

HOW TO USE THIS MANUAL

MANUAL ORGANIZATION

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

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

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

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

EXPLODED DIAGRAMS

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

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

②
①

CLUTCH
ENG

④

CLUTCH
ENG

REMOVING THE CLUTCH

1. Remove.

- clutch housing assembly
- gasket
- dowel pins

NOTE:
Working in crisscross pattern, loosen each bolt 1/4 of a turn. Remove them after all of them are loosened.

2. Straighten.

- punched portion of the nut ②

3. Remove.

- nut ③

CAUTION

The clutch carrier assembly nut has left-handed threads. To loosen the clutch carrier assembly nut turn it clockwise.

NOTE:
Use a clutch holding tool ⑧ to hold the clutch carrier assembly.

Universal clutch holder
90890-G4086, YM-91042

⑤

Order	Job/Part	Qty	Remarks
Removing the clutch			
Primary shaft/secondary shaft			
1	Clutch housing assembly	1	Remove the parts in the order listed. Refer to "PRIMARY AND SECONDARY SHEAVES".
2	Gasket	1	
3	Dowel pin	2	
4	One-way clutch bearing	1	
5	Nut	1	
6	Clutch carrier assembly	1	
For installation, reverse the removal procedure.			

⑥

The clutch carrier assembly nut has left-handed threads. To loosen the clutch carrier assembly nut turn it clockwise.

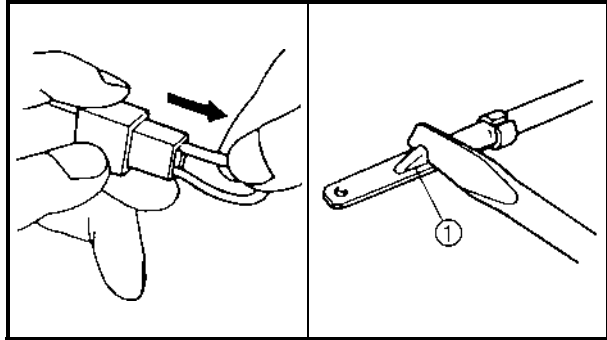
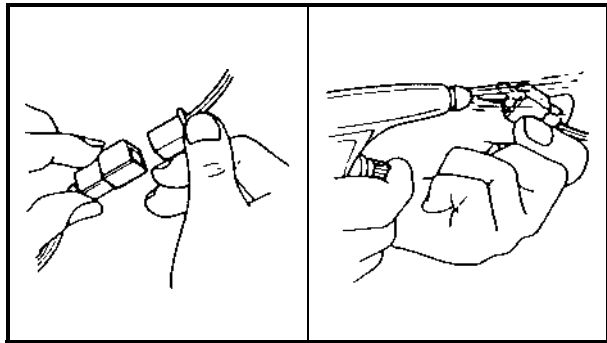
⑦

Use a clutch holding tool ⑧ to hold the clutch carrier assembly.

⑧

Universal clutch holder
90890-G4086, YM-91042

4 - 63
4 - 65



EBS00019

CHECKING THE CONNECTIONS

Check the leads, couplers, and connectors for stains, rust, moisture, etc.

1. Disconnect:

- lead
- coupler
- connector

2. Check:

- lead
- coupler
- connector

Moisture → Dry with an air blower.

Rust/stains → Connect and disconnect several times.

3. Check:

- all connections

Loose connection → Connect properly.

NOTE: _____

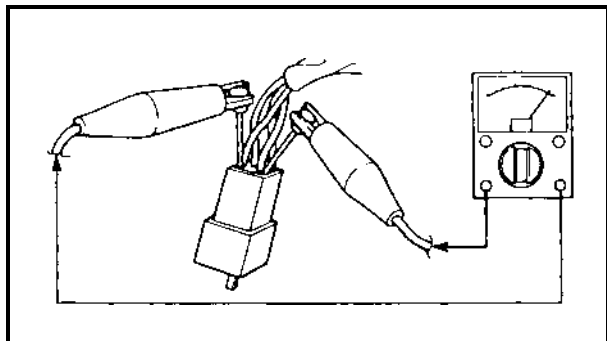
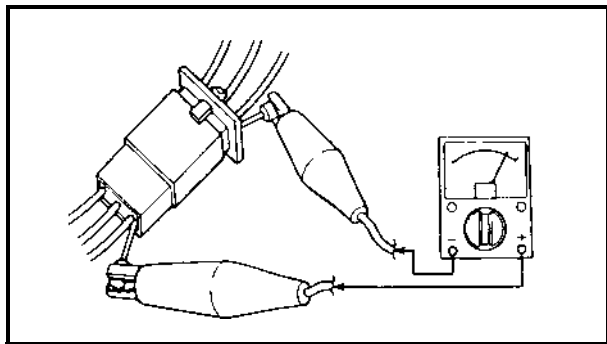
If the pin ① on the terminal is flattened, bend it up.

4. Connect:

- lead
- coupler
- connector

NOTE: _____

Make sure all connections are tight.



