUAL: 5TE2-AE1

YFM4FAT/YFM400FAT
SUPPLEMENTARY
SERVICE MANUAL

First edition, June 2004

EB001000

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.

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 inspecting 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.

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HOW TO USE THIS MANUAL

MANUAL ORGANIZATION

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

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

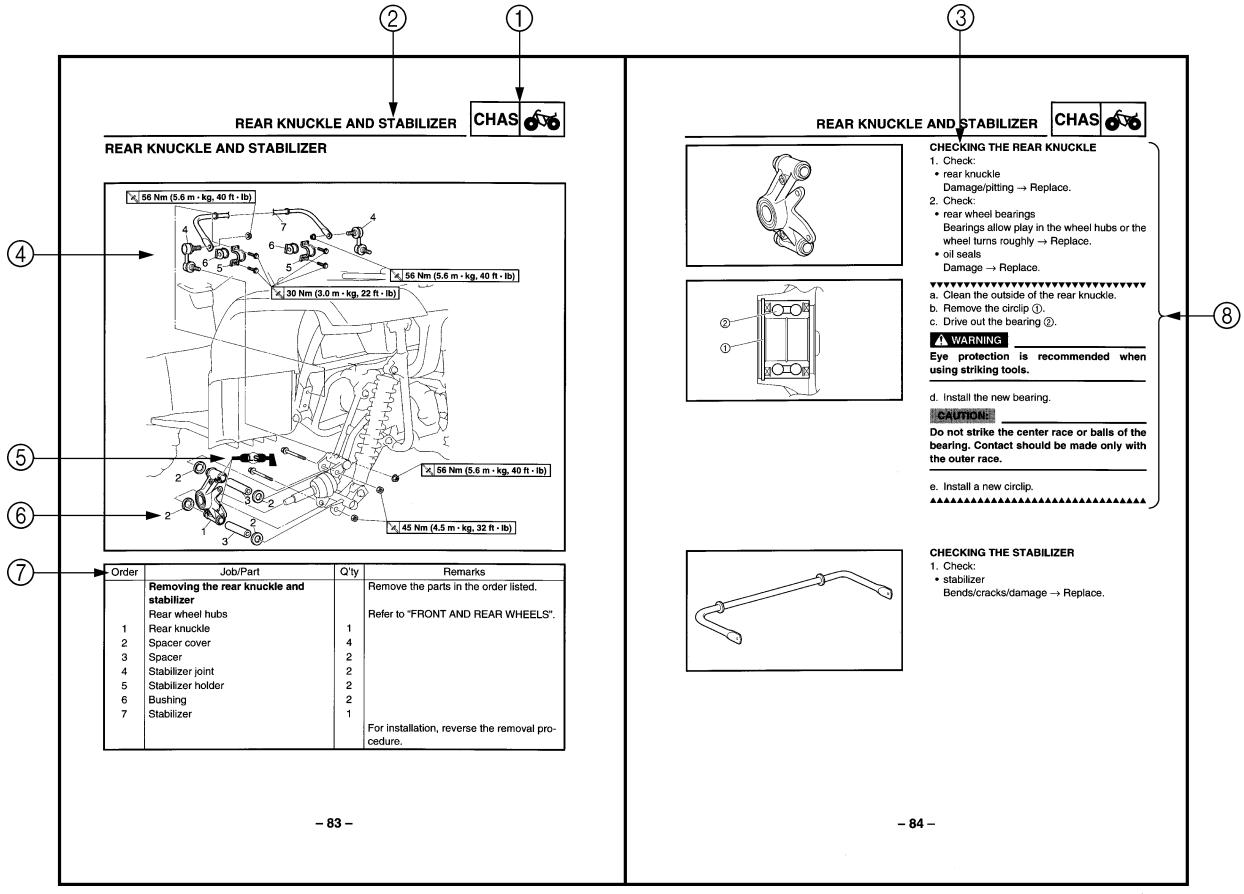
2nd title ②: This title indicates the section of the chapter and only appears on the first page of each section. It is located in the upper left corner of the page.

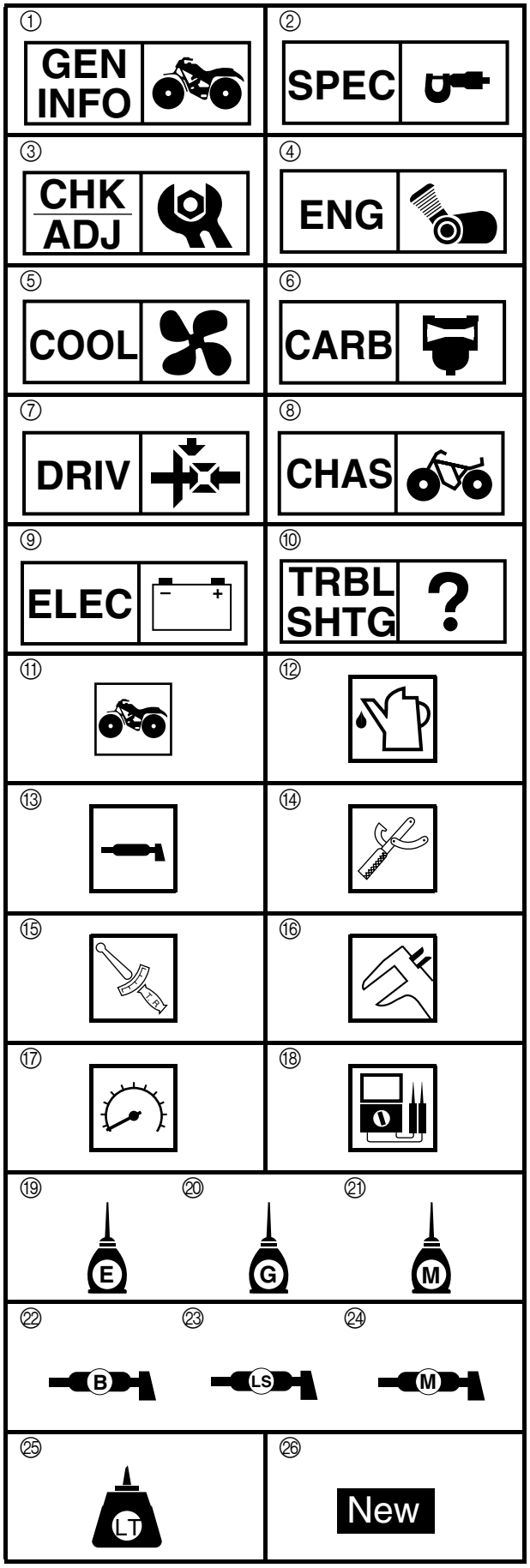
3rd title ③: This title indicates a sub-section that is followed by step-by-step procedures accompanied by corresponding illustrations.

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.





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ILLUSTRATED SYMBOLS

Illustrated symbols ① to ⑩ are printed on the top right of each page and indicate the subject of each chapter.

① General information
② Specifications
③ Periodic checks and adjustments
④ Engine
⑤ Cooling system
⑥ Carburetion
⑦ Drive train
⑧ Chassis
⑨ Electrical
⑩ Troubleshooting

Illustrated symbols ⑪ to ⑱ are used to identify the specifications appearing in the text.

⑪ Can be serviced with engine mounted
⑫ Filling fluid
⑬ Lubricant
⑭ Special tool
⑮ Torque
⑯ Wear limit, clearance
⑰ Engine speed
⑱ Ω, V, A

Illustrated symbols ⑲ to ㉔ in the exploded diagrams indicate the types of lubricants and lubrication points.

⑲ Apply engine oil
⑳ Apply gear oil
㉑ Apply molybdenum disulfide oil
㉒ Apply wheel bearing grease
㉓ Apply lithium-soap-based grease
㉔ Apply molybdenum disulfide grease

Illustrated symbols ㉕ to ㉖ in the exploded diagrams indicate where to apply a locking agent ㉕ and when to install a new part ㉖.

㉕ Apply the locking agent (LOCTITE®)
㉖ Replace

CONTENTS

SPECIFICATIONS

GENERAL SPECIFICATIONS

Item	Standard
Model code:	1P11, 1P14 (for USA) 1P12 (for CDN) 1P13 (for Oceania)
Dimensions:	
Overall length	1,993 mm (78.5 in)
Overall width	1,093 mm (43.0 in)
Overall height	1,120 mm (44.1 in)
Seat height	830 mm (32.7 in)
Wheelbase	1,233 mm (48.5 in)
Minimum ground clearance	245 mm (9.7 in)
Minimum turning radius	3,000 mm (118.1 in)
Basic weight:	
With oil and full fuel tank	279 kg (615 lb) (for USA and CDN) 283 kg (624 lb) (for Oceania)
Oil capacity:	
Engine oil	
Periodic oil change	2.30 L (2.02 Imp qt, 2.43 US qt)
With oil filter replacement	2.40 L (2.11 Imp qt, 2.54 US qt)
Total amount	2.60 L (2.29 Imp qt, 2.75 US qt)
Final gear case oil	
Periodic oil change	0.16 L (0.14 Imp qt, 0.17 US qt)
Total amount	0.18 L (0.16 Imp qt, 0.19 US qt)
Differential gear case oil	
Periodic oil change	0.35 L (0.31 Imp qt, 0.37 US qt)
Total amount	0.40 L (0.35 Imp qt, 0.42 US qt)
Radiator capacity (including all routes)	1.32 L (1.16 Imp qt, 1.40 US qt)
Chassis:	
Frame type	Steel tube frame
Caster angle	2.5°
Camber angle	1°
Kingpin angle	11°
Kingpin offset	0 mm (0 in)
Trail	8.5 mm (0.33 in)
Tread (STD) front	850 mm (33.46 in)
rear	839 mm (33.03 in)
Toe-in	0 ~ 10 mm (0 ~ 0.39 in)

Item		Standard
Tires:		
Type		Tubeless
Size	front	AT25 × 8–12
	rear	AT25 × 10–12
Manufacturer	front	MAXXIS (for USA and CDN) CHENG SHIN (for Oceania)
	rear	MAXXIS (for USA and CDN) CHENG SHIN (for Oceania)
Model	front	M911Y (for USA and CDN) C828 (for Oceania)
	rear	M912Y (for USA and CDN) C828 (for Oceania)
Brakes:		
Front brake	type	Dual disc brake
	operation	Right hand operation
Rear brake	type	Single disc brake
	operation	Left hand and right foot operation
Suspension:		
Front suspension		Double wishbone
Rear suspension		Double wishbone
Bulb wattage × quantity:		
Headlight		12 V 30 W/30 W × 2
Tail/brake light		12 V 5 W/21 W × 1
Meter light		14 V 3 W × 1
Indicator lights		
Neutral		12 V 1.7 W × 1
Reverse		12 V 1.7 W × 1
Park		12 V 1.7 W × 1
Coolant temperature		12 V 1.7 W × 1
Four-wheel drive		12 V 1.7 W × 1

MAINTENANCE SPECIFICATIONS

ENGINE

Item		Standard	Limit
Carburetor:			
I. D. mark		5TEC 00	----
Main jet	(M.J)	#132.5	----
Main air jet	(M.A.J)	#50	----
Jet needle	(J.N)	5EP13-55-3	----
Needle jet	(N.J)	P-0M	----
Pilot air jet	(P.A.J.1)	#80	----
Pilot air jet	(P.A.J.2)	1.3	----
Pilot outlet	(P.O)	0.95	----
Pilot jet	(P.J)	#17.5	----
Bypass 1	(B.P.1)	0.8	----
Bypass 2	(B.P.2)	0.8	----
Bypass 3	(B.P.3)	0.8	----
Pilot screw	(P.S.)	2-1/2 turns out	----
Valve seat size	(V.S)	2.0	----
Starter jet	(G.S.1)	#75	----
Starter jet	(G.S.2)	0.9	----
Throttle valve size	(Th.V)	#90	----
Float height	(F.H)	13 mm (0.51 in)	----
Fuel level	(F.L)	4.0 ~ 5.0 mm (0.16 ~ 0.20 in)	----
Engine idle speed		1,450 ~ 1,550 r/min	----
Intake vacuum		33.3 kPa (250 mmHg, 9.84 inHg)	----

Tightening torques

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m · kg	ft · lb	
Shift lever 2 assembly	Bolt	M6	1	14	1.4	10	
Shift lever cover	Bolt	M6	4	10	1.0	7.2	
Stopper lever	Bolt	M6	1	10	1.0	7.2	
Stopper lever shaft	Bolt	M6	1	10	1.0	7.2	
Park switch	—	M10	1	20	2.0	14	

CHASSIS

Item		Standard	Limit
Front suspension:			
Shock absorber travel		99 mm (3.90 in)	----
Spring free length		285 mm (11.22 in)	----
Spring fitting length		231.9 mm (9.13 in)	----
Spring rate	(K1)	15 N/mm (1.53 kg/mm, 85.68 lb/in)	----
Stroke	(K1)	0 ~ 99 mm (0 ~ 3.90 in)	----
Optional spring		No	----
Rear suspension:			
Shock absorber travel		95 mm (3.74 in)	----
Spring free length		277.9 mm (10.94 in)	----
Spring fitting length		247.9 mm (9.76 in)	----
Spring rate	(K1)	27 N/mm (2.75 kg/mm, 153.99 lb/in)	----
Stroke	(K1)	0 ~ 95 mm (0 ~ 3.74 in)	----
Optional spring		No	----
Rear disc brake:			
Type		Single	----
Disc outside diameter × thickness		220.0 × 3.5 mm (8.66 ~ 0.14 in)	----
Pad thickness	inner	5.0 mm (0.20 in)	1 mm (0.04 in)
Pad thickness	outer	5.0 mm (0.20 in)	1 mm (0.04 in)
Master cylinder inside diameter		14 mm (0.55 in)	----
Caliper cylinder inside diameter		32.03 mm (1.26 in)	----
Brake fluid type		DOT 4	----
Brake lever and brake pedal:			
Brake lever free play (pivot)	front	0 mm (0 in)	----
	rear	0.5 ~ 2.0 mm (0.02 ~ 0.08 in)	----
Brake pedal height		67 ~ 77 mm (2.64 ~ 3.03 in)	----
Throttle lever free play		3 ~ 5 mm (0.12 ~ 0.20 in)	----

Tightening torques

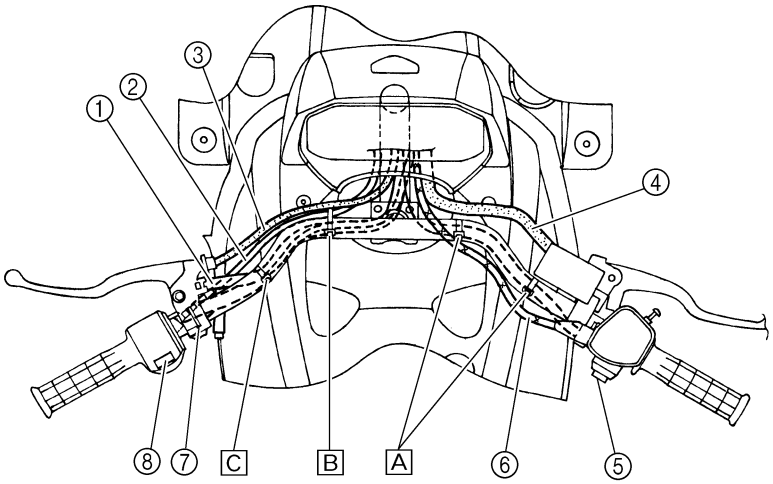
Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m · kg	ft · lb	
Rear shock absorber and sub-frame	M10	45	4.5	32	
Rear shock absorber and rear lower arm	M10	45	4.5	32	
Rear upper arm and sub-frame	M10	45	4.5	32	LS
Rear lower arm and sub-frame	M10	45	4.5	32	LS
Rear upper arm and rear knuckle	M10	45	4.5	32	
Rear lower arm and rear knuckle	M10	45	4.5	32	
Stabilizer and sub-frame	M8	30	3.0	22	
Stabilizer joint and stabilizer	M10	56	5.6	40	
Stabilizer joint and rear lower arm	M10	56	5.6	40	
Frame and sub-frame (front lower)	M12	82	8.2	59	
Frame and sub-frame (rear upper)	M10	48	4.8	35	
Final drive gear case and sub-frame	M10	45	4.5	32	
Trailer hitch and sub-frame	M10	40	4.0	29	
Brake disc guard and steering knuckle	M6	7	0.7	5.1	
Front lower arm and protector	M6	7	0.7	5.1	
Steering stem, pitman arm and frame	M14	190	19.0	140	
Fuel tank and frame	M6	10	1.0	7.2	
Front wheel and wheel hub	M10	55	5.5	40	
Rear axle and wheel hub	M20	260	26.0	190	Stake
Rear knuckle and brake caliper	M8	30	3.0	22	
Brake disc guard and rear knuckle	M6	7	0.7	5.1	
Rear brake disc and wheel hub	M8	30	3.0	22	G
Front brake pipe joint and frame	M6	7	0.7	5.1	
Brake hose holder and steering knuckle	M6	7	0.7	5.1	
Brake hose holder and front upper arm	M6	7	0.7	5.1	
Rear brake hose union bolt	M10	30	3.0	22	
Rear brake pad holding bolt	M10	17	1.7	12	G
Rear brake master cylinder	M8	23	2.3	17	
Rear brake master cylinder bracket	M8	30	3.0	22	
Rear brake master cylinder cover	M6	7	0.7	5.1	
Rear brake pipe nut	M10	19	1.9	13	
Rear brake pipe joint and frame	M6	7	0.7	5.1	
Final drive gear case filler bolt	M14	23	2.3	17	
Final drive gear case drain bolt	M14	23	2.3	17	
Final drive gear case and bearing housing	M10	40	4.0	29	
Final drive gear case and bearing housing	M8	23	2.3	17	
Bearing retainer (final drive pinion gear)	M75	115	11.5	85	Left-hand threads
Universal joint yoke (final drive pinion gear)	M14	97	9.7	70	
Ring gear stopper	M8	16	1.6	11	
Air duct assembly 1 and frame	M6	7	0.7	5.1	
Engine skid plate and frame	M6	7	0.7	5.1	
Final gear case skid plate and sub-frame	M6	7	0.7	5.1	

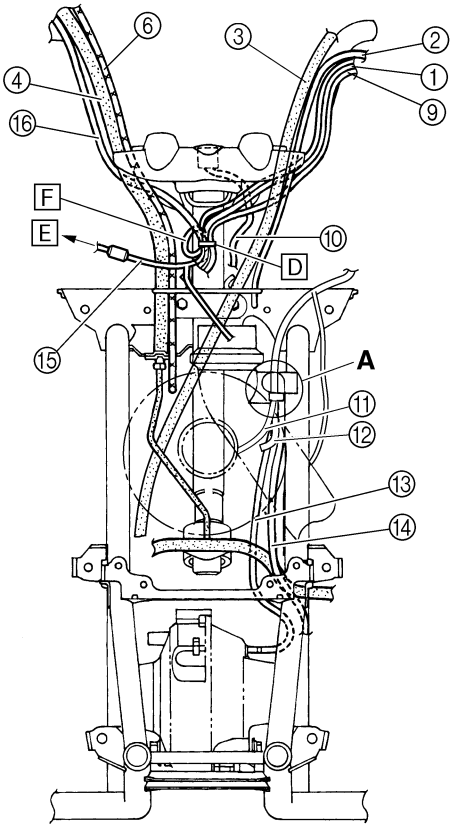
ELECTRICAL

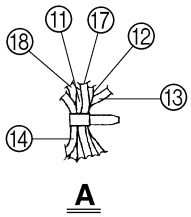
Item	Standard	Limit
C.D.I.:		
Magneto model/manufacturer	F4T464/MITSUBISHI	----
Pickup coil resistance/color	459 ~ 561 Ω at 20 °C (68 °F)/ White/Red – White/Green	----
Rotor rotation direction sensing coil resistance/color	0.086 ~ 0.105 Ω at 20 °C (68 °F)/ Red – White/Blue	----
C.D.I. unit model/manufacturer	F8T40376/MITSUBISHI	----

CABLE ROUTING

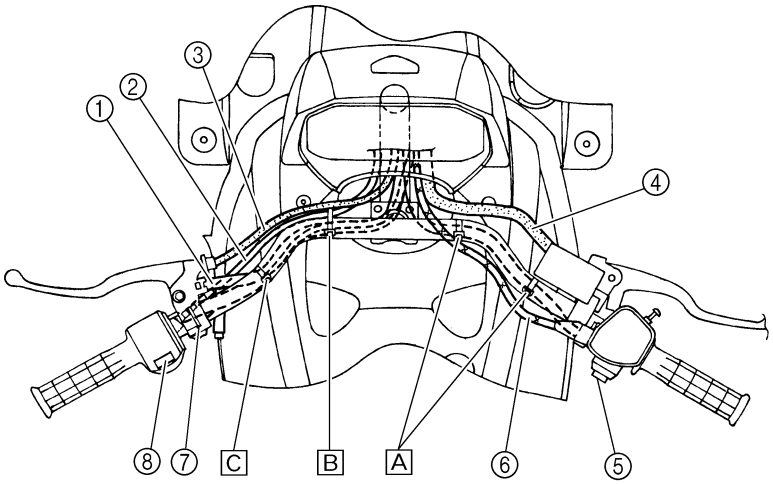
① Rear brake switch lead
② Starter cable
③ Rear brake cable
④ Front brake hose
⑤ On-command four-wheel drive switch
⑥ Throttle cable
⑦ Horn switch (for Oceania)
⑧ Handlebar switch
⑨ Handlebar switch lead
⑩ Main switch lead
⑪ Fan motor lead
⑫ Fan motor breather hose
⑬ Differential gear case breather hose
⑭ Sub-wire harness
⑮ Horn switch lead (for Oceania)
⑯ On-command four-wheel drive switch lead
⑰ Coolant reservoir hose
⑱ Coolant reservoir breather hose

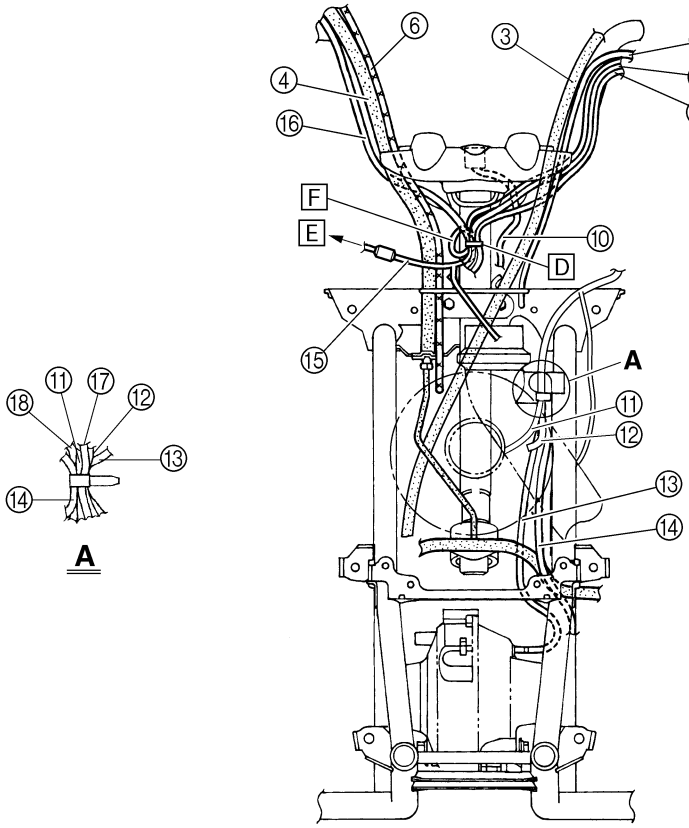






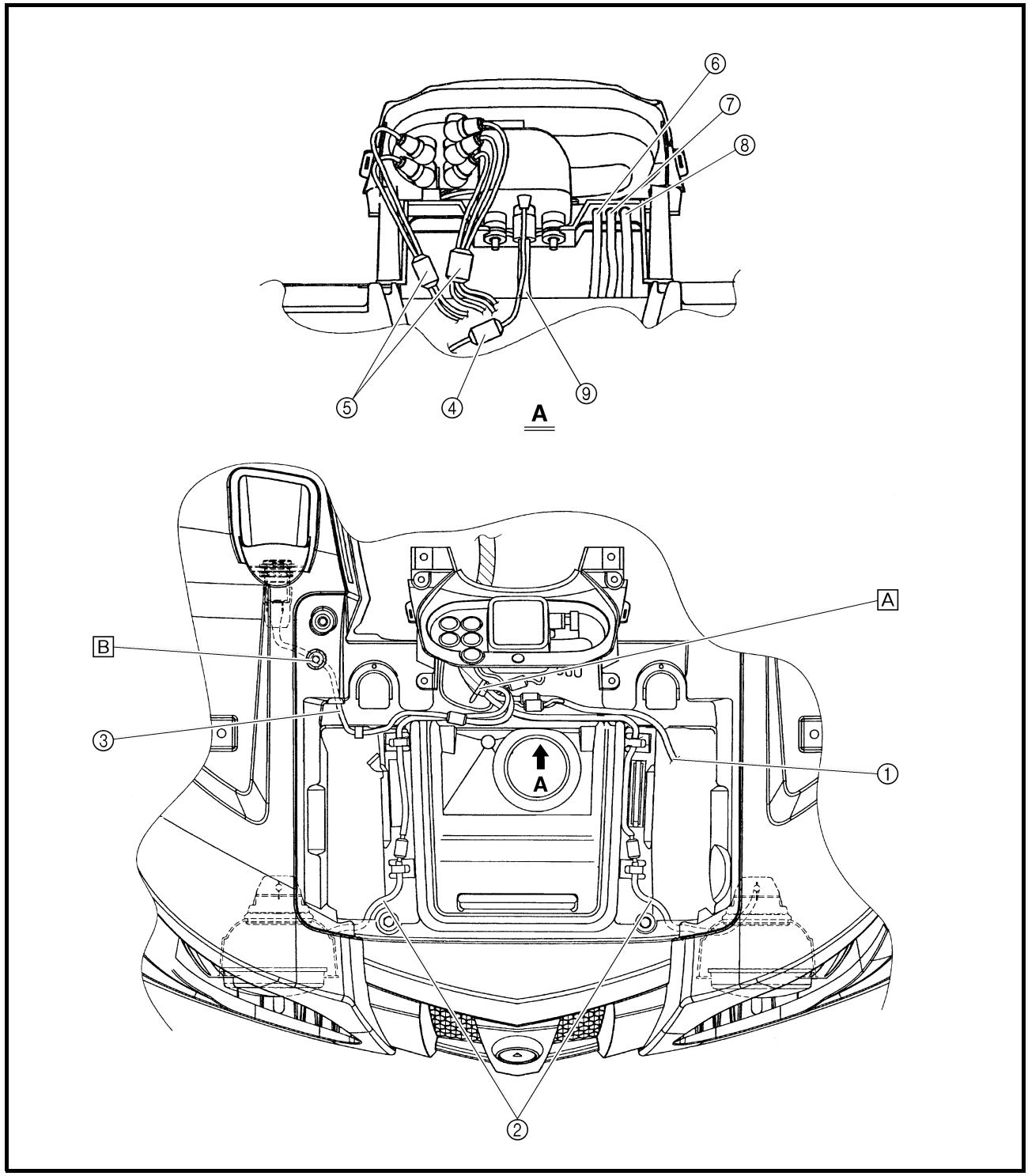
[A] Fasten the on-command four-wheel drive switch lead behind the handlebar with the plastic bands.
[B] Fasten the starter cable, handlebar switch lead, rear brake switch lead, and horn switch lead (for Oceania) behind the handlebar with a plastic band.
[C] Fasten the handlebar switch lead, rear brake switch lead, and horn switch lead (for Oceania) behind the handlebar with a plastic band.
[D] Fasten the handlebar switch lead, rear brake switch lead, on-command four-wheel drive switch lead, and horn switch lead (for Oceania) with a plastic band.
[E] To wire harness
[F] Loop the horn switch lead (for Oceania) around the plastic band as shown.



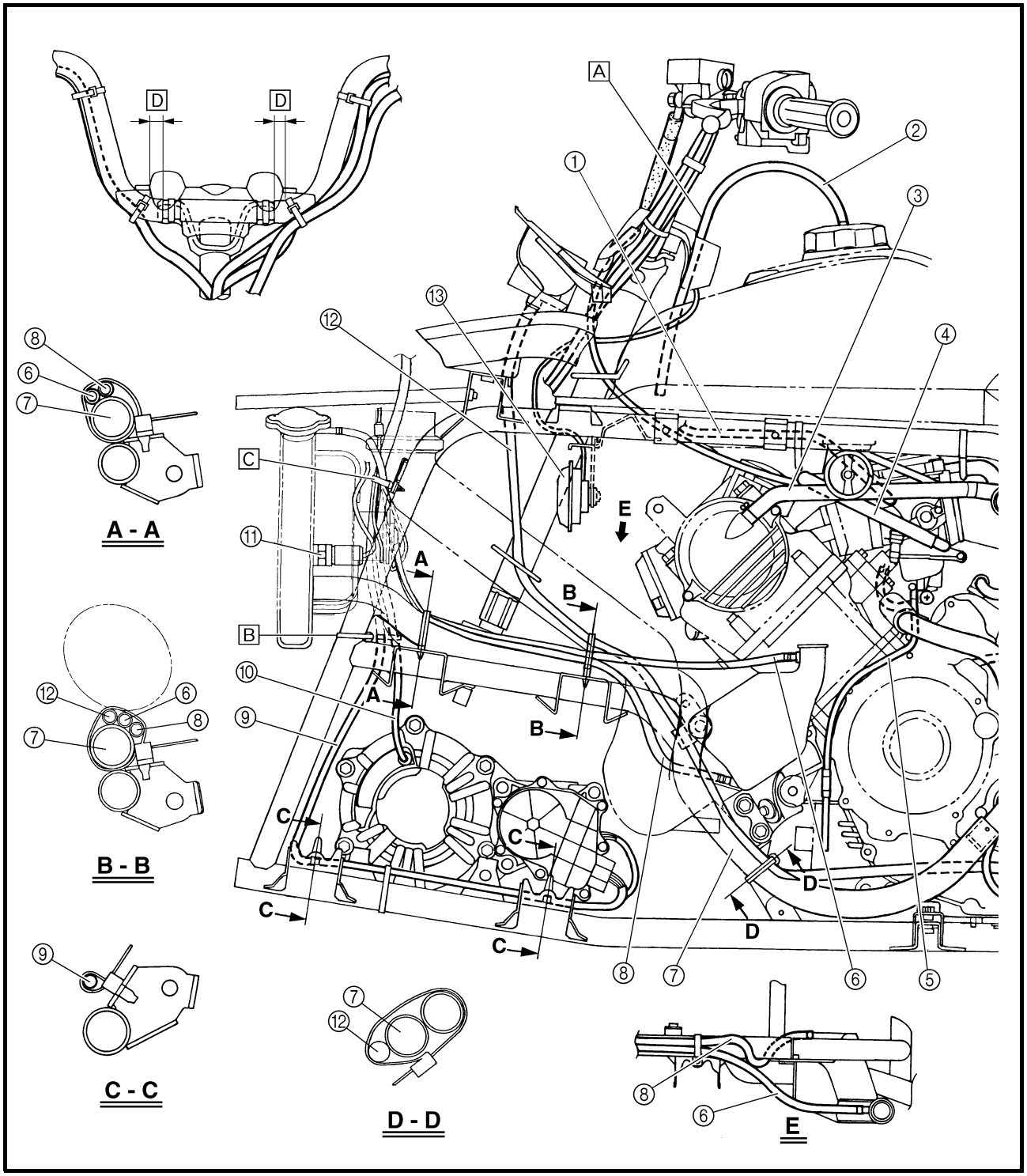


① Sub-wire harness
② Headlight leads
③ Auxiliary DC jack lead
④ Meter light coupler
⑤ Indicator light assembly couplers
⑥ Differential gear case breather hose
⑦ Coolant reservoir breather hose
⑧ Fan motor breather hose
⑨ Speedometer cable

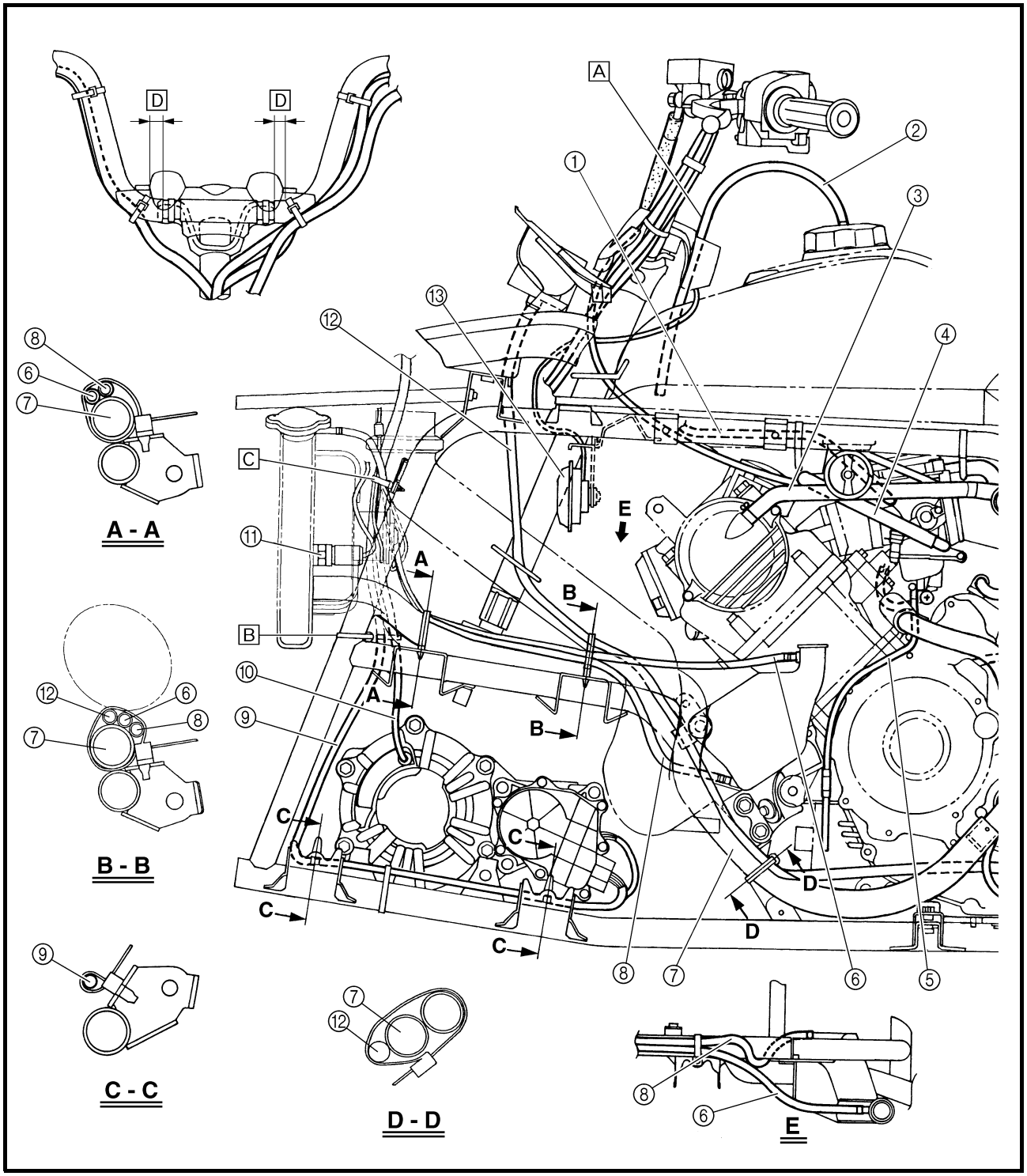
[A] Fasten the wire harness with a plastic band.
[B] Fasten the auxiliary DC jack lead with a plastic holder.



