



SERVICE MANUAL

**RX10H/RX10SH
RX10MH/RX10MSH
RX10RH/RX10RSH**

NOTICE

This manual was written by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so it is assumed that persons using this book to perform maintenance and repairs on Yamaha snowmobiles have a basic understanding of the mechanical concepts and procedures inherent in snowmobile repair. Without such knowledge, attempted repairs or service to this model may render it unfit and/or unsafe to use.

Yamaha Motor Company, Ltd. is continually striving to improve all models manufactured by Yamaha.

Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha dealers and will, where applicable, appear in future editions of this manual.

HOW TO USE THIS MANUAL

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



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

WARNING

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

CAUTION:

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

NOTE:

A NOTE provides key information that can make procedures easier or clearer.

MANUAL FORMAT

All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all inspection, repair, assembly, and disassembly operations.

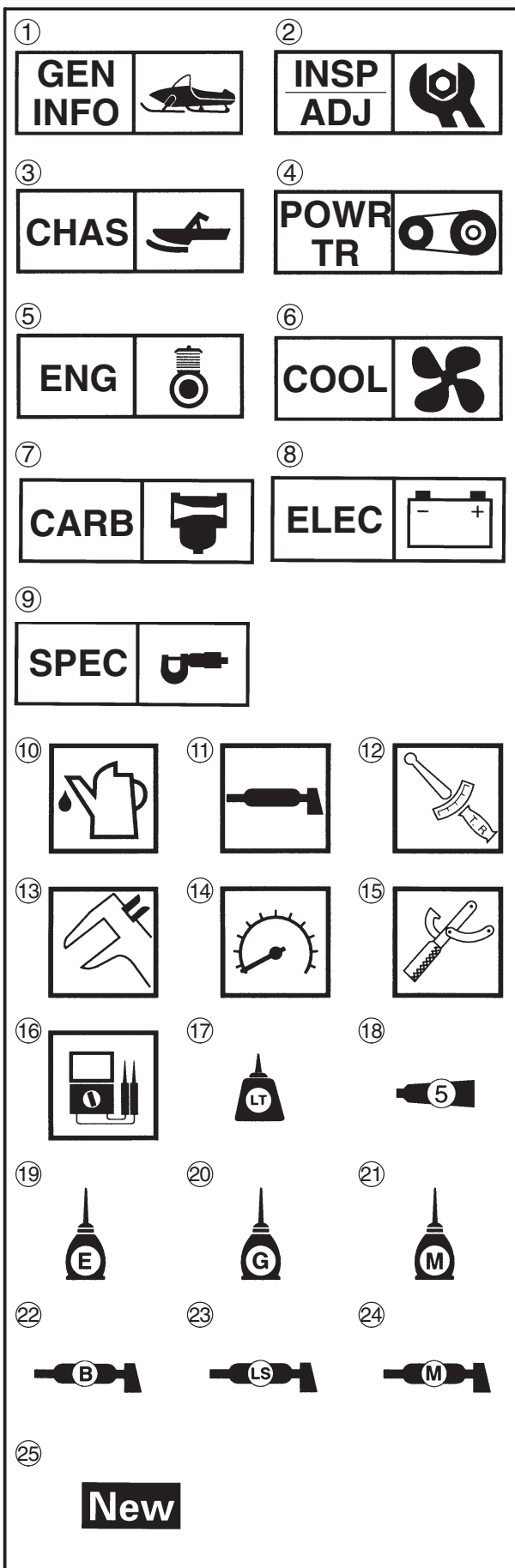
In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required to correct the problem will follow the symbol, e.g.,

- Bearings
Pitting/damage → Replace.

EXPLODED DIAGRAM

Each chapter provides exploded diagrams before each disassembly section to facilitate correct disassembly and assembly procedures.

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SERVICE MANUAL**
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ILLUSTRATED SYMBOLS (Refer to the illustration)

Illustrated symbols ① to ⑨ are designed as thumb tabs to indicate the chapter's number and content.

- ① General information
- ② Periodic inspections and adjustments
- ③ Chassis
- ④ Power train
- ⑤ Engine
- ⑥ Cooling system
- ⑦ Carburetion
- ⑧ Electrical
- ⑨ Specifications

Illustrated symbols ⑩ to ⑯ are used to identify the specifications which appear.

- ⑩ Filling fluid
- ⑪ Lubricant
- ⑫ Tightening
- ⑬ Wear limit, clearance
- ⑭ Engine speed
- ⑮ Special tool
- ⑯ Ω , V, A

Illustrated symbols ⑰ to ⑳ in the exploded diagram indicate grade of lubricant and location of lubrication point.

- ⑰ Apply locking agent (LOCTITE®)
- ⑱ Apply Yamabond No.5®
- ⑲ Apply engine oil
- ⑳ Apply gear oil
- ㉑ Apply molybdenum disulfide oil
- ㉒ Apply wheel bearing grease
- ㉓ Apply low-temperature lithium-soap base grease
- ㉔ Apply molybdenum disulfide grease
- ㉕ Use new one

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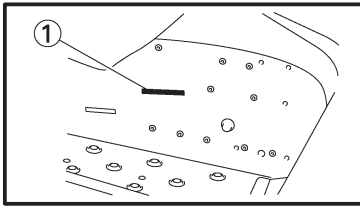
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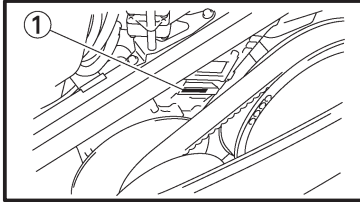
GENERAL INFORMATION



MACHINE IDENTIFICATION

FRAME SERIAL NUMBER

The frame serial number ① is located on the right-hand side of the frame (just below the front of the seat).



ENGINE SERIAL NUMBER

The engine serial number ① is located on the left-hand side of the crankcase.

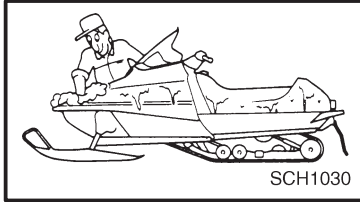
NOTE:

Designs and specifications are subject to change without notice.

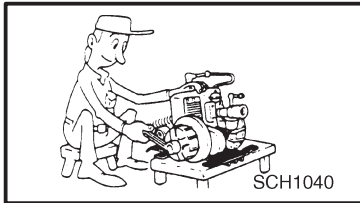


IMPORTANT INFORMATION PREPARATION FOR REMOVAL AND DISASSEMBLY

1



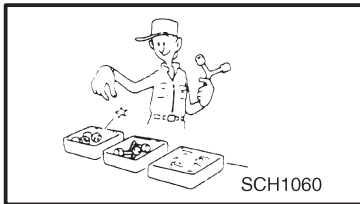
1. Remove all dirt, mud, dust, and foreign material before removal and disassembly.
While cleaning, take care to protect the electrical parts, such as relays, switches, motor, resistors, controllers, etc., from high pressure water splashes.



2. Use proper tools and cleaning equipment.
Refer to "SPECIAL TOOLS".

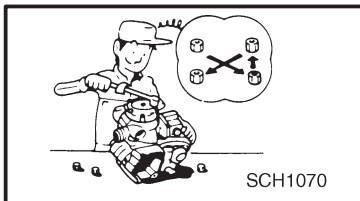


3. When disassembling the machine, keep mated parts together. This includes gears, cylinders, pistons, and other parts that have been "mated" through normal wear. Mated parts must be reused or replaced as an assembly.

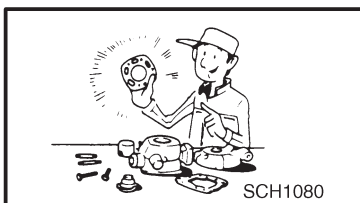


4. During disassembly of the machine, clean all parts and place them in trays in the order of disassembly. This will speed up assembly time and help ensure that all parts are reinstalled correctly.

5. Keep all parts away from any source of fire.



6. Be sure to keep to the tightening torque specifications. When tightening bolts, nuts, and screws, start with those that have larger diameters, and proceed from the inside to the outside in a criss-cross pattern.



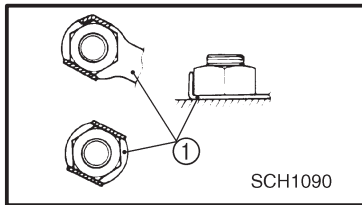
ALL REPLACEMENT PARTS

We recommend using genuine Yamaha parts for all replacements. Use oil and grease recommended by Yamaha for assembly and adjustments.



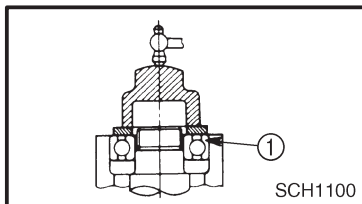
GASKETS, OIL SEALS, AND O-RINGS

1. All gaskets, seals, and O-rings should be replaced when an engine is overhauled. All gasket surfaces, oil seal lips, and O-rings must be cleaned.
2. Properly oil all mating parts and bearings during reassembly. Apply grease to the oil seal lips.



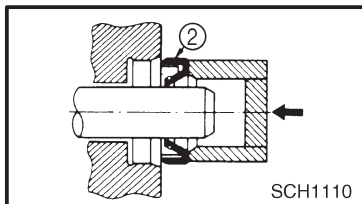
LOCK WASHERS/PLATES AND COTTER PINS

All lock washers/plates ① and cotter pins must be replaced if they are removed. Lock tab(s) should be bent along the bolt or nut flat(s) after the bolt or nut has been properly tightened.



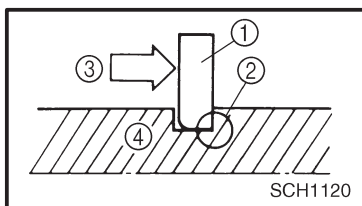
BEARINGS AND OIL SEALS

Install the bearings ① and oil seals ② with their manufacturer's marks or numbers facing outwards. (In other words, the stamped letters must be on the side exposed to view.) When installing oil seals, apply a light coating of lightweight lithium base grease to the seal lips. Oil the bearings liberally when installing.



CAUTION:

Do not use compressed air to spin the bearings dry. This causes damage to the surface of the bearings.



CIRCLIPS

All circlips should be inspected carefully before reassembly. Always replace piston pin clips after one use. Replace misshapen circlips. When installing a circlip ①, make sure that the sharp edged corner ② is positioned opposite to the thrust ③ it receives. See the sectional view.

④ Shaft

LOCTITE®

After installing fasteners that have LOCTITE® applied, wait 24 hours before using the machine. This will give the LOCTITE® time to dry properly.

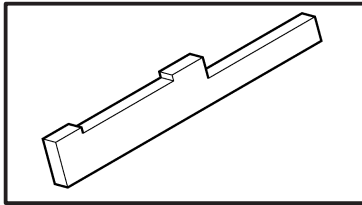


SPECIAL TOOLS

Some special tools are necessary for a completely accurate tune-up and assembly. Using the correct special tool will help prevent damage that can be caused by the use of improper tools or improvised techniques.

NOTE:

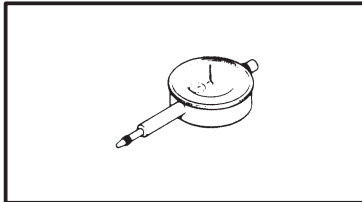
Be sure to use the correct part number when ordering the tool, since the part number may differ according to country.

**FOR TUNE UP**

- Sheave gauge

P/N: YS-42421-1 (15 mm offset) (for U.S.A./Canada)

This gauge is used to measure the sheave distance and for offset adjustment.

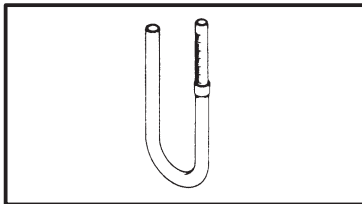


- Dial gauge

P/N: YU-03097 (for U.S.A./Canada)

90890-03097 (for Europe)

This gauge is used for run out measurement.

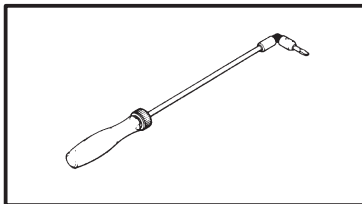


- Fuel level gauge

P/N: YM-01312-A (for U.S.A./Canada)

90890-01312 (for Europe)

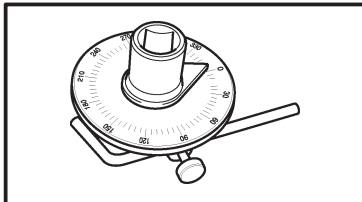
This gauge is used to measure the fuel level in the float chamber.



- Carburetor angle driver:

P/N: 90890-03173 (for Europe)

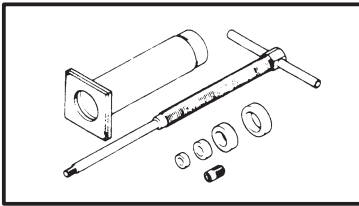
This tool is used to adjust the pilot screw when synchronizing the carburetor.



- Angle gauge:

Use goods on the market.

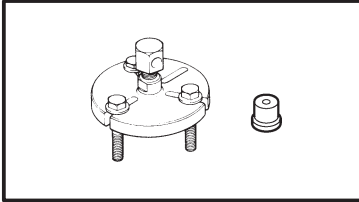
This tool is used to tightening the torque.



FOR ENGINE SERVICE

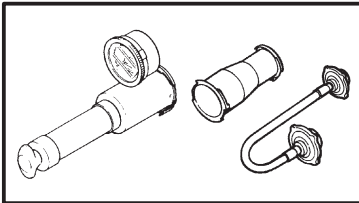
- Piston pin puller
P/N: YU-01304 (for U.S.A./Canada)
90890-01304 (for Europe)

This tool is used to remove the piston pin.



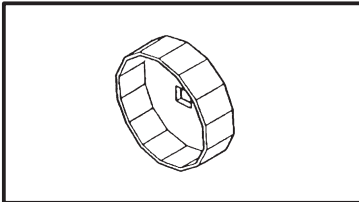
- Rotor holding puller, attachment
P/N: YU-33270 (for U.S.A./Canada)
90890-01362 (for Europe)
P/N: YM-33282
90890-04089

This tool is used to remove the magneto rotor.



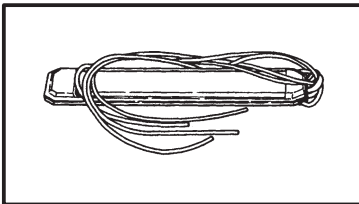
- Cooling system tester, adapter
P/N: YU-24460-01 (for U.S.A./Canada)
90890-01325 (for Europe)
P/N: YU-33984 (for U.S.A./Canada)
90890-01352 (for Europe)

This tester is used for checking the cooling system.



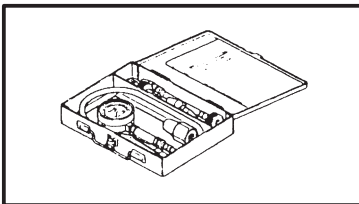
- Oil filter wrench
P/N: YU-38411 (for U.S.A./Canada)
90890-01426 (for Europe)

This tool is needed to loosen or tighten the oil filter cartridge.



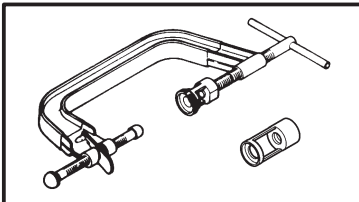
- Carburetor synchronizer
P/N: YU-8030 (for U.S.A./Canada)
90890-03094 (for Europe)

This guide is used to synchronize the carburetors.



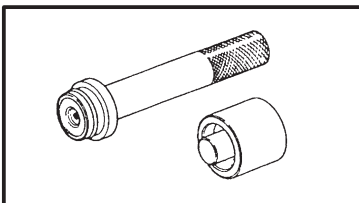
- Compression gauge set
P/N: YU-33223 (compression gage) (for U.S.A./Canada)
90890-03081 (for Europe)
P/N: YU-33223-3 (adapter) (for U.S.A./Canada) (for Europe)
90890-04136 (for Europe)

These tools are used to measure engine compression.



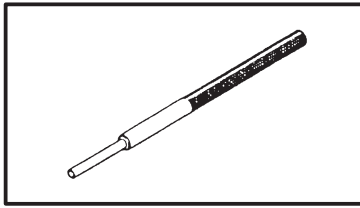
- Valve spring compressor set, quick release, attachment
P/N: YM-04019 (valve spring compressor) (for U.S.A./Canada)
90890-04019 (for Europe)
P/N: YM-4108, YM-4114 (attachment) (for U.S.A./Canada)
90890-04108, 90890-04114 (for Europe)

These tools are used to remove or install the valve assemblies.



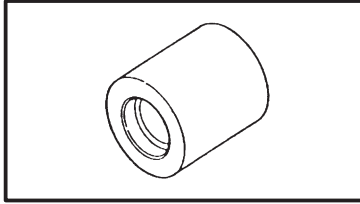
- 40 and 50 mm bearing driver.
Water pump seal installer.
P/N: YM-4058 (40 and 50 mm bearing driver) (for U.S.A./Canada)
90890-04058 (for Europe)
P/N: YM-33221 (water pump seal installer) (for U.S.A./Canada)
90890-04078 (for Europe)

These tools are used to install the water pump seal.



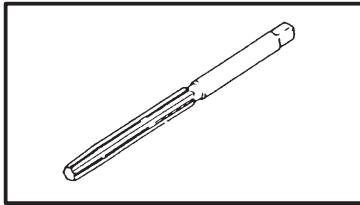
- Valve guide remover (ø4, ø4.5)
P/N: YM-04111 (ø4) (for U.S.A./Canada)
90890-04111 (for Europe)
P/N: YM-4116 (ø4.5) (for U.S.A./Canada)
90890-04116 (for Europe)

These tools are used to remove or install the valve guides.



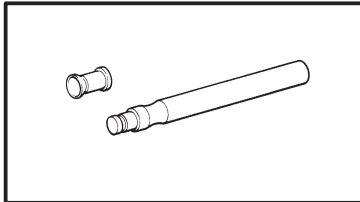
- Valve guide installer (ø4, ø4.5)
P/N: YM-04112 (ø4) (for U.S.A./Canada)
90890-04112 (for Europe)
P/N: YM-4117 (ø4.5) (for U.S.A./Canada)
90890-04117 (for Europe)

These tools are used to install the valve guides.



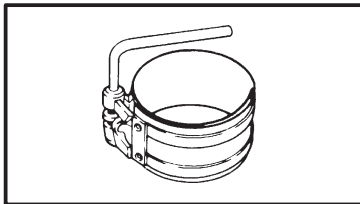
- Valve guide reamer (ø4, ø4.5)
P/N: YM-04113 (ø4) (for U.S.A./Canada)
90890-04113 (for Europe)
P/N: YM-4118 (ø4.5) (for U.S.A./Canada)
90890-04118 (for Europe)

These tools are used to rebores the new valve guides.



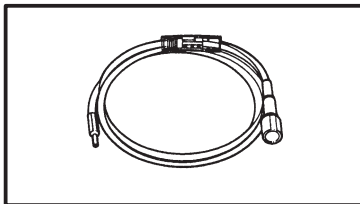
- Valve lapper
P/N: 90890-04101 (for Europe)

This tool is needed to remove and install the valve lifter.



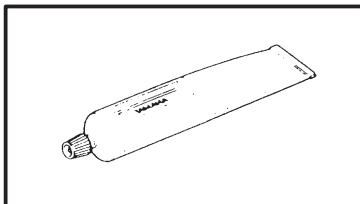
- Piston ring compressor
P/N: YM-8037 (for U.S.A./Canada)
90890-05158 (for Europe)

This tool is used to compress the piston rings when installing the piston into the cylinder.



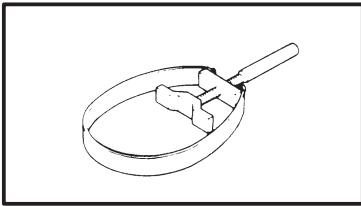
- Dynamic spark tester
P/N: YM-34487 (for U.S.A./Canada)
90890-06754 (for Europe)

This tool is used to check the ignition system component.



- Quick gasket[®]
P/N: ACC-1100-15-01 (for U.S.A./Canada)
90890-85505 (for Europe)

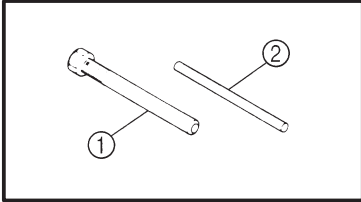
This bond is used to seal two mating surfaces (e.g., crankcase mating surfaces.)



FOR POWER TRAIN SERVICE

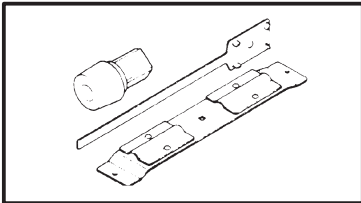
- Primary sheave holder
P/N: YS-01880 (for U.S.A./Canada)
90890-01701 (for Europe)

This tool is used to hold the primary sheave.



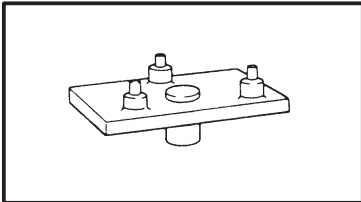
- Primary sheave puller (18 mm)
P/N: YS-01881-1 ①, YS-01882-1 ② (for U.S.A./Canada)
90890-01898 (for Europe)

This tool is used for removing the primary sheave.



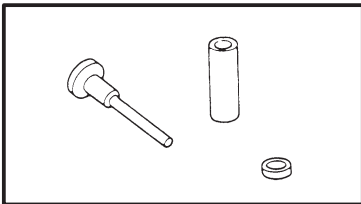
- Clutch spider separator
P/N: YS-28890-B (for U.S.A./Canada)
90890-01711 (for Europe)

This tool is used when disassembling and assembling the primary sheave.



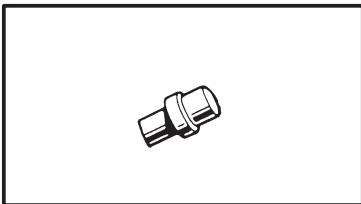
- Clutch separator adapter
P/N: YS-34480 (for U.S.A./Canada)
90890-01740 (for Europe)

This tool is used when disassembling and assembling the primary sheave.



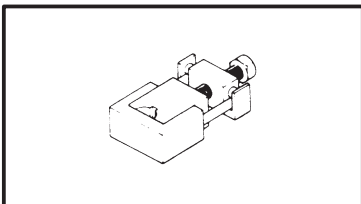
- YXR clutch bushing jig kit
P/N: YS-39752 (for U.S.A./Canada)

This tool is used for removal and installation of primary clutch weight and roller bushings.



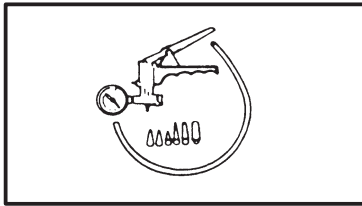
- Clutch bushing press
P/N: YS-42424 (for U.S.A./Canada)

This tool is used for removing and installing the post bushings (primary sheave cap bush, sliding sheave bush and torque cam bush).



- Track clip installer
P/N: YS-91045-A (for U.S.A./Canada)
90890-01721 (for Europe)

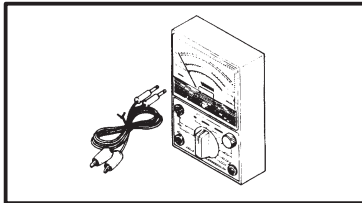
This tool is used for installing the track clip.



FOR CARBURETION SERVICE

- Mity vac
P/N: YB-35956 (for U.S.A./Canada)
90890-06756 (for Europe)

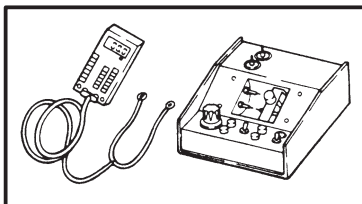
This tool is used to check the fuel pump.



FOR ELECTRICAL SERVICE

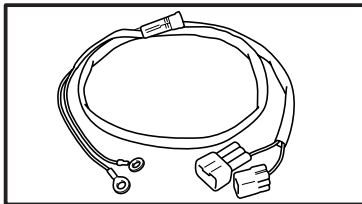
- Pocket tester
P/N: YU-03112 (for U.S.A./Canada)
90890-03112 (for Europe)

This instrument is necessary for checking the electrical components.



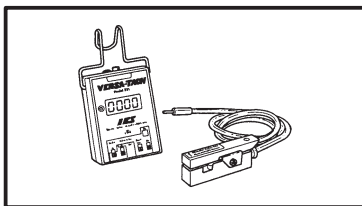
- Electro tester
P/N: YU-33260-A (for U.S.A./Canada)
90890-03021 (for Europe)

This instrument is invaluable for checking the electrical system.



- Speedometer unit test coupler.
P/N: YS-45686 (for U.S.A./Canada)
8EK-82507-09 (For Europe)

This tool is used for checking the speedometer unit.



- Inductive self-powered tachometer
P/N: YU-8036-B (for U.S.A./Canada)
90793-80009 (for Europe)

This tool is used to check engine speed.



PERIODIC INSPECTION AND ADJUSTMENT

INTRODUCTION

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

PERIODIC MAINTENANCE TABLE

Item	Remarks	Preoperation check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every
				Seasonally or 3,200 km (2,000 mi) (160 hr)
Spark plugs	Check condition. Adjust gap and clean. Replace if necessary.			●
Valves	Check valve clearance. Adjust clearance when engine is cold.	Every 40,000 km (25,000 mi)		
Engine oil	Check oil level.	●		
	Replace.		●	●
Engine oil filter cartridge	Replace.		●	Every 20,000 km (12,000 mi)
Fuel	Check fuel level.	●		
Fuel filter	Check condition. Replace if necessary.			●
Fuel line	Check fuel hose for cracks or damage. Replace if necessary.			●
Engine coolant	Check coolant level.	●		
	Air bleed the cooling system if necessary.			●
Carburetor	Check the throttle lever operation.	●		
	Adjust the jets.	Whenever operating condition (elevation/temperature) is changed.		
Engine stop switch	Check operation. Repair if necessary.	●		
Throttle override system (T.O.R.S.)	Check operation. Repair if necessary.	●		
Throttle lever	Check operation. Repair if necessary.	●		
Exhaust system	Check for leakage. Tighten or replace gasket if necessary.			●
Drive guard	Check for cracks, bends or damage. Replace if necessary.	●		
V-belt	Check for wear and damage. Replace if necessary.	●		
Drive track and idler wheels	Check deflection, and for wear and damage. Adjust/replace if necessary.	●		
Slide runners	Check for wear and damage.	●		
	Replace if necessary.			●

PERIODIC MAINTENANCE TABLE

INSP
ADJ

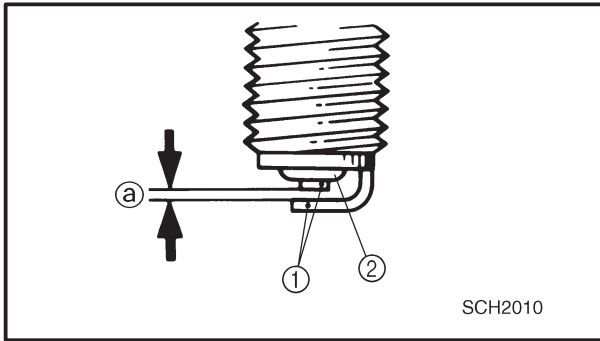


Item	Remarks	Preoperation check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every
				Seasonally or 3,200 km (2,000 mi) (160 hr)
Brake and parking brake	Check operation and fluid leakage.	●		
	Adjust free play and/or replace pads if necessary.			●
	Repair brake fluid.	See note.		
Disc brake installation	Check for slight free play. Lubricate shaft with specified grease as required.			Every 1,600 km (1,000 mi)
Drive chain oil	Check oil level.		●	
	Replace.			●
Drive chain	Check deflection. Adjust if necessary.	Initial at 500 km (300 mi) and every 800 km (500 mi) thereafter.		
Skis and ski runners	Check for wear and damage.	●		
	Repair if necessary.			●
Steering system	Check operation.	●		
	Adjust toe-out if necessary.			●
Lights	Check operation. Replace bulbs if necessary.	●		
Primary and secondary clutches	Check engagement and shift speed.			●
	Adjust if necessary.	Whenever operating elevation is changed.		
	Inspect sheaves for wear/damage. Inspect weights/rollers and bushings for wear-for primary. Inspect ramp shoes/bushings for wear-for secondary. Replace if necessary.			●
	Lubricate with specified grease.			●
Steering column bearing	Lubricate with specified grease.			●
Ski and front suspension	Lubricate with specified grease.			●
Suspension component	Lubricate with specified grease.			●
Parking brake cable end and lever end/throttle cable end	Lubricate with specified grease.			●
	Check cable damage. Replace if necessary.			●
Shroud latches	Make sure that the shroud latches and hooked.	●		
Fittings and fasteners	Check tightness. Replace if necessary.	●		
Tool kit and recommended equipment	Check for proper placement.	●		

NOTE:

Brake fluid replacement:

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

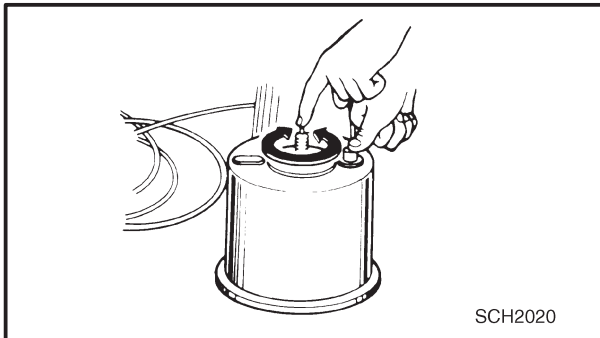


ENGINE SPARK PLUGS

1. Remove:
 - Spark plug caps
 - Spark plugs
2. Inspect:
 - Electrodes ①
Damage/wear → Replace the spark plug.
 - Insulator color ②
3. Measure:
 - Spark plug gap ③
Out of specification → Regap.
Use a wire thickness gauge.



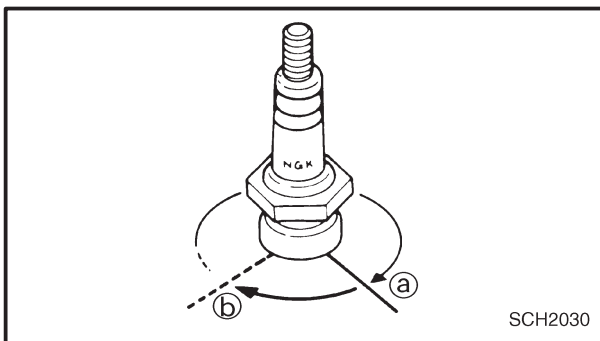
Spark plug gap:
0.7 ~ 0.8 mm
(0.028 ~ 0.031 in)



If necessary, clean the spark plugs with a spark plug cleaner.

Standard spark plug: CR9E (NGK)

Before installing a spark plug, clean the gasket surface and spark plug surface.

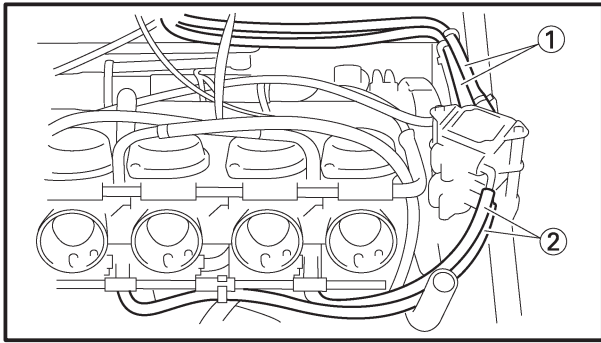


4. Install:
 - Spark plugs



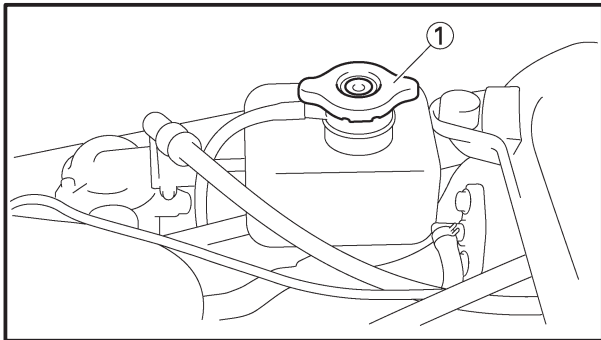
Spark plug:
13 Nm (1.3 m•kg, 9.4 ft•lb)

NOTE: _____
Finger-tighten ③ the spark plug before torquing ④ it to specification.



FUEL LINE INSPECTION

1. Remove:
 - Intake silencer
Refer to “CARBURETORS” in CHAPTER 7.
2. Inspect:
 - Fuel hoses ①
 - Fuel delivery hoses ②
Cracks/damage → Replace.
3. Install:
 - Intake silencer
Refer to “CARBURETORS” in CHAPTER 7.



COOLING SYSTEM

Coolant replacement

NOTE:

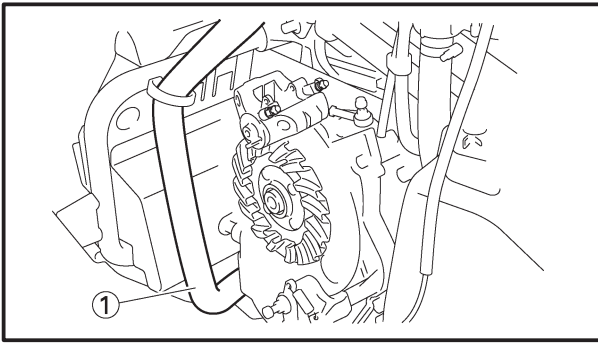
The coolant should be changed at least every season.

1. Place the machine on a level surface.
2. Remove:
 - Intake silencer
Refer to “CARBURETORS” in CHAPTER 7.
3. Remove:
 - Coolant filler cap ①

⚠ WARNING

Do not remove the coolant filler cap ① when the engine is hot. Pressurized scalding hot fluid and steam may be blown out, which could cause serious injury. When the engine has cooled, place a thick rag or a towel over the coolant filler cap.

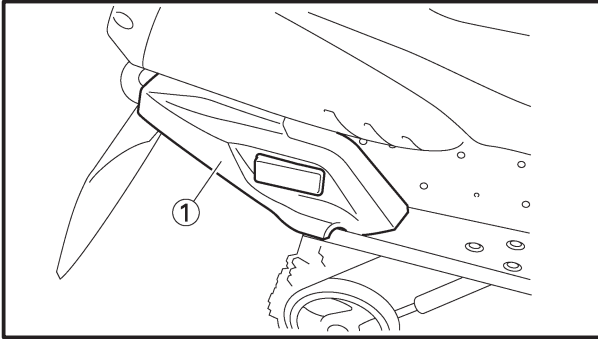
Slowly turn the cap counterclockwise until it stop. This allows any residual pressure to escape. When the hissing sound has stopped, press down on the cap while turning it counterclockwise to remove it.



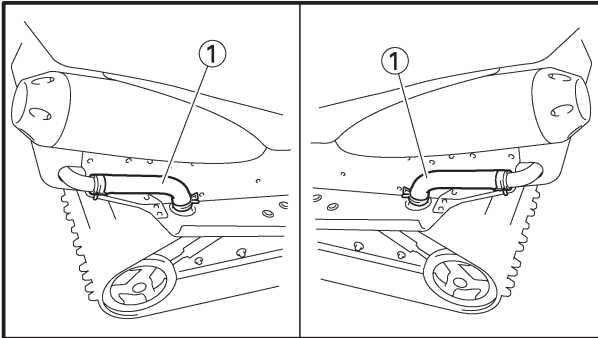
4. Place an open container under the coolant hose.
5. Disconnect:
 - Coolant hose ①
6. Drain the coolant.

NOTE:

Lift up the tail of the machine to drain the coolant.



7. Remove:
 - Rear cover ①



8. Disconnect:
 - Coolant hoses ①
9. Drain the coolant.

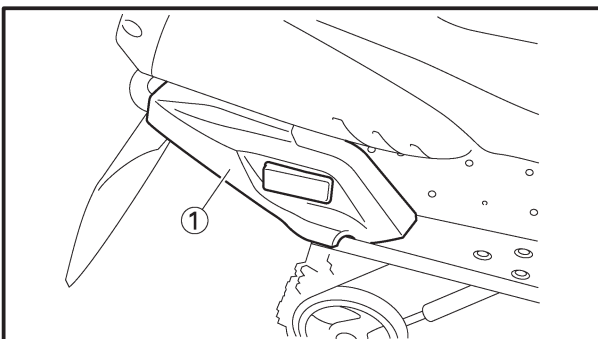
NOTE:

Lift up the front of the machine to drain the coolant completely.

⚠ WARNING

Coolant is poisonous. It is harmful or fatal if swallowed.

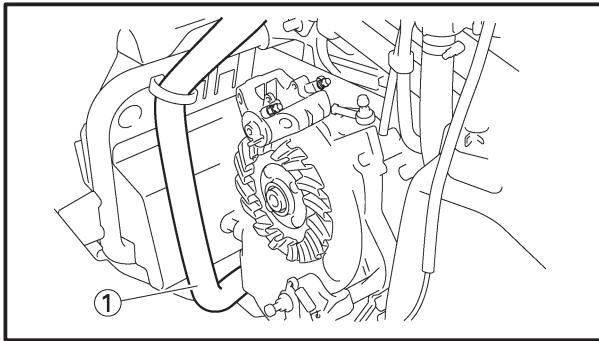
- If coolant is swallowed, induce vomiting immediately and get immediate medical attention.
- If coolant splashes in your eyes, thoroughly wash them with water and consult a doctor.
- If coolant splashes on your skin or clothes, quickly wash it away with soap and water.



10. Connect:
 - Coolant hoses
11. Install:
 - Rear cover ①



Bolt (rear cover):
3 Nm (0.3 m•kg, 2.2 ft•lb)



12. Install:
- Coolant hose ①

13. Install:
- Intake silencer
Refer to “CARBURETORS” in CHAPTER 7.
14. Fill:
- Cooling system

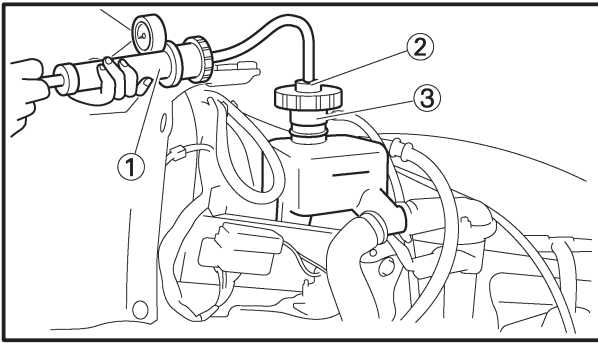


Recommended coolant:
High quality silicate-free
ethylene glycol antifreeze
containing corrosion inhibitors
Coolant mixing ratio
(coolant:water)
3:2 (60%:40%)
Total amount:
4.7 L (4.14 Imp qt, 4.97 US qt)

CAUTION:

- Hard water or salt water is harmful to engine parts. If soft water is not available, use boiled or distilled water.
- Do not use water containing impurities or oil.

15. Bleed the air from the cooling system.
16. Inspect:
- Cooling system
Decrease of pressure (leaks) → Repair as required.



Inspection steps:

- Attach the cooling system tester (1) and adapter (2) to the coolant filler (3).



Cooling system tester:

90890-01325, YU-24460-01

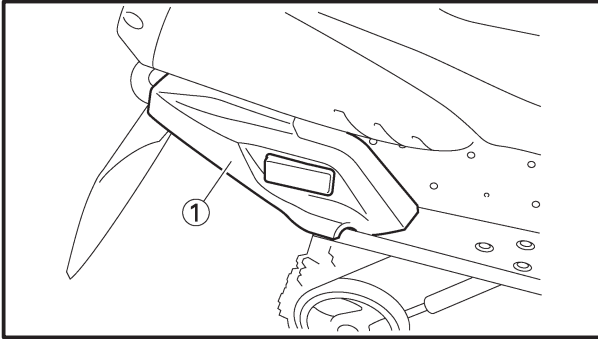
Adapter:

90890-01352, YU-24460-01

- Apply 100 kPa (1.0 kg/cm², 14 psi).
- Measure the pressure with the gauge.

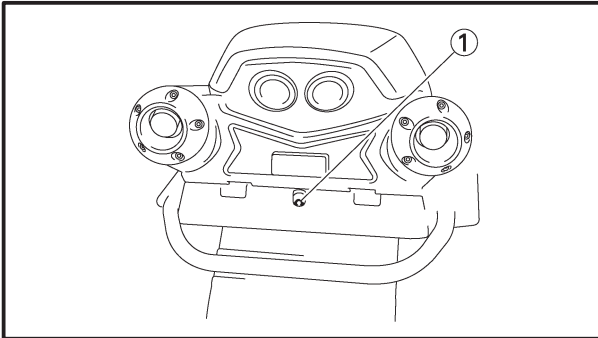
Air bleeding

1. Remove:
 - Rear cover (1)
2. Bleed air from the cooling system.



Air bleeding steps:

- Lift up the tail of the machine.
- Remove the bleed bolt (1) on the heat exchanger.
- While slowly adding coolant to the coolant filler, drain the coolant until no more air bubbles appear.
- Tighten the bleed bolt (1).

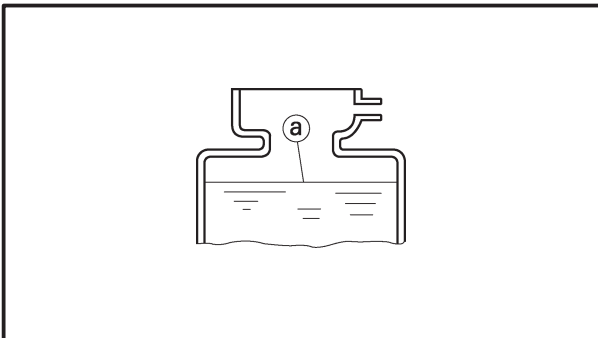


Bleed bolt:

13 Nm (1.3 m•kg, 9.4 ft•lb)

- Add coolant to the coolant cold level (a).
- Install the coolant filler cap.

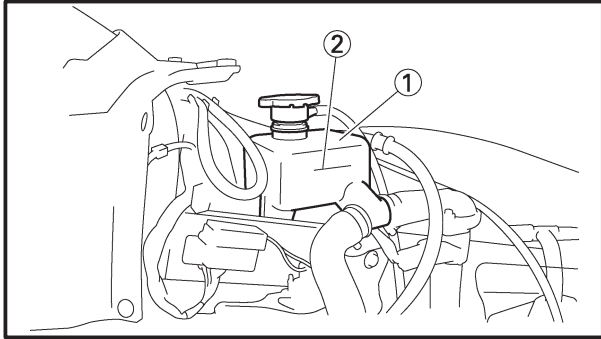
Apply and lock the parking brake. Start the engine and run it at approximately 2,500 ~ 3,000 r/min until the coolant circulates (approximately 3 ~ 5 minutes). The rear heat exchanger will be warm to the touch.



**⚠ WARNING**

To avoid severe injury or death:

- Make sure the machine is securely supported with a suitable stand.
- Do not exceed 3,000 r/min. Drive line damage and excessive V-belt wear could occur, or the machine could unexpectedly move forward if the clutch engages.
- Operate the engine only in a well-ventilated area.



- Remove the coolant filler cap and bleed the cooling system again, as described above.
No air bubbles → OK.
 - Add coolant to the specified level.
 - Pour coolant into the coolant reservoir ① until the coolant level reaches the “COLD LEVEL” level mark ②.
3. Install:
- Rear cover



VALVE CLEARANCE ADJUSTMENT

NOTE:

- Valve clearance adjustment should be made on a cold engine, at room temperature.
- When the valve clearance is to be measured or adjusted, the piston must be at top dead center (TDC) on the compression stroke.

1. Drain:
 - Coolant
2. Remove:
 - Cylinder head cover
Refer to “CYLINDER HEAD” in CHAPTER 5.
 - Timing plug
3. Measure:
 - Valve clearance
Out of specification → Adjust.



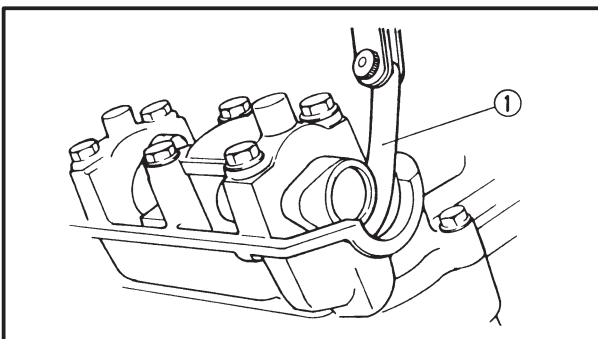
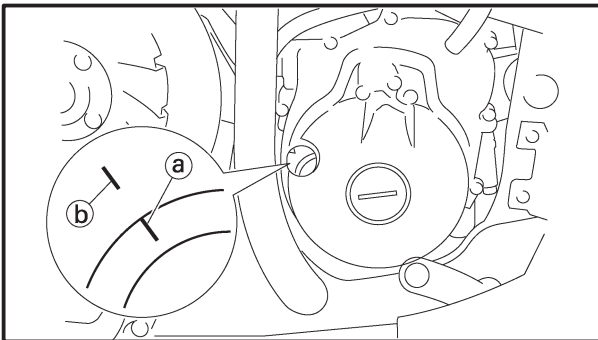
Valve clearance (cold)

Intake valve

0.11 ~ 0.20 mm
(0.0043 ~ 0.0079 in)

Exhaust valve

0.21 ~ 0.25 mm
(0.0083 ~ 0.0098 in)



Checking steps:

- Turn the crankshaft clockwise.
- When piston #4 is at TDC on the compression stroke, align the TDC mark (a) on the A.C. magneto rotor with the mark (b) on the A.C. magneto cover.
- Turn the crankshaft clockwise.

NOTE:

TDC on the compression stroke can be found when the camshaft lobes are turned away from each other.

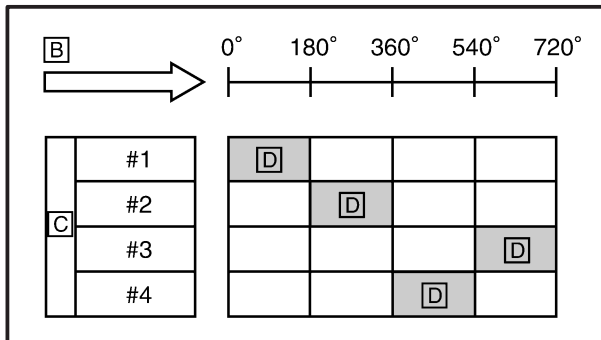
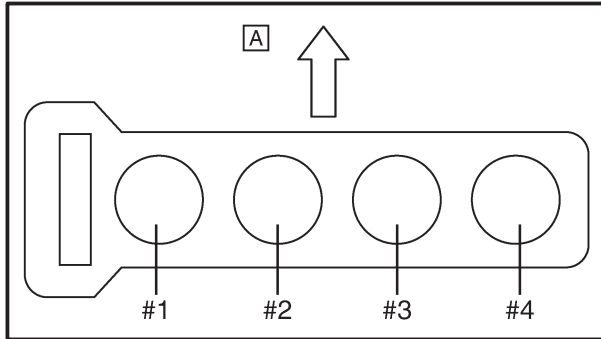
- Measure the valve clearance with a thickness gauge (1).



NOTE:

- If the valve clearance is incorrect, record the measured reading.
- Measure the valve clearance in the following sequence.

Valve clearance measuring sequence Cylinder #1 → #2 → #4 → #3



A Front

For each cylinder, starting with cylinder #1 at TDC, turn the crankshaft clockwise as specified in the following table.

B Degrees that the crankshaft is turned clockwise

C Cylinder

D Combustion cycle

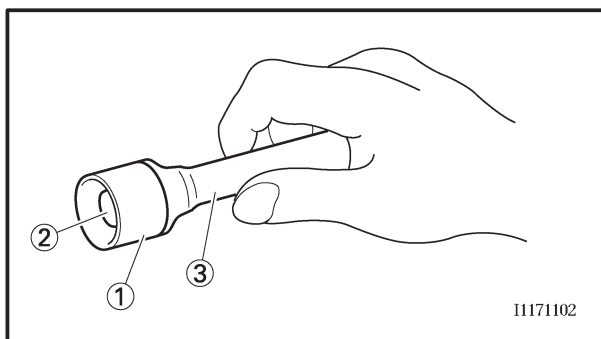
#2 Cylinder	180°
#4 Cylinder	360°
#3 Cylinder	540°

4. Remove:

- Intake camshaft
- Exhaust camshaft

NOTE:

- Refer to “CAMSHAFTS” in CHAPTER 5.
- When removing the timing chain and camshafts, fasten a wire to the timing chain to retrieve it if it falls into the crankcase.



5. Adjust:

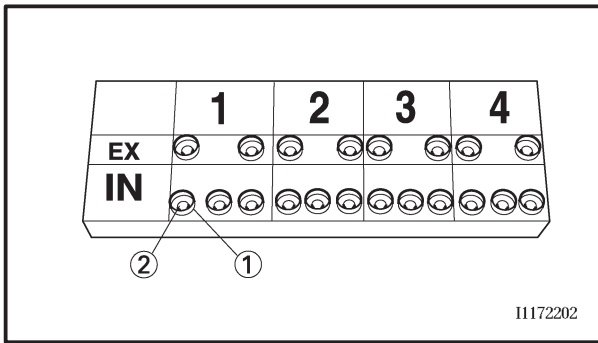
- Valve clearance

Adjustment steps:

- Remove the valve lifter ① and the valve pad ② with a valve lapper ③.

VALVE CLEARANCE ADJUSTMENT

**INSP
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NOTE:

- Cover the timing chain opening with a rag to prevent the valve pad from falling into the crankcase.
- Make a note of the position of each valve lifter ① and valve pad ② so that they can be installed in the correct place.

- Select the proper valve pad from the following table.

Valve pad thickness range		Available valve pads
Nos. 120 ~ 240	1.20 ~ 2.40 mm (0.047 ~ 0.095 in)	25 thicknesses in 0.05 mm (0.0020 in) increments

NOTE:

- The thickness ① of each valve pad is marked in hundredths of millimeters on the side that touches the valve lifter.
- Since valve pads of various sizes are originally installed, the valve pad number must be rounded in order to reach the closest equivalent to the original.

- Round off the original valve pad number according to the following table.

Last digit	Rounded value
0 or 2	0
5	5
8	10

EXAMPLE:

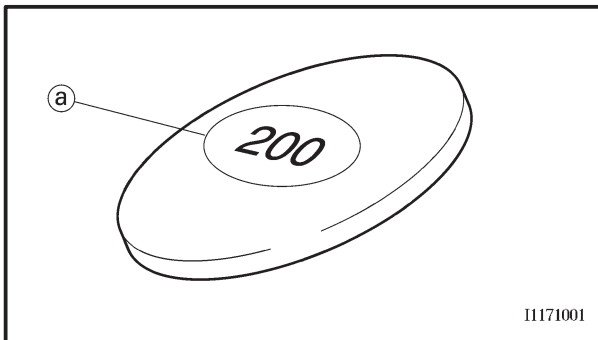
Original valve pad number = 148 (thickness = 1.48 mm (0.058 in))

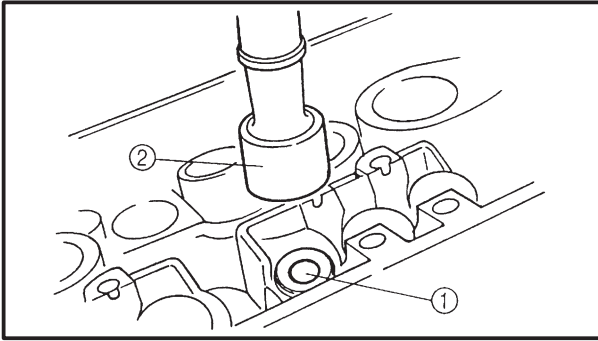
Rounded value = 150

- Locate the rounded number of the original valve pad and the measured valve clearance in the valve pad selection table. The point where the column and row intersect is the new valve pad number.

NOTE:

The new valve pad number is only an approximation. The valve clearance must be measured again and the above steps should be repeated if the measurement is still incorrect.





- Install the new valve pad ① and the valve lifter ②.

NOTE:

- Apply molybdenum disulfide oil to the valve pad and the valve lifter.
- The valve lifter must turn smoothly when rotated by hand.
- Install the valve lifter and the valve pad in the correct place.

- Install the exhaust and intake camshafts, timing chain and camshaft caps.



Camshaft cap bolt
10 Nm (1.0 m•kg, 7.2 ft•lb)

NOTE:

- Refer to “CAMSHAFTS” in CHAPTER 4.
- Lubricate the camshaft caps, camshaft lobes and camshaft journals.
- First, install the exhaust camshaft.
- Align the camshaft marks with the camshaft cap marks.
- Rotate the crankshaft clockwise several turns to seat the parts.

- Measure the valve clearance again.
- If the valve clearance is still out of specification, repeat all of the valve clearance adjustment steps until the specified clearance is obtained.

6. Install:

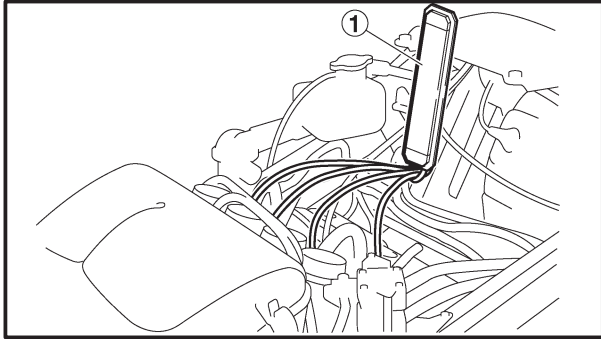
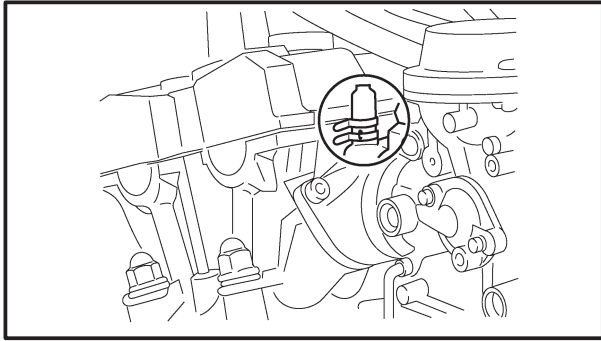
- Cylinder head cover
Refer to “CAMSHAFTS” in CHAPTER 5.

7. Install:

- All removed parts

NOTE:

For installation, reverse the removal procedure.
Note the following points.



CARBURETOR SYNCHRONIZATION

NOTE:

Prior to synchronizing the carburetors, the valve clearance and the engine idling speed should be properly adjusted and the ignition timing should be checked.

1. Remove:
 - Vacuum cap
2. Install:
 - Carburetor synchronizer ①
 - Engine tachometer (near the spark plug)



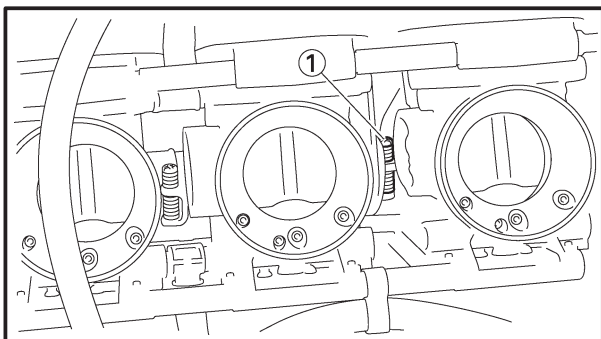
Carburetor synchronizer
90890-03094, YU-8030
Engine tachometer
90793-80009, YU-8036-B

3. Start the engine and let it warm up for several minutes.
4. Inspect:
 - Engine idle speed
Out of specification → Adjust.
Refer to “ENGINE IDLE SPEED ADJUSTMENT”.



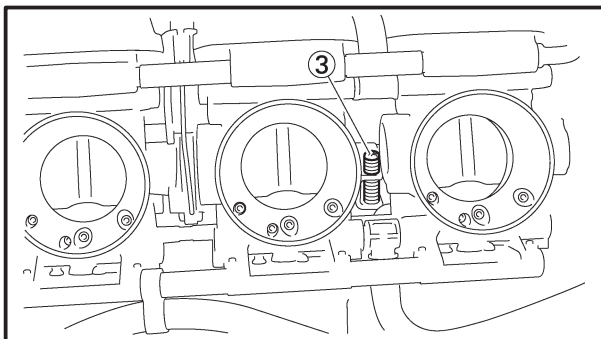
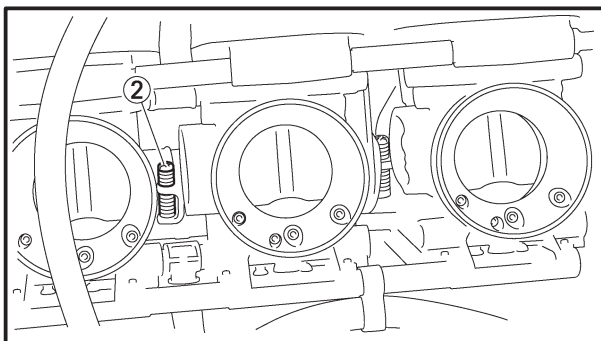
Engine idle speed:
 $1,350 \pm 100$ r/min
(1,250 ~ 1,450 r/min)

5. Adjust:
 - Carburetor synchronization



Adjustment steps:

- Synchronize carburetor #2 to carburetor #3 by turning the synchronizing screw ① in either direction until both gauges read the same.



NOTE:

After each step, rev the engine two or three times, each time for less than a second, and check the synchronization again.

- Synchronize carburetor #4 to carburetor #3 by turning the synchronizing screw ② in either direction until both gauges read the same.
- Synchronize carburetor #2 to carburetor #1 by turning the synchronizing screw ③ in either direction until both gauges read the same.



**Vacuum pressure at engine
idling speed**
35 kPa (0.35 kg/cm², 4.98 psi)

NOTE:

The difference in vacuum pressure between two carburetors should not exceed 1.33 kPa (0.01 kg/cm², 0.19 psi).

6. Measure:

- Engine idle speed
Out of specification → Adjust.

7. Adjust:

- Throttle cable free play
Refer to "THROTTLE CABLE FREE PLAY ADJUSTMENT".



ENGINE IDLE SPEED ADJUSTMENT

NOTE:

Prior to adjusting the engine idling speed, the carburetor synchronization should be adjusted properly, the air filter should be clean, and the engine should have adequate compression.

1. Start the engine and let it warm up for several minutes.
2. Install:
 - Engine tachometer
(near the spark plug)



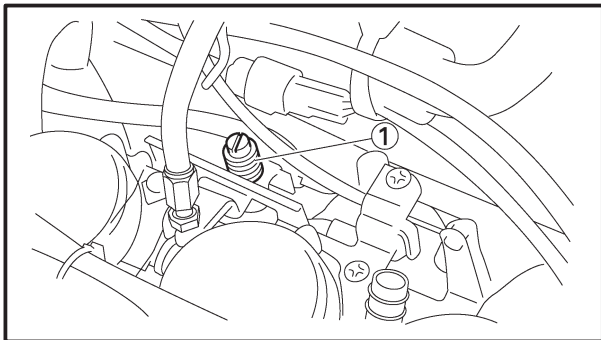
Engine tachometer
90793-80009, YU-8036-B

3. Measure:
 - Engine idle speed
Out of specification → Adjust.



Engine idle speed:
 $1,350 \pm 100$ r/min
(1,250 ~ 1,450 r/min)

4. Adjust:
 - Engine idle speed



- Turn the throttle stop screw ① in or out until the specified engine idle speed is obtained.
Turning in → Idle speed is increased.
Turning out → Idle speed is decreased.