5. Check:

- continuity (with the pocket tester)



Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

NOTE: _____

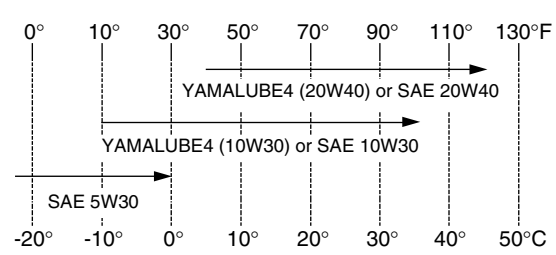
- If there is no continuity, clean the terminals.
- When checking the wire harness, perform steps (1) to (3).
- As a quick remedy, use a contact revitalizer available at most part stores.



EBS01001

SPECIFICATIONS

GENERAL SPECIFICATIONS

Item	Standard
Model code	3B41 3B45 3B48
Dimensions Overall length Overall width Overall height Seat height Wheelbase Minimum ground clearance Minimum turning radius	2,065 mm (81.3 in) 1,180 mm (46.5 in) 1,240 mm (48.8 in) 905 mm (35.6 in) 1,250 mm (49.2 in) 275 mm (10.8 in) 3,200 mm (126.0 in)
Basic weight With oil and fuel	294.0 kg (648 lb)
Engine Engine type Cylinder arrangement Displacement Bore × stroke Compression ratio Standard compression pressure (at sea level) Starting system	Liquid-cooled 4-stroke, SOHC Forward-inclined single cylinder 686.0 cm ³ (41.86 cu. in) 102.0 × 84.0 mm (4.02 × 3.31 in) 9.20 : 1 450 kPa (4.50 kg/cm ² , 64.0 psi) Electric starter
Lubrication system	Wet sump
Oil type or grade Engine oil  Final gear oil Differential gear oil	API service SE, SF, SG type or higher JASO standard MA SAE 80 API GL-4 Hypoid gear oil SAE 80 API GL-4 Hypoid gear oil

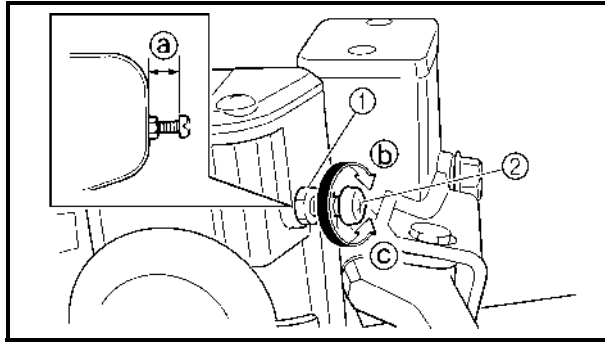


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LUBRICATION POINTS AND LUBRICANT TYPES

ENGINE

Lubrication point	Lubricant
Oil seal lips	
Bearings	
O-ring	
Cylinder head bolts	
Crankshaft pin	
Connecting rod big end thrust surface	
Crankshaft sprocket	
Inner race (crankshaft)	
Buffer boss (crankshaft)	
Crankshaft seal	
Piston pin	
Piston and ring groove	
Valve stems (intake and exhaust)	
Valve stem ends (intake and exhaust)	
Rocker arm shafts	
Camshaft lobes	
Decompressor lever pin	
Decompressor lever spring	
Rocker arms (intake and exhaust)	
Oil pump shaft	
O-ring (oil filter cartridge)	
Water pump impeller shaft	
Dipstick mating surface	
Starter idler gear inner surface	
Starter idler gear shaft	
Starter wheel gear	
Torque limiter	
Clutch housing shaft end	
Clutch carrier assembly	
One-way clutch bearing	
Clutch dog and middle drive gear	
Reverse idle gear shaft	
Middle driven shaft splines	
Shift drum	
Shift forks and shift fork guide bar	
Ball (shift drum stopper)	
Stopper lever and stopper lever shaft	



EBS00053

ADJUSTING THE SPEED LIMITER

The speed limiter keeps the throttle from becoming fully-opened even when the throttle lever is applied to the maximum position. Screwing in the adjusting screw stops the engine speed from increasing.

1. Measure:

- speed limiter length (a)
- Out of specification → Adjust.

	Speed limiter length Less than 12 mm (0.47 in)
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2. Adjust:

- speed limiter length



- Loosen the locknut (1).
- Turn the adjuster (2) in direction (b) or (c) until the specified speed limiter length is obtained.

Direction (b)	Speed limiter length is decreased.
Direction (c)	Speed limiter length is increased.


c. Tighten the locknut.

WARNING

- Particularly for a beginner rider, the speed limiter should be screwed in completely. Screw it out little by little as their riding technique improves. Never remove the speed limiter for a beginning rider.
- For proper throttle lever operation do not turn out the adjuster more than 12 mm (0.47 in). Also, always adjust the throttle lever free play to 3.0 ~ 5.0 mm (0.12 ~ 0.20 in).




6. Install:
- final gear oil drain bolt

 **23 Nm (2.3 m · kg, 17 ft · lb)**

NOTE: _____

Check the gasket (drain bolt). If it is damaged, replace it with a new one.