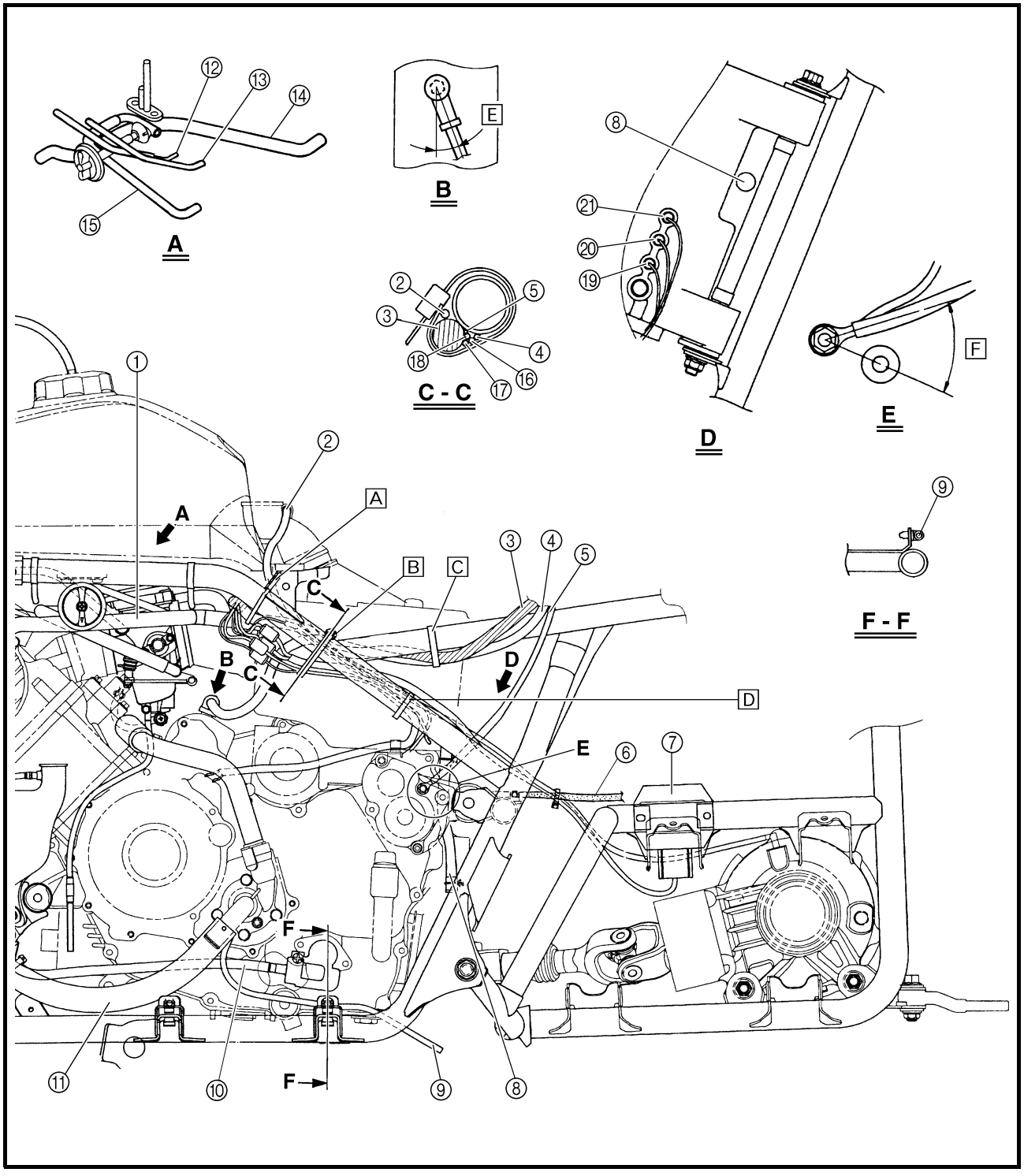
① Starter cable
② Fuel tank breather hose
③ Cylinder head breather hose
④ Fuel hose
⑤ Carburetor drain hose
⑥ Coolant reservoir breather hose
⑦ Radiator outlet hose
⑧ Coolant reservoir hose
⑨ Sub-wire harness
⑩ Differential gear case breather hose
⑪ Thermo switch (radiator)
⑫ Speedometer cable
⑬ Horn (for Oceania)



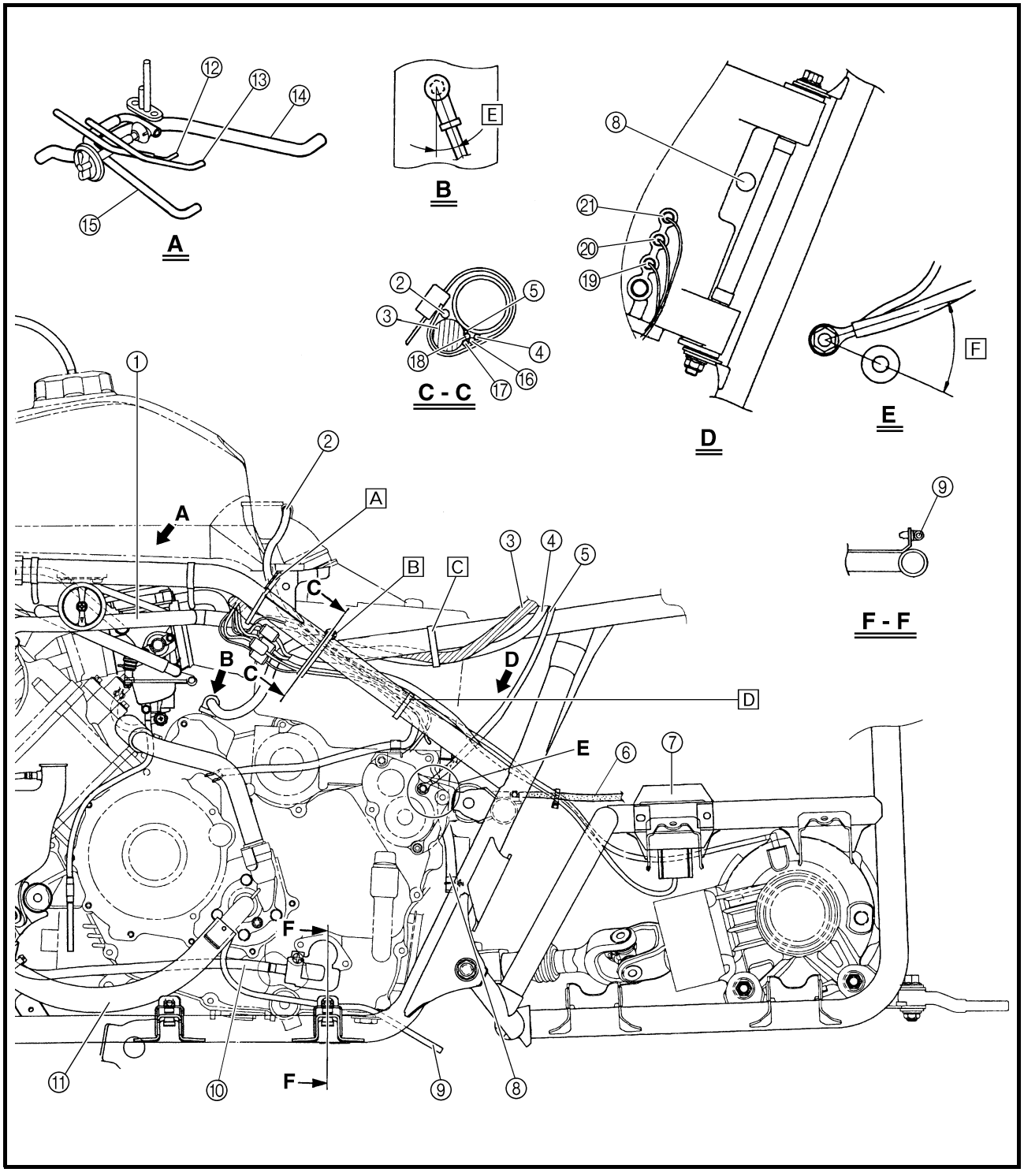
A Insert the fuel tank breather hose into the hole of the handlebar cover.
B Fasten the sub-wire harness and differential gear case breather hose with a plastic band.
C Fasten the sub-wire harness, differential gear case breather hose, coolant reservoir hose, coolant reservoir breather hose, fan motor lead and fan motor breather hose with a plastic band.
D 11.5 ~ 12.5 mm (0.45 ~ 0.49 in)



① Cylinder head breather hose
② Final drive gear case breather hose
③ Wire harness
④ Starter motor lead
⑤ Negative battery lead
⑥ Rear brake hose
⑦ Rectifier/regulator
⑧ Air filter case check hose
⑨ Water pump breather hose
⑩ Speedometer cable
⑪ Radiator outlet hose
⑫ Starter cable
⑬ Float chamber air vent hose
⑭ Cylinder head breather hose
⑮ Fuel hose
⑯ A.C. magneto lead
⑰ Neutral switch/park switch/reverse switch leads
⑱ Rectifier/regulator lead
⑲ Neutral switch
⑳ Park switch
㉑ Reverse switch

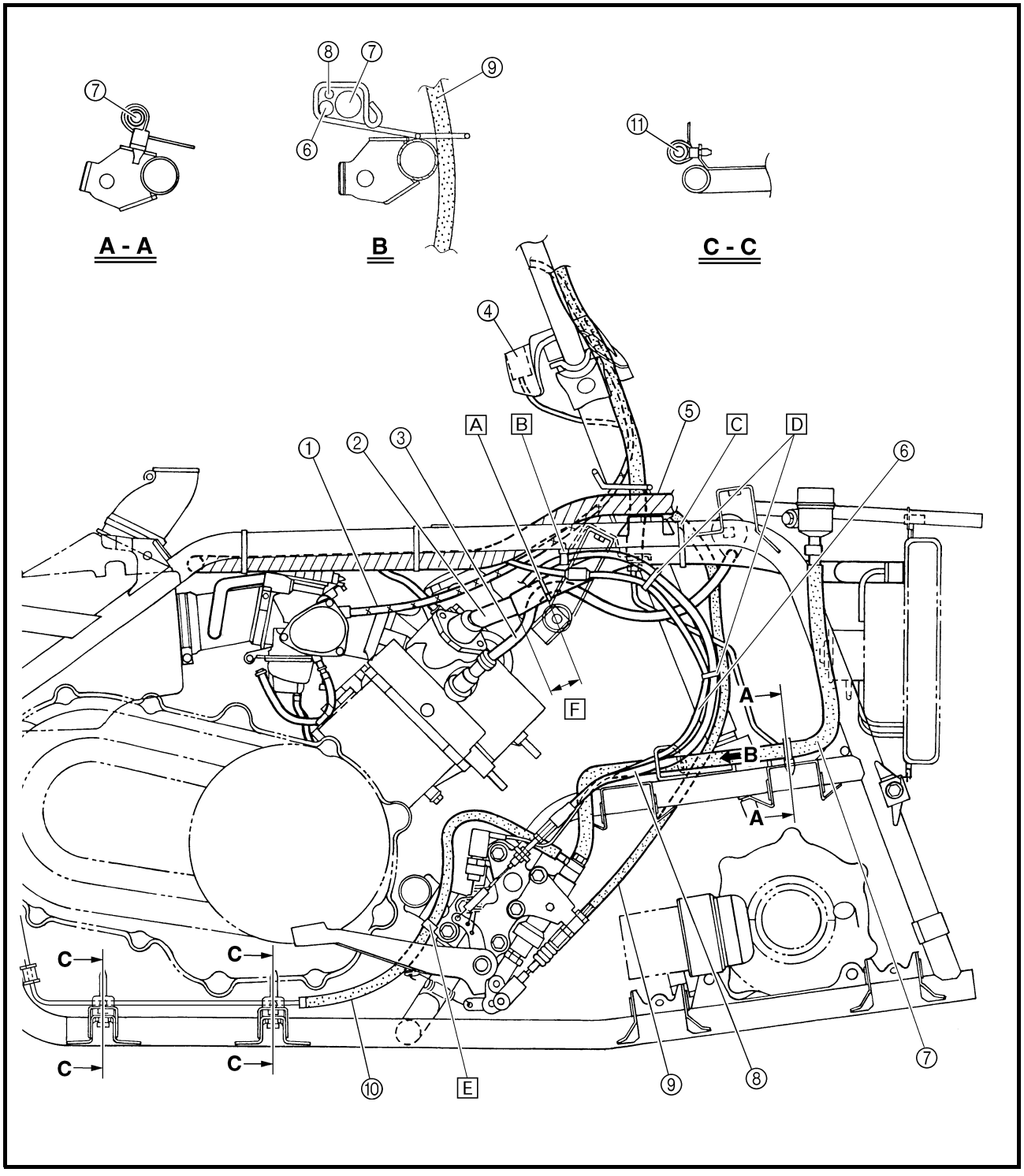


[A] Fasten the wire harness with a plastic band.
[B] Fasten the starter motor lead, wire harness, negative battery lead, final drive gear case breather hose, rectifier/regulator lead, neutral switch/park switch/reverse switch leads, and A.C. magneto lead with a plastic band.
[C] Fasten the wire harness and starter motor lead with a plastic band.
[D] Fasten the neutral switch/park switch/reverse switch leads, A.C. magneto lead, rectifier/regulator lead, negative battery lead, and final drive gear case breather hose with a plastic band.
[E] 10 ~ 30°
[F] 35 ~ 45°



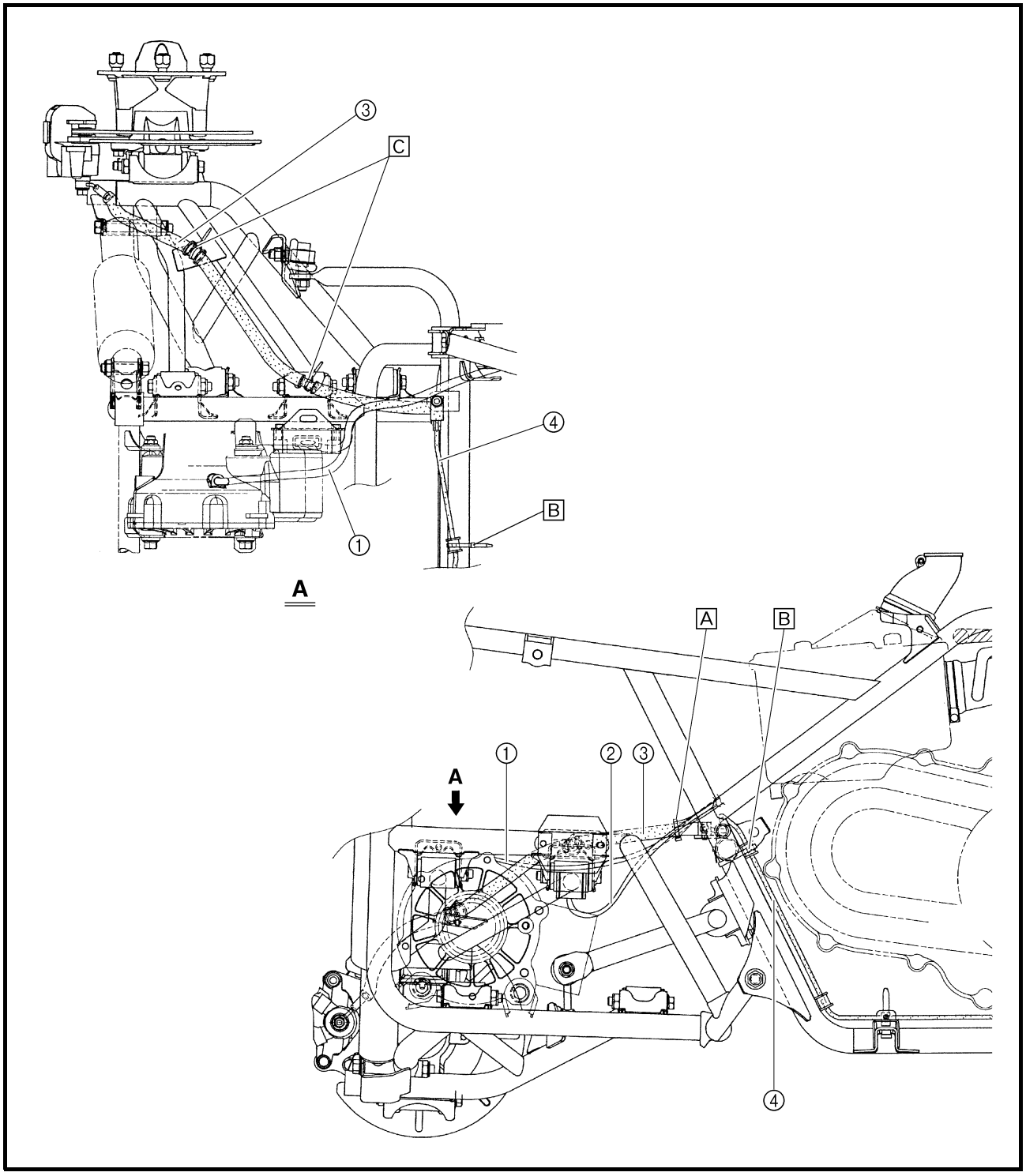
① Throttle cable
② Radiator inlet hose
③ Spark plug lead
④ Main switch
⑤ Wire harness
⑥ Rear brake light switch lead
⑦ Rear brake fluid reservoir hose
⑧ Select lever control cable
⑨ Rear brake cable
⑩ Rear brake hose
⑪ Rear brake pipe

A Fasten the radiator inlet hose and spark plug lead with a plastic band.
B Fasten the select lever control cable with a plastic holder.
C Fasten the radiator inlet hose with a plastic holder.
D Fasten the select lever control cable and rear brake light switch lead with the plastic bands.
E Fasten the rear brake hose with a plastic holder.
F 15 ~ 45 mm (0.59 ~ 1.77 in)

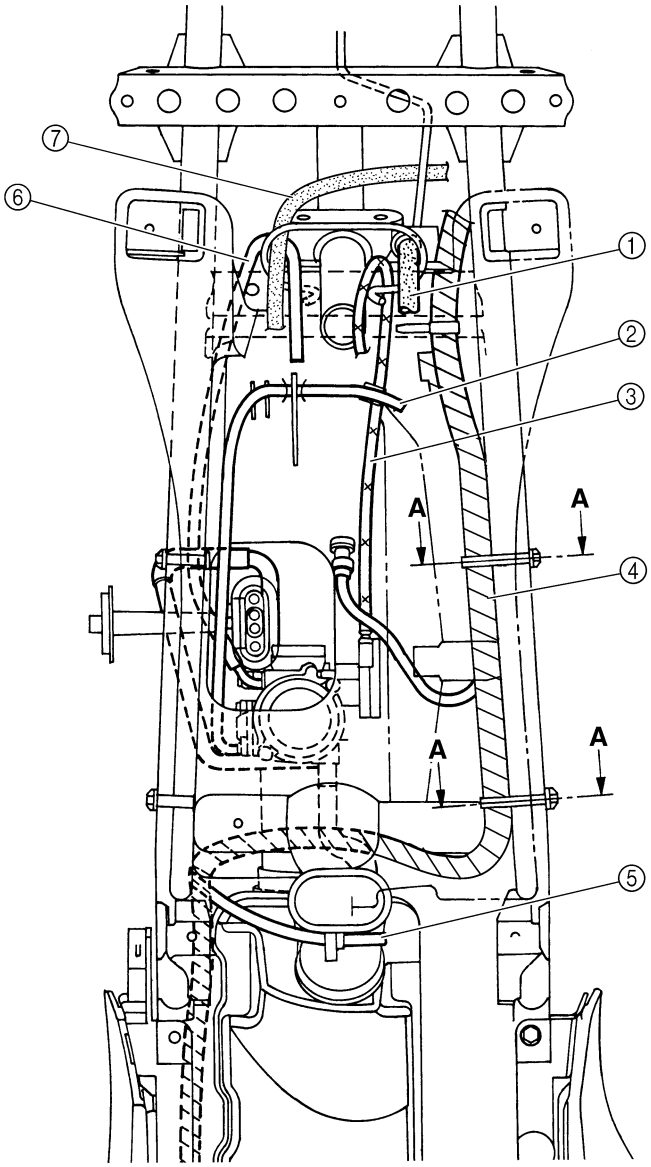


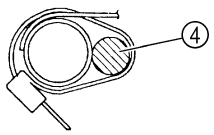
① Final drive gear case breather hose
② Rectifier/regulator lead
③ Rear brake hose
④ Rear brake pipe

A Fasten the final drive gear case breather hose, rectifier/regulator lead, and rear brake hose with a plastic band.
B Fasten the brake pipe with the plastic bands.
C Fasten the brake hose with the plastic bands.



① Front brake hose
② Float chamber air vent hose
③ Throttle cable
④ Wire harness
⑤ Final drive gear case breather hose
⑥ Starter cable
⑦ Rear brake cable

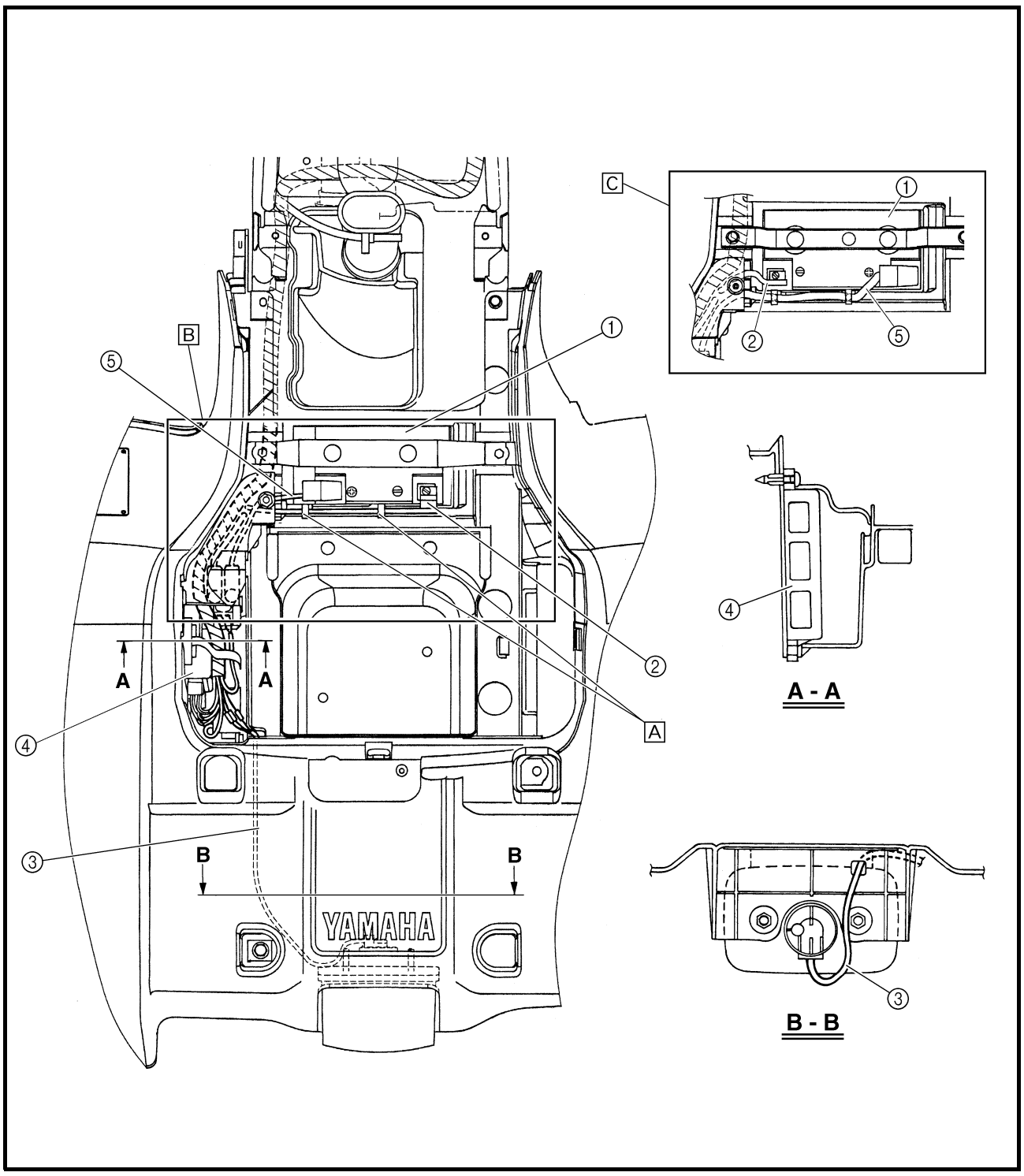




A - A

① Battery
② Negative battery lead
③ Tail/brake light lead
④ CDI unit
⑤ Positive battery lead

A Fasten the negative battery lead with the plastic holders.
B For CDN
C For Oceania



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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.			○		○	○	○
Cooling system	• Check coolant leakage. • Repair if necessary. • Replace coolant every 24 months.			○	○	○	○	○
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.				○	○	○	○
Crankcase 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.					○	○	○
Fuel line*	• Check fuel hose for cracks or damage. • Replace if necessary.					○	○	○
Engine oil	• Replace. (Warm engine before draining.)			○		○	○	○
Engine oil filter cartridge	• Replace.			○		○		○
Engine oil strainer*	• Clean.			○		○		○
Final gear oil **Differential gear oil**	• Check for oil leakage. • Replace every 12 months.			○				○
Front brake*	• Check operation/fluid leakage. (See NOTE page 19.) • Correct if necessary.			○	○	○	○	○
Rear brake*	• Check operation/fluid leakage. (See NOTE page 19.) • Adjust if necessary.			○	○	○	○	○
Select lever safety system cable*	• 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
V-belt*	• Check operation. • Check for cracks or damage.			○		○	○	○
Wheels*	• Check balance/damage/runout. • Repair if necessary.			○		○	○	○
Wheel bearing*	• 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.			○	○	○	○	○
Rear upper and lower knuckle pivots*	• Lubricate with lithium-soap-based grease.					○	○	○
Drive shaft universal joint*	• Lubricate with lithium-soap-based grease.					○	○	○
Engine mount*	• Check for cracks or damage.					○	○	○
Front and rear axle boots*	• Check operation. • Replace if damaged.			○	○	○	○	○
Stabilizer bushes*	• Check for cracks or damage.					○	○	○
Fittings and fasteners*	• Check all chassis fittings and fasteners. • Correct if necessary.			○	○	○	○	○
Lights and switches*	• Check operation. • Adjust headlight beams.			○	○	○	○	○

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

NOTE:

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

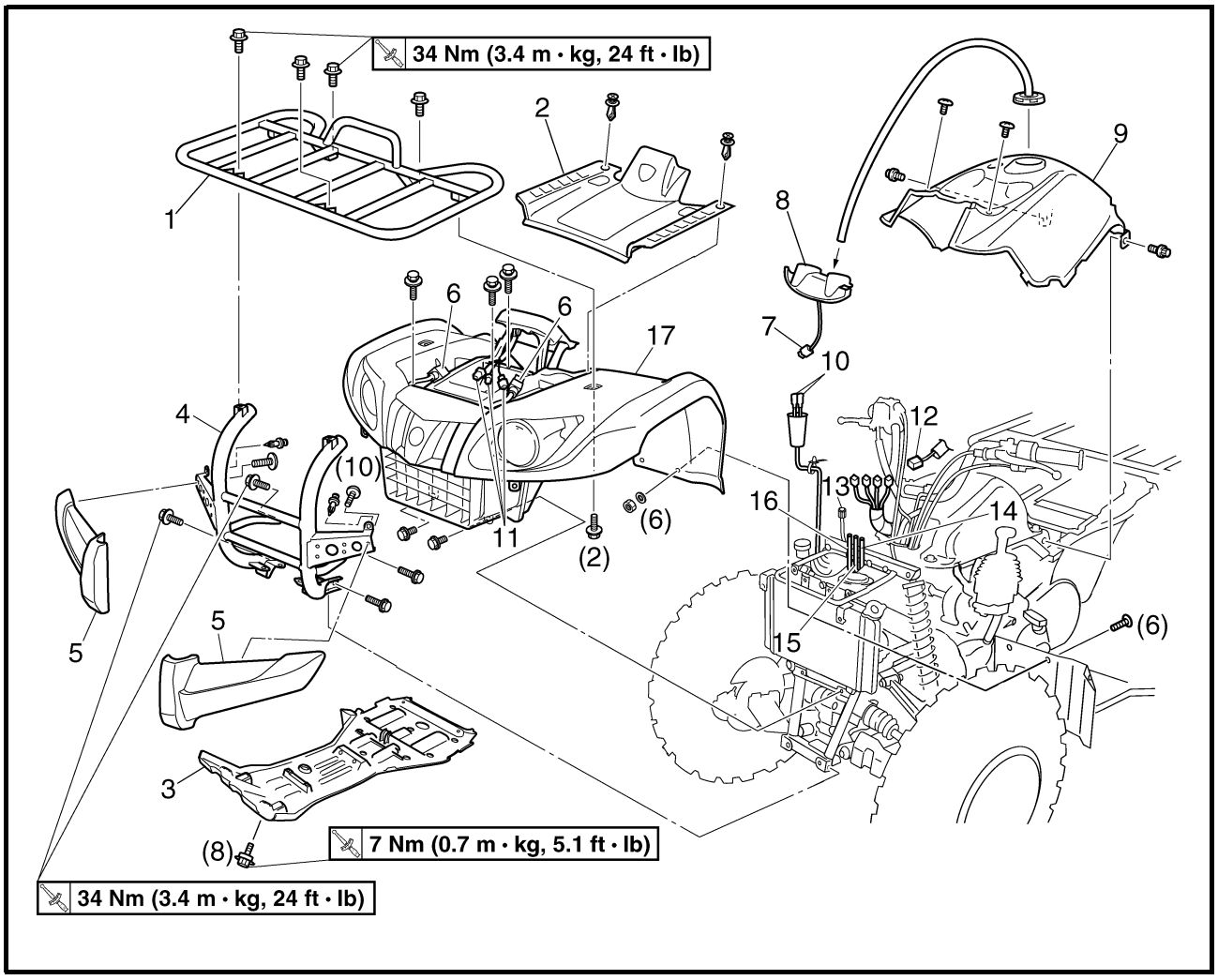
1. When disassembling the master cylinder or caliper, replace the brake fluid. Normally check the brake fluid level and add fluid as required.
2. On the inner parts of the master cylinder and caliper, replace the oil seals every two years.
3. Replace the brake hoses every four years, or if cracked or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

⚠ WARNING

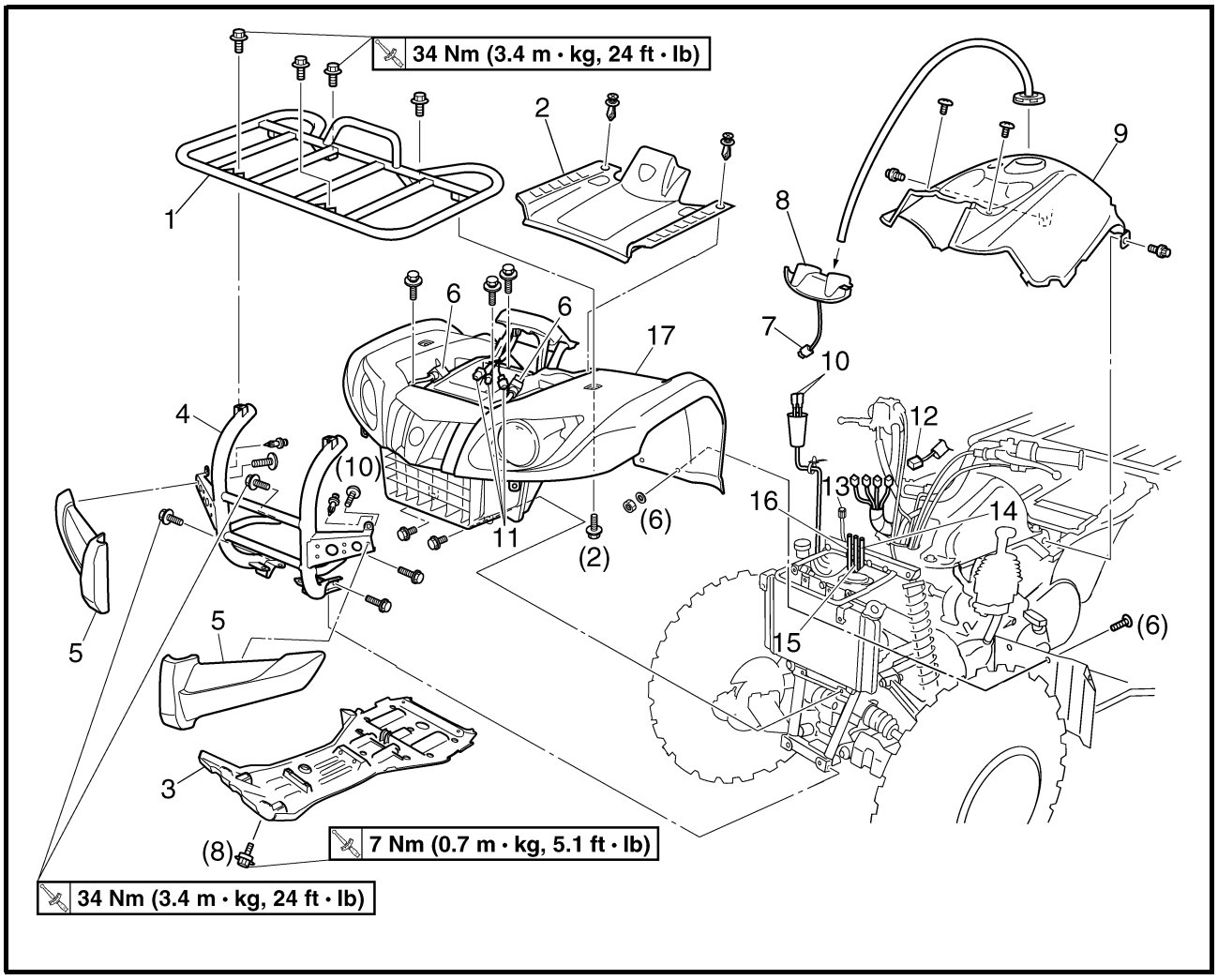
Indicates a potential hazard that could result in serious injury or death.

SEAT, CARRIERS, FENDERS AND FUEL TANK

FRONT CARRIER, FRONT BUMPER AND FRONT FENDER



Order	Job/Part	Q'ty	Remarks
	Removing the front carrier, front bumper and front fender		Remove the parts in the order below.
	Seat and fuel tank side panels		Refer to "SEAT AND SIDE PANELS" in chapter 3. (Manual No.: 5TE2-AE1)
1	Front carrier	1	
2	Front fender panel	1	
3	Engine skid plate	1	
4	Front bumper	1	
5	Front bumper cover	2	
6	Headlight coupler	2	Disconnect.
7	Main switch coupler	1	Disconnect.
8	Handlebar cover	1	
9	Fuel tank cover	1	



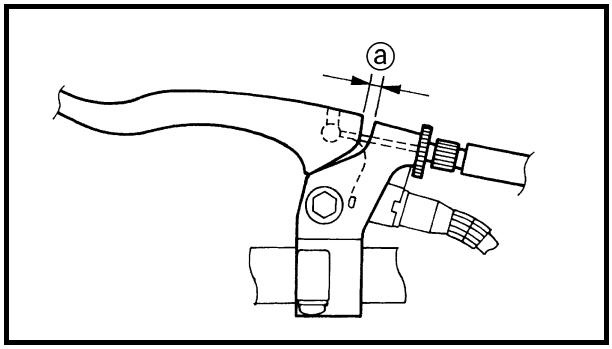
Order	Job/Part	Q'ty	Remarks
10	Auxiliary DC jack connector	2	Disconnect.
11	Indicator light assembly coupler/meter light coupler	3	Disconnect.
12	Sub-wire harness 1 coupler	1	Disconnect.
13	Speedometer cable	1	Disconnect.
14	Fan motor breather hose	1	
15	Coolant reservoir breather hose	1	
16	Differential gear case breather hose	1	
17	Front fender	1	
			For installation, reverse the removal procedure.