NOTE:

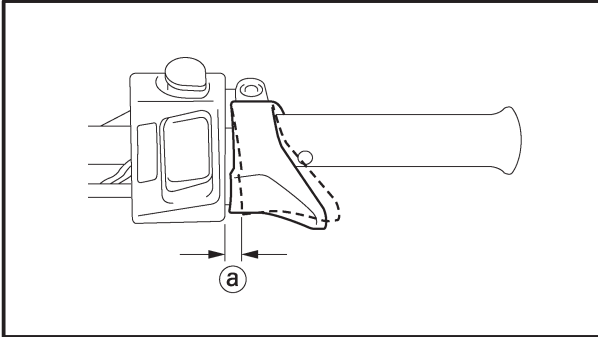
After adjusting the engine idle speed, the throttle cable free play should be adjusted.



THROTTLE CABLE FREE PLAY ADJUSTMENT

NOTE:

- Before adjusting the throttle cable free play, the engine idle speed should be adjusted.
- Adjust the throttle cable free play while the cable is in the cable guide.



1. Measure:

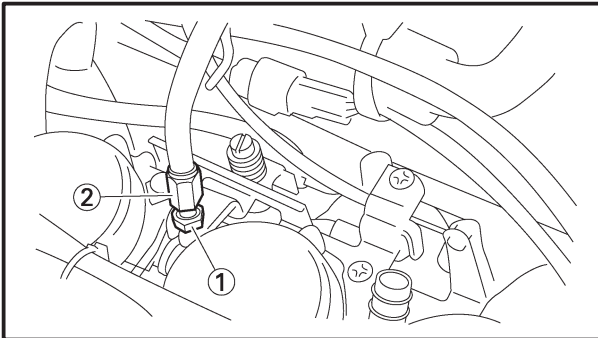
- Throttle cable free play ①
- Out of specification → Adjust.



Throttle cable free play:
2.0 ~ 3.0 mm (0.08 ~ 0.12 in)

2. Adjust:

- Throttle cable free play



Adjustment steps:

- Loosen the locknut ①.
- Turn the adjusting nut ② in or out until the specified free play is obtained.

Turning in → Free play is increased.

Turning out → Free play is decreased.

- Tighten the locknut.

NOTE:

After adjusting the free play, turn the handlebar to right and left, and make sure that the engine idling does not run faster.

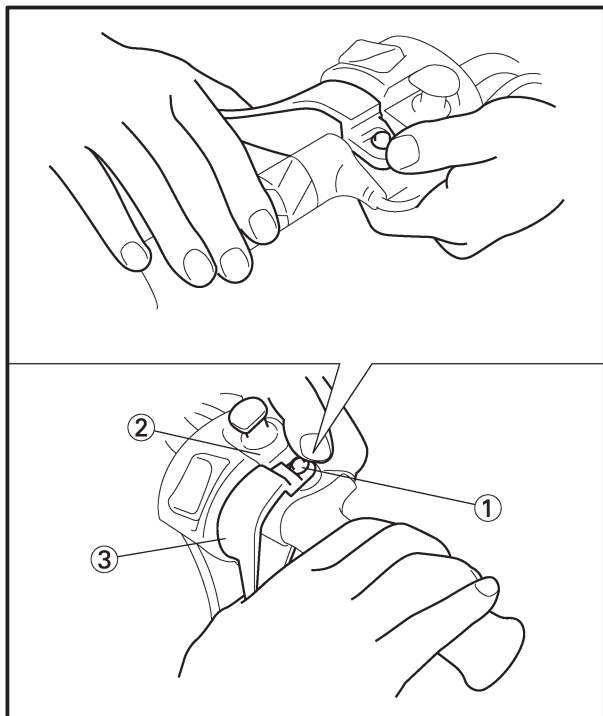


THROTTLE OVERRIDE SYSTEM (T.O.R.S.) CHECK

⚠ WARNING

When checking T.O.R.S.:

- Be sure the parking brake is applied.
- Be sure the throttle lever moves smoothly.
- Do not run the engine up to the clutch engagement speed. Otherwise, the machine could start moving forward unexpectedly, which could cause an accident.



1. Start the engine.
2. Hold the pivot point of the throttle lever away from the throttle switch by putting your thumb (above) and forefinger (below) between the throttle lever pivot ① and stop switch housing ②.

While holding as described above, press the throttle lever ③ gradually.

The T.O.R.S. will operate and the engine should run between 2,800 and 3,000 r/min.

⚠ WARNING

If the engine does not run between 2,800 and 3,000 r/min, stop the engine by turning the main switch to the “OFF” position and check the electrical system.

COMPRESSION PRESSURE MEASUREMENT

NOTE:

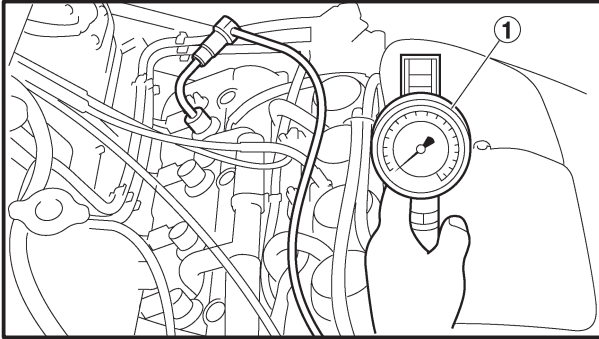
Insufficient compression pressure will result in a loss of performance.

1. Measure:
 - Valve clearance
Out of specification → Adjust.
Refer to “VALVE CLEARANCE ADJUSTMENT”.
2. Start the engine, warm it up for several minutes, and then turn it off.
3. Remove:
 - Spark plug



CAUTION:

Before removing the spark plugs, use compressed air to blow away any dirt accumulated in the spark plug wells to prevent it from falling into the cylinders.



4. Install:

- Compression gauge ①



Compression gauge set
90890-03081, YU-33223
Compression gauge adapter
90890-04136, YU-33223-3

5. Measure:

- Compression pressure

Above the maximum pressure → Inspect the cylinder head, valve surfaces, and piston crown for carbon deposits.

Below the minimum pressure → Squirt a few drops of oil into the affected cylinder and measure again.

Refer to the following table.

Compression pressure (with oil applied into cylinder)	
Reading	Diagnosis
Higher than without oil	Piston ring(-s) wear or damage → Repair.
Same as without oil	Piston, valves, cylinder head gasket or piston possibly defective → Repair. Compression pressure (at sea level)



Compression pressure
(at sea level):

Standard:

1,450 kPa (14.5 kg/cm²,
206 psi) at 400 r/min

Minimum:

1,260 kPa (12.6 kg/cm²,
179 psi) at 400 r/min

Maximum:

1,620 kPa (16.2 kg/cm²,
230 psi) at 400 r/min



Measurement steps:

- Turn the main switch to “ON”.
- With the throttle wide open, crank the engine until the reading on the compression gauge stabilizes.

⚠ WARNING

To prevent sparking, ground all spark plug leads before cranking the engine.

NOTE:

The difference in compression pressure between cylinders should not exceed 100 kPa (1 kg/cm², 14.2 psi)

6. Install:

- Spark plug



Spark plug:
13 Nm (1.3 m•kg, 9.4 ft•lb)

ENGINE OIL LEVEL INSPECTION

1. Inspect:

- Engine oil level

CAUTION:

Do not run the engine with too much or not enough oil in the oil tank. Oil could flow into the intake silencer and the engine could be damaged.

Inspection steps:

- Place the snowmobile on a level surface and apply the parking brake.
- Start the engine, warm it up for 10 ~ 15 minutes, and then turn off.
- Disconnect the oil level gauge coupler.

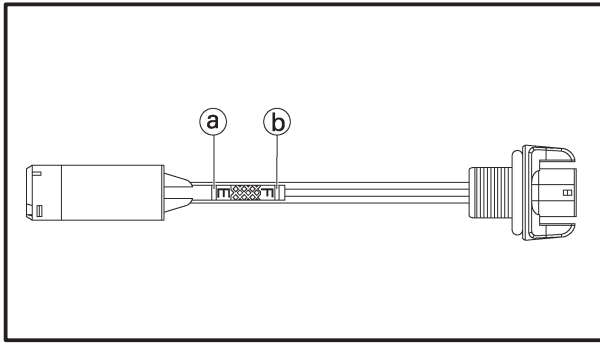
CAUTION:

Disconnect the oil level gauge coupler before removing the oil level gauge. Otherwise the lead can twist and become severed.

- Remove the oil level gauge, wipe it clean, insert it back into the filler hole (without screwing it in), and then remove it again to check the oil level.

ENGINE OIL LEVEL INSPECTION

INSP
ADJ



- The engine oil level should be between the minimum level mark (a) and maximum level mark (b).

Below the minimum level mark → Add the recommended engine oil to the proper level.

CAUTION:

When adding the engine oil, be careful not to fill above the maximum level mark and minimum level mark on the oil level gauge.



Recommended oil

Refer to the chart for the engine oil grade which is best suited for certain atmospheric temperatures.

API standard

API SE, SF, SG or higher
SAE 5W-30

CAUTION:

Do not allow foreign materials to enter the crankcase.

NOTE:

Before checking the engine oil level, wait a few minutes until the oil has settled.

- Start the engine, warm it up for several minutes, and then turn it off.
- Check the engine oil level again.

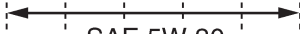
NOTE:

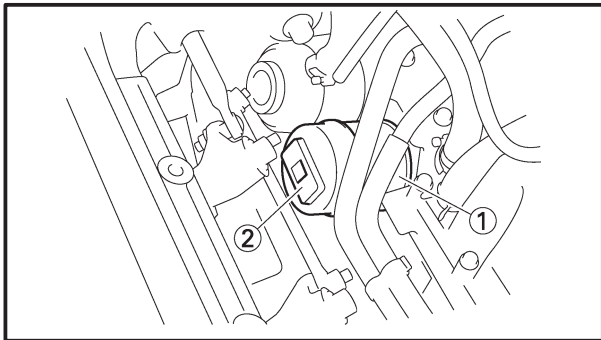
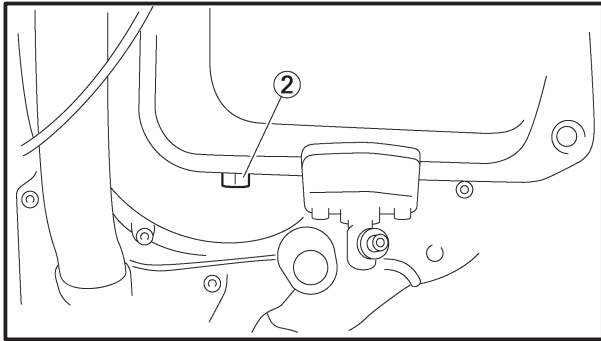
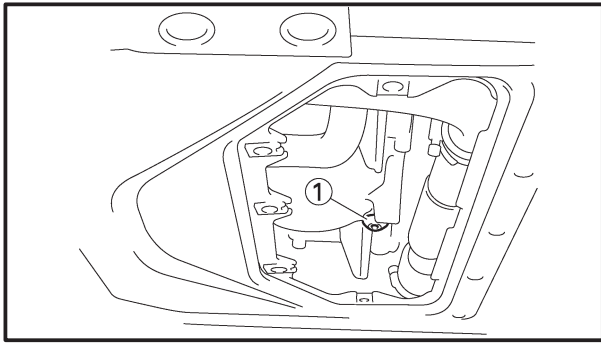
Before checking the engine oil level, wait a few minutes until the oil has settled.

CAUTION:

- Use only 4-stroke engine oil.
- In order to prevent starter clutch slippage, do not mix any chemical additives. Do not use oils with a diesel specification of "CD" or oils of a higher quality than specified. In addition, do not use oils labeled "ENERGY CONSERVING II" or higher.



SAE						API	
-40°	-20°	0°	20°	40°	60° F	SE,SF,SG or higher	
							
-40°	-29°	-18°	-7°	4°	16° C		



ENGINE OIL REPLACEMENT

1. Start the engine, warm up for several minutes, and then turn it off.
2. Place a containers under the engine oil drain bolt and oil tank.
3. Remove:
 - Bottom panel
 - Right side cover
 - Oil level gauge coupler
 - Oil level gauge/dipstick
 - Cylinder head cap
 - Oil pan drain bolt ①
 - Oil tank drain bolt ②
4. Drain:
 - Engine oil (completely from the oil pan and oil tank)
5. If the oil filter cartridge is also to be replaced, perform the following procedure.

Replacement steps:

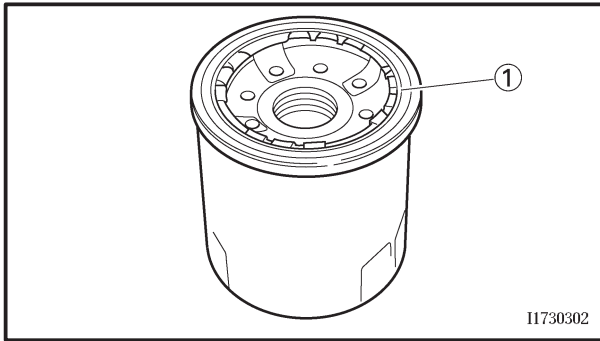
- a) Remove air box
- b) Remove battery
- c) Remove battery bracket
- d) Then remove oil filter
 - Remove the oil filter cartridge ① with an oil filter wrench ②.

NOTE:

When remove the oil filter cartridge, turn the handlebar to the left.



Oil filter wrench:
90890-01426, YU-38411



- Apply a thin coat of engine oil onto the O-ring ① of the new oil filter cartridge.

CAUTION:

Make sure that the O-ring ① is positioned correctly in the groove of the oil filter cartridge.

- Tighten the new oil filter cartridge to specification with an oil filter wrench.



Oil filter cartridge:
17 Nm (1.7 m•kg, 12 ft•lb)

6. Install:

- Drain bolts
(along with the new gaskets)



Drain bolt (oil tank):
16 Nm (1.6 m•kg, 12 ft•lb)
Drain bolt (oil pan):
30 Nm (3.0 m•kg, 22 ft•lb)

7. Fill:

- Engine oil
(with the specified amount of the recommended engine oil)

Add 2.0 L (1.8 Imp qt, 2.1 US qt) of the recommended engine oil to the oil tank, and then install and tighten the oil level gauge/dipstick and the cylinder head cap.

**Quantity****Total amount**

3.8 L (3.3 Imp qt, 4.0 US qt)

Periodic oil change

2.8 L (2.5 Imp qt, 3.0 US qt)

With oil filter replacement

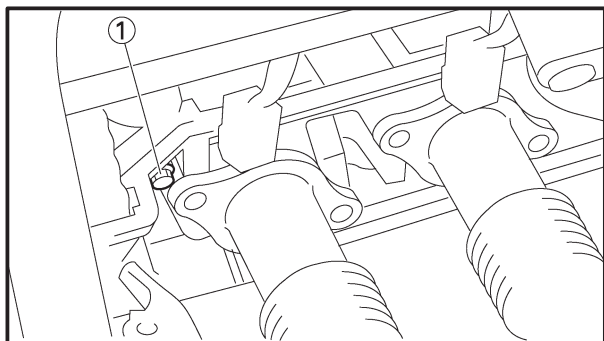
3.0 L (2.6 Imp qt, 3.2 US qt)

8. Inspect:

- Engine and oil tank
(for engine oil leaks)

9. Inspect:

- Engine oil level
Refer to “ENGINE OIL INSPECTION”.



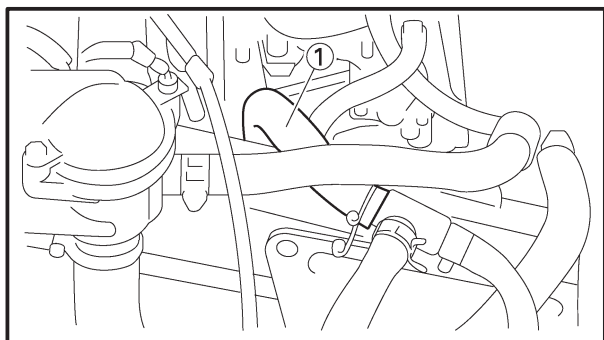
10. Inspect:
- Engine oil pressure

Inspection steps:

- Slightly loosen the oil gallery bolt ①.
- Start the engine and keep it idling until engine oil starts to seep from the oil gallery bolt.
If no engine oil comes out after one minute, turn the engine off so that it will not seize.
- Check the engine oil passages, the oil filter and the oil pump for damage or leakage.
- Start the engine after solving the problem(-s) and check the engine oil pressure again.
Tighten the oil gallery bolt to specification.



Oil gallery bolt
10 Nm (1.0 m•kg, 7.2 ft•lb)

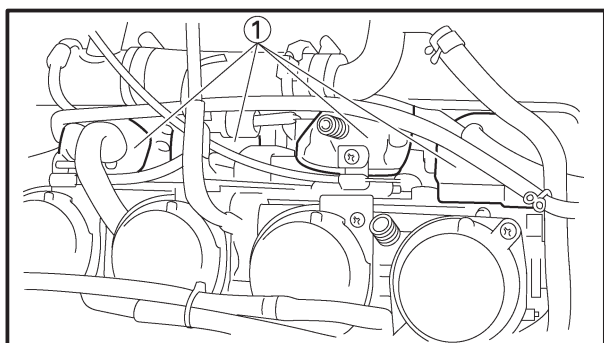


CRANKCASE BREATHER HOSE INSPECTION

1. Inspect:
- Crankcase breather hose ①
Cranks/damage → Replace.
Loosen connection → Connect properly.

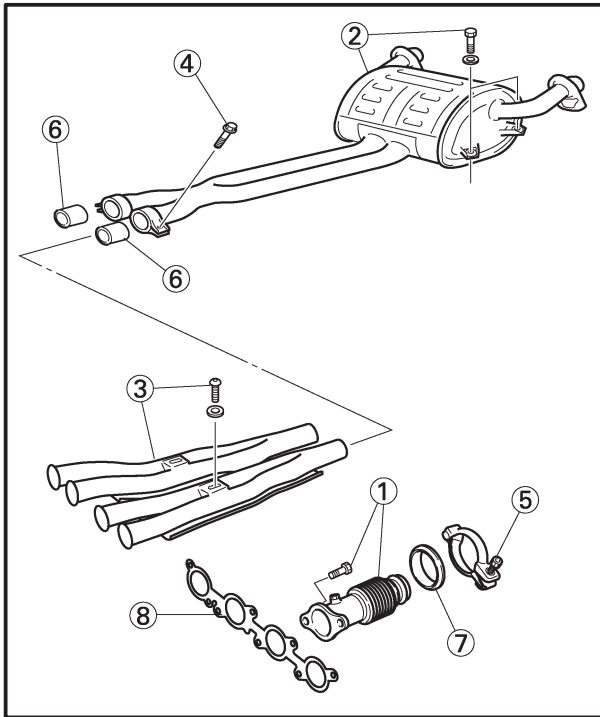
CAUTION:

Make sure that the crankcase breather hose is routed correctly.



CARBURETOR JOINTS INSPECTION

1. Remove:
- Silencer assembly
2. Inspect:
- Carburetor joints ①
Refer to “CARBURETORS” in CHAPTER 6.



EXHAUST SYSTEM INSPECTION

1. Remove:
 - Seat
 - Exhaust system
 - Refer to “EXHAUST PIPE AND MUFFLER” in CHAPTER 5.
2. Inspect:
 - Exhaust joint ①
 - Tightening torque



Bolt (exhaust joint):
25 Nm (2.5 m•kg, 18 ft•lb)

- Muffler ②
- Tightening torque



Bolt (muffler):
16 Nm (1.6 m•kg, 12 ft•lb)

- Exhaust pipe ③
- Tightening torque



Bolt (exhaust pipe):
25 Nm (2.5 m•kg, 18 ft•lb)

- Muffler band ④
- Tightening torque



Bolt (muffler band):
20 Nm (2.0 m•kg, 14 ft•lb)

- Exhaust pipe band ⑤
- Tightening torque

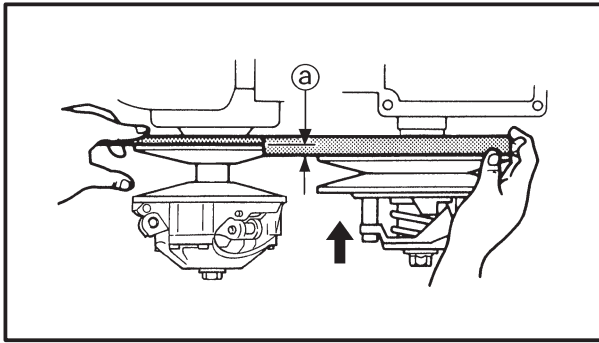


Bolt (exhaust pipe band):
9 Nm (0.9 m•kg, 6.5 ft•lb)

Cracks/damage → Replace.

- Gaskets ⑥
- Gaskets ⑦
- Gasket ⑧

Exhaust gas leaks→Replace.



POWER TRAIN SHEAVE OFFSET ADJUSTMENT

1. Measure:

- Sheave offset ①
Use the sheave gauge.
Out of specification → Adjust.



Sheave offset:

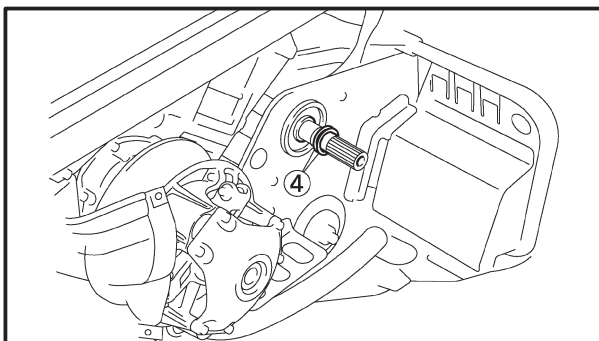
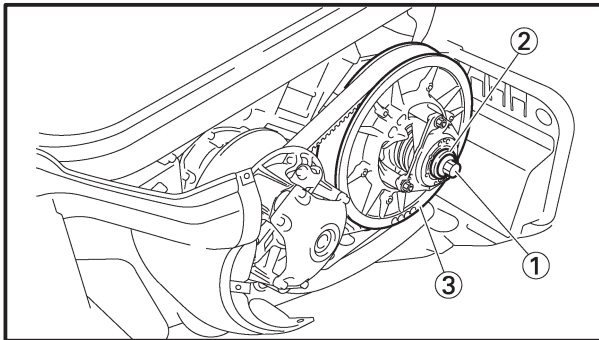
$15 \pm 1.5 \text{ mm}$ ($0.59 \pm 0.06 \text{ in}$)
(13.5 ~ 16.5 mm
(0.53 ~ 0.65 in))



Sheave gauge: YS-42421-1

NOTE:

Push the secondary sheave toward the inside of vehicle frame first and measure the sheave offset.



2. Adjust:

- Sheave offset

Adjustment steps:

- Apply the brake to lock the secondary sheave.
- Remove the bolt (Secondary sheave) ①, washer ② and secondary sheave ③.
- Adjust the sheave offset by adding or removing shim(s) ④.

Adding shim → Offset is increased.

Removing shim → Offset is decreased.

Shim size	
Part Number	Thickness
90201-25526	2.0 mm (0.08 in)

- Install the secondary sheave, bolt (secondary sheave) and washer.

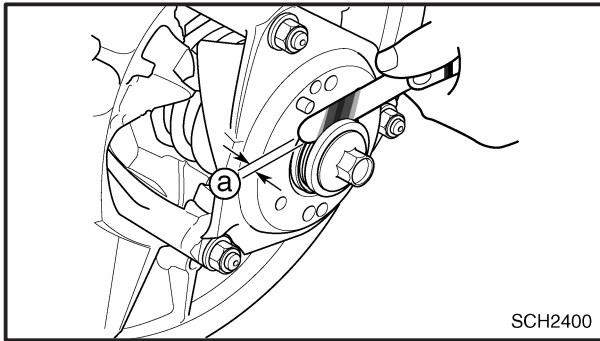


Bolt (secondary sheave): 64 Nm (6.4 m•kg, 46 ft•lb)

- Recheck the sheave offset. If out of specification, repeat the above steps.

NOTE:

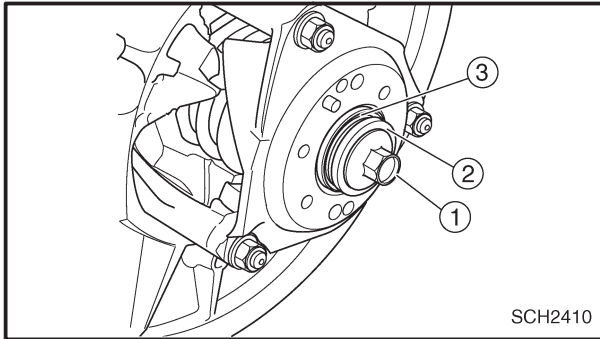
When adjusting the sheave offset, the secondary sheave free play (clearance) should be adjusted.



3. Measure:
- Secondary sheave free play (clearance) ①
Use a feeler gauge.
Out of specification → Adjust.



Secondary sheave free play (clearance):
1.0 ~ 2.0 mm (0.04 ~ 0.08 in)



4. Adjust:
- Secondary sheave free play (clearance)

Adjustment steps:

- Apply the brake to lock the secondary sheave.
- Remove the bolt ① and washer ②.
- Adjust the secondary sheave free play (clearance) by adding or removing a shim(s) ③.

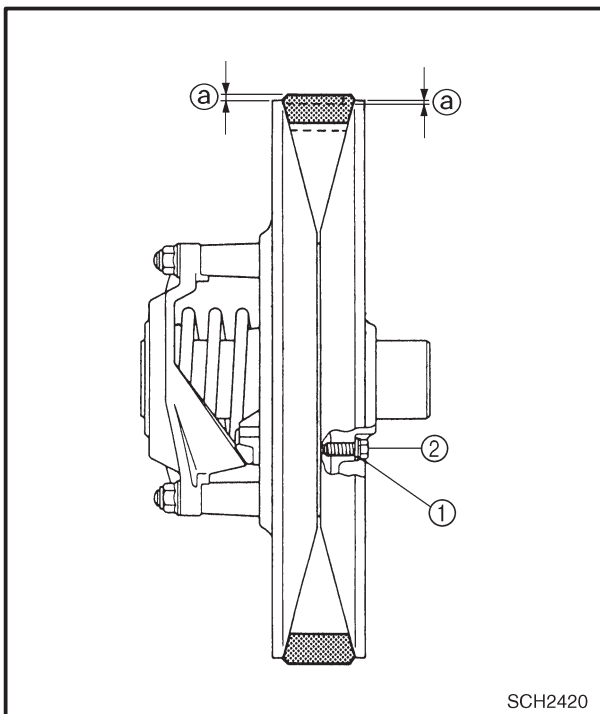
Shim size	
Part number	Thickness
90201-222F0	0.5 mm (0.02 in)
90201-225A4	1.0 mm (0.04 in)

DRIVE V-BELT

⚠ WARNING

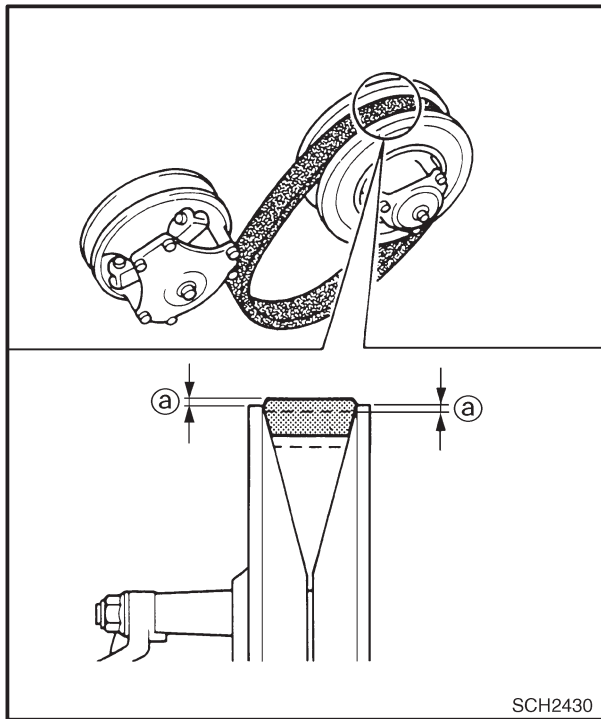
When installing the new V-belt, make sure that it is positioned from 1.5 mm (0.06 in) above the edge of the secondary sheave to -0.5 mm (-0.02 in) below the edge ①. If the V-belt is not positioned correctly, the clutch engagement speed will be changed. The machine may move unexpectedly when the engine is started.

Adjust the V-belt position by removing or adding a spacer ① on each adjusting bolt ②.



CAUTION:

As the V-belt wears, adjustment may be necessary. To ensure proper clutch performance, the V-belt position should be adjusted by adding a spacer on each adjusting bolt when the V-belt position reaches 1.5 mm (0.06 in) below the edge.



New belt width:
34.5 mm (1.36 in)
Belt wear limit width:
32.5 mm (1.28 in)

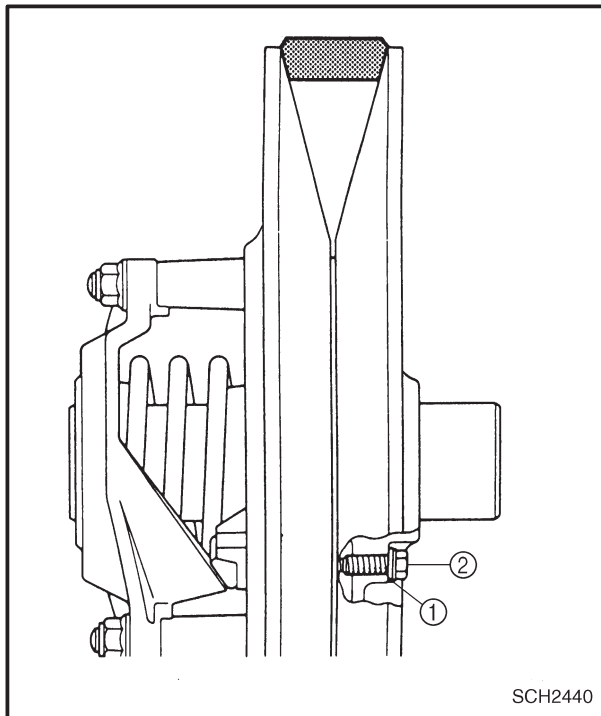
1. Measure:
 - V-belt position ①

NOTE:

Install the new V-belt onto the secondary sheave only. Do not force the V-belt between the sheaves; the sliding and fixed sheaves must touch each other.



Standard V-belt height:
-0.5 ~ 1.5 mm
(-0.02 ~ 0.06 in)



2. Adjust the position of the V-belt by removing or adding a spacer ① on each adjusting bolt ②.

V-belt position	Adjustment
More than 1.5 mm (0.06 in) above the edge	Remove a spacer
From 1.5 mm (0.06 in) above the edge to -0.5 mm (-0.02 in) below the edge	Not necessary (It is correct.)
More than -0.5 mm (-0.02 in) below the edge	Add spacer

Part number	Thickness
90201-061H1	0.5 mm (0.02 in)
90201-06037	1.0 mm (0.04 in)

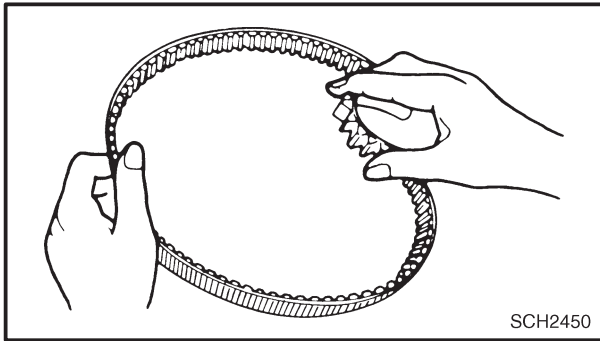
3. Tighten:
 - Adjusting bolt ②



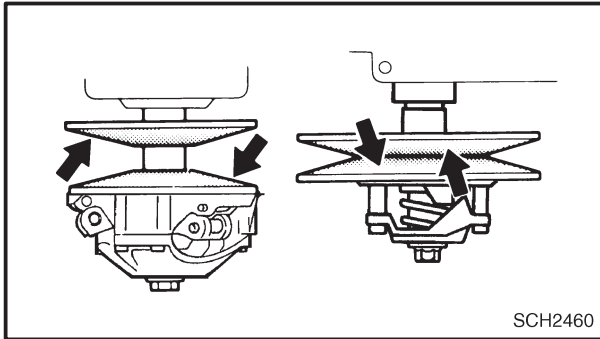
Adjusting bolt:
10 Nm (1.0 m•kg, 7.2 ft•lb)

DRIVE V-BELT/ENGAGEMENT SPEED CHECK

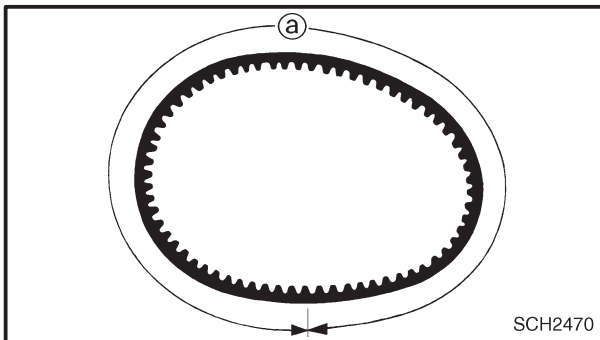
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4. Inspect:
 - Drive V-belt
 Cracks/damage/wear → Replace.
 Oil or grease on the V-belt → Check the primary and secondary sheaves.



5. Inspect:
 - Primary sheave
 - Secondary sheave
 Oil or grease on the primary and secondary sheaves → Use a rag soaked in lacquer thinner or solvent to remove the oil or grease.
 Check the primary and secondary sheaves.



6. Measure:
 - Drive V-belt circumference (a)
 Out of specification → Replace.



V-belt circumference:
 1,129 ~ 1,137 mm
 (44.4 ~ 44.8 in)

ENGAGEMENT SPEED CHECK

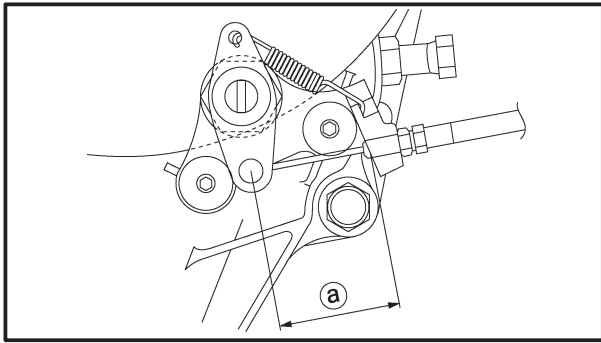
1. Place the machine on a level surface of hard-packed snow.
2. Inspect:
 - Clutch engagement speed

Inspection steps:

- Start the engine, and open the throttle lever gradually.
 - Check the engine speed when the machine starts moving forward.
- Out of specification → Adjust the primary sheave.



Engagement speed:
 3,600 ± 200 r/min
 (RX10, RX10S, RX10R, RX10RS)
 4,200 ± 200 r/min
 (RX10M, RX10MS)



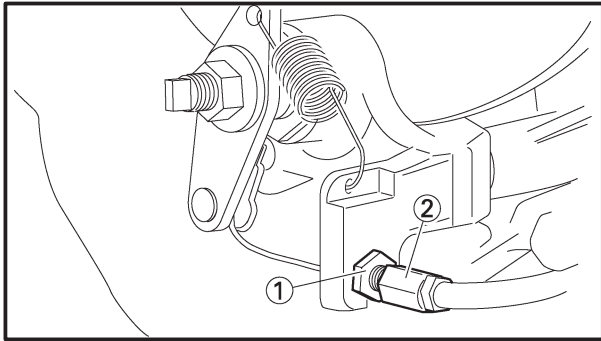
PARKING BRAKE ADJUSTMENT

1. Measure:

- Parking brake cable distance (a)
Out of specification → Adjust.



Parking brake cable distance:
43.5 ~ 46.5 mm
(1.713 ~ 1.831 in)



2. Adjust:

- Parking brake cable

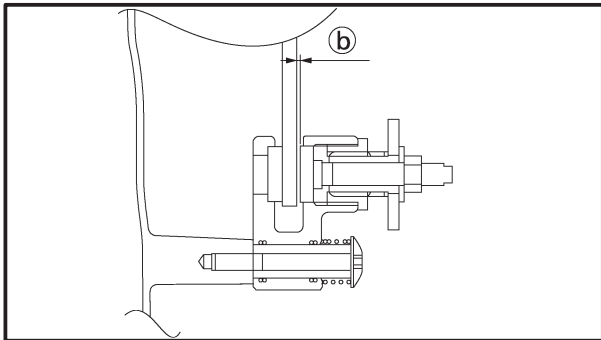
Adjustment steps:

- Loosen the locknut (1)
- Turn the adjuster (2) in or out until the specified distance (a) is obtained.

Turning in → Distance (a) is increased.

Turning out → Distance (a) is decreased.

- Tighten the locknut.

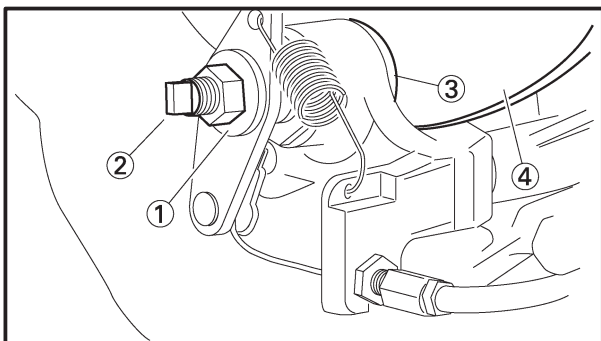


3. Measure:

- Brake pad clearance (b)
Out of specification → Adjust.



Brake pad clearance:
1.5 ~ 2.0 mm
(0.059 ~ 0.079 in)



4. Adjust:

- Brake pad clearance

Adjustment steps:

- Loosen the locknut (1)
- Turn the adjuster (2) in or out to until the specified clearance between the brake pad (3) and brake disc (4) is obtained.
- Tighten the locknut.

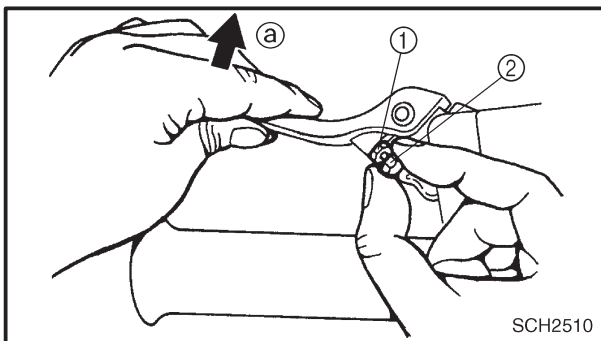
BRAKE LEVER ADJUSTMENT

1. Adjust:

- Brake lever position
(distance from the grip to the brake lever)

BRAKE LEVER ADJUSTMENT/ BRAKE FLUID LEVEL INSPECTION

INSP
ADJ

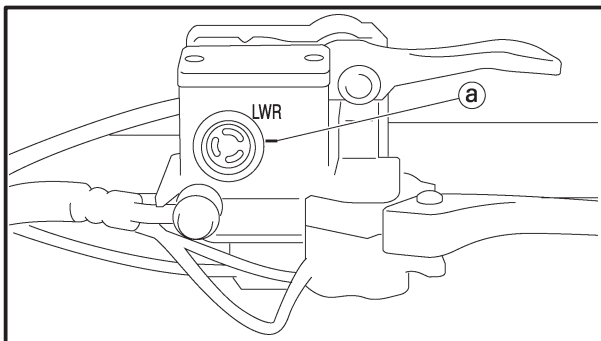


Adjustment steps:

- Loosen the locknut (1).
- While lightly pushing the brake lever in direction (a), turn the adjusting bolt (2) by fingers to set the brake lever to the desired position.
- Tighten the locknut securely after adjusting.



Locknut:
6 Nm (0.6 m•kg, 4.3 ft•lb)



BRAKE FLUID LEVEL INSPECTION

1. Place the machine on a level surface.
2. Check:
 - Fluid level
Fluid level is under the “LOWER” level line (a)
→ Fill to the proper level.



Recommended brake fluid:
DOT 4

NOTE:

For a correct reading of the brake fluid level, make sure that the top of the handlebar brake master cylinder reservoir is horizontal.

CAUTION:

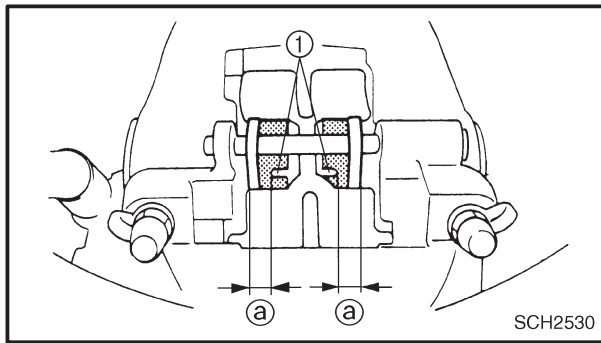
Brake fluid may corrode painted surfaces or plastic parts. Always clean up spilled fluid immediately.

⚠ WARNING

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

BRAKE PAD INSPECTION/BRAKE HOSE INSPECTION/ AIR BLEEDING (HYDRAULIC BRAKE SYSTEM)

INSP
ADJ



BRAKE PAD INSPECTION

1. Apply the brake lever.
2. Inspect:
 - Brake pad wear (a)Wear indicator ① nearly contacts the brake disc → Replace as a set.



Wear limit:
7.5 mm (0.30 in)

BRAKE HOSE INSPECTION

1. Inspect:
 - Brake hoseCracks/damage/wear → Replace.
2. Check:
 - Fluid leakageApply the brake lever several times.
Fluid leakage → Replace the defective parts.

AIR BLEEDING (HYDRAULIC BRAKE SYSTEM)

⚠ WARNING

Bleed the brake system in the following cases:

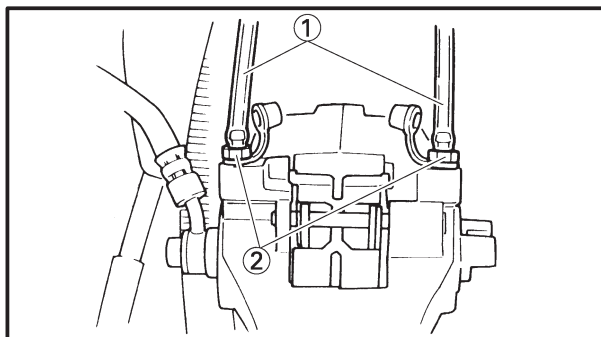
- The system has been disassembled.
- A brake hose is loosened or removed.
- The brake fluid has been very low.
- Brake operation is faulty.

If the brake system is not properly bled a loss of braking performance may occur.

1. Bleed:
 - Brake system

Air bleeding steps:

- Fill the brake master cylinder reservoir with the proper brake fluid.
- Install the diaphragm. Be careful not to spill any fluid or allow the brake master cylinder reservoir to overflow.
- Connect clear plastic hoses ① tightly to the brake caliper bleed screws ②.
- Place the other ends of the hoses in a container.





- a. Slowly apply the brake lever several times.
- b. Pull the lever in, then hold the lever in position.
- c. Loosen the bleed screws and allow the brake lever to travel towards its limit.
- d. Tighten the bleed screws when the brake lever limit has been reached, then release the lever.
 - Repeat steps (a) to (d) until all of the air bubbles have disappeared from the fluid.
 - Tighten the bleed screws.



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.

- Add brake fluid to the proper level.
Refer to “BRAKE FLUID LEVEL INSPECTION”.

⚠ WARNING _____

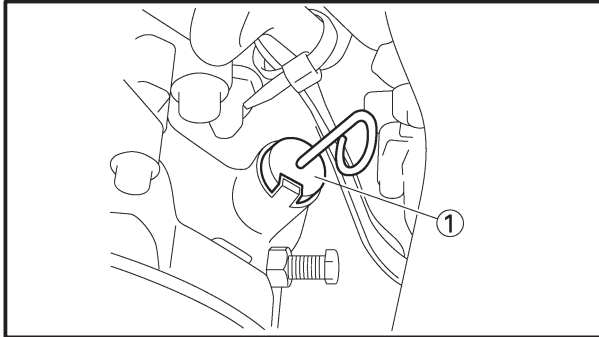
After bleeding the brake system, check the brake operation.



DRIVE CHAIN Oil level inspection

⚠ WARNING

The engine and muffler will be very hot after the engine has run. Avoid touching a hot engine and muffler while they are still hot with any part of your body or clothing during inspection or repair.



1. Place the machine on a level surface.
2. Check:
 - Oil level

Checking steps:

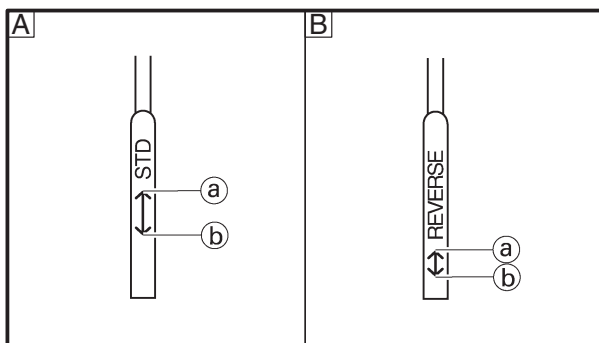
- Remove the dipstick ① and wipe it off with a clean rag.
Reinsert the dipstick.

CAUTION:

There is a magnet attached to the end of the dipstick. It is used to remove any metal particles that may accumulate in the drive chain housing.

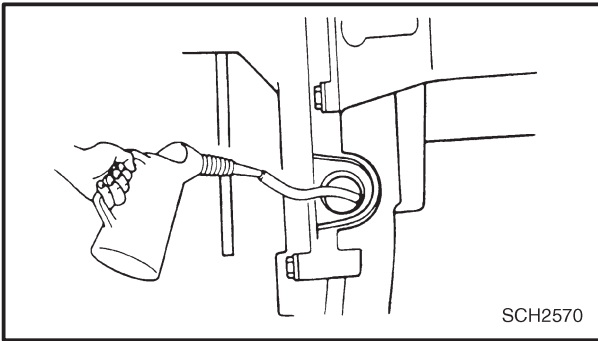
Be sure to:

- Pull the dipstick out slowly and gently so the metal particles do not fall off the magnet back into the drive chain housing.
- Wipe off the magnet before reinserting the dipstick into the drive chain housing.



- Remove the dipstick and check that the oil is between the upper (a) and lower (b) levels. If not, add oil to the upper level.

- A** For models without reverse transmissions
(RX10, RX10S, RX10M, RX10MS)
- B** For models with reverse transmissions
(RX10R, RX10RS)

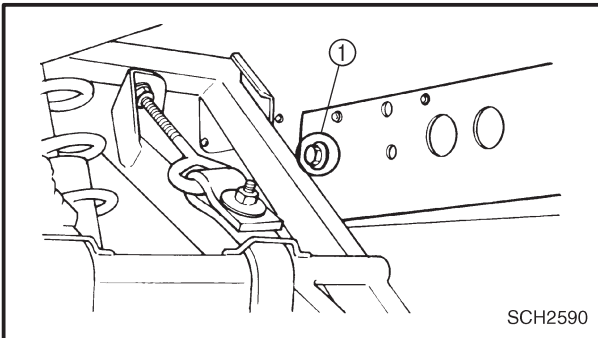
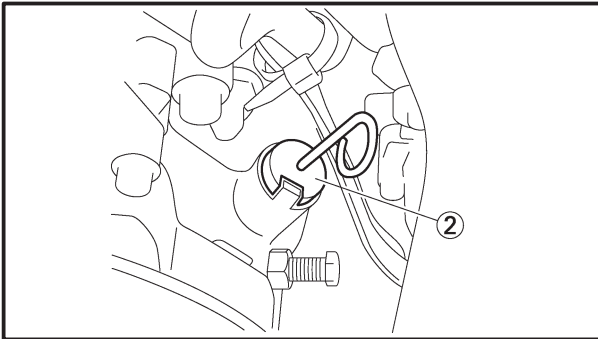


Recommended oil:
Gear oil API “GL-3”
SAE #75 or #80

CAUTION:

Make sure that no foreign material enters the gear case.

- Reinsert the dipstick ②.



Oil replacement

Oil replacement steps:

- Place the oil pan under the drain hole.
- Remove the oil drain bolt ① and drain the oil.

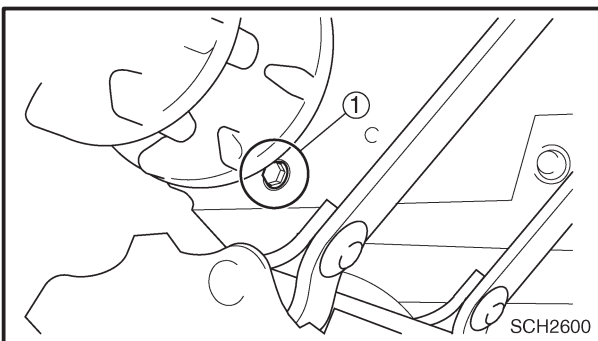
CAUTION:

Be sure to remove any oil from the heat protector.

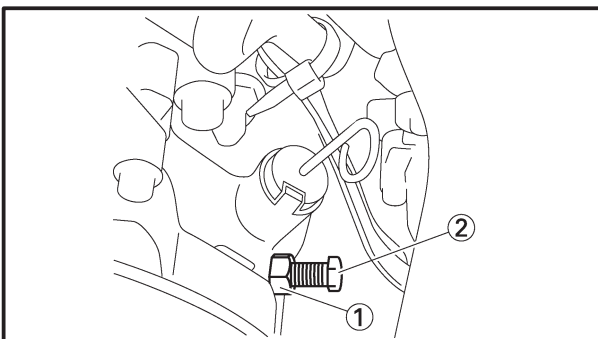
- Install the oil drain bolt ①.



Oil drain bolt:
16 Nm (1.6 m•kg, 12 ft•lb)



Recommended oil:
Gear oil API “GL-3”
SAE #75 or #80
Oil capacity:
0.25 L (8.8 Imp oz, 8.5 US oz)



Chain slack adjustment

- Adjust:
 - Drive chain slack

Adjustment steps:

- Loosen the locknut ①.
- Turn the adjusting bolt ② in until it is finger tight.
- Tighten the locknut.

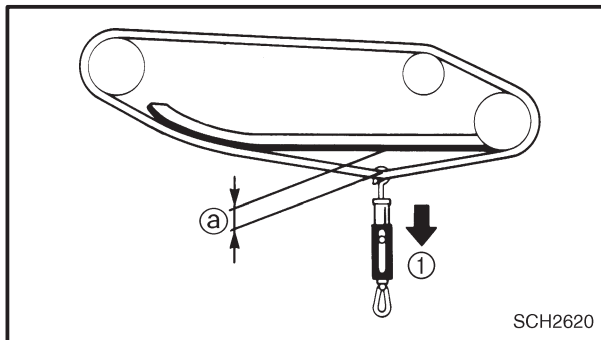


TRACK TENSION ADJUSTMENT

⚠ WARNING

A broken track or track fittings, and debris thrown by the track could be dangerous to an operator or by standers. Observe the following precautions.

- Do not allow anyone to stand behind the machine when the engine is running.
- When the rear of the machine is raised to allow the track to spin, a suitable stand must be used to support the rear of the machine. Never allow anyone to hold the rear of the machine off the ground to allow the track to spin. Never allow anyone near a rotating track.
- Inspect the condition of the track frequently. Replace the track if it is damaged to a level where the fabric reinforcement material is visible.

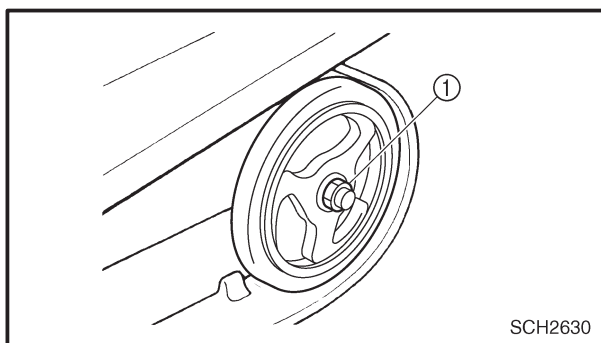


1. Lift the rear of the machine onto a suitable stand to raise the track off the ground.
2. Measure:
 - Track deflection (a)
Using a spring scale (1), pull down on the center of the track with 100 N (10 kg, 22 lb) of force.
Out of specification → Adjust.



Track deflection:

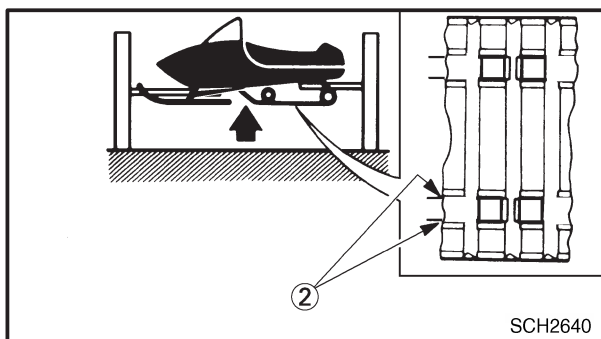
25 ~ 30 mm (0.98 ~ 1.18 in)



3. Adjust:
 - Track deflection

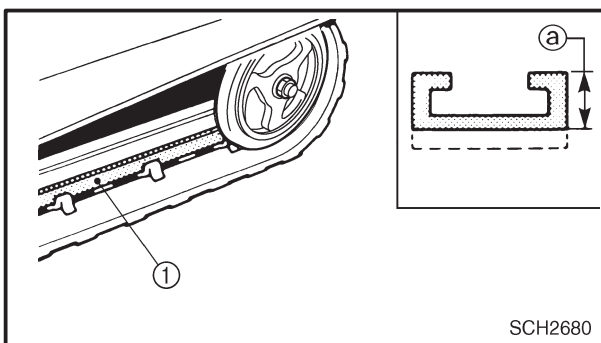
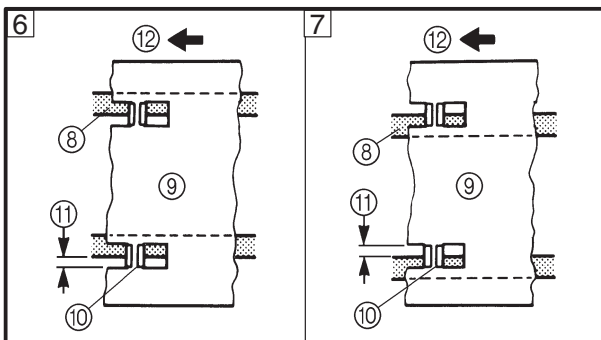
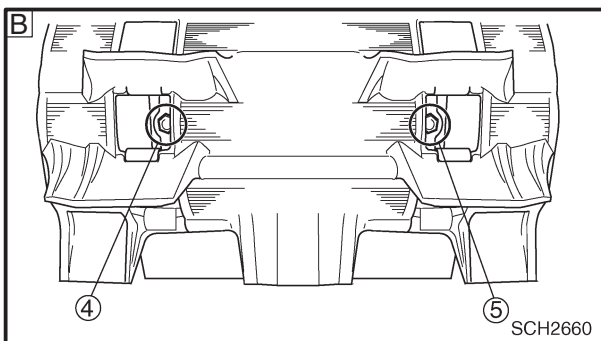
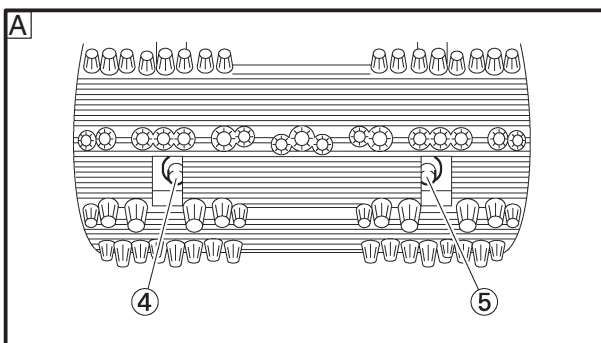
Adjustment steps:

- Place the machine onto a suitable stand to raise the track off of the ground.
 - Loosen the rear axle nut (1).
- a. Start the engine and rotate the track once or twice. Stop the engine.
 - b. Check the track alignment with the slide runner (2). If the alignment is incorrect, turn the left and right adjusters to adjust.



TRACK TENSION ADJUSTMENT/ SLIDE RUNNER INSPECTION

**INSP
ADJ**



Track alignment	6 Shifted to right	7 Shifted to left
4 Left adjuster	Turn out	Turn in
5 Right adjuster	Turn in	Turn out

- 8 Slide runner 9 Track
10 Track metal 11 Gap 12 Forward

A RX10, RX10S, RX10R, RX10RS

B RX10M, RX10MS

c. Adjust the track deflection until the specified amount is obtained.

Track deflection	More than specified	Less than specified
4 Left adjuster	Turn in	Turn out
5 Right adjuster	Turn in	Turn out

CAUTION:

The adjusters should be turned an equal amount.

- Recheck the alignment and deflection. If necessary, repeat steps (a) to (c) until the specified amount is obtained.
- Tighten the rear axle nut.

	Nut (rear axle): 75 Nm (7.5 m•kg, 54 ft•lb)
--	---

SLIDE RUNNER INSPECTION

- Inspect:
 - Slide runner 1
 - Cracks/damage/wear → Replace.
- Measure:
 - Slide runner thickness a
 - Out of specification → Replace.

	Slide runner wear limit: 10 mm (0.39 in)
--	--

MAXIMIZING DRIVE TRACK LIFE Recommendations

Track tension

During initial break-in, the new drive track will tend to stretch quickly as the track settles. Be sure to correct the track tension and alignment frequently. (See pages 2-36 ~ 2-37 for adjustment procedures.) A loose track can slip (ratchet), derail or catch on suspension parts causing severe damage. Do not overtighten the drive track, otherwise it may increase the friction between the track and the slide runners, resulting in the rapid wear of both components. Also, this may put an excessive load on the suspension components, resulting in component failure.

Marginal snow

The drive track and the slide runners are lubricated and cooled by snow and water. To prevent the drive track and slide runners from overheating, avoid sustained high-speed usage in areas such as icy trails, frozen lakes and rivers that have minimal snow coverage. An overheated track will be weakened internally, which may cause failure or damage.

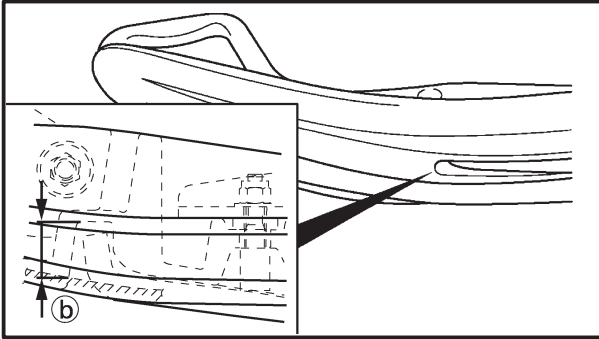
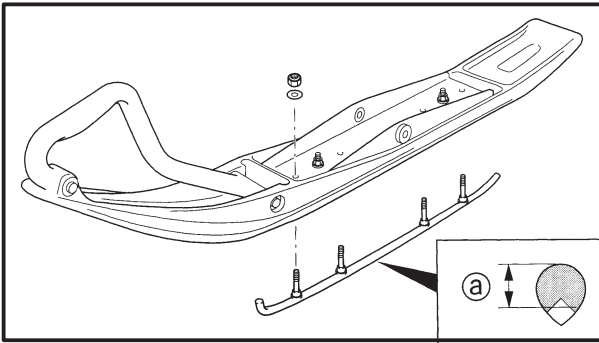
Off-trail riding

Avoid off-trail riding until there is sufficient snow coverage. It generally takes several feet of snow to provide a good overall base to properly cover debris, such as rocks, logs, etc. If snow coverage is not sufficient, stay on trails to avoid impact damage to the drive track.

Studded track

In general, track life will be shortened when studs are installed. Drilling stud holes into the drive track will cut the internal fibers, which weakens the track. Avoid spinning the drive track. Studs may catch on an object and pull out of the track, leaving tears and damage around the already weakened area. To minimize possible damage, consult your stud manufacturer for installation and stud pattern recommendations.