7. Fill:
- final gear case


	Periodic oil change
	0.20 L (0.18 Imp qt, 0.21 US qt)
	Total amount
	0.25 L (0.22 Imp qt, 0.26 US qt)
	Recommended oil
	SAE80 API GL-4 Hypoid gear oil

CAUTION: _____


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

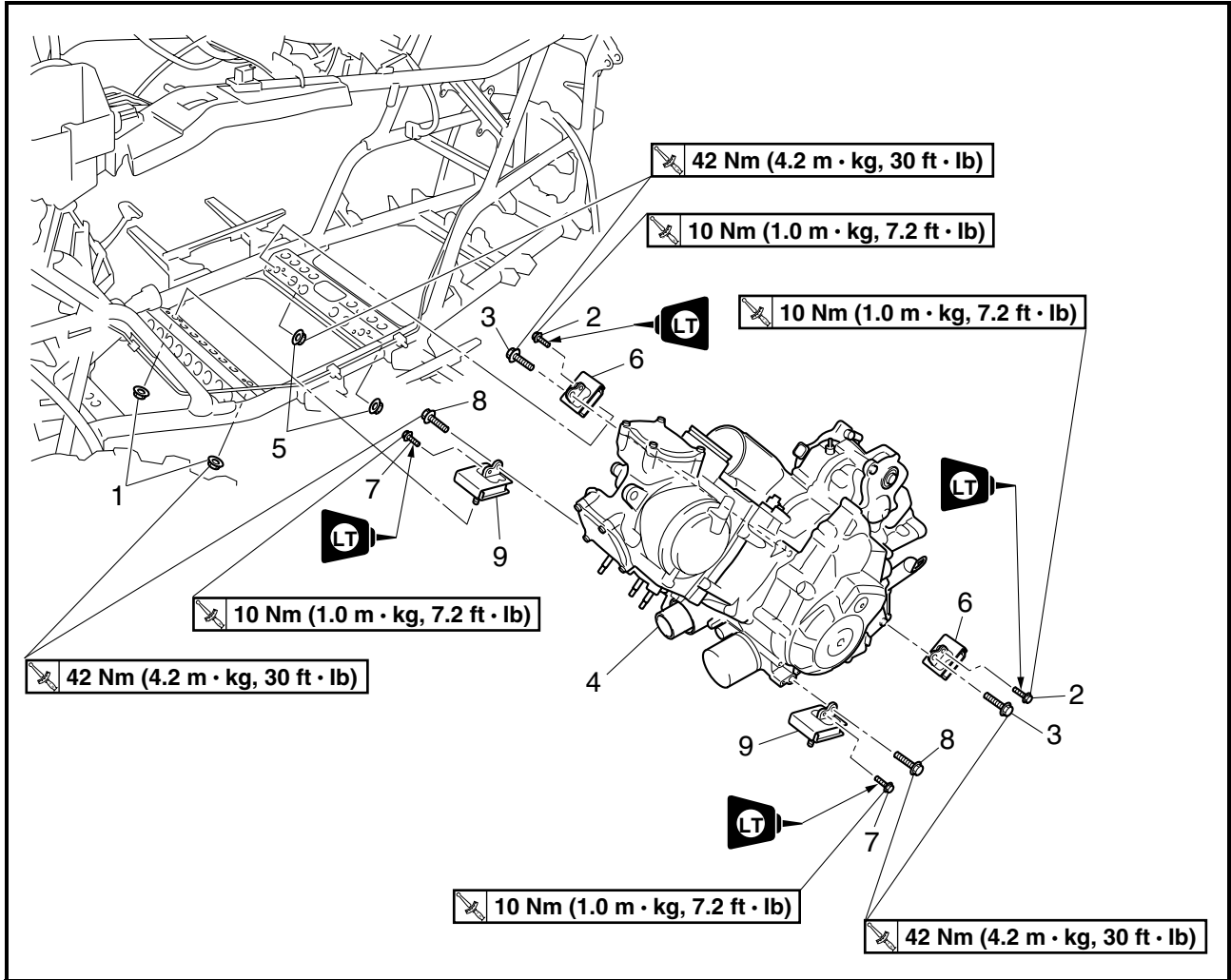
8. Check:
- oil level
Refer to “CHECKING THE FINAL GEAR OIL LEVEL”.