CHASSIS

ADJUSTING THE REAR BRAKE

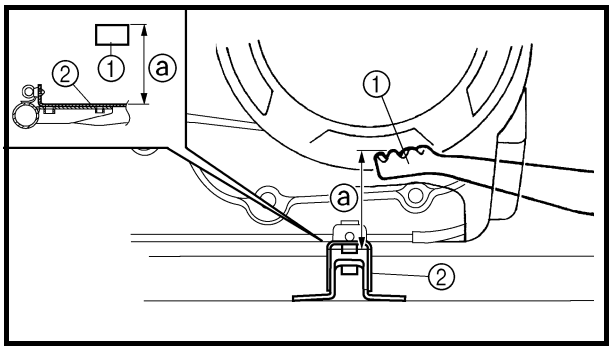
⚠ WARNING

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



1. Check:
   - rear brake lever free play ⓐ
     Out of specification → Adjust.

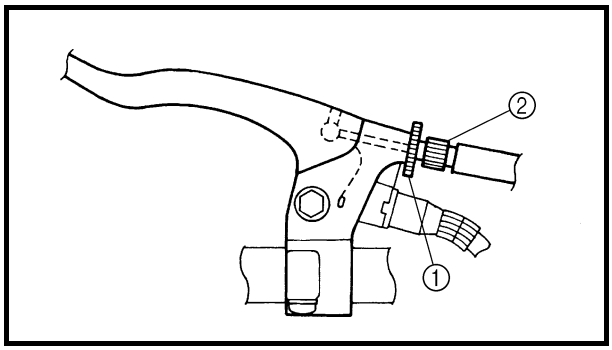
Rear brake lever free play
0.5 ~ 2.0 mm (0.02 ~ 0.08 in)



2. Check:
   - rear brake pedal height ⓐ
     Out of specification → Adjust.

Rear brake pedal height
67 ~ 77 mm (2.64 ~ 3.03 in)

① Brake pedal
② Footrest bracket



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

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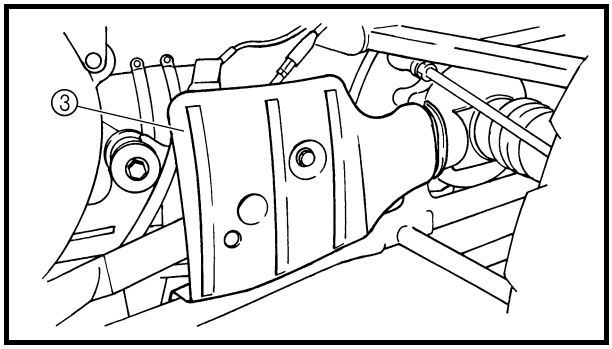
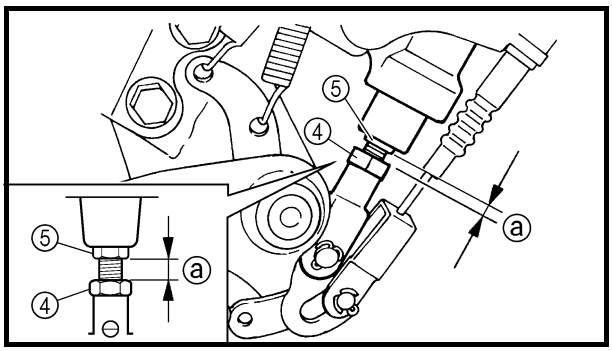
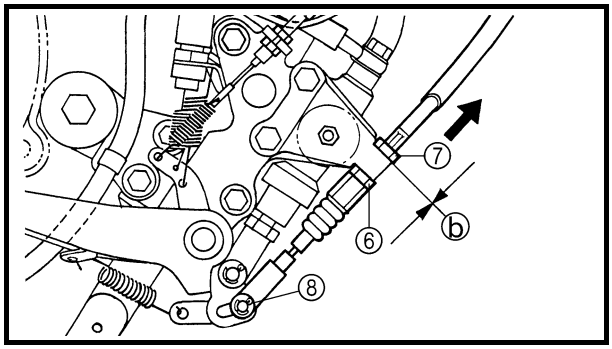
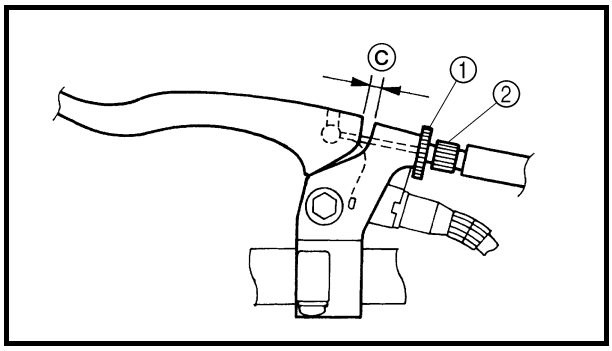
a. Loosen the locknut (handlebar) ① and fully screw in the brake lever cable adjuster (handlebar) ②.
b. Remove the rear brake master cylinder cover ③.









c. Loosen the locknut ④.
d. Turn the adjusting bolt ⑤ until the brake pedal height is within the specified limits.

Brake pedal height
67 ~ 77 mm (2.64 ~ 3.03 in)

e. Tighten the locknut ④.

NOTE:
When adjusting the brake pedal height make sure the locknut-to-adjusting bolt clearance ⓐ does not exceed 6 mm (0.24 in).

f. Loosen the locknut ⑥.
g. Pull up the brake outer cable and turn the brake cable adjusting (nut) ⑦ until the clearance ⓑ is within the specified limits.

Clearance ⓑ
Less than 1 mm (0.04 in)

NOTE:
Make sure the pin ⑧ is all the way to the right of the link plate hole.

h. Hold the adjusting nut ⑦ and tighten the locknut ⑥.
i. Turn the brake lever cable adjuster (handlebar) ② until the rear brake lever free play ⓒ is within the specified limits.

Rear brake lever free play
0.5 ~ 2.0 mm (0.02 ~ 0.08 in)

Tighten the locknut (handlebar) ①.
j. Adjust the select lever control cable.
Refer to "ADJUSTING THE SELECT LEVER CONTROL CABLE AND SHIFT ROD".
k. Install the rear brake master cylinder cover.

⚠ 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.

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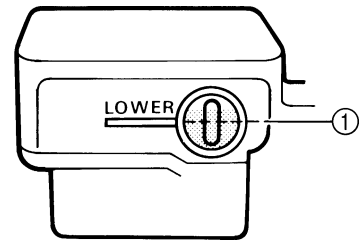

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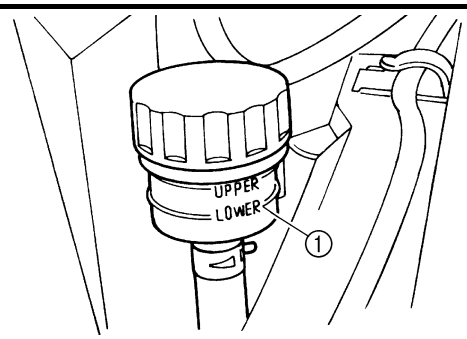


CHECKING THE BRAKE FLUID LEVEL

1. Place the machine on a level surface.

NOTE:

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

2. Remove: (rear brake)
   - front carrier
   - front fender panel

   Refer to "SEAT, CARRIERS, FENDERS AND FUEL TANK".
3. Check:
   - brake fluid level

   Fluid level is under "LOWER" level line ① → Fill up.

Recommended brake fluid
DOT 4

A Front brake
B Rear brake

CAUTION:

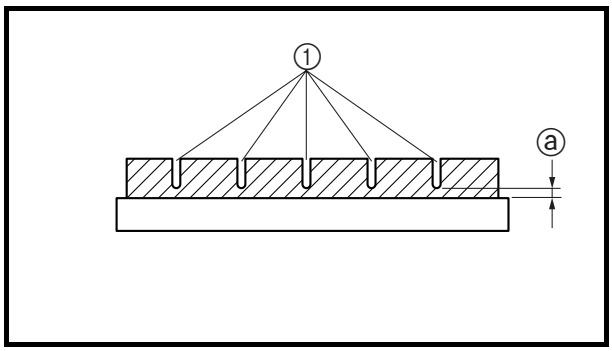
Brake fluid may erode painted surfaces or plastic parts. Always clean up spilled fluid immediately.

⚠ WARNING

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

4. Install: (rear brake)
   - front fender panel
   - front carrier

   Refer to "SEAT, CARRIERS, FENDERS AND FUEL TANK".

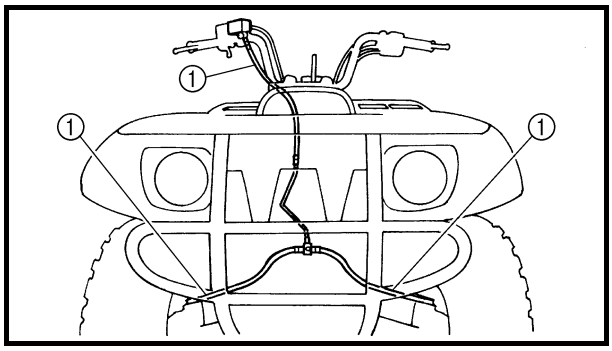


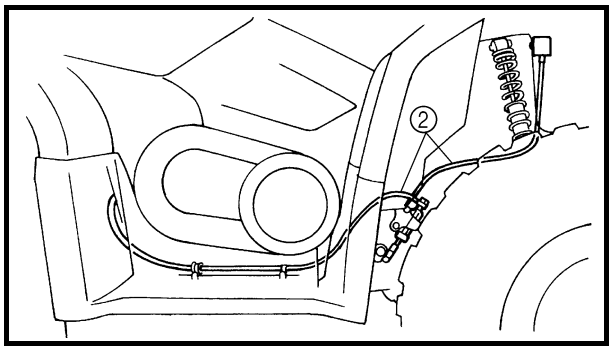
CHECKING THE REAR BRAKE PADS

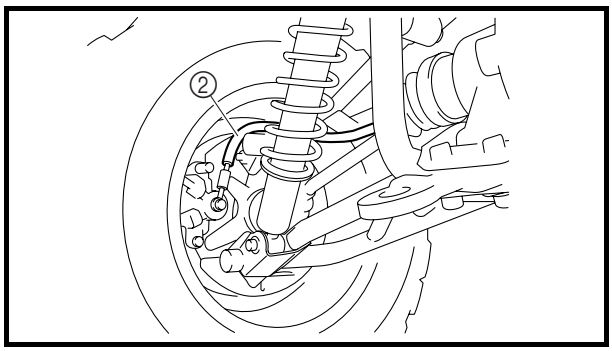
1. Remove:
   - rear wheel (left)
     Refer to “FRONT AND REAR WHEELS”.
2. Check:
   - brake pads
     Wear indicator groove ① almost disappeared → Replace the brake pads as a set.
     Refer to “REAR BRAKE”.

Brake pad wear limit ⓐ
1 mm (0.04 in)

3. Operate the brake lever or brake pedal.
4. Install:
   - rear wheel (left)
     Refer to “FRONT AND REAR WHEELS”.







CHECKING THE BRAKE HOSES

1. Remove:
   - seat
   - front carrier
   - front fender
     Refer to “SEAT, CARRIERS, FENDERS AND FUEL TANK”.
   - right footrest board
     Refer to “FOOTREST BOARDS” in chapter 3. (Manual No.: 5TE2-AE1)
2. Check:
   - front brake hoses ①
   - rear brake hoses ②
     Cracks/wear/damage → Replace.
     Fluid leakage → Replace the hose.
     Refer to “FRONT BRAKE” in chapter 8 (Manual No.: 5TE2-AE1) for the front brake hoses or “REAR BRAKE” for the rear brake hoses.

NOTE:
Hold the machine in an upright position and apply the front or rear brake.

3. Check:
   - brake hose clamp
     Loosen → Tighten.

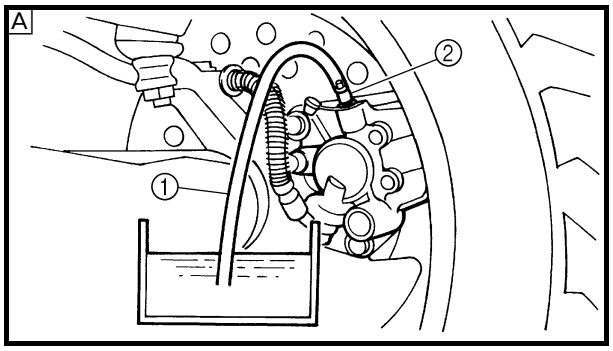
4. Install:
   - right footrest board
     Refer to “FOOTREST BOARDS” in chapter 3. (Manual No.: 5TE2-AE1)
   - front fender
   - front carrier
   - seat
     Refer to “SEAT, CARRIERS, FENDERS AND FUEL TANK”.

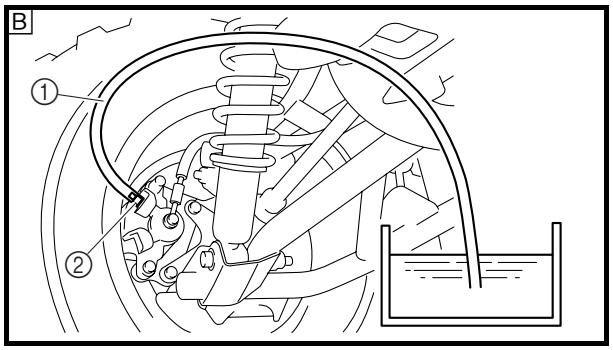
BLEEDING THE HYDRAULIC BRAKE SYSTEM

⚠ WARNING

Bleed the brake system if:
- **The system has been disassembled.**
- **A brake hose or brake pipe have been loosened or removed.**
- **The brake fluid has been very low.**
- **The brake operation has been faulty.**

A loss of braking performance may occur if the brake system is not properly bled.





1. Bleed:
   - brake system

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a. Add the proper brake fluid to the reservoir.
b. Install the diaphragm. Be careful not to spill any fluid or allow the reservoir to overflow.
c. Connect a clear plastic hose ① tightly to the caliper bleed screw ②.

A Front
B Rear

d. Place the other end of the hose into a container.
e. Slowly apply the brake lever or pedal several times.
f. Pull the lever in or push down on the pedal and hold it.
g. Loosen the bleed screw and allow the lever or pedal to travel towards its limit.
h. Tighten the bleed screw when the lever or pedal limit has been reached, then release the lever or pedal.
i. Repeat steps (e) to (h) until all the air bubbles have disappeared from the fluid.
j. Tighten the bleed screw.

	Bleed screw **6 Nm (0.6 m · kg, 4.3 ft · lb)**

NOTE:
If bleeding is difficult, it may be necessary to let the brake fluid settle for a few hours. Repeat the bleeding procedure when the tiny bubbles in the system have disappeared.

k. Add brake fluid to the proper level.
Refer to "CHECKING THE BRAKE FLUID LEVEL".

⚠ WARNING

Check the operation of the brake after bleeding the brake system.

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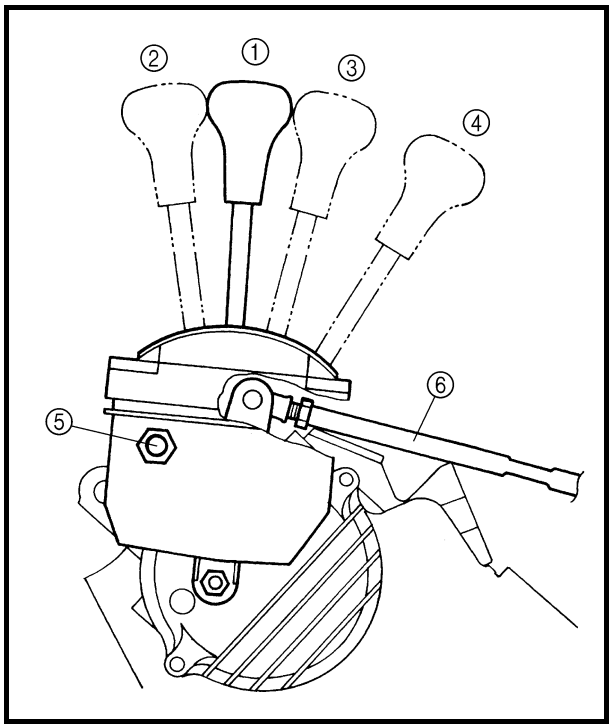


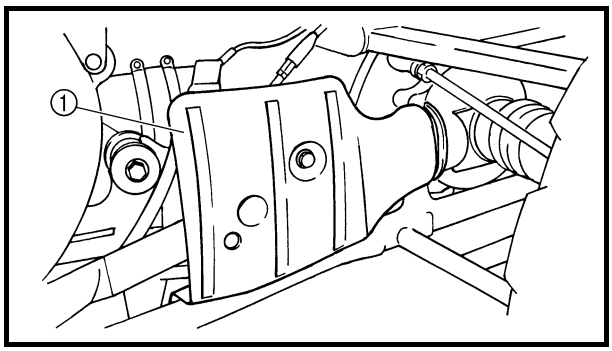
ADJUSTING THE SELECT LEVER CONTROL CABLE AND SHIFT ROD

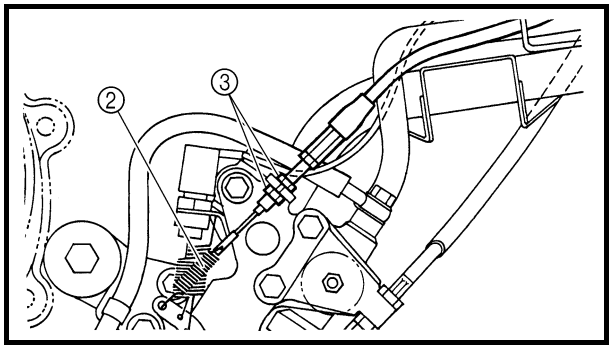
① NEUTRAL
② FORWARD
③ REVERSE
④ PARK
⑤ Control cable
⑥ Select lever shift rod

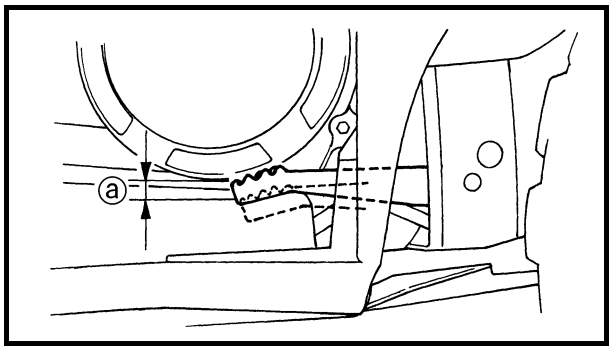
⚠ WARNING

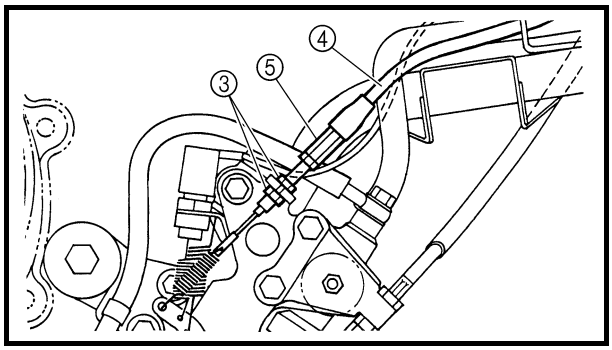
Before moving the select lever, bring the machine to a complete stop and return the throttle lever to its closed position. Otherwise the transmission may be damaged.

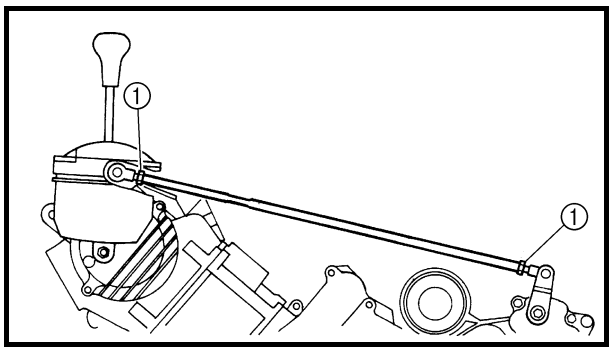
1. Adjust:
   • rear brake pedal free play
   Refer to "ADJUSTING THE REAR BRAKE".











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

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Control cable:

a. Remove the rear brake master cylinder cover ①.
b. Make sure the select lever is in NEUTRAL.
c. Adjust the control cable so there is zero free play in the cable. When the adjustment is correct, slack in the return spring ② will be taken up.

NOTE:

In some cases it will be necessary to further adjust the cable with the locknuts ③ arrangement that holds the cable to its mount.

d. When the brake begins to work "ⓐ = 20 ~ 30 mm (0.8 ~ 1.2 in)", verify that the select lever can be shifted to REVERSE from NEUTRAL, to PARK from REVERSE, to REVERSE from PARK, and to NEUTRAL from REVERSE.
e. Before the brake begins to work "ⓐ = 0 ~ 20 mm (0 ~ 0.8 in)", verify that the select lever cannot be shifted to REVERSE from NEUTRAL, to PARK from REVERSE, to REVERSE from PARK, and to NEUTRAL from REVERSE.
f. Check that locknuts ③ are tightened correctly.
g. If the operation of the select lever is incorrect, adjust the select lever control cable ④ with the adjuster ⑤.

Select lever shift rod:

a. Make sure the select lever is in NEUTRAL.
b. Loosen both locknuts ①.
c. Adjust the shift rod length for smooth and correct shifting.
d. Tighten the locknuts ① to specification.

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

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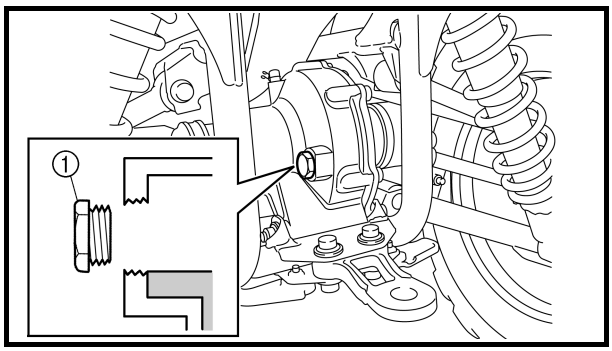
CHECKING THE FINAL GEAR OIL LEVEL/CHECKING THE CONSTANT VELOCITY JOINT DUST BOOTS



CHECKING THE FINAL GEAR OIL LEVEL

1. Place the vehicle on a level surface.
2. Remove:
   - oil filler plug ①
3. Check:
   - oil level

     Oil level should be up to the brim of the hole.

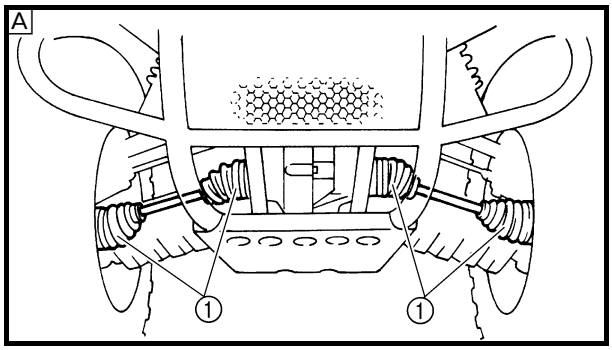
     Oil level low → Add oil to the proper level.

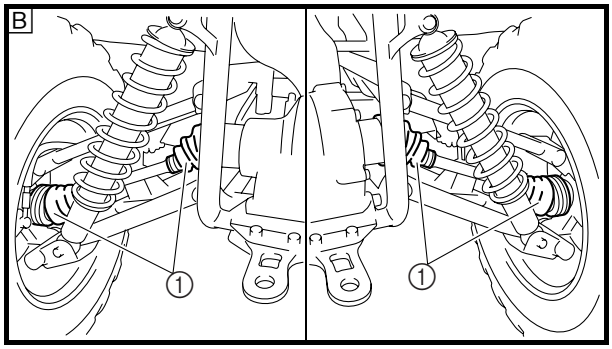
Recommended oil
SAE 80 API "GL-4" Hypoid gear oil

CAUTION:

Take care not allow foreign material to enter the final gear case.

4. Install:
   - oil filler plug — **23 Nm (2.3 m · kg, 17 ft · lb)**





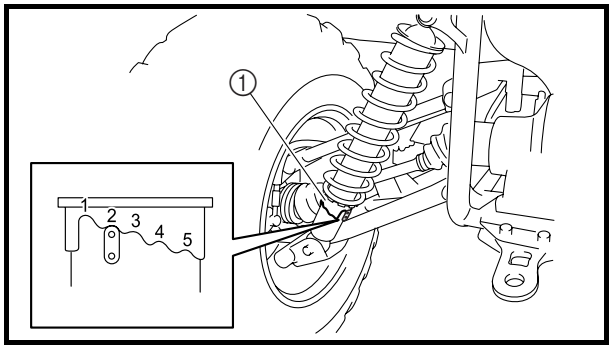
CHECKING THE CONSTANT VELOCITY JOINT DUST BOOTS

1. Check:
   - dust boots ①

     Damage → Replace.

     Refer to "FRONT CONSTANT VELOCITY JOINTS AND DIFFERENTIAL GEAR" in chapter 7 (Manual No.: 5TE2-AE1) for the front constant velocity joint dust boots or "REAR CONSTANT VELOCITY JOINTS, FINAL DRIVE GEAR AND DRIVE SHAFT" for the rear constant velocity joint dust boots.

A Front
B Rear



ADJUSTING THE REAR SHOCK ABSORBERS

⚠ WARNING

Always adjust both shock absorber spring preload to the same setting. Uneven adjustment can cause poor handling and loss of stability.

NOTE:

The spring preload of the shock absorbers can be adjusted to suit the operator's preference, weight, and the operating conditions.

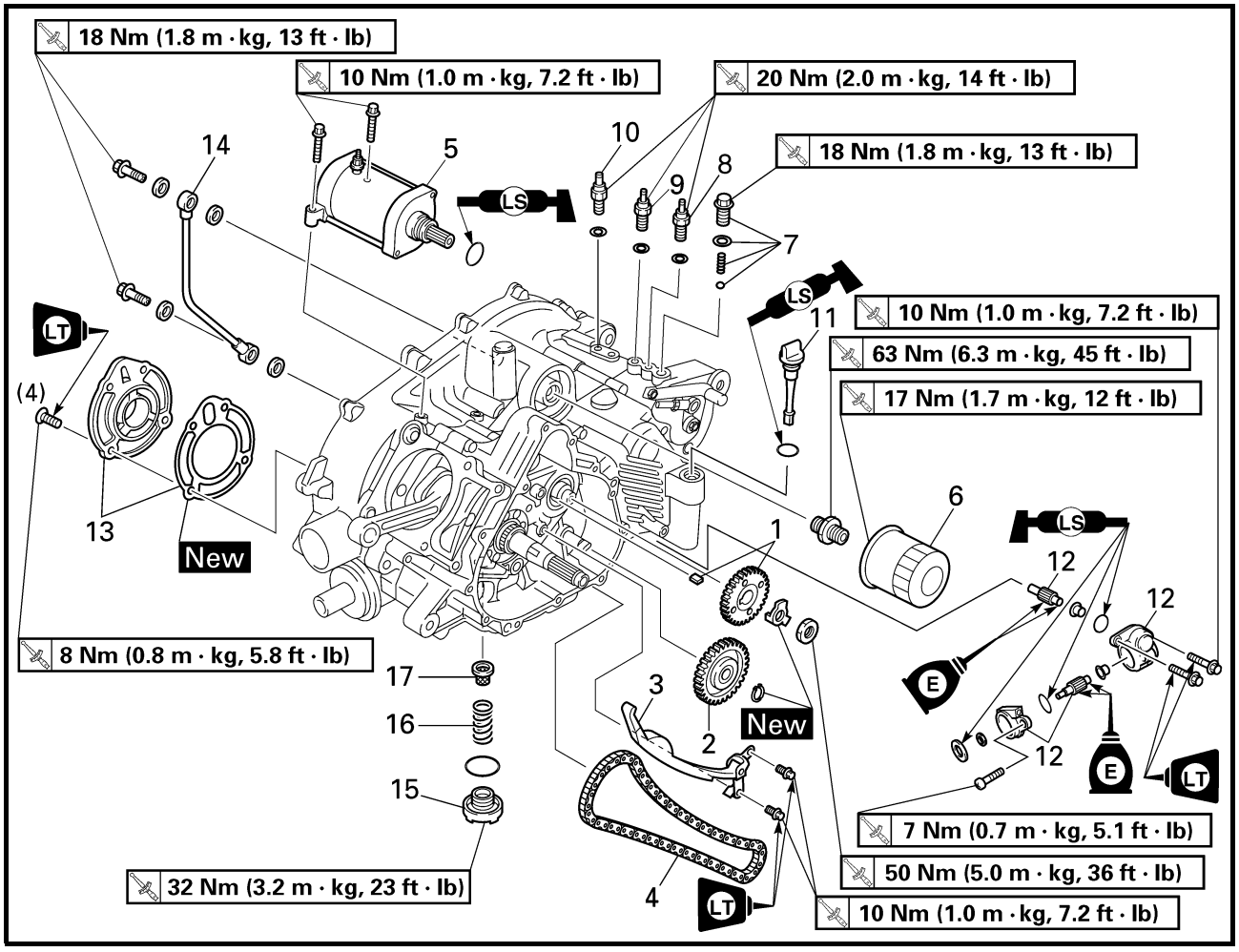
1. Adjust:
   - spring preload
     Turn the adjuster ① to increase or decrease the spring preload.

Standard position: 2
Minimum (Soft) position: 1
Maximum (Hard) position: 5

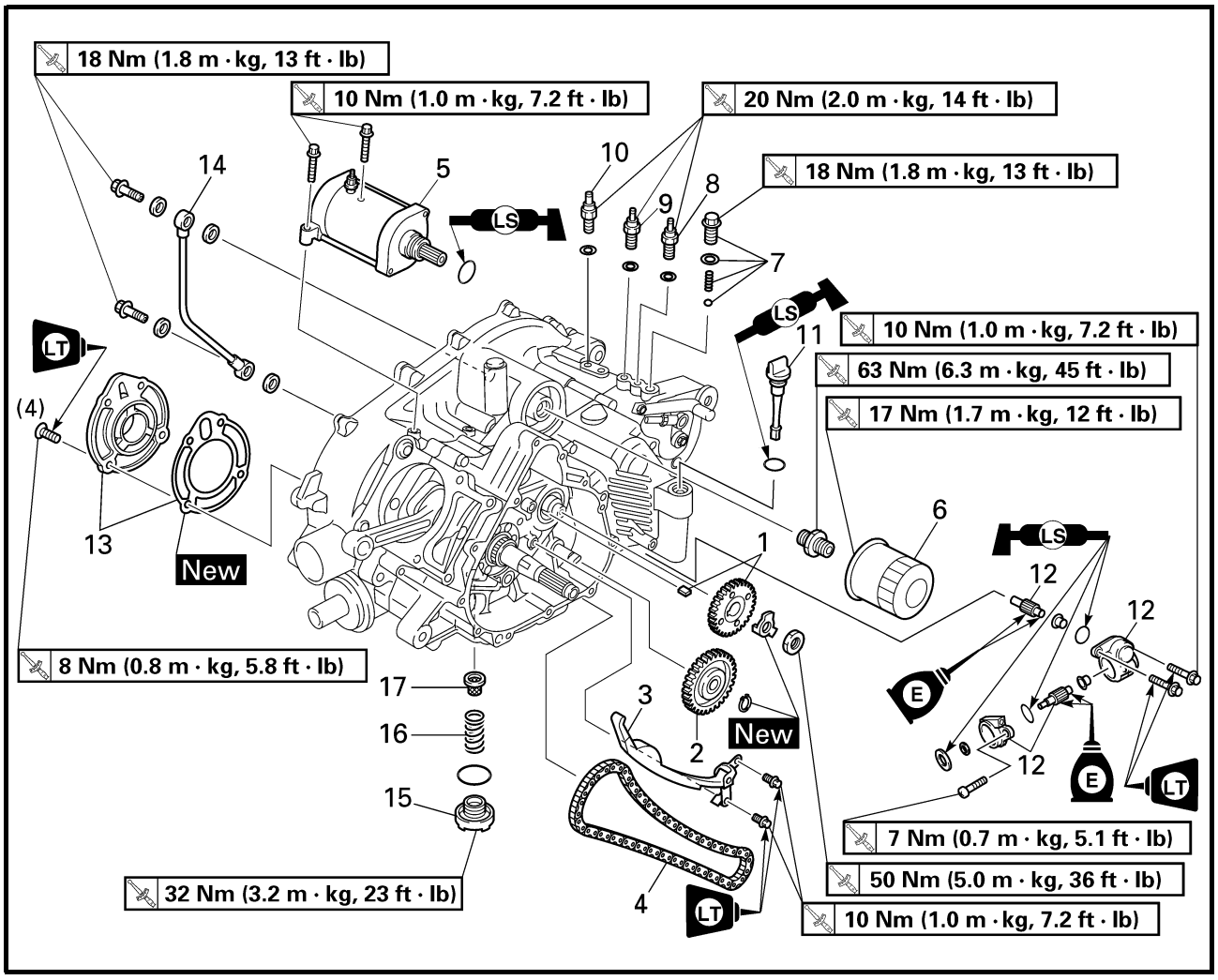
ENGINE

CRANKCASE

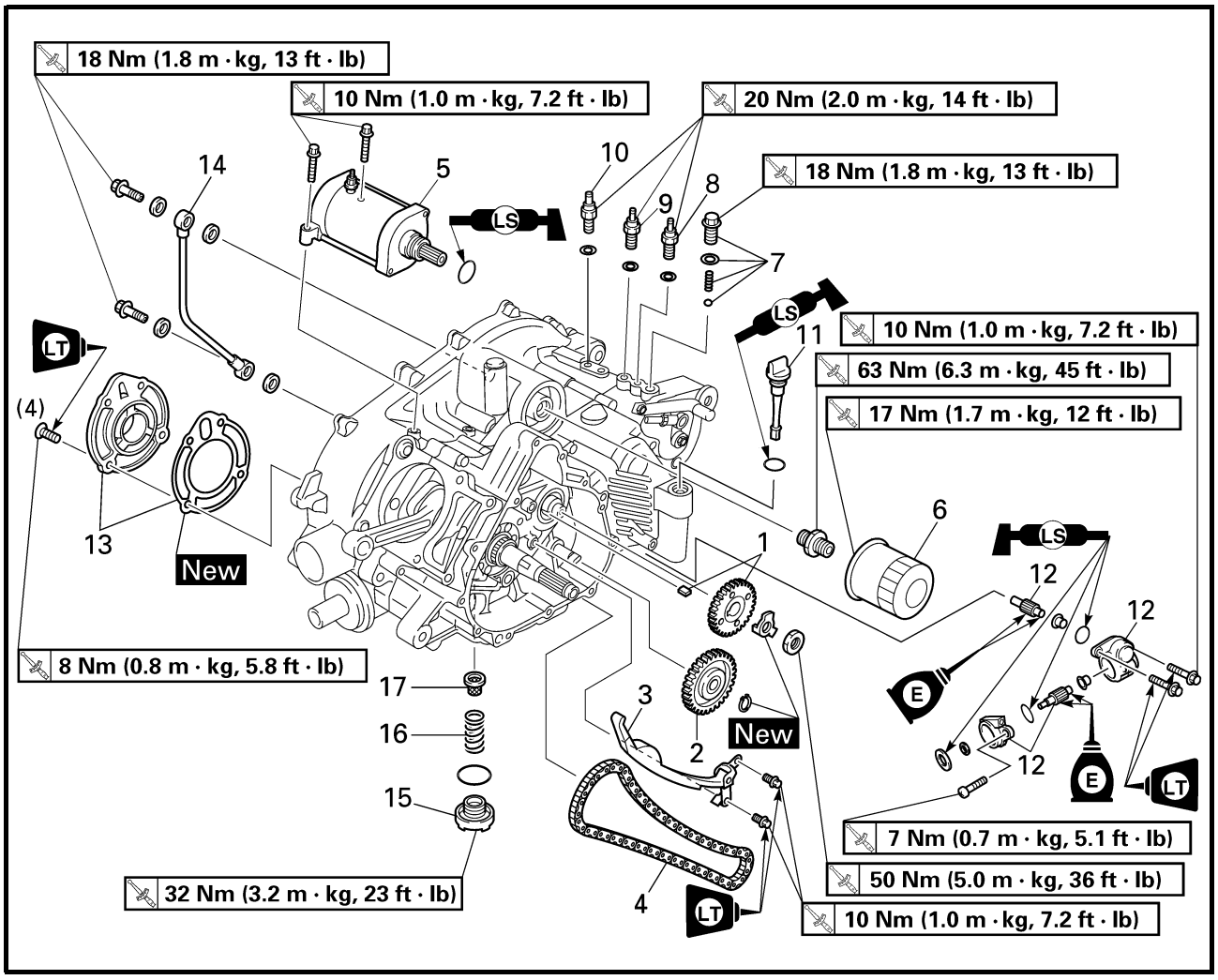
STARTER MOTOR, TIMING CHAIN AND OIL FILTER



Order	Job/Part	Q'ty	Remarks
	Removing the starter motor, timing chain and oil filter		Remove the parts in the order below.
	Engine assembly		Refer to "ENGINE REMOVAL" in chapter 4. (Manual No.: 5TE2-AE1)
	Cylinder head		Refer to "CYLINDER HEAD" in chapter 4. (Manual No.: 5TE2-AE1)
	Cylinder and piston		Refer to "CYLINDER AND PISTON" in chapter 4. (Manual No.: 5TE2-AE1)
	Recoil starter and rotor		Refer to "RECOIL STARTER AND A.C. MAGNETO" in chapter 4. (Manual No.: 5TE2-AE1)
	Primary and secondary sheaves		Refer to "PRIMARY AND SECONDARY SHEAVES" in chapter 4. (Manual No.: 5TE2-AE1)
	Clutch carrier assembly		Refer to "CLUTCH" in chapter 4. (Manual No.: 5TE2-AE1)

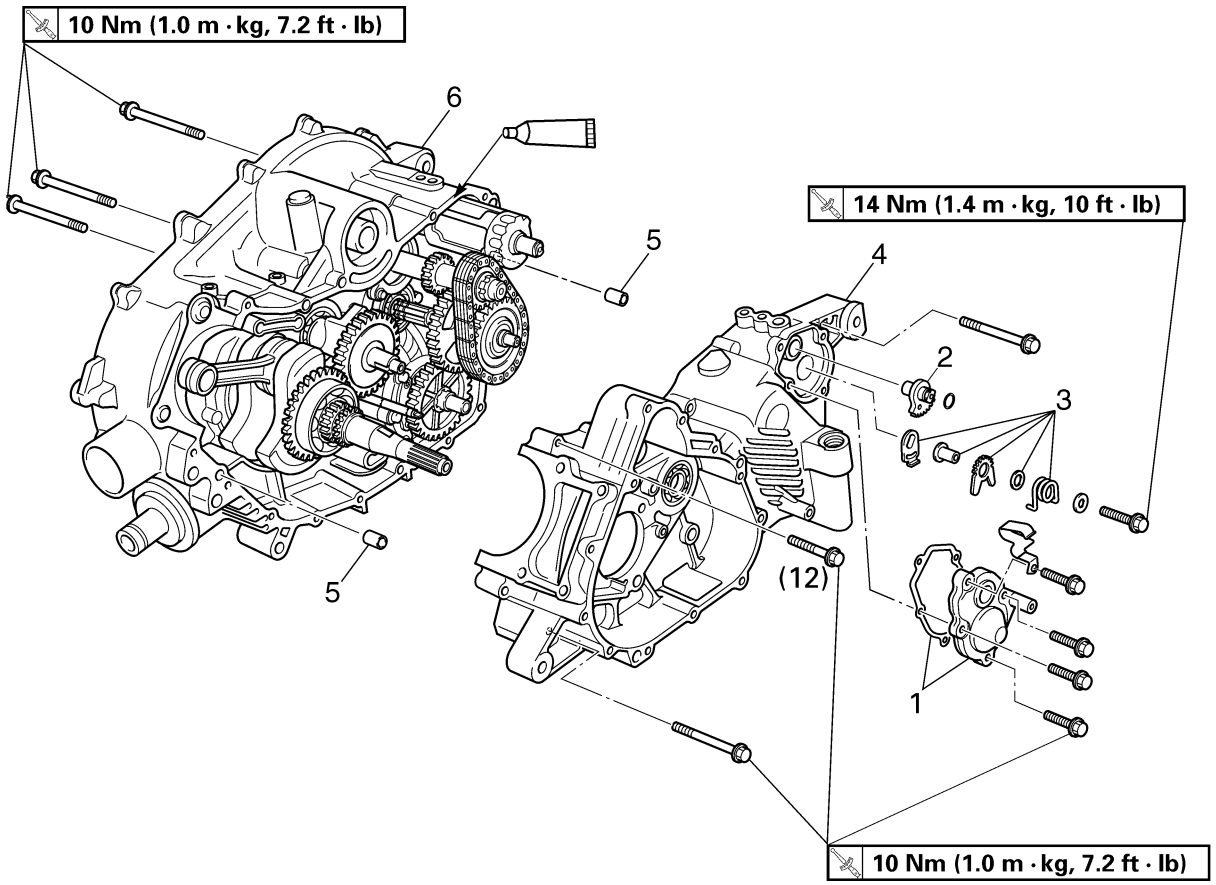


Order	Job/Part	Q'ty	Remarks
1	Oil pump drive gear/straight key	1/1	Refer to "REMOVING/INSTALLING THE OIL PUMP DRIVE GEAR" in chapter 4. (Manual No.: 5TE2-AE1)
2	Oil pump driven gear	1	
3	Timing chain guide (intake)	1	
4	Timing chain	1	
5	Starter motor	1	
6	Oil filter cartridge	1	
7	Shift cam stopper	1	
8	Neutral switch	1	
9	Park switch	1	
10	Reverse switch	1	
11	Oil filler cap	1	
12	Gear unit	1	
13	Bearing cover/gasket	1/1	

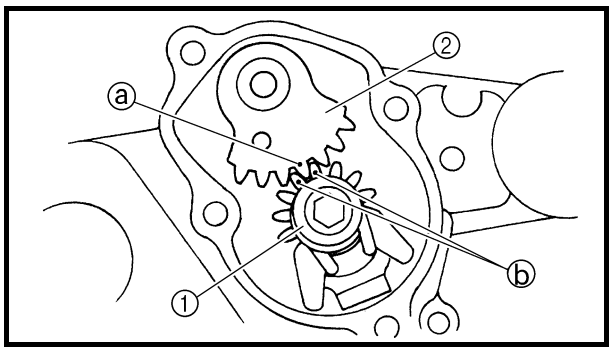


Order	Job/Part	Q'ty	Remarks
14	Oil delivery pipe	1	
15	Oil strainer cover	1	
16	Compression spring	1	
17	Oil strainer	1	
			For installation, reverse the removal procedure.