Yamaha does not recommend track stud-ding.



CHASSIS

SKI/SKI RUNNER

1. Inspect:

- Ski
- Ski runner
Damage/wear → Replace.
- Ski runner thickness (a)
- Plastic ski thickness (b)
Out of specification → Replace.



Ski runner wear limit:

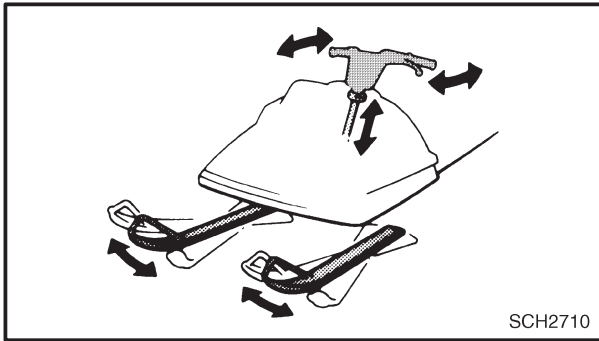
8 mm (0.31 in)

Plastic ski wear limit:

24 mm (0.95 in)

CAUTION:

To avoid scratching, wearing and damaging the plastic skis, be careful when loading and unloading the snowmobile and avoid riding in areas with little or no snow and on surfaces with sharp edges such as concrete, curbs, etc.



STEERING SYSTEM

Free play check

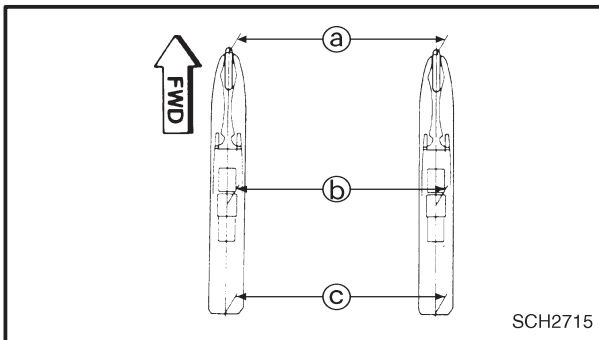
1. Check:

- Steering system free play

Move the handlebar up and down and back and forth.

Turn the handlebar slightly to the right and left.

Excessive free play → Check that the handlebar, tie rod ends and relay rod ends are installed securely in position. If free play still exists, check the steering bearing, front suspension links and ski mounting area for wear. Replace if necessary.



Toe-out adjustment

1. Place the machine on a level surface.

2. Check:

- Ski toe-out (a) – (c)
- Ski stance (b)

Point the skis forward.

Out of specification → Adjust.



Ski toe-out:

0 ~ 15 mm (0 ~ 0.59 in)

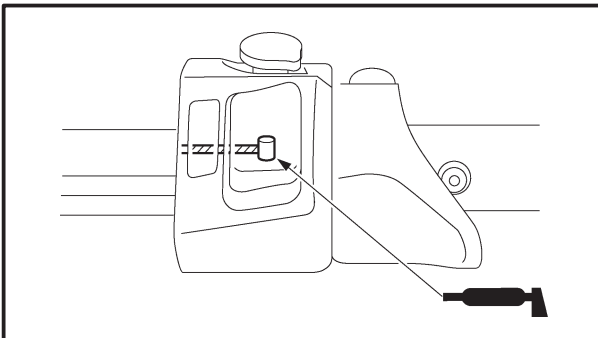
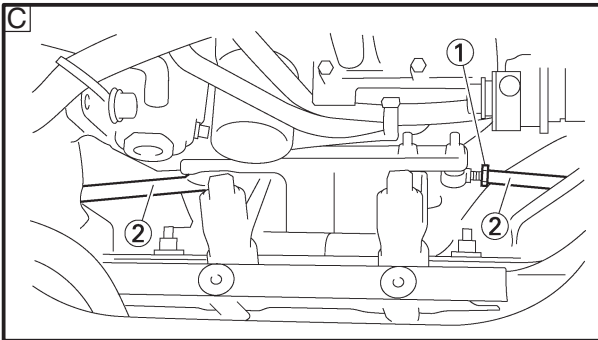
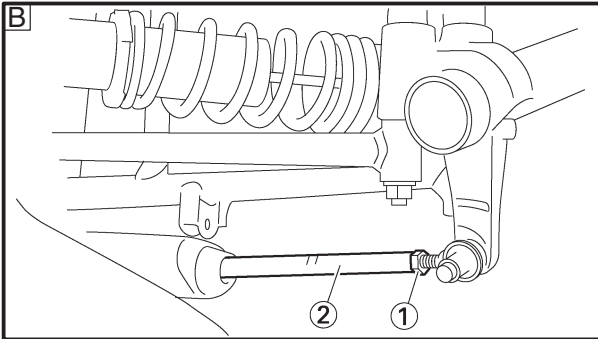
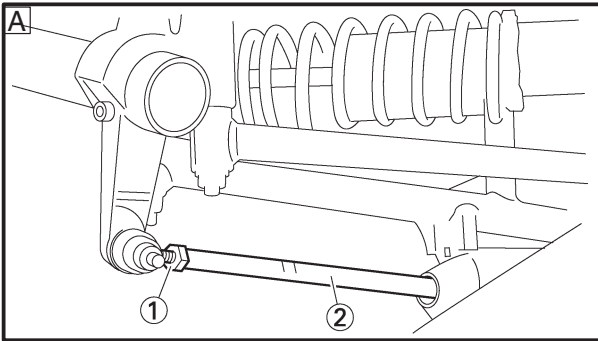
Ski stance (center to center):

RX10, RX10S, RX10R, RX10RS

1,068 mm (42.0 in)

RX10M, RX10MS

980 mm (38.6 in)



3. Adjust:
 - Ski toe-out

Adjustment steps:

- Loosen the locknuts (tie-rod) ①.
- Turn the tie rods ② in or out until the specified toe-out is obtained.
- Tighten the locknuts (tie-rod) ①.



Locknut (rod end):
25 Nm (2.5 m•kg, 18 ft•lb)
LOCTITE®

CAUTION:

After tightening the inside and outside ball joint locknuts ①, make sure the tie rod ② can be rotated freely through the ball joint travel. If not, loosen the locknut ① and reposition the ball joint so that the tie rod ② can be rotated freely. Tighten the locknuts to specification.

- A Left side
- B Right side
- C Inside

LUBRICATION

Brake lever, throttle lever and throttle cable end

1. Lubricate the brake lever pivot, throttle lever and the ends of the throttle cables.

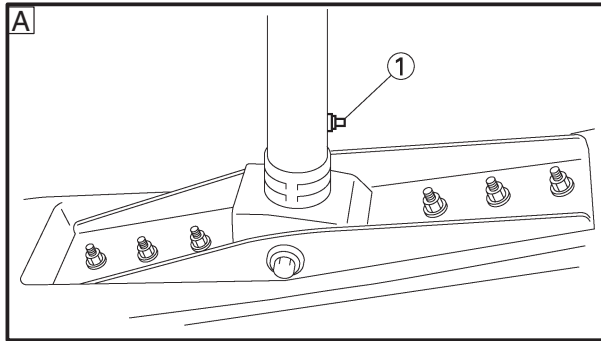


Recommended lubricant:
ESSO Beacon 325 Grease

⚠ WARNING

Apply a dab of grease onto only the end of the cables.

Do not grease the throttle cables. They could freeze and cause a loss of control.



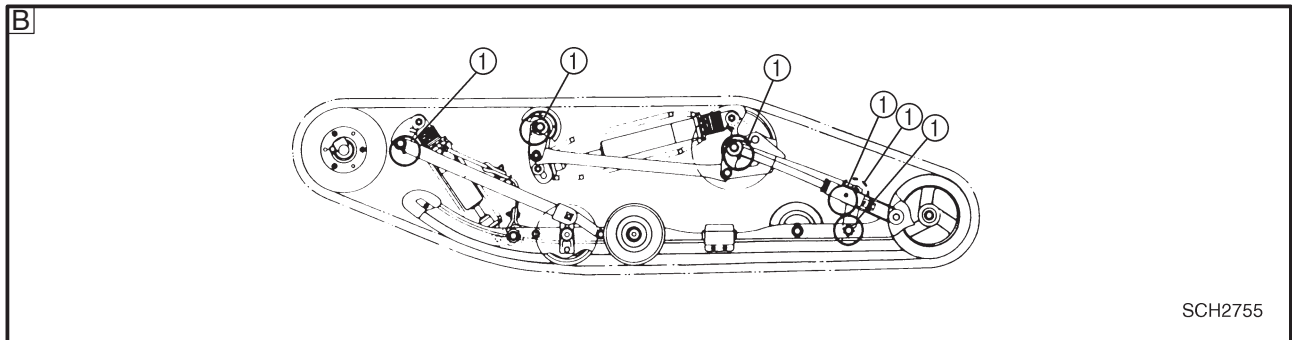
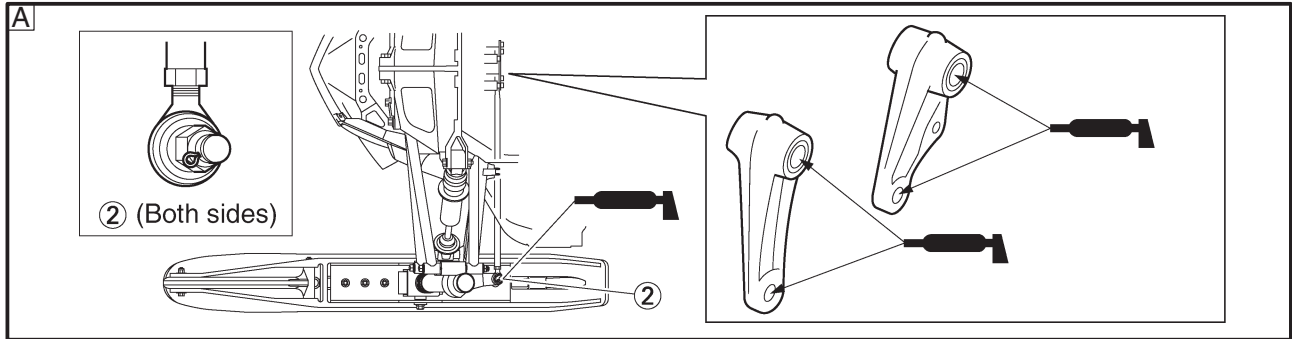
Front and rear suspension

1. Use a grease gun to inject grease into the nipples ①.

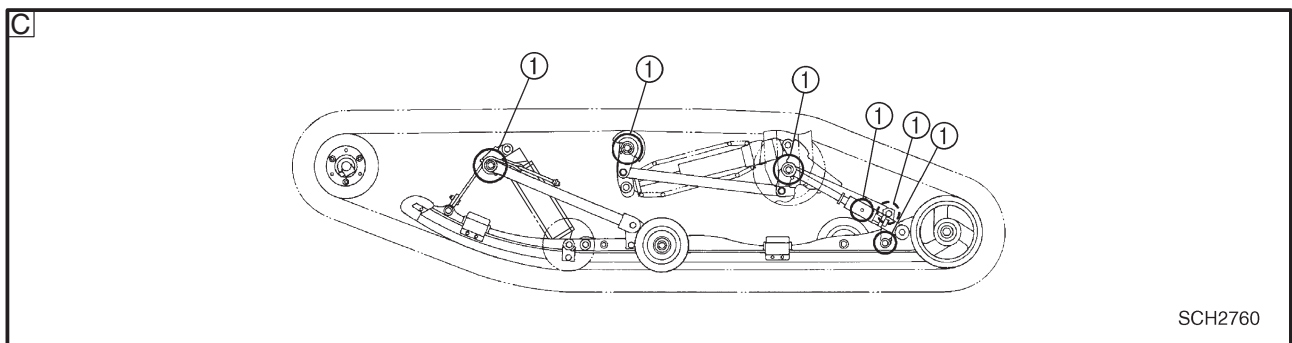


Recommended lubricant:
Esso Beacon 325 Grease or
Aeroshell Grease #7A

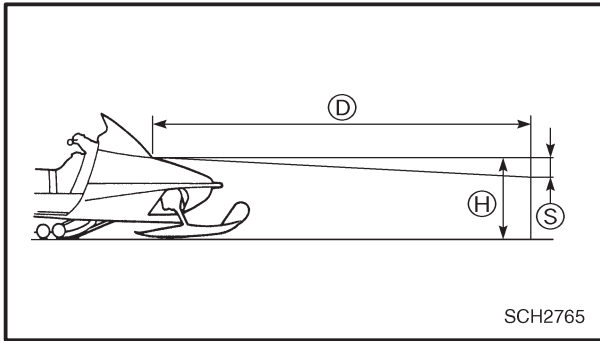
- A** Front
- B** Rear (RX10, RX10S, RX10R, RX10RS)
- C** Rear (RX10M, RX10MS)



SCH2755



SCH2760

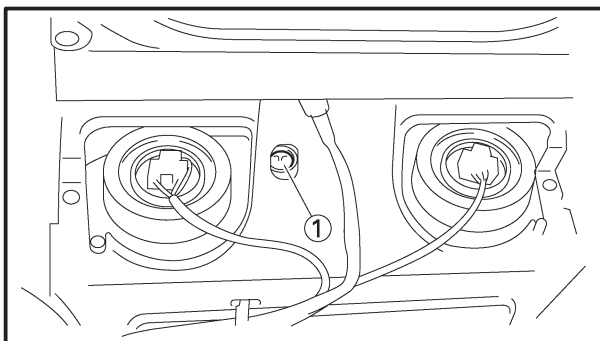


ELECTRICAL HEADLIGHT BEAM ADJUSTMENT

1. Place the machine on a level surface.
2. Place the machine in front of a wall at the recommended distance **D**. Refer to the table below.
3. Measure the distance **H** from the floor to the center of the headlight and place a mark on the wall at that height.
4. With a person sitting on the machine, apply the parking brake, start the engine and let it idle.
5. Switch on the headlight's high beam and check the height of the projected beam on the wall. The projection should be at the position marked in step 3 or $1/2^\circ$ lower (set range **S**).

D	3.0 m (10 ft)	7.6 m (25 ft)
S	26 mm (1.0 in)	66 mm (2.6 in)

D: Distance **S**: Set range



6. Adjust:
 - Headlight beam (vertically)

Vertical adjustment

Higher Turn the adjusting screw **1** clockwise.

Lower Turn the adjusting screw **1** counterclockwise.



EAS00178

BATTERY INSPECTION

⚠ WARNING

Batteries generate explosive hydrogen gas and contain electrolyte which is made of poisonous and highly caustic sulfuric acid. Therefore, always follow these preventive measures:

- Wear protective eye gear when handling or working near batteries.
- Charge batteries in a well-ventilated area.
- Keep batteries away from fire, sparks or open flames (e.g., welding equipment, lighted cigarettes).
- DO NOT SMOKE when charging or handling batteries.
- KEEP BATTERIES AND ELECTROLYTE OUT OF REACH OF CHILDREN.
- Avoid bodily contact with electrolyte as it can cause severe burns or permanent eye injury.

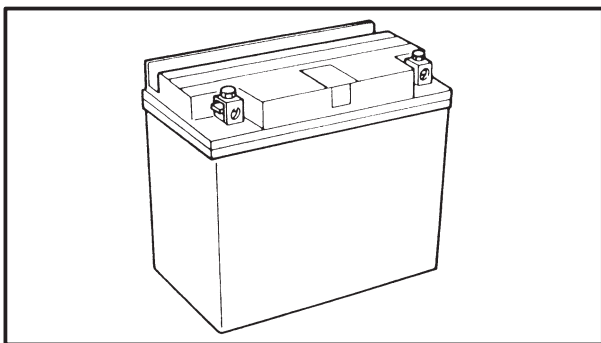
First aid in case of bodily contact:

External

- SKIN – Wash with water.
- EYES – Flush with water for 15 minutes and get immediate medical attention.

Internal

- Drink large quantities of water or milk followed with milk of magnesia, beaten egg or vegetable oil. Get immediate medical attention.

**CAUTION:**

- This is a sealed battery. Never remove the sealing caps because the balance between cells will not be maintained and battery performance will deteriorate.
- Charging time, charging amperage and charging voltage for a MF battery are different from those of conventional batteries. The MF battery should be charged as explained in the charging method illustrations. If the battery is overcharged, the electrolyte level will drop considerably. Therefore, take special care when charging the battery.



NOTE:

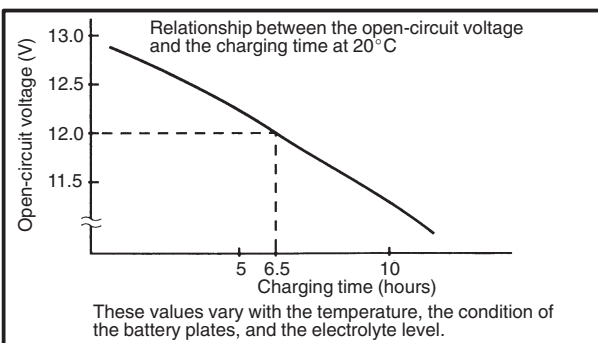
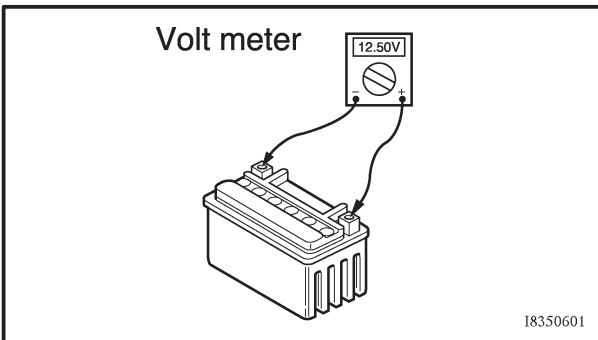
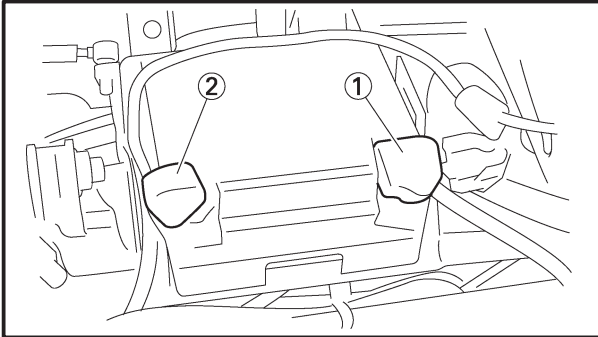
Since MF batteries are sealed, it is not possible to check the charge state of the battery by measuring the specific gravity of the electrolyte. Therefore, the charge of the battery has to be checked by measuring the voltage at the battery terminals.

1. Disconnect:

- Battery leads
(from the battery terminals)

CAUTION:

First, disconnect the negative lead ①, then the positive lead ②.



2. Remove:

- Battery

3. Inspect:

- Battery charge

Inspection steps:

- Connect a pocket tester to the battery terminals.

Tester positive lead → battery positive terminal
Tester negative lead → battery negative terminal

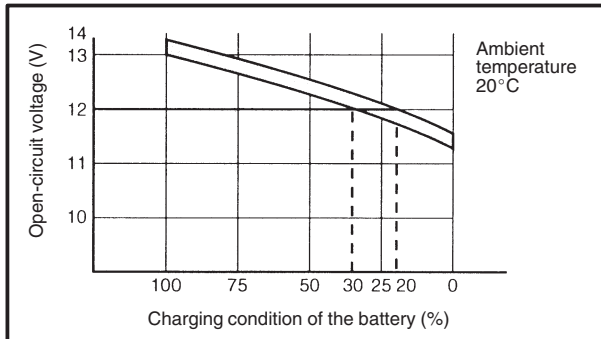
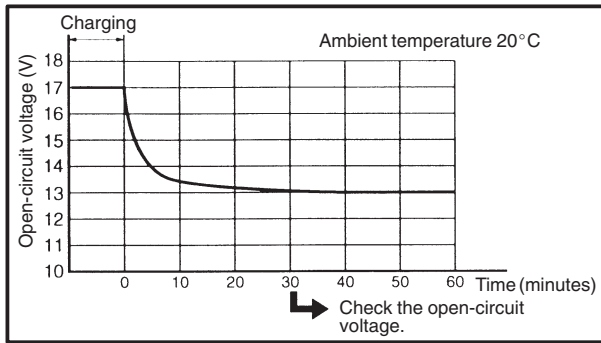
NOTE:

- The charge state of a MF battery can be checked by measuring its open-circuit voltage (i.e., the voltage when the positive terminal is disconnected).
- No charging is necessary when the open-circuit voltage equals or exceeds 12.8 V.

- Check the charge of the battery, as shown in the charts and the following example.

Example

- Open-circuit voltage = 12.0 V
- Charging time = 6.5 hours
- Charge of the battery = 20 ~ 30%



4. Charge:

- battery
(refer to the appropriate charging method illustration)

⚠ WARNING

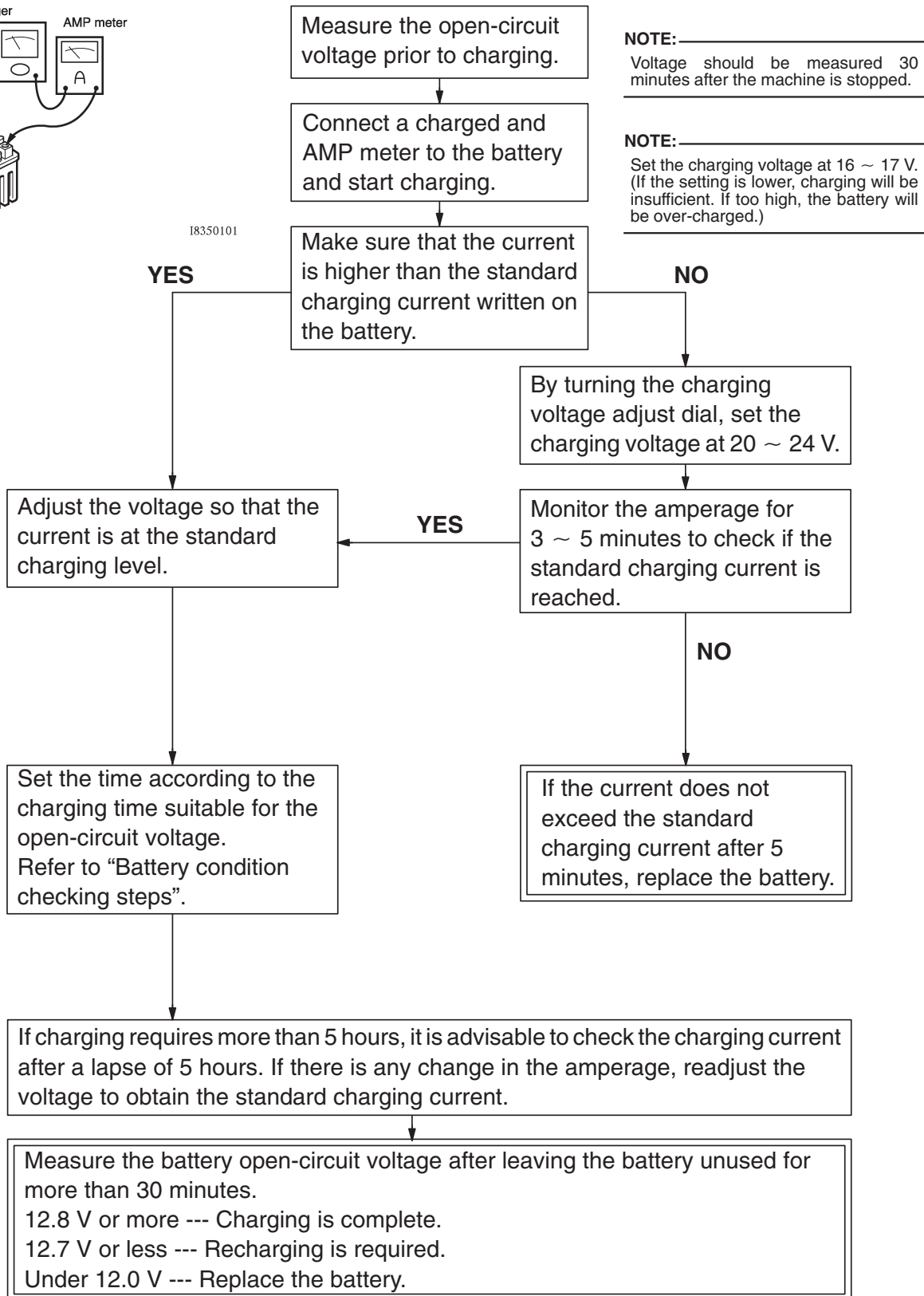
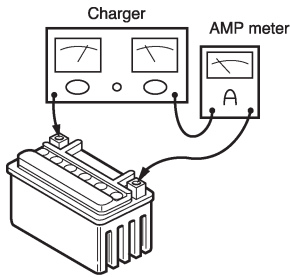
Do not quick charge a battery.

CAUTION:

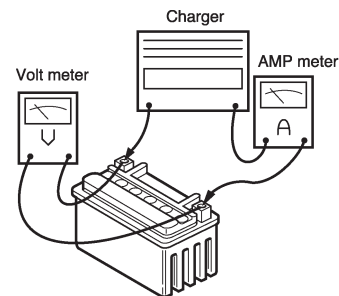
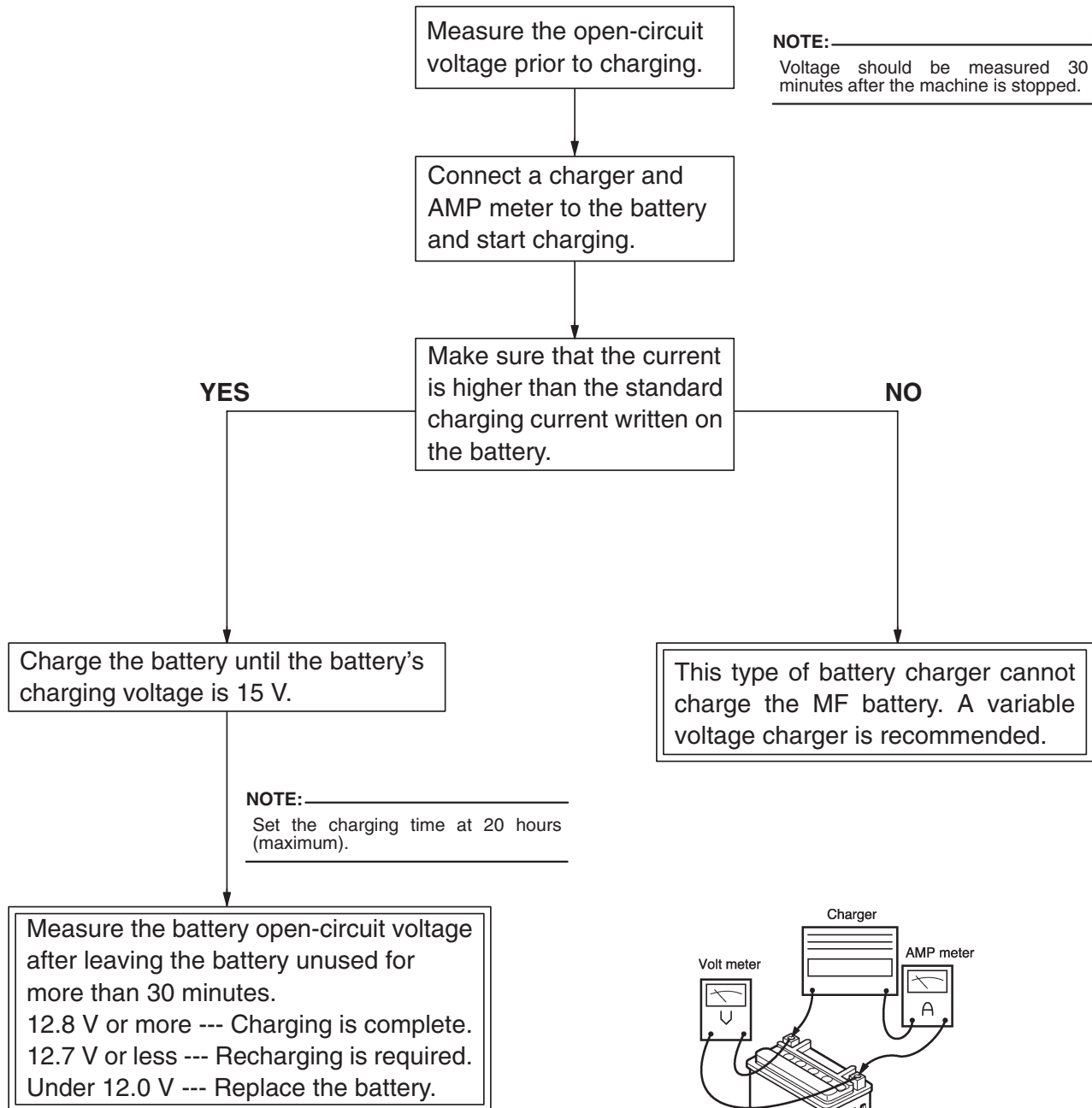
- Make sure that the battery vent is free of obstructions.
- Never remove the MF battery sealing caps.
- Do not use a high-rate battery charger. They force a high-amperage current into the battery quickly and can cause battery overheating and battery plate damage.
- If it is impossible to regulate the charging current on the battery charger, be careful not to overcharge the battery.
- When charging a battery, be sure to remove it from the motorcycle. (If charging has to be done with the battery mounted on the motorcycle, disconnect the negative lead from the battery terminal.)
- To reduce the chance of sparks, do not plug in the battery charger until the battery charger leads are connected to the battery.
- Before removing the battery charger lead clips from the battery terminals, be sure to turn off the battery charger.
- Make sure that the battery charger lead clips are in full contact with the battery terminal and that they are not shorted. A corroded battery charger lead clip may generate heat in the contact area and a weak clip spring may cause sparks.
- If the battery becomes hot to the touch at any time during the charging process, disconnect the battery charger and let the battery cool before reconnecting it. Hot batteries can explode!
- As shown in the following illustration, the open-circuit voltage of a MF battery stabilizes about 30 minutes after charging has been completed. Therefore, wait 30 minutes after charging is completed before measuring the open-circuit voltage.



Charging method using a variable voltage charger



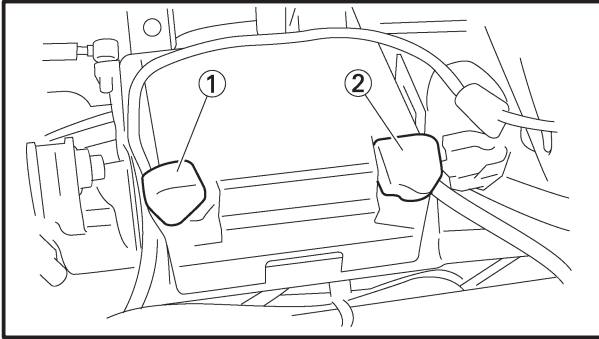
Charging method using a constant voltage charger



18350102



5. Install:
- Battery



6. Connect:
- Battery leads
(to the battery terminals)

CAUTION:

First, connect the positive lead ①, then the negative lead ②.

7. Check:
- Battery terminals
Dirt → Clean with a wire brush.
Loose connection → Connect properly.
8. Lubricate:
- Battery terminals



Recommended lubricant
Dielectric grease

FUSE INSPECTION

The following procedure applies to all of the fuses.

CAUTION:

To avoid a short circuit, always set the main switch to “OFF” when checking or replacing a fuse.

1. Inspect:
- Continuity

Inspection steps:

- Connect the pocket tester to the fuse and check the continuity.

NOTE:

Set the pocket tester selector to “Ω × 1”.

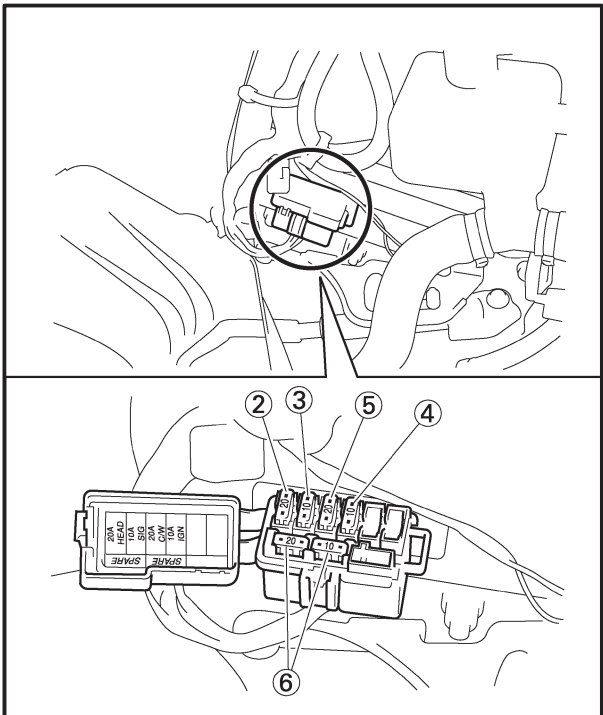
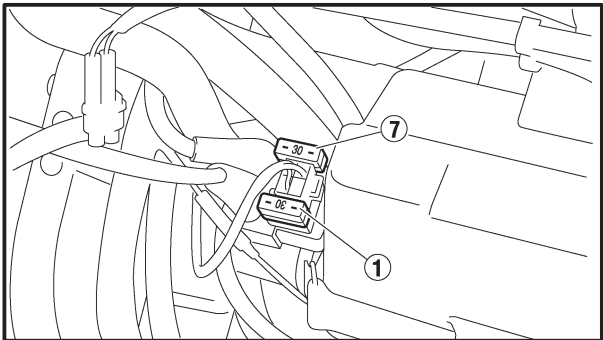


Pocket tester:
90890-03112, YU-03112

- If the pocket tester indicates “∞”, replace the fuse.
2. Replace:
- Blown fuse

Replacing steps:

- Set the main switch to “OFF”.
- Install a new fuse of the correct amperage.
- Set the main switch to “ON” and verify if the electrical circuit is operational.
- If the fuse immediately blows again, check the electrical circuit.

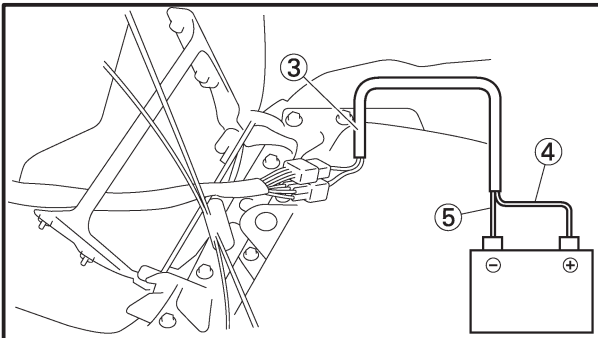
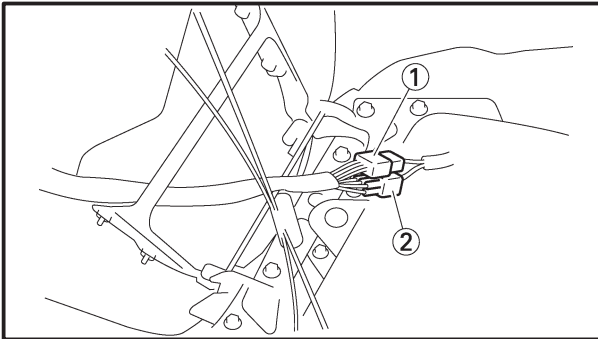


Item	Amperage	Q'ty
① Main fuse	30 A	1
② “HEAD” fuse	20 A	1
③ “SIGNAL” fuse	10 A	1
④ “IGNITION” fuse	10 A	1
⑤ “CARBURE-TOR HEATER” fuse	20 A	1
⑥ Reserve fuse	20 A 10 A	1 1
⑦ Reserve fuse	30 A	1



⚠ WARNING

Never use a fuse with an amperage other than that specified. Improvising or using a fuse with the wrong amperage rating may cause extensive damage to the electrical system, cause the lighting, ignition, grip warmer, signal and meter systems to malfunction and could possibly cause a fire.



SPEEDOMETER UNIT INSPECTION

1. Inspect:

- Speedometer unit

Inspection steps:

- Remove the speedometer coupler ① and headlight coupler ②.
- Connect the speedometer unit test coupler ③ to the speedometer coupler and headlight coupler.
- Connect the speedometer unit test coupler leads as follows.

Speedometer unit test coupler lead (red) ④

→ **Battery (+) terminal**

Speedometer unit test coupler lead (black)

⑤ → **Battery (-) terminal**



**Speedometer unit test coupler:
8EK-82507-09, YS-45686**

- Check that the light and LCD in the speedometer light up.
- If the light does not light up. → Check the bulbs.
Refer to "BULB(S)" in CHAPTER 8.
- If the LCD is not indicated. → Replace the speedometer unit.



TUNING

CARBURETOR TUNING

The carburetors are set at the factory to run at temperatures of 0°C ~ -20°C (32°F ~ -4°F) at sea level. If the machine is to be operated under conditions other than those specified above, the carburetors must be properly adjusted. Special care should be taken in carburetor setting so that the pistons will not be damaged or will not seize.

CAUTION:

Before performing the carburetor tuning, make sure that the following items are set to specification.

- Engine idle speed
- Throttle cable free play
- Carburetor synchronization
- Starter cable free play

Carburetor tuning data

1. Standard specifications

A Type	BSR37
B Manufacturer	MIKUNI
C I.D. Mark	8FA100
D Main jet (M.J.)	#135
E Pilot jet (P.J.)	#17.5
F Pilot screw (P.S.)	Approx 2 turns out
G Float height	11 ~ 15 mm (0.43 ~ 0.59 in)
H Idle speed	1,350 ± 100 r/min (1,250 ~ 1,450 r/min)



Mid-range and high speed tuning

Adjustments are normally not required, but may sometimes be necessary, depending on temperatures, altitude or both.

Mid-range speed and high speed tuning (from 1/4 to full-throttle) can be done by adjusting the main jet.

CAUTION:

Never run the engine without the air intake silencer installed. Severe engine damage may result.

1. Start the engine and operate the machine under normal conditions to make sure that the engine operates smoothly. Stop the engine.
2. Remove:
 - Spark plugs
3. Check:
 - Spark plug insulator ① color
A medium to light tan color indicates normal conditions.
Distinctly different color → Replace the main jet.
4. The main jet should be adjusted on the basis of the “Main jet selection chart”.

NOTE:

By checking the condition of the spark plugs, it is easy to get some idea of the condition of the engine. This may diagnose potential problems before engine damage occurs.

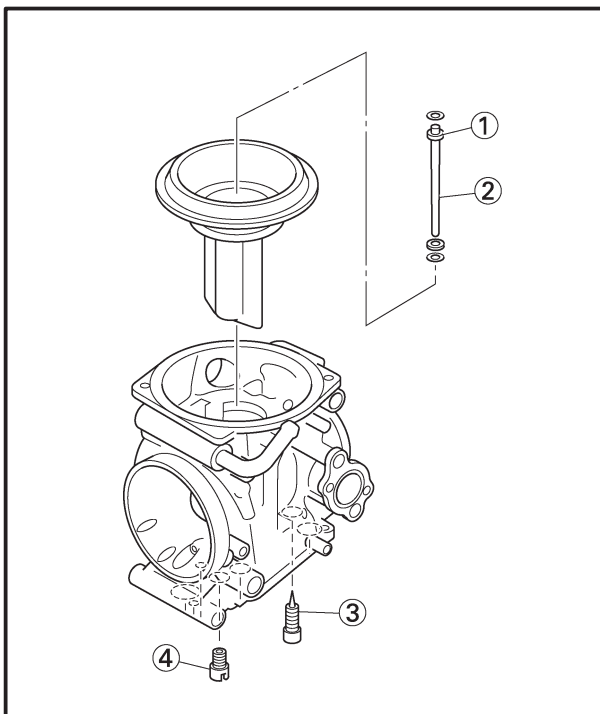
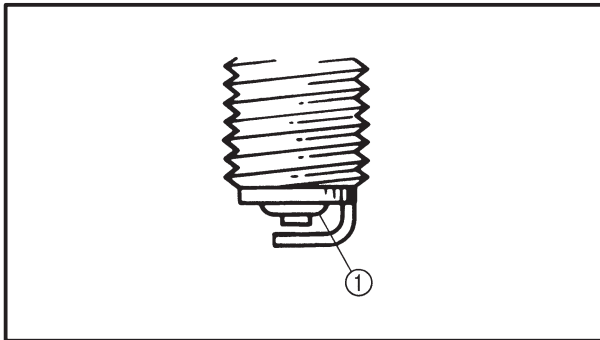
High altitude tuning

Use the chart in CHAPTER 9 to select main jets according to variations in elevation and temperature.

NOTE:

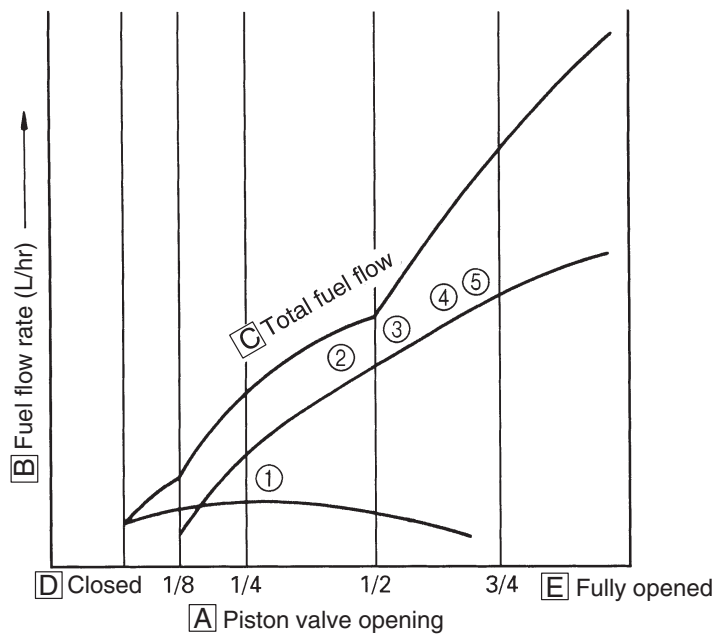
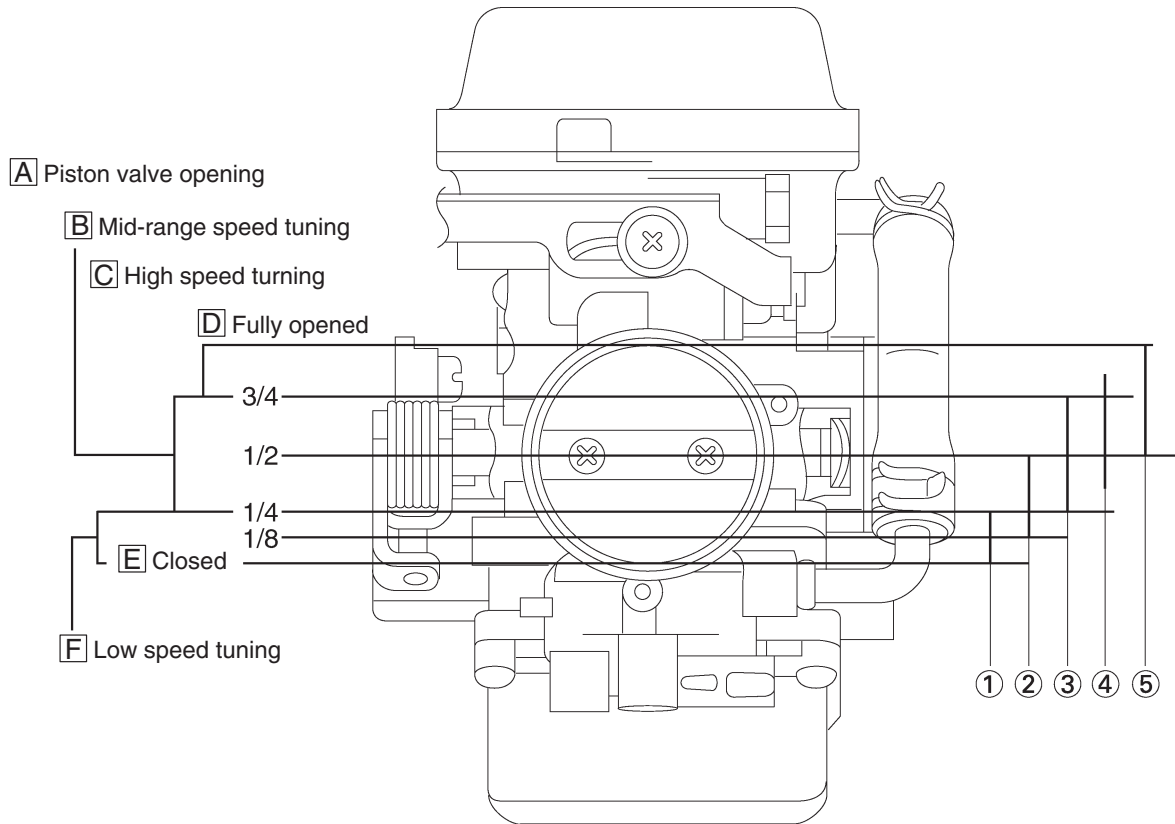
These jetting specifications are subject to change.

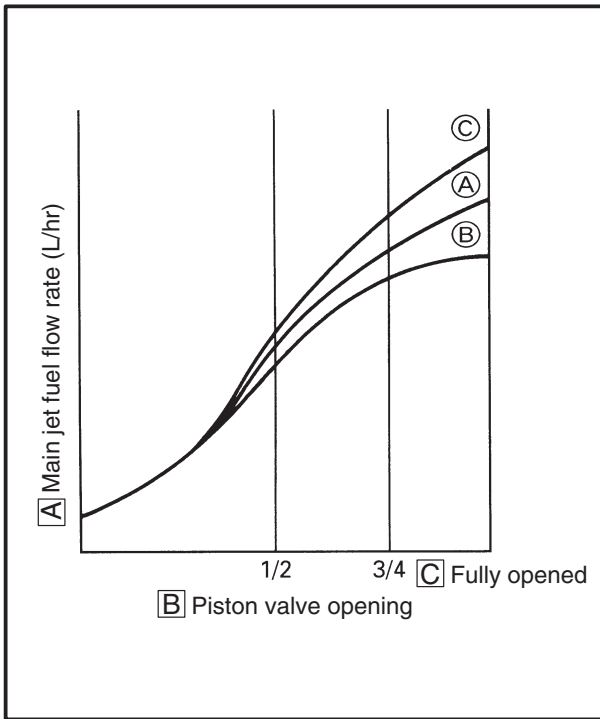
Consult the latest technical information from Yamaha to be sure you have the most up-to-date jetting specifications.



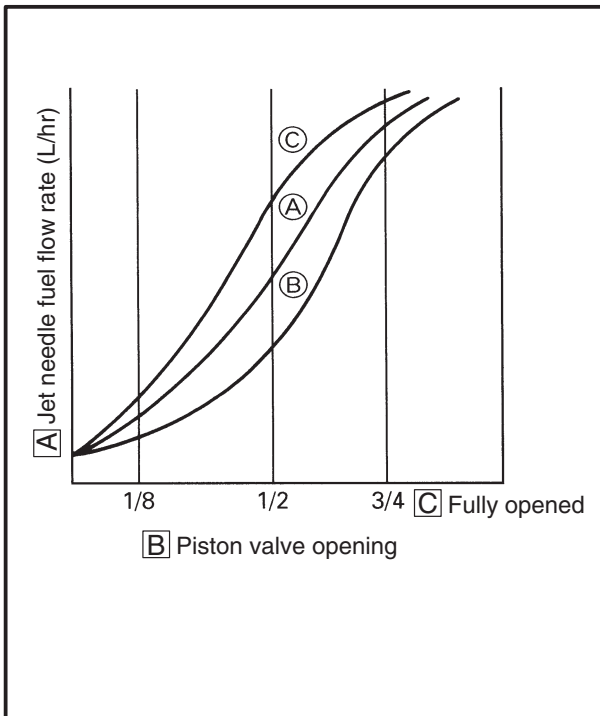
- ① Clip
- ② Jet needle
- ③ Pilot screw
- ④ Main jet

Guide for carburetion

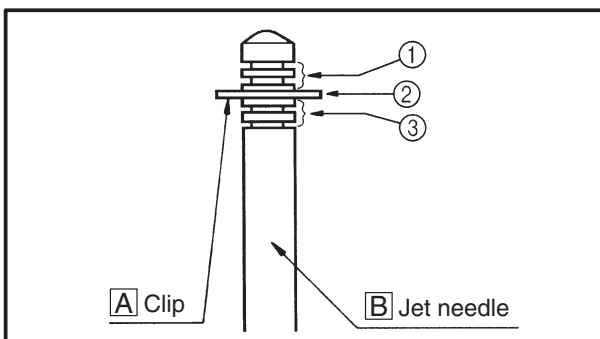




- (A) Standard main jet
- (B) Main jet whose diameter is 10% smaller than standard
- (C) Main jet whose diameter is 10% larger than standard

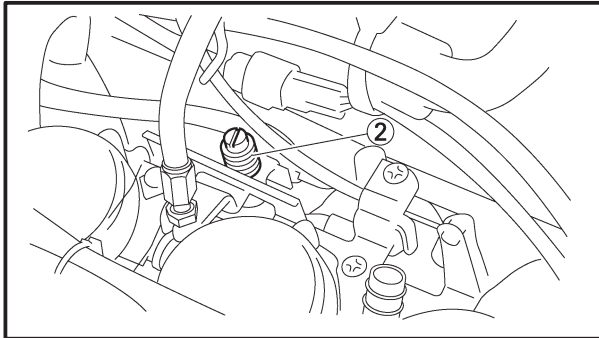
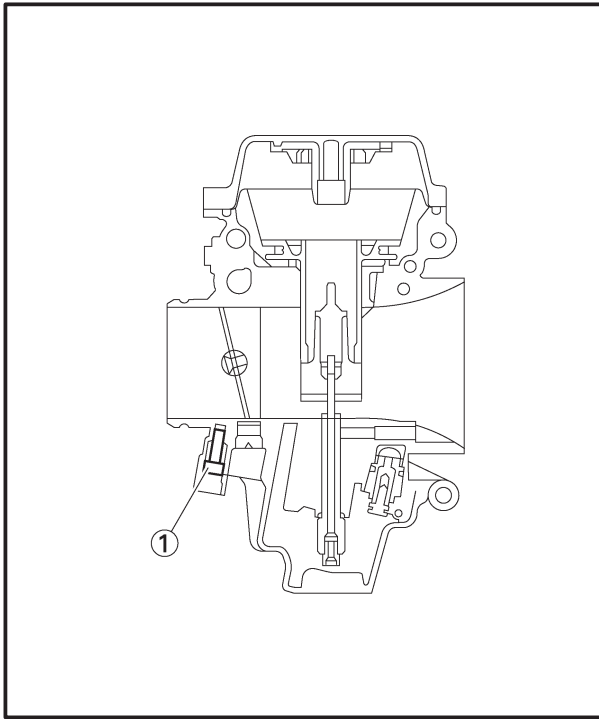


- (A) No. 2 position
- (B) No. 1 position
- (C) No. 3 position



CAUTION:

If the air silencer box is removed from the carburetors, the change in pressure in the intake will create a lean mixture that may cause severe engine damage. The air silencer box has no effect on performance characteristics and must be secured to the carburetors during carburetor tuning and adjustment. Also, it must always be in place when the engine is operated. Regularly clean the silencer and keep it free from obstructions.



Low-speed tuning

The carburetors are built so that low speed tuning can be done by adjusting the pilot mixture screw ① and throttle stop screw ②.

CAUTION:

Never run the engine without the air intake silencer installed. Severe engine damage may result.

1. Tighten the pilot mixture screw until it is lightly seated and then back it out the specified number of turns.

Pilot screw ①:

Approx 2 turns out

NOTE:

Number of return rotation of pilot screw may vary depending on each cylinder.

Make sure to rotate the screw backward after listing its present number of return rotation on each cylinder.

Pilot mixture screw effects:

Turn in	←	STD setting	→	Turn out
Leaner Mixture	←		→	Richer Mixture

2. Set the engine idle speed by turning the throttle stop screw ② in (to increase engine speed) or out (to decrease engine speed).



Engine idle speed:

1,350 ± 100 r/min

(1,250 ~ 1,450 r/min)

3. If low-speed performance is still poor at higher elevations under extreme conditions, the standard pilot jets may need to be replaced. In this way, the proper air/fuel mixture is obtained.

NOTE:

In this case, use a larger numbered pilot jet to enrich the air/fuel mixture.

Standard pilot jet:

#17.5



Main jet selection chart		
Spark plug color	Diagnosis	Remedy
Light tan or gray	Carburetors are tuned properly.	
Dry black or fluffy deposits	Mixture is too rich.	Replace the main jet with the next smaller size.
White or light gray	Mixture is too lean.	Replace the main jet with the next larger size.
White or gray insulator with small black or grayish brown spots and electrodes having a bluish-burnt appearance	Mixture is too lean. The piston is damaged or seized.	Replace the piston and spark plug. Tune the carburetors again. Begin with low-speed tuning.
Melted electrodes and possibly a blistered insulator Metallic deposits on insulator	Mixture is too lean. The spark plug melted.	Check the piston for holes or seizure. Check the cooling system, gasoline octane rating and ignition timing. After replacing the spark plug with a colder type, tune the carburetors again. Begin with low-speed tuning.

Troubleshooting

Trouble	Diagnosis	Adjustment
Hard starting	Insufficient fuel	Add gasoline.
	Excessive use of the starter or choke	Return the starter lever to its seated position so that the starter valve is fully closed.
	Fuel passage is clogged or frozen	• Check and, if necessary, clean the fuel tank air vent, the fuel filter and all of the fuel passages. • Check and, if necessary, clean the carburetor air vents, fuel passages and the float valve. • Clean the float chamber of any ice or water.
	Overflow	Adjust the fuel level.
Poor idling: • Poor performance at low speeds • Poor acceleration • Slow response to throttle • Engine tends to stall	Improper idling speed adjustment	Adjust the engine idle speed. Refer to "Low speed tuning".
	Damaged pilot screw	Replace the pilot screw.
	Clogged bypass hole	Clean the bypass hole.
	Clogged or loose pilot jet	• Remove the pilot jet, clean it with compressed air and then install it. • Make sure that the pilot jet is fully tightened.
	Air leaking into the carburetor joint	Retighten the clamp screws on the carburetor joints.
	Defective starter valve seat	Clean or replace the starter valve seat.
	Overflow	Adjust the fuel level.

CARBURETOR TUNING

INSP
ADJ



Trouble	Diagnosis	Adjustment
Poor performance at mid-range speeds: • Momentary slow response to the throttle • Poor acceleration	Clogged or loose pilot jet	• Remove the pilot jet, clean it with compressed air, and then install it. • Make sure that the pilot jet is fully tightened.
	Lean mixture	Overhaul the carburetors.
Poor performance at normal speeds: • Excessive fuel consumption • Poor acceleration	Clogged air vent	Remove the air vent hose and clean it.
	Clogged or loose main jet	• Remove the main jet, clean it with compressed air, and then install it. • Make sure that the main jet is fully tightened.
	Overflow	Check and, if necessary, clean the float and float valve.
Poor performance at high speeds: • Power loss • Poor acceleration	Starter valve is left open	Return the starter lever to its seated position so that the starter valve is fully closed.
	Clogged air vent	Remove and clean the air vent.
	Clogged or loose main air jet	• Remove the main jet, clean it with compressed air, and then install it. • Make sure that the main jet is fully tightened.
	Clogged fuel line	Clean or replace the fuel line.
	Dirty fuel tank	Clean the fuel tank.
	Air leaks into the fuel line	Tighten or replace the fuel line joint.
	Low fuel pump performance	Repair or replace the fuel pump.
	Clogged fuel filter	Replace the fuel filter.
	Clogged intake	Remove any obstructions (e.g., ice).
Abnormal combustion: • Backfiring	Lean mixture	Clean and adjust the carburetors.
	Dirty carburetors	Clean the carburetors.
	Dirty or clogged fuel line	Clean or replace the fuel line.
Overflow: • Poor idling • Poor performance at low, mid-range, and high speeds • Excessive fuel consumption • Hard starting • Power loss • Poor acceleration	Clogged air vent	Clean the air vent.
	Clogged float valve	• Disassemble and clean the float valve. • Do not scratch the valve seat.
	Scratched or unevenly worn float valve or valve seat	• Clean or replace the float valve and valve seat. • The valve seat and body must be replaced as a set
	Broken float	Replace the float.
	Incorrect float level	Check and, if necessary, replace the following parts: • Float tang • Float (entire assembly) • Arm pin


CLUTCH
High altitude

G	Green	P	Pink
S	Silver	Y	Yellow

Specifications Model: RX10, RX10S, RX10R, RX10RS

A	Elevation	~ 800 m (~ 2,500 ft)	600 ~ 1,400 m (2,000 ~ 4,500 ft)	1,200 ~ 2,000 m (4,000 ~ 6,500 ft)	1,800 ~ 2,600 m (6,000 ~ 8,500 ft)	2,400 ~ 3,000 m (8,000 ~ 10,000 ft)
B	Engine idle speed	1,350 ± 100 r/min	←	←	←	←
C	Engagement r/min	3,600 ± 200 r/min	←	←	←	←
D	Shift r/min	10,250 ± 250 r/min	←	←	←	←
E	Main jet	d Refer to "HIGH ALTITUDE SETTINGS" in "MAINTENANCE SPECIFICATIONS".				
F	Pilot jet*1					
G	Pilot screw					
H	Secondary reduction ratio (number of links)	38/24 (70 L)	←	38/23 (70 L)	38/22 (68 L)	←
I	Primary sheave spring	90501-582L1	←	90501-582L2	90501-602L3	←
J	Color	Y-S-Y	←	G-S-G	P-S-P	←
K	Free length	87.4 mm (3.44 in)	←	←	85.1 mm (3.35 in)	←
L	Preload	343 N (35 kg, 77 lb)	←	←	←	←
M	Spring rate	24.5 N/mm (2.50 kg/mm, 140 lb/in)	←	27 N/mm (2.75 kg/mm, 154 lb/in)	29.4 Nm (3.00 kg/mm, 168 lb/in)	←
N	Wire diameter	5.8 mm (0.228 in)	←	←	6.0 mm (0.236 in)	←
O	Outside diameter	60 mm (2.36 in)	←	←	←	←
P	Weight (ID)	8FA-17605-00 (8FA00)	←	←	←	←
Q	Weight rivet	OUT	Steel 17.2 with-hole	Steel 13.3	Steel 13.3 with-hole	Aluminum 13.3 with-hole
		IN	Steel 17.2	Steel 13.3	Steel 13.3 with-hole	Steel 13.3 with-hole
R	Weight bushing	Duralon	←	←	←	←
S	Roller outer dia.	15.0 mm (0.59 in)	←	←	←	←
T	Roller bushing	Duralon	←	←	←	←
U	Pri. clutch shim	None	←	←	←	←
V	Secondary sheave spring	90508-60012	←	←	←	←
W	Color	P	←	←	←	←
X	Free length	75 mm (2.95 in)	←	←	←	←
Y	Preload rate	60° (3-3) 1211 kg•mm/rad	←	←	←	←
Z	Wire diameter	6.0 mm (0.236 in)	←	←	←	←
a	Outside diameter	69.5 mm (2.736 in)	←	←	←	←
b	Sec. torque cam angle	51 – 43°	←	←	←	←
c	Sec. clutch shim	1.0 mm (0.04 in)	←	←	←	←

NOTE:

*1: Number of return rotation of pilot screw may vary depending on each cylinder.

Make sure to rotate the screw backward after listing its present number of return rotation on each cylinder.