9. Install:
- final gear oil level check bolt

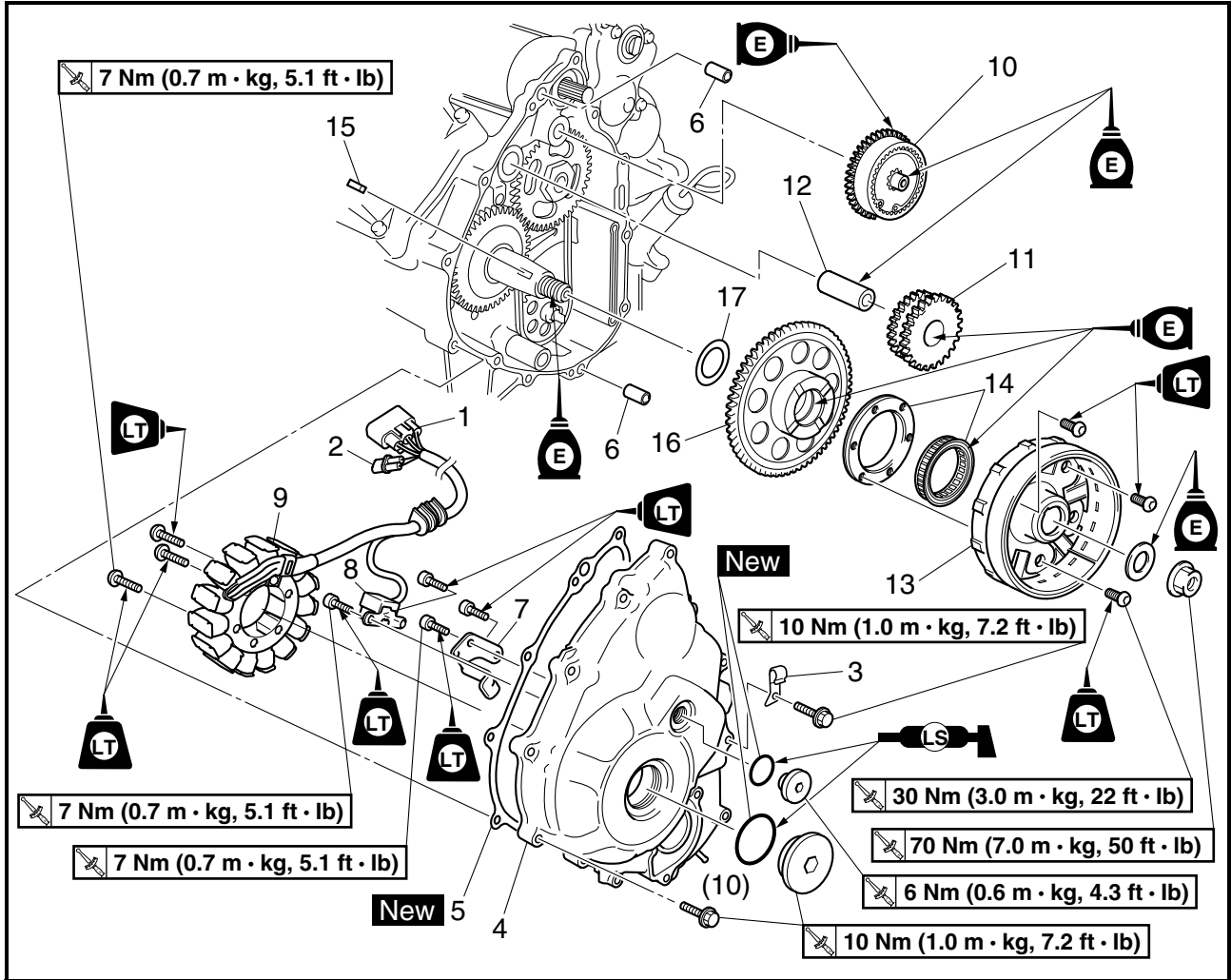
 **10 Nm (1.0 m · kg, 7.2 ft · lb)**

- final gear oil filler bolt

 **23 Nm (2.3 m · kg, 17 ft · lb)**



Order	Job/Part	Q'ty	Remarks
6	Rubber damper (rear side)	2	Refer to "INSTALLING THE ENGINE".
7	Engine mounting bolt (front upper side)	2	
8	Engine mounting bolt (front lower side)	2	
9	Rubber damper (front side)	2	
			For installation, reverse the removal procedure.