CRANKCASE



Order	Job/Part	Q'ty	Remarks
	Separating the crankcase		Remove the parts in the order below.
1	Shift lever cover/gasket	1/1	Refer to "INSTALLING THE SHIFT LEVER".
2	Shift lever 1	1	
3	Shift lever 2 assembly	1	
4	Crankcase (left)	1	Refer to "SEPARATING/ASSEMBLING THE CRANKCASE" in chapter 4. (Manual No.: 5TE2-AE1)
5	Dowel pin	2	
6	Crankcase (right)	1	
			For installation, reverse the removal procedure.



INSTALLING THE SHIFT LEVER

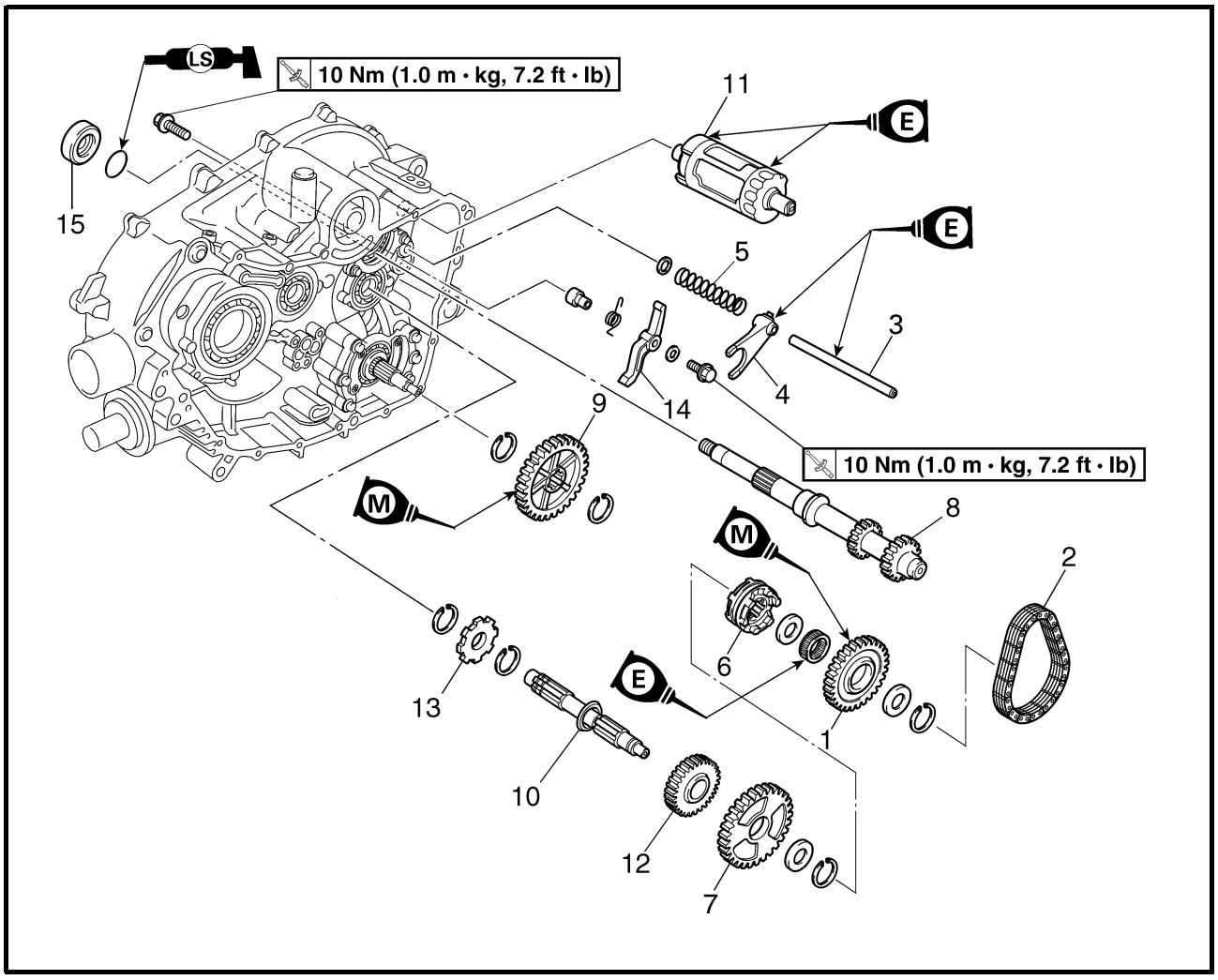
1. Install:
   - shift lever 2 assembly ①

     14 Nm (1.4 m · kg, 10 ft · lb)
   - shift lever 1 ②

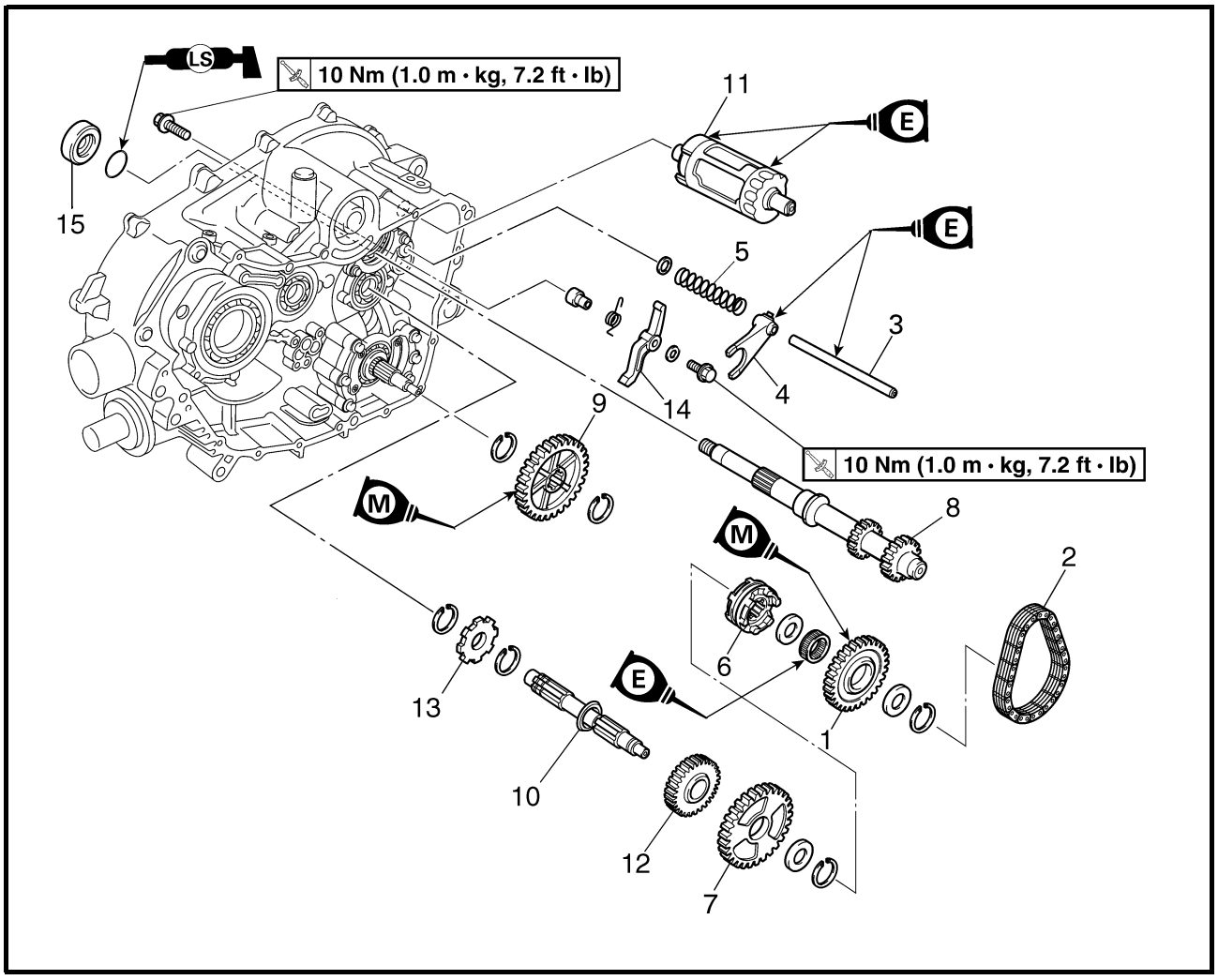
NOTE:

When installing the shift lever 1, align the punch mark ⓐ on the shift lever 1 with the punch marks ⓑ on the shift lever 2 assembly.

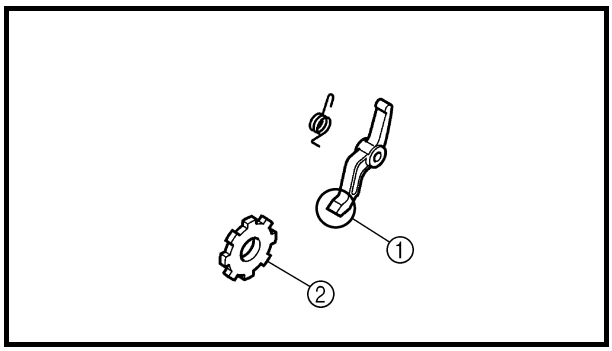
TRANSMISSION



Order	Job/Part	Q'ty	Remarks
	Removing the transmission		Remove the parts in the order below.
	Crankcase separation		Refer to "CRANKCASE".
1	Driven sprocket	1	
2	Chain	1	
3	Guide bar	1	
4	Shift fork	1	
5	Spring	1	
6	Clutch dog	1	
7	Low wheel gear	1	
8	Secondary shaft	1	
9	Middle driven gear	1	
10	Drive axle assembly	1	



Order	Job/Part	Q'ty	Remarks
11	Shift cam	1	
12	Middle drive gear	1	
13	Stopper wheel	1	
14	Stopper lever	1	
15	Spacer	1	
			For installation, reverse the removal procedure.

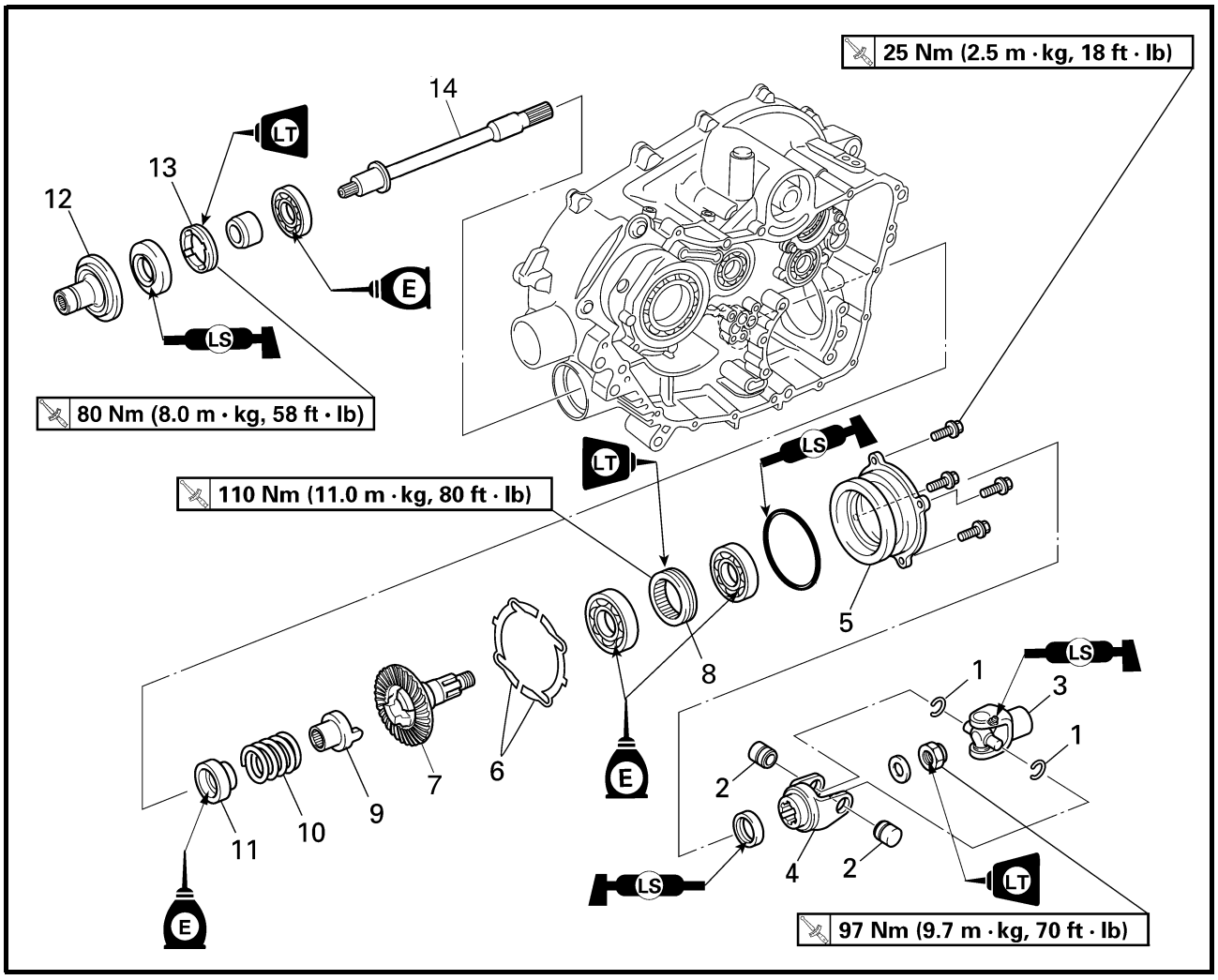


CHECKING THE STOPPER LEVER AND STOPPER WHEEL

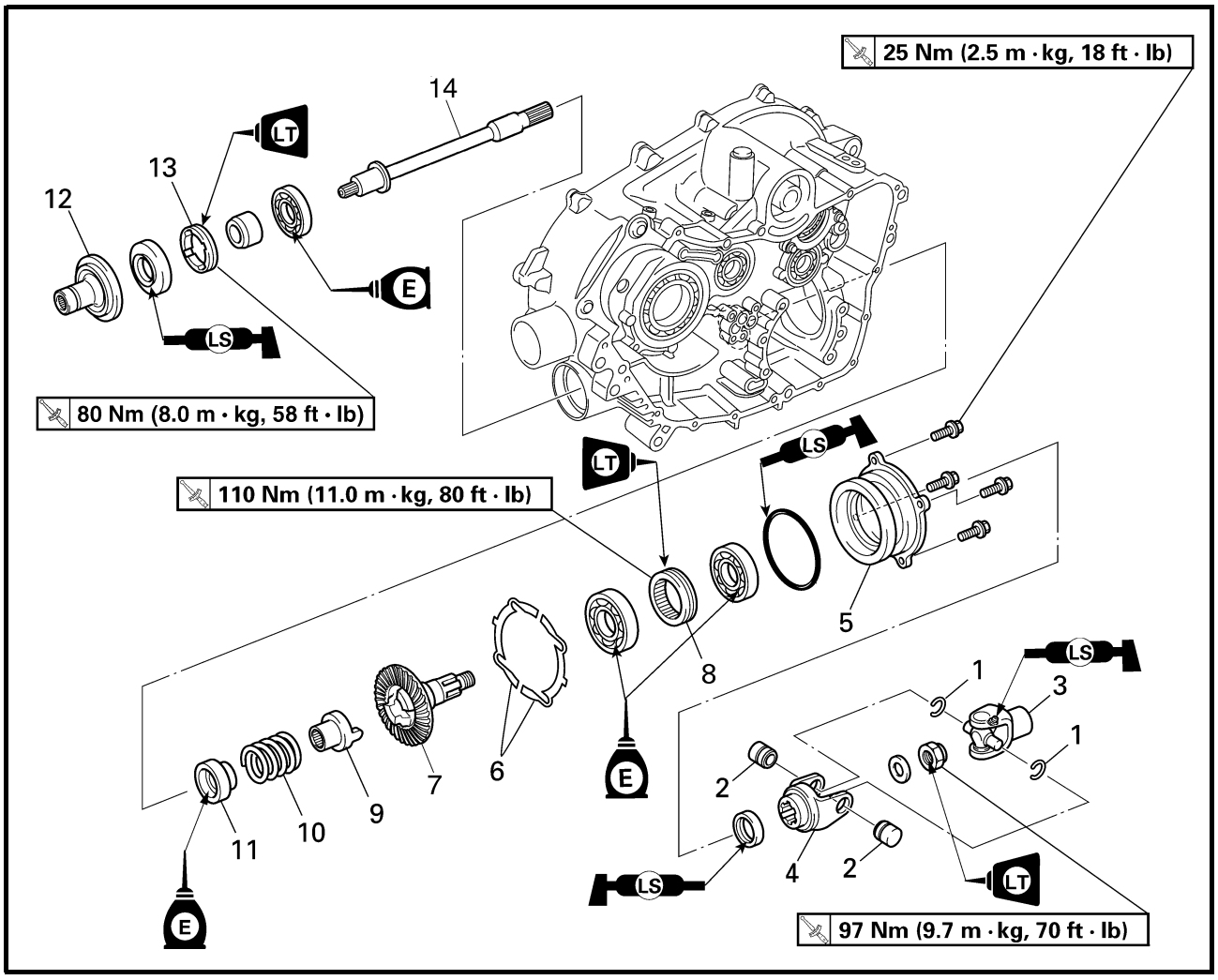
1. Check:
   - stopper lever pawl ①
     Bends/damage/wear → Replace the stopper lever and stopper wheel as a set.
   - stopper wheel ②
     Damage/wear → Replace the stopper wheel and stopper lever as a set.

MIDDLE GEAR

MIDDLE DRIVEN SHAFT



Order	Job/Part	Q'ty	Remarks
	Removing the middle driven shaft		Remove the parts in the order below.
	Crankcase separation		Refer to "CRANKCASE".
1	Circlip	2	
2	Bearing	2	Refer to "REMOVING/INSTALLING THE MIDDLE DRIVEN SHAFT" in chapter 4. (Manual No.: 5TE2-AE1)
3	Universal joint	1	
4	Universal joint yoke	1	
5	Bearing housing	1	
6	Shim		Refer to "SELECTING THE MIDDLE DRIVE AND DRIVEN GEAR SHIMS" in chapter 4. (Manual No.: 5TE2-AE1)
7	Middle drive pinion gear	1	Refer to "REMOVING/INSTALLING THE MIDDLE DRIVEN SHAFT" in chapter 4. (Manual No.: 5TE2-AE1)
8	Bearing retainer	1	
9	Damper cam	1	



Order	Job/Part	Q'ty	Remarks
10	Spring	1	
11	Gear coupling	1	
12	Front drive shaft coupling	1	
13	Bearing retainer	1	
14	Middle driven shaft	1	
			For installation, reverse the removal procedure.

DRIVE TRAIN

TROUBLESHOOTING

The following conditions may indicate damaged shaft drive components:

Symptoms	Possible Causes
1. A pronounced hesitation or "jerky" movement during acceleration, deceleration, or sustained speed. (This must not be confused with engine surging or transmission characteristics.) 2. A "rolling rumble" noticeable at low speed; a high-pitched whine; a "clunk" from a shaft drive component or area. 3. A locked-up condition of the shaft drive train mechanism, no power transmitted from the engine to the front and/or rear wheel.	A. Bearing damage. B. Improper gear lash. C. Gear tooth damage. D. Broken drive shaft. E. Broken gear teeth. F. Seizure due to lack of lubrication. G. Small foreign objects lodged between the moving parts.

NOTE:

Areas A, B, and C above may be extremely difficult to diagnose. The symptoms are quite subtle and difficult to distinguish from normal machine operating noise. If there is reason to believe these components are damaged, remove the components and check them.

1. Check:
   • unusual noises

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The following "noises" may indicate a mechanical defect:

a. A "rolling rumble" noise during coasting, acceleration, or deceleration. The noise increases with front and/or rear wheel speed, but it does not increase with higher engine or transmission speeds.
   Diagnosis: Possible wheel bearing damage.
b. A "whining" noise that varies with acceleration and deceleration.
   Diagnosis: Possible incorrect reassembly, too-little gear lash.

CAUTION:

Too little gear lash is extremely destructive to the gear teeth. If a test ride following reassembly indicates this condition, stop riding immediately to minimize gear damage.

c. A slight "thunk" evident at low speed operation. This noise must be distinguished from normal machine operation.
Diagnosis: Possible broken gear teeth.

⚠ WARNING

Stop riding immediately if broken gear teeth are suspected. This condition could result in the shaft drive assembly locking up, causing loss of control of the machine and possible injury to the rider.

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2. Check:
• drained oil
Drained oil shows large amounts of metal particles → Check the bearings for seizure.

NOTE:

A small amount of metal particles in the oil is normal.

3. Check:
• oil leakage

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a. Clean the entire machine thoroughly, then dry it.
b. Apply a leak-localizing compound or dry powder spray to the shaft drive.
c. Road test the machine for the distance necessary to locate the leak.
Leakage → Check the component housing, gasket, and/or seal for damage.
Damage → Replace the component.

NOTE:

• An apparent oil leak on a new or nearly new machine may be the result of a rust-preventative coating or excessive seal lubrication.
• Always clean the machine and recheck the suspected location of an apparent leakage.

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Troubleshooting chart

When basic condition “a” and “b” exist, check the following points:

Elevate and spin both wheels. Feel for wheel bearing damage.
YES → Replace the wheel bearings. (Refer to “STEERING SYSTEM” in chapter 8 (Manual No.: 5TE2-AE1) for the front wheel bearings or “REAR KNUCKLES AND STABILIZER” for the rear wheel bearings.)
NO ↓

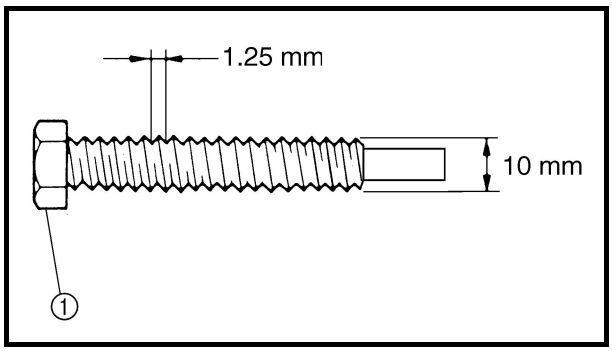
Check the wheel nuts and hub nuts for tightness.
NO → Torque to specification. (Refer to “FRONT AND REAR WHEELS” in chapter 8 (Manual No.: 5TE2-AE1) for the front wheel nuts and hub nuts or “FRONT AND REAR WHEELS” for the rear wheel nuts and hub nuts.)
YES ↓

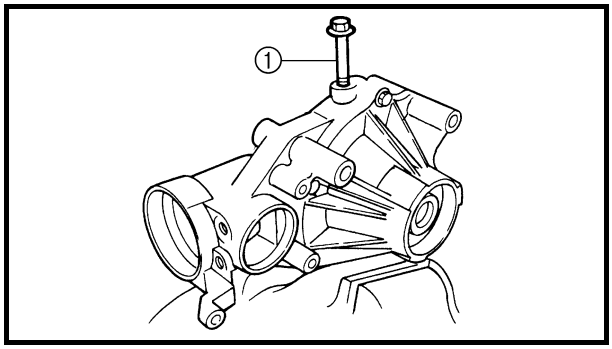
Check the front constant velocity joints. Feel for bearing damage.
NO → Constant velocity joint bearings and differential gear bearings are probably not damaged. Repeat the test or remove the individual components.
YES ↓

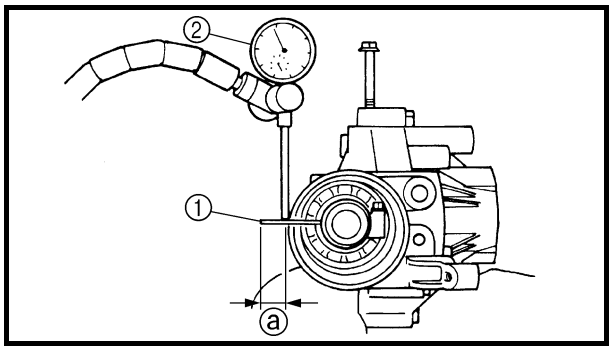
Check the rear brake adjustment.
NO → Adjust per instructions. (Refer to “ADJUSTING THE REAR BRAKE”.)
YES ↓

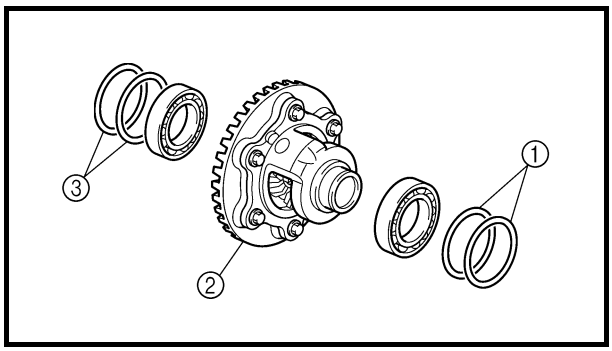
Check the rear constant velocity joints. Feel for bearing damage.
NO → Constant velocity joint bearings and final drive gear bearings are probably not damaged. Repeat the test or remove the individual components.
YES ↓

Remove the drive shaft components.









FRONT CONSTANT VELOCITY JOINTS AND DIFFERENTIAL GEAR

MEASURING AND ADJUSTING THE DIFFERENTIAL GEAR LASH

Measuring the differential gear lash

1. Secure the gear case in a vise or another supporting device.
2. Remove:
   - drain plug
   - gasket
3. Install:
   - a bolt of the specified size ①
     (into the drain plug hole)

CAUTION:

Finger tighten the bolt until it holds the ring gear. Otherwise, the ring gear will be damaged.

4. Attach:
   - gear lash measurement tool ①
   - dial gauge ②

	Gear lash measurement tool **P/N. YM-01475, 90890-01475**

ⓐ Measuring point is 25 mm (0.98 in)

5. Measure:
   - gear lash
     Gently rotate the gear coupling from engagement to engagement.

	Differential gear lash **0.10 ~ 0.50 mm** **(0.004 ~ 0.020 in)**

NOTE:

Measure the gear lash at four positions. Rotate the shaft 90° each time.

Adjusting differential gear lash

1. Remove:
   - shim(s) (left) ①
   - differential gear assembly ②
   - shim(s) (right) ③

2. Adjust:
   • gear lash

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a. Select the suitable shims using the following chart.

Too little gear lash	**Reduce shim thickness.**
Too large gear lash	**Increase shim thickness.**

b. If it is necessary to increase by more than 0.05 mm (0.002 in):
   Reduce right shim thickness by 0.1 mm (0.004 in) for every 0.1 mm (0.004 in) of left shim increase.
c. If it is necessary to reduce by more than 0.1 mm (0.004 in):
   Increase right shim thickness by 0.1 mm (0.004 in) for every 0.1 mm of left shim decrease.

	**Ring gear shim (left and right)**		
Thickness (mm)	**0.1** **0.4**	**0.2** **0.5**	**0.3** **1.0**

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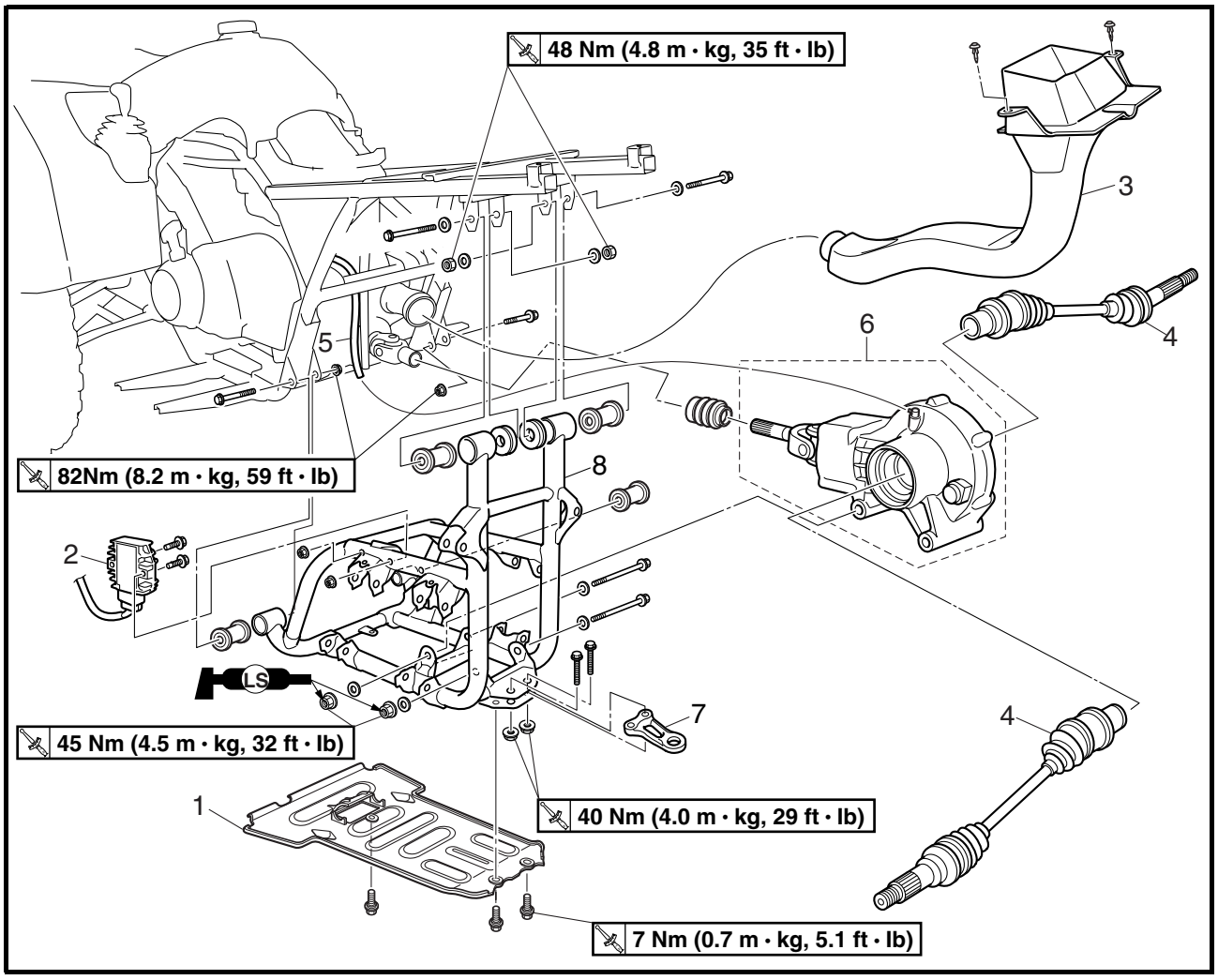
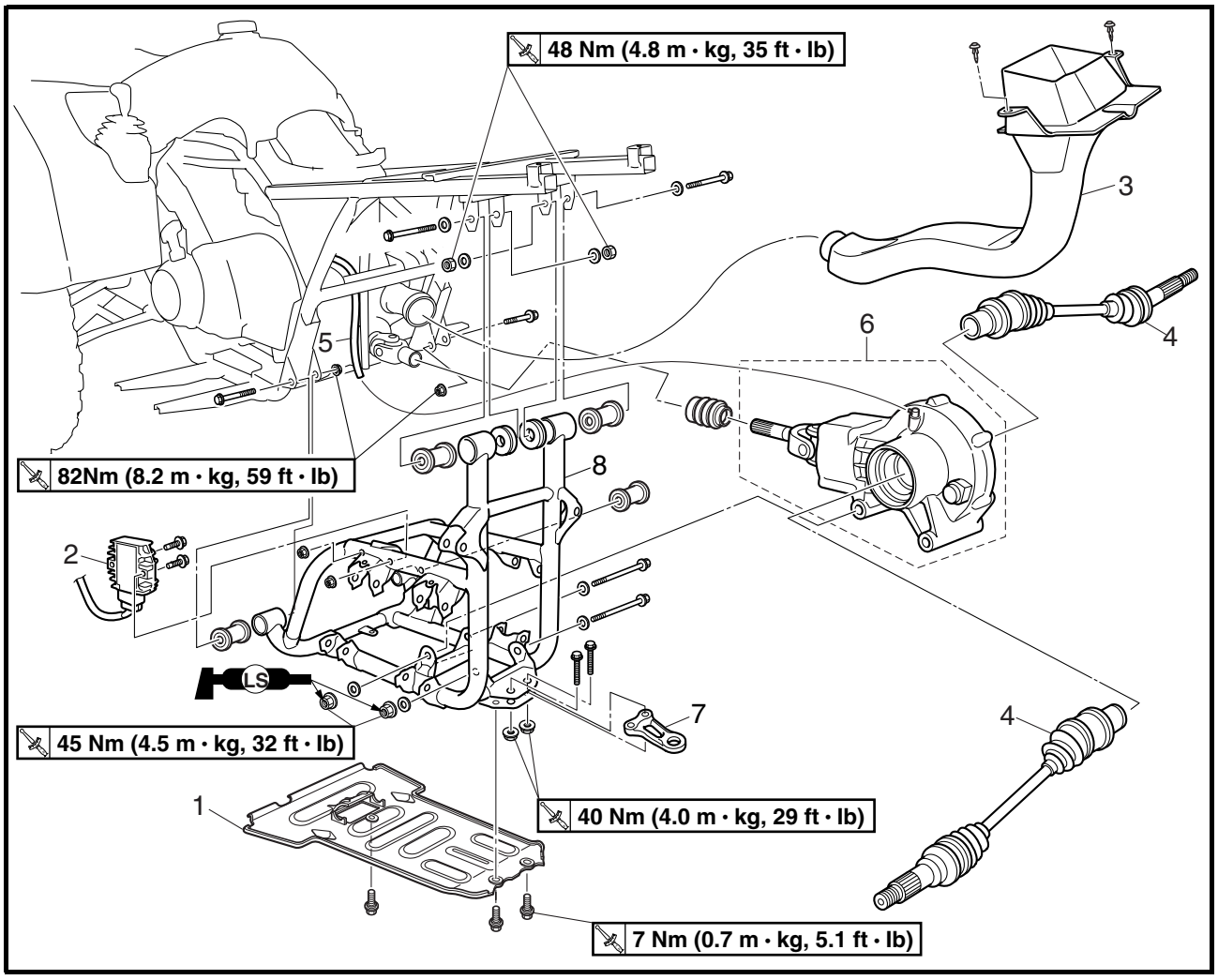
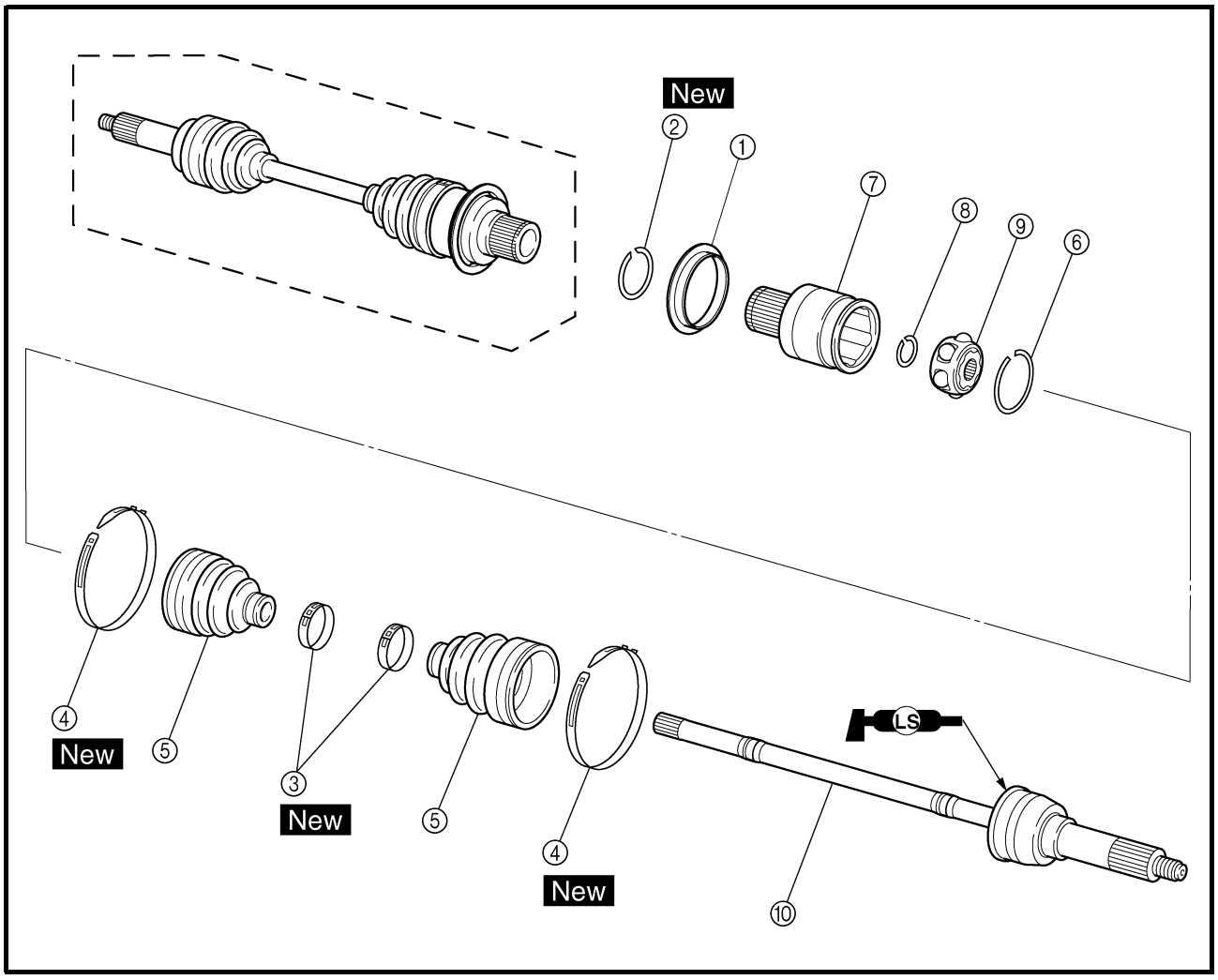
REAR CONSTANT VELOCITY JOINTS, FINAL DRIVE GEAR AND DRIVE SHAFT