S	Silver	O	Orange
W	White		

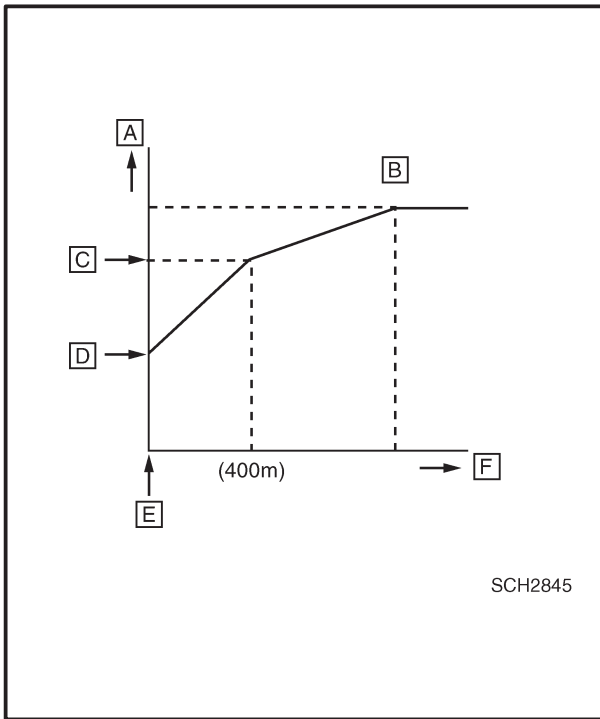
Specifications Model: RX10M, RX10MS

[A] Elevation		~ 800 m (~ 2,500 ft)	600 ~ 1,400 m (2,000 ~ 4,500 ft)	1,200 ~ 2,000 m (4,000 ~ 6,500 ft)	1,800 ~ 2,600 m (6,000 ~ 8,500 ft)	2,400 ~ 3,000 m (8,000 ~ 10,000 ft)
[B] Engine idle speed		1,350 ± 100 r/min	←	←	←	←
[C] Engagement r/min		4,200 ± 200 r/min	←	←	←	←
[D] Shift r/min		10,250 ± 250 r/min	←	←	←	←
[E] Main jet		[d] Refer to “HIGH ALTITUDE SETTINGS” in ”MAINTENANCE SPECIFICATIONS”.				
[F] Pilot jet* ¹						
[G] Pilot screw						
[H] Secondary reduction ratio (number of links)		40/23 (70 L)	←	40/22 (70 L)	40/21 (70 L)	←
[I] Primary sheave spring		90501-624L8	←	←	←	←
[J] Color		O-S-O	←	←	←	←
[K] Free length		84.2 mm(3.32 in)	←	←	←	←
[L] Preload		343 N (35 kg, 77 lb)	←	←	←	←
[M] Spring rate		31.9 N/mm (3.25 kg/mm, 182 lb/in)	←	←	←	←
[N] Wire diameter		6.2 mm (0.244 in)	←	←	←	←
[O] Outside diameter		60 mm (2.36 in)	←	←	←	←
[P] Weight (ID)		8FA-17605-00 (8FA00)	←	←	←	←
[Q] Weight rivet	OUT	Steel 17.2 with-hole	Steel 13.3	Steel 13.3 with-hole	Aluminum 13.3 with-hole	None
	IN	Steel 17.2	Steel 13.3 with-hole	Aluminum 13.3 with-hole	Aluminum 13.3 with hole	None
[R] Weight bushing		Duralon	←	←	←	←
[S] Roller outer dia.		16.5 mm (0.65 in)	←	←	←	←
[T] Roller bushing		Duralon	←	←	←	←
[U] Pri. clutch shim		None	←	←	←	←
[V] Secondary sheave spring		90508-60007	←	←	←	←
[W] Color		W	←	←	←	←
[X] Free length		75 mm (2.95 in)	←	←	←	←
[Y] Preload rate		70° (1-6) 1290 kg•mm/rad	←	←	←	←
[Z] Wire diameter		6 mm (0.236 in)	←	←	←	←
[a] Outside diameter		69.5 mm (2.736 in)	←	←	←	←
[b] Sec. torque cam angle		45°	←	←	←	←
[c] Sec. clutch shim		1.0 mm (0.04 in)	←	←	←	←

NOTE:

*1: Number of return rotation of pilot screw may vary depending on each cylinder.

Make sure to rotate the screw backward after listing its present number of return rotation on each cylinder.



The clutch may require tuning depending upon where the machine will be operated and the desired handling characteristics. The clutch can be tuned by changing the engagement and shifting speeds.

Clutch engagement speed is defined as the engine speed at which the machine first begins to move from a complete stop.

Clutch shifting speed is defined as the engine speed reached when the machine has travelled 800 m (2,500 ft) after being started at full-throttle from a dead stop.

Normally, when a machine reaches shifting speed, the vehicle speed increases but the engine speed remains nearly constant. Under unfavorable conditions (wet snow, icy snow, hills, or rough terrain), however, engine speed may decrease after the shifting speed has been reached.

- [A] Engine speed
- [B] Good condition
- [C] Clutch shifting speed
- [D] Clutch engagement speed
- [E] Starting position
- [F] Distance travelled 800 m (2,500 ft)

GEAR SELECTION

The reduction ratio of the driven gear to the drive gear must be set according to the snow conditions. If there are many rough surfaces or unfavorable snow conditions, the drive/driven gear ratio should be increased. If the surfaces are fairly smooth or better snow conditions exist, decrease the ratio.

Gear ratio chart

The drive and driven gears and the chains shown in the gear ratio chart are available as options. The figures containing a decimal point represent the drive/driven gear ratios, while the bottom numbers designate the number of links in the chain.



① Chain and sprocket part number

[A] Parts name	[B] Teeth & links	[C] Parts no.	[D] Standard
[E] Drive sprocket	20 teeth	8FA-17682-00	
	21 teeth	8FA-17682-10	RX10M, RX10MS
	22 teeth	8FA-17682-20	
	23 teeth	8FA-17682-30	
	24 teeth	8FA-17682-40	RX10, RX10S, RX10R, RX10RS
[F] Driven sprocket	37 teeth	8DW-47587-70	
	38 teeth	8DW-47587-80	RX10, RX10S
	38 teeth	8FB-47587-80	RX10R, RX10RS
	39 teeth	8DW-47587-90	
	39 teeth	8FB-47587-90	
	40 teeth	8DW-47587-00	RX10M, RX10MS
[G] Chain	68 links	94890-09068	
	70 links	94890-09070	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS

② Gear ratio

[A] Drive gear \ [B] Driven gear	20 teeth	21 teeth	22 teeth	23 teeth	24 teeth
37 teeth		1.76 68 links	1.68 68 links	1.61 68 links	1.54 70 links
38 teeth	1.90 68 links	1.81 68 links	1.73 68 links	1.65 70 links	1.58 70 links
39 teeth	1.95 68 links	1.86 68 links	1.77 70 links	1.70 70 links	1.63 70 links
40 teeth	2.00 68 links	1.91 70 links	1.82 70 links	1.74 70 links	1.67 70 links

③ Secondary sheave spring

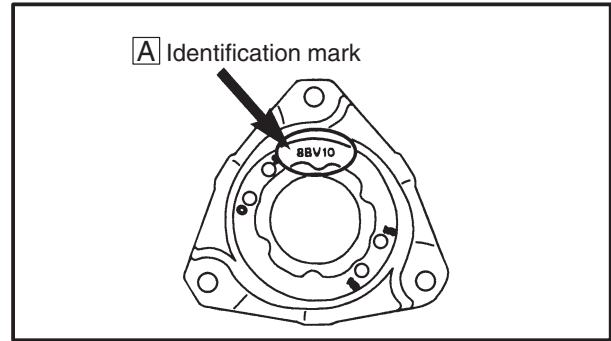
[A] Part no.	[B] Spring rate N•mm/rad (kg•mm/rad)	[C] Preload N/mm (kg/mm) (lb/in)	[D] Color	[E] Wire gauge mm (in)	[F] No. of coils	[G] Free length mm (in)	[H] Outside diameter mm (in)	[I] Standard
90508-500B1	6003 (613)	6.2 (0.63), 35.28	Brown	5.0 (0.196)	5.19	75 (2.95)	69.5 (2.736)	
90508-536A9	7147 (729)	7.3 (0.74), 41.44	Red	5.3 (0.209)	5.53	75 (2.95)	69.5 (2.736)	
90508-556A2	8314 (848)	8.5 (0.87), 48.72	Green	5.5 (0.217)	5.53	75 (2.95)	69.5 (2.736)	
90508-556A7	9460 (965)	10.21 (1.04), 58.24	Silver	5.5 (0.217)	4.86	75 (2.95)	69.5 (2.736)	
90508-60012	11876 (1211)	12.32 (1.256), 70.34	Pink	6.0 (0.236)	5.53	75 (2.95)	69.5 (2.736)	RX10, RX10S, RX10R, RX10RS
90508-60007	12654 (1290)	13.45 (1.372), 76.84	White	6.0 (0.236)	5.19	75 (2.95)	69.5 (2.736)	RX10M, RX10MS

④ Secondary spring twist angle

[B] Sheave \ [A] Seat	0	3	6	9
1	10°	40°	70°	100°
2	20°	50°	80°	110°
3	30°	60°	90°	120°



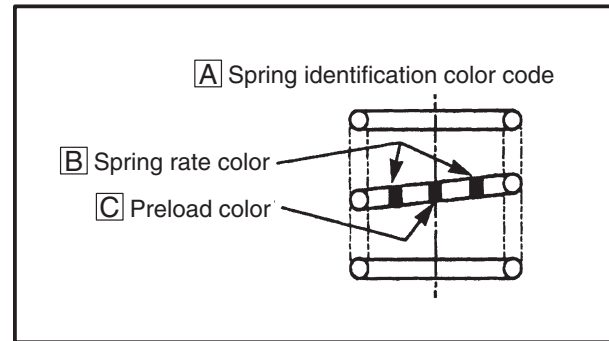
⑤ Torque cam (secondary spring seat)



B Effects	C Part no.	D Cam angle	E Identification mark	F Standard
G Quicker upshifting during acceleration  H Quicker backshifting under load	8FA-17604-00	51-43°	8BVFA	RX10, RX10S, RX10R, RX10RS
	8BV-17604-71	47°	8BV71	
	8BV-17604-51	45°	8BV51	RX10M, RX10MS
	8BV-17604-31	43°	8BV31	
	8BV-17604-11	41°	8BV11	
	8BV-17604-91	39°	8BV91	



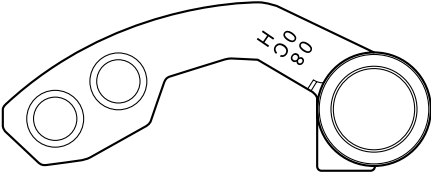
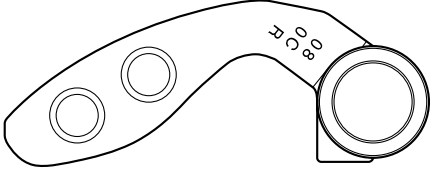
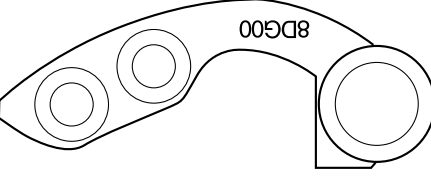
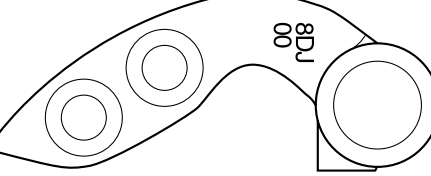
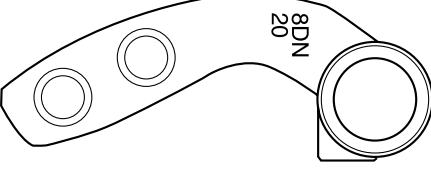
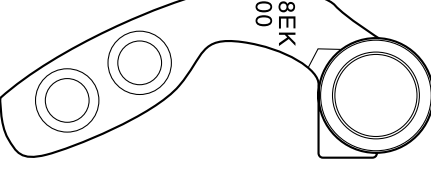
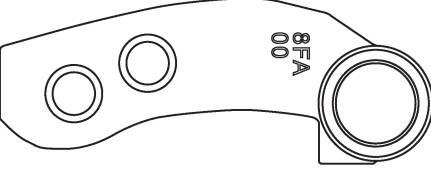
⑥ Primary spring



D Parts No.	E Spring rate N/mm (kg/mm)	F Preload N (kg)	G Color	H Wire gauge mm (in)	I Outside diameter mm (in)	J No. of coils	K Free length mm (in)	L Standard
90501-551L3	19.6 (2.00)	294 (30)	Blue-Pink-Blue	5.5 (0.216)	60 (2.36)	4.91	88.4 (3.48)	
90501-551L9	19.6 (2.00)	343 (35)	Blue-Silver-Blue	5.5 (0.216)	60 (2.36)	4.91	90.9 (3.58)	
90501-552L5	19.6 (2.00)	392 (40)	Blue-Green-Blue	5.5 (0.216)	60 (2.36)	4.91	93.4 (3.68)	
90501-581L5	24.5 (2.50)	294 (30)	Yellow-Pink-Yellow	5.8 (0.228)	60 (2.36)	4.92	85.4 (3.36)	
90501-581L6	27 (2.75)	294 (30)	Green-Pink-Green	5.8 (0.228)	60 (2.36)	4.66	84.3 (3.32)	
90501-582L1	24.5 (2.50)	343 (35)	Yellow-Silver-Yellow	5.8 (0.228)	60 (2.36)	4.92	87.4 (3.44)	RX10, RX10S, RX10R, RX10RS
90501-582L2	27 (2.75)	343 (35)	Green-Silver-Green	5.8 (0.228)	60 (2.36)	4.66	86.1 (3.39)	
90501-582L6	22.1 (2.25)	392 (40)	White-Green-White	5.8 (0.228)	60 (2.36)	5.25	91.2 (3.59)	
90501-582L7	24.5 (2.50)	392 (40)	Yellow-Green-Yellow	5.8 (0.228)	60 (2.36)	4.92	89.4 (3.52)	
90501-583L0	19.6 (2.00)	441 (45)	Blue-White-Blue	5.8 (0.228)	60 (2.36)	5.65	95.9 (3.78)	
90501-583L1	22.1 (2.25)	441 (45)	White-White-White	5.8 (0.228)	60 (2.36)	5.25	93.4 (3.68)	
90501-583L4	22.1 (2.25)	343 (35)	White-Silver-White	5.8 (0.228)	60 (2.36)	5.25	89.0 (3.50)	
90501-583L5	22.1 (2.25)	294 (30)	White-Pink-White	5.8 (0.228)	60 (2.36)	5.25	86.7 (3.41)	
90501-601L7	29.4 (3.00)	294 (30)	Pink-Pink-Pink	6.0 (0.236)	60 (2.36)	4.82	83.4 (3.28)	
90501-601L8	31.9 (3.25)	294 (30)	Orange-Pink-Orange	6.0 (0.236)	60 (2.36)	4.60	82.6 (3.25)	
90501-602L3	29.4 (3.00)	343 (35)	Pink-Silver-Pink	6.0 (0.236)	60 (2.36)	4.82	85.1 (3.35)	
90501-602L8	27.0 (2.75)	392 (40)	Green-Green-Green	6.0 (0.236)	60 (2.36)	5.08	87.9 (3.46)	
90501-602L9	29.4 (3.00)	392 (40)	Pink-Green-Pink	6.0 (0.236)	60 (2.36)	4.82	86.7 (3.41)	
90501-603L2	24.5 (2.50)	441 (45)	Yellow-White-Yellow	6.0 (0.236)	60 (2.36)	5.39	91.4 (3.60)	
90501-603L3	27.0 (2.75)	441 (45)	Green-White-Green	6.0 (0.236)	60 (2.36)	5.08	89.8 (3.54)	
90501-624L8	31.9 (3.25)	343 (35)	Orange-Silver-Orange	6.2 (0.244)	60 (2.36)	5.00	84.2 (3.32)	RX10M, RX10MS



⑦ Clutch weight

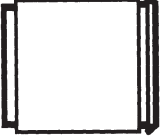
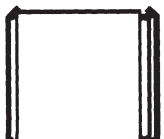
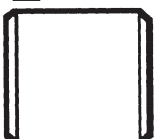
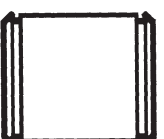
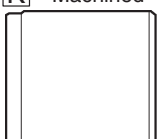
A Parts no.	B Weight g (oz) without bush and rivets	C Shape & ID mark	D Standard
8CH-17605-10	35.32 (1.247)		
8CR-17605-10	38.09 (1.345)		
8DG-17605-00	34.26 (1.209)		
8DJ-17605-00	37.77 (1.333)		
8DN-17605-20	42.09 (1.486)		
8EK-17605-00	39.00 (1.376)		
8FA-17605-00	69.43 (2.449)		RX10, RX10S, RX10M, RX10MS, RX10R, RX10RS



⑧ Weight rivets

A Parts No.	B Material	C Length mm (in)	D Weight g (oz)	E Standard	F Effects
90261-06033	Steel	17.2 (0.677)	4.5 (0.159)	IN: RX10, RX10S, RX10R, RX10RS	G Increased Force H Decreased Force
90269-06006	Steel	17.2 (0.677)	3.6 (0.127) with hole	OUT: RX10, RX10S, RX10R, RX10RS	
90261-06034	Steel	13.9 (0.548)	3.6 (0.127)		
90261-06019	Steel	13.3 (0.524)	3.1 (0.109)		
90261-06017	Steel	11.3 (0.445)	2.7 (0.095)		
90266-06002	Steel	13.3 (0.524)	2.4 (0.085) with hole		
90261-06015	Steel	10.3 (0.406)	2.4 (0.085)		
90261-06028	Aluminum	10.3 (0.406)	0.8 (0.028)		
90266-06001	Aluminum	13.3 (0.524)	0.8 (0.028) with hole		
None				RX10M, RX10MS	

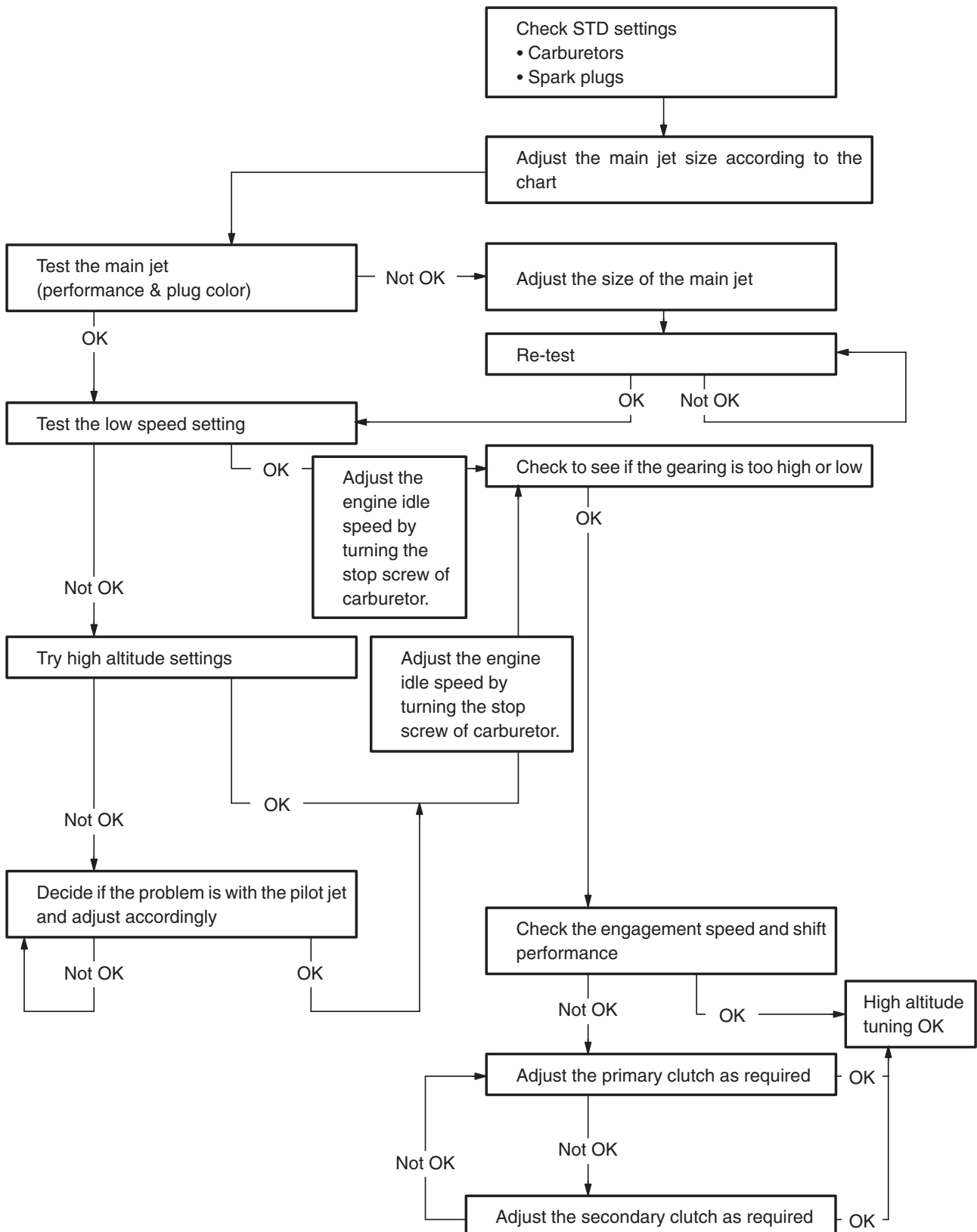
⑨ Rollers

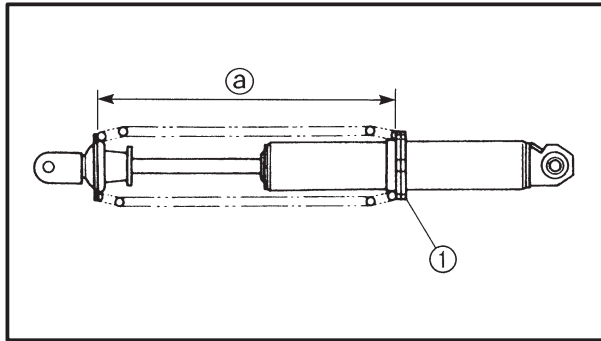
I.D. 9 mm (0.354 in)					
A Roller with bushing part number	B Outside diameter mm (in)	C Bushing type (P/N)	D Identification mark (Width)	E Standard	F Effects
8CR-17624-00	14.5 (0.57)	Duralon	G Grooved & Machined  (14.6 mm)		L Increased force M Decreased force
		90380-09245			
8CR-17624-10	15.0 (0.59)	Duralon	H Grooved  (14.6 mm)	RX10, RX10S, RX10R, RX10RS	
		90380-09245			
8CR-17624-20	15.6 (0.61)	Duralon	I No Mark  (14.6 mm)		
		90380-09245			
8CR-17624-30	16.0 (0.63)	Duralon	J Grooved & Grooved  (14.6 mm)		
		90380-09245			
8CR-17624-40	16.5 (0.65)	Duralon	K Machined  (14.6 mm)	RX10M, RX10MS	
		90380-09245			



HIGH ALTITUDE TUNING

To attain the best performance in high altitude conditions, carefully tune the snowmobile as outlined below.





FRONT SUSPENSION

Spring preload

1. Adjust:

- Spring preload

Adjustment steps:

- Turn the spring seat ① in or out.

RX10, RX10S, RX10R, RX10RS

Spring seat distance	Standard		
	Shorter ←		→ Longer
Preload	Harder ←		→ Softer
Length ①	Min.		Max.
	250 mm (9.84 in)	258 mm (10.16 in)	260 mm (10.24 in)

RX10M, RX10MS

Spring seat distance	Standard		
	Shorter ←		→ Longer
Preload	Harder ←		→ Softer
Length ①	Min.		Max.
	213 mm (8.39 in)	223 mm (8.78 in)	226 mm (8.90 in)

CAUTION:

Be sure that the left and right spring preloads are the same.

⚠ WARNING

This shock absorber contains highly pressurized nitrogen gas.

Do not tamper with or attempt to open the shock absorber assembly.

Do not subject the shock absorber assembly to flames or high heat, which could cause it to explode.

REAR SUSPENSION
Stopper band

1. Adjust:
- Stopper band tension

CAUTION: _____

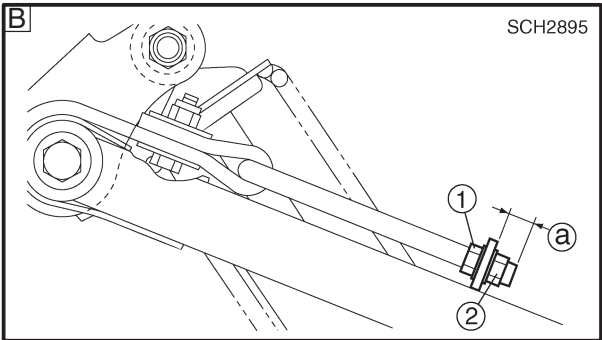
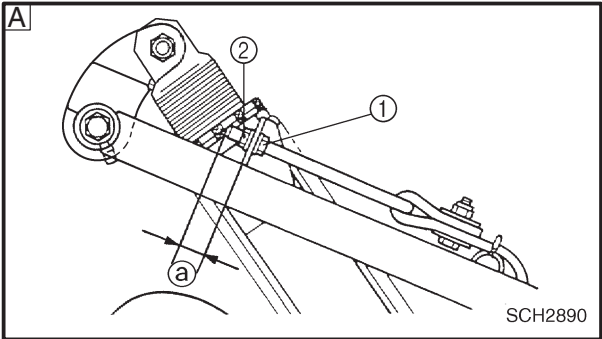
Make sure the left and right sides of the rear suspension stopper band are adjusted evenly.

NOTE: _____

This adjustment affects the handling characteristics of the machine.

Adjustment steps:

- Loosen the locknut ①.
- Turn the adjusting nut ② in or out to adjust the stopper band tension.



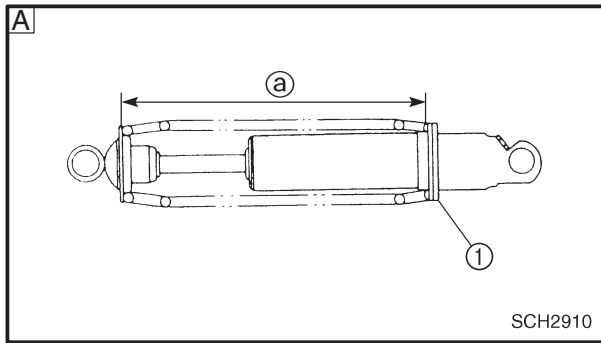
Adjuster thread length ①	RX10, RX10S, RX10R, RX10RS: 25 ± 0.5 mm (0.98 ± 0.02 in)	
	RX10M, RX10MS: 10 ± 0.5 mm (0.39 ± 0.02 in)	
	Longer (Maximum)	Shorter (Minimum)
Effects	More weight on skis; Less weight transfer	Less weight on skis; More weight transfer

- Tighten the locknut.

	Locknut: 16 Nm (1.6 m•kg, 12 ft•lb)
--	---

A RX10, RX10S, RX10R, RX10RS

B RX10M, RX10MS



Spring preload (RX10, RX10S, RX10R, RX10RS)

1. Adjust:

- Spring preload

Adjustment step:

- Turn the spring seat ① in or out.

Front **A**

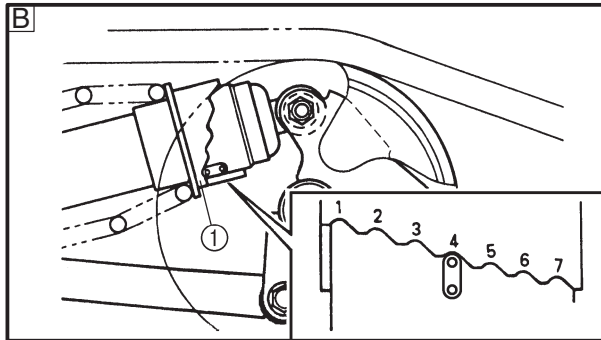
Spring seat distance	Standard		
	Shorter ←		→ Longer
Preload	Harder ←		→ Softer
Length ①	Min.		Max.
	180 mm (7.09 in)	190 mm (7.48 in)	190 mm (7.48 in)

⚠ WARNING

This shock absorber contains highly pressurized nitrogen gas.

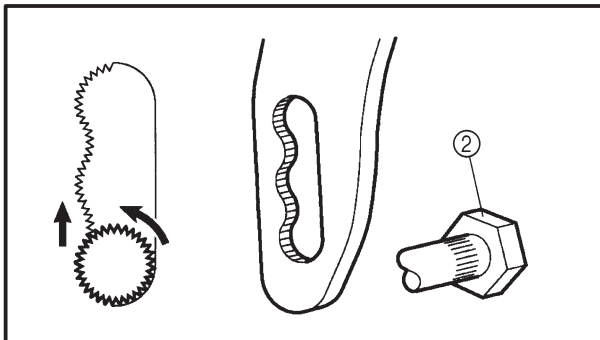
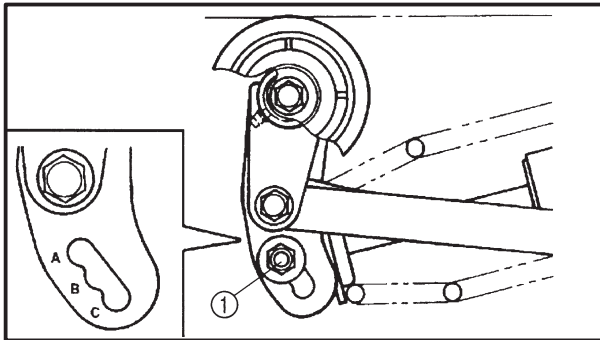
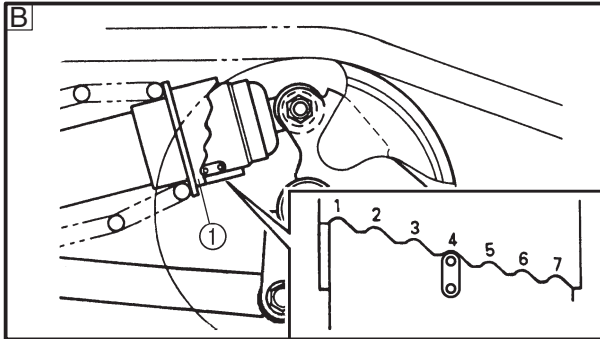
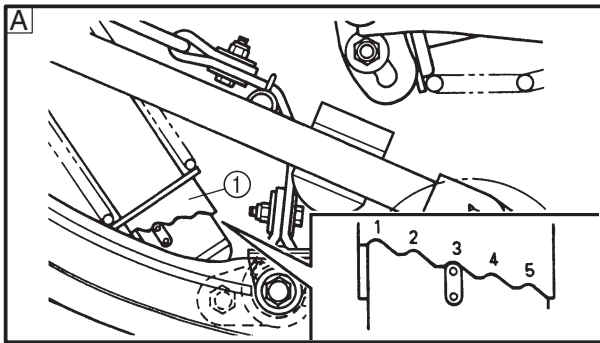
Do not tamper with or attempt to open the shock absorber assembly.

Do not subject the shock absorber assembly to flames or high heat, which could cause it to explode.



- Turn the adjusting ring ① to the proper position.

Spring adjuster position	1	2	3	4	5	6	7
Preload	Softer ← → Harder						
☐ Rear Standard	4						



Spring preload (RX10M, RX10MS)

- Adjust:
 - Spring preload

Adjustment steps:

- Turn the adjusting ring (1) to the proper position.

Spring adjuster position	1	2	3	4	5
Preload	Softer ← → Harder				
A Front Standard	3				

Spring adjuster position	1	2	3	4	5	6	7
Preload	Softer ← → Harder						
B Rear Standard	4						

Rear suspension full rate

- Adjust:
 - Full rate adjuster

Adjustment steps:

Installation position	A	B	C
Spring rate and damping	Soft	Medium	Hard
Standard	B		

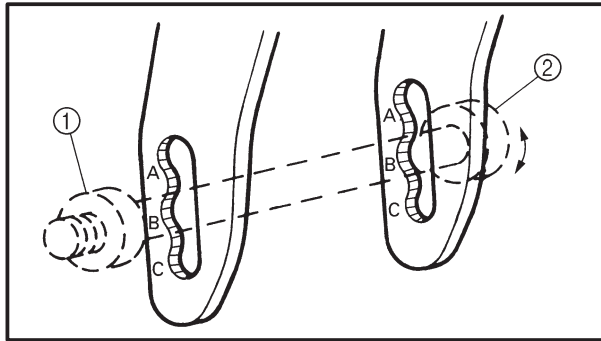
NOTE:

Be sure to make this adjustment when there is no load (rider or cargo) on the snowmobile.

- Loosen the nut (1) 1/2 or 3/4 turns, while holding the adjusting bolt (2) securely with a wrench so it does not move.

CAUTION:

Never allow the adjusting bolt (2) to move while loosening the nut.



- Turn the adjusting bolt (2) to the desired position.

CAUTION:

Be sure the adjusting bolt ends are set at the same position on each side.

- While holding the adjusting bolt securely, tighten the nut (1).



Nut (shock absorber):
49 Nm (4.9 m•kg, 35 ft•lb)

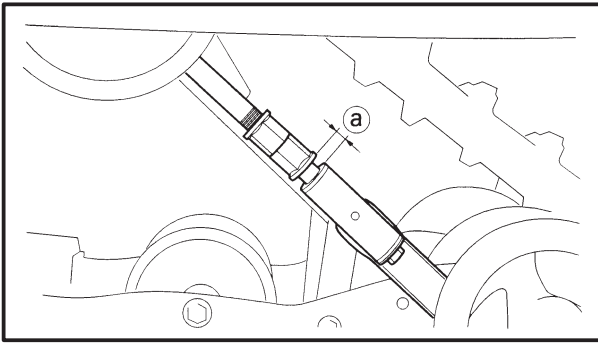
CAUTION:

Never allow the adjusting bolt to move while tightening the nut.

- This model has a “Easy adjust” system for the Full rate adjuster. The bolt has teeth on it. So when the bolt is turned, it rides up and down the bracket.

NOTE:

- The nut has to be loosen first, while the bolt is held in place with a wrench.
- Then the bolt can be turned to adjust the shock position up or down.
- If the bolt is turned with the nut tight, it is possible to strip the teeth off the bolt.



Control rod

1. Adjust:
 - Control rod stroke (a)

CAUTION:

Make sure the adjusting bolt ends are set at the same position on each side.

Adjustment steps:

- Loosen the lock nut (1).
- Turn the adjusting nut (2) in or out to adjust the control rod stroke.

Adjusting position	1	2	3	4
Effect	Increase weight transfer ←		→ Decrease pitching	
Standard	3			

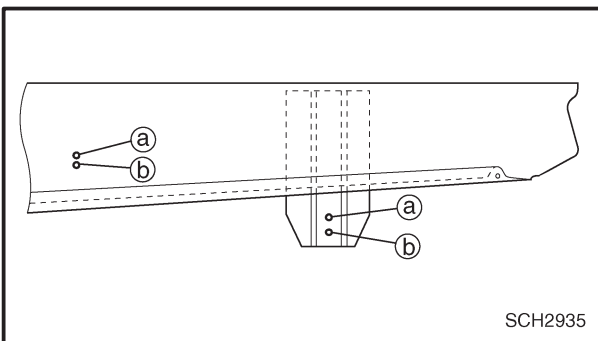
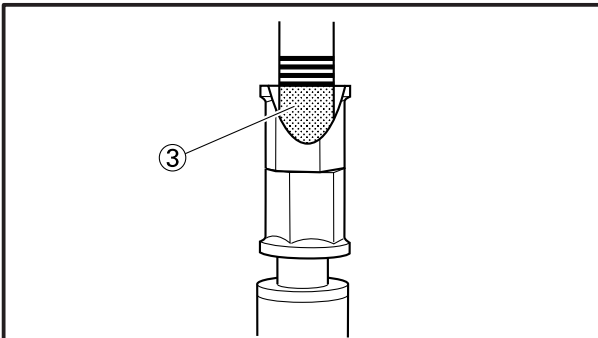
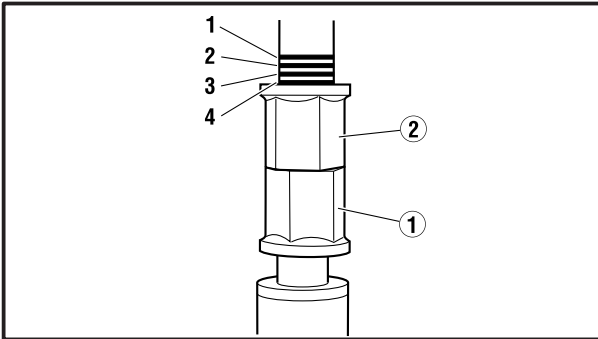
! WARNING

Never adjust the control rods beyond the maximum range indicated on the rods with red paint (3).

- While holding the adjusting bolt securely, tighten the locknut (1).



Locknut:
25 Nm (2.5 m•kg, 18 ft•lb)



Rear suspension position (RX10M, RX10MS)

1. Adjust:
 - Rear suspension position

NOTE:

Select the rear suspension position according to the snow conditions: (a) standard; (b) deep new snow.



Bolt (slide rail suspension):
72 Nm (7.2 m•kg, 52 ft•lb)

SCH2935



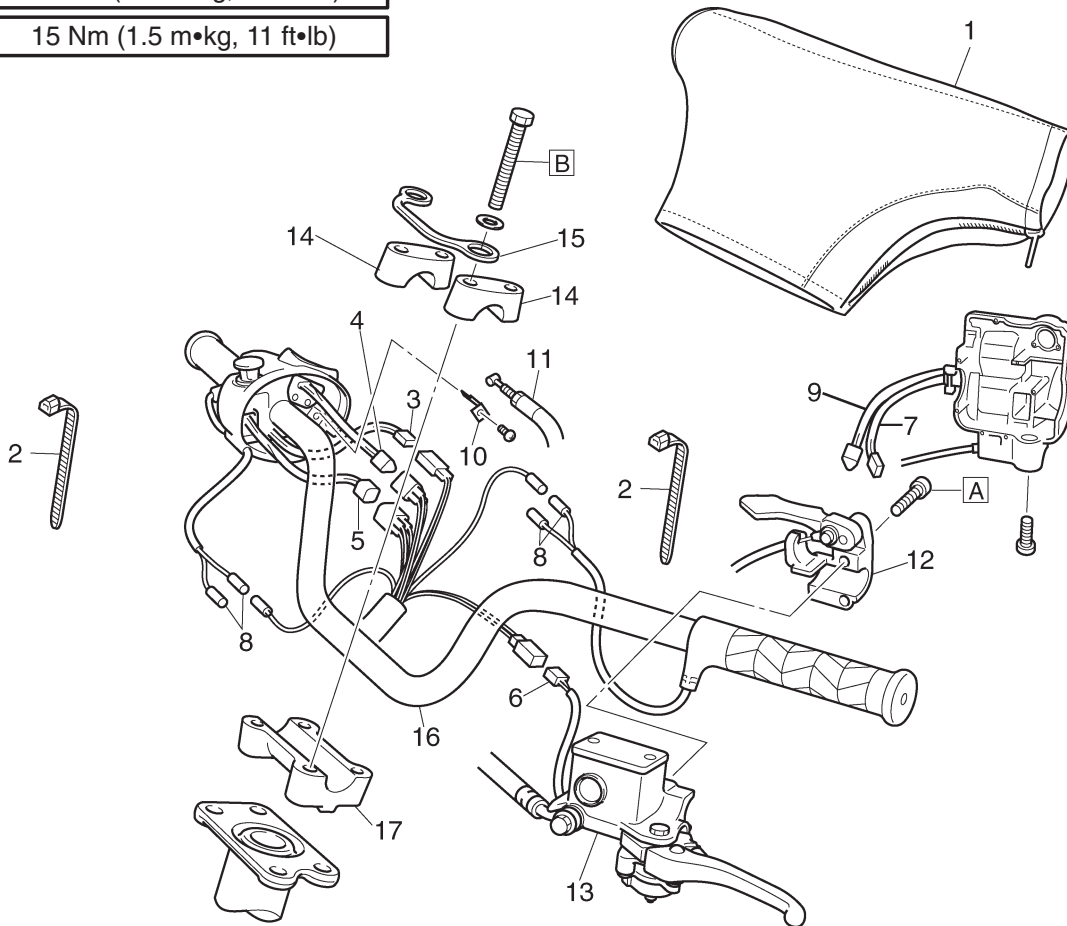
CHASSIS

STEERING

RX10, RX10S, RX10R, RX10RS

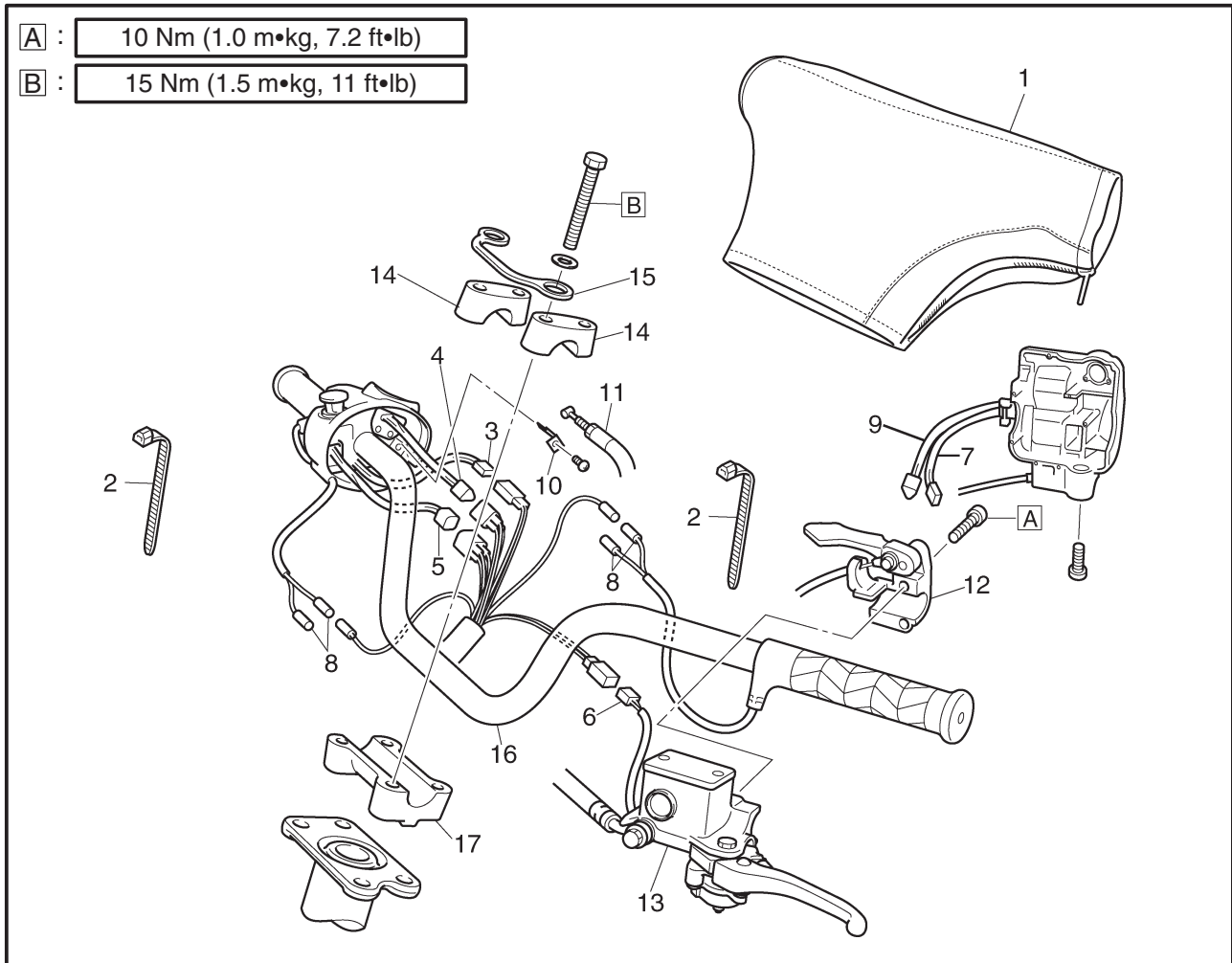
[A] : 10 Nm (1.0 m•kg, 7.2 ft•lb)

[B] : 15 Nm (1.5 m•kg, 11 ft•lb)



3

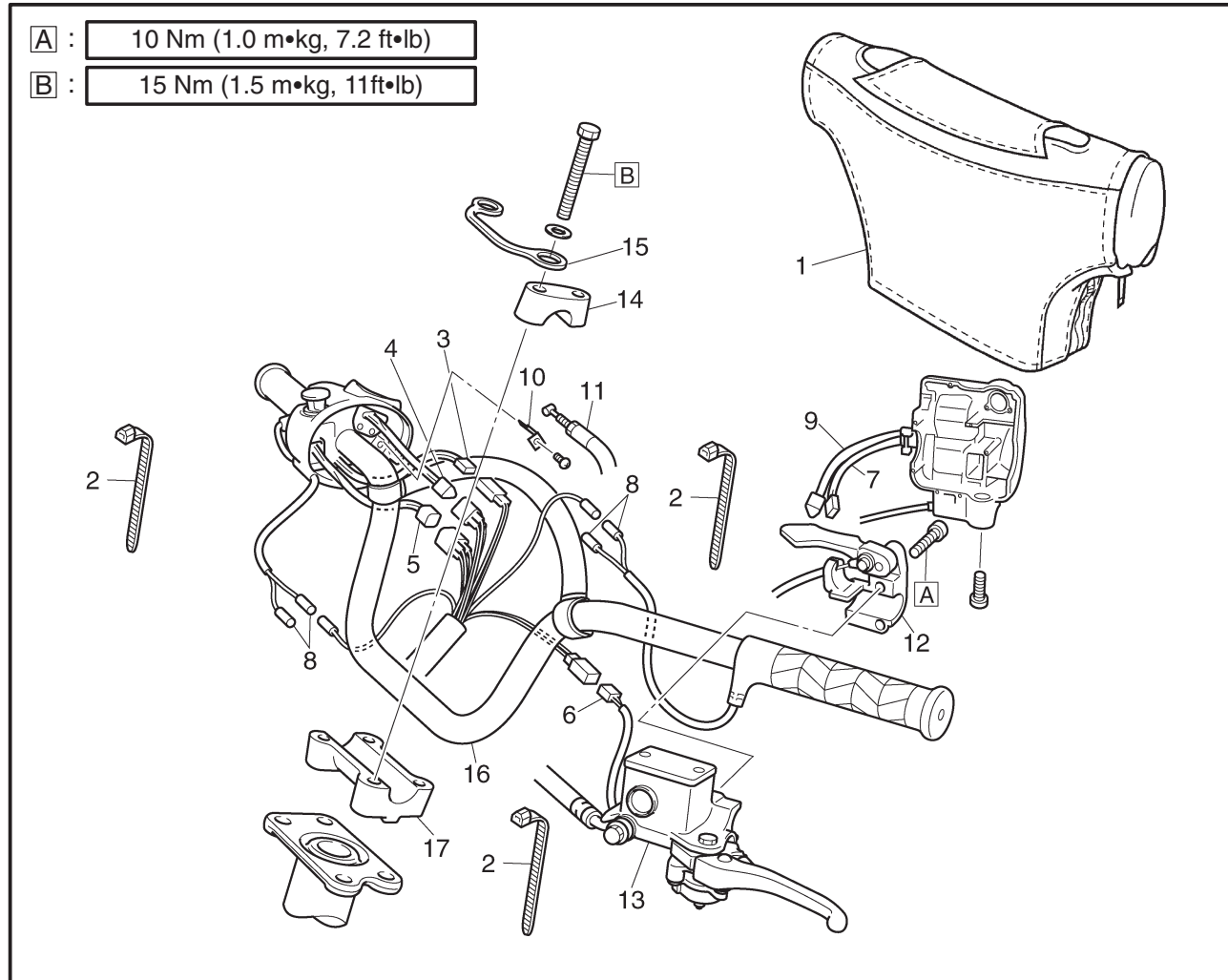
Order	Job name/Part name	Q'ty	Remarks
	Handlebar removal		Remove the parts in the order listed below.
1	Handlebar cover	1	
2	Plastic band	2	
3	Thumb warmer lead coupler	1	Disconnect.
4	Thumb warmer switch lead coupler	1	Disconnect.
5	Engine stop switch coupler	1	Disconnect.
6	Brake switch coupler	1	Disconnect.
7	Headlight beam switch coupler	1	Disconnect.
8	Grip warmer lead coupler	4	Disconnect.
9	Grip warmer switch lead coupler	1	Disconnect.
10	Throttle cable holder	1	
11	Throttle cable	1	
12	Brake lever holder	1	



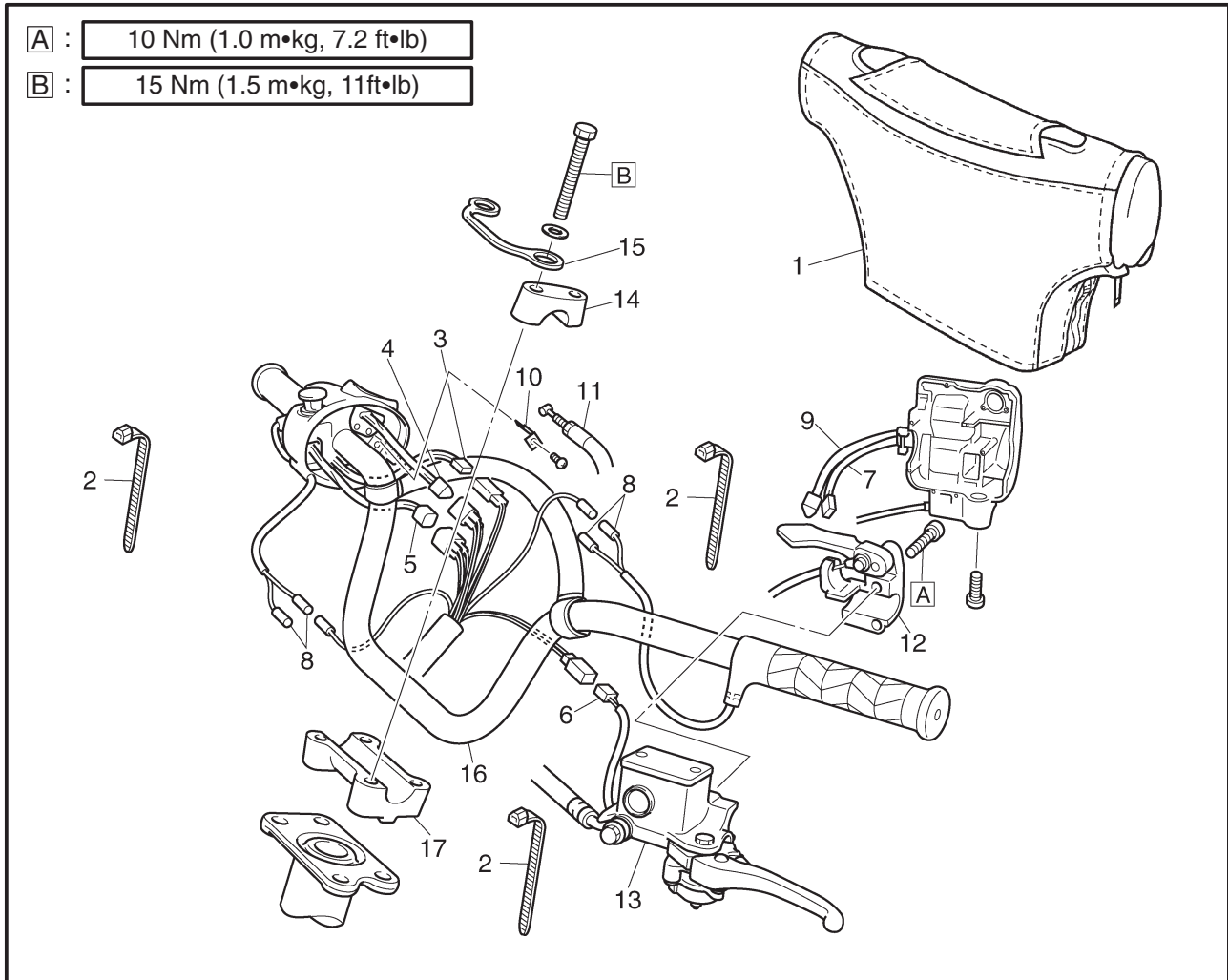
Order	Job name/Part name	Q'ty	Remarks
13	Master cylinder assembly	1	NOTE: _____ After installing all parts, refer to "CABLE ROUTING" in CHAPTER 9, to check the cable, lead and hose routings. _____ For installation, reverse the removal procedure.
14	Handlebar holder (upper)	2	
15	Cable holder	1	
16	Handlebar	1	
17	Handlebar holder (lower)	1	



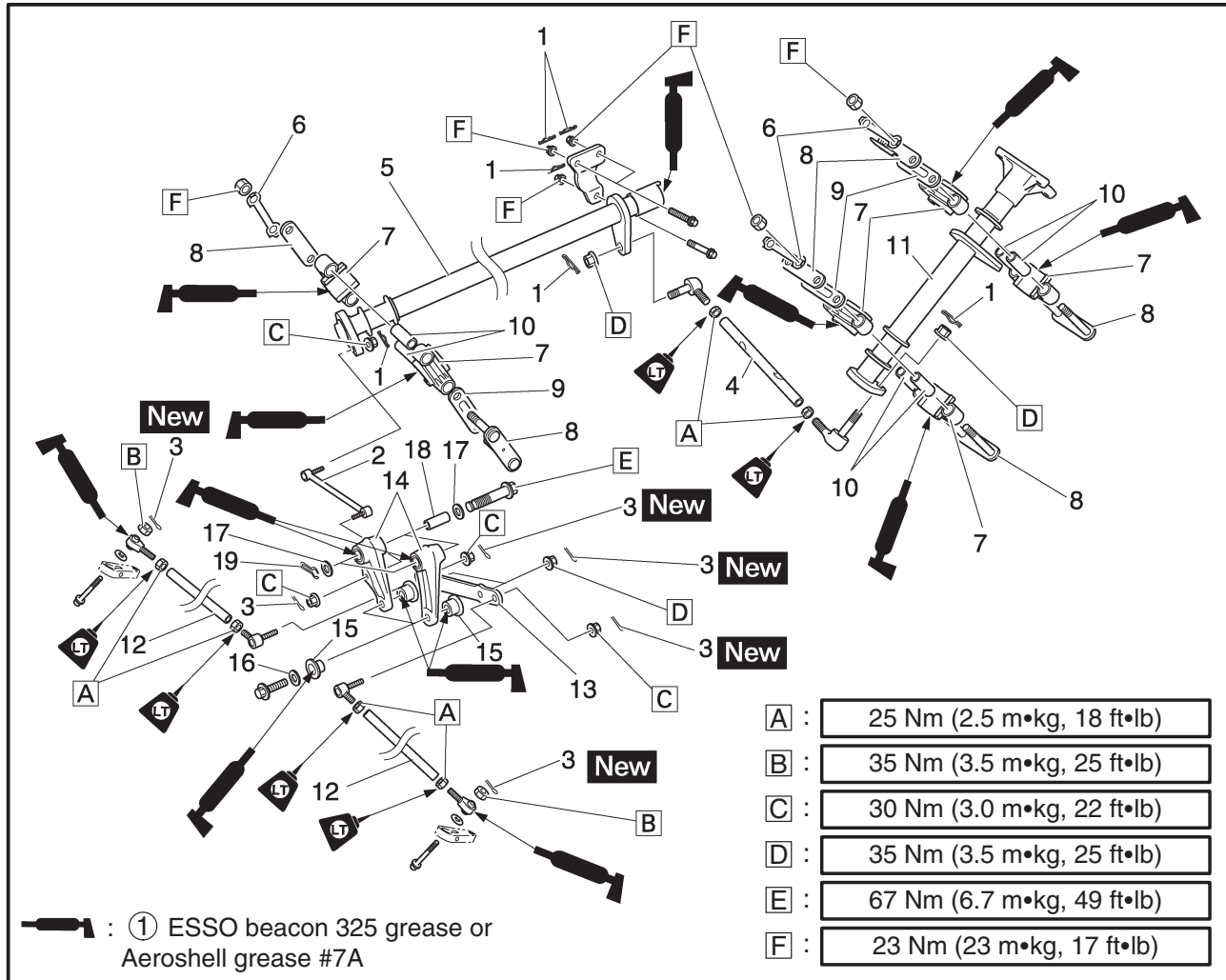
RX10M, RX10MS



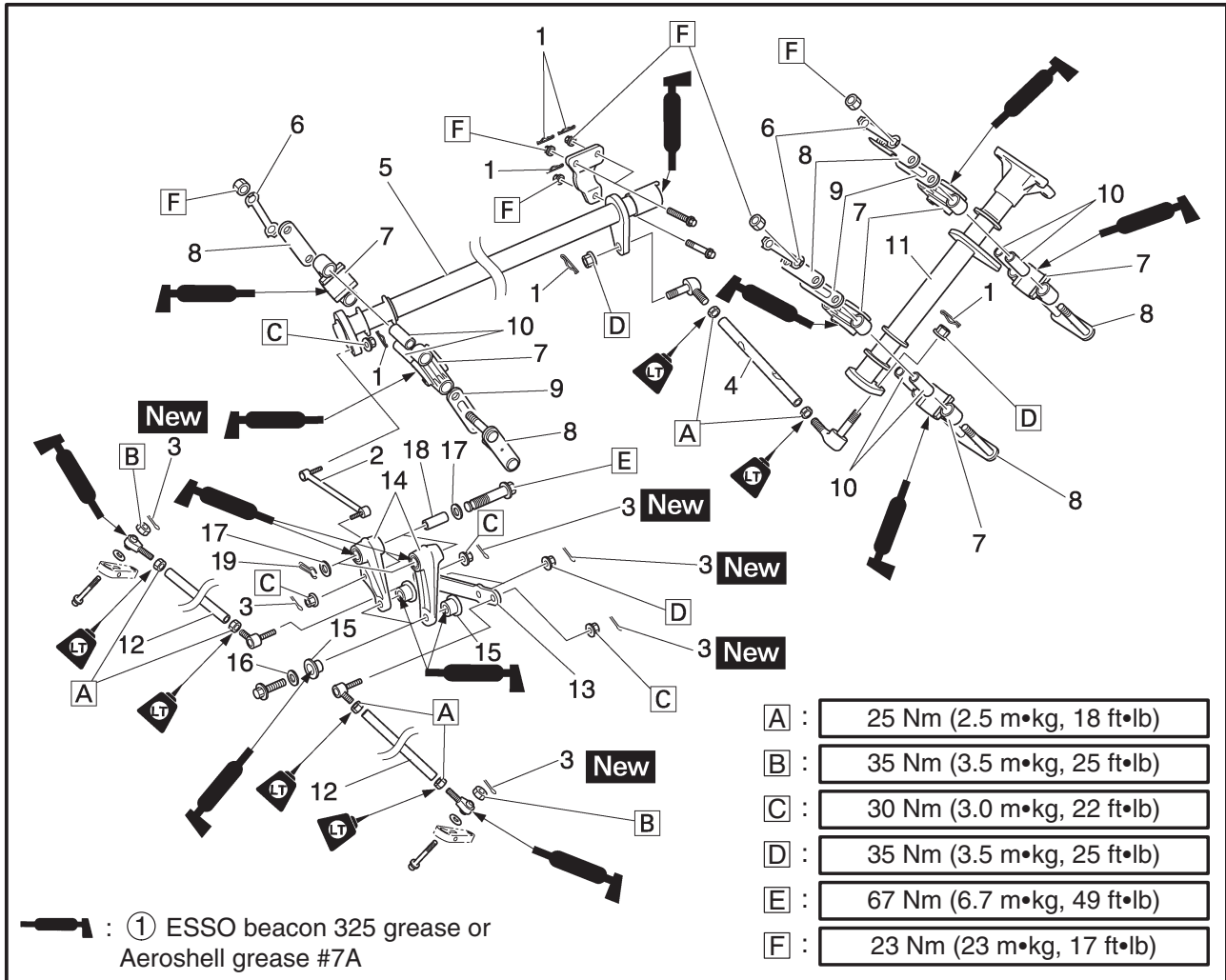
Order	Job name/Part name	Q'ty	Remarks
	Handlebar removal		Remove the parts in the order listed below.
1	Handlebar cover	1	
2	Plastic band	3	
3	Thumb warmer lead coupler	1	Disconnect.
4	Thumb warmer switch lead coupler	1	Disconnect.
5	Engine stop switch coupler	1	Disconnect.
6	Brake switch coupler	1	Disconnect.
7	Headlight beam switch coupler	1	Disconnect.
8	Grip warmer lead coupler	4	Disconnect.
9	Grip warmer switch lead coupler	1	Disconnect.
10	Throttle cable holder	1	
11	Throttle cable	1	
12	Brake lever holder	1	



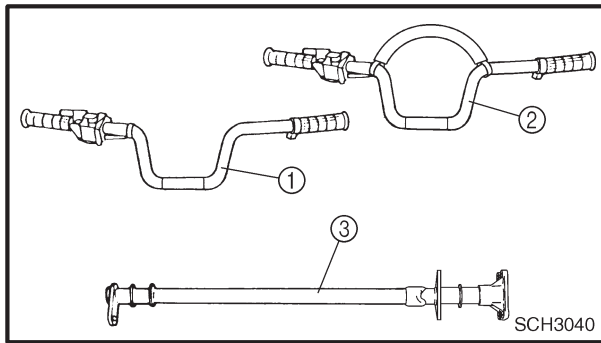
Order	Job name/Part name	Q'ty	Remarks
13	Master cylinder assembly	1	NOTE: _____ After installing all parts, refer to "CABLE ROUTING" in CHAPTER 9, to check the cable, lead and hose routings. _____ For installation, reverse the removal procedure.
14	Handlebar holder (upper)	2	
15	Cable holder	1	
16	Handlebar	1	
17	Handlebar holder (lower)	1	



Order	Job name/Part name	Q'ty	Remarks
	Steering column and tie rod removal		Remove the parts in the order listed below.
	Handlebar		
1	Clip	6	
2	Relay rod	1	
3	Cotter pin	7	
4	Steering shaft	1	
5	Steering column 1	1	
6	Lock plate	3	
7	Bearing	6	
8	Bearing holder	6	
9	Plate	4	
10	Collar	6	
11	Steering column 2	1	
12	Tie rod	2	
13	Idler arm	1	
14	Relay arm	2	
15	Bushing	4	
16	Washer	2	



Order	Job name/Part name	Q'ty	Remarks
17	Washer	4	For installation, reverse the removal procedure.
18	Collar	2	
19	Clip	2	

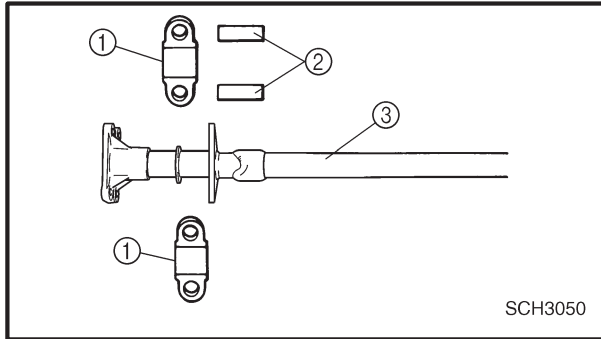
**INSPECTION**

1. Inspect:

- Handlebar ① (RX10, RX10S, RX10R, RX10RS)
- Handlebar ② (RX10M, RX10MS)
- Steering column ③
Bends/cracks/damage → Replace.