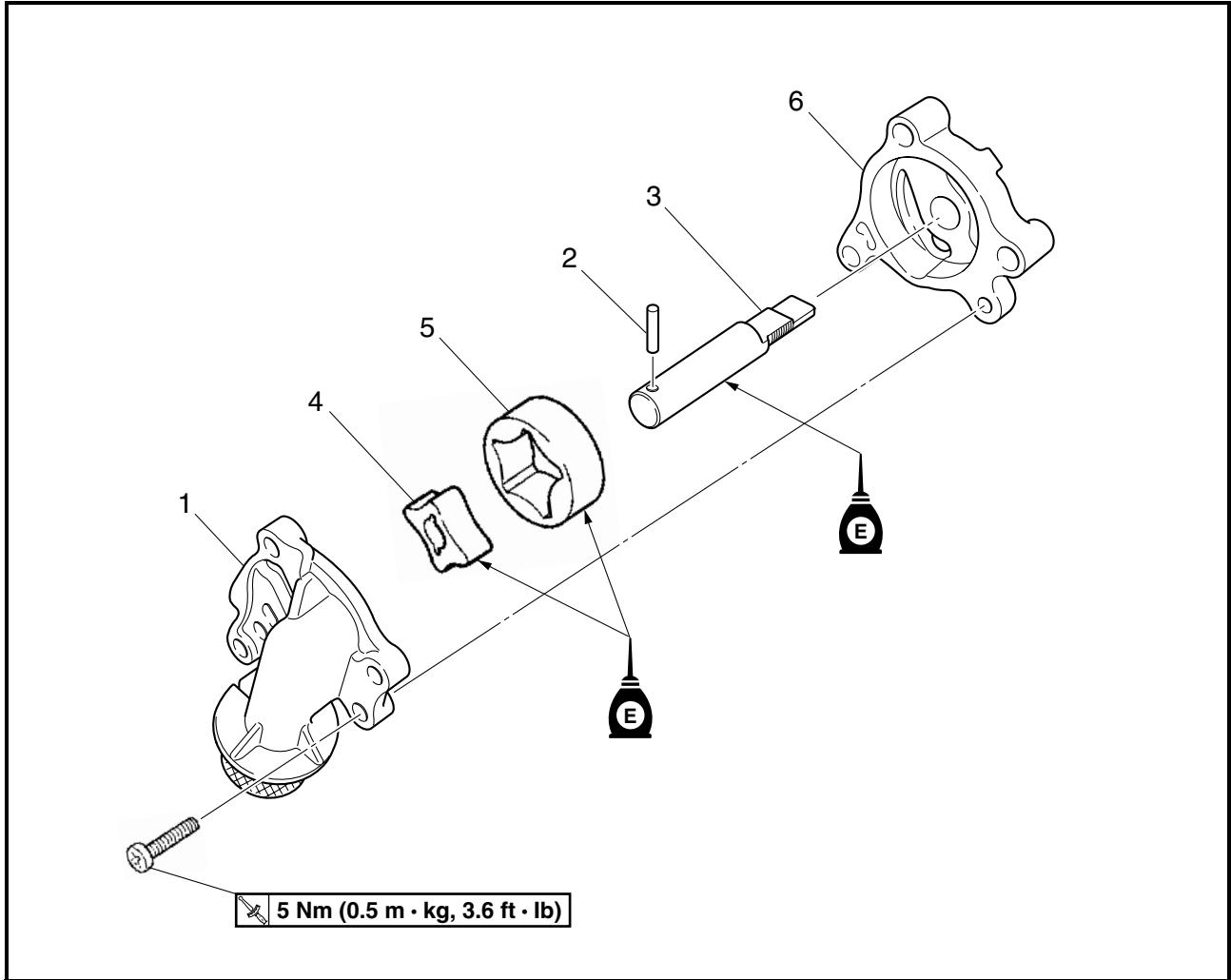


Order	Job/Part	Q'ty	Remarks
17	Washer	1	For installation, reverse the removal procedure.

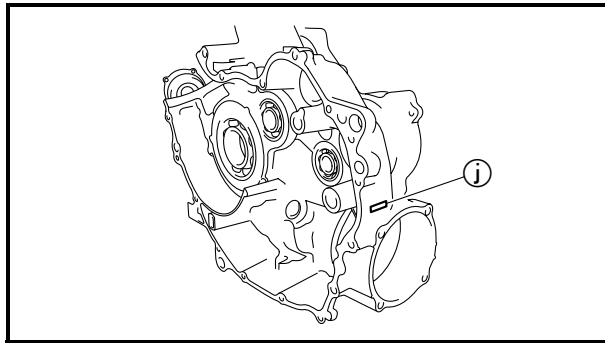


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OIL PUMP




Order	Job/Part	Q'ty	Remarks
	Disassembling the oil pump		Remove the parts in the order listed.
1	Oil pump housing cover	1	
2	Pin	1	
3	Oil pump shaft	1	
4	Oil pump inner rotor	1	
5	Oil pump outer rotor	1	
6	Oil pump housing	1	
			For assembly, reverse the disassembly procedure.

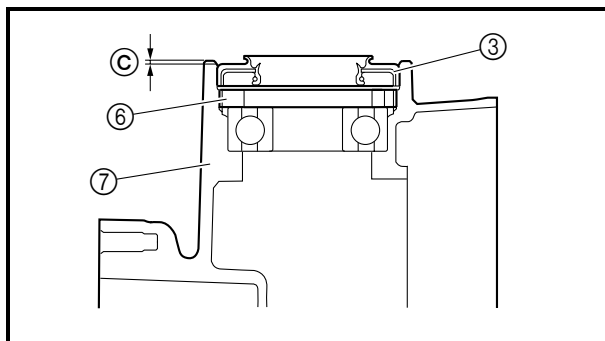
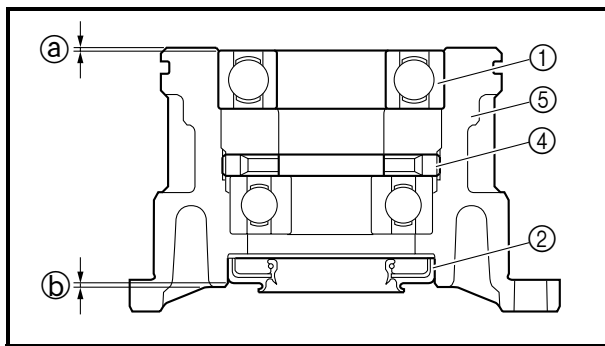


7) Round off hundredth digit and select appropriate shim(s). In the example above, the calculated shim thickness is 0.72 mm. The chart instructs you, however, to round off 2 to 0.