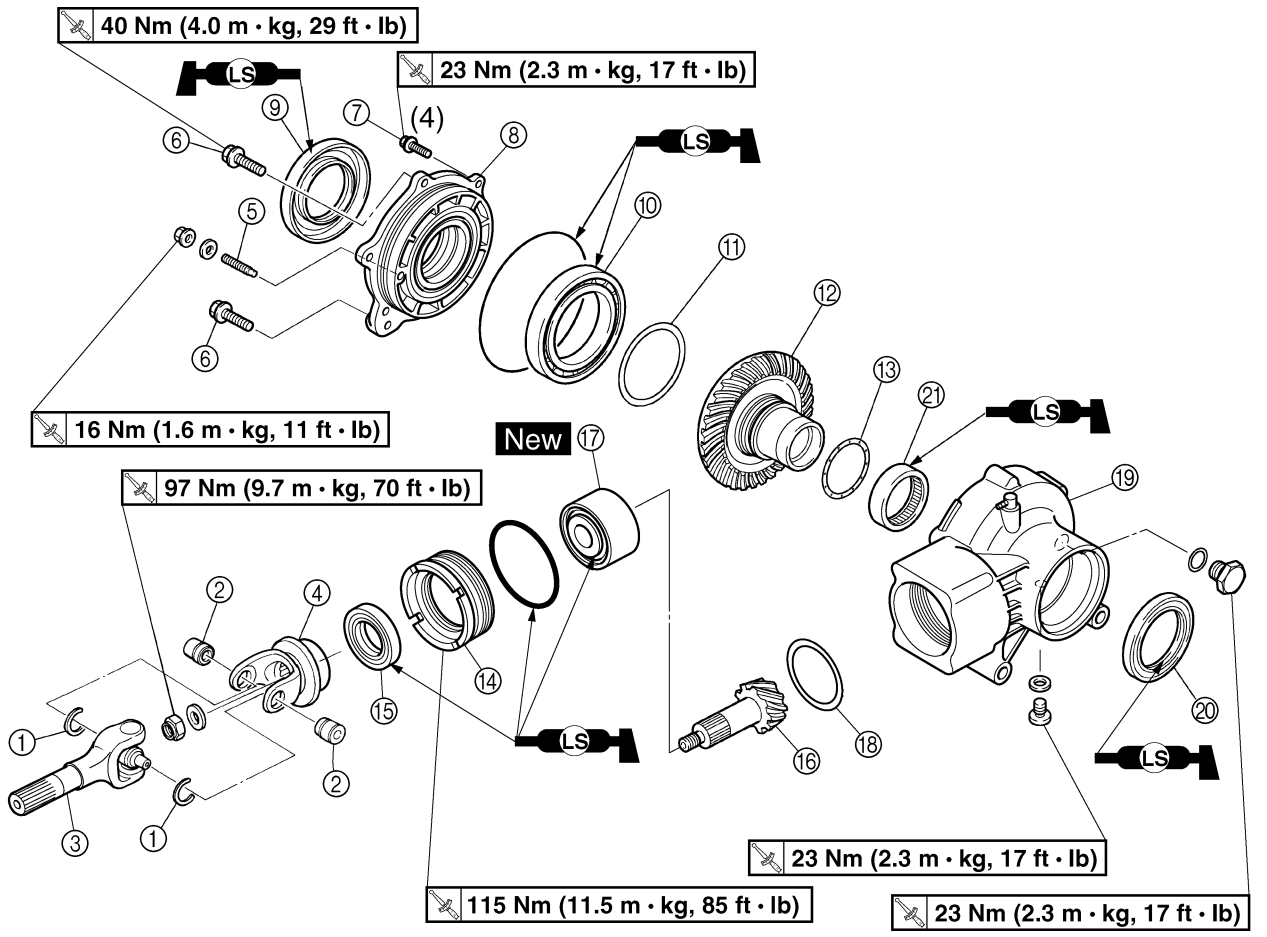
Order	Job/Part	Q'ty	Remarks
	Removing the rear constant velocity joints, final drive gear assembly and drive shaft		Remove the parts in the order below.
	Engine skid plate		Refer to "SEAT, CARRIERS, FENDERS AND FUEL TANK".
	Rear fender		Refer to "SEAT, CARRIERS, FENDERS AND FUEL TANK" in chapter 3. (Manual No.: 5TE2-AE1)
	Footrest boards		Refer to "FOOTREST BOARDS" in chapter 3. (Manual No.: 5TE2-AE1)
	Final gear oil		Drain.
	Rear arms and rear shock absorber		Refer to "REAR ARMS AND REAR SHOCK ABSORBERS".



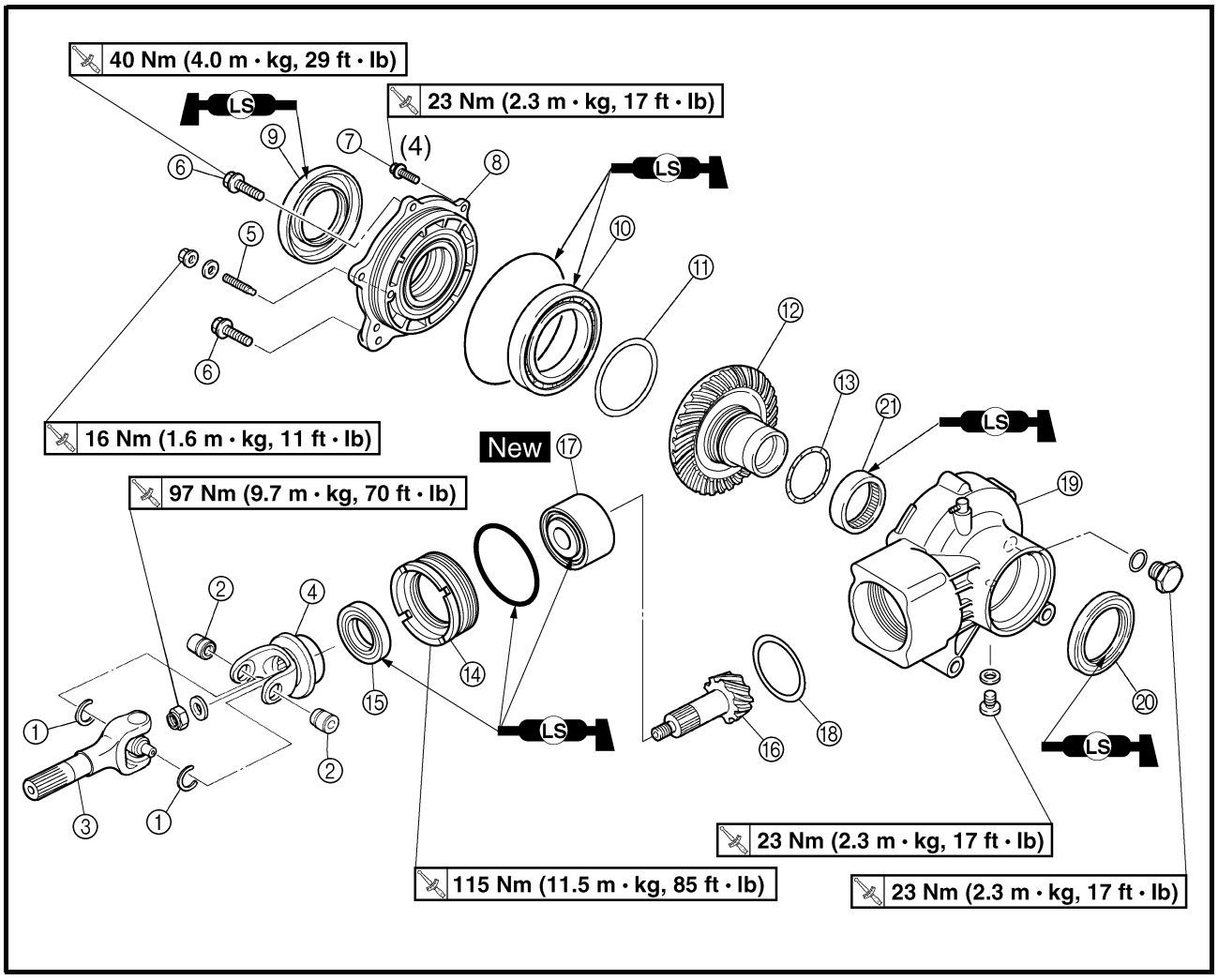
Order	Job/Part	Q'ty	Remarks
1	Final gear case skid plate	1	
2	Rectifier/regulator	1	
3	Air duct assembly 2	1	
4	Rear constant velocity joint	2	
5	Final drive gear case breather hose	1	Disconnect.
6	Final drive gear assembly	1	
7	Trailer hitch	1	
8	Sub-frame	1	
			For installation, reverse the removal procedure.



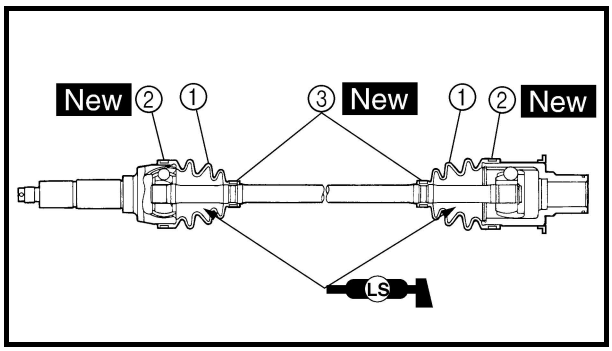
Order	Job/Part	Q'ty	Remarks
	Disassembling the rear constant velocity joint		Remove the parts in the order below.
①	Dust cover	1	
②	Circlip	1	
③	Boot band	2	
④	Boot band	2	
⑤	Dust boot	2	
⑥	Circlip	1	Refer to "ASSEMBLING THE REAR CONSTANT VELOCITY JOINTS".
⑦	Double off-set joint	1	
⑧	Snap ring	1	
⑨	Ball bearing	1	
⑩	Joint shaft assembly	1	
			For assembly, reverse the disassembly procedure.



Order	Job/Part	Q'ty	Remarks
	Disassembling the final drive gear		Remove the parts in the order below.
①	Circlip	2	Refer to "DISASSEMBLING THE FINAL DRIVE GEAR" and "ASSEMBLING THE FINAL DRIVE GEAR".
②	Bearing	2	
③	Drive shaft/universal joint yoke	1	
④	Universal joint yoke	1	
⑤	Ring gear stopper	1	
⑥	Bolt	2	
⑦	Bolt	4	**NOTE:** Working in a crisscross pattern, loosen each bolt 1/4 of a turn. After all the bolts are loosened, remove them.
⑧	Ring gear bearing housing	1	
⑨	Oil seal	1	
⑩	Bearing	1	



Order	Job/Part	Q'ty	Remarks
⑪	Ring gear shim	1	
⑫	Ring gear	1	
⑬	Thrust washer	1	
⑭	Bearing retainer	1	
⑮	Oil seal	1	
⑯	Final drive pinion gear	1	Refer to "REPLACING THE FINAL DRIVE PINION GEAR AND BEARING".
⑰	Bearing	1	
⑱	Final drive pinion gear shim	1	
⑲	Final drive gear case	1	
⑳	Oil seal	1	
㉑	Bearing	1	Refer to "REPLACING THE FINAL DRIVE ROLLER BEARING".
			For assembly, reverse the disassembly procedure.



ASSEMBLING THE REAR CONSTANT VELOCITY JOINTS

1. Apply:
   - lithium-soap base grease (into the ball joint assembly)
2. Install:
   - dust boots ①
   - boot bands ②, ③ New

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a. Apply lithium-soap base grease into the dust boots.

Lithium-soap base grease
40 g (1.4 oz) per dust boot (rear wheel side)
60 g (2.1 oz) per dust boot (final gear case side)

b. Install the dust boots.
c. Install the dust boot bands.

NOTE:

- The new boot bands may differ from the original ones.
- The dust boots should be fastened with the boot bands ③ at the grooves in the joint shaft.

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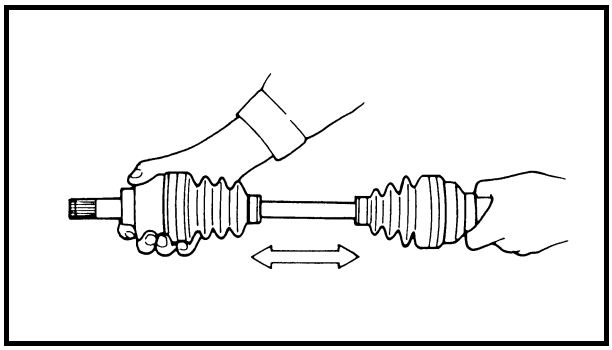
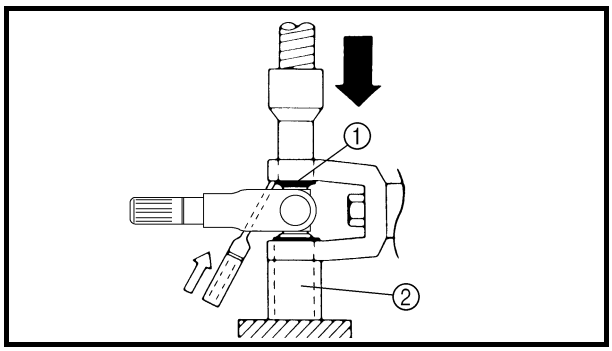
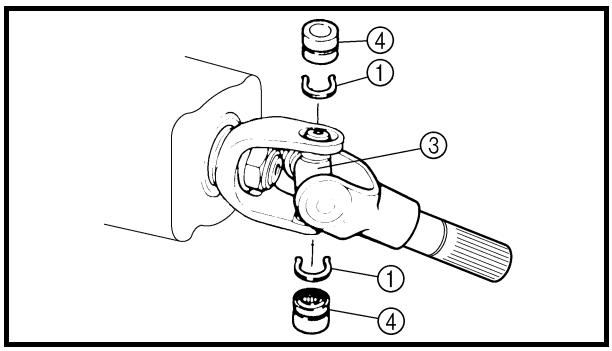


3. Check:
   - free play (thrust movement)
     Excessive play → Replace the joint assembly.





DISASSEMBLING THE FINAL DRIVE GEAR

1. Remove:
   - drive shaft assembly

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a. Remove the circlips ①.
b. Place the U-joint in a press.
c. With a suitable diameter pipe ② beneath the yoke ③, press the bearing ④ into the pipe as shown.

NOTE:

It may be necessary to lightly tap the yoke with a punch.

d. Repeat the steps for the opposite bearing.
e. Remove the yoke.

NOTE:

It may be necessary to lightly tap the yoke with a punch.

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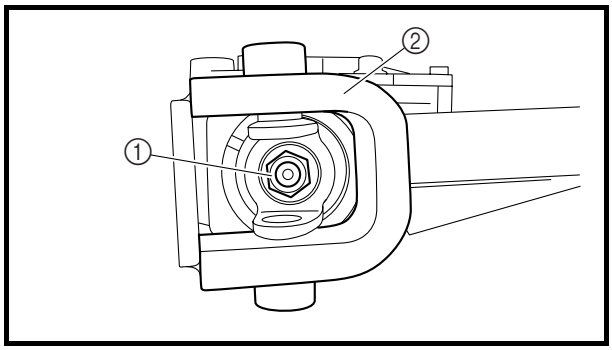
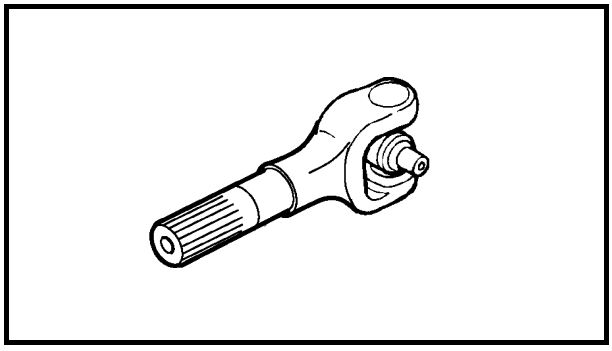


2. Remove:
   - nut ①
   - washer
   - universal joint yoke

NOTE:

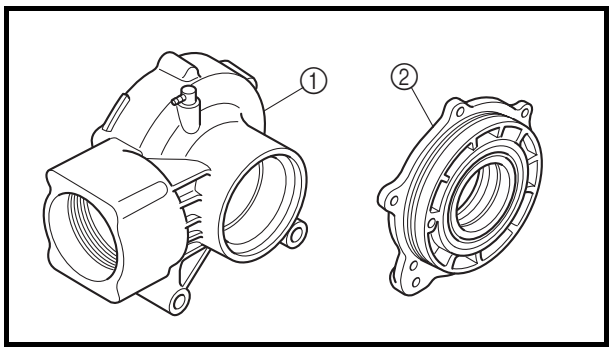
Use the universal joint holder ② to hold the universal joint yoke.

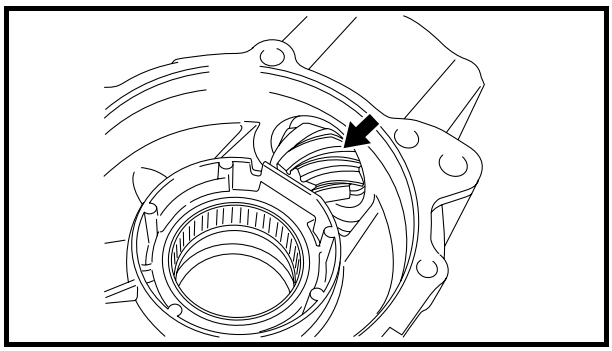
Universal joint holder
P/N. YM-04062, 90890-04062



CHECKING THE DRIVE SHAFT/UNIVERSAL JOINT YOKE

1. Check:
   - drive shaft/universal joint yoke (splines)
     Wear/damage → Replace.





CHECKING THE FINAL DRIVE GEAR

1. Check:
   - final gear case ①
   - bearing housing (ring gear) ②
     Cracks/damage → Replace.

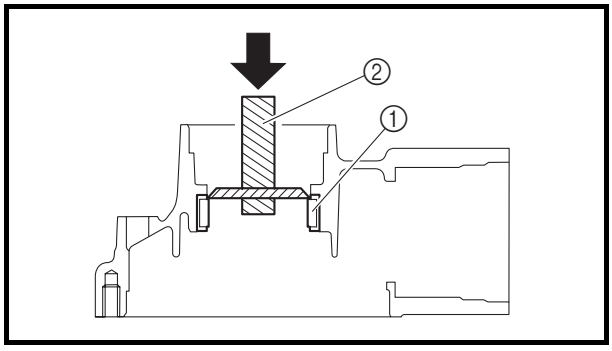
NOTE:

When the final gear case and/or the ring gear bearing housing are replaced, be sure to adjust the shim of the final drive pinion gear and/or ring gear.

2. Check:
   - gear teeth
     Pitting/galling/wear → Replace the drive pinion gear and ring gear as a set.
     Refer to "REPLACING THE FINAL DRIVE PINION GEAR AND BEARING".
   - oil seals
   - O-rings
     Damage → Replace.
3. Check:
   - bearings
     Damage → Replace.

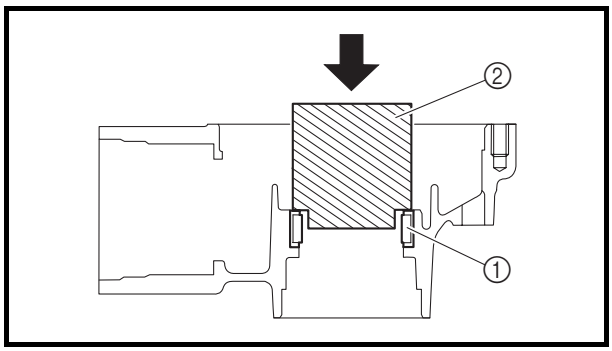
NOTE:

- Reusing roller bearing is acceptable, but Yamaha recommends installing new ones. Do not reuse oil seals.
- When the final drive pinion gear and/or ring gear are replaced, be sure to adjust the shim of the final drive pinion gear and/or ring gear.

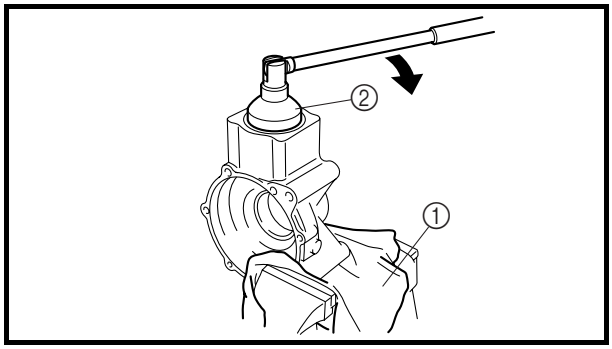


REPLACING THE FINAL DRIVE ROLLER BEARING

1. Remove:
   - roller bearing ①
     Use a suitable press tool ② and an appropriate support for the main housing.



2. Install:
   • roller bearing ①
   Use a suitable press tool ② and a press to install the above component into the main housing.



REPLACING THE FINAL DRIVE PINION GEAR AND BEARING

1. Remove:
   • bearing retainer

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a. Place a folded rag ①.
b. Secure the final drive gear case edge in the vise.
c. Attach the bearing retainer wrench ②.

	**Bearing retainer wrench P/N. YM-04050, 90890-04050**

d. Remove the bearing retainer.

CAUTION:

The bearing retainer has left-handed threads. To loosen the retainer, turn it clockwise.

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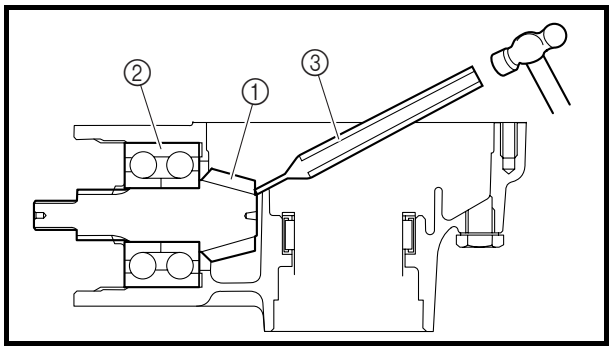

2. Remove:
   • final drive pinion gear ①
   • final drive pinion gear bearing ②

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a. Heat the main housing only to 150°C (302 °F).
b. Remove the final drive pinion gear assembly with an appropriately shaped punch ③.
c. Remove the final drive pinion gear bearing ② from the final drive pinion gear ①.

NOTE:

The removal of the final drive pinion gear is difficult and seldom necessary.

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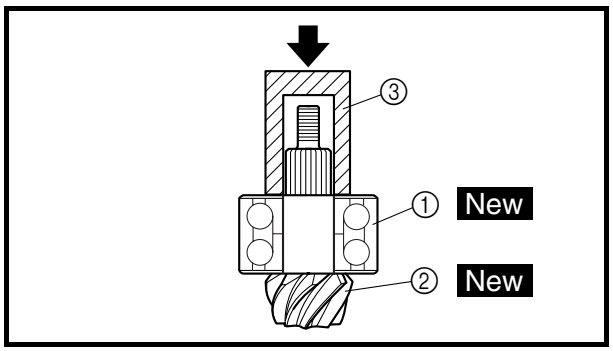
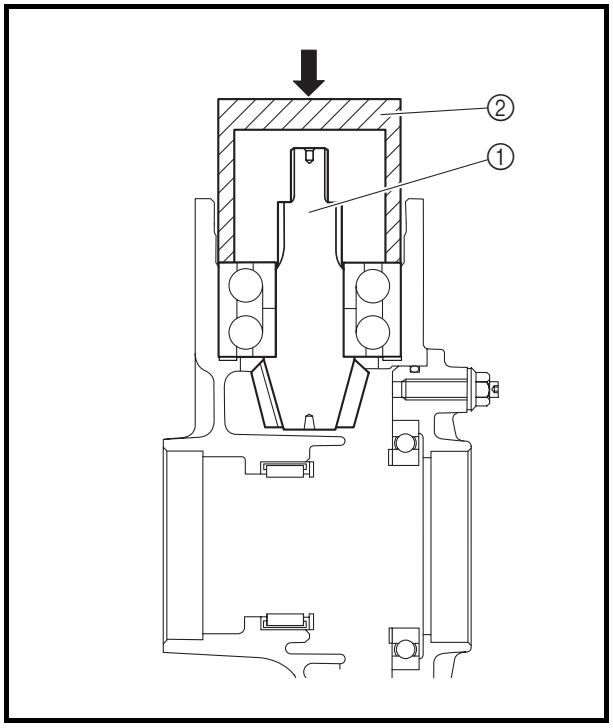
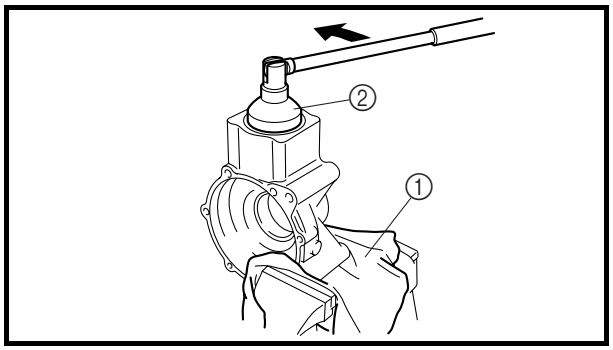
3. Select:
   • final drive pinion gear shim
   Refer to “POSITIONING THE FINAL DRIVE PINION GEAR”.



4. Install:
   - final drive pinion gear bearing ① New
   - final drive pinion gear ② New
   Use a suitable press tool ③ and a press to install the final drive pinion gear bearing into the final drive pinion gear.



5. Install:
   - final drive pinion gear shim
   - final drive pinion gear assembly ①
   Use a suitable press tool ② and a press to install the above components into the final drive gear case.



6. Install:
   - bearing retainer

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a. Place a folded rag ①.
b. Secure the final drive gear case edge in the vise.
c. Attach the bearing retainer wrench ②.

	**Bearing retainer wrench** **P/N. YM-04050, 90890-04050**

d. Tighten the bearing retainer.

	**Bearing retainer** **115 Nm (11.5 m · kg, 85 ft · lb)**

CAUTION:

The bearing retainer has left-hand threads. Turn the retainer counterclockwise to tighten it.

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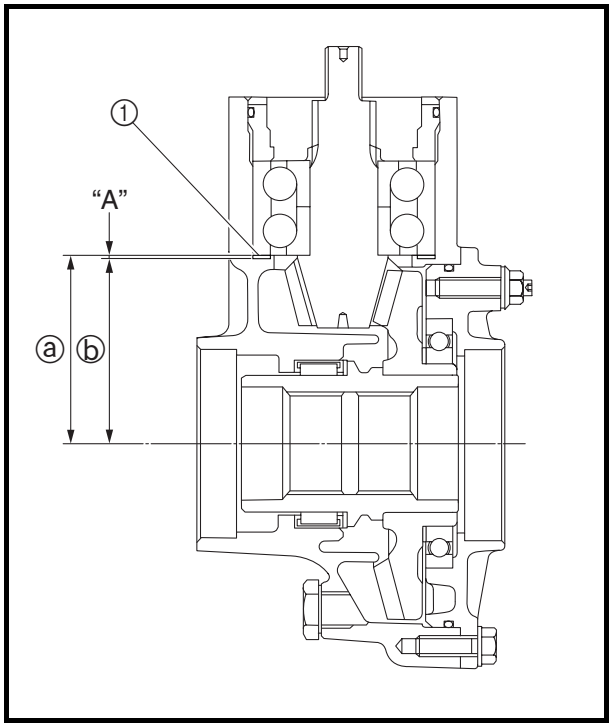
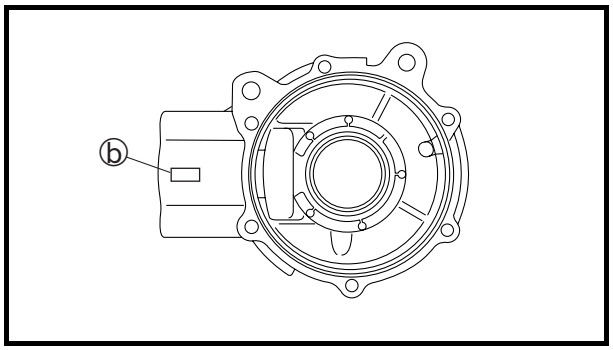
POSITIONING THE FINAL DRIVE PINION GEAR

When the final drive pinion gear, ring gear, final drive gear case and/or ring gear bearing housing are replaced, be sure to adjust the positions of the final drive pinion gear using shim.





Final drive pinion gear shim selection

1. Select:
   - final drive pinion gear shim ①

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a. To find the final drive pinion gear shim thickness "A", use the following formula.

Final drive pinion gear shim thickness "A" = ⓐ – ⓑ

ⓐ = 76.0 mm

ⓑ = a numeral (usually a decimal number) on the final drive gear case either added to or subtracted from "75"

Example:

1) ⓐ = 76
2) If "51" is stamped on the final drive gear case,
   ⓑ = 75 + 0.51 = 75.51
3) Therefore, "A" is 0.49.
   "A" = 76 – 75.51
   = 0.49
4) Round off the hundredth digit and select the appropriate shim.
   In the example above, the calculated number is 0.49. The chart instructs you to round off 9 to 10 at the hundredth place. Thus, the shim thickness is 0.50 mm.

Hundredths	Rounded value
0, 1, 2	0
3, 4, 5, 6, 7	5
8, 9	10

Shims are supplied in the following thicknesses.

Final drive pinion gear shim			
Thickness (mm)	0.15	0.30	0.40
	0.45	0.50	

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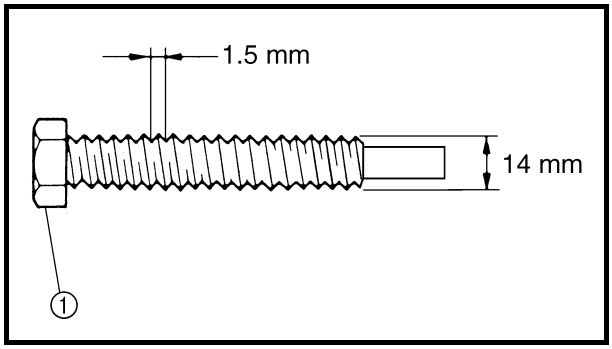


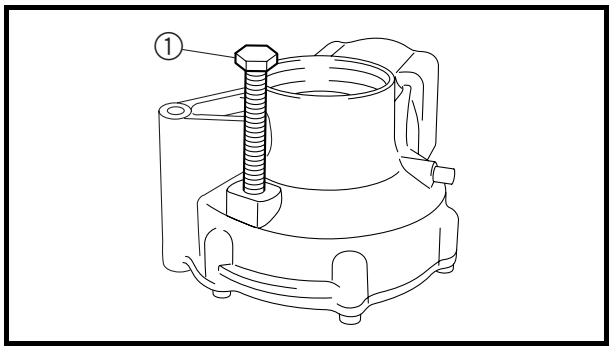
MEASUREMENT AND ADJUSTING THE FINAL GEAR LASH

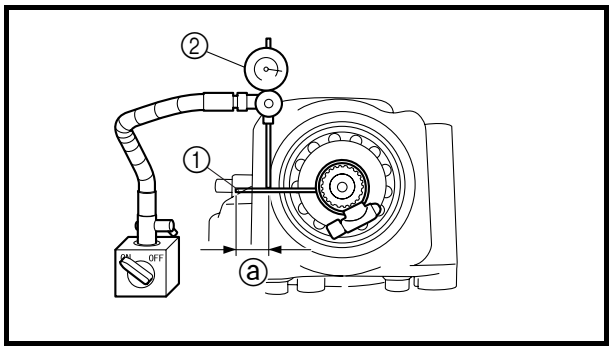
Final gear lash measurement

1. Remove:
   - drain plug
   - gasket
2. Install:
   - a bolt of the specified size ①
     (into the drain plug hole)

CAUTION:

Finger tighten the bolt until it holds the ring gear. Otherwise, the ring gear will be damaged.