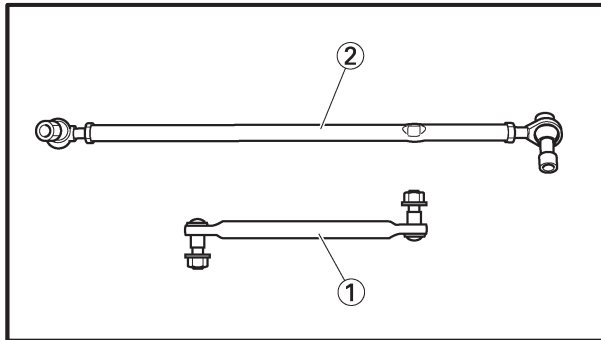
⚠ WARNING

Do not attempt to straighten a bent column. This may dangerously weaken the column.



2. Inspect:

- Bearings (steering column) ①
- Collars ②
Wear/damage → Replace.
- Steering column ③ (bearing contact surfaces)
Scratches/wear/damage → Replace.

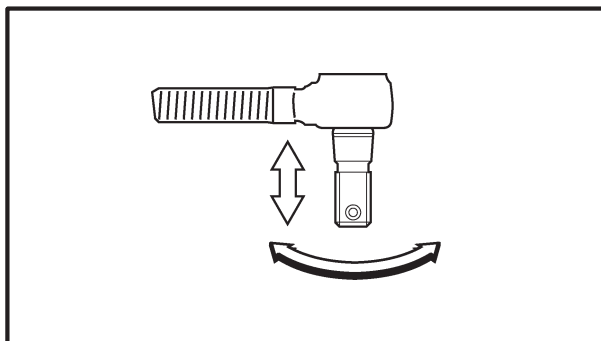


3. Inspect:

- Relay rod ①
- Tie rod ②
Bends/cracks/damage → Replace.

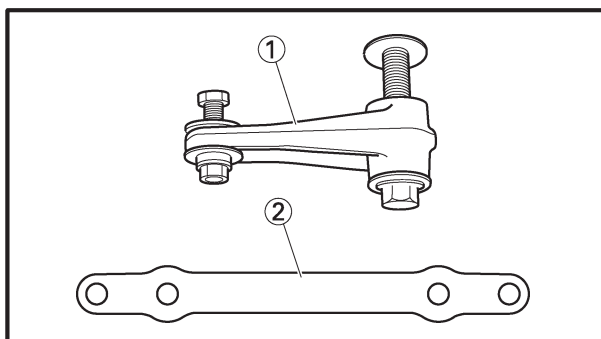
⚠ WARNING

Do not attempt to straighten bent rods. This may dangerously weaken the rods.



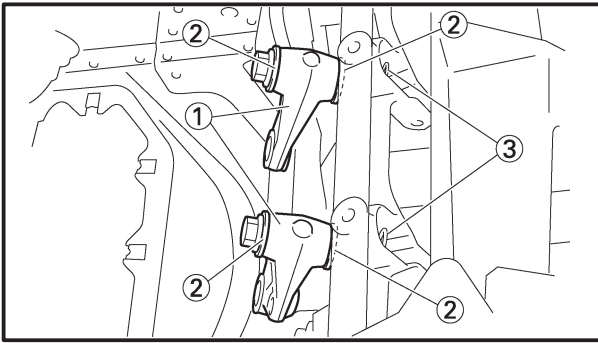
4. Check:

- Rod end movement
Rod end free play exists → Replace the rod end.
Rod end turns roughly → Replace the rod end.



5. Inspect:

- Relay arm ①
- Idler arm ②
Cracks/damage → Replace.

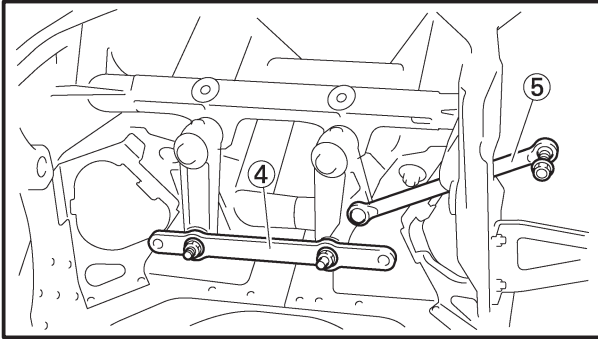
**INSTALLATION**

1. Install:

- Relay arms ①
- Bushings ②
- Washers ②

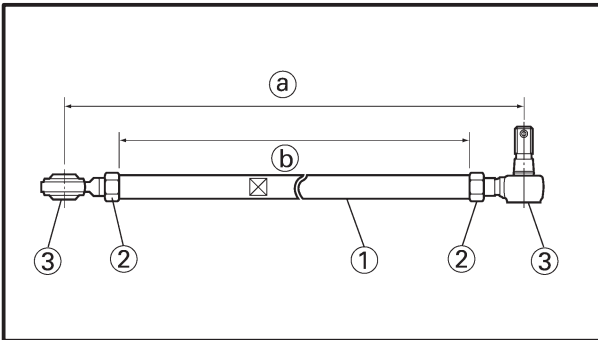
**Bolt (relay arm):****67 Nm (6.7 m•kg, 49 ft•lb)**

- Clips ③



2. Install:

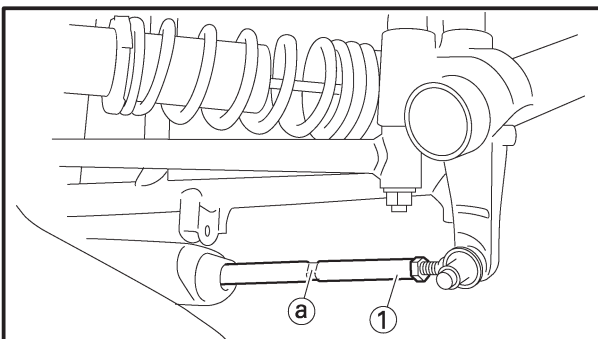
- Idler arm ④
- Bushings ④
- Washers ④
- Relay rod ⑤

**Nut (idler arm):****35 Nm (3.5 m•kg, 25 ft•lb)****Nut (relay rod):****30 Nm (3.0 m•kg, 22 ft•lb)**

3. Install:

- Tie rod ①
- Locknuts ②
- Joints ③

[A] Tie rod part number	[B] Set length ^a	[C] Tie rod length ^b
8FA-23831-00 (RX10, RX10S, RX10R, RX10RS)	418.0 mm (16.4567 in)	355.0 mm (13.9764 in)
8EP-23831-00 (RX10M, RX10MS)	374.0 mm (14.7244 in)	311.0 mm (12.2441 in)



4. Install:

- Tie rods ①

NOTE:

- Make sure that the indentation ^a on the tie rod faces out.
- The threads on both rod ends must be the same length.

**CAUTION:**

Always use new cotter pins.



Locknut (rod end):

25 Nm (2.5 m•kg, 18 ft•lb)

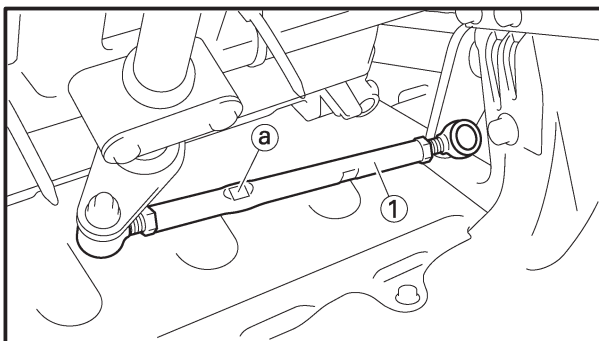
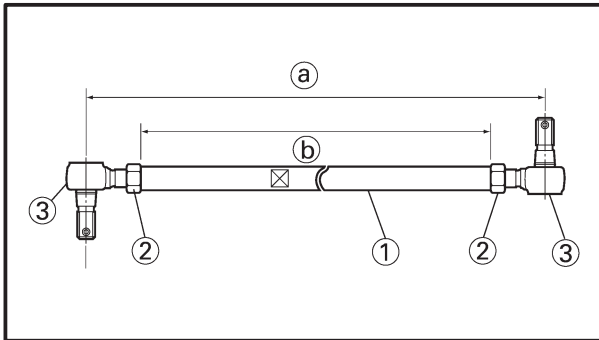
LOCTITE®

Nut (tie rod-idler arm):

30 Nm (3.0 m•kg, 22 ft•lb)

Nut (tie rod-steering arm):

35 Nm (3.5 m•kg, 25 ft•lb)



5. Install:

- Steering shaft ①
- Locknuts ②
- Joints ③

A Steering Shaft part number	B Set length (a)	C Shaft length (b)
8FA-23840-00	227.8 mm (8.9685 in)	170.0 mm (6.6929 in)

NOTE:

Make sure that the end of the steering shaft with the indentation (a) is connected to the steering clump.

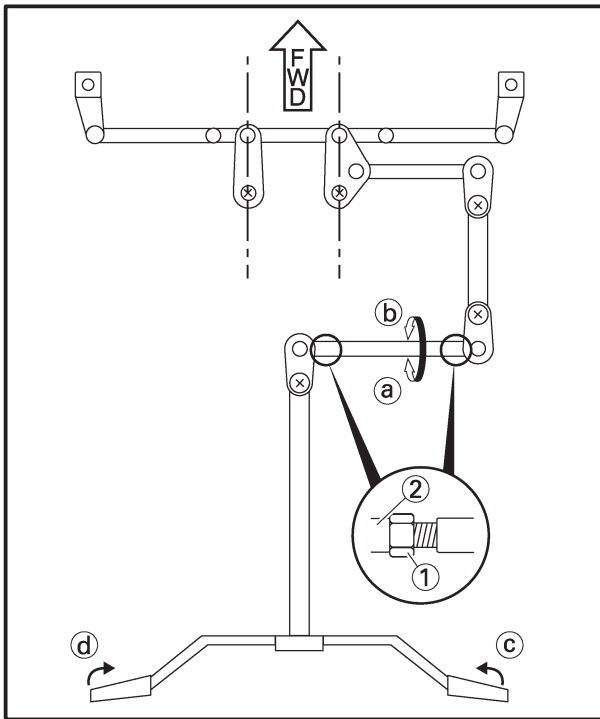
CAUTION:

Always use new cotter pins.



Nut (steering shaft):

35 Nm (3.5 m•kg, 25 ft•lb)



6. Adjust:
- Skis

Adjustment steps:

- Temporarily install the handlebar.
- Hold the handlebar straight and check that the skis and relay arms are at right angles to the handlebar.
- Loosen the locknuts (steering shaft) ①.
- Hold the handlebar straight.
- Adjust the steering shaft ② by turning so that the right and left relay arms point right under.
- Adjust each angle of right and left skis by turning the tie rod respectively.

Turning the steering shaft in direction ①

Turning the handlebar in direction ③

Turning the steering shaft in direction ②

Turning the handlebar in direction ④

- Tighten the locknuts (Steering shaft) ①.



Loknut (steering shaft):
25 Nm (2.5 m•kg, 18 ft•lb)
LOCTITE®

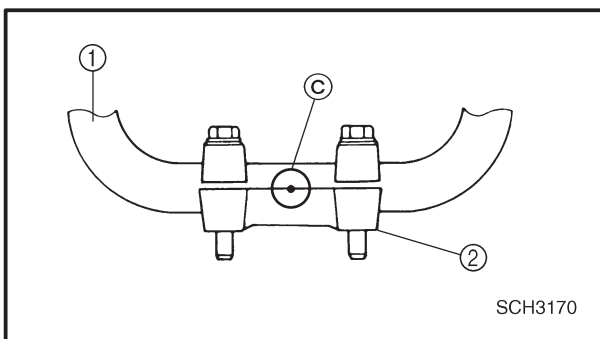
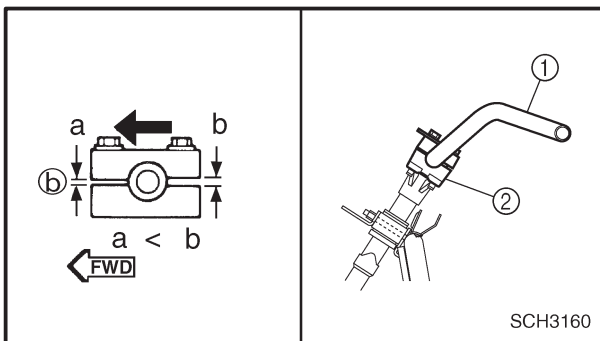
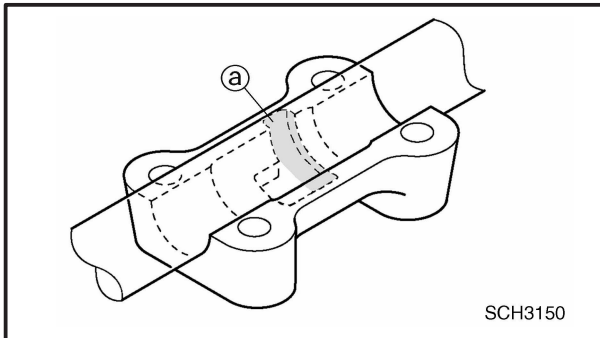
7. Install:
- Handlebar

CAUTION:

- Be sure the projection on the handlebar is not installed into the area ① shown.
- Be sure the side of the holder with the small gap ② faces forward.
- First tighten the bolts on the front side of the handlebar holder, and then tighten the bolts on the rear side.
- Center the match mark ③ on the handlebar ① between the lower handlebar holders ②.



Bolt (handlebar holder):
15 Nm (1.5 m•kg, 11 ft•lb)





SKI

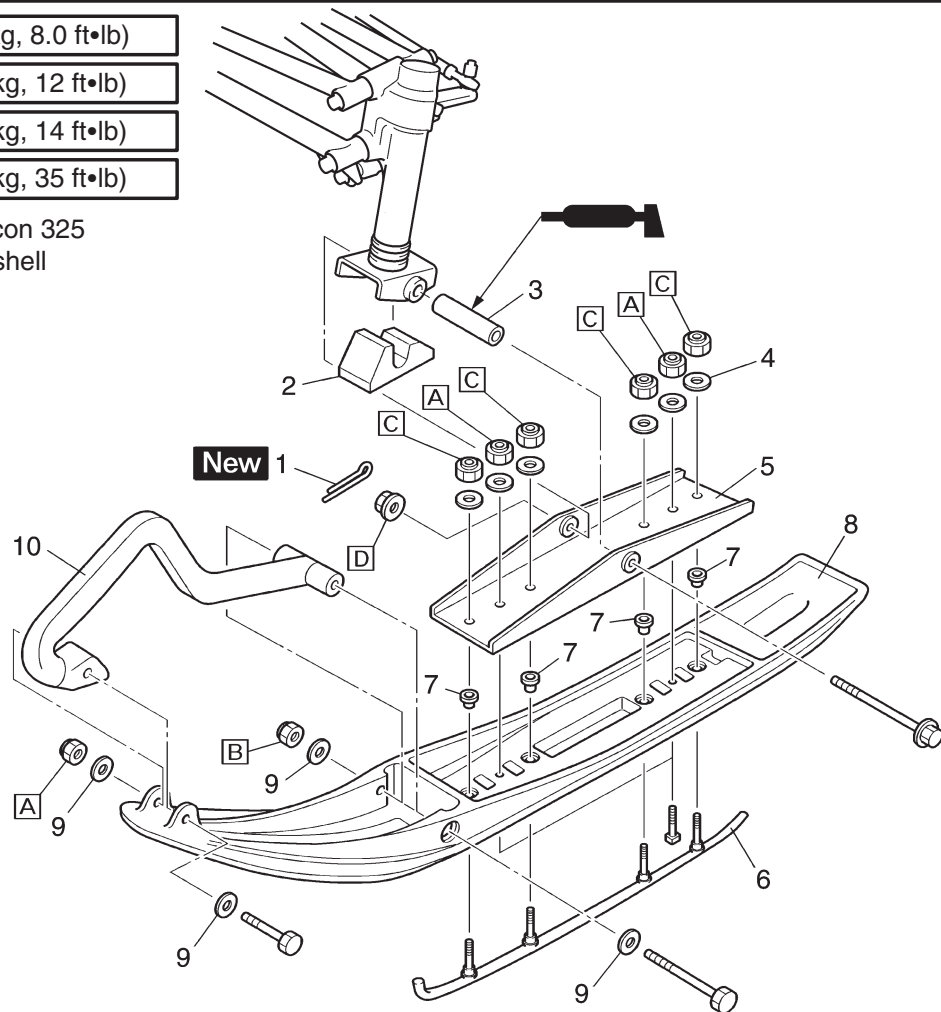
A : 11 Nm (1.1 m•kg, 8.0 ft•lb)

B : 17 Nm (1.7 m•kg, 12 ft•lb)

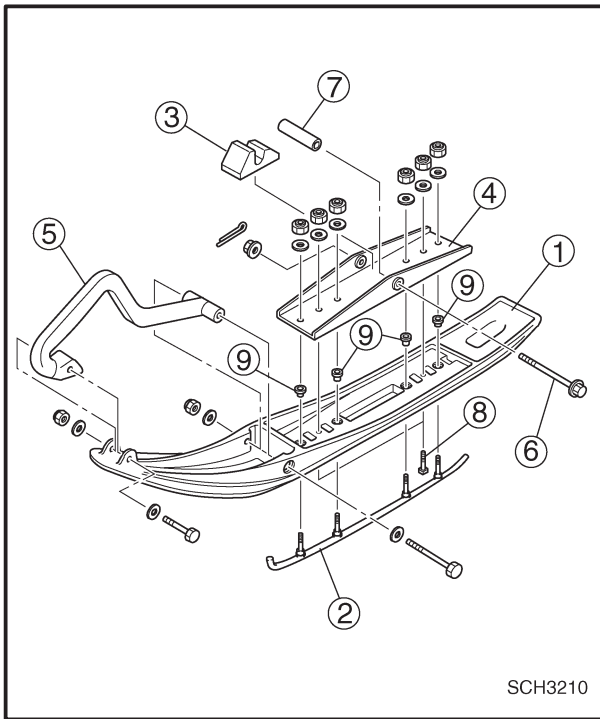
C : 19 Nm (1.9 m•kg, 14 ft•lb)

D : 48 Nm (4.8 m•kg, 35 ft•lb)

 : ① ESSO beacon 325 grease or Aeroshell grease #7A



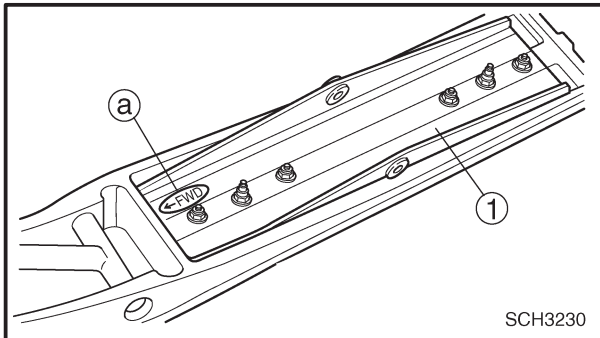
Order	Job name/Part name	Q'ty	Remarks
	Ski removal		Remove the parts in the order listed below.
1	Cotter pin	1	
2	Ski stopper	1	
3	Collar	1	
4	Washer	6	
5	Ski column lower bracket	1	
6	Ski runner	1	
7	Collar	2	
8	Ski	1	
9	Washer	4	
10	Ski handle	1	
			For installation, reverse the removal procedure.



INSPECTION

1. Inspect:

- Ski ①
- Ski runner ②
- Ski stopper ③
- Ski column lower bracket ④
- Ski handle ⑤
- Wear/cracks/damage → Replace.
- Mounting bolt ⑥
- Collar ⑦
- Bolts ⑧
- Collars ⑨
- Wear/damage → Replace.



INSTALLATION

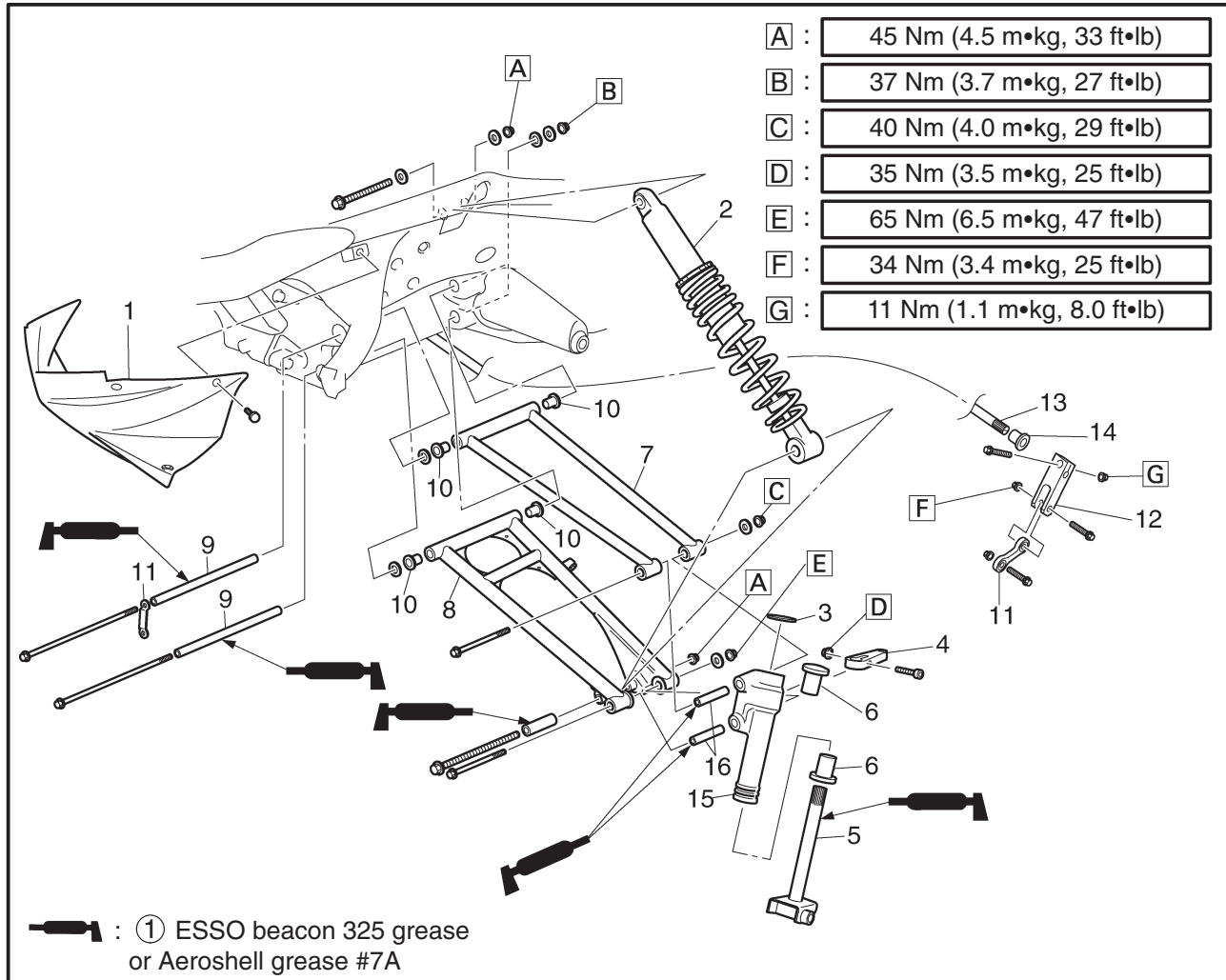
1. Install:

- Ski column lower bracket ①

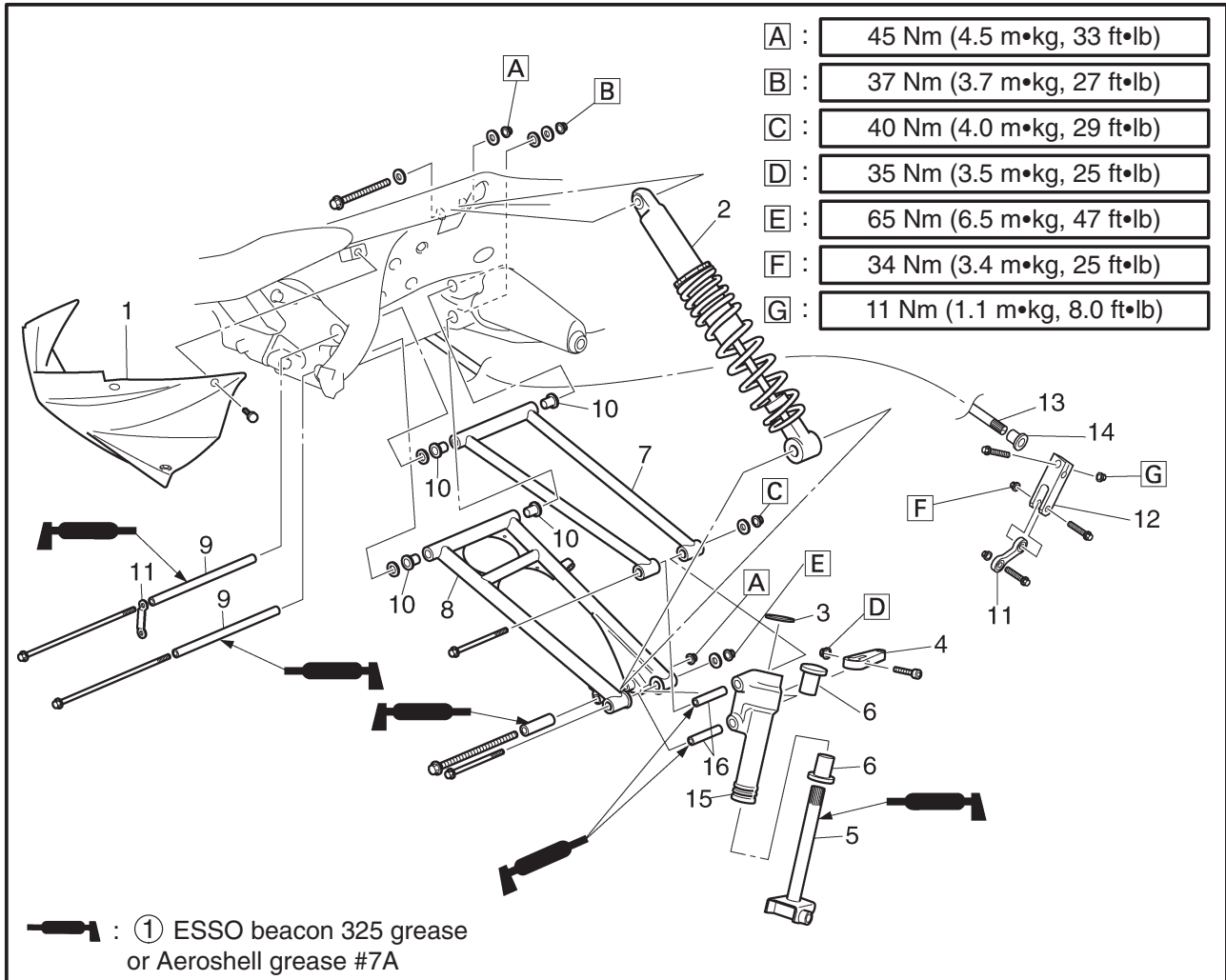
NOTE:

Be sure to install the ski column lower bracket with the arrow mark ① pointing forward the tip of the ski.

FRONT SUSPENSION



Order	Job name/Part name	Q'ty	Remarks
	Front suspension removal		
	Ski		Remove the parts in the order listed below. Refer to "SKI".
1	Front cover	1	
2	Shock absorber	1	
3	Cap	1	
4	Steering arm	1	
5	Ski column	1	
6	Bushing	1	
7	Upper arm	1	
8	Lower arm	1	
9	Collar	2	
10	Bushing	4	
11	Connecting rod	1	
12	Stabilizer arm	1	



Order	Job name/Part name	Q'ty	Remarks
13	Stabilizer	1	For installation, reverse the removal procedure.
14	Steering knuckle	1	
15	Collar	2	

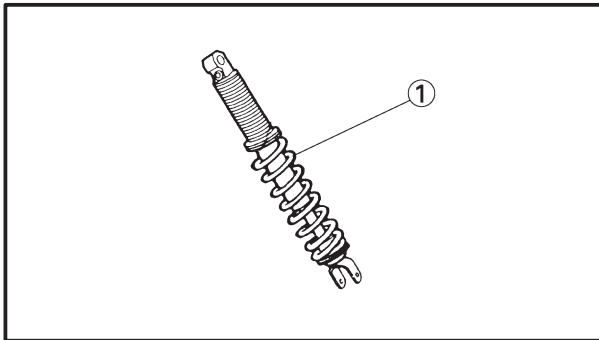


HANDLING NOTES

⚠ WARNING

This shock absorber contains highly compressed nitrogen gas. Before handling the shock absorber read and make sure that you understand the following information. The manufacturer cannot be held responsible for property damage or personal injury that may result from improper handling.

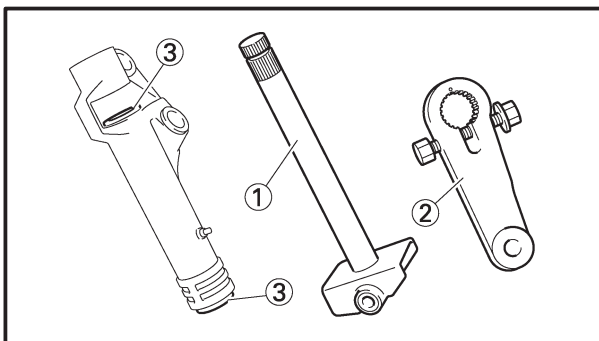
- Do not tamper or attempt to open the gas chamber.
- Do not subject the shock absorber to flames or any other source of high heat. This may cause the unit to explode due to excessive gas pressure.
- Do not deform or damage the gas chamber in any way. Gas chamber damage will result in poor damping performance.



INSPECTION

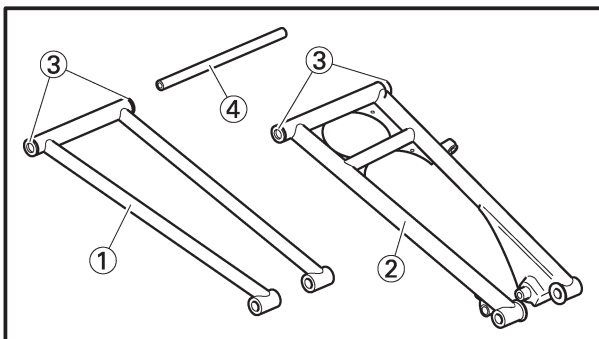
1. Inspect:

- Shock absorber (1)
Oil (gas) leaks/bends/damage → Replace.



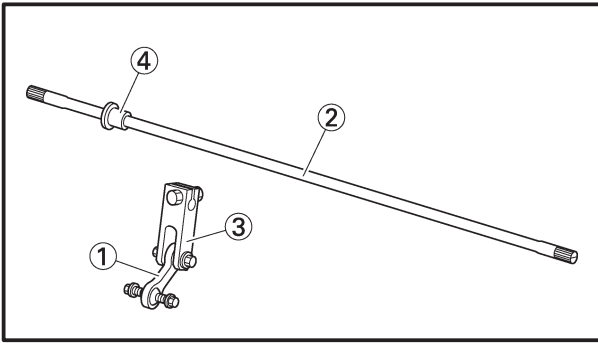
2. Inspect:

- Ski column (1)
- Steering arm (2)
Cracks/bends/damage → Replace.
- Bushing (3)
Wear/scratches/damage → Replace.



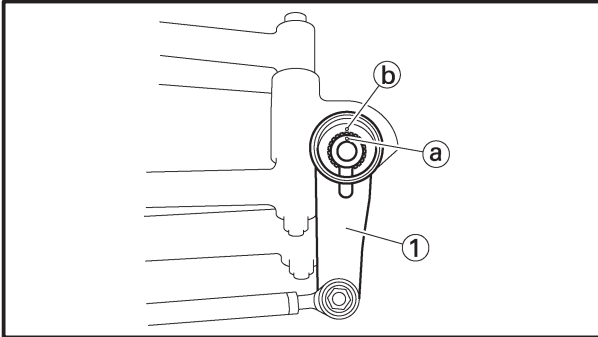
3. Inspect:

- Upper arm (1)
- Lower arm (2)
Cracks/bends/damage → Replace.
- Bushing (3)
- Collar (4)
Wear/scratches/damage → Replace.



4. Inspect:

- Connecting rod ①
- Stabilizer ②
- Stabilizer arm ③
- Cracks/bends/damage → Replace.
- Bushing ④
- Wear/scratches/damage → Replace.



INSTALLATION

1. Install:

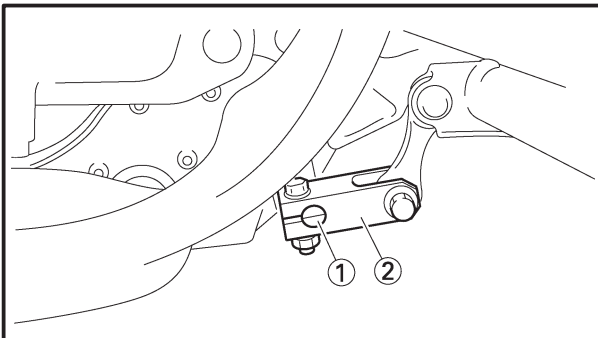
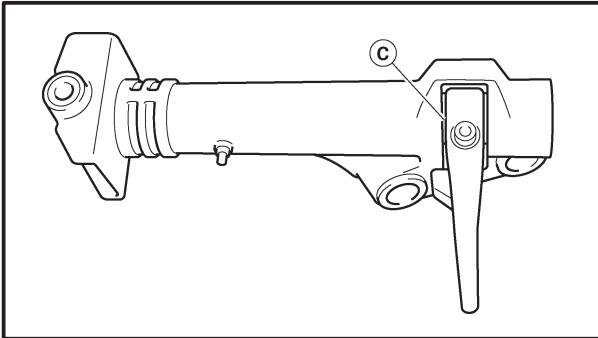
- Steering arm ①

NOTE:

- Align the punch mark (a) on the ski column with the punch mark (b) on the steering arm.
- Install sections (c) without any gaps.



Nut (steering arm):
35 Nm (3.5 m•kg, 25 ft•lb)



2. Install:

- Stabilizer ①
- Stabilizer arm ②

NOTE:

Install so that the angle shift between the right side stabilizer arm and the left stabilizer arm can be within 6°.



Nut (stabilizer arm):
11 Nm (1.1m•kg, 8.0 ft•lb)



Ski alignment

NOTE:

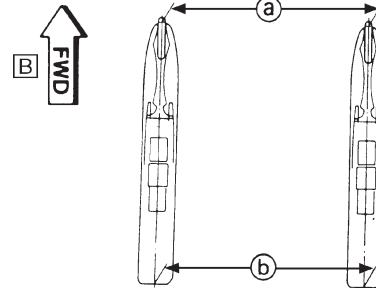
Be sure to verify the spring preload setting and the ski spindle camber before adjusting the ski toe out since either of those adjustments may affect the ski toe out setting.

Point the skis straight forward and measure the amount of ski toe out.

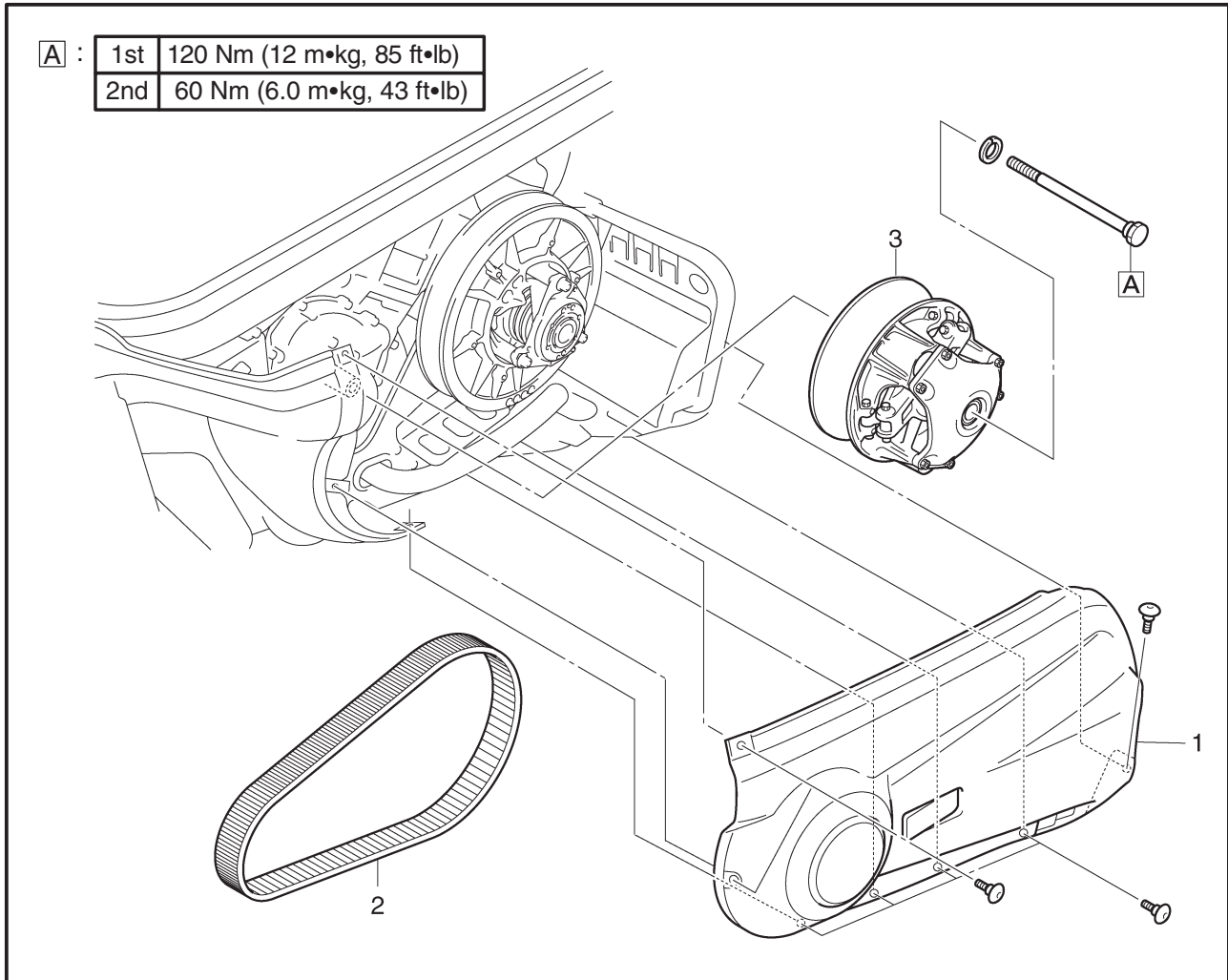
A Ski toe out:
0 ~ 15 mm (0 ~ 0.59 in)

a - **b** = Toe out

Refer to “STEERING SYSTEM” in CHAPTER 2.



SCH3380

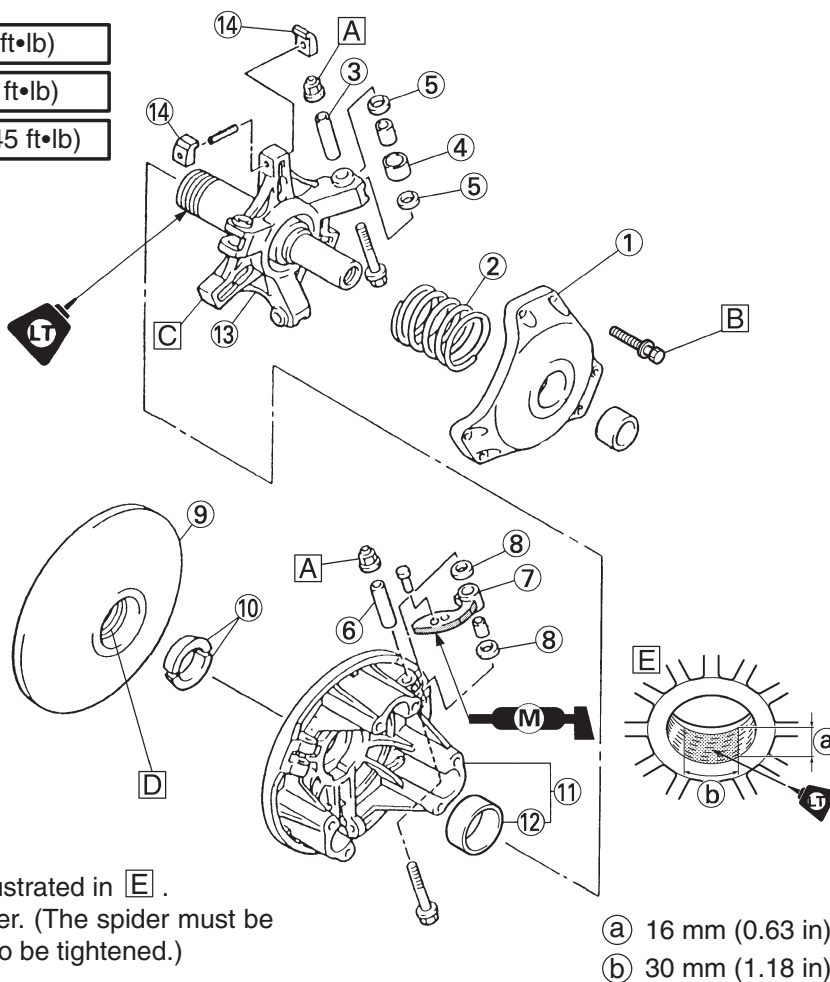
POWER TRAIN**PRIMARY SHEAVE AND DRIVE V-BELT**

Order	Job name/Part name	Q'ty	Remarks
	Primary sheave removal		
1	Left side cover	1	Remove the parts in the order listed below.
2	V-belt	1	
3	Primary sheave assembly	1	
			For installation, reverse the removal procedure.

PRIMARY SHEAVE AND DRIVE V-BELT



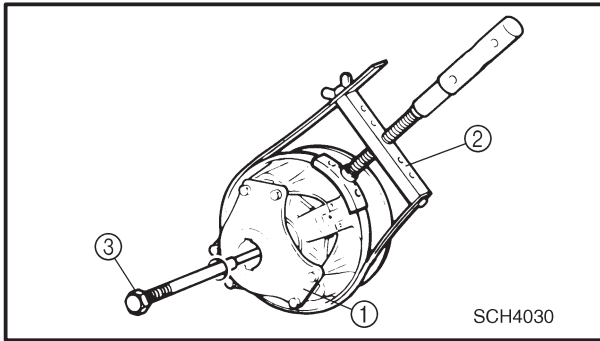
- A : 6 Nm (0.6 m•kg, 4.3 ft•lb)
 B : 14 Nm (1.4 m•kg, 10 ft•lb)
 C : 200 Nm (20.0 m•kg, 145 ft•lb)



4

Order	Job name/Part name	Q'ty	Remarks
	Primary sheave disassembly		
①	Primary sheave cap	1	Disassemble the parts in the order listed below.
②	Primary sheave spring	1	
③	Collar	3	
④	Roller	3	
⑤	Washer	6	
⑥	Collar	3	
⑦	Weight	3	
⑧	Washer	6	
⑨	Fixed sheave	1	
⑩	Stopper	1	
⑪	Sliding sheave	1	
⑫	Bushing	1	
⑬	Spider	1	
⑭	Slider	6	Left-handed thread.
			For assembly, reverse the disassembly procedure.

PRIMARY SHEAVE AND DRIVE V-BELT



REMOVAL

1. Remove:
 - Primary sheave assembly ①

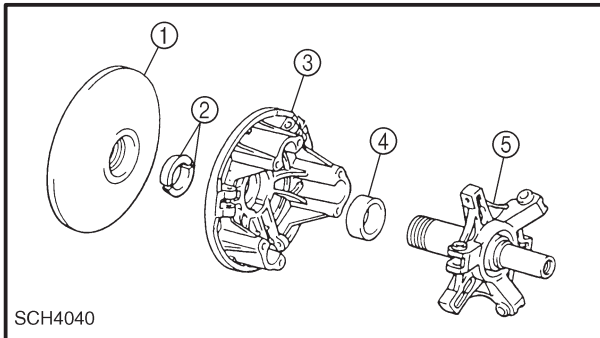
NOTE:

Use the primary sheave holder ② and primary sheave puller ③.



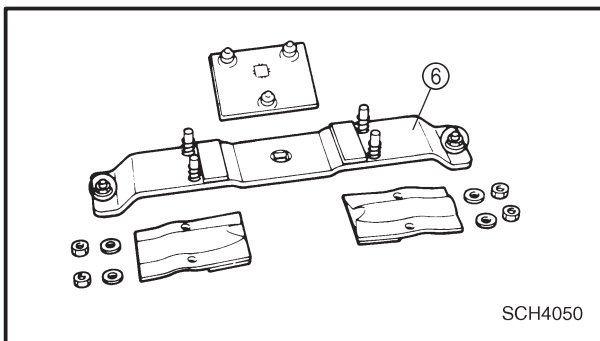
Primary sheave holder:
90890-01701, YS-01880

Primary sheave puller:
90890-01898
YS-01881-1, YS-01882-1



DISASSEMBLY

1. Remove:
 - Fixed sheave ①
 - Stopper ②
 - Sliding sheave ③
 - Bushing ④
 - Spider ⑤



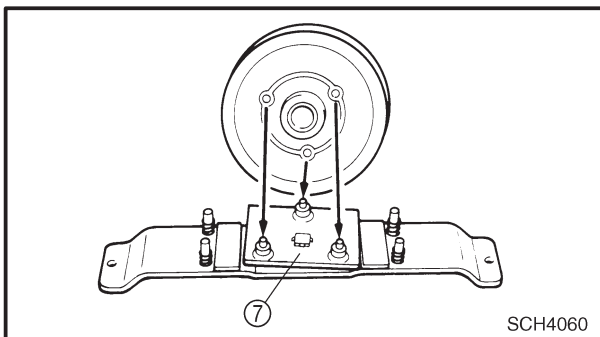
Removal steps:

- Immerse the primary sheave assembly in 80 ~ 100°C (176 ~ 212°F) water for several minutes.
 - Attach the lower piece of the clutch spider separator ⑥ onto a rigid table using suitable mounting bolts.
- Then, install the clutch separator adapter ⑦ onto the separator.

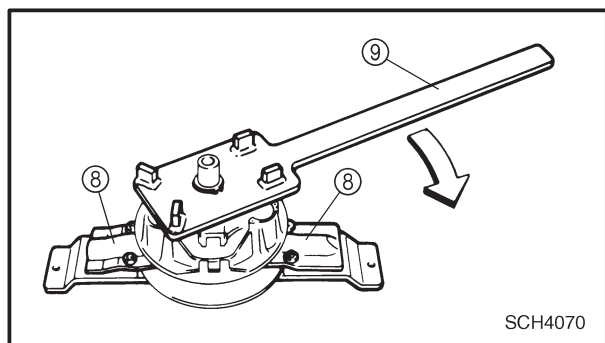


Clutch spider separator:
90890-01711, YS-28890-B

Clutch separator adapter:
90890-01740, YS-34480



PRIMARY SHEAVE AND DRIVE V-BELT



- Fit the primary sheave assembly onto the adapter and secure the supporting plates (8).

NOTE:

Securely fit the projections on the adapter into the fixed sheave holes.

- Set the bar wrench (9) onto the spider and turn the special tool clockwise to loosen the spider.



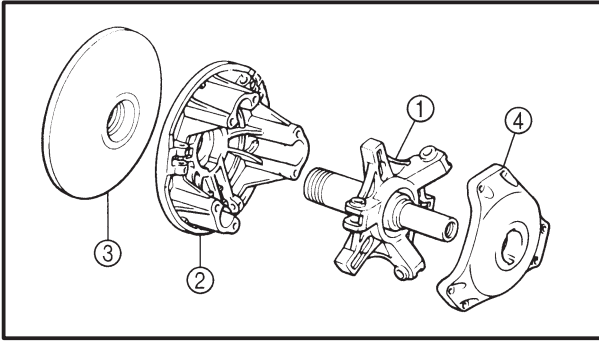
**Clutch spider separator
(bar wrench):**

90890-01711, YS-28890-B

CAUTION:

- The spider has a left-handed thread.
- Since a high torque is required to loosen the spider, make sure that the spider, fixed sheave and special tool are well secured. Loosen the spider carefully to prevent cracks and damage to the sheaves and spider.

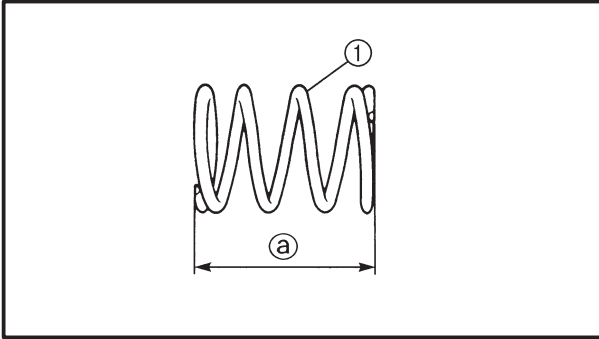
- Remove the fixed sheave, fixed sheave stopper, and sliding sheave from the spider.



INSPECTION

1. Inspect:

- Spider ①
 - Sliding sheave ②
 - Fixed sheave ③
 - Primary sheave cap ④
- Cracks/damage → Replace.



2. Inspect:

- Primary sheave spring ①
- Cracks/damage → Replace.

3. Measure:

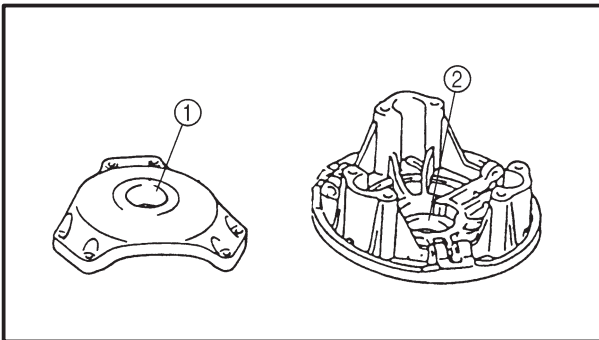
- Primary sheave spring free length ①
- Out of specification → Replace the primary sheave spring.



Primary sheave spring free length:
RX10, RX10S, RX10R, RX10RS:
 87.4 mm (3.44 in)
RX10M, RX10MS:
 84.2 mm (3.32 in)

NOTE:

When changing the primary sheave springs, refer to “GEAR SELECTION” in CHAPTER 2.



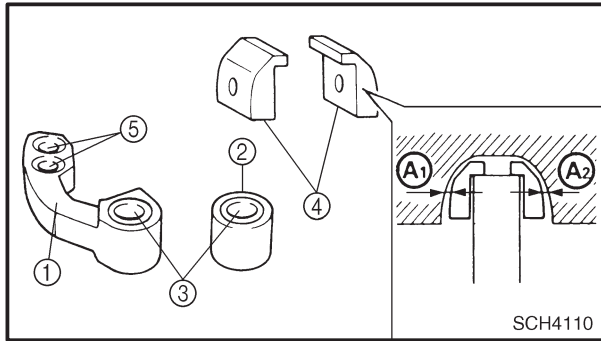
4. Inspect:

- Primary sheave cap bush ①
 - Sliding sheave bush ②
- Cracks/damage → Replace.



Clutch bushing press:
YS-42424

PRIMARY SHEAVE AND DRIVE V-BELT



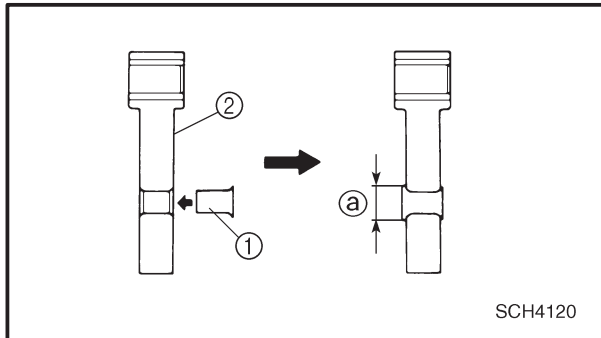
5. Inspect:

- Weight ①
- Roller ②
- Bushing ③
- Slider ④
- Rivet ⑤
- Collar

Wear/scratches/damage → Replace.

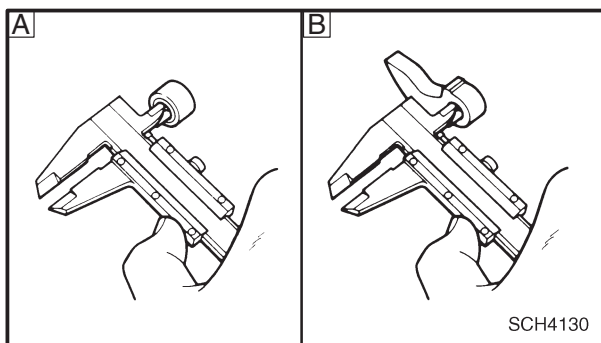


Slider inside clearance $A_1 + A_2$:
Min. 0 mm (0 in)
Max. 0.3 mm (0.0118 in)



Rivet replacement steps:

- Remove old rivet with the appropriate drill.
- Insert the rivet ① from the ID mark ② side.
- Press or peen the rivet head so that the diameter a of the rivet head measures 8.2 mm (0.32 in) or larger.



6. Measure:

- Bushing inside diameter
- Out of specification → Replace as a set.



Bushing inside diameter:

A Roller

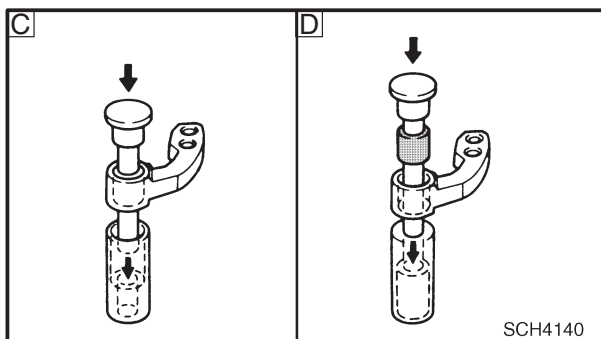
New: 9.077 mm (0.357 in)

Wear limit: 9.3 mm (0.366 in)

B Weight

New: 8.077 mm (0.318 in)

Wear limit: 8.3 mm (0.327 in)



NOTE:

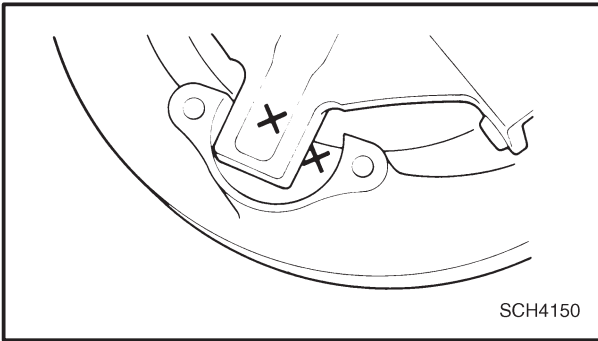
When replacing the weight and roller bushings, use the YXR clutch bushing jig kit.



YXR clutch bushing jig kit:
YS-39752

- C Removing
- D Installing

PRIMARY SHEAVE AND DRIVE V-BELT

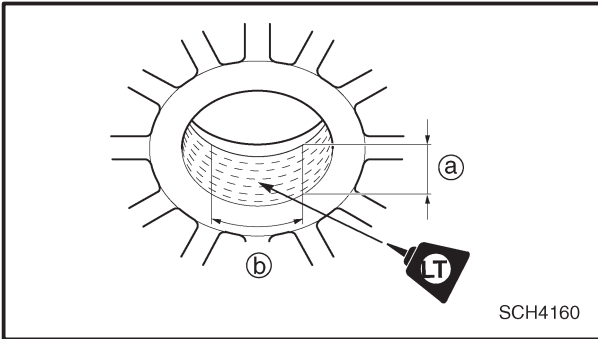


ASSEMBLY

1. Install:
 - Sliding sheave (onto the spider)

NOTE:

Be sure the sliding sheave match mark (X) is aligned with the spider match mark (X).



2. Install:
 - Fixed sheave (onto the spider)

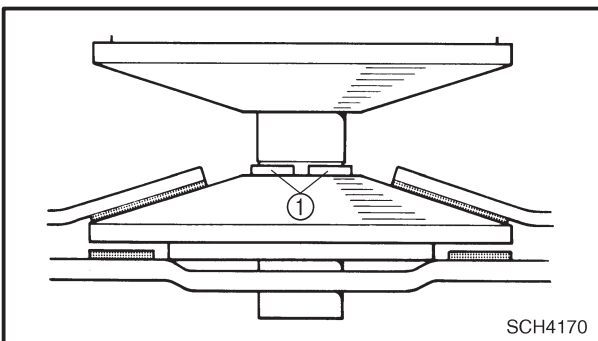
NOTE:

- Clean the threads.
- Apply LOCTITE648 to the fixed sheave as shown.