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


Shims are supplied in the following thickness.

 Middle drive pinion gear shim	
Thickness (mm)	0.10 0.40
	0.15 0.50
	0.20 0.60
	0.30



INSTALLING THE BEARING AND OIL SEALS

1. Install:
- bearing ①
 - oil seal ②
 - oil seal ③

	Installed depth of bearing ①
	0.9 ~ 1.4 mm (0.035 ~ 0.055 in)
	Installed depth of oil seal ②
	1.0 ~ 1.5 mm (0.039 ~ 0.059 in)
	Installed depth of oil seal ③
	1.0 ~ 1.5 mm (0.039 ~ 0.059 in)

- ④ Middle drive pinion gear bearing retainer
- ⑤ Bearing housing
- ⑥ Middle driven shaft bearing retainer
- ⑦ Crankcase

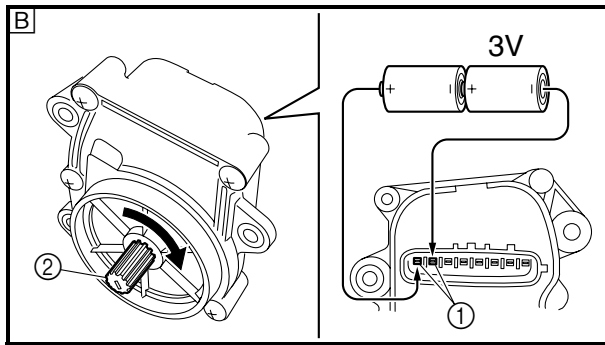
FUEL INJECTION SYSTEM

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Fault code No.	16	Symptom	Stuck throttle position sensor detected.	
Diagnostic code No.		D01	Throttle position sensor	
Order	Item/components and probable cause		Check or maintenance job	Reinstatement method
1	Installed condition of throttle position sensor.		<ul style="list-style-type: none"> • Check the installed area for looseness or pinching. • Check that the throttle position sensor is installed in the specified position. Refer to “CHECKING AND ADJUSTING THE THROTTLE POSITION SENSOR”.	Reinstated by starting the engine, operating it at idle, and then racing it.
2	Defective throttle position sensor.		<ul style="list-style-type: none"> • Execute the diagnostic monitoring mode. (Code No.D01) • Replace if defective. Refer to “CHECKING AND ADJUSTING THE THROTTLE POSITION SENSOR”.	

Fault code No.	21	Symptom	Coolant temperature sensor: open or short circuit detected.	
Diagnostic code No.		D06	Coolant temperature sensor	
Order	Item/components and probable cause		Check or maintenance job	Reinstatement method
1	Installed condition of coolant temperature sensor.		Check the installed area for looseness or pinching.	Turning the main switch to “ON”.
2	Connections <ul style="list-style-type: none"> • Coolant temperature sensor coupler • Main wire harness-ECU coupler 		<ul style="list-style-type: none"> • Check the coupler for any pins that may have pulled out. • Check the locking condition of the coupler. If there is a malfunction, repair it and connect the coupler securely.	
3	Open or short circuit in wire harness.		<ul style="list-style-type: none"> • Repair or replace if there is an open or short circuit. • Between coolant temperature sensor coupler and ECU coupler. (black/blue–black/blue) (green/yellow–green/yellow) 	
4	Defective coolant temperature sensor.		<ul style="list-style-type: none"> • Execute the diagnostic mode. (Code No.D06) • Replace if defective. Refer to “SIGNALING SYSTEM” in chapter 9.	



B Check that the pinion gear ② turns clockwise.

NOTE: _____
Be sure not to disassemble the gear motor and remove the pinion gear.

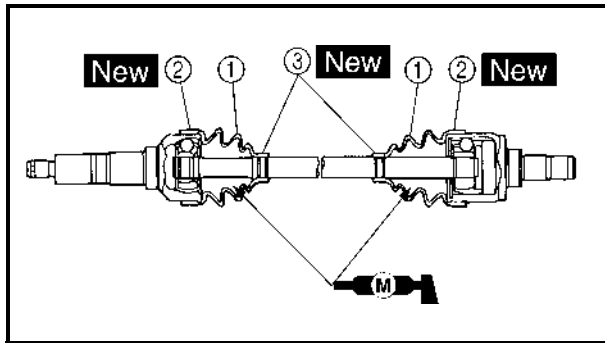


EBS00167

ASSEMBLING THE FRONT CONSTANT VELOCITY JOINTS

1. Apply:
 - molybdenum disulfide grease
(into the ball joint assembly)

NOTE: _____
Molybdenum disulfide grease is included in the repair kit.



2. Install:
 - dust boots ①
 - boot bands ②, ③ **New**



- a. Apply molybdenum disulfide grease into the dust boots.