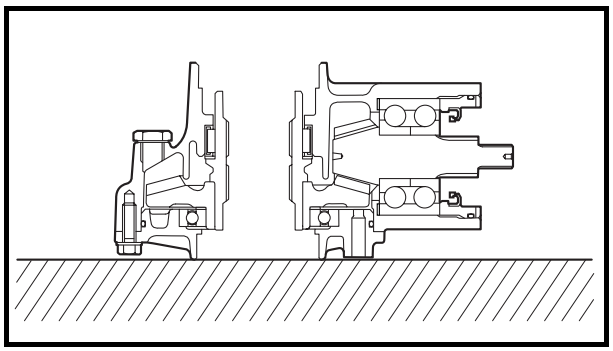




3. Attach:
   - gear lash measurement tool ①
   - dial gauge ②

Gear lash measurement tool P/N. YM-01467, 90890-01467

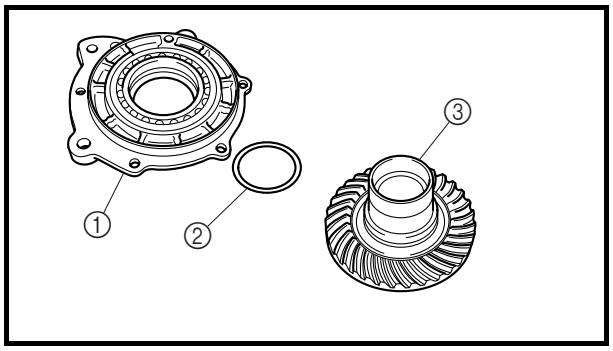
ⓐ Measuring point is 34.15 mm (1.34 in)



4. Measure:
   • gear lash
   Gently rotate the gear coupling from engagement to engagement.

	Final gear lash **0.1 ~ 0.2 mm (0.004 ~ 0.008 in)**

NOTE:
- Secure the gear case with the ring gear bearing housing side facing down.
- Measure the gear lash at four positions. Rotate the shaft 90° each time.



Final gear lash adjustment
1. Remove:
   • bearing housing ①
   • ring gear shim ②
   • ring gear ③

2. Adjust:
   • gear lash

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a. Select suitable shim and thrust washer using the following chart.

Too little gear lash	**Reduce shim thickness.**
Too large gear lash	**Increase shim thickness.**

	Ring gear shim			
Thickness (mm)	**0.25** **0.40**	**0.30** **0.45**	**0.35** **0.50**	

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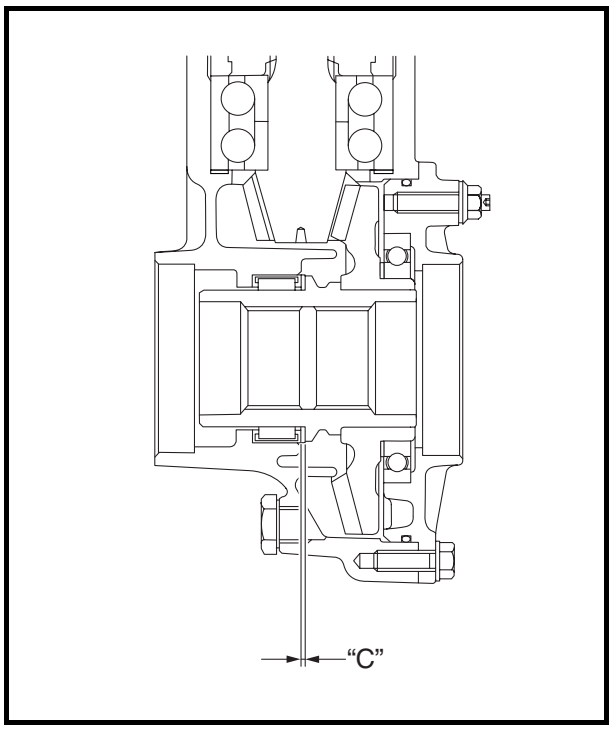

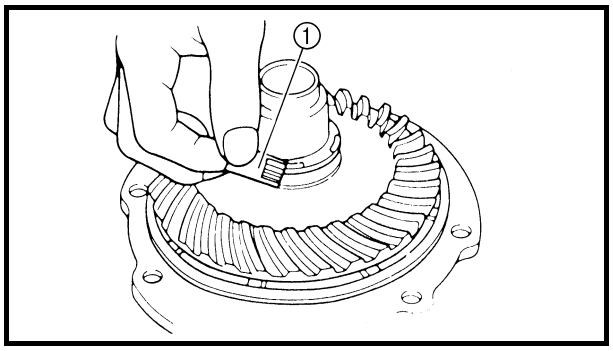

Ring gear thrust clearance adjustment

1. Measure/adjust:
   - ring gear thrust clearance "C"

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a. Place four pieces of Plastigauge® between the thrust washer and the ring gear.

NOTE:

Install the thinnest thrust washer from the following chart.

	Thrust washer		
Thickness (mm)	1.0	1.1	1.2
	1.3	1.35	1.4
	1.45	1.5	1.55
	1.6	1.7	1.8
	1.9	2.0	2.1

b. Install the ring gear assembly and tighten the bolts to specification.

M8 bolts (bearing housing)
23 Nm (2.3 m · kg, 17 ft · lb)
M10 bolts (bearing housing)
40 Nm (4.0 m · kg, 29 ft · lb)

NOTE:

Do not turn the final drive pinion gear and ring gear when measuring the clearance with Plastigauge®.

c. Remove the ring gear assembly.
d. Measure the thrust clearance. Calculate the width of the flattened Plastigauge® ①.

Ring gear thrust clearance
0.1 ~ 0.2 mm (0.004 ~ 0.008 in)

e. If out of specification, repeat the measurement steps with a slightly thicker thrust washer until the ring gear thrust clearance is within the specified limits.

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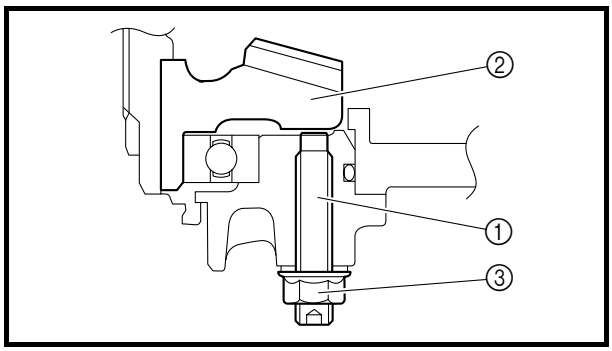

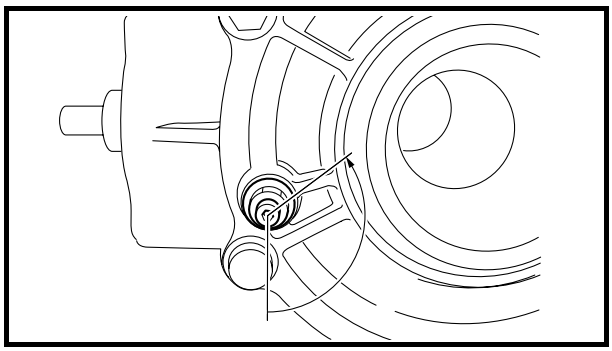

Ring gear stopper adjustment

1. Install:
   - ring gear stopper
   - nut
2. Adjust:
   - ring gear stopper clearance

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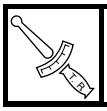
a. Finger tighten the ring gear stopper ① until it contacts the ring gear ②.
b. Turn the ring gear stopper 120° counterclockwise.
c. Tighten the ring gear stopper nut ③.

	**Ring gear stopper nut** **16 Nm (1.6 m · kg, 11 ft · lb)**

NOTE:

Apply Quick Gasket® to the ring gear stopper threads.

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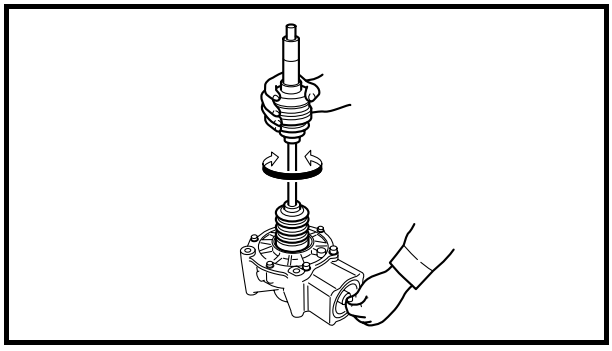
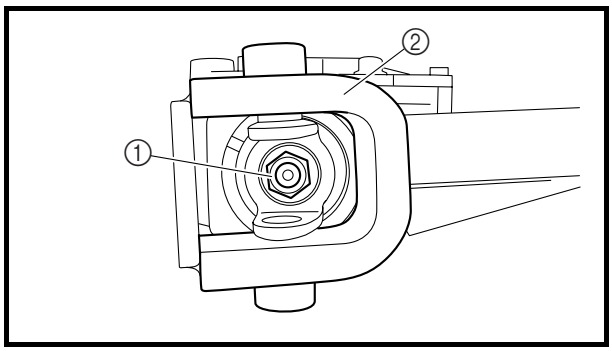
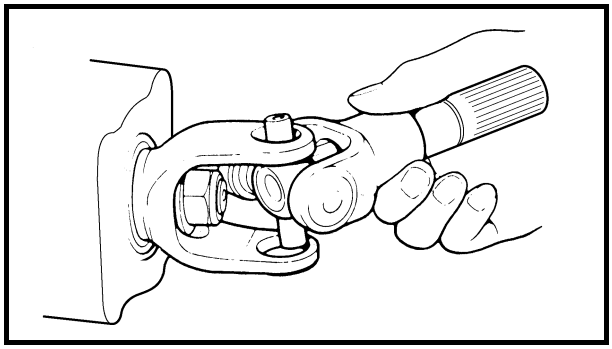
ASSEMBLING THE FINAL DRIVE GEAR

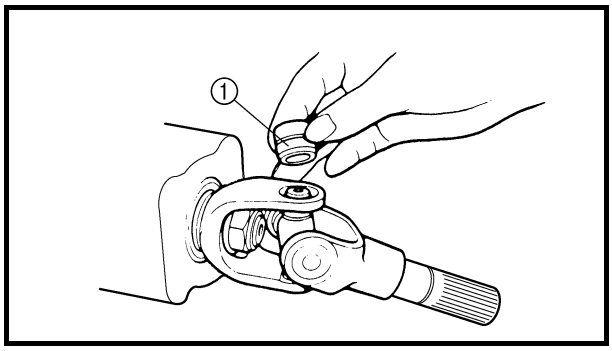
1. Adjust:
   - final gear lash
     Refer to "MEASUREMENT AND ADJUSTING THE FINAL GEAR LASH".

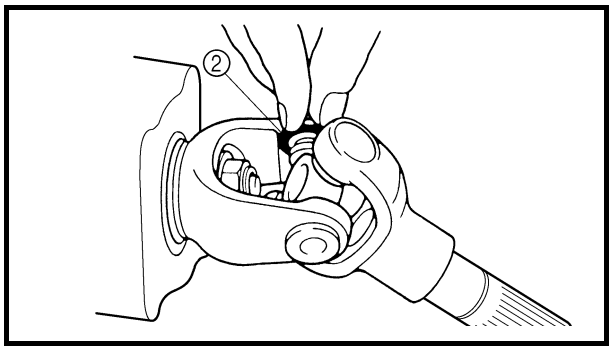


2. Check:
   - final drive gear operation
     Unsmooth operation → Replace the final drive gear assembly.
     Insert the double off-set joint into the final drive gear, and turn the gear back and forth.









3. Install:
   - universal joint yoke
   - washer
   - nut ①

97 Nm (9.7 m · kg, 70 ft · lb)

NOTE:

Use the universal joint holder ② to hold the yoke.

Universal joint holder
P/N. YM-04062, 90890-04062

4. Install:
   - drive shaft assembly

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a. Install the opposite yoke into the U-joint.
b. Apply wheel bearing grease to the bearings.
c. Install the bearings ① onto the yoke.

CAUTION:

Check each bearing. The needles can easily fall out of their races. Slide the yoke back and forth on the bearings; the yoke will not go all the way onto a bearing if a needle is out of place.

d. Press the bearings into the U-joint using a suitable socket.

NOTE:

The bearing must be inserted far enough into the U-joint so that the circlip can be installed.

e. Install the circlips ② into the groove of each bearing.

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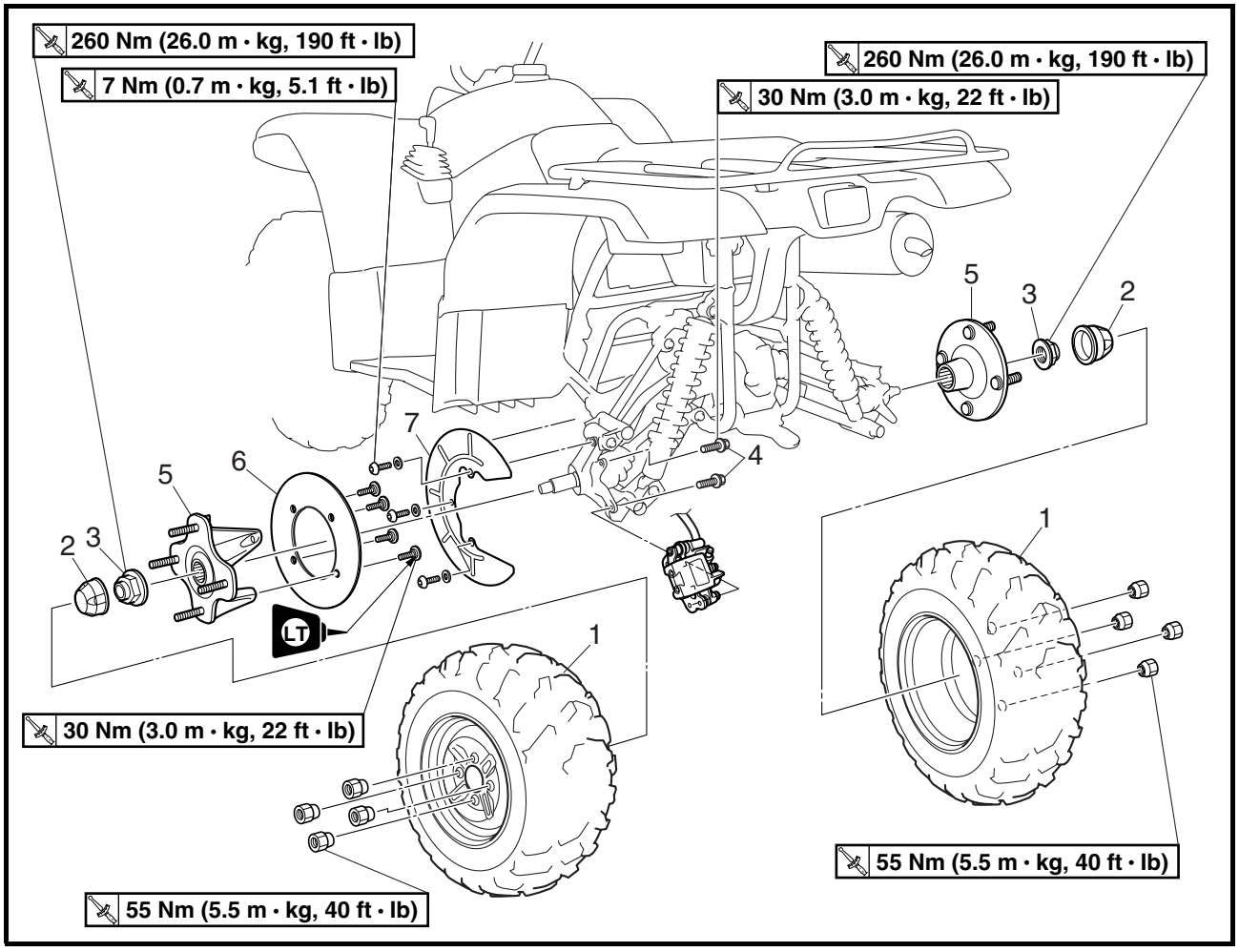
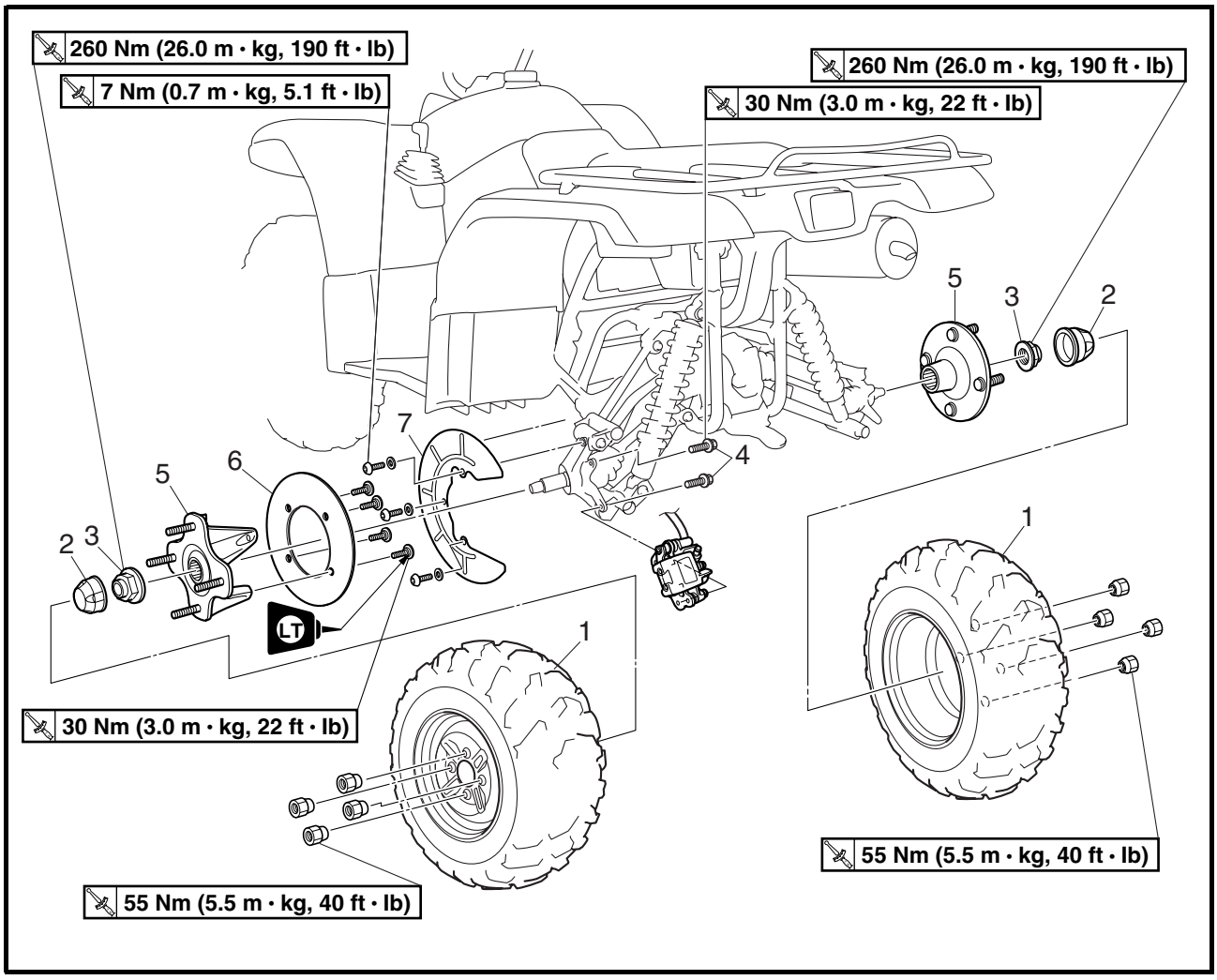
CHASSIS

FRONT AND REAR WHEELS

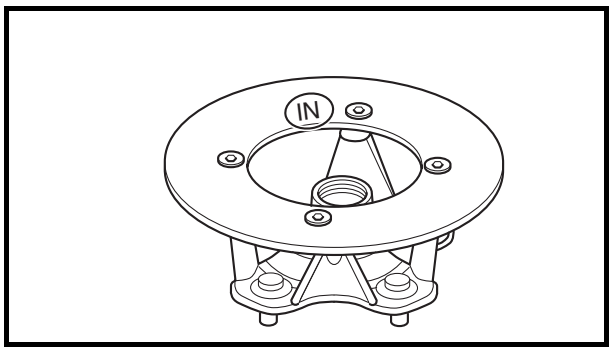
REAR WHEELS



Order	Job/Part	Q'ty	Remarks
	Removing the rear wheel		Remove the parts in the order below. Place the machine on a level surface. **⚠ WARNING** **Securely support the machine so there is no danger of it falling over.**
1	Rear wheel	2	Refer to "INSTALLING THE WHEELS" in chapter 8. (Manual No.: 5TE2-AE1)
2	Wheel cap	2	
3	Axle nut	2	Refer to "INSTALLING THE REAR WHEEL HUBS".
4	Brake caliper mounting bolt	2	
5	Wheel hub	2	
6	Brake disc	1	



Order	Job/Part	Q'ty	Remarks
7	Brake disc guard	1	For installation, reverse the removal procedure.

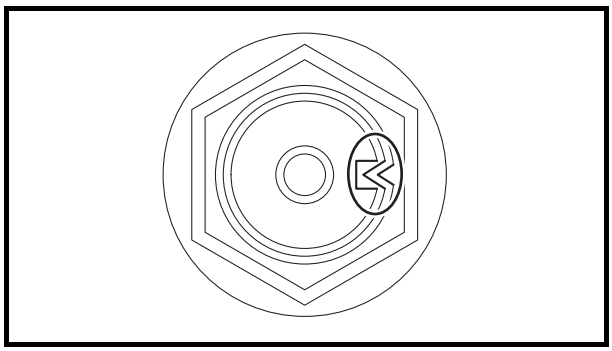


INSTALLING THE REAR BRAKE DISC

1. Install:
   - brake disc — 30 Nm (3.0 m · kg, 22 ft · lb)

NOTE:

Install the brake disc to the rear wheel hub with the “IN” mark facing away from the wheel hub.



INSTALLING THE REAR WHEEL HUBS

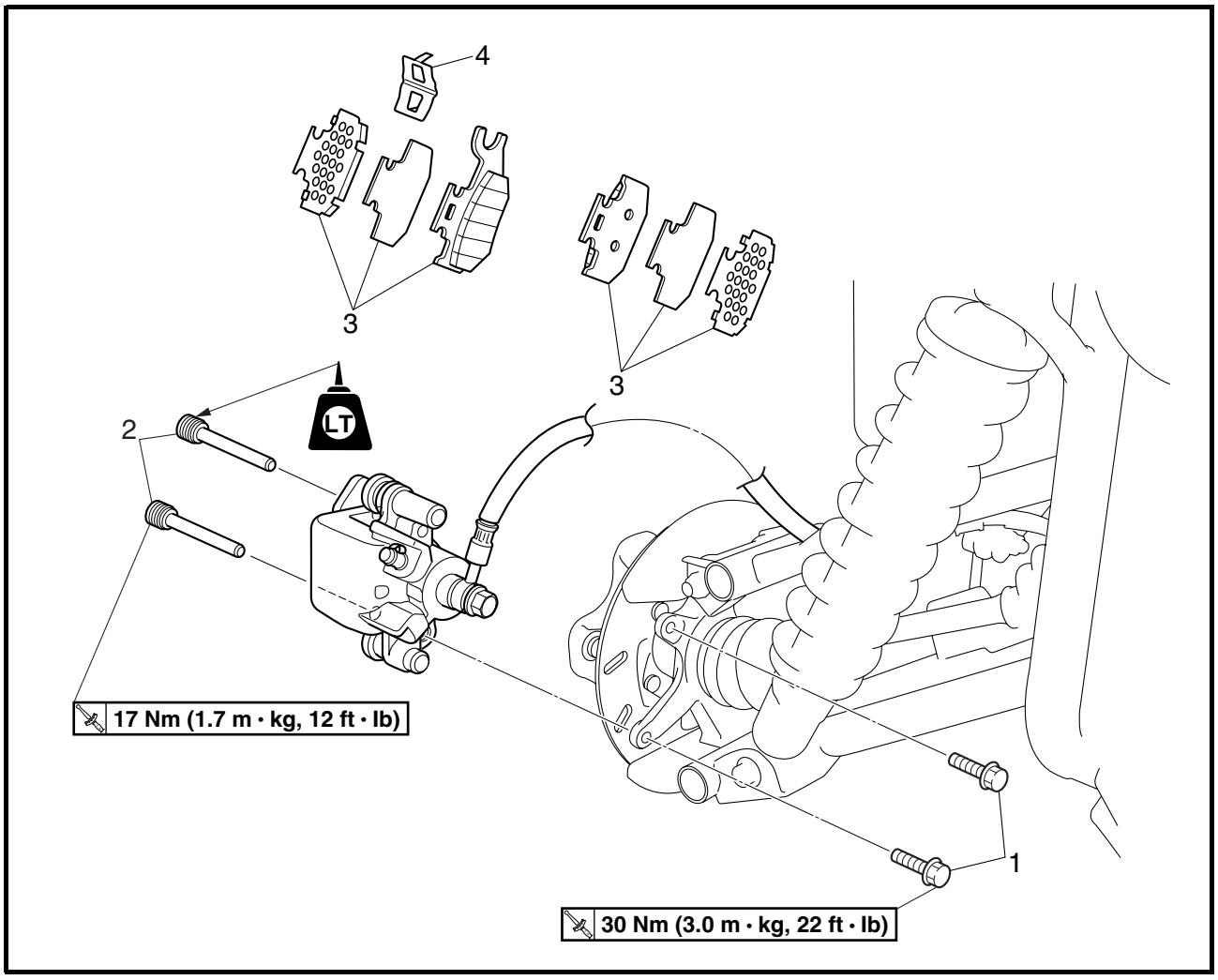
1. Install:
   - axle nut New — 260 Nm (26.0 m · kg, 190 ft · lb)

NOTE:

- Do not apply oil to the seat of the nut.
- After tightening the nut, stake the collar of the nut into the notch of the shaft.

REAR BRAKE

REAR BRAKE PADS



Order	Job/Part	Q'ty	Remarks
	Removing the rear brake pads		Remove the parts in the order below.
	Rear wheel (left)		Refer to "FRONT AND REAR WHEELS".
1	Brake caliper mounting bolt	2	
2	Brake pad holding bolt	2	Refer to "REPLACING THE REAR BRAKE PADS".
3	Brake pad/insulator/pad shim	2/2/2	
4	Pad spring	1	
			For installation, reverse the removal procedure.

CAUTION:

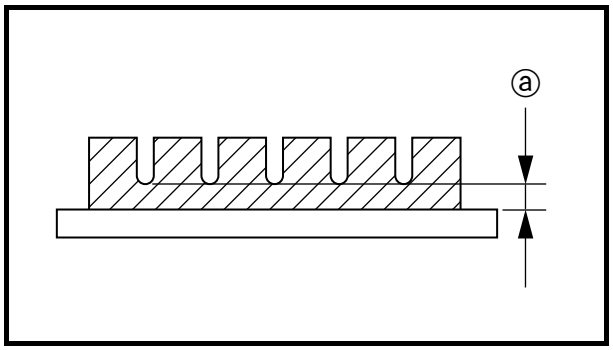
Disc brake components rarely require disassembly. DO NOT:

- **disassemble components unless absolutely necessary;**
- **use solvents on internal brake components;**
- **use spent brake fluid for cleaning; (use only clean brake fluid)**
- **allow brake fluid to come in contact with the eyes, as this may cause eye injury;**
- **splash brake fluid onto painted surfaces or plastic parts, as this may cause damage;**
- **disconnect any hydraulic connection, as this would require the entire brake system to be disassembled, drained, cleaned, properly filled and bled after reassembly.**

REPLACING THE REAR BRAKE PADS

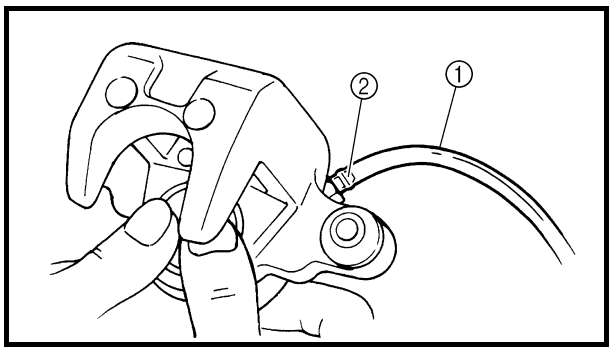
NOTE:

It is not necessary to disassemble the brake caliper and brake hose to replace the brake pads.



1. Measure:
   - brake pad wear limit ⓐ
     Out of specification → Replace the brake pads as a set.

Brake pad wear limit
1 mm (0.04 in)



2. Install:
   • brake pads
   • brake pad spring

NOTE:
Always install new brake pads, brake pad shims, insulators and brake pad spring as a set.

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a. Connect a suitable hose ① tightly to the brake caliper bleed screw ②. Put the other end of this hose into an open container.
b. Loosen the brake caliper bleed screw and, using a finger, push the caliper piston into the brake caliper.
c. Tighten the brake caliper bleed screw.

Brake caliper bleed screw
6 Nm (0.6 m · kg, 4.3 ft · lb)

d. Install new brake pads, new insulators, new pad shims and a new brake pad spring.
e. Install the holding bolts and brake caliper.

Brake pad holding bolt
17 Nm (1.7 m · kg, 12 ft · lb)
Brake caliper mounting bolt
30 Nm (3.0 m · kg, 22 ft · lb)

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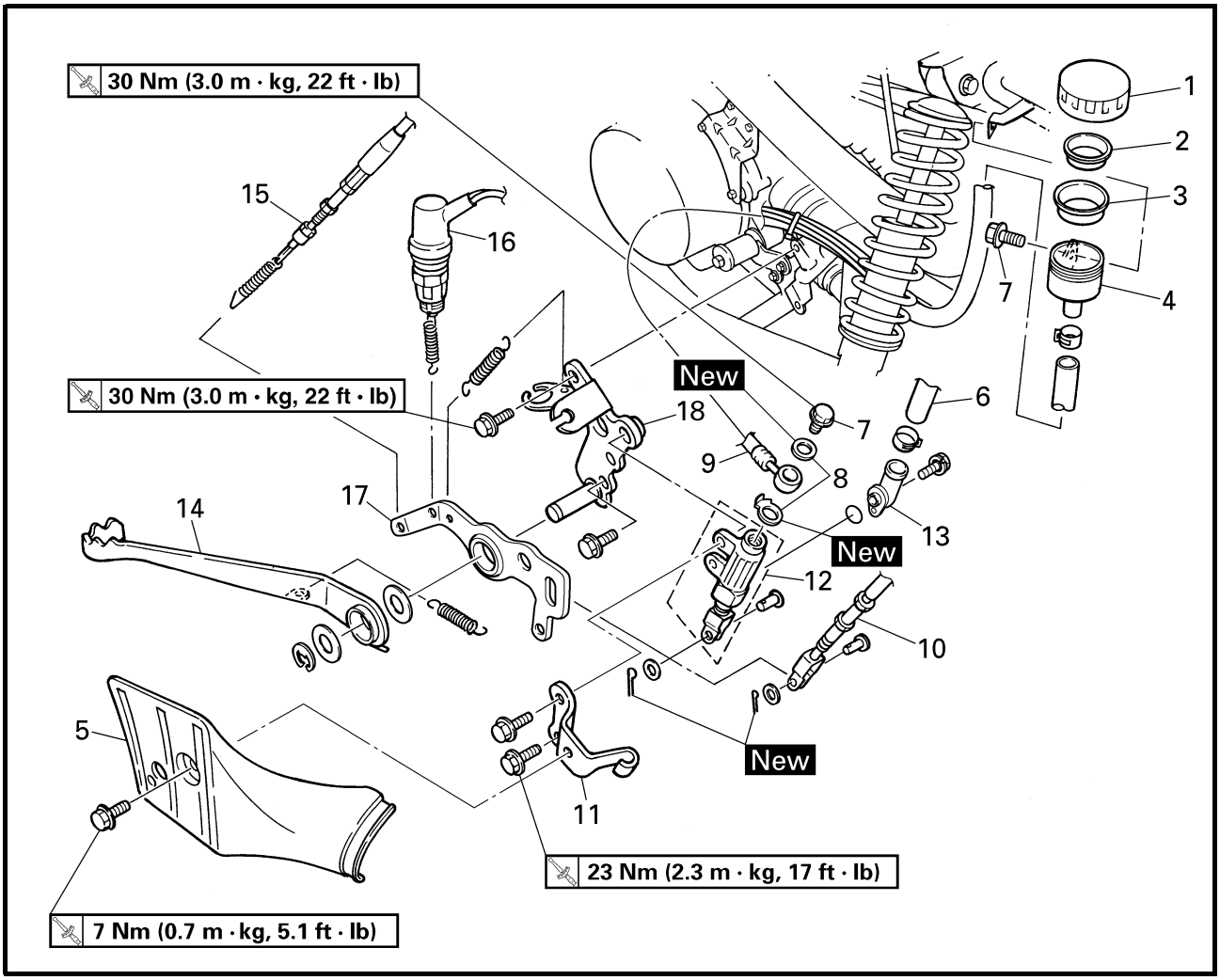
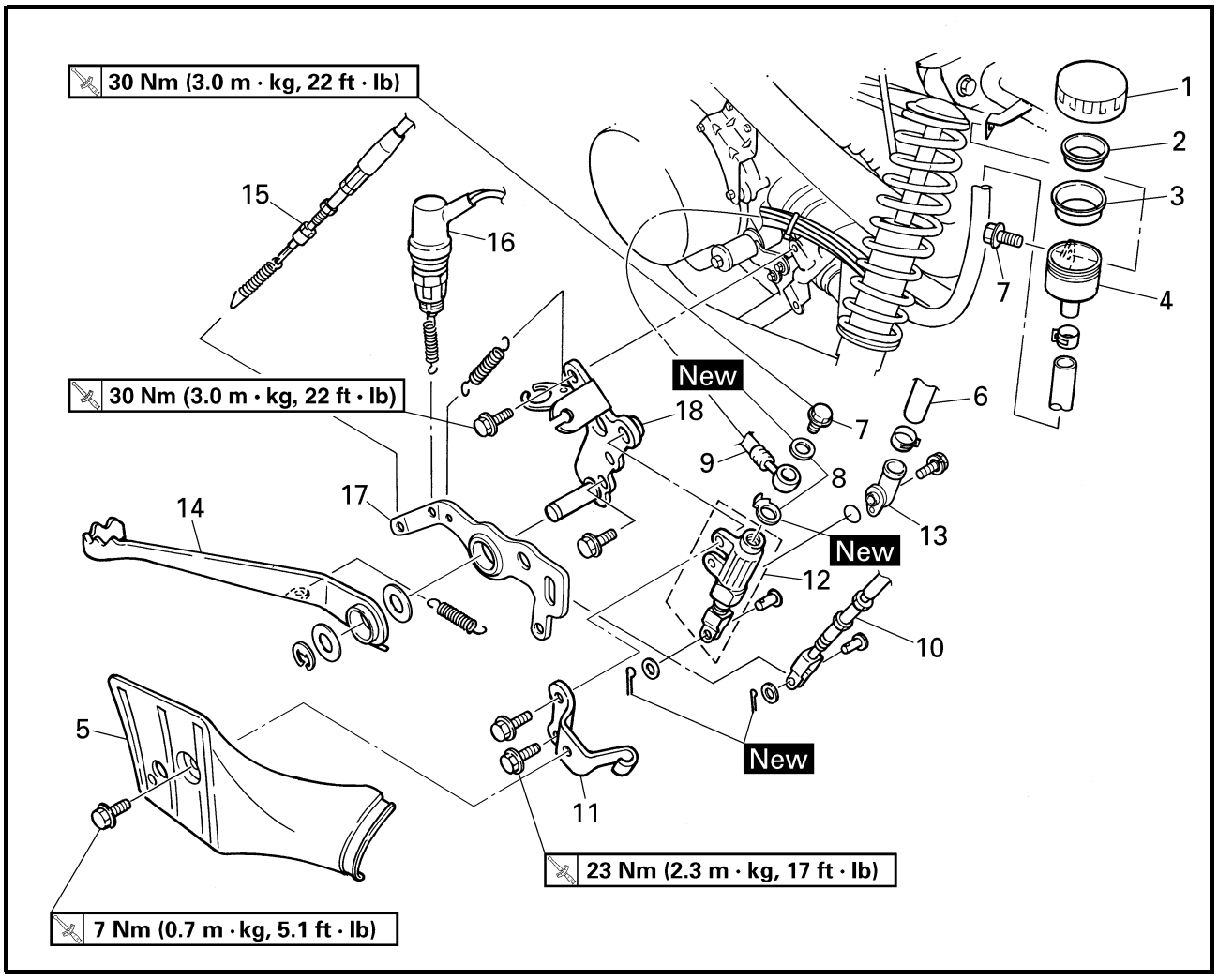
3. Check:
   • brake fluid level
   Refer to “CHECKING THE BRAKE FLUID LEVEL”.
4. Check:
   • brake lever or brake pedal operation
   Soft or spongy feeling → Bleed the rear brake system.
   Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM”.