CAUTION:

LOCTITE® should be applied only to the specified area. Never apply it to the bushings and other areas.

- (a) 16 mm (0.63 in)
- (b) 30 mm (1.18 in)



3. Install:
 - Fixed sheave stoppers ①

NOTE:

Stopper tapered portion should face fixed sheave.

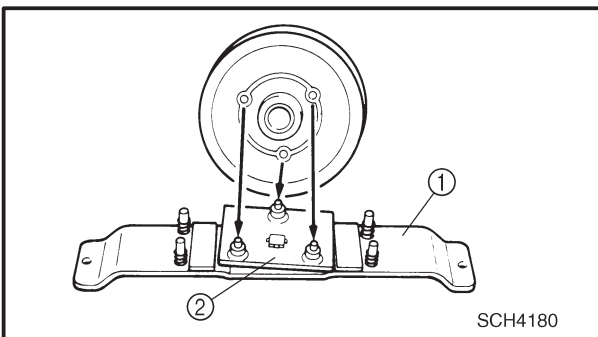
4. Tighten:
 - Spider

Tightening steps:

- Finger-tighten the spider until it is stopped by the fixed sheave stopper.
- Hold the fixed sheave with the clutch spider separator ①.



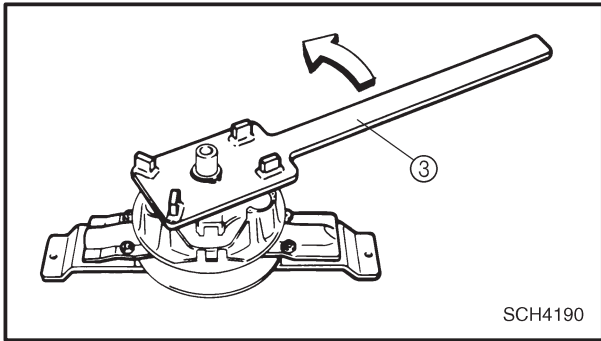
Clutch spider separator:
90890-01711, YS-28890-B



NOTE:

Securely fit the projections on the clutch separator adapter ② into the fixed sheave holes.

PRIMARY SHEAVE AND DRIVE V-BELT



- Tighten the spider to specification using the bar wrench (3).



Spider:
200 Nm (20 m•kg, 145 ft•lb)

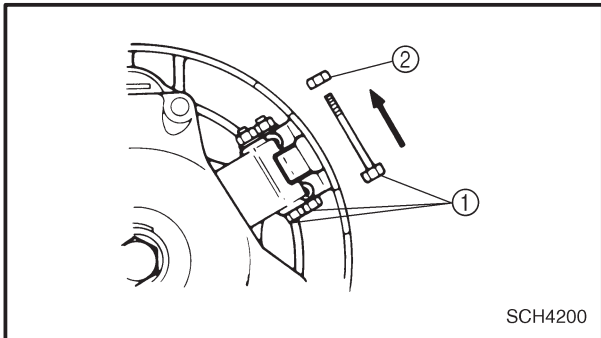
CAUTION:

The spider has a left-handed thread.



WARNING

- Do not operate the primary sheave until the LOCTITE® has dried completely. Wait 24 hours before operating the primary sheave.
- Since a high torque is required to tighten the spider, make sure the spider, fixed sheave, and special tool are well secured. Tighten the spider carefully to prevent cracks and damage to the sheaves and spider.



5. Install:

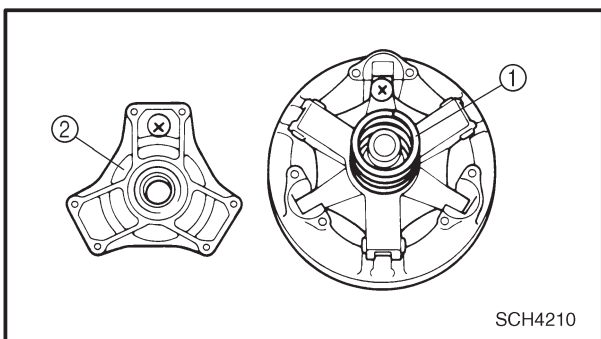
- Weight
- Bolts (1)
- Nuts (2)



Nut:
6 Nm (0.6 m•kg, 4.3 ft•lb)

NOTE:

To maintain the primary sheave balance, the bolts (2) must be installed with their threaded portions pointing in a counterclockwise direction, as illustrated.



6. Install:

- Primary sheave spring (1)
- Primary sheave cap (2)

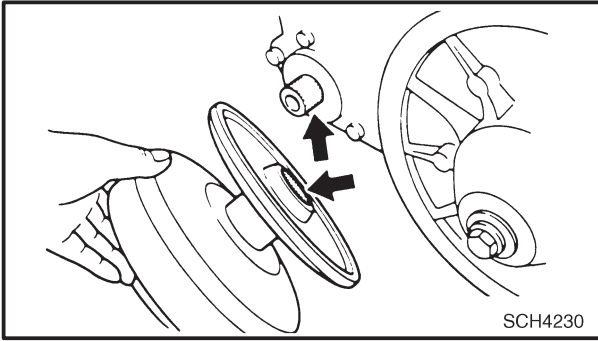
NOTE:

Be sure the sheave cap match mark (X) is aligned with the spider match mark (X).



Primary sheave cap bolt:
14 Nm (1.4 m•kg, 10 ft•lb)

PRIMARY SHEAVE AND DRIVE V-BELT

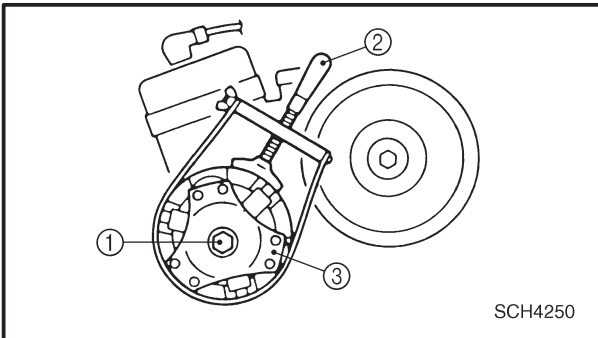
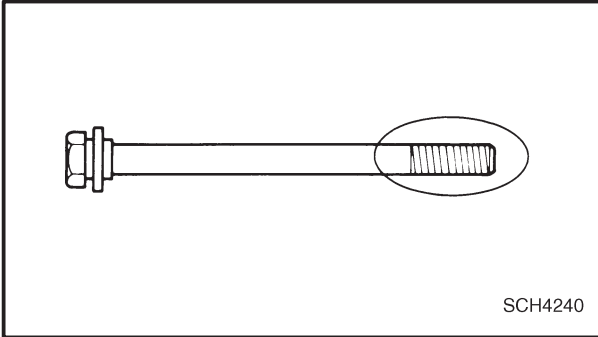


INSTALLATION

1. Install:
 - Primary sheave assembly

CAUTION:

Be sure to remove any oil or grease from the tapered portion of the crankshaft and spider using a cloth dampened with thinner.



2. Apply:
 - Engine oil or an equivalent grease (to threads of primary sheave bolt)

3. Tighten:
 - Bolt (primary sheave) ①

Tightening steps:

- Hold the primary sheave ③ using the primary sheave holder ② and tighten the bolt (primary sheave) to specification.



Primary sheave holder:
90890-01701, YS-01880



Bolt (primary sheave):
(1st)
120 Nm (12 m•kg, 85 ft•lb)

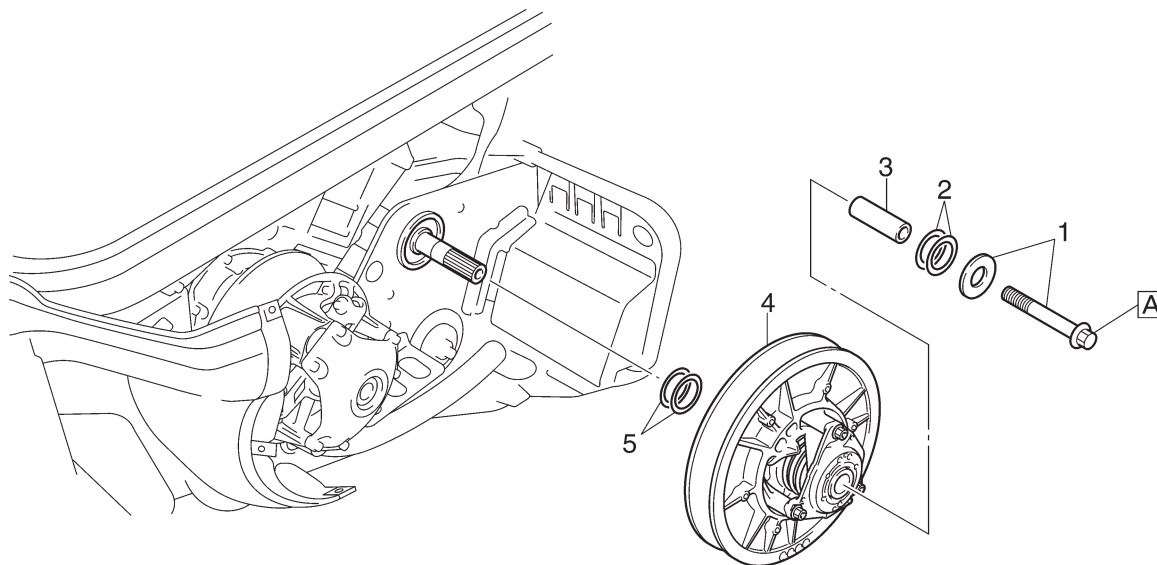
- Loosen the bolt (primary sheave) completely.
- Retighten the bolt (primary sheave) to specification.



Bolt (primary sheave):
(2nd)
60 Nm (6.0 m•kg, 43 ft•lb)

4. Adjust:
 - V-belt position
Refer to “DRIVE V-BELT” in CHAPTER 2.
 - Sheave offset
 - Secondary sheave free play (clearance)
Refer to “SHEAVE OFFSET ADJUSTMENT” in CHAPTER 2.

SECONDARY SHEAVE

A : 64 Nm (6.4 m•kg, 46 ft•lb)


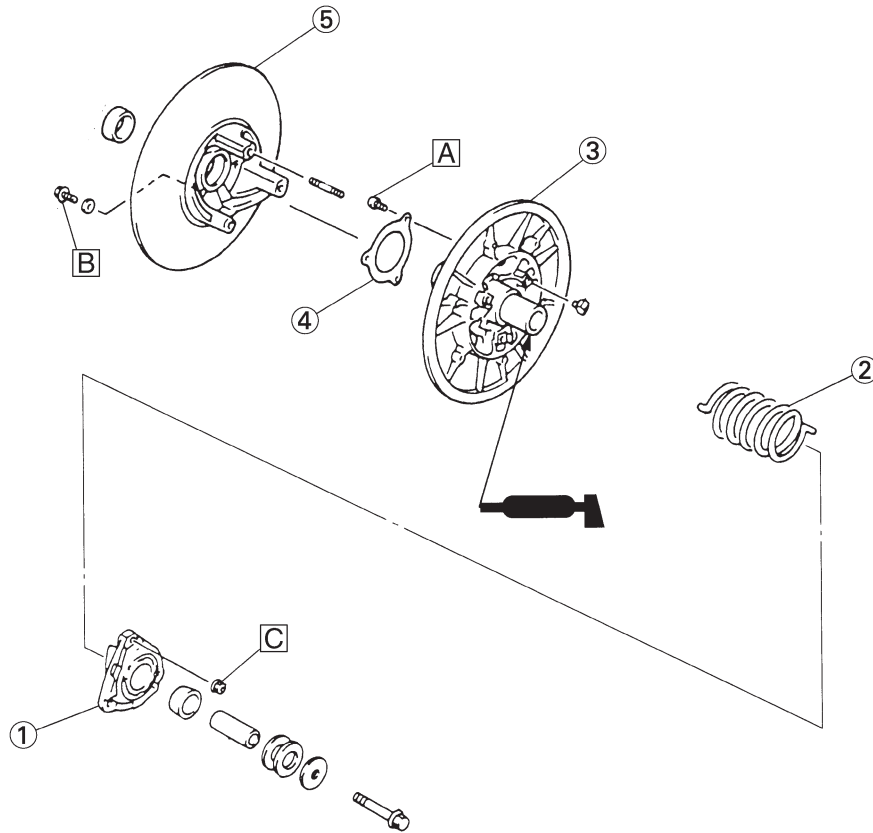
Order	Job name/Part name	Q'ty	Remarks
	Secondary sheave removal		
	Left side cover		Remove the parts in the order listed below.
1	V-belt	1	Refer to "PRIMARY SHEAVE AND V-BELT".
2	Washer and bolt	—	
3	Shim	—	Refer to "SHEAVE OFFSET ADJUSTMENT" in CHAPTER 2.
4	Collar	1	
5	Secondary sheave assembly	1	
	Shim	—	
			For installation, reverse the removal procedure.

- A :

7 Nm (0.7 m•kg, 5.1 ft•lb)
- B :

10 Nm (1.0 m•kg, 7.2 ft•lb)
- C :

23 Nm (2.3 m•kg, 17 ft•lb)



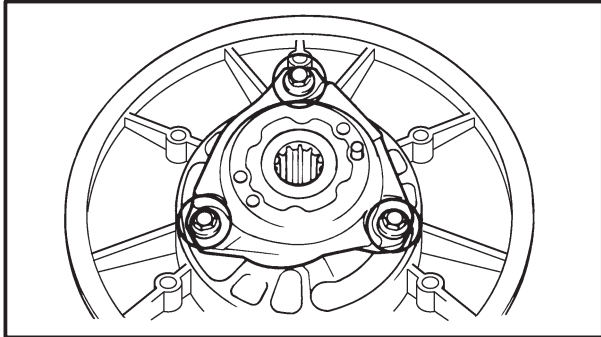
 : ① ESSO beacon 325 grease or Aeroshell grease #7A

Order	Job name/Part name	Q'ty	Remarks
	Secondary sheave disassembly		Remove the parts in the order listed below.
①	Spring seat	1	
②	Secondary sheave spring	1	
③	Fixed sheave	1	
④	Stopper	1	
⑤	Sliding sheave	1	
			For assembly, reverse the disassembly procedure.

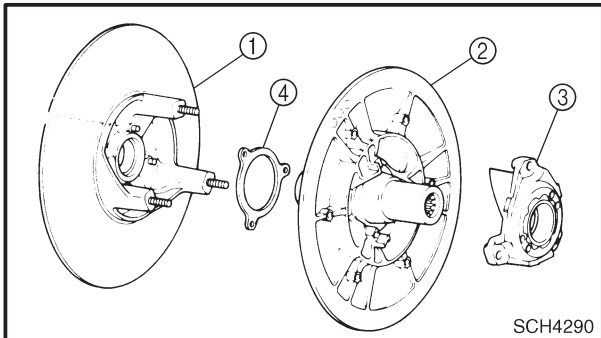
DISASSEMBLY

WARNING

- Use extreme **CAUTION** when disassembling the secondary sheave since serious injury can occur due to the sudden release of spring tension. Use the sheave compressor to contain the spring tension before removing the nuts (spring seat).
- Do not attempt this procedure unless you have the proper tools and understand the instructions thoroughly.

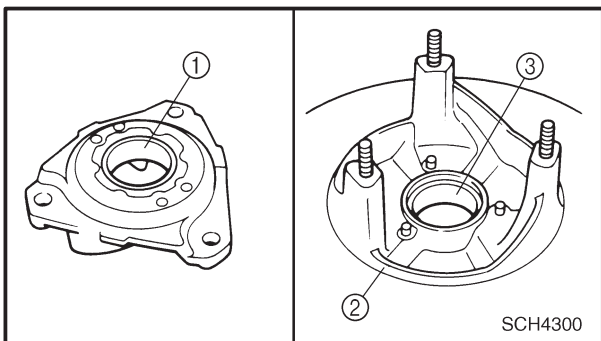


1. Remove:
 - Nuts (spring seat)

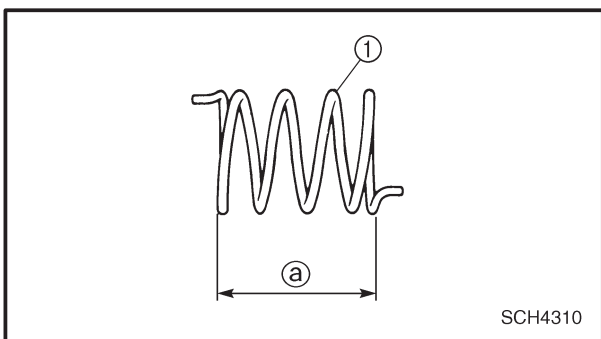


INSPECTION

1. Inspect:
 - Sliding sheave ①
 - Fixed sheave ②
 - Spring seat ③
Cracks/damage → Replace.
 - Stopper ④
Wear/damage → Replace.
2. Inspect:
 - Bushing (spring seat) ①
 - Sliding sheave (V-belt contact surface) ②
Scratches/wear/damage → Replace.
 - Sliding bushing ③
Unsymmetrical wear/damage → Replace.



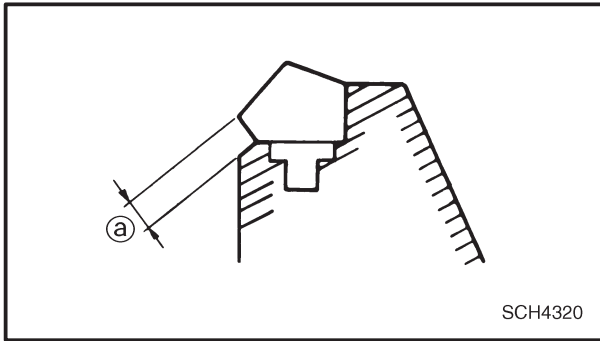
3. Inspect:
 - Secondary sheave spring ①
Cracks/damage → Replace.
4. Measure:
 - Secondary sheave spring free length ①
Below specification → Replace the secondary sheave spring.





Free length:
75 mm (2.95 in)

SECONDARY SHEAVE



5. Measure:

- Ramp shoe thickness ①
- Out of specification → Replace the ramp shoe.



Wear limit:
1.0 mm (0.04 in)

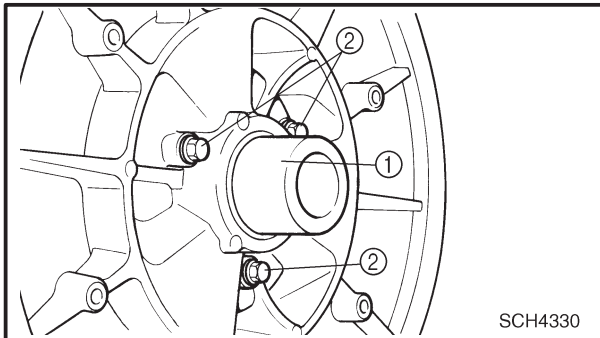
ASSEMBLY

1. Install:

- Stopper
- Sliding sheave



Screw (stopper):
7 Nm (0.7 m•kg, 5.1 ft•lb)

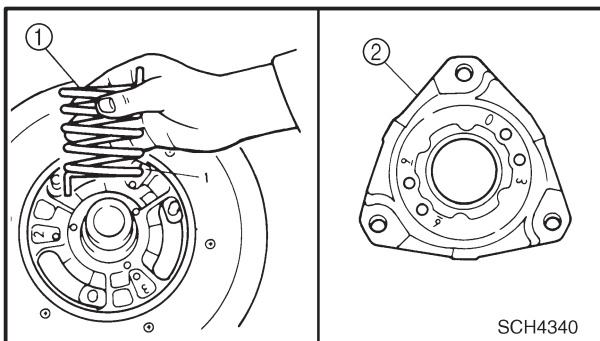


2. Install:

- Fixed sheave ①
 - Bolts ②
- (along with the shims)



Bolt:
10 Nm (1.0 m•kg, 7.2 ft•lb)



3. Install:

- Secondary sheave spring ①
- Spring seat ②

NOTE:

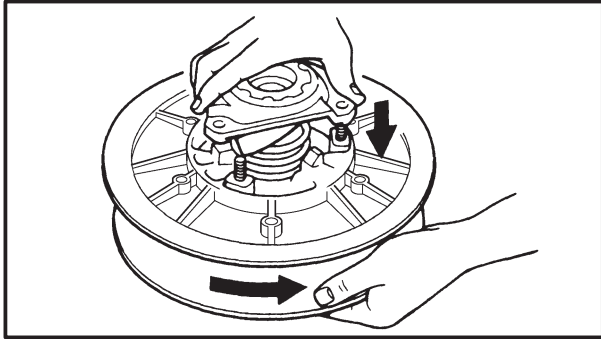
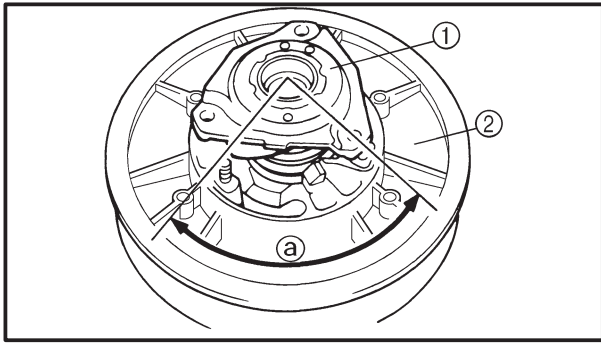
Hook the end of the secondary sheave spring into the spring holes in the fixed sheave. Hook the other end of the spring into the holes in the spring seat.

Standard spring position:

3-3 (RX10, RX10S, RX10R, RX10RS)

1-6 (RX10M, RX10MS)

SECONDARY SHEAVE



Installation steps:

- Hold the spring seat ① and turn the fixed sheave ② counterclockwise to the specified angle ③.

NOTE:

The holes in the spring seat should align with the bolts on the sliding sheave.

$$\textcircled{a} = (\text{sheave hole number} + \text{spring seat hole number}) \times 10$$



Twist angle:

60° (RX10, RX10S, RX10R, RX10RS)

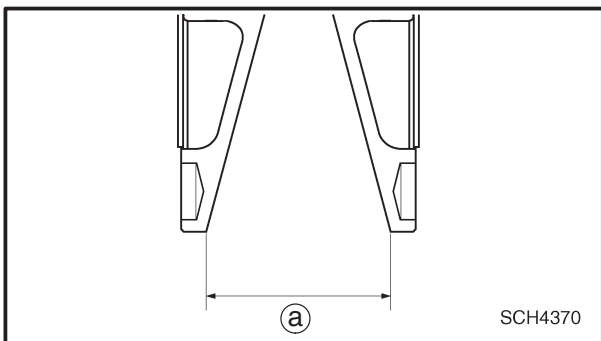
70° (RX10M, RX10MS)

- Push down on the spring seat until the bolts come through the holes.
- While pushing down on the spring seat, install the nuts and tighten them to the specified torque.



Nut (spring seat):

23 Nm (2.3 m•kg, 17 ft•lb)



SCH4370

4. Measure:

- Secondary sheave clearance ③
- Out of specification → Adjust.



Secondary sheave clearance:

35.0 ~ 35.8 mm

(1.38 ~ 1.41 in)

5. Calculate:

- Shim thickness

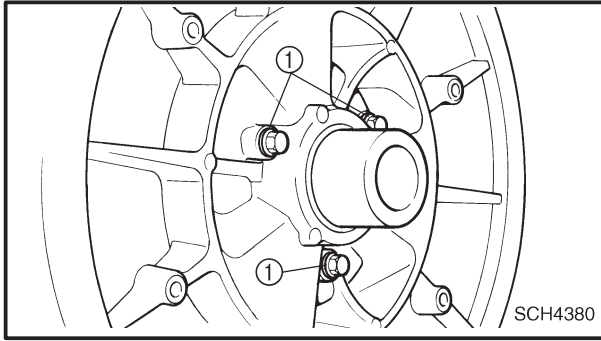
NOTE:

For example, if the clearance is 36 mm (1.42 in), install a 0.5 mm (0.02 in) shim on each bolt so the clearance is 35.5 mm (1.40 in).

6. Adjust:

- Secondary sheave clearance

SECONDARY SHEAVE



Adjustment steps:

- Disassemble the secondary sheave.
- Remove the bolts and original shims ①.
- Install new shims of the proper thickness and reassemble the secondary sheave.
- Measure the secondary sheave clearance again.

Repeat these steps until the clearance is within specification.

NOTE:

Yamaha recommends keeping the original shims.

Shims:

Part number	Thickness
90201-061H1	0.5 mm (0.02 in)
90201-06037	1.0 mm (0.04 in)

INSTALLATION

1. Lubricate:
 - Splines (fixed sheave)



Recommended grease:
ESSO beacon 325 grease or
Aeroshell grease #7A

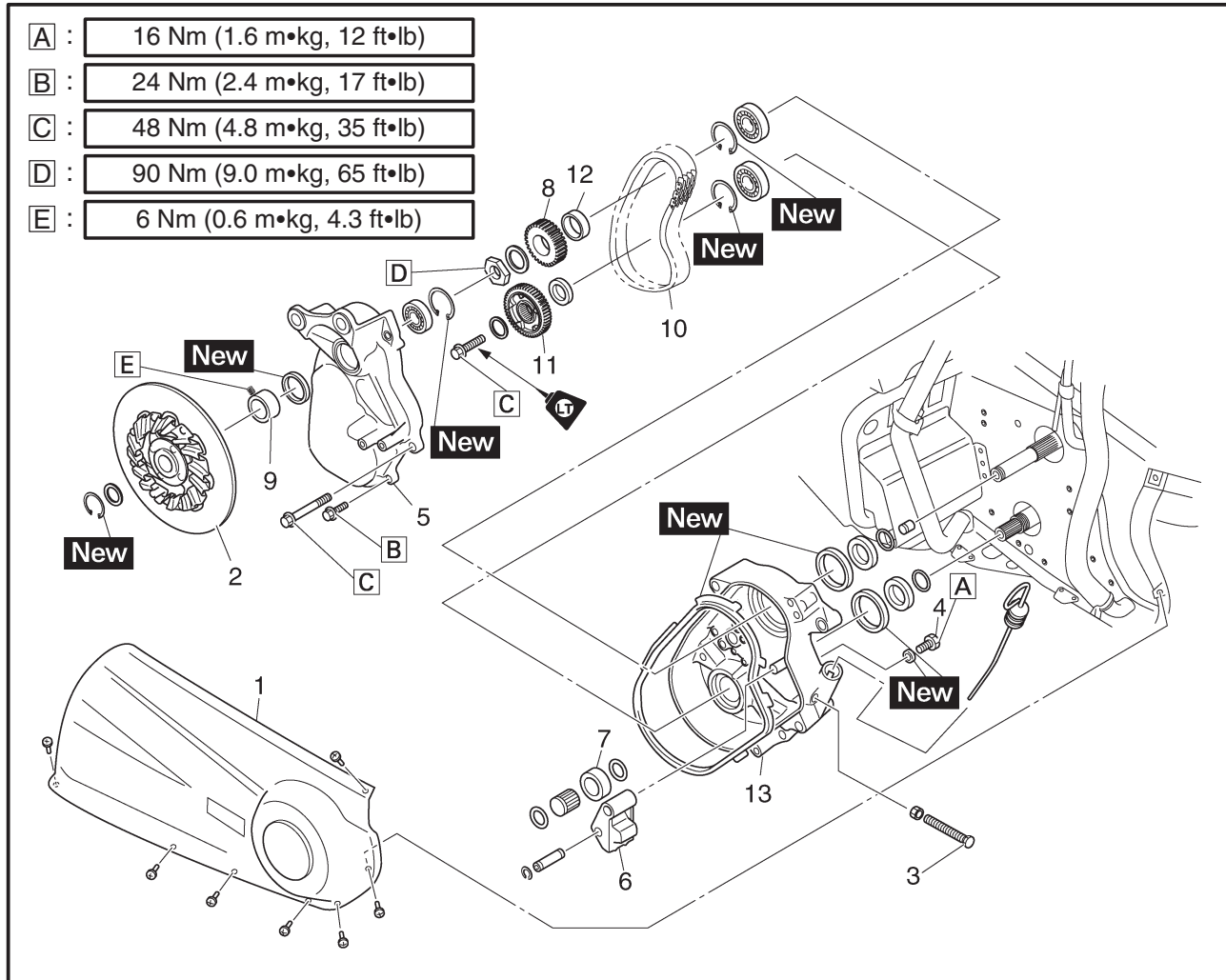
2. Tighten:



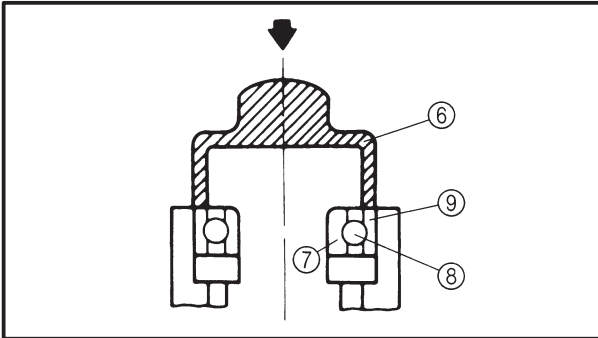
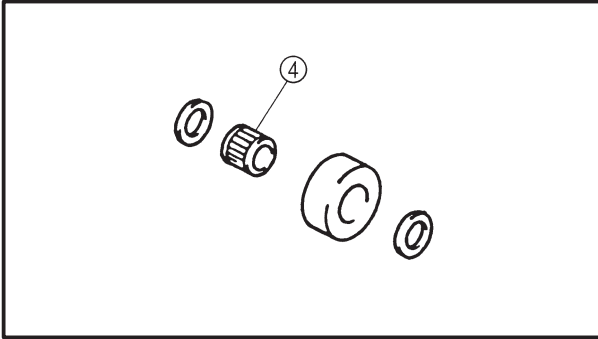
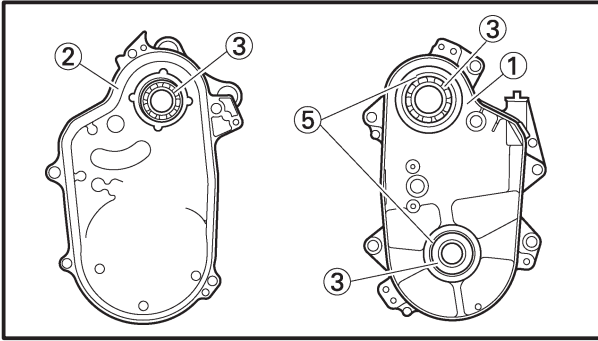
Secondary sheave bolt:
64 Nm (6.4 m•kg, 46 ft•lb)

3. Adjust:
 - V-belt position
Refer to “DRIVE V-BELT” in CHAPTER 2.
 - Sheave offset
 - Secondary sheave free play (clearance)
Refer to “SHEAVE DISTANCE AND OFFSET ADJUSTMENT” in CHAPTER 2.

DRIVE CHAIN HOUSING WITHOUT REVERSE MODEL



Order	Job name/Part name	Q'ty	Remarks
	Drive chain housing removal		Remove the parts in the order listed below. Refer to "BRAKE". Refer to "BRAKE".
1	Right side cover	1	
2	Brake disc	1	
3	Chain tension adjuster	1	Loosen. Drain.
4	Drain bolt	1	
5	Drive chain housing cover	1	
6	Chain tensioner	1	
7	Roller	1	
8	Drive sprocket	1	
9	Collar	1	
10	Drive chain	1	
11	Driven sprocket	1	
12	Collar	1	
13	Drive chain housing	1	
			For installation, reverse the removal procedure.



INSPECTION

1. Inspect:

- Drive chain housing ①
- Drive chain housing cover ②
- Cracks/damage → Replace.
- Oil seals (drive chain housing)
- Wear/damage → Replace.
- Bearings (drive chain housing and cover) ③
- Pitting/damage → Replace.
- Bearing (chain tensioner) ④
- Pitting/damage → Replace the bearing and the inner race holder as a set.

Replacement steps:

- Remove the circlip ⑤ (drive chain housing).
- Remove the bearing(s) ③ using a general bearing puller.
- Install the new bearing(s).

NOTE:

Use a socket ⑥ that is the same size as the outside diameter of the bearing race.

CAUTION:

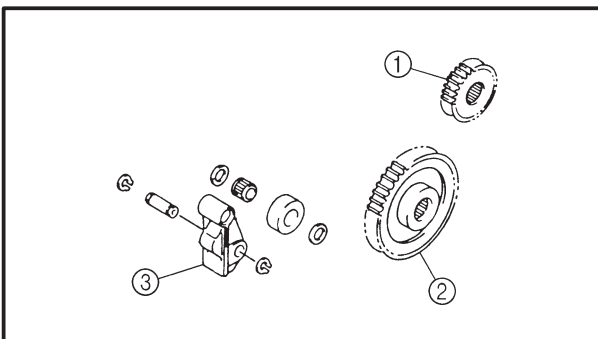
Do not strike the inner race ⑦ or ball bearings ⑧.

Contact only the outer race ⑨.

- Install a new circlip (drive chain housing).

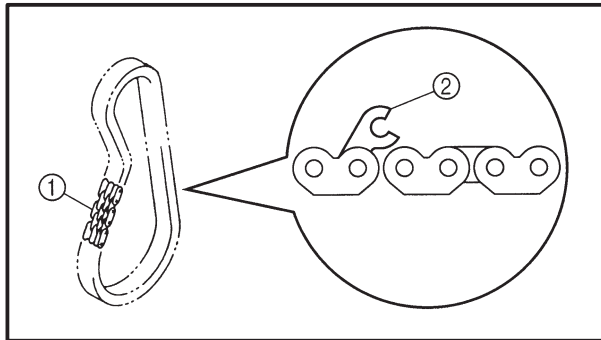
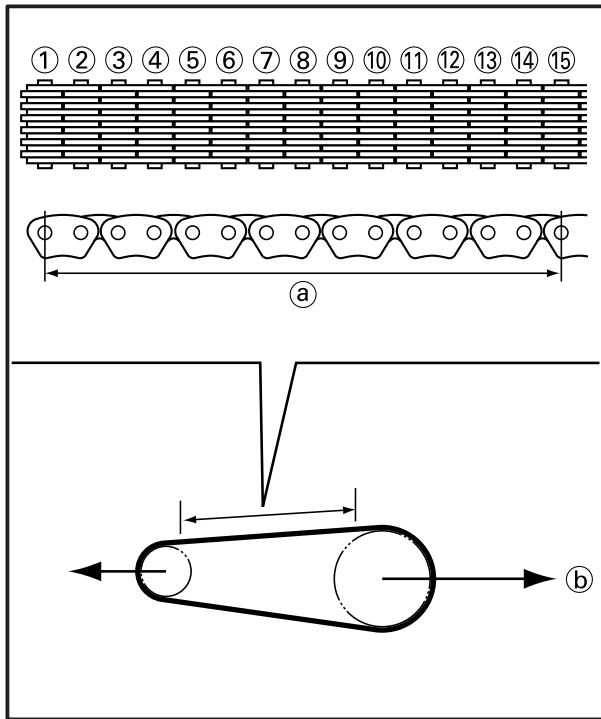
CAUTION:

Always use new circlips.



2. Inspect:

- Drive sprocket ①
- Driven sprocket ②
- Chain tensioner ③
- Pitting/wear/damage → Replace.



3. Measure:

- 14 link section (a) of the drive chain
Using a spring scale, pull on the drive chain with 36 kg (80 lb) of force (b).
Out of specification → Replace the drive chain.



**Maximum 14 link drive chain
section length:**
133.35 mm (5.25 in)
Limit: 137.35 mm (5.41 in)

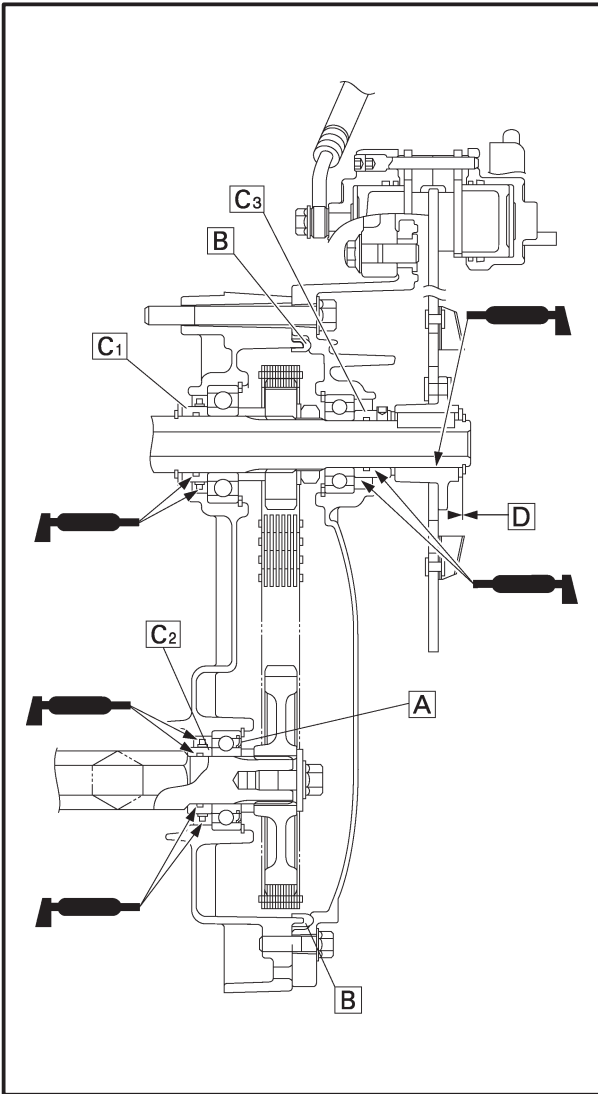
NOTE:

- Measure the length between drive chain pin ① and ⑮ as shown.
- Perform this measurement at two or three different places.

If replacement is necessary, always replace the chain and the sprockets as a set.

4. Inspect:

- Drive chain ①
Stiffness → Clean and lubricate or replace.
- Drive chain plates ②
Damage/wear → Replace the drive chain.
Cracks → Replace the drive chain.



INSTALLATION

1. During installation, pay attention to the following.

A Make sure that the bearing seals face towards the drive chain as shown.

B Properly install the rubber seal onto the drive chain housing, making sure that there are no gaps.

C₁ **C₂** **C₃** Be sure to install the spacers in their original positions, otherwise the brake disc and jackshaft will stick.

D 0.2 ~ 0.6 mm (0.008 ~ 0.024 in)

 : ESSO beacon 325 grease or Aeroshell grease #7A

For the jackshaft and drive chain housing installation, refer to "SECONDARYSHAFT".

2. Fill:

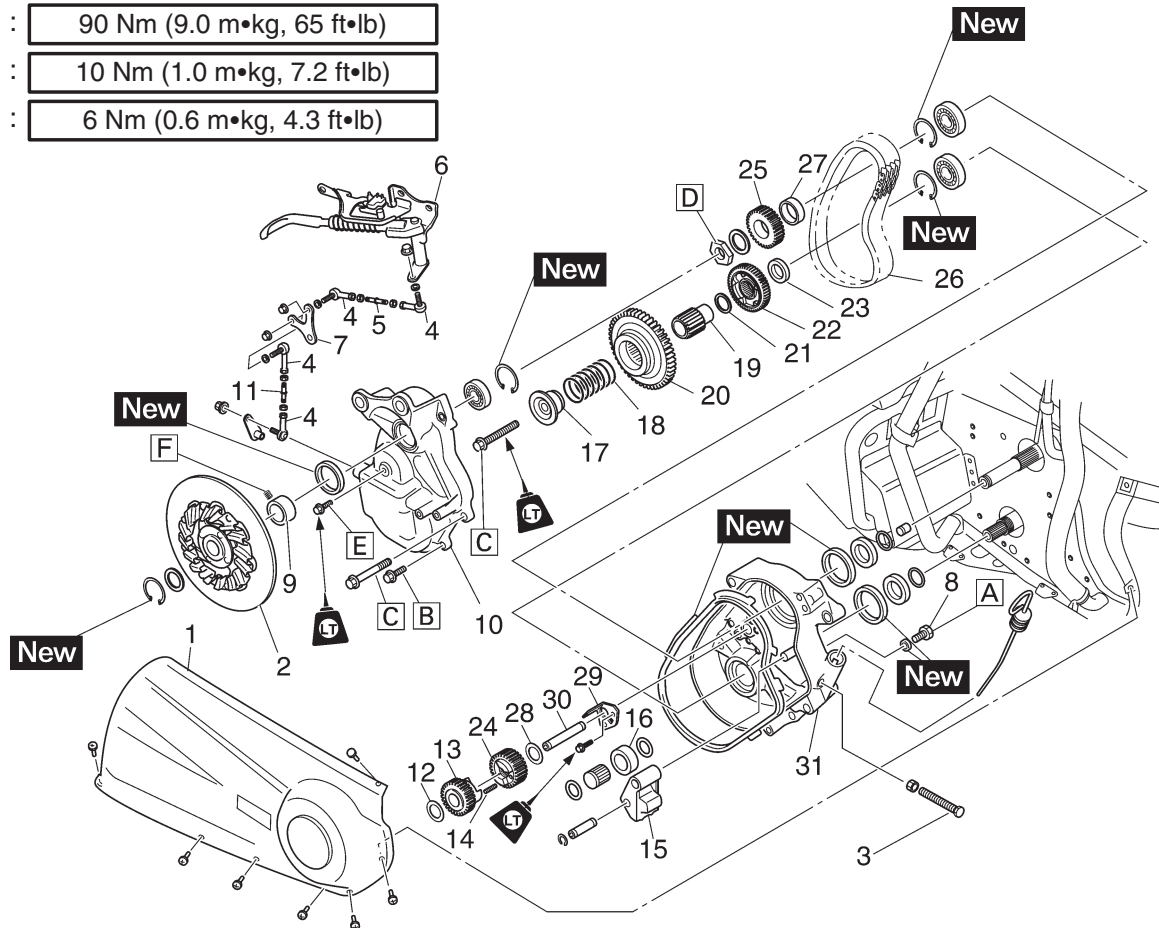
- Drive chain housing oil
Refer to "DRIVE CHAIN" in CHAPTER 2.

3. Adjust:

- Drive chain slack
Refer to "DRIVE CHAIN" in CHAPTER 2.

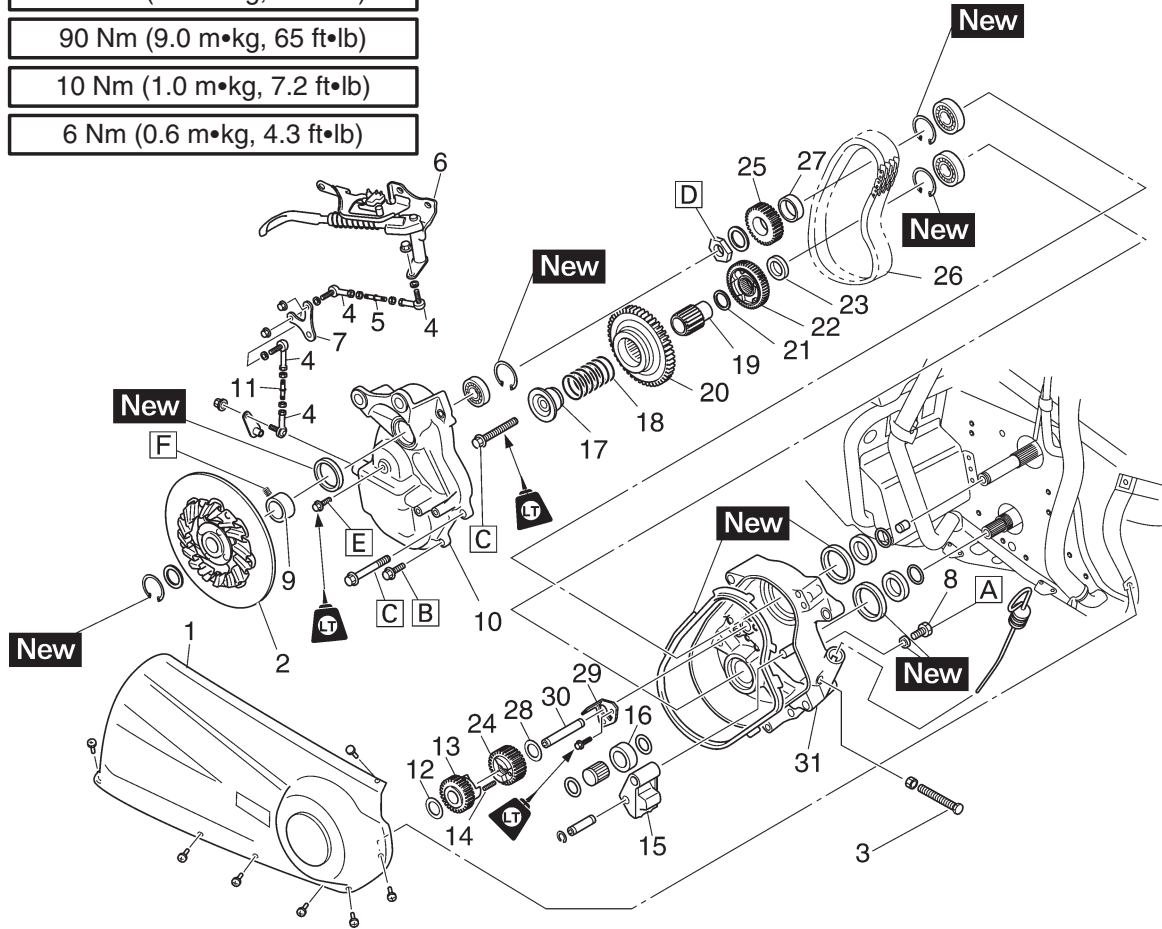
WITH REVERSE MODEL

- A :** 16 Nm (1.6 m•kg, 12 ft•lb)
B : 24 Nm (2.4 m•kg, 17 ft•lb)
C : 48 Nm (4.8 m•kg, 35 ft•lb)
D : 90 Nm (9.0 m•kg, 65 ft•lb)
E : 10 Nm (1.0 m•kg, 7.2 ft•lb)
F : 6 Nm (0.6 m•kg, 4.3 ft•lb)

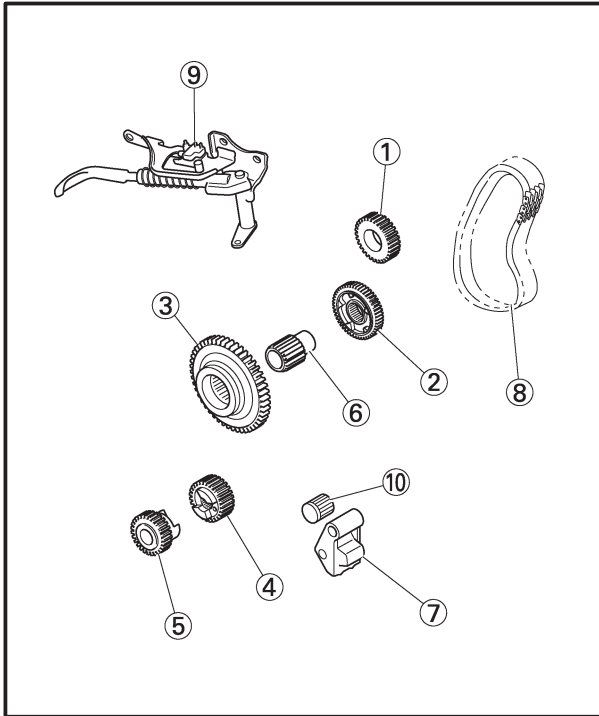
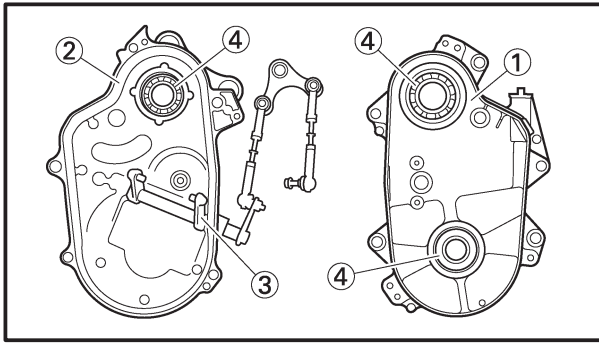


Order	Job name/Part name	Q'ty	Remarks
	Drive chain housing removal		
	Brake caliper		Remove the parts in the order listed below.
	Parking brake		Refer to "BRAKE".
1	Right side cover	1	Refer to "BRAKE".
2	Brake disc	1	
3	Chain tension adjuster	1	Loosen.
4	Joint	4	
5	Shift rod	1	
6	Shift lever assembly	1	Disconnect the gear position switch leads.
7	Lever	1	
8	Drain bolt	1	Drain.
9	Collar	1	
10	Drive chain housing cover	1	
11	Lever rod	1	
12	Washer	1	
13	Counter gear	1	
14	Spring	1	

- A :** 16 Nm (1.6 m•kg, 12 ft•lb)
B : 24 Nm (2.4 m•kg, 17 ft•lb)
C : 48 Nm (4.8 m•kg, 35 ft•lb)
D : 90 Nm (9.0 m•kg, 65 ft•lb)
E : 10 Nm (1.0 m•kg, 7.2 ft•lb)
F : 6 Nm (0.6 m•kg, 4.3 ft•lb)



Order	Job name/Part name	Q'ty	Remarks
15	Chain tensioner	1	For installation, reverse the removal procedure.
16	Roller	1	
17	Collar	1	
18	Spring	1	
19	Journal	1	
20	Reverse driven gear	1	
21	Washer	1	
22	Forward driven sprocket	1	
23	Collar	1	
24	Reverse drive gear	1	
25	Drive sprocket	1	
26	Drive chain	1	
27	Collar	1	
28	Washer	1	
29	Plate	1	
30	Shaft	1	
31	Drive chain housing	1	



INSPECTION

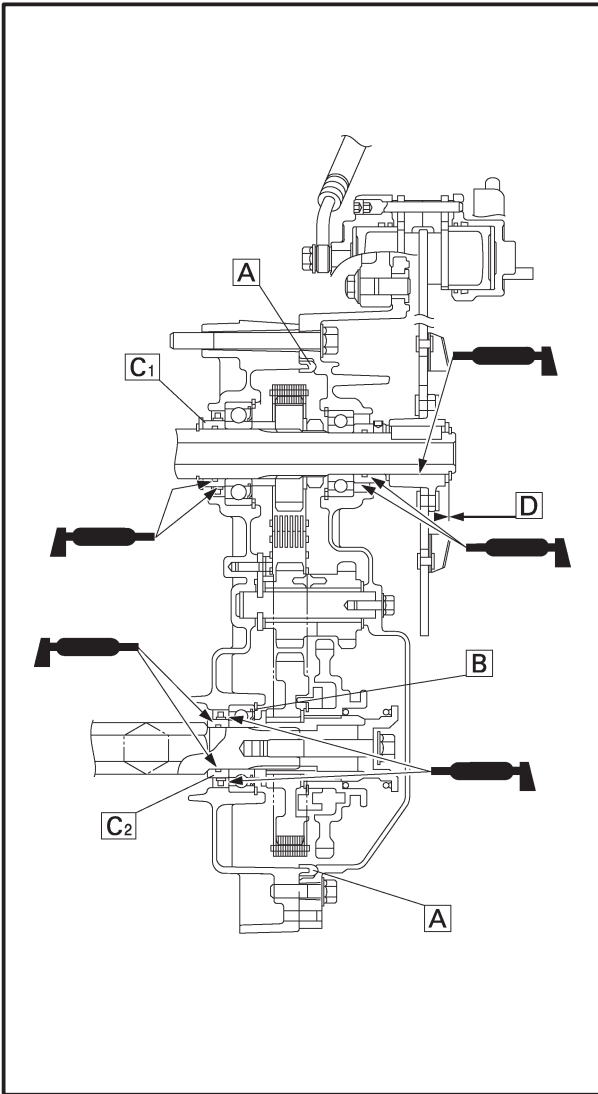
1. Inspect:

- Drive chain housing ①
- Drive chain housing cover ②
Cracks/damage → Replace.
- Shift fork ③
Pitting/wear/damage → Replace.
- Oil seals (drive chain housing)
Wear/damage → Replace.
- Bearings (drive chain housing and cover) ④
Pitting/damage → Replace.

2. Inspect:

- Drive sprocket ①
- Forward driven sprocket ②
- Reverse driven gear ③
- Reverse drive gear ④
- Counter gear ⑤
- Journal ⑥
- Chain tensioner ⑦
Pitting/wear/damage → Replace.
- Drive chain ⑧
Wear/damage → Replace.
Shift → Clean or replace.
- Shift lever assembly ⑨
- Bearing (chain tensioner) ⑩
Pitting/damage → Replace the bearing and the inner race holder as a set.

For the bearing replacement and drive chain inspection, refer to "WITHOUT REVERSE MODEL".



INSTALLATION

1. During installation, pay attention to the following.

A Properly install the rubber seal onto the drive chain housing, making sure that there are no gaps.

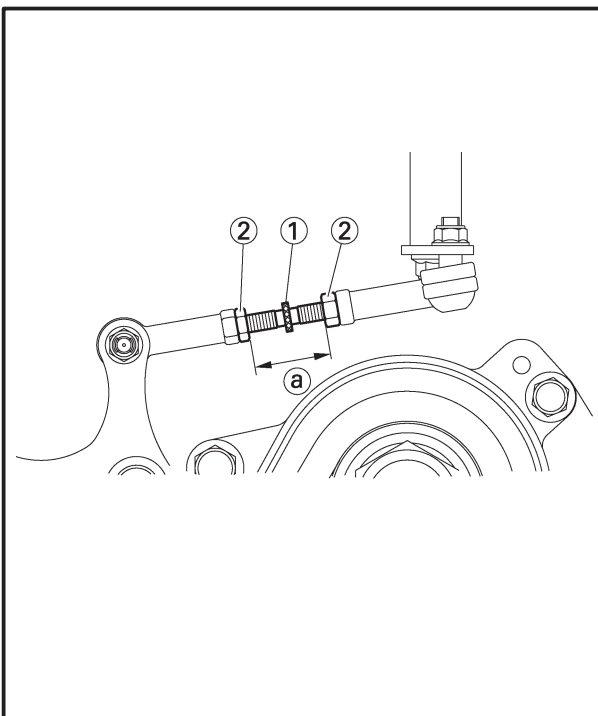
B Make sure that the bearing seals face towards the drive chain as shown.

C₁ **C₂** Be sure to install the spacers in their original positions, otherwise the brake disc and jackshaft will stick.

D 0.2 ~ 0.6 mm (0.008 ~ 0.024 in)

 : ESSO beacon 325 grease or Aeroshell grease #7A

For the jackshaft and drive chain housing installation, refer to "SECONDARY SHAFT".



2. Install:

- Lever rod ①

3. Adjust:

- Lever rod length ②

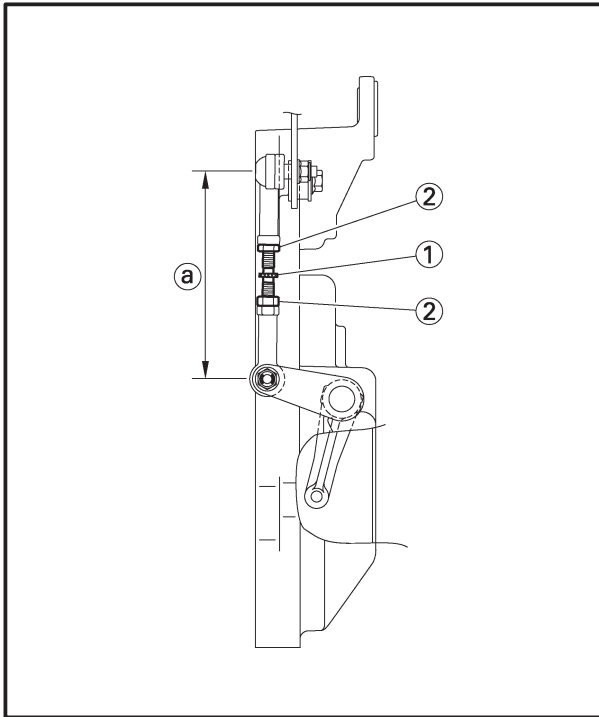
Adjustment steps:

- Loosen the locknuts ②.
- Turn the lever rod ① in or out until the specified length is obtained.



Lever rod length:
27 mm (1.06 in)

- Tighten the locknuts.

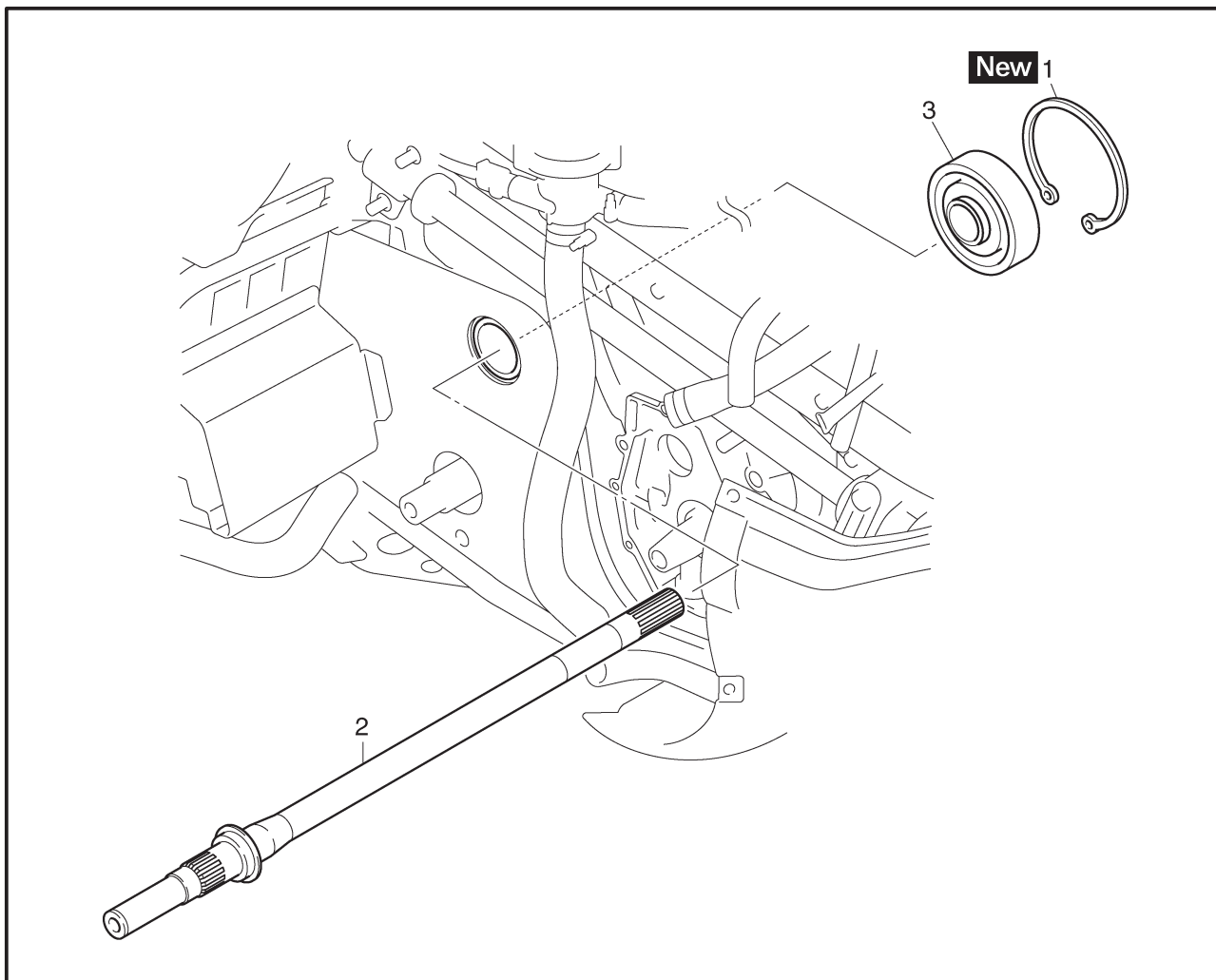


4. Install:
 - Shift rod ①
5. Adjust:
 - Shift rod length ②

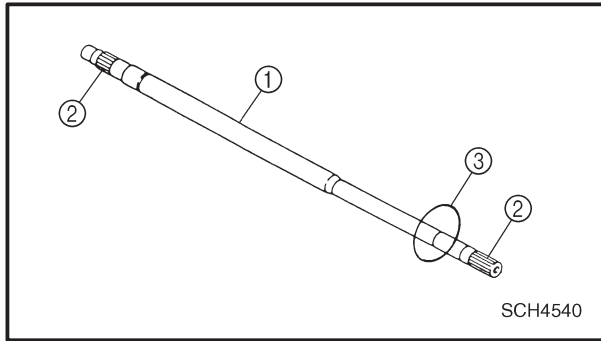
Adjustment steps:

- Move the shift lever to the “FWD.” position.
 - Loosen the locknuts ②.
 - Turn the shift rod ① so that shift rod free play is 0 mm (in direction where ② can be shortened appropriately) and then turn back the shift rod 1/4 turns.
 - Tighten the locknuts.
6. Fill:
 - Drive chain housing oil
Refer to “DRIVE CHAIN” in CHAPTER 2.
 7. Adjust:
 - Drive chain slack
Refer to “DRIVE CHAIN” in CHAPTER 2.