	<p>Molybdenum disulfide grease 40 g (1.4 oz) per dust boot (front wheel side) 55 g (1.9 oz) per dust boot (differential gear case side)</p>
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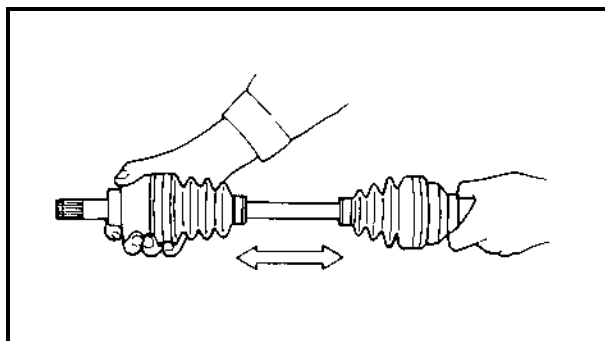
- b. Install the dust boots ①.
- c. Install the dust boot bands.

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.

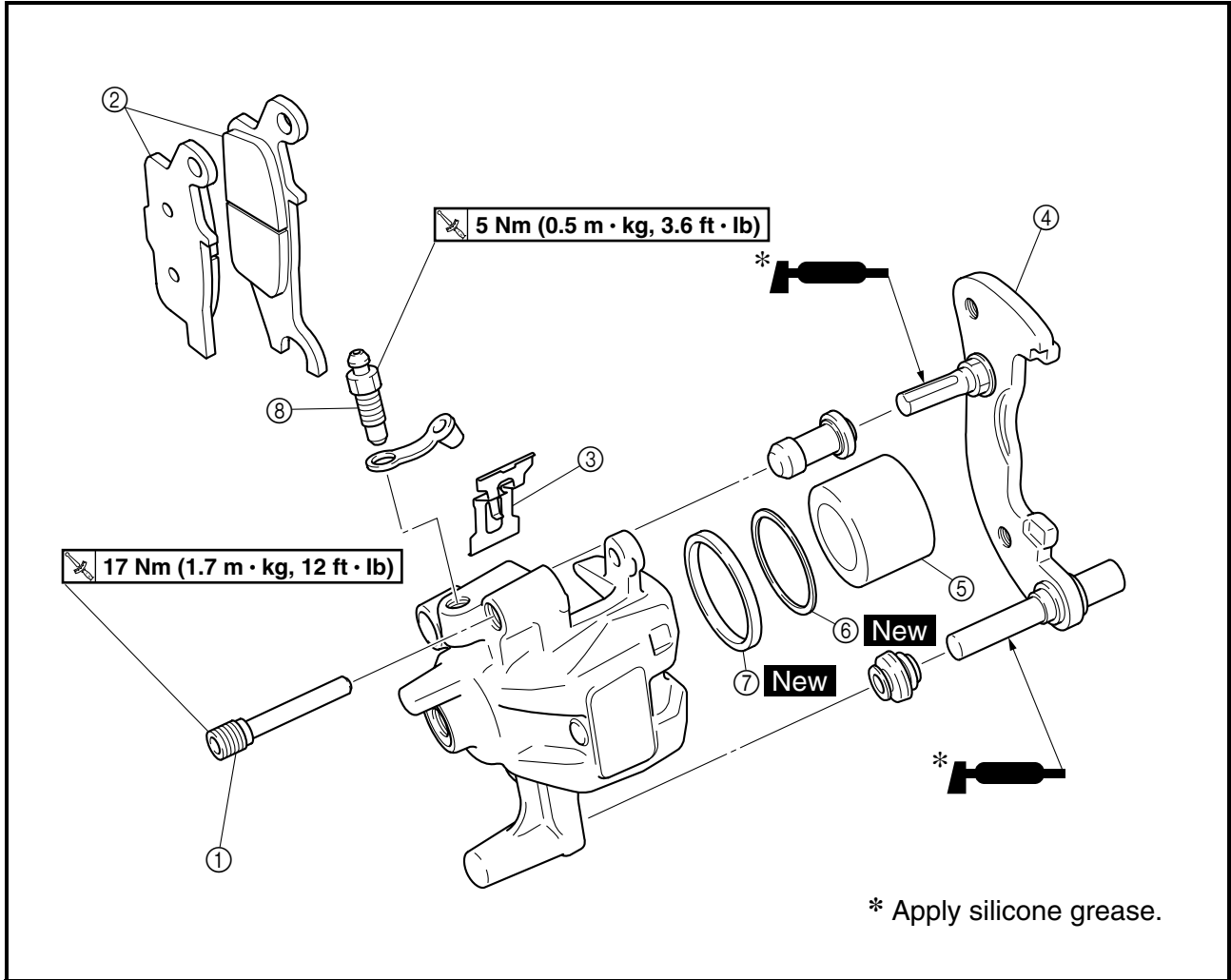


3. Check:
 - thrust movement free play
Excessive play → Replace the joint assembly.



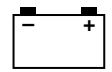


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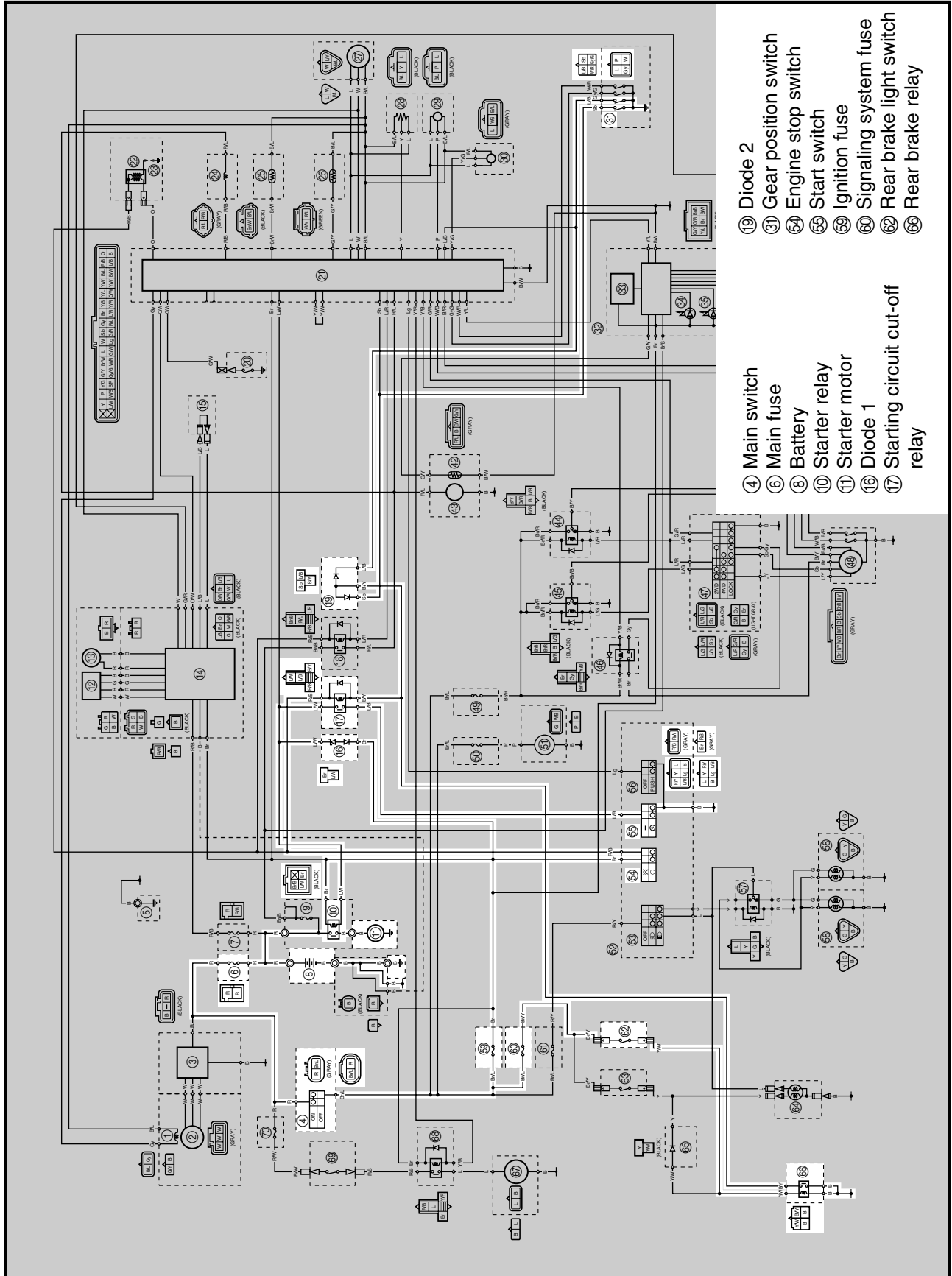
* Apply silicone grease.

Order	Job/Part	Q'ty	Remarks
	Disassembling the front brake calipers		Remove the parts in the order listed. The following procedure applies to both of the front brake calipers.
①	Brake pad holding bolt	1	Refer to "DISASSEMBLING THE FRONT AND REAR BRAKE CALI-PERS" and "ASSEMBLING THE FRONT AND REAR BRAKE CALI-PERS".
②	Front brake pad	2	
③	Brake pad spring	1	
④	Front brake caliper bracket	1	
⑤	Caliper piston	1	
⑥	Dust seal	1	
⑦	Caliper piston seal	1	
⑧	Bleed screw	1	For assembly, reverse the disassembly procedure.



EBS00506

ELECTRIC STARTING SYSTEM CIRCUIT DIAGRAM



- ④ Main switch
- ⑥ Main fuse
- ⑧ Battery
- ⑩ Starter relay
- ⑪ Starter motor
- ⑬ Diode 1
- ⑰ Starting circuit cut-off relay
- ⑲ Diode 2
- ⑳ Gear position switch
- ㉑ Engine stop switch
- ㉒ Start switch
- ㉓ Ignition fuse
- ㉔ Signaling system fuse
- ㉕ Rear brake light switch
- ㉖ Rear brake relay