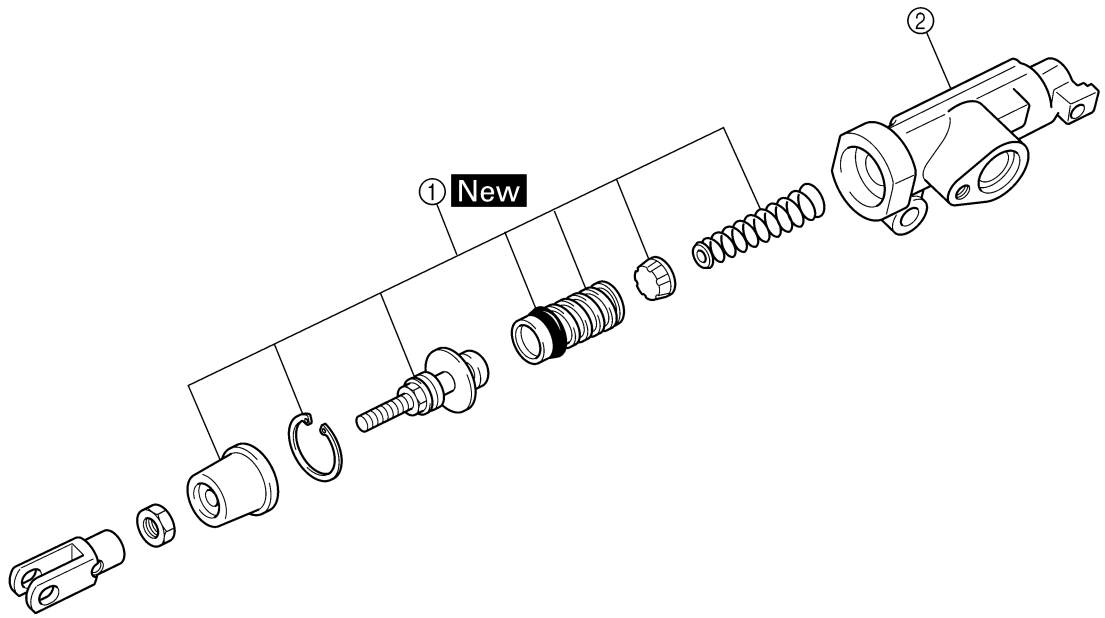
REAR BRAKE MASTER CYLINDER



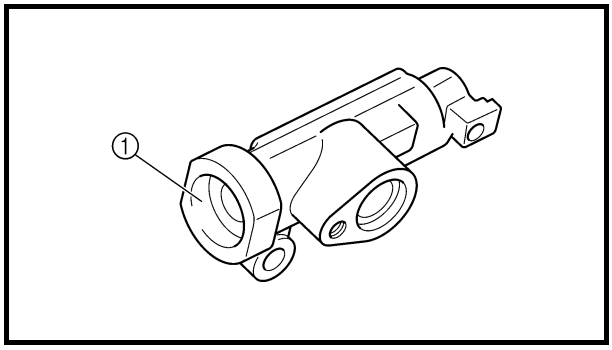
Order	Job/Part	Q'ty	Remarks
	Removing the rear brake master cylinder		Remove the parts in the order below.
	Front fender		Refer to "SEAT, CARRIERS, FENDERS AND FUEL TANK".
	Brake fluid		Drain.
1	Brake fluid reservoir cap	1	
2	Brake fluid reservoir diaphragm holder	1	
3	Brake fluid reservoir diaphragm	1	
4	Brake fluid reservoir	1	
5	Brake master cylinder cover	1	
6	Brake fluid reservoir hose	1	
7	Union bolt	1	Refer to "INSTALLING THE REAR BRAKE MASTER CYLINDER".
8	Copper washer	2	
9	Brake hose	1	

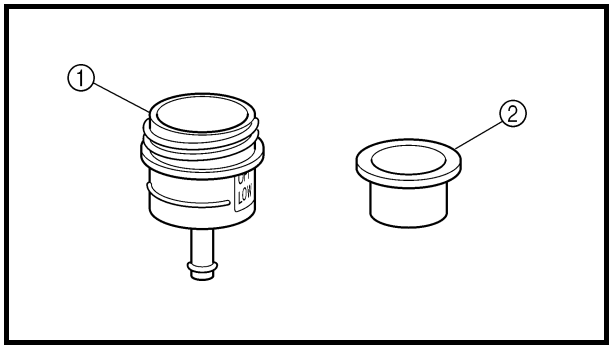


Order	Job/Part	Q'ty	Remarks
10	Brake cable	1	Disconnect.
11	Bracket	1	
12	Brake master cylinder	1	
13	Hose joint	1	
14	Brake pedal	1	
15	Select lever control cable	1	Disconnect.
16	Rear brake light switch	1	
17	Bracket	1	
18	Brake master cylinder bracket	1	
			For installation, reverse the removal procedure.



Order	Job/Part	Q'ty	Remarks
	Disassembling the rear brake master cylinder		Remove the parts in the order below.
①	Brake master cylinder kit	1	Refer to "ASSEMBLING THE REAR BRAKE MASTER CYLINDER".
②	Brake master cylinder	1	
			For assembly, reverse the disassembly procedure.





CHECKING THE MASTER CYLINDER

1. Check:
   - brake master cylinder ①
     Wear/scratches → Replace the brake master cylinder assembly.
   - brake master cylinder body
     Cracks/damage → Replace.
   - brake fluid delivery passage
     (brake master cylinder body)
     Blockage → Blow out with compressed air.
2. Check:
   - rear brake fluid reservoir ①
   - rear brake fluid reservoir diaphragm ②
     Cracks/damage → Replace.

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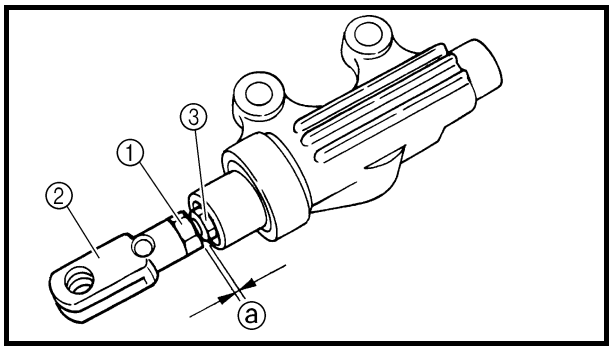
ASSEMBLING THE REAR BRAKE MASTER CYLINDER

⚠ WARNING

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

Recommended brake fluid
DOT 4

- **Whenever a master cylinder is disassembled, replace the piston seals and dust seals.**



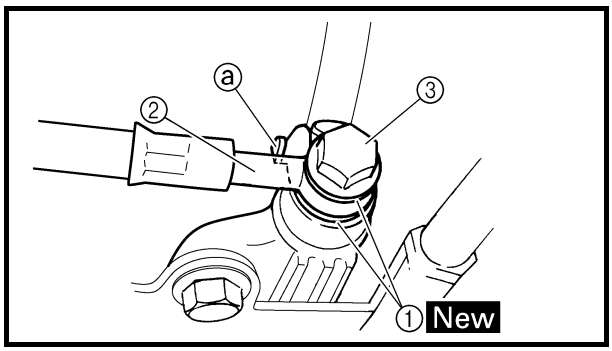
1. Install:
   - brake master cylinder kit
   - nut ①
   - joint ②

NOTE:

Turn the adjusting bolt ③ until the clearance ⓐ is within the specified limits when install the joint ②.

Clearance ⓐ
4 ~ 6 mm (0.16 ~ 0.24 in)

2. Tighten:
   - nut ①



INSTALLING THE REAR BRAKE MASTER CYLINDER

1. Install:
   - copper washers ① New
   - brake hose ②
   - union bolt ③ **30 Nm (3.0 m · kg, 22 ft · lb)**

CAUTION:

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

⚠ WARNING

Proper brake hose routing is essential to insure safe machine operation. Refer to "CABLE ROUTING".

2. Fill:
   - brake fluid reservoir

Recommended brake fluid
DOT 4

CAUTION:

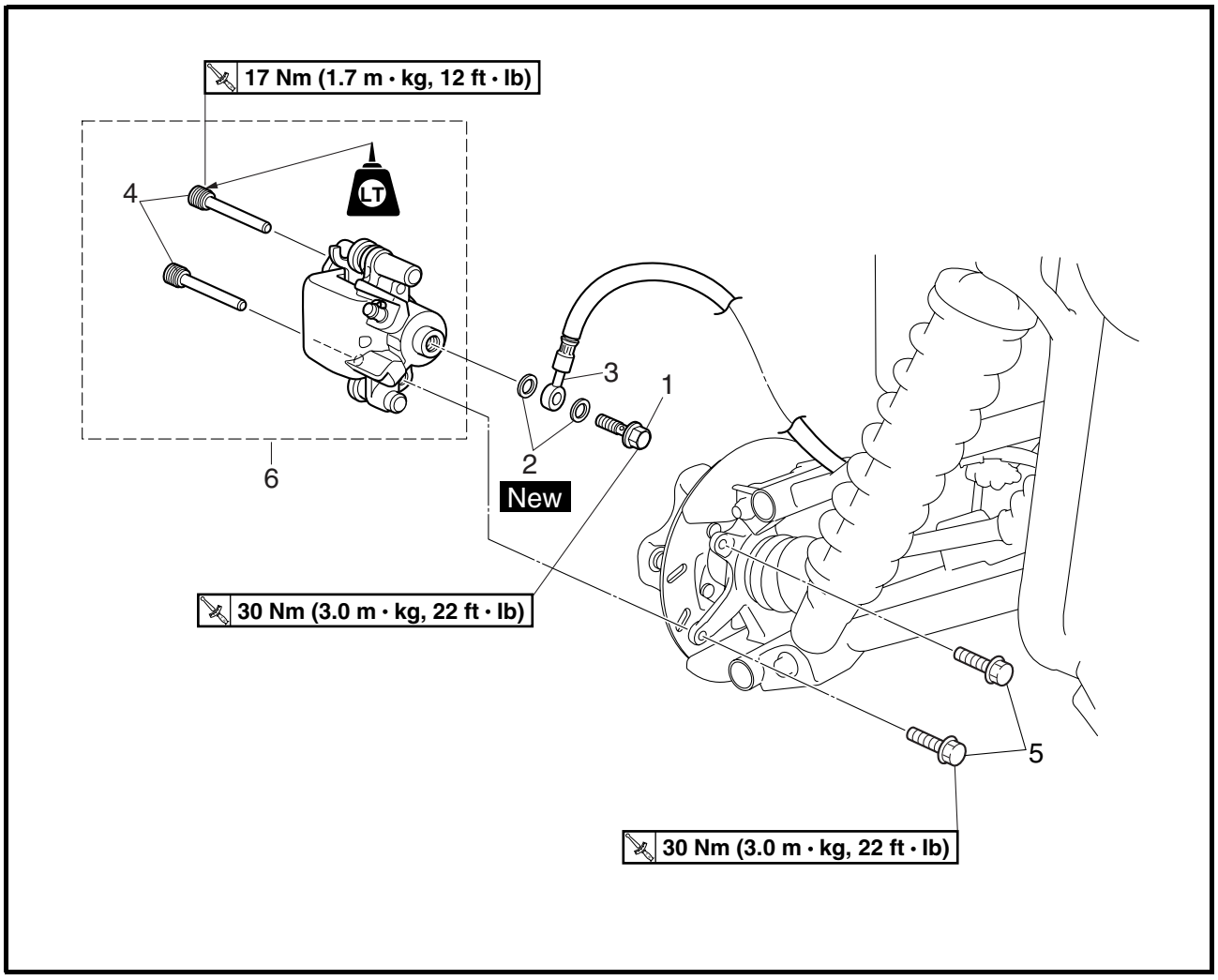
Brake fluid may damage painted surfaces or plastic parts. Always clean up spilled brake fluid immediately.

⚠ WARNING

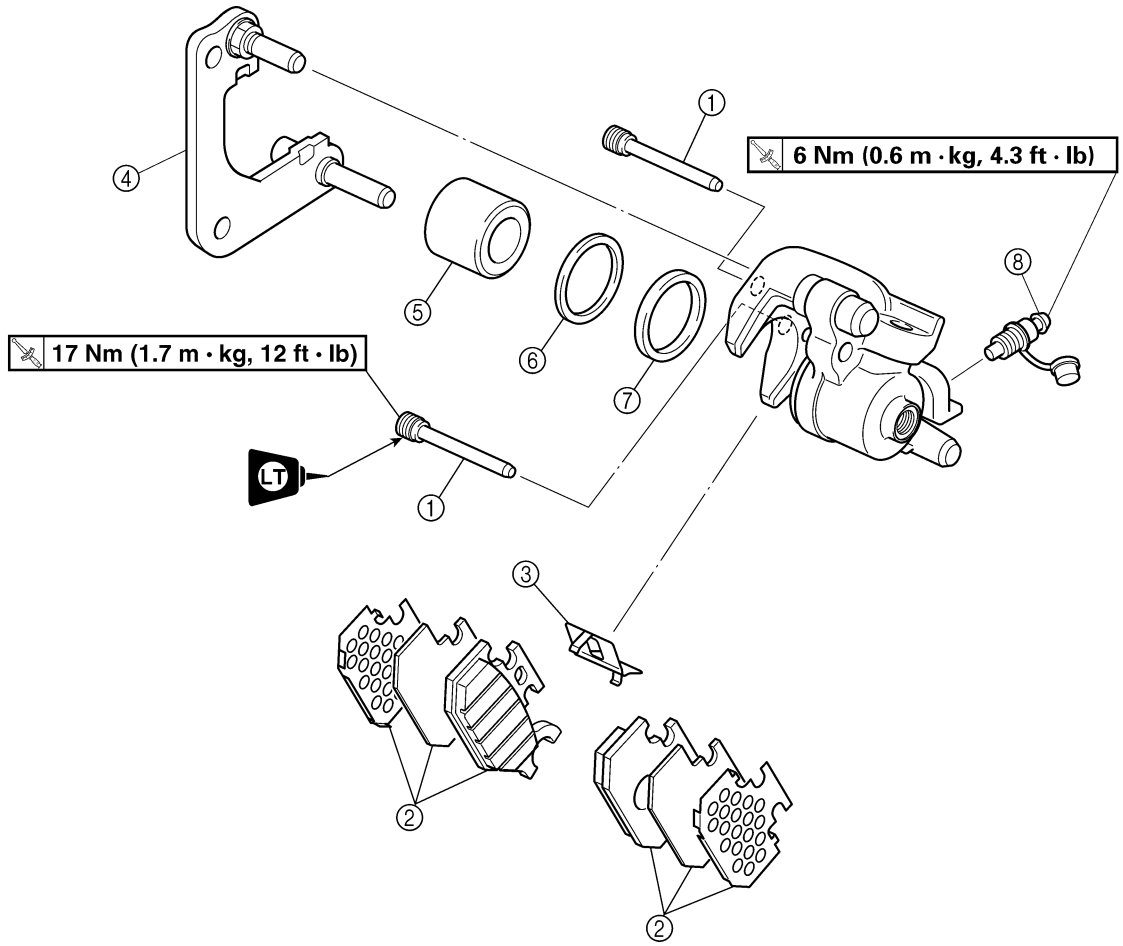
- **Use only the designated quality brake fluid: other brake fluids may deteriorate the rubber seals, causing leakage and poor brake performance.**
- **Refill with the same type of brake fluid: mixing brake fluids may result in a harmful chemical reaction and lead to poor brake performance.**
- **Be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

3. Air bleed:
   • brake system
   Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM”.
4. Check:
   • brake fluid level
   Brake fluid level is under the “LOWER” level line → Fill up.
   Refer to “CHECKING THE BRAKE FLUID LEVEL”.

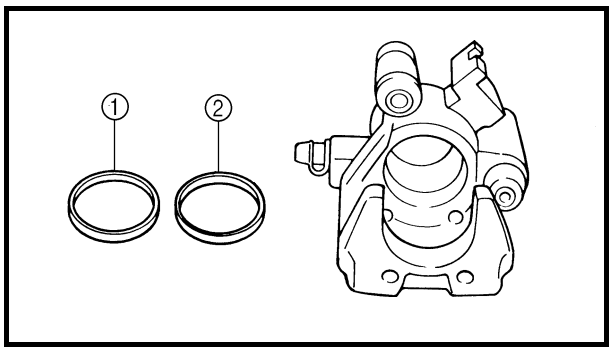
REAR BRAKE CALIPER

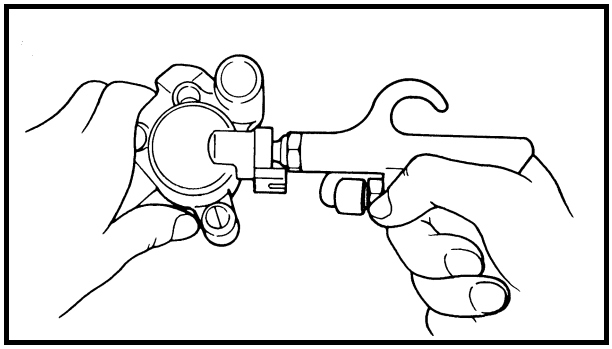


Order	Job/Part	Q'ty	Remarks
	Removing the rear brake caliper		Remove the parts in the order below.
	Brake fluid		Drain.
	Rear wheel		Refer to "FRONT AND REAR WHEELS".
1	Union bolt	1	Refer to "INSTALLING THE REAR BRAKE CALIPER".
2	Copper washer	2	
3	Brake hose	1	Disconnect.
4	Brake pad holding bolt	2	Loosen.
5	Brake caliper mounting bolt	2	
6	Brake caliper assembly	1	
			For installation, reverse the removal procedure.



Order	Job/Part	Q'ty	Remarks
	Disassembling the rear brake caliper		Remove the parts in the order below.
①	Brake pad holding bolt	2	
②	Brake pad/insulator/pad shim	2/2/2	
③	Pad spring	1	
④	Caliper bracket	1	
⑤	Brake caliper piston	1	Refer to "DISASSEMBLING THE REAR BRAKE CALIPER" and "ASSEMBLING THE REAR BRAKE CALIPER".
⑥	Dust seal	1	
⑦	Caliper piston seal	1	
⑧	Bleed screw	1	
			For assembly, reverse the disassembly procedure.





DISASSEMBLING THE REAR BRAKE CALIPER

1. Remove:
   - brake caliper piston
   - dust seal ①
   - caliper piston seal ②

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a. Blow compressed air into the hose joint opening to force out the caliper piston from the brake caliper body.

⚠ WARNING

- **Never try to pry out the caliper piston.**
- **Cover the caliper piston with a rag. Be careful not to get injured when the piston is expelled from the master cylinder.**

b. Remove the caliper piston seals.

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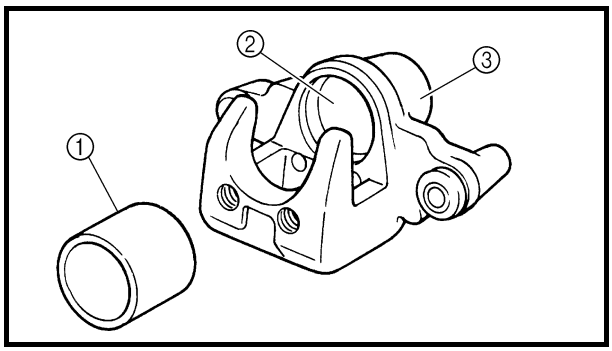
CHECKING THE REAR BRAKE CALIPER

Recommended brake component replacement schedule:	
Brake pads	**As required**
Piston seal, dust seal	**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 piston ①
     Scratches/rust/wear → Replace the brake caliper assembly.
   - brake caliper cylinder 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 seal and dust seal whenever the brake caliper is disassembled.

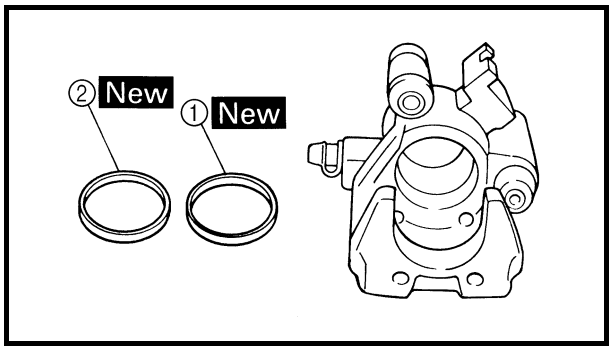
ASSEMBLING THE REAR BRAKE CALIPER

⚠ WARNING

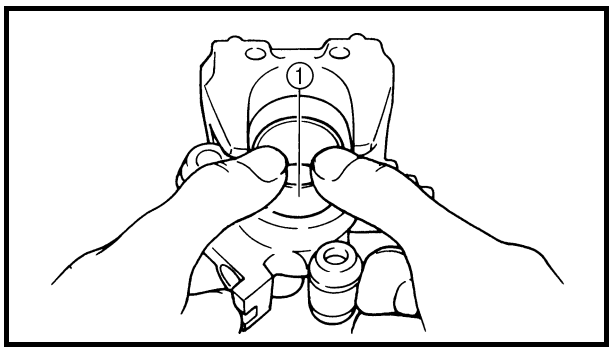
- **All internal brake components should be cleaned and lubricated with new brake fluid only before installation.**

Recommended brake fluid
DOT 4

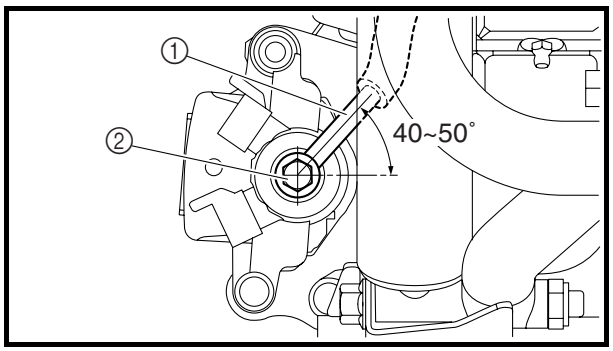
- **Replace the caliper piston seal and dust seal whenever a brake caliper is disassembled.**



1. Install:
   - caliper piston seal ① New
   - dust seal ② New



2. Install:
   - brake caliper piston ①



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INSTALLING THE REAR BRAKE CALIPER

1. Install:
   - brake caliper assembly
   - brake caliper mounting bolts
     30 Nm (3.0 m · kg, 22 ft · lb)
   - brake hose ①
   - copper washers **New**
   - union bolt ② **30 Nm (3.0 m · kg, 22 ft · lb)**

NOTE:
Tighten the union bolt while holding the brake hose as shown.

⚠ WARNING

Proper brake hose routing is essential to insure safe vehicle operation. Refer to "CABLE ROUTING".

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.

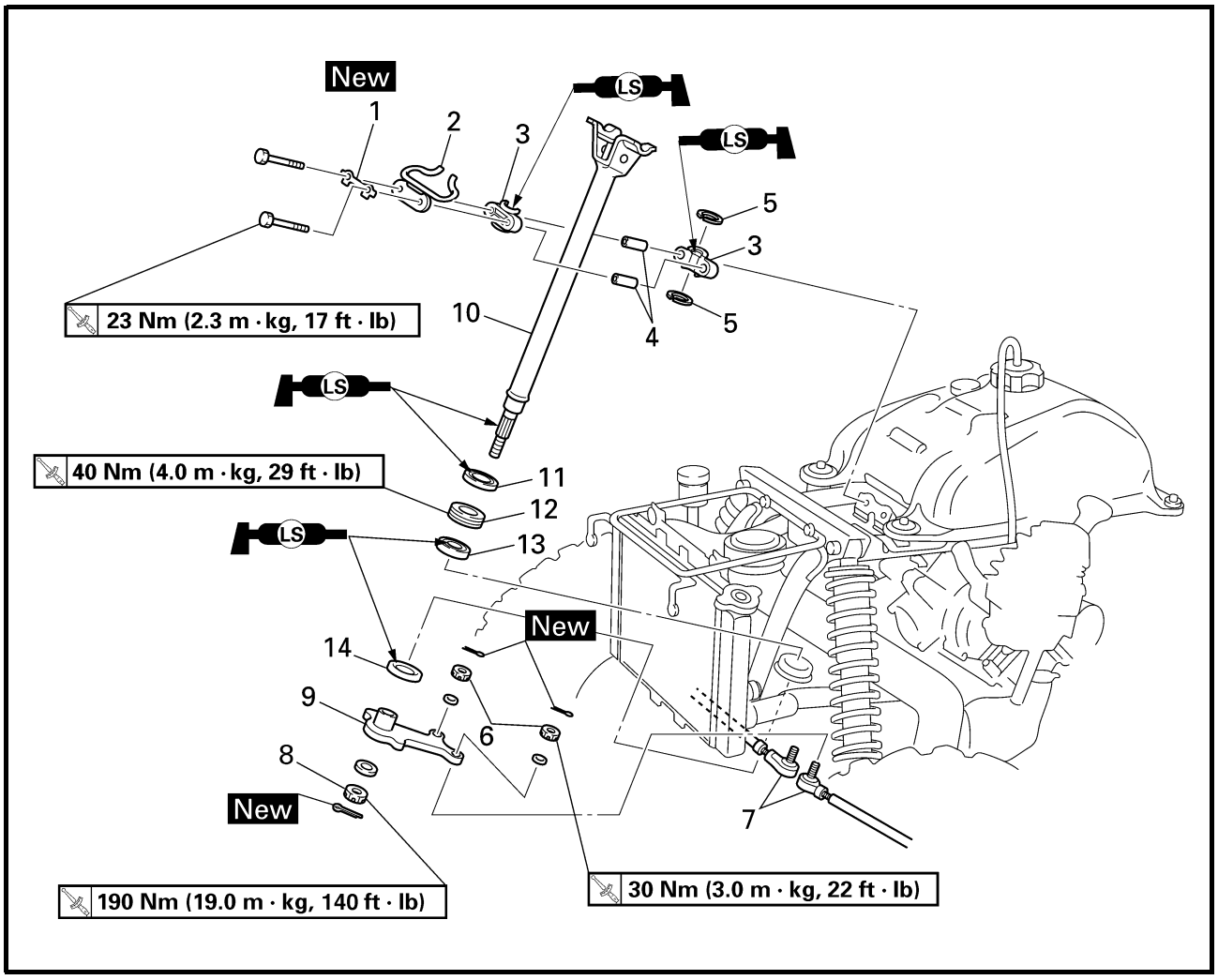
⚠ WARNING

- **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.**

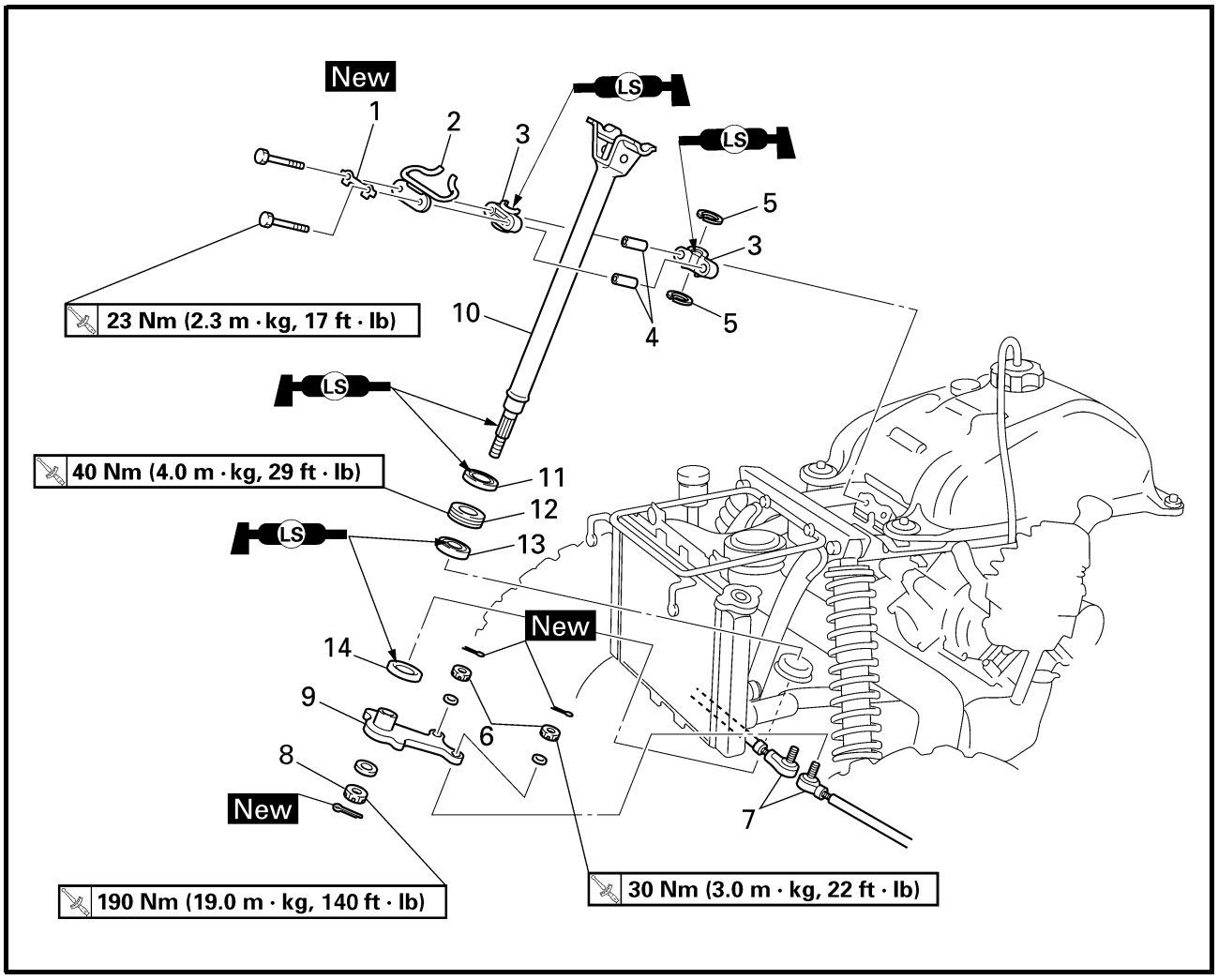
3. Air bleed:
   • brake system
   Refer to “BLEEDING THE HYDRAULIC BRAKE SYSTEM”.
4. Check:
   • brake fluid level
   Brake fluid level is below the “MIN” level line
   → Add the recommended brake fluid to the proper level.
   Refer to “CHECKING THE BRAKE FLUID LEVEL”.

STEERING SYSTEM

STEERING STEM

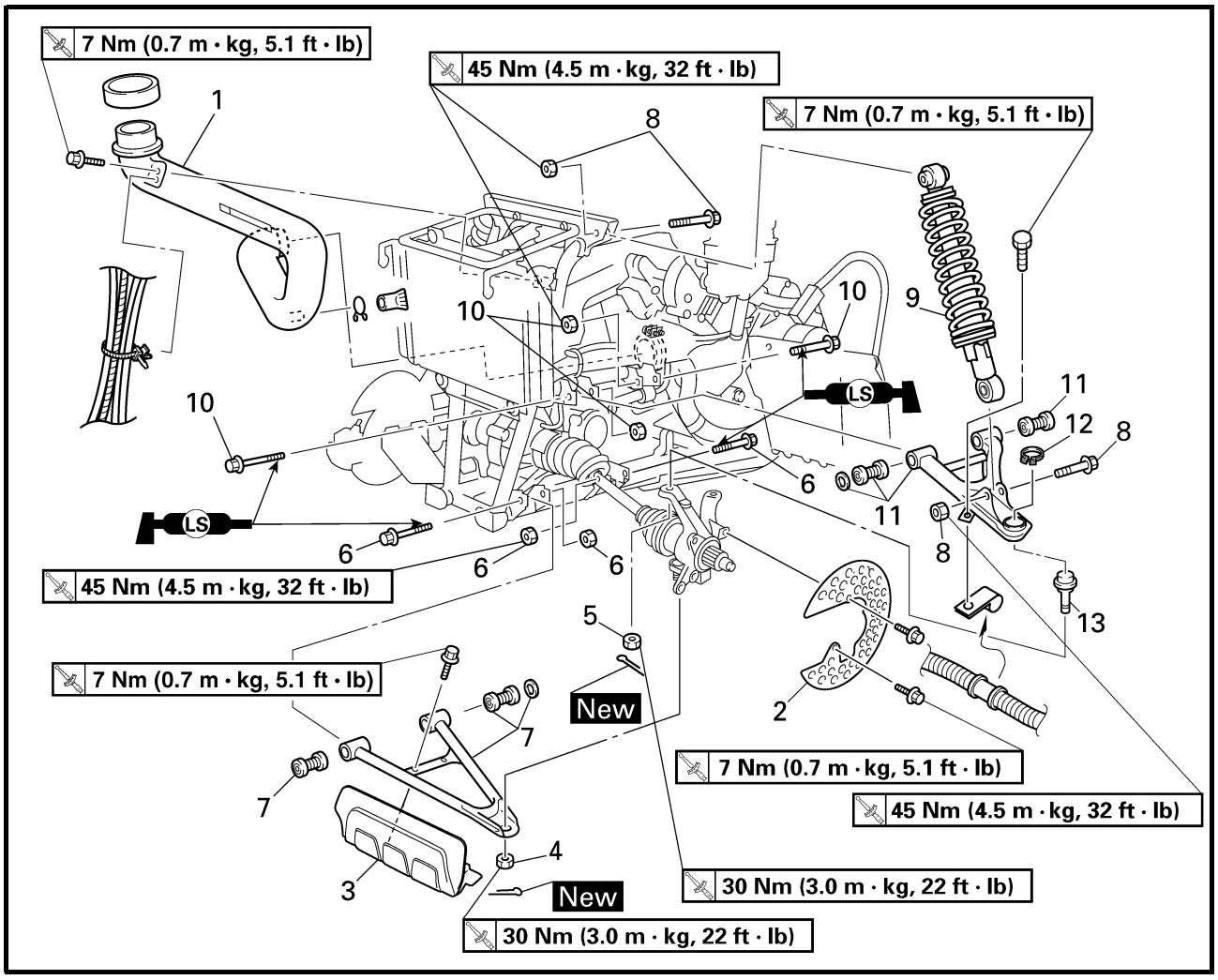


Order	Job/Part	Q'ty	Remarks
	Removing the steering stem		Remove the parts in the order below.
	Handlebar		Refer to "HANDLEBAR" in chapter 8. (Manual No.: 5TE2-AE1)
	Seat		Refer to "SEAT, CARRIERS, FENDERS AND FUEL TANK".
	Front fender		
1	Lock washer	1	Refer to "INSTALLING THE CABLE GUIDE" in chapter 8. (Manual No.: 5TE2-AE1)
2	Cable guide	1	
3	Steering stem bushing	2	
4	Collar	2	
5	Oil seal	2	
6	Tie rod end nut	2	
7	Tie rod	2	Disconnect.
8	Steering stem nut	1	
9	Pitman arm	1	

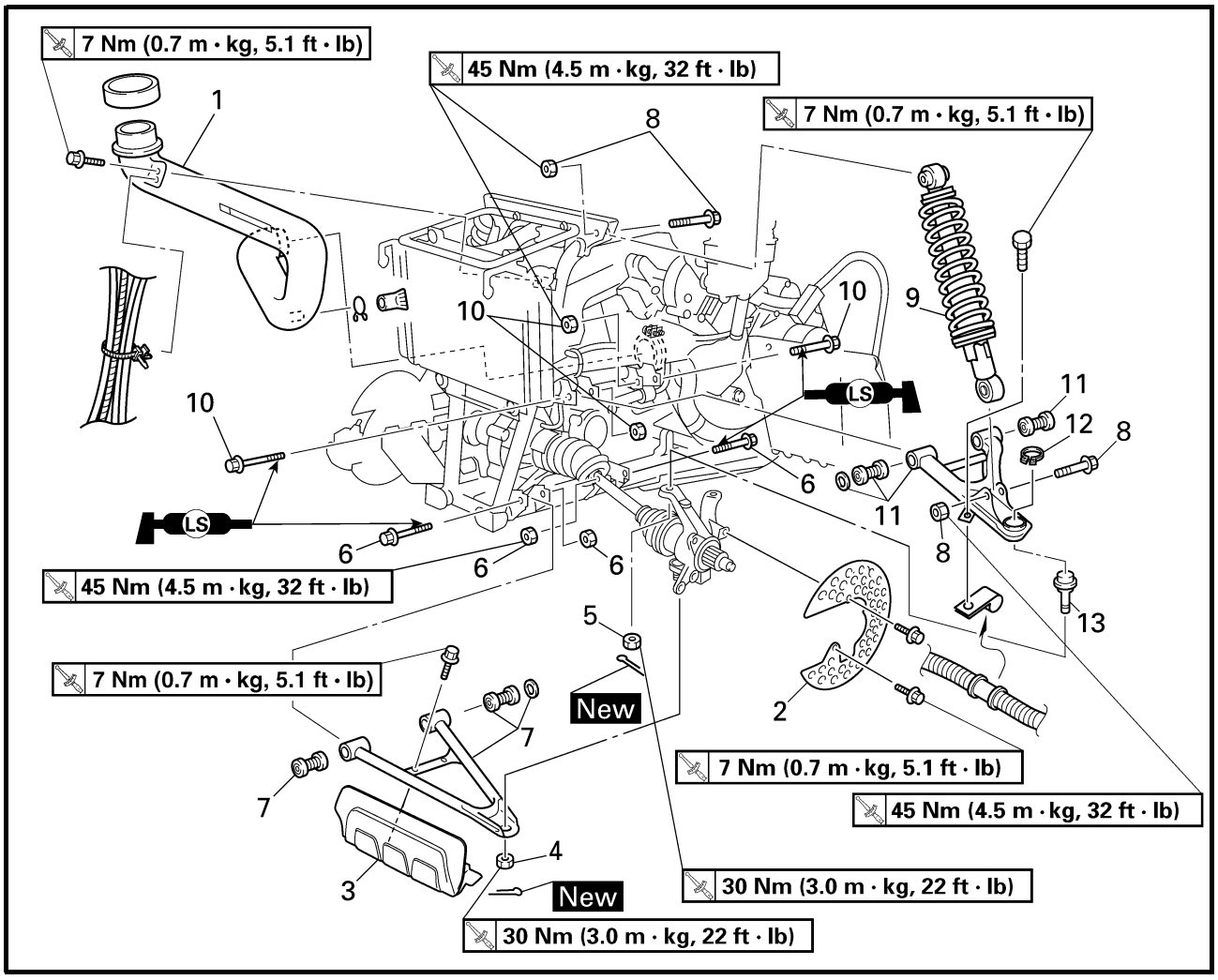


Order	Job/Part	Q'ty	Remarks
10	Steering stem	1	
11	Oil seal	1	
12	Bearing retainer	1	Refer to "REMOVING THE BEARING RETAINER" and "INSTALLING THE BEARING RETAINER" in chapter 8. (Manual No.: 5TE2-AE1)
13	Bearing	1	
14	Oil seal	1	
			For installation, reverse the removal procedure.