SECONDARYSHAFT



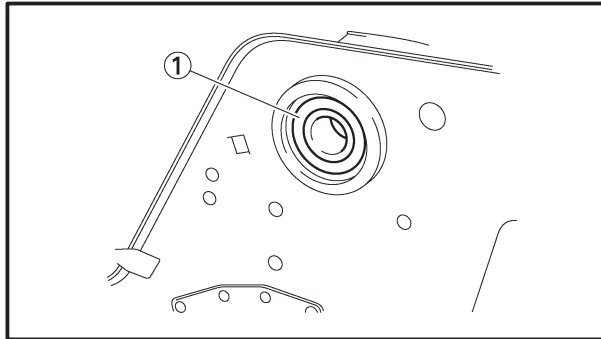
Order	Job name/Part name	Q'ty	Remarks
	Secondaryshaft removal		
1	Secondary sheave	1	Remove the parts in the order listed below. Refer to "SECONDARY SHEAVE". Refer to "DRIVE CHAIN HOUSING".
2	Drive chain housing	1	
3	Circlip	1	
	Secondaryshaft		
	Bearing	1	
			For installation, reverse the removal procedure.



INSPECTION

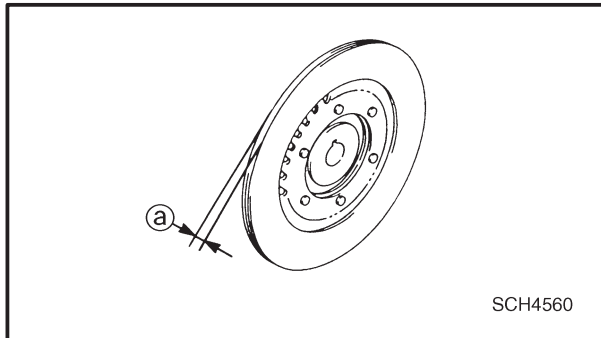
1. Inspect:

- Secondaryshaft ①
Scratches (excessive)/damage → Replace.
- Splines ②
Wear/damage → Replace the secondary-shaft.
- Bearing contact surface ③
Scratches/wear/damage → Replace the secondaryshaft.



2. Inspect:

- Bearing ①
Pitting/damage → Replace.



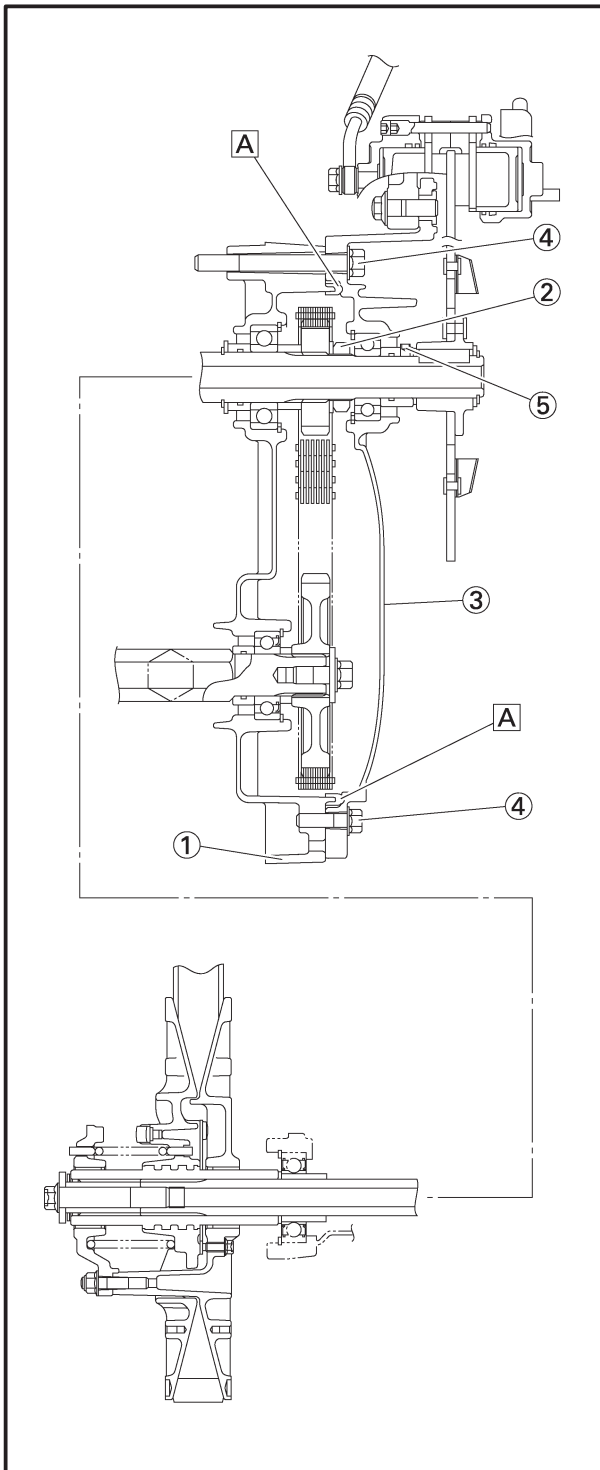
3. Measure:

- Brake disc thickness (a)
Out of specification → Replace.



**Minimum thickness:
4.5 mm (0.18 in)**

Measuring point: 1 ~ 3 mm (0.04 ~ 0.12 in)
from the edge of the brake disc.



SECONDARYSHAFT AND DRIVE CHAIN HOUSING INSTALLATION

1. Install:

- Secondaryshaft
- Drive chain housing

Installation steps:

- Install the secondaryshaft.
- Install the drive chain housing ①.
- Tighten the bolts.



Bolt (drive chain housing):
48 Nm (4.8 m•kg, 35 ft•lb)

- Install the drive chain, drive sprocket and driven sprocket.
- Tighten the nuts ②.



Nut (secondaryshaft):
90 Nm (9.0 m•kg, 65 ft•lb)

- Install the drive chain housing cover ③.

- A** Properly install the rubber seal onto the drive chain housing, making sure that these are no gaps.

- Tighten the bolts ④.



Bolt (drive chain housing cover):
24 Nm (2.4 m•kg, 17 ft•lb)

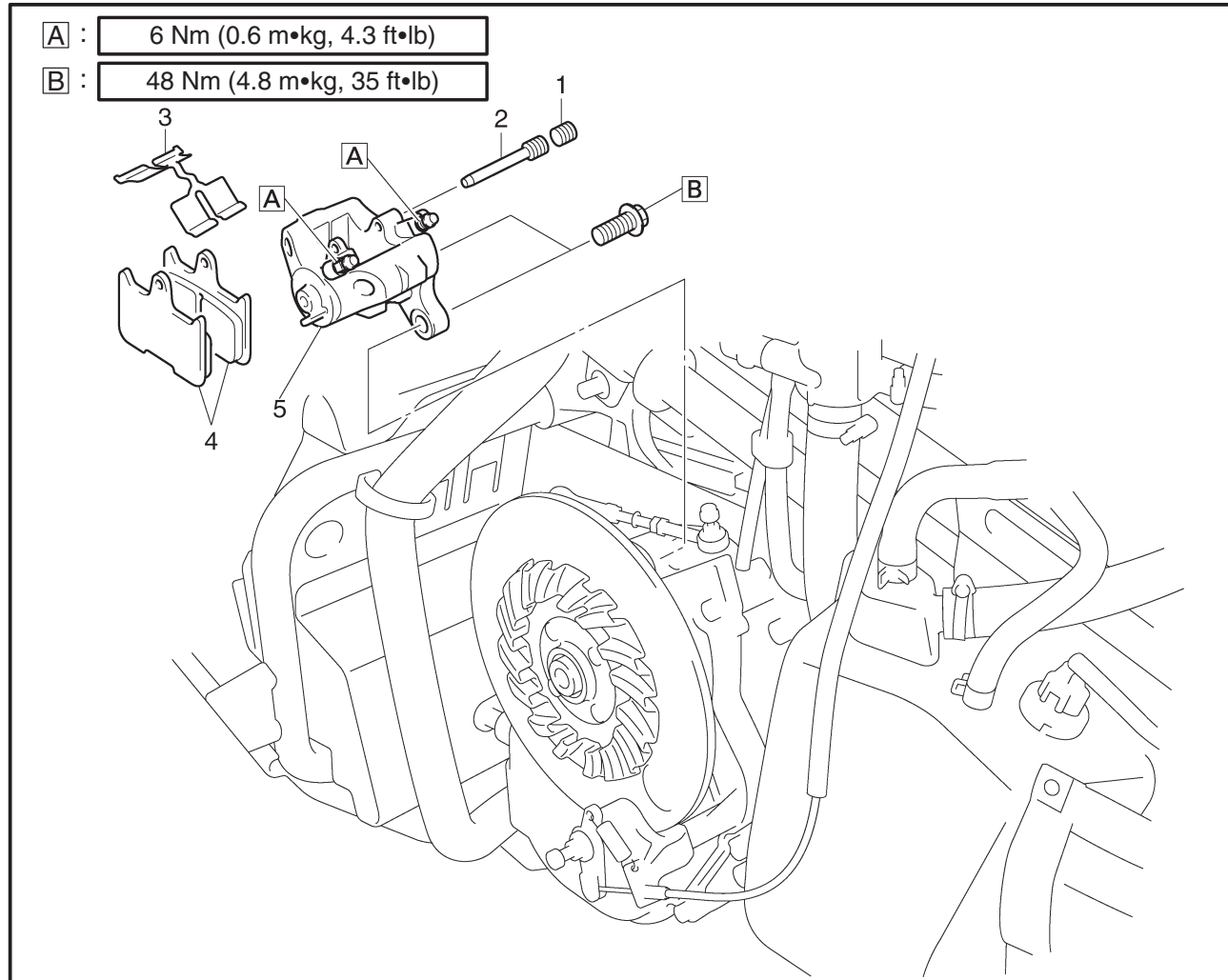
- Install the spacer.
- Tighten the set screw ⑤.



Set screw (spacer):
6 Nm (0.6 m•kg, 4.3 ft•lb)

- Install the brake disc.
- Adjust the brake disc clearance.

BRAKE



Order	Job name/Part name	Q'ty	Remarks
	Brake pad removal		
1	Cap bolt	1	Remove the parts in the order listed below.
2	Retaining pin	1	
3	Pad spring	1	
4	Brake pad	2	
5	Brake caliper assembly	1	For installation, reverse the removal procedure.

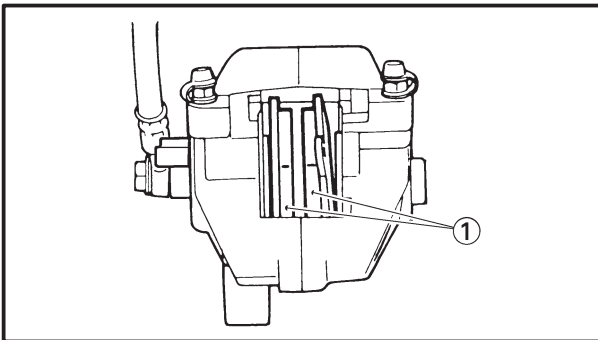
CAUTION:

Disc brake components rarely require disassembly. **DO NOT:**

- Do not disassemble components unless absolutely necessary.
- Do not use solvents on internal brake components.
- Do not use contaminated brake fluid for cleaning.
Use only clean brake fluid.
- Do not allow brake fluid to contact the eyes, otherwise eye injury may occur.
- Do not allow brake fluid to contact painted surfaces or plastic parts otherwise damage may occur.
- Do not disconnect any hydraulic connection, otherwise the entire system must be disassembled, drained, cleaned, and then properly filled and bled after reassembly.

BRAKE PAD REPLACEMENT**NOTE:**

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

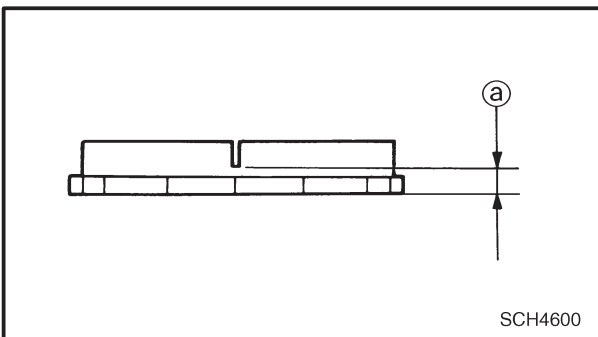


1. Remove:

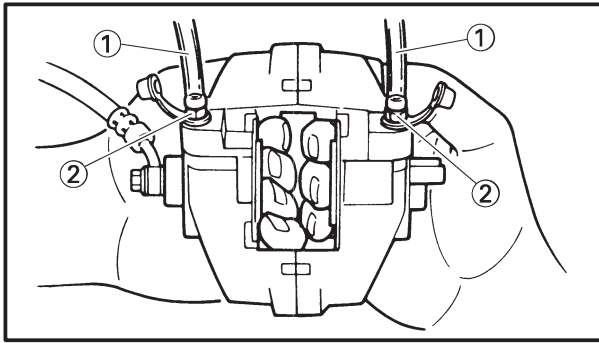
- Brake pads ①

NOTE:

- Do not depress the brake lever when the caliper or disc is off the machine otherwise the brake pads will be forced shut.
- Install a new brake pad spring and shims when the brake pads are replaced.
- Replace the pads as a set if either one is found to be worn to the wear limit (a).



Wear limit:
7.5 mm (0.30 in)



2. Install:
- Brake pads
 - Pad spring

Installation steps:

- Connect a suitable hose ① tightly to the caliper bleed screw ②. Put the other end of this hose into an open container.
- Loosen the caliper bleed screw and push the pistons into the caliper with your finger.
- Tighten the caliper bleed screw ②.

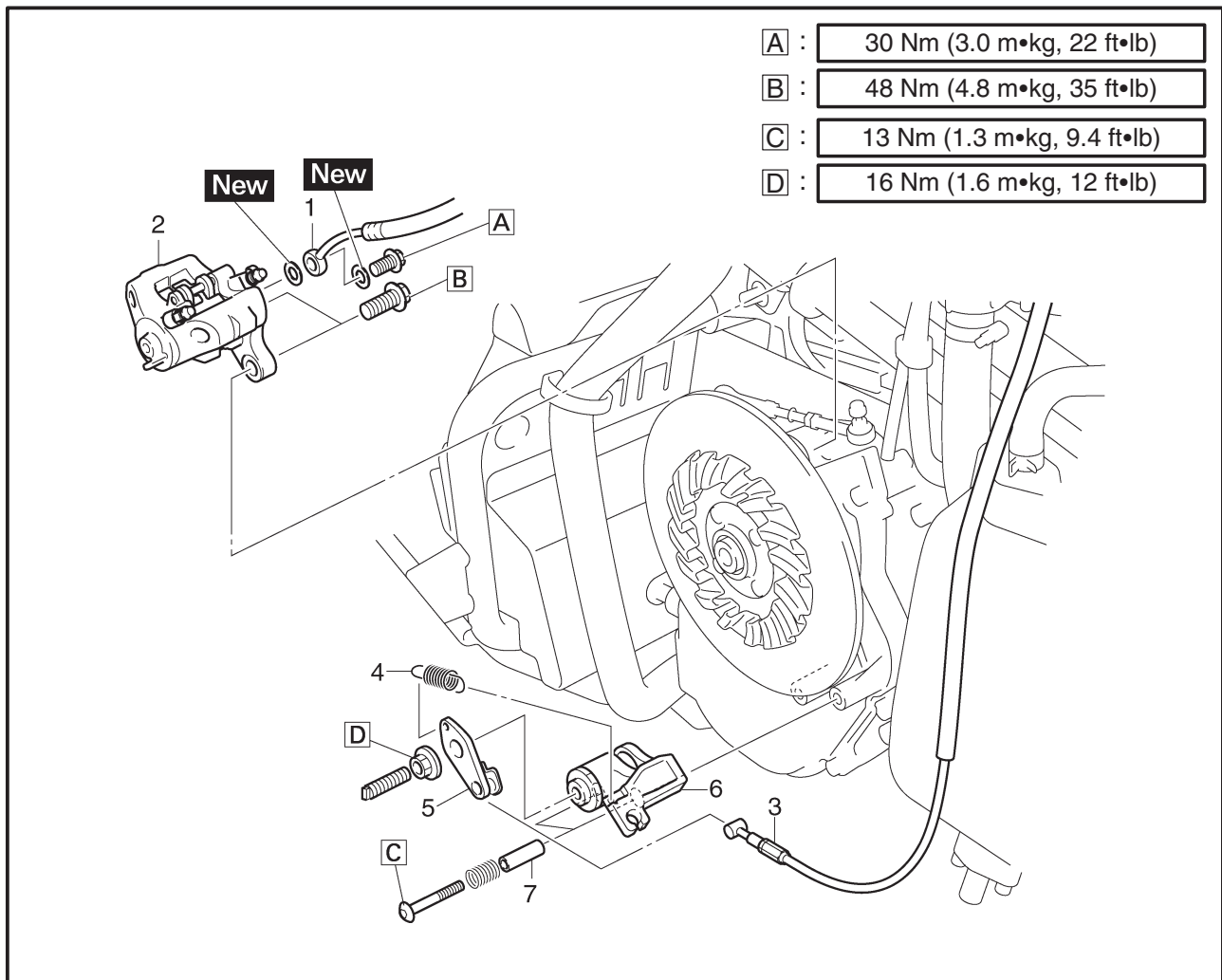


Bleed screw:

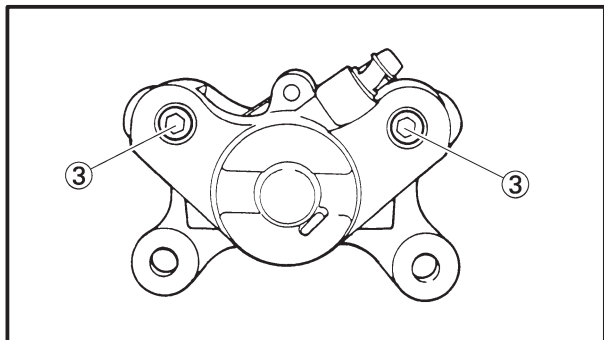
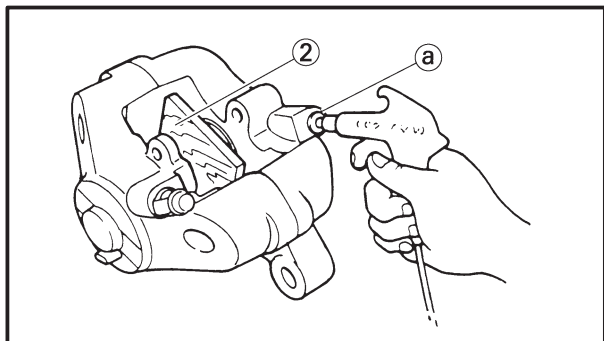
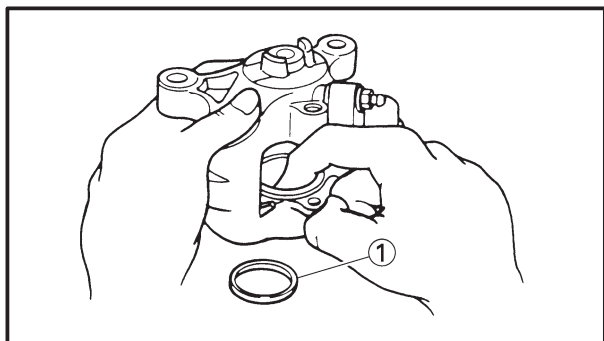
6 Nm (0.6 m•kg, 4.3 ft•lb)

- Install the brake pads and pad spring.

3. Inspect:
- Brake fluid level
Refer to “BRAKE FLUID LEVEL INSPECTION” in CHAPTER 2.
4. Check:
- Brake lever operation
A soft or spongy feeling → Bleed brake system.
Refer to “AIR BLEEDING (HYDRAULIC BRAKE SYSTEM)” in CHAPTER 2.



Order	Job name/Part name	Q'ty	Remarks
	Brake caliper and parking brake removal		Remove the parts in the order listed below.
	Brake fluid		Drain.
1	Brake hose	1	
2	Brake caliper assembly	1	
3	Parking brake cable	1	
4	Spring	1	
5	Lever	1	
6	Parking brake assembly	1	
7	Collar	1	
			For installation, reverse the removal procedure.



BRAKE CALIPER DISASSEMBLY

NOTE:

Before disassembling a caliper, drain brake fluid from brake hose, master cylinder, brake caliper and brake reservoir of their brake fluid.

1. Remove:

- Pistons
- Piston oil seals ①

Removal steps:

- Using a wood of piece ②, lock the right piston.
- Blow compressed air into the hose joint opening ③ to force out the left piston from the caliper body.
- Remove the piston seals and reinstall the piston.
- Repeat the previous steps to force out the right piston from the caliper body.

⚠ WARNING

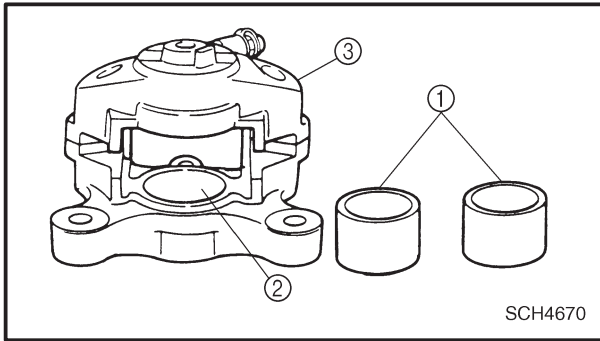
- Never try to pry out the pistons.
- Do not loosen the retaining pin ③.

BRAKE CALIPER INSPECTION AND REPAIR

Recommended brake component replacement schedule	
Brake pads	As required
Piston seals and dust seals	Every two years
Brake hose	Every two years
Brake fluid	Only when brakes are disassembled.

⚠ WARNING

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



1. Inspect:

- Caliper piston ①
Scratches/rust/wear → Replace the caliper assembly.
- Caliper cylinder ②
Wear/scratches → Replace the caliper assembly.
- Caliper body ③
Cracks/damage → Replace.
- Oil delivery passage (caliper body)
Blow out with compressed air.

⚠ WARNING

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

BRAKE CALIPER ASSEMBLY

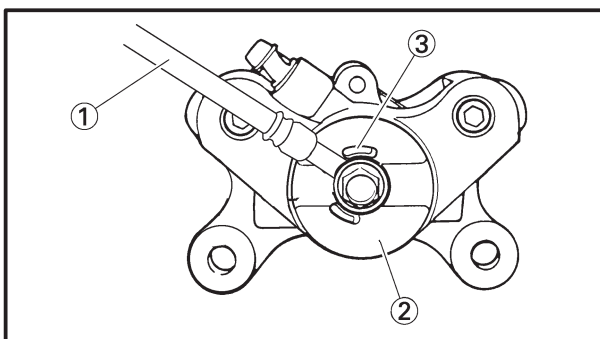
⚠ WARNING

- All internal parts should be cleaned only with new brake fluid.
- Internal parts should be lubricated with brake fluid when installed.



Recommended brake fluid:
DOT 4

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



BRAKE CALIPER INSTALLATION

1. Install:

- Brake hose ①

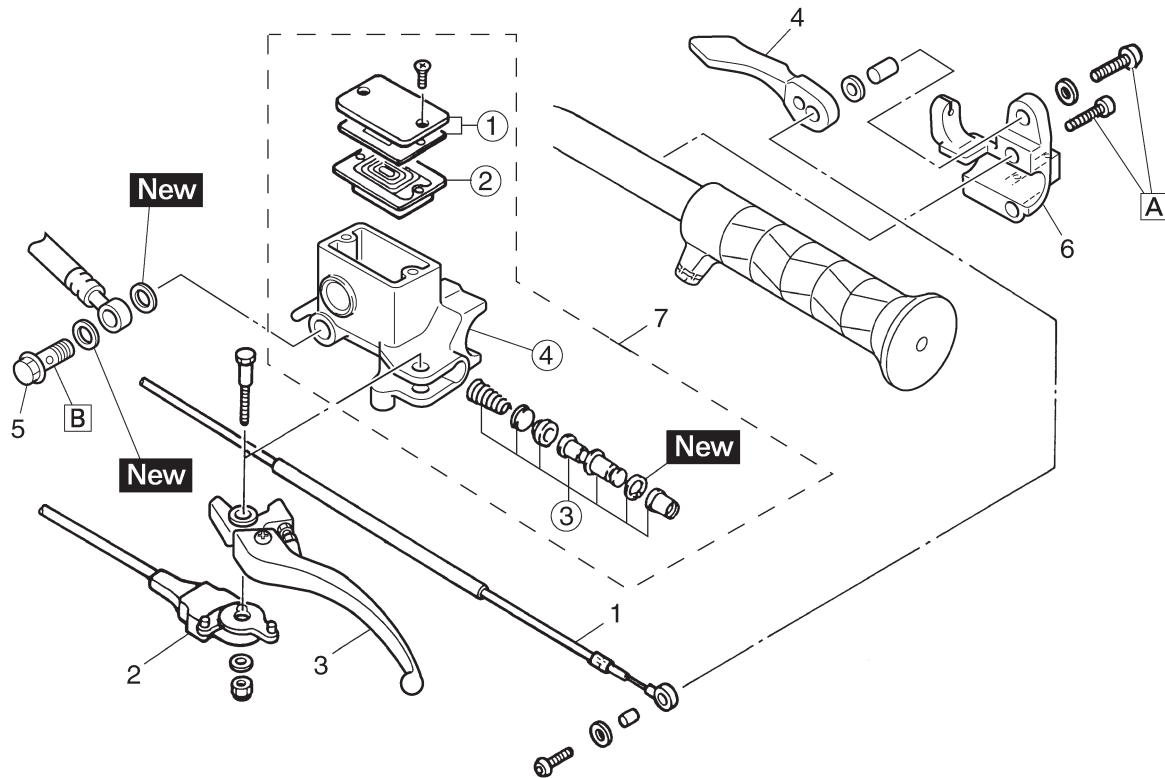
CAUTION:

When installing the brake hose ① onto the brake caliper ②, make sure that the brake pipe touches the projection ③ on the brake caliper.

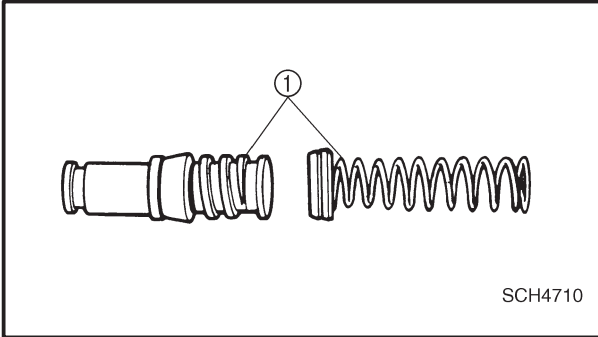
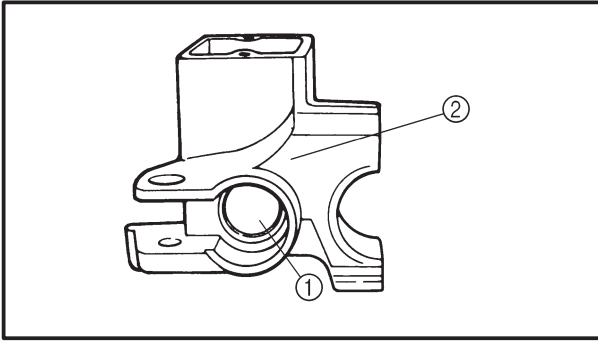


A : 10 Nm (1.0 m•kg, 7.2 ft•lb)

B : 30 Nm (3.0 m•kg, 22 ft•lb)



Order	Job name/Part name	Q'ty	Remarks
	Brake master cylinder removal		
	Brake fluid		Remove the parts in the order listed below. Drain.
1	Parking brake cable	1	
2	Brake switch	1	
3	Brake lever	1	
4	Parking brake lever	1	
5	Union bolt	1	
6	Holder	1	
7	Master cylinder assembly	1	
			For installation, reverse the removal procedure.
	Brake master cylinder disassembly		
①	Reservoir cap set	1	Disassemble the parts in the order listed below.
②	Diaphragm	1	
③	Master cylinder kit	1	
④	Master cylinder body	1	
			For assembly, reverse the disassembly procedure.



INSPECTION

1. Inspect:

- Master cylinder ①
Wear/scratches → Replace the master cylinder assembly.
- Master cylinder body ②
Cracks/damage → Replace.
- Oil delivery passage (master cylinder body)
Blow out with compressed air.

2. Inspect:

- Master cylinder kit ①
Scratches/wear/damage → Replace as a set.

BRAKE MASTER CYLINDER ASSEMBLY

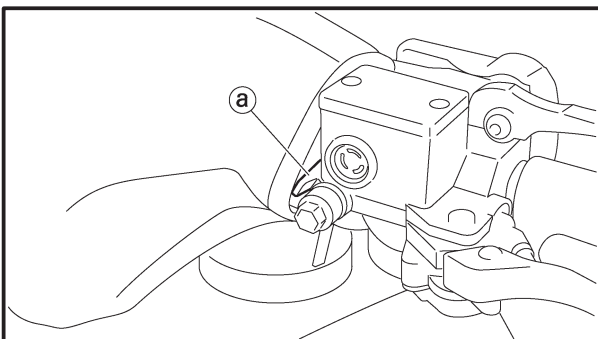
⚠ WARNING

- All internal parts should be cleaned only with new brake fluid.
- Internal parts should be lubricated with brake fluid when installed.



**Recommended brake fluid:
DOT 4**

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



INSTALLATION

1. Connect:

- Brake hose

NOTE:

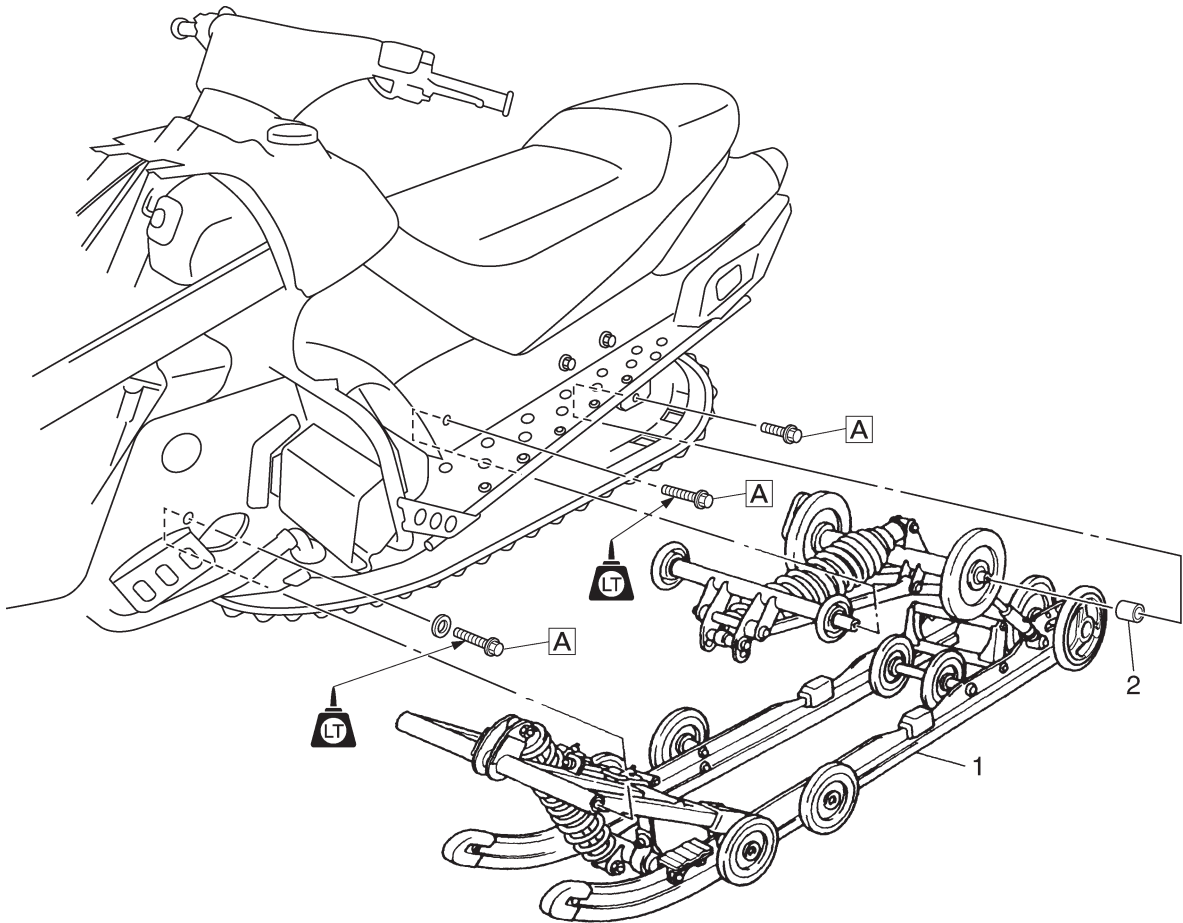
When installing the brake hose onto the brake master cylinder, make sure that the brake pipe touches the projection ① as shown.



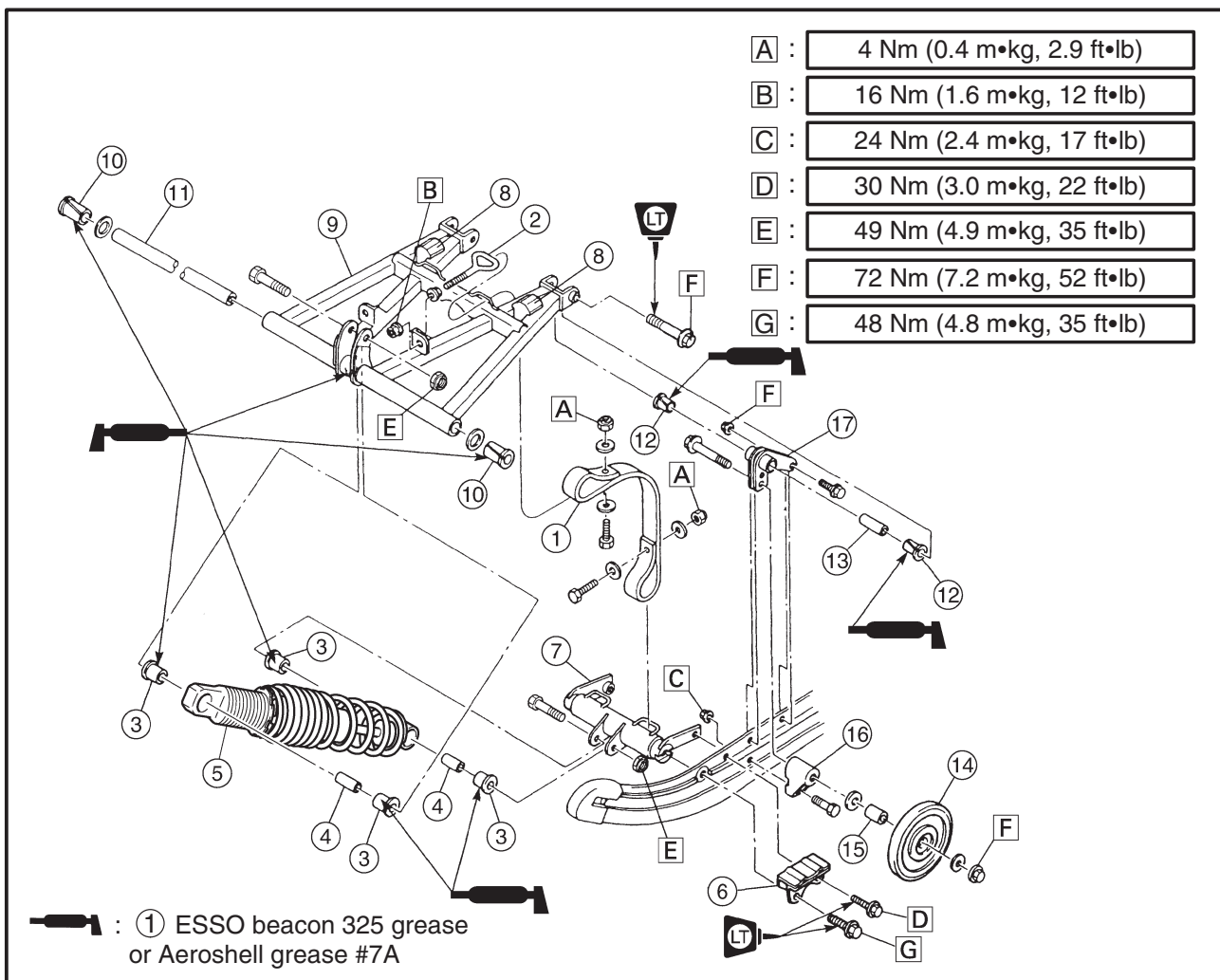
**Union bolt (brake hose):
30 Nm (3.0 m•kg, 22 ft•lb)**

SLIDE RAIL SUSPENSION
RX10, RX10S, RX10R, RX10RS

A : 72 Nm (7.2 m•kg, 52 ft•lb)

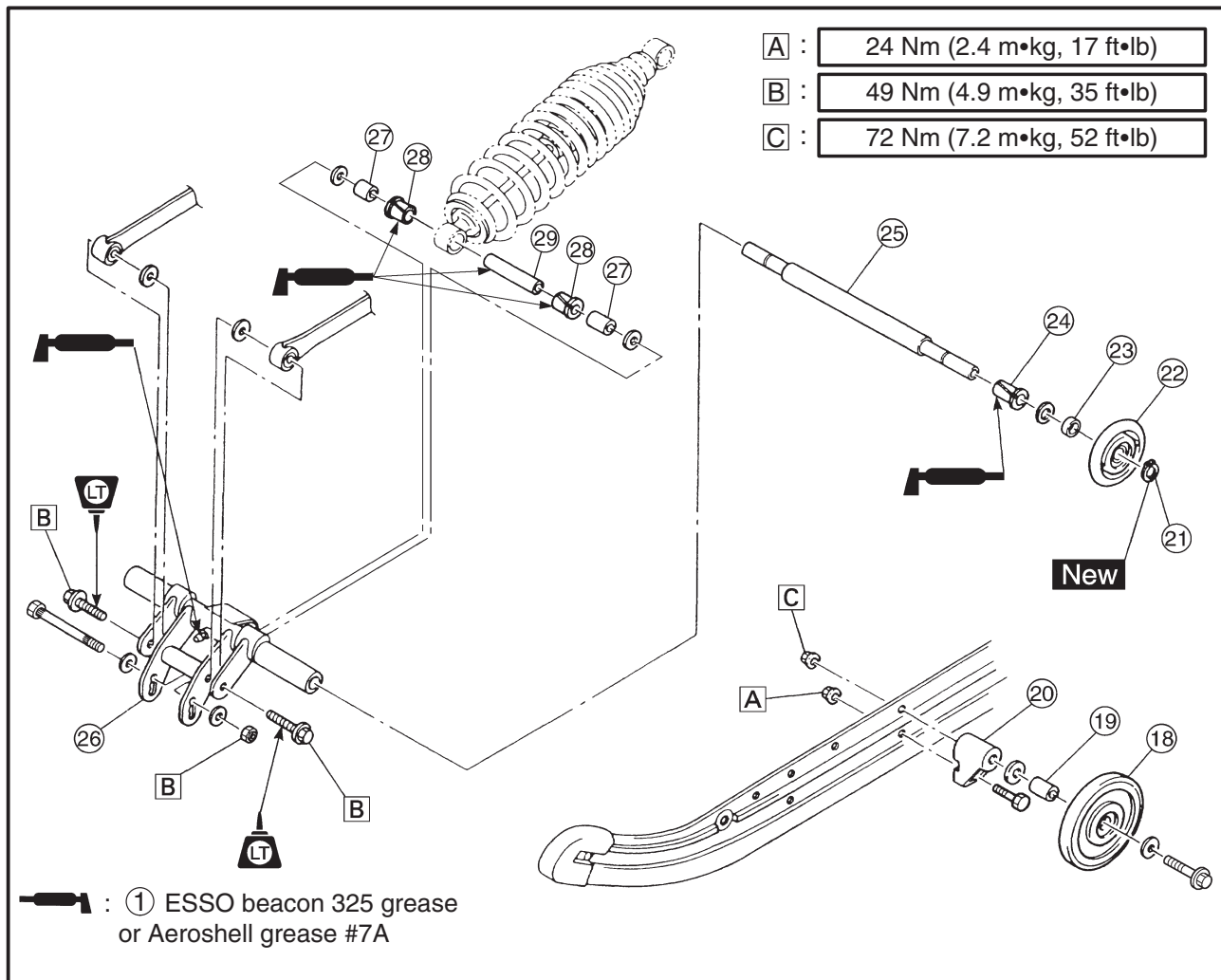


Order	Job name/Part name	Q'ty	Remarks
	Slide rail suspension removal		
	Rear axle nut		Remove the parts in the order listed below.
	Tension adjuster		Loosen.
	Left side cover		Loosen.
			Refer to "PRIMARY SHEAVE AND DRIVE VELT".
1	Slide rail suspension	1	
2	Collar	2	
			For installation, reverse the removal procedure.



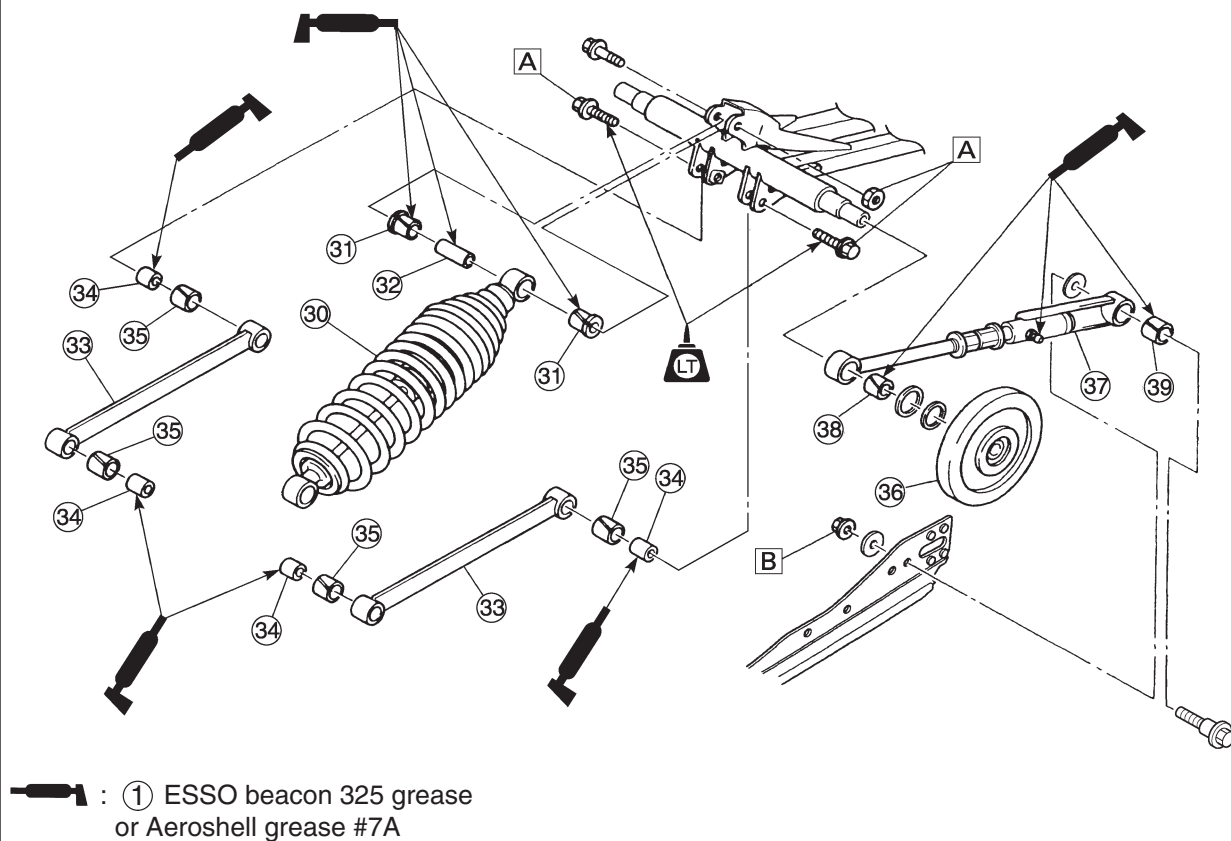
Order	Job name/Part name	Q'ty	Remarks
	Slide rail suspension disassembly		Remove the parts in the order listed below.
①	Stopper band	2	
②	Hook	2	
③	Bushing	4	
④	Collar	2	
⑤	Front shock absorber	1	
⑥	Bracket	2	
⑦	Front suspension bracket	1	
⑧	Rubber damper	2	
⑨	Front pivot arm	1	
⑩	Bushing	2	
⑪	Shaft	1	
⑫	Bushing	4	
⑬	Collar	2	
⑭	Suspension wheel	2	
⑮	Collar	2	
⑯	Wheel bracket	2	
⑰	Front pivot arm bracket	2	

SLIDE RAIL SUSPENSION



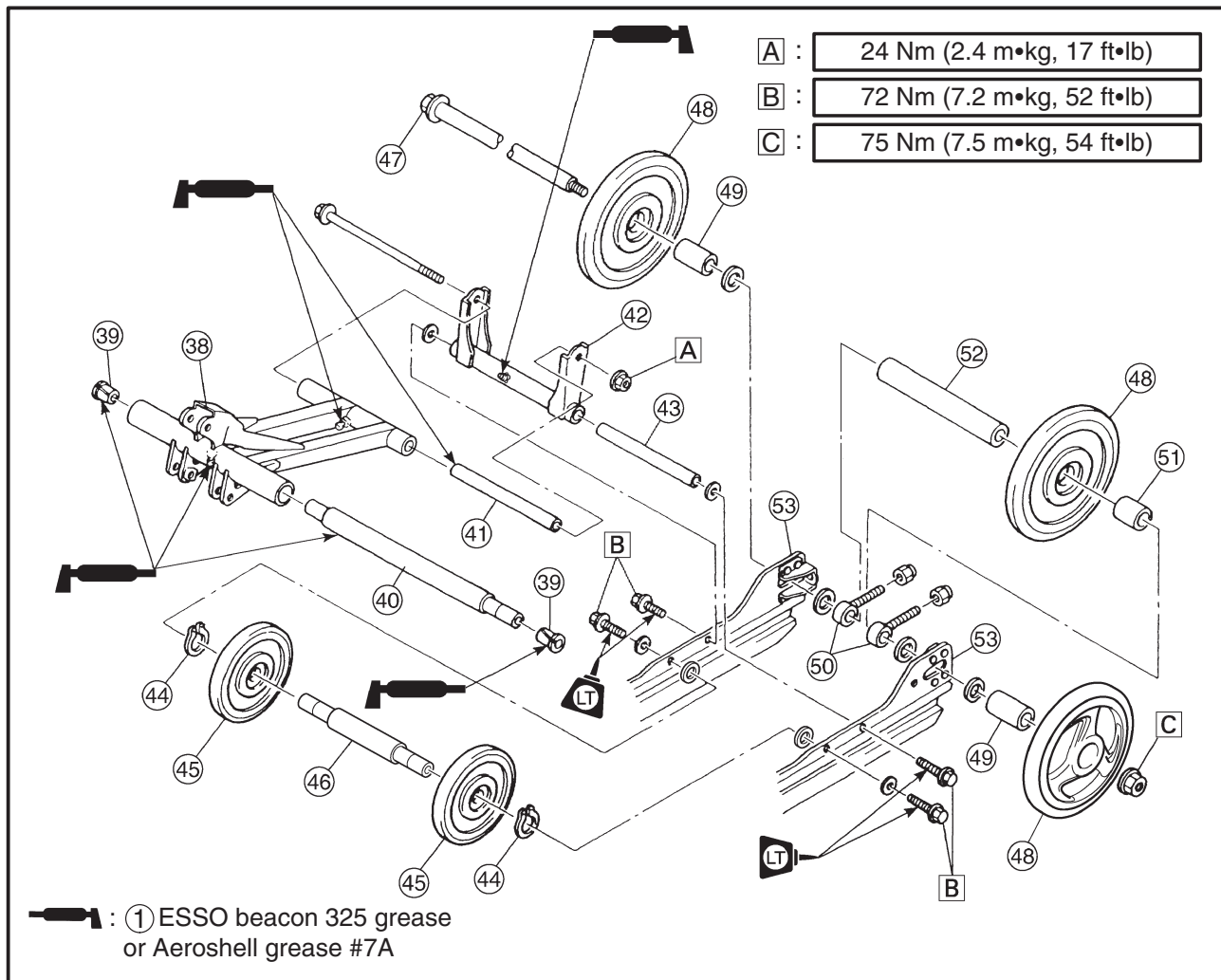
Order	Job name/Part name	Q'ty	Remarks
①8	Suspension wheel	2	
①9	Collar	2	
②0	Wheel bracket	2	
②1	Circlip	2	
②2	Suspension wheel	2	
②3	Collar	2	
②4	Bushing	2	
②5	Shaft	1	
②6	Rear suspension bracket	1	
②7	Spacer	2	
②8	Bushing	2	
②9	Collar	1	

A : 49 Nm (4.9 m•kg, 35 ft•lb)

B : 72 Nm (7.2 m•kg, 52 ft•lb)


Order	Job name/Part name	Q'ty	Remarks
③①	Rear shock absorber	1	
③②	Bushing	2	
③③	Collar	1	
③④	Pull rod	2	
③⑤	Collar	4	
③⑥	Bushing	4	
③⑦	Guide wheel	2	
③⑧	Control rod assembly	2	
③⑨	Bushing	2	
③⑩	Bushing	2	

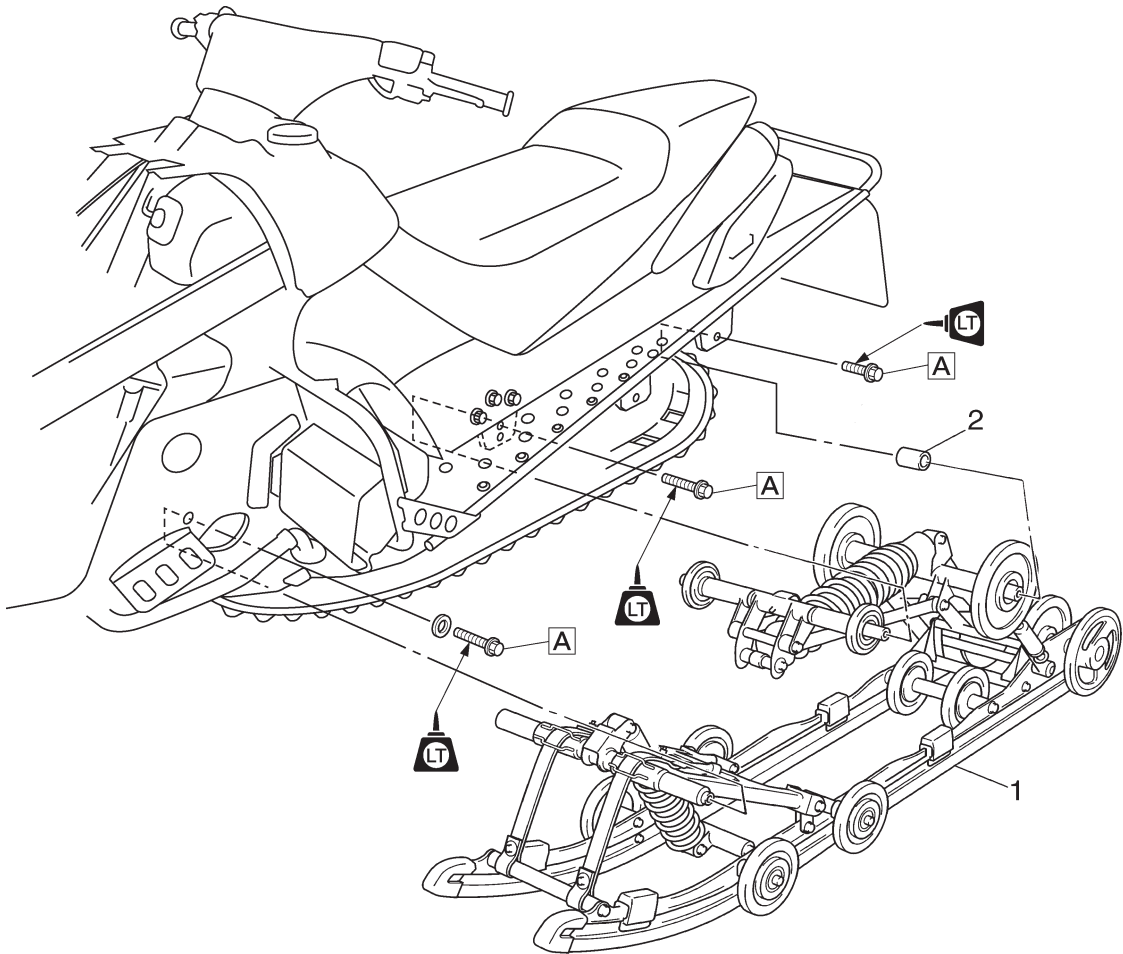
SLIDE RAIL SUSPENSION



Order	Job name/Part name	Q'ty	Remarks
③⑧	Rear pivot arm	1	For assembly, reverse the disassembly procedure.
③⑨	Bushing	2	
④①	Shaft	1	
④②	Rear pivot arm bracket	1	
④③	Shaft	1	
④④	Circlip	2	
④⑤	Suspension wheel	2	
④⑥	Wheel bracket shaft	1	
④⑦	Rear axle	1	
④⑧	Guide wheel	3	
④⑨	Collar	2	
⑤①	Tension adjuster	2	
⑤②	Collar	1	
⑤③	Collar	1	
⑤④	Sliding frame	2	

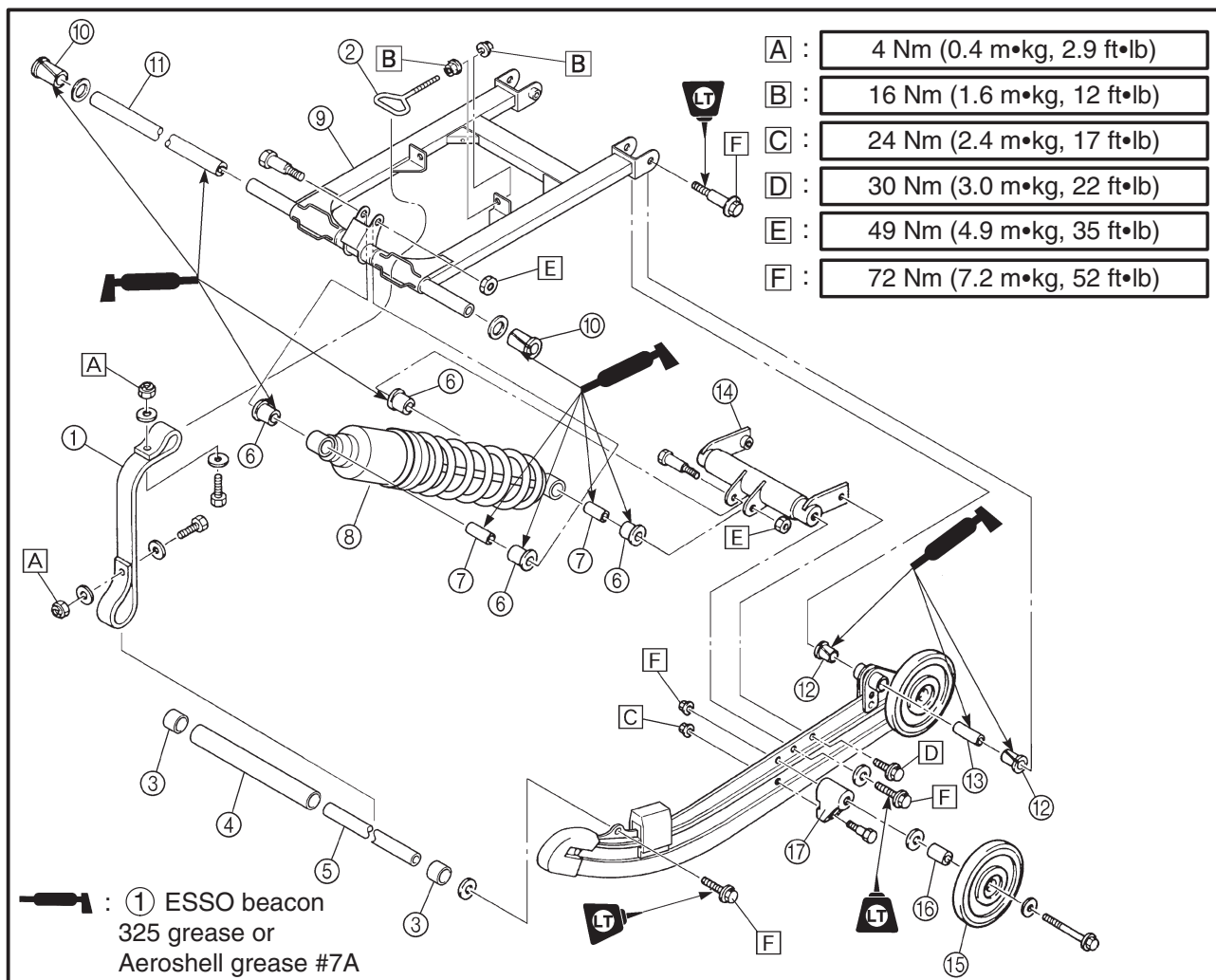
RX10M, RX10MS

A : 72 Nm (7.2 m•kg, 52 ft•lb)



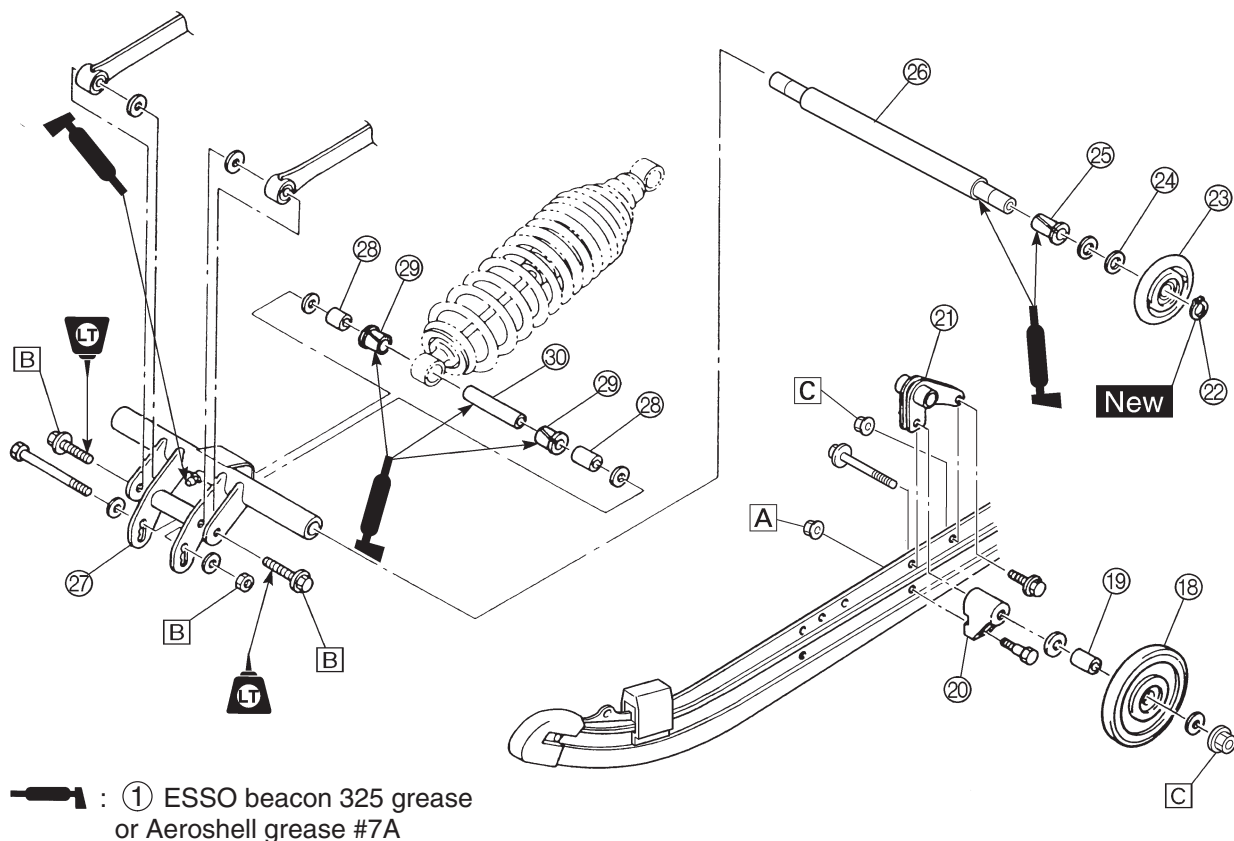
Order	Job name/Part name	Q'ty	Remarks
	Slide rail suspension removal		
	Rear axle nut		Remove the parts in the order listed below.
	Tension adjuster		Loosen.
	Left side cover		Loosen.
			Refer to "PRIMARY SHEAVE AND DRIVE VELT".
1	Slide rail suspension	1	
2	Collar	2	
			For installation, reverse the removal procedure.