FRONT ARMS AND FRONT SHOCK ABSORBERS

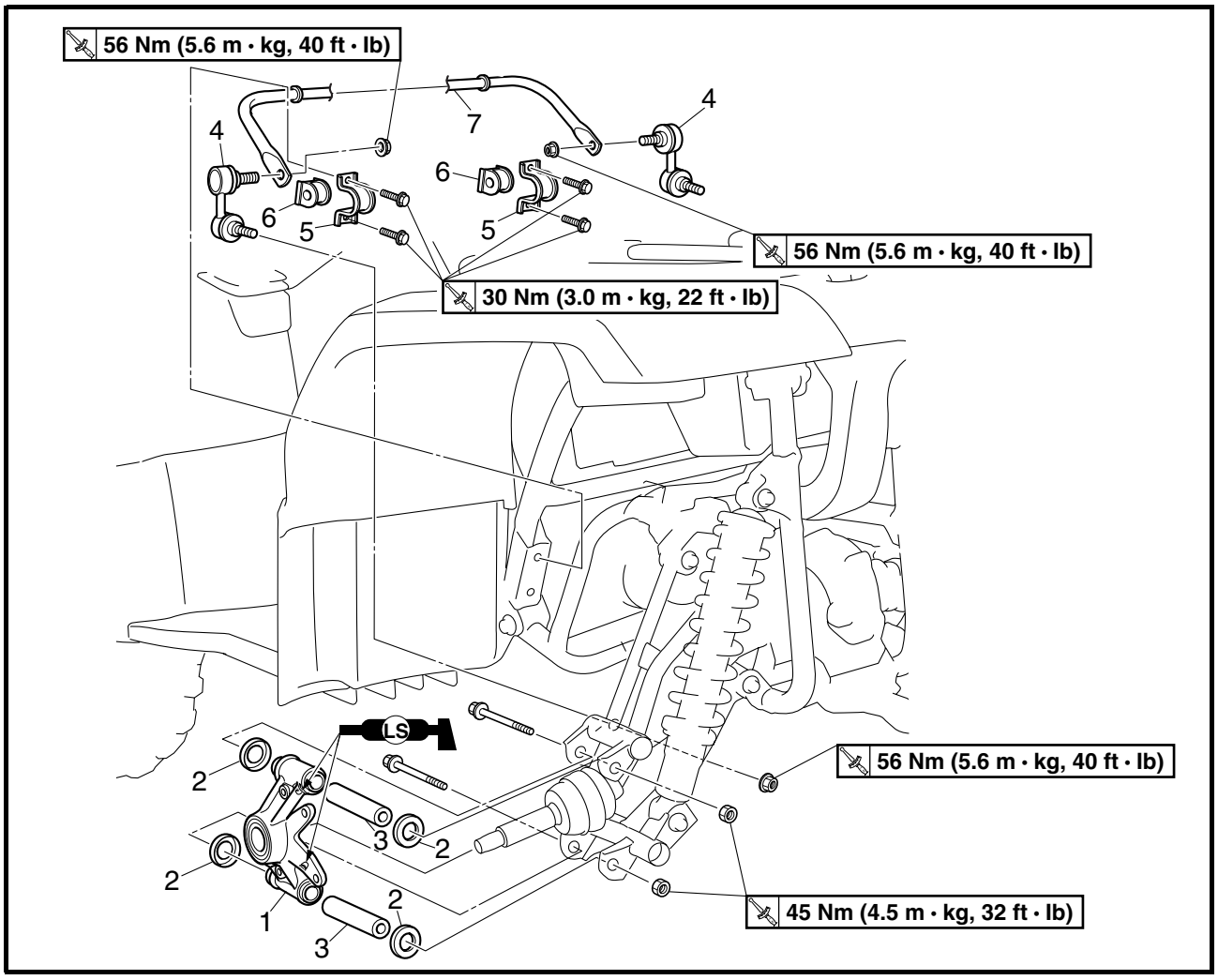


Order	Job/Part	Q'ty	Remarks
	Removing the front arms and front shock absorbers		Remove the parts in the order below.
	Engine skid plate		Refer to "SEAT, CARRIERS, FENDERS AND FUEL TANK".
	Front fender		
	Front wheel/brake disc		Refer to "FRONT AND REAR WHEELS" in chapter 8. (Manual No.: 5TE2-AE1)
1	Air duct assembly 1	1	
2	Brake disc guard	1	
3	Protector	1	

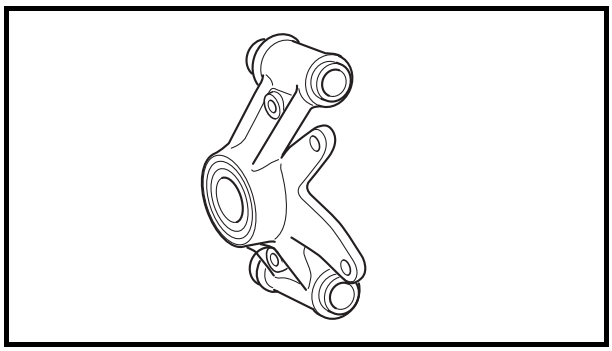


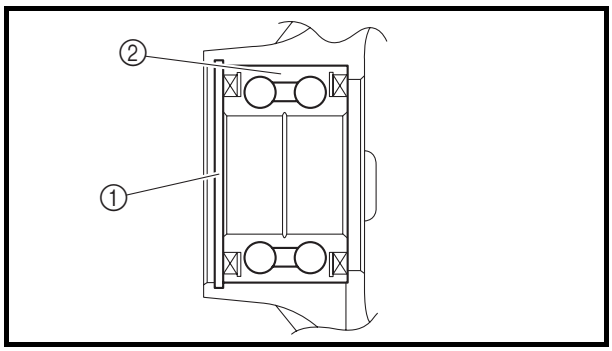
Order	Job/Part	Q'ty	Remarks
4	Nut	1	Refer to "REMOVING THE FRONT ARMS" and "INSTALLING THE FRONT ARMS AND FRONT SHOCK ABSORBER" in chapter 8. (Manual No.: 5TE2-AE1)
5	Nut	1	
6	Bolt/nut	2/2	
7	Front lower arm/washer/bushing	1/1/2	
8	Nut/bolt	2/2	
9	Front shock absorber	1	
10	Bolt/nut	2/2	
11	Front upper arm/washer/bushing	1/1/2	
12	Circlip	1	
13	Ball joint	1	
			For installation, reverse the removal procedure.

REAR KNUCKLES AND STABILIZER



Order	Job/Part	Q'ty	Remarks
	Removing the rear knuckles and stabilizer		Remove the parts in the order listed.
	Rear wheel hubs		Refer to "FRONT AND REAR WHEELS".
1	Rear knuckle	1	
2	Spacer cover	4	
3	Spacer	2	
4	Stabilizer joint	2	
5	Stabilizer holder	2	
6	Bushing	2	
7	Stabilizer	1	
			For installation, reverse the removal procedure.





CHECKING THE REAR KNUCKLES

1. Check:
   - rear knuckles
     Damage/pitting → Replace.
2. Check:
   - rear wheel bearings
     Bearings allow play in the wheel hubs or the wheel turns roughly → Replace.
   - oil seals
     Damage → Replace.

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a. Clean the outside of the rear knuckle.
b. Remove the circlip ①.
c. Drive out the bearing ②.

⚠ WARNING

Eye protection is recommended when using striking tools.

d. Install a new bearing.

CAUTION:

Do not strike the center race or balls of the bearing. Contact should be made only with the outer race.

e. Install a new circlip.

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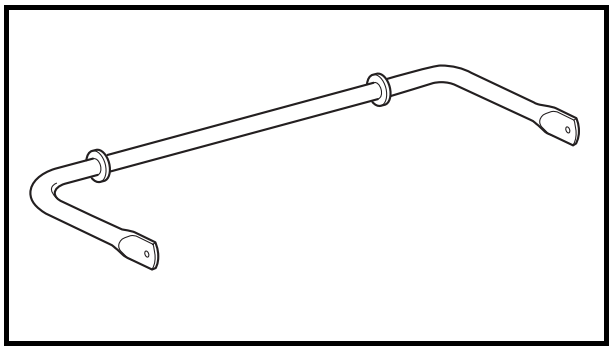
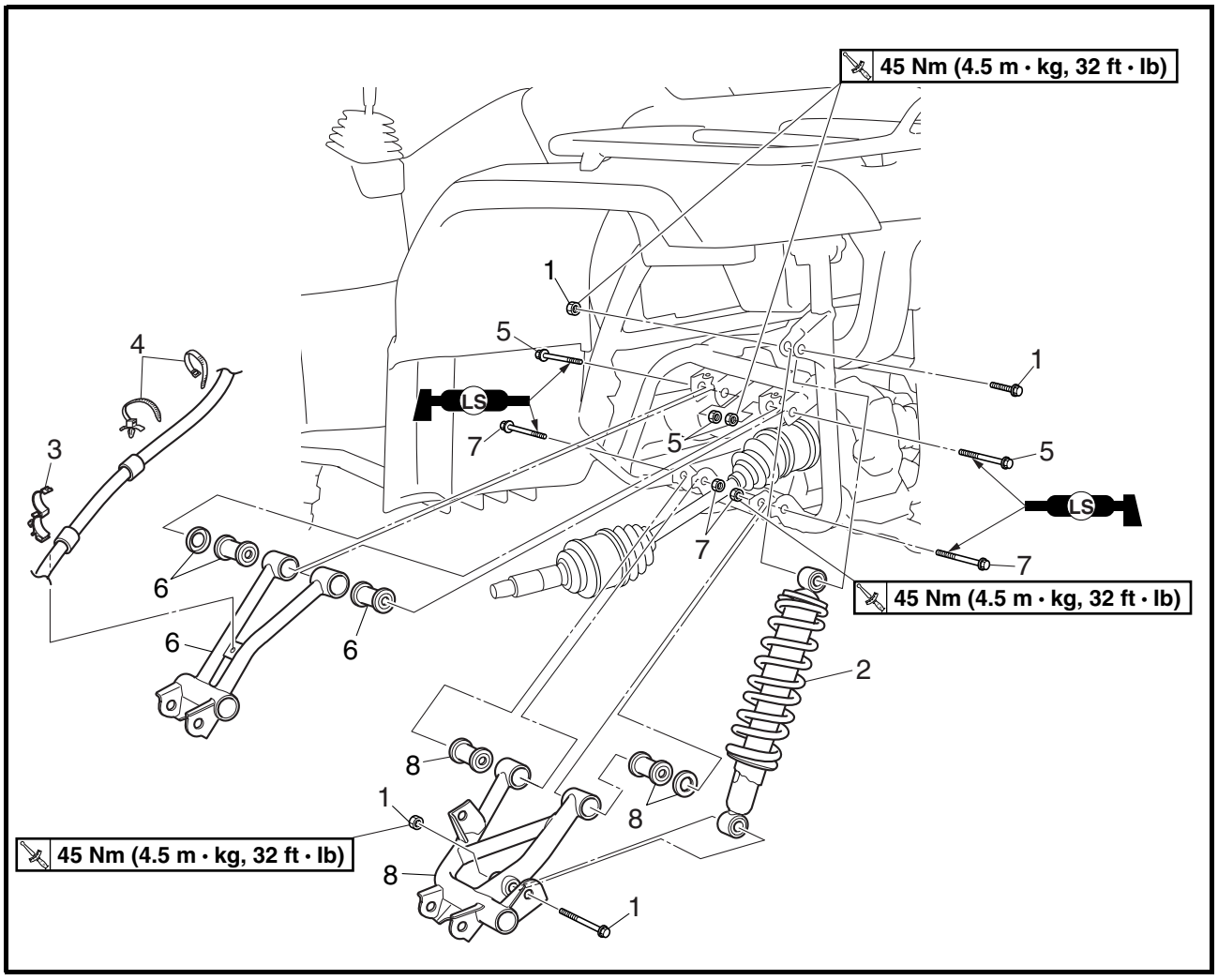


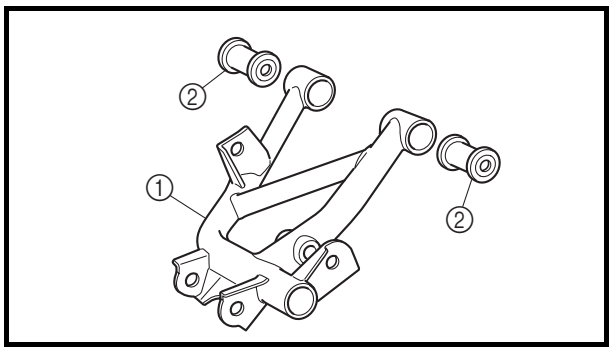
CHECKING THE STABILIZER

1. Check:
   - stabilizer
     Bends/cracks/damage → Replace.

REAR ARMS AND REAR SHOCK ABSORBERS

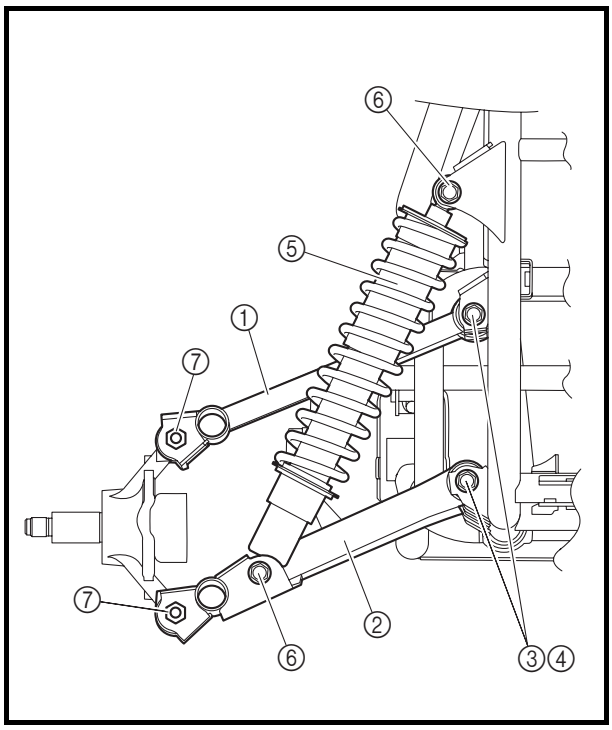


Order	Job/Part	Q'ty	Remarks
	Removing the rear arms and rear shock absorbers		Remove the parts in the order listed.
	Rear knuckle/stabilizer		Refer to "REAR KNUCKLES AND STABILIZER".
	Rear brake caliper		Refer to "REAR BRAKE".
1	Nut/bolt	2/2	
2	Rear shock absorber	1	
3	Plastic holder	1	
4	Plastic band	2	Refer to "INSTALLING THE REAR ARMS AND REAR SHOCK ABSORBERS".
5	Nut/bolt	2/2	
6	Rear upper arm/washer/bushing	1/1/2	
7	Nut/bolt	2/2	
8	Rear lower arm/washer/bushing	1/1/2	
			For installation, reverse the removal procedure.



CHECKING THE REAR ARMS

1. Check:
   - rear arms ①
     Bends/damage → Replace.
2. Check:
   - bushings ②
     Wear/damage → Replace.



INSTALLING THE REAR ARMS AND REAR SHOCK ABSORBERS

1. Install:
   - rear arms
   - rear shock absorbers

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a. Install the rear upper arm ① and rear lower arm ②.

NOTE:

- Lubricate the bolts ③ with lithium-soap-based grease.
- Be sure to position the bolts ③ so that the bolt head faces outward.
- Temporarily tighten the nuts ④.

b. Install the rear shock absorber ⑤.

	**Nut ⑥** **45 Nm (4.5 m · kg, 32 ft · lb)**

c. Install the rear knuckle.

	**Nut ⑦** **45 Nm (4.5 m · kg, 32 ft · lb)**

d. Tighten the nuts ④.

	**Nut ④** **45 Nm (4.5 m · kg, 32 ft · lb)**

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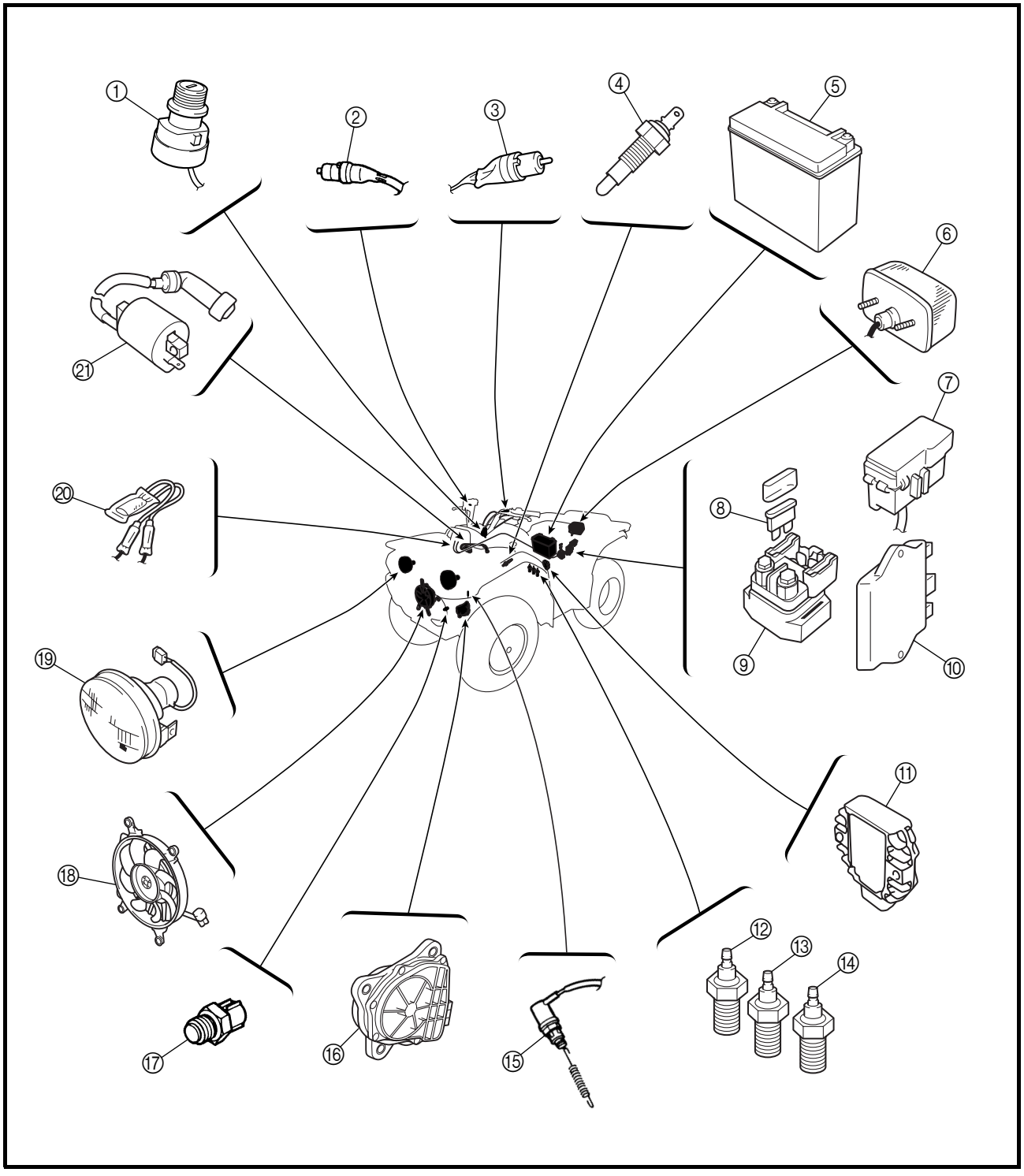
EB800000

ELECTRICAL

ELECTRICAL COMPONENTS

① Main switch
② Front brake light switch
③ Rear brake switch
④ Thermo switch (cylinder head)
⑤ Battery
⑥ Tail/brake light
⑦ Fuse box
⑧ Main fuse
⑨ Starter relay
⑩ CDI unit
⑪ Rectifier/regulator
⑫ Reverse switch
⑬ Park switch
⑭ Neutral switch
⑮ Rear brake light switch
⑯ Gear motor
⑰ Thermo switch (radiator)
⑱ Fan
⑲ Headlight
⑳ Circuit breaker (fan)
㉑ Ignition coil



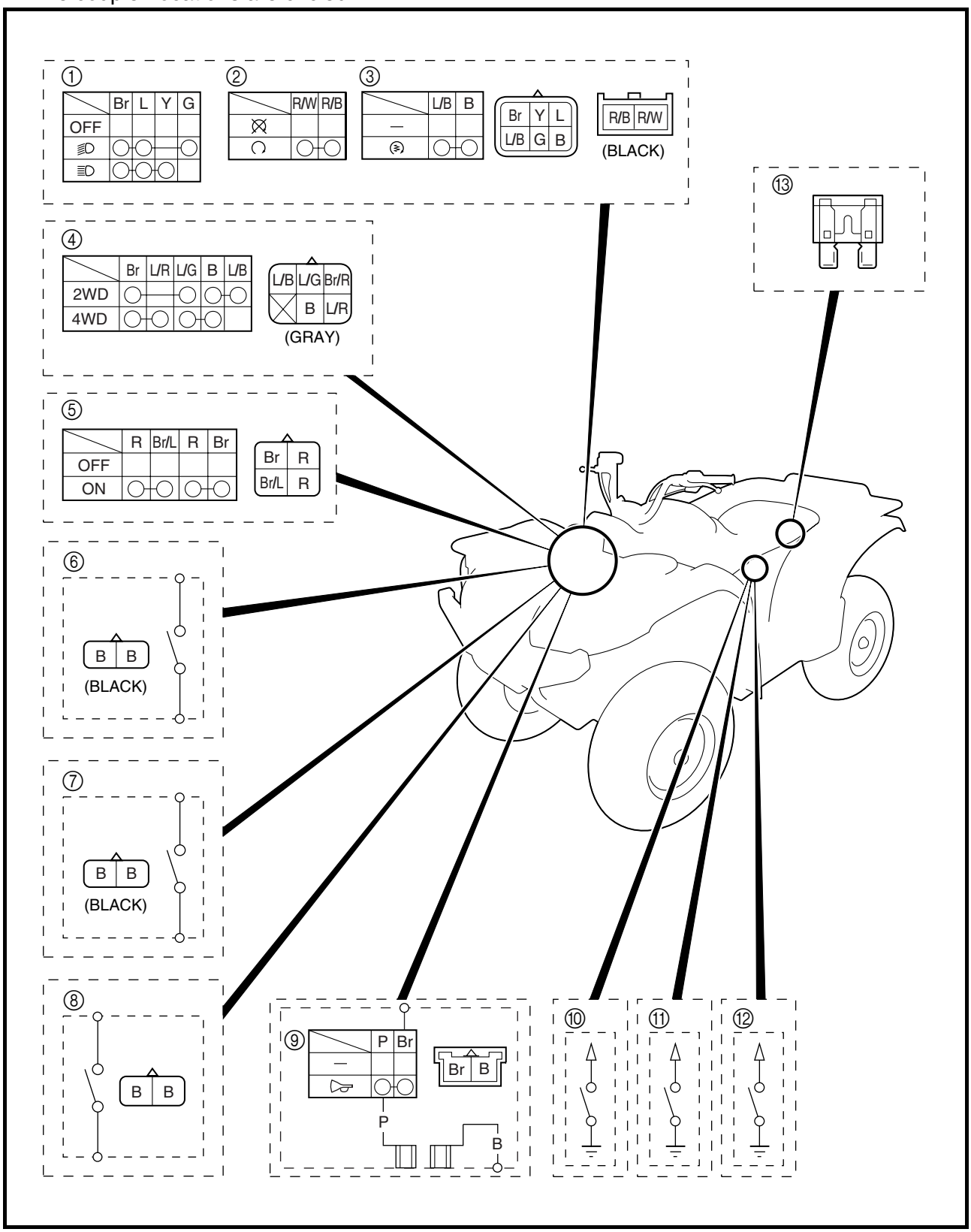
CHECKING THE SWITCHES

CHECKING THE SWITCH CONTINUITY

Refer to “CHECKING THE SWITCHES” in chapter 9 (Manual No.: 5TE2-AE1) and check for continuity between lead terminals.

Poor connection, no continuity → Correct or replace.

* The coupler locations are circled.

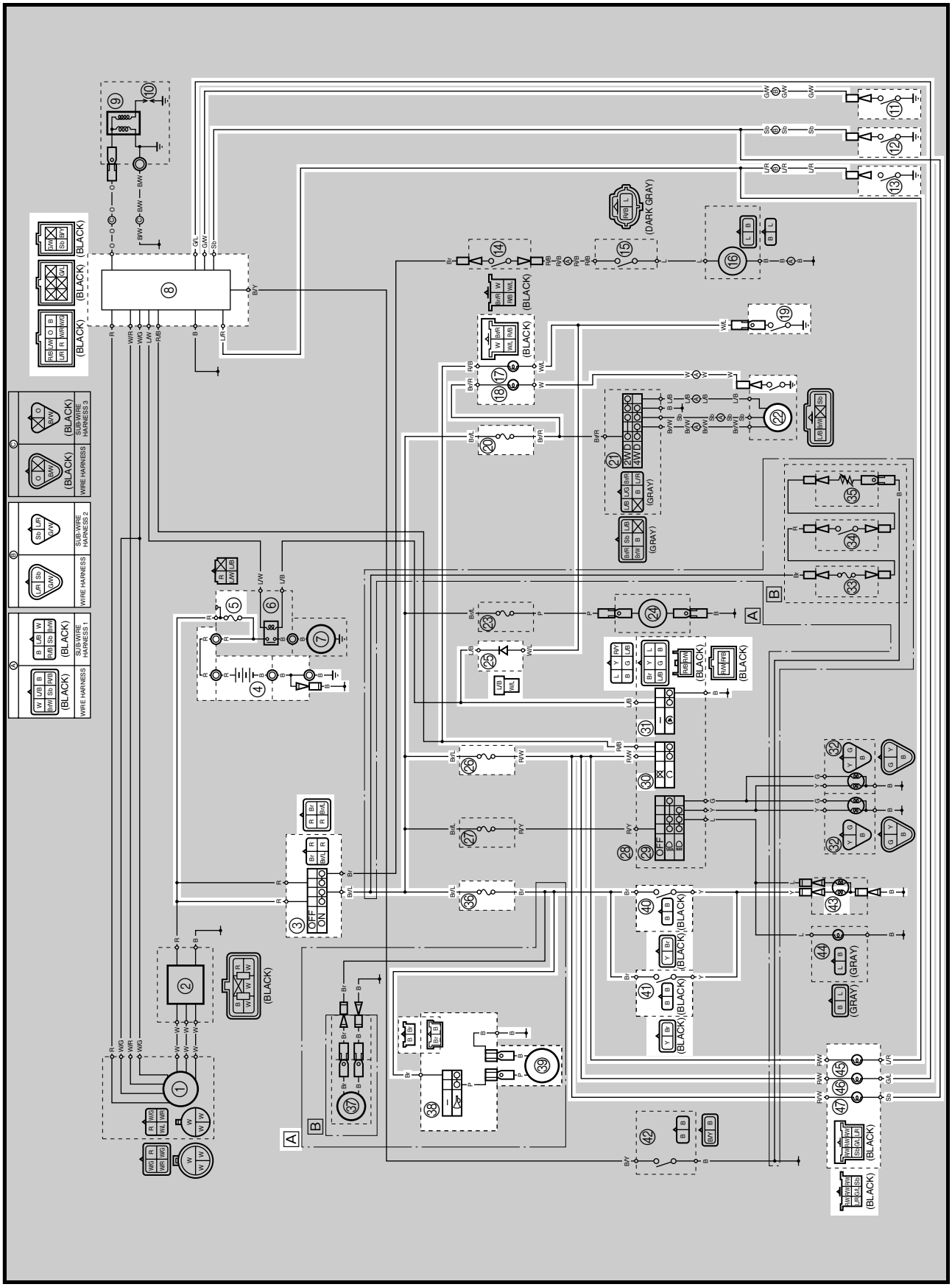


① Light switch
② Engine stop switch
③ Start switch
④ On-command four-wheel drive switch
⑤ Main switch
⑥ Rear brake light switch
⑦ Front brake light switch
⑧ Rear brake switch
⑨ Horn switch (for Oceania)
⑩ Reverse switch
⑪ Park switch
⑫ Neutral switch
⑬ Fuses

EB806000

SIGNAL SYSTEM

CIRCUIT DIAGRAM



③ Main switch
④ Battery
⑤ Main fuse
⑧ CDI unit
⑪ Reverse switch
⑫ Neutral switch
⑬ Park switch
⑰ Coolant temperature warning light
⑱ Four-wheel drive indicator light
⑲ Thermo switch (cylinder head)
⑳ Four-wheel drive fuse
㉒ Gear motor
㉕ Diode
㉖ Ignition fuse
㉚ Engine stop switch
㉛ Start switch
㊱ Signaling system fuse
㊳ Horn switch
㊴ Horn
㊵ Front brake light switch
㊶ Rear brake light switch
㊸ Tail/brake light
㊺ Park indicator light
㊻ Reverse indicator light
㊼ Neutral indicator light
Ⓐ For Oceania

CHECKING THE SIGNAL SYSTEM

EB806024

6. If the park indicator light fails to come on:

1. Bulb and bulb socket
   - Check the bulb and bulb socket for continuity.

NO CONTINUITY → Replace the bulb and/or bulb socket.

CONTINUITY ⇩

2. Park switch

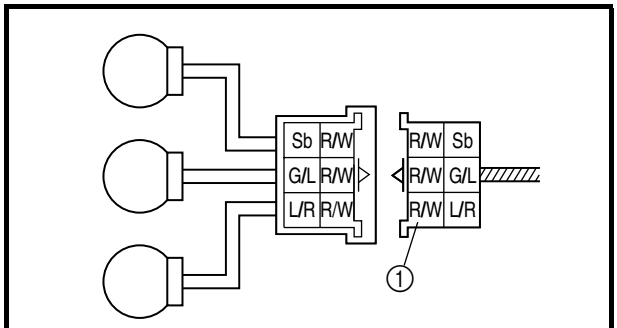
Refer to “CHECKING THE SWITCHES”.

NO CONTINUITY → Replace the park switch.

CONTINUITY ⇩

3. Voltage
   - Connect the pocket tester (DC 20 V) to the bulb socket coupler.

Tester (+) lead → Red/White terminal ①
Tester (–) lead → Frame ground



- Turn the main switch to “ON”.
- Check the voltage (12 V).

OUT OF SPECIFICATION → The wiring circuit from the main switch to the bulb socket connector is faulty, repair it.

MEETS SPECIFICATION ⇩

The wiring circuit from the bulb socket coupler to the park switch is faulty, repair it.

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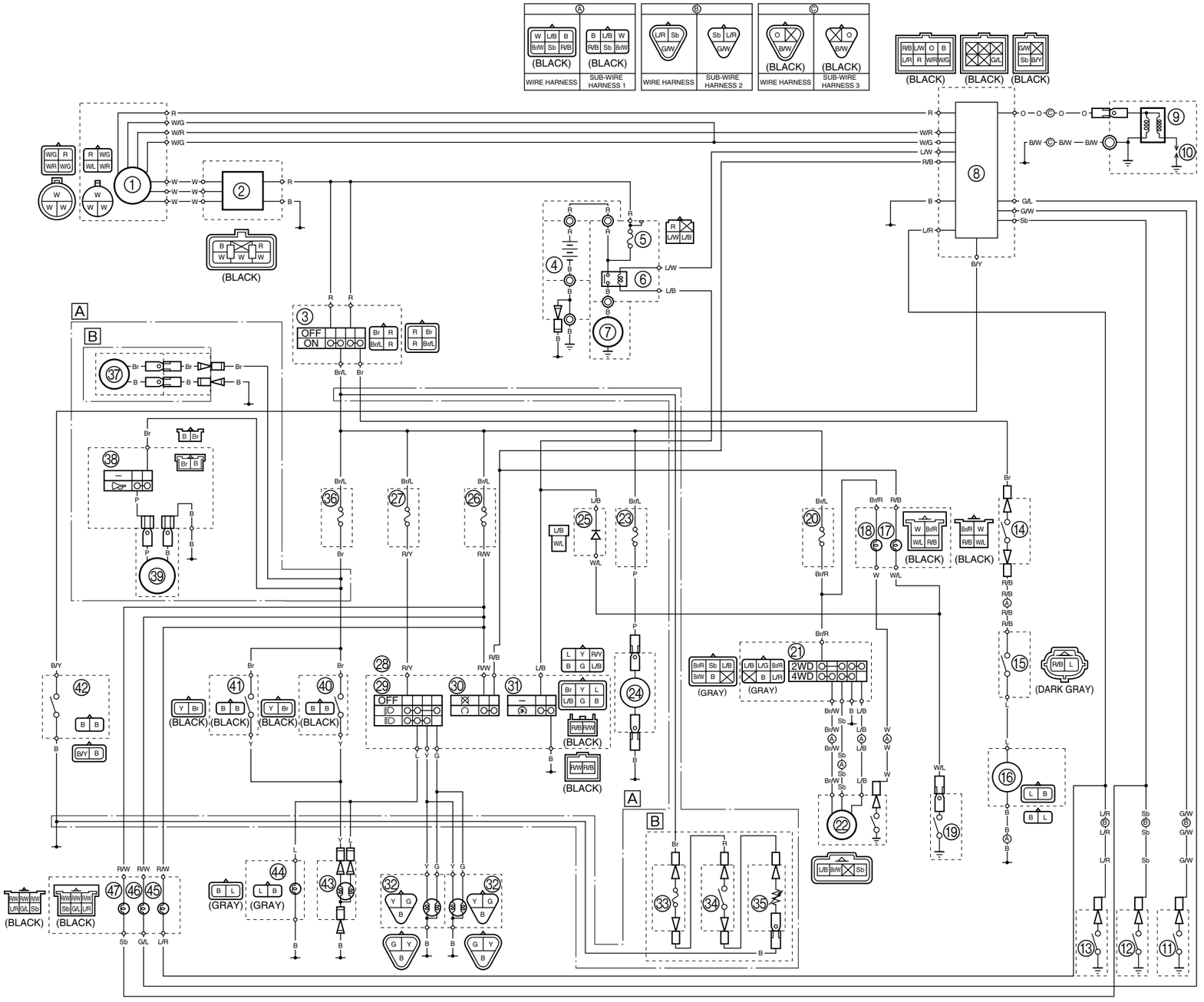
2500 SHINGAI IWATA SHIZUOKA JAPAN

YFM4FAT/YFM400FAT WIRING DIAGRAM



① A.C. magneto
② Rectifier/regulator
③ Main switch
④ Battery
⑤ Main fuse
⑥ Starter relay
⑦ Starter motor
⑧ CDI unit
⑨ Ignition coil
⑩ Spark plug
⑪ Reverse switch
⑫ Neutral switch
⑬ Park switch
⑭ Circuit breaker (fan motor)
⑮ Thermo switch (radiator)
⑯ Fan motor
⑰ Coolant temperature warning light
⑱ Four-wheel drive indicator light
⑲ Thermo switch (cylinder head)
⑳ Four-wheel drive fuse
㉑ On-command four-wheel drive switch
㉒ Gear motor
㉓ Auxiliary DC jack fuse
㉔ Auxiliary DC jack
㉕ Diode
㉖ Ignition fuse
㉗ Headlight fuse
㉘ Handlebar switch (left)
㉙ Light switch
㉚ Engine stop switch
㉛ Start switch
㉜ Headlight
㉝ Carburetor heater fuse
㉞ Thermo switch (carburetor heater)
㉟ Carburetor heater
㊱ Signaling system fuse
㊲ Hour meter
㊳ Horn switch
㊴ Horn
㊵ Front brake light switch
㊶ Rear brake light switch
㊷ Rear brake switch
㊸ Tail/brake light
㊹ Meter light
㊺ Park indicator light
㊻ Reverse indicator light
㊼ Neutral indicator light
Ⓐ For Oceania
Ⓑ Option (for Oceania)

COLOR CODE

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