SLIDE RAIL SUSPENSION



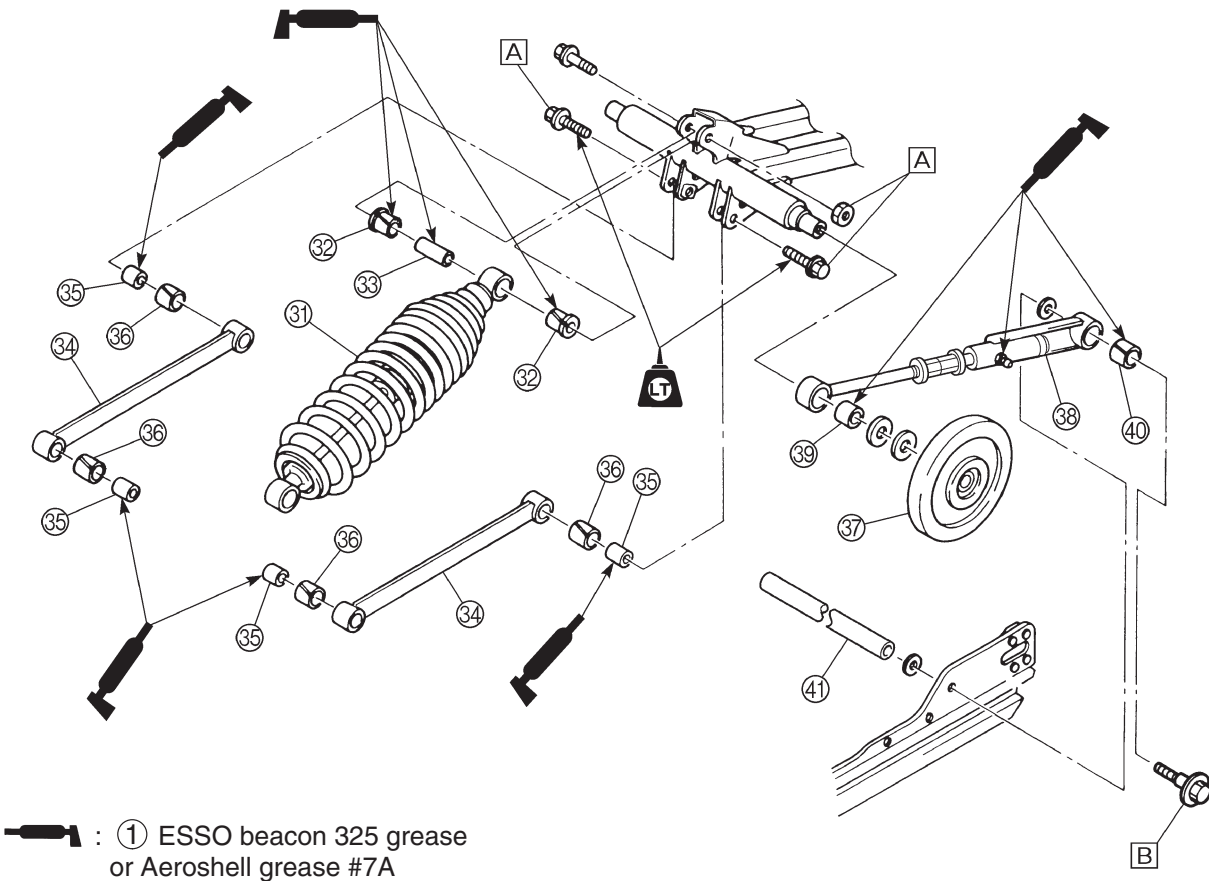
Order	Job name/Part name	Q'ty	Remarks
	Slide rail suspension disassembly		Remove the parts in the order listed below.
①	Stopper band	2	
②	Hook	2	
③	Rubber collar	2	
④	Rubber collar	1	
⑤	Shaft	1	
⑥	Bushing	4	
⑦	Collar	2	
⑧	Front shock absorber	1	
⑨	Front pivot arm	1	
⑩	Bushing	2	
⑪	Collar	1	
⑫	Bushing	4	
⑬	Collar	2	
⑭	Front suspension bracket	1	
⑮	Suspension wheel	2	
⑯	Collar	2	
⑰	Wheel bracket	2	

- A : 24 Nm (2.4 m•kg, 17 ft•lb)
- B : 49 Nm (4.9 m•kg, 35 ft•lb)
- C : 72 Nm (7.2 m•kg, 52 ft•lb)



Order	Job name/Part name	Q'ty	Remarks
⑱	Suspension wheel	2	
⑲	Collar	2	
⑳	Wheel bracket	2	
㉑	Front pivot arm bracket	2	
㉒	Circlip	2	
㉓	Suspension wheel	2	
㉔	Collar	2	
㉕	Bushing	2	
㉖	Collar	1	
㉗	Rear suspension bracket	1	
㉘	Spacer	2	
㉙	Bushing	2	
㉚	Collar	1	

A : 49 Nm (4.9 m•kg, 35 ft•lb)

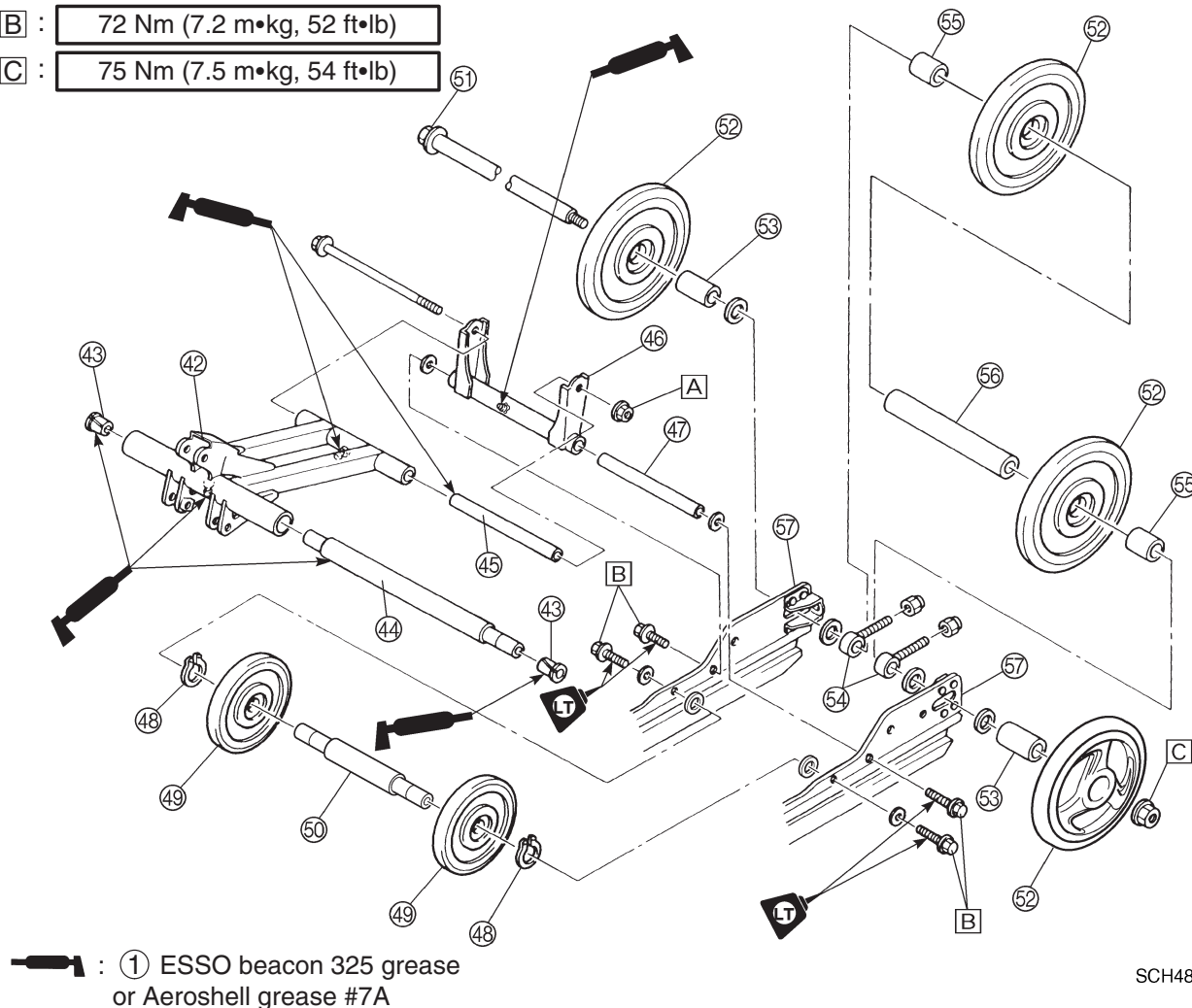
B : 72 Nm (7.2 m•kg, 52 ft•lb)


Order	Job name/Part name	Q'ty	Remarks
③①	Rear shock absorber	1	
③②	Bushing	2	
③③	Collar	1	
③④	Pull rod	2	
③⑤	Collar	4	
③⑥	Bushing	4	
③⑦	Guide wheel	2	
③⑧	Control rod assembly	2	
③⑨	Bushing	2	
④①	Bushing	2	
④①	Shaft	1	

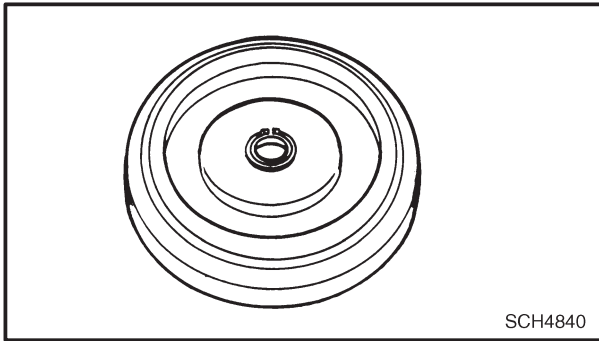
SLIDE RAIL SUSPENSION



- A : 24 Nm (2.4 m•kg, 17 ft•lb)
 B : 72 Nm (7.2 m•kg, 52 ft•lb)
 C : 75 Nm (7.5 m•kg, 54 ft•lb)



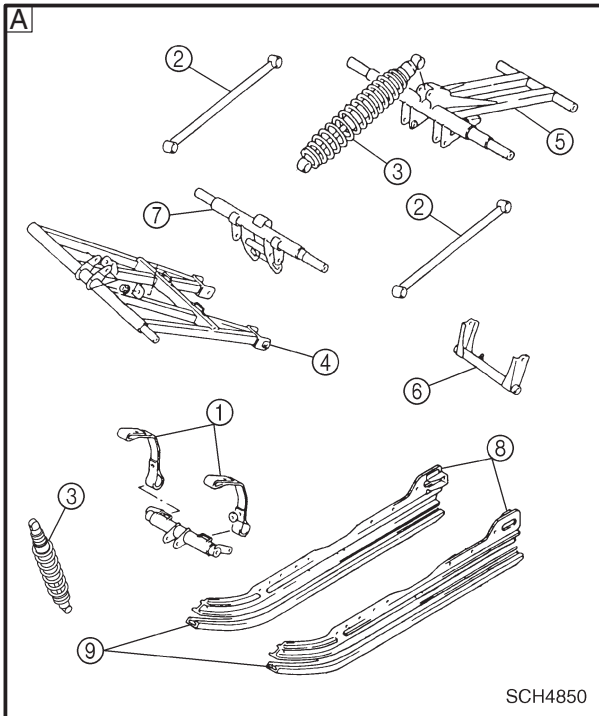
Order	Job name/Part name	Q'ty	Remarks
④②	Rear pivot arm	1	For assembly, reverse the disassembly procedure.
④③	Bushing	2	
④④	Collar	1	
④⑤	Collar	1	
④⑥	Rear pivot arm bracket	1	
④⑦	Collar	1	
④⑧	Circlip	2	
④⑨	Suspension wheel	2	
⑤①	Wheel bracket shaft	1	
⑤②	Guide wheel	4	
⑤③	Collar	2	
⑤④	Tension adjuster	2	
⑤⑤	Collar	2	
⑤⑥	Collar	1	
⑤⑦	Sliding frame	2	



INSPECTION

1. Inspect:

- Suspension wheel
- Guide wheel
- Cracks/damage → Replace.
- Wheel bearing
- Wheel turns roughly → Replace.

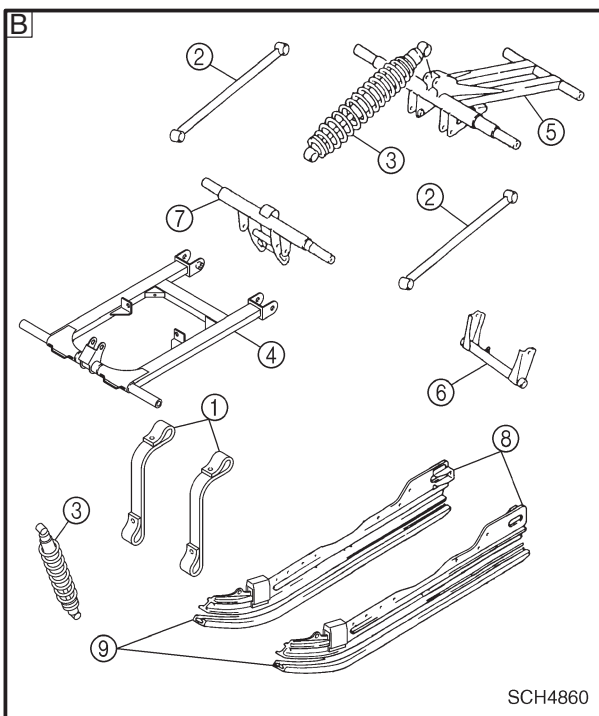


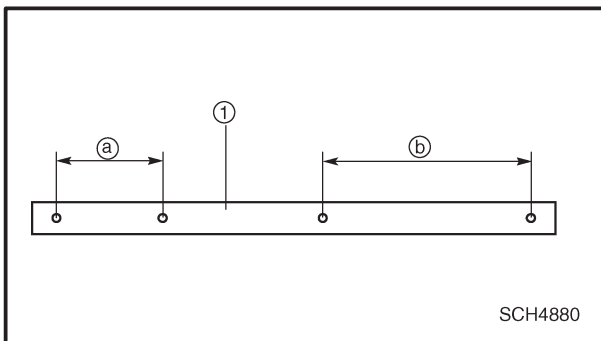
2. Inspect:

- Stopper band ①
- Frayed/damage → Replace.
- Pull rod ②
- Bends/damage → Replace.
- Shock absorber ③
- Oil leaks/damage → Replace.
- Bushings
- Wear/cracks/damage → Replace.
- Front pivot arm ④
- Rear pivot arm ⑤
- Rear pivot arm bracket ⑥
- Suspension wheel bracket ⑦
- Sliding frame ⑧
- Cracks/damage → Replace.
- Slide runner ⑨
- Wear/damage → Replace.

A RX10, RX10S, RX10R, RX10RS

B RX10M, RX10MS





ASSEMBLY

1. Install:
 - Stopper band ①

NOTE:

- For RX10, RX10S, RX10R, RX10RS:
Install the stopper band with ① toward the hook and ② toward the front suspension bracket.
- For RX10M, RX10MS:
Install the stopper band with ① toward the hook and ② toward the shaft.

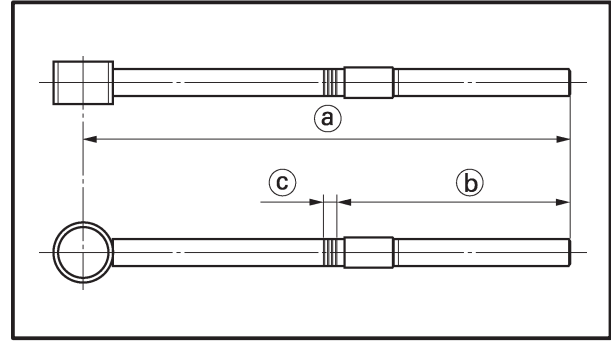


Nut (stopper band):
4 Nm (0.4 m•kg, 2.9 ft•lb)

INSTALLATION

1. Adjust:
 - Slide rail suspension position
Refer to “REAR SUSPENSION” in CHAPTER 2.

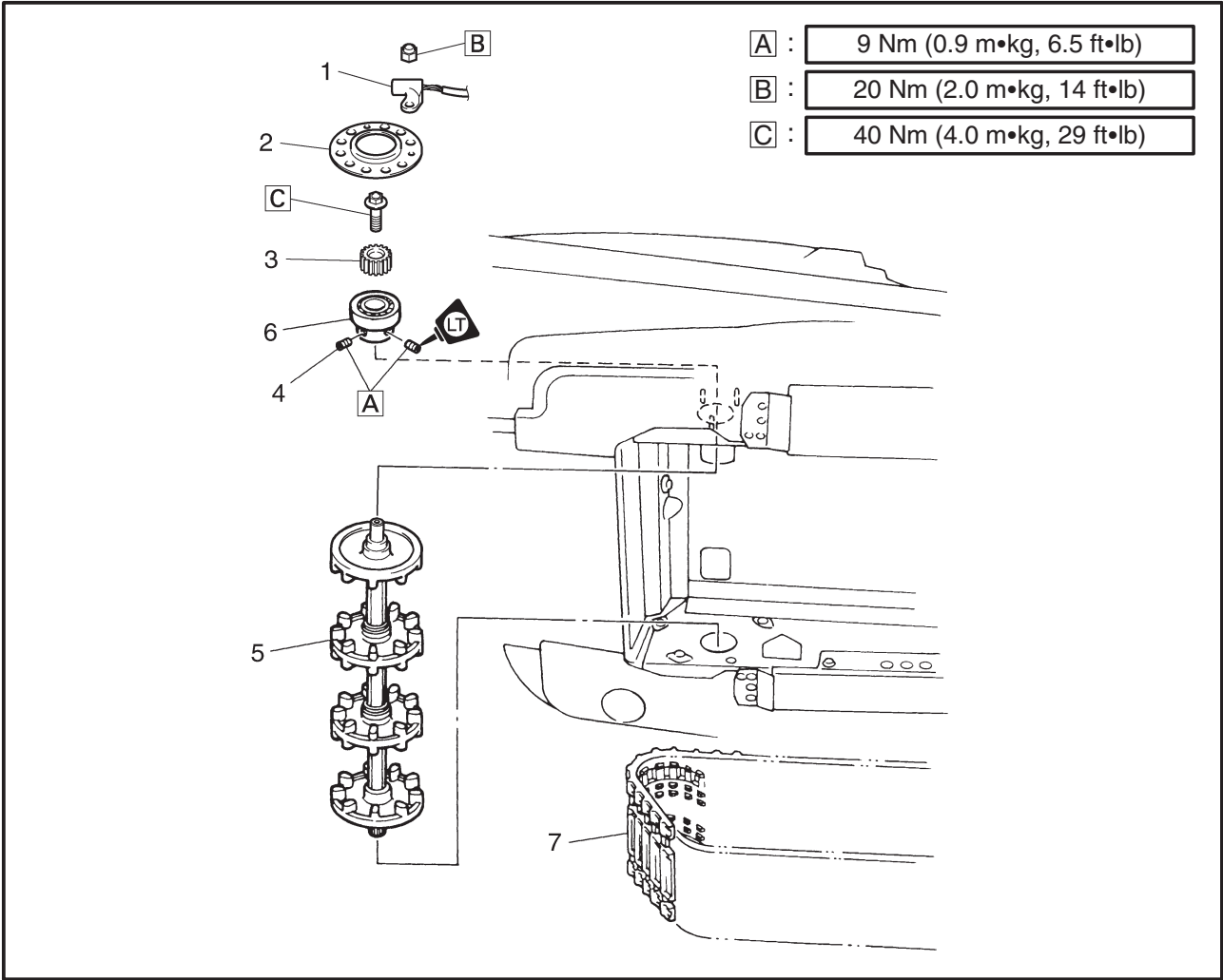
Control rod parts number



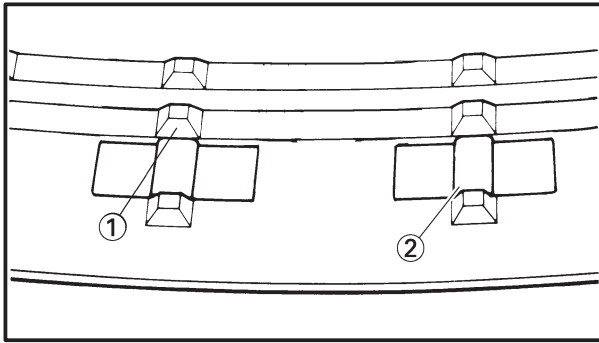
[A] Control rod 1	[B] Length (a) mm (in)	[C] Length (b) mm (in)	[D] Length (c) mm (in)
RX10, RX10S, RX10R, RX10RS	301.0 (11.85)	155.5 (6.12)	$2.5P \times 3 = 7.5$ $(0.098P \times 3 = 0.295)$
RX10M, RX10MS	257.5 (10.14)	165.0 (6.50)	

[E] Control rod 1 parts number	[F] Control rod 2 parts number	[G] Washer plate parts number [H] Washer plate thickness mm (in)	
		[I] Upper	[J] Lower
8FA-4745A-00 (RX10, RX10S, RX10R, RX10RS)	8CR-4745B-00	90202-16229 2.5 (0.098)	90202-16232 10.0 (0.394)
8EP-4745A-00 (RX10M, RX10MS)		90202-16229 2.5 (0.098)	90202-16230 5.0 (0.197)

FRONT AXLE AND TRACK



Order	Job name/Part name	Q'ty	Remarks
	Front axle and track removal		
	Drive chain housing		Remove the parts in the order listed below.
	Slide rail suspension		Refer to "DRIVE CHAIN HOUSING".
	Secondary sheave		Refer to "SLIDE RAIL SUSPENSION".
1	Speed sensor	1	Refer to "SECONDARY SHEAVE".
2	Bearing holder	1	
3	Gear unit	1	
4	Set bolt	2	
5	Front axle assembly	1	
6	Bearing	1	
7	Track	1	
			For installation, reverse the removal procedure.



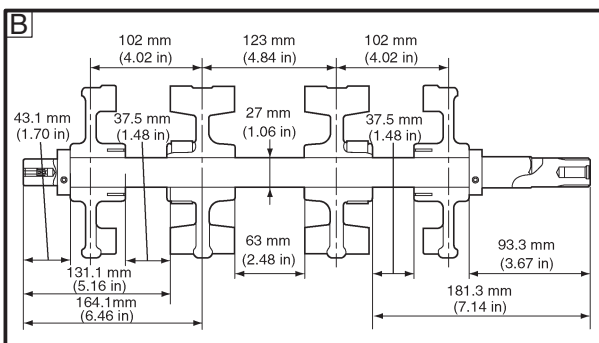
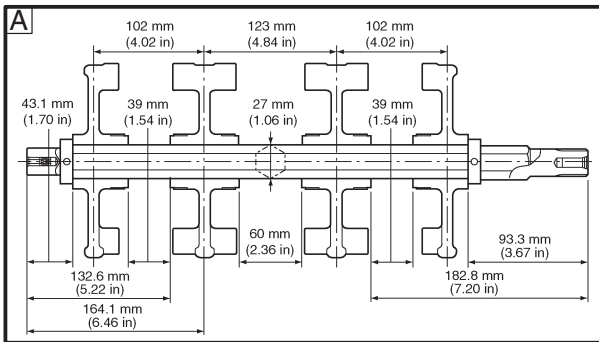
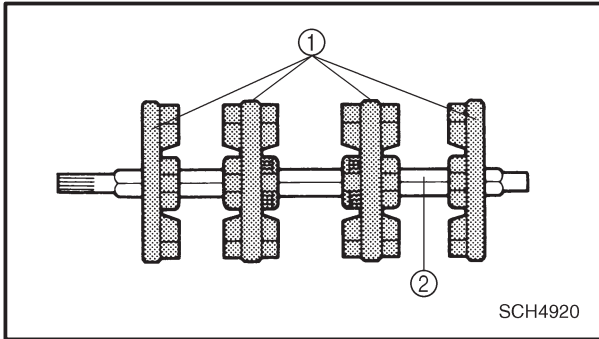
INSPECTION

1. Inspect:

- Track ①
 - Slide metal ②
- Wear/cracks/damage → Replace.

2. Inspect:

- Sprocket wheel ①
 - Front axle ②
- Wear/break/damage → Replace.
- Bends/scratches (excessive)/damage → Replace.



INSTALLATION

1. Install:

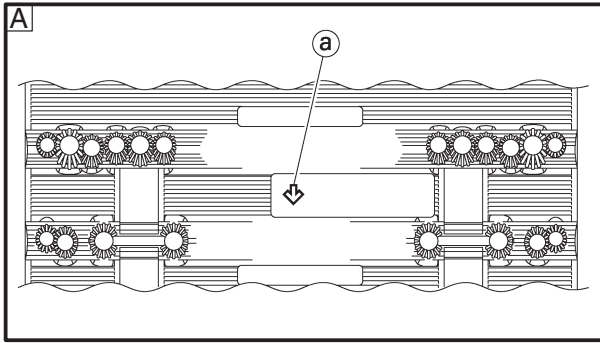
- Sprocket wheels
- Guide wheels

NOTE:

- When pressing the sprocket wheels onto the front axle, align the lugs on each sprocket wheel.
- Position each sprocket wheel on the axle as shown in the illustration.

A RX10, RX10S, RX10R, RX10RS

B RX10M, RX10MS



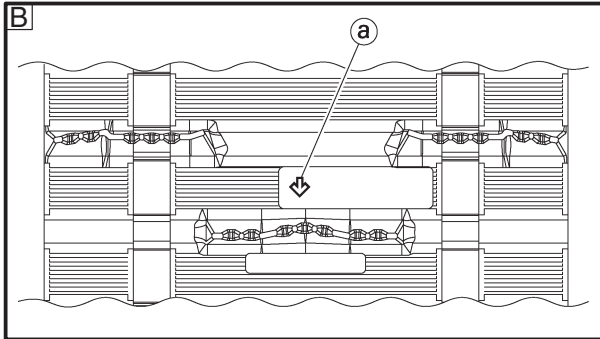
2. Place the track in the chassis.

NOTE:

For track with a direction of rotation mark (a):
Install the track with the mark pointing in the
direction of track rotation.

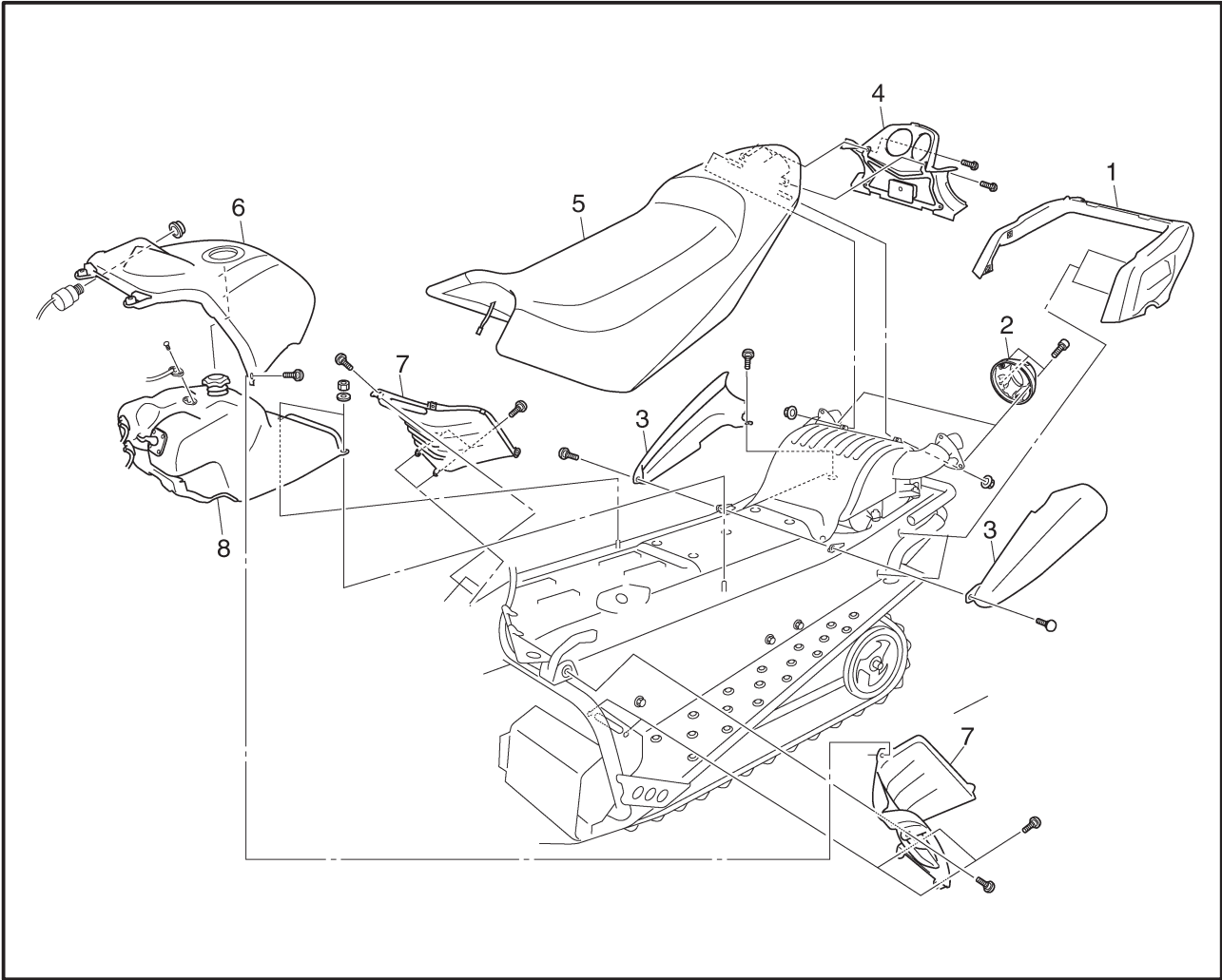
A RX10, RX10S, RX10R, RX10RS

B RX10M, RX10MS



ENGINE

SEAT AND FUEL TANK

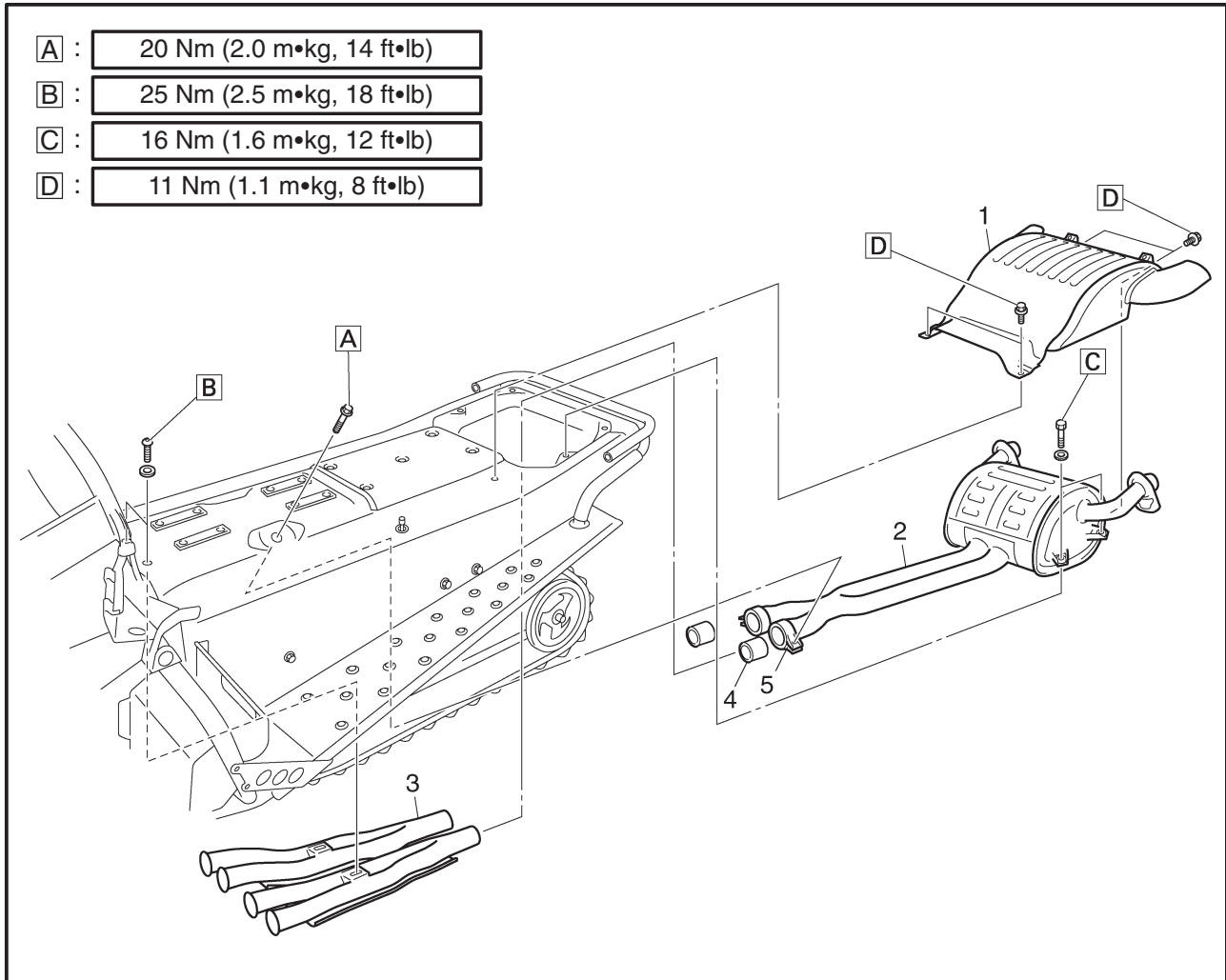


5

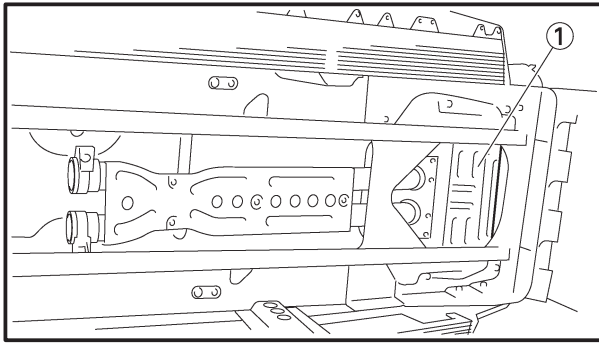
Order	Job name/Part name	Q'ty	Remarks
	Seat and fuel tank removal		
1	Rear cover	1	Remove the parts in the order listed below.
2	Muffler end pipe	2	
3	Muffler side cover	2	
4	Tail/brake light cover	1	
5	Seat	1	
6	Fuel tank cover	1	
7	Side cover	2	
8	Fuel tank	1	
			For installation, reverse the removal procedure.



EXHAUST PIPE AND MUFFLER



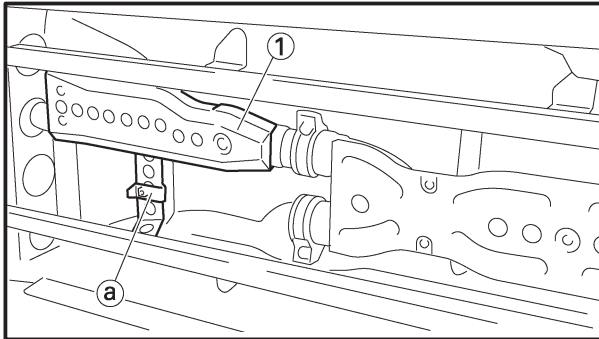
Order	Job name/Part name	Q'ty	Remarks
	Exhaust pipe and muffler removal		
	Slide rail suspension		Remove the parts in the order listed below. Refer to "SLIDE RAIL SUSPENSION" in CHAPTER 4.
	Front axle assembly		Refer to "FRONT AXLE AND TRACK" in CHAPTER 4.
	Track		Refer to "SEAT AND FUEL TANK".
	Seat and fuel tank		
1	Protector	1	
2	Muffler	1	
3	Exhaust pipe	2	
4	Gasket	2	
5	Band	2	
			For installation, reverse the removal procedure.



INSTALLATION

1. Install:

- Muffler ①

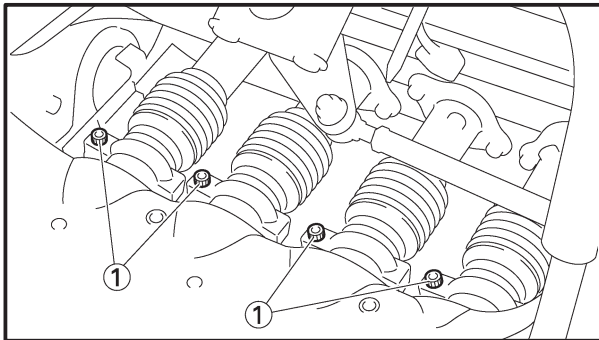


2. Install:

- Exhaust pipe ①

NOTE:

Hang the exhaust pipe to the frame (a).



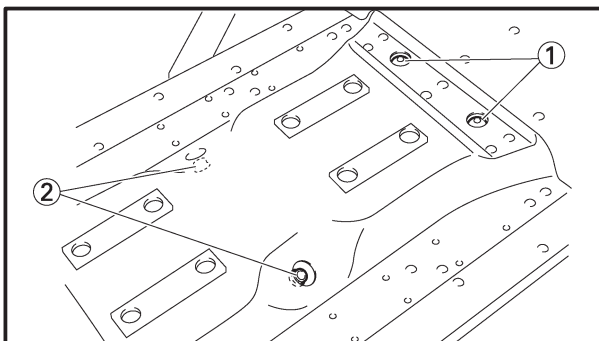
3. Tighten:

- Exhaust pipe bolts ①



Bolt (band):

9 Nm (0.9 m•kg, 7 ft•lb)



4. Tighten:

- Exhaust pipe bolts ①
- Muffler band bolts ②

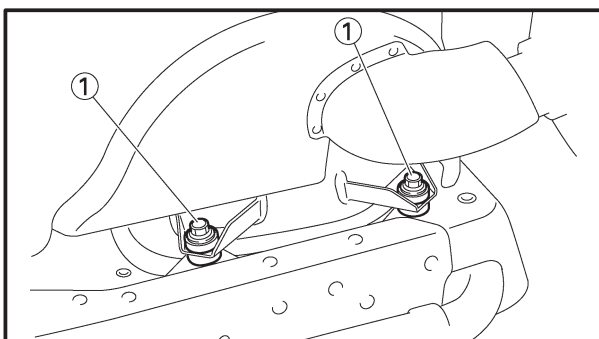


Bolt (exhaust pipe):

25 Nm (2.5 m•kg, 18 ft•lb)

Bolt (muffler band):

20 Nm (2.0 m•kg, 14 ft•lb)



5. Tighten:

- Muffler bolt ①

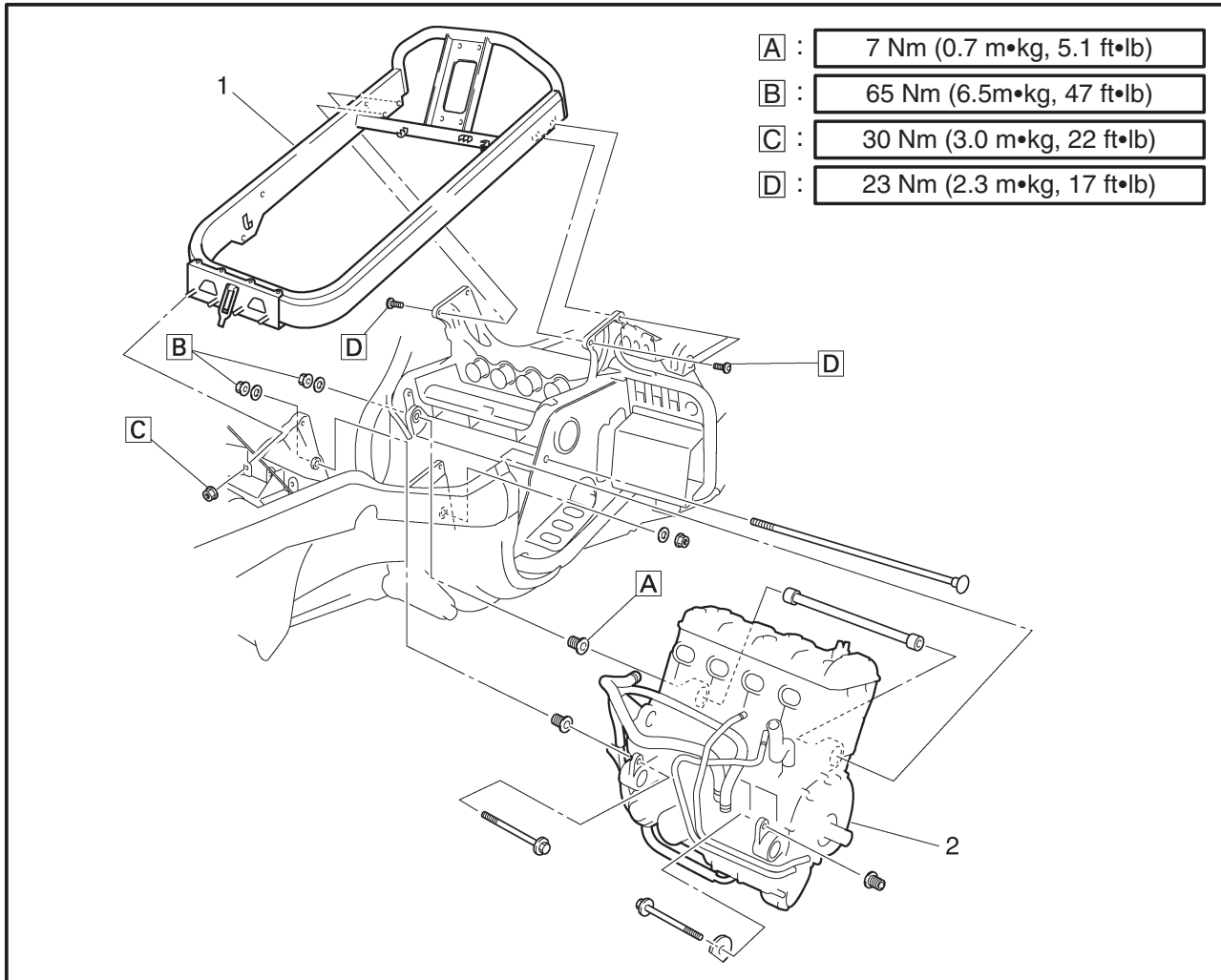


Bolt (muffler):

16 Nm (1.6 m•kg, 12 ft•lb)



ENGINE ASSEMBLY



Order	Job name/Part name	Q'ty	Remarks
	Engine assembly removal		Remove the parts in the order listed below.
	Intake silencer		Refer to "CARBURETORS" in CHAPTER 7.
	Fuel pump		Refer to "PRIMARY SHEAVE AND DRIVE V-BELT" in CHAPTER 4.
	Carburetor assembly		Drain.
	Primary sheave		Refer to "COOLING SYSTEM" in CHAPTER 2.
	Coolant		Refer to "SEAT AND FUEL TANK".
	Fuel tank		Refer to "STEERING" in CHAPTER 3.
	Relay rod		Refer to "A.C. MAGNETO AND STARTER CLUTCH".
	Oil tank		
1	Frame cross member	1	
2	Engine assembly	1	For installation, reverse the removal procedure.

**INSPECTION**

1. Inspect:

- Engine mounting adjust bolts
Cracks/damage → Replace.

INSTALLATION**NOTE:**

After installing all parts, refer to “CABLE ROUTING” in CHAPTER 9, to check the cable, lead and hose routing.

1. Install:

- Engine mounting adjust bolts
- Engine
- Engine mounting bolts and nuts

NOTE:

- Use the pivot shaft wrench to tighten the engine mounting adjust bolts.

Installation steps:

- Tighten the rear engine mounting adjust bolt.



Bolt (engine mounting adjust):
7 Nm (0.7 m•kg, 5.1 ft•lb)

- Tighten the rear engine mounting nut.



Nut (engine mounting):
65 Nm (6.5 m•kg, 47 ft•lb)

- Tighten the front right and left engine mounting adjust bolts until they come to contact with the engine damper. At this time, do not apply torque to the engine mounting adjust bolts.
- Tighten the front right and left engine mounting nuts.



Nut (engine mounting):
65 Nm (6.5 m•kg, 47 ft•lb)

2. Fill:

- Coolant
Refer to “COOLING SYSTEM” in CHAPTER 2.

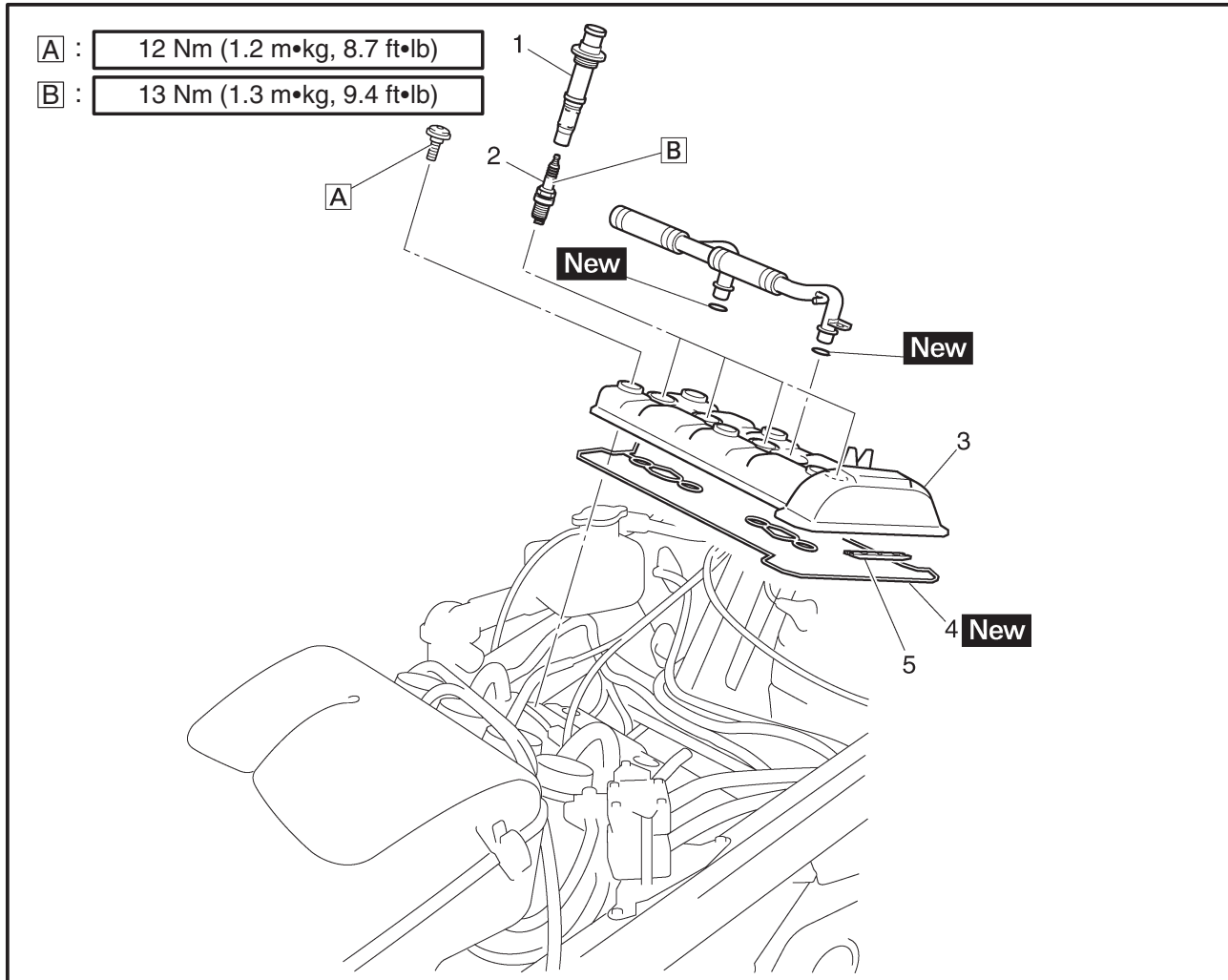
3. Fill:

- Engine oil
Refer to “ENGINE OIL REPLACEMENT” in CHAPTER 2.



CAMSHAFTS

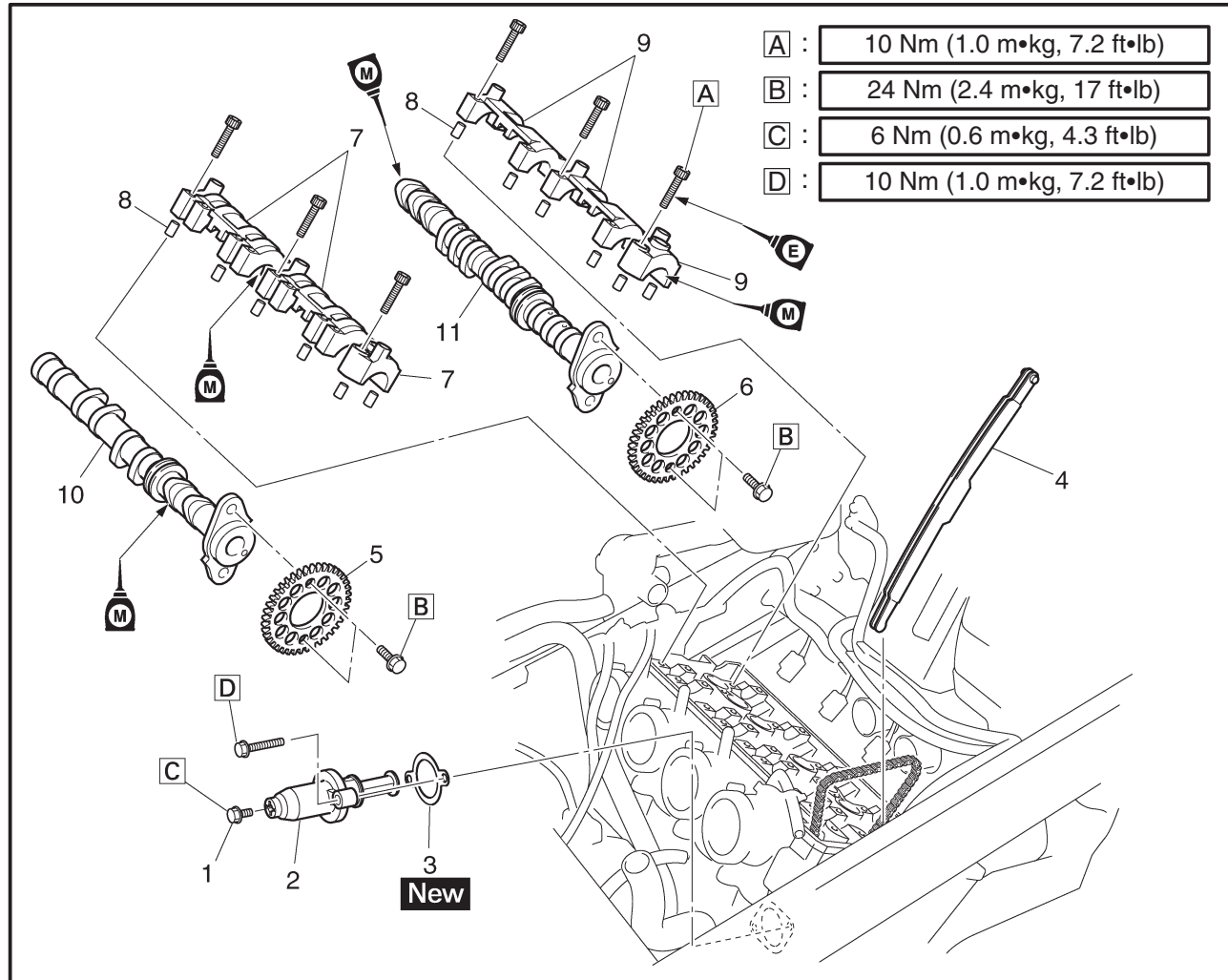
CYLINDER HEAD COVER



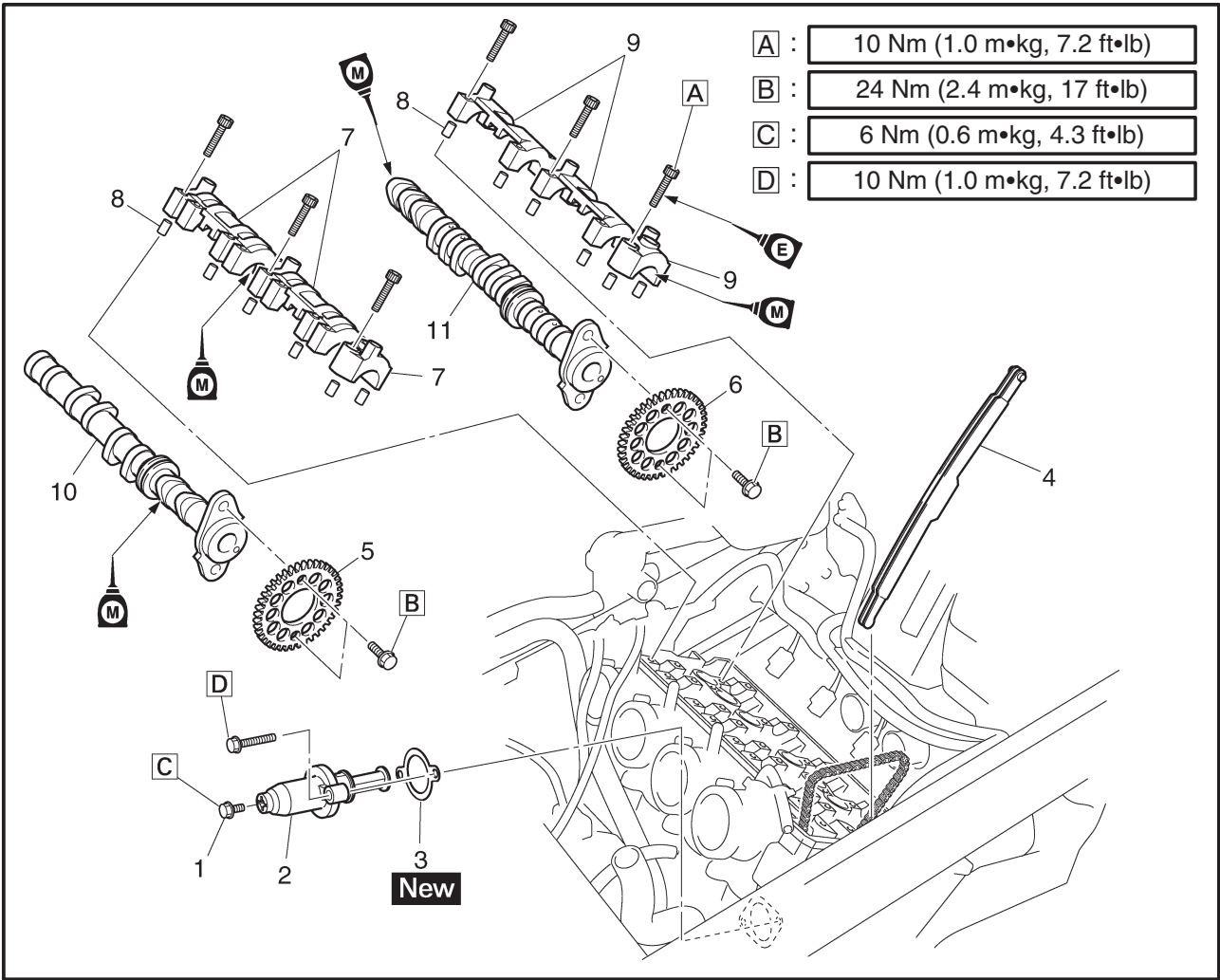
Order	Job name/Part name	Q'ty	Remarks
	Cylinder head cover removal		
	Coolant		Remove the parts in the order listed below.
	Coolant hose and pipe		Drain.
			Refer to "HEAT EXCHANGER" in CHAPTER 6.
1	Ignition coil	4	
2	Spark plug	4	
3	Cylinder head cover	1	
4	Cylinder head cover gasket	1	
5	Timing chain guide (top side)	1	
			For installation, reverse the removal procedure.



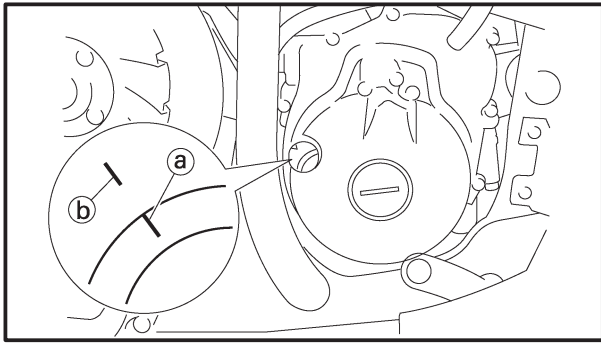
CAMSHAFTS



Order	Job name/Part name	Q'ty	Remarks
	Camshaft removal		
	Oil tank		Remove the parts in the order listed below. Refer to "A.C. MAGNETO AND STARTER CLUTCH".
1	Timing chain tensioner cap bolt	1	
2	Timing chain tensioner	1	
3	Timing chain tensioner gasket	1	
4	Timing chain guide (exhaust side)	1	
5	Intake camshaft sprocket	1	
6	Exhaust camshaft sprocket	1	NOTE: _____
7	Intake camshaft cap	3	During removal, the dowel pins may still be connected to the camshaft caps.
8	Dowel pin	12	
9	Exhaust camshaft cap	3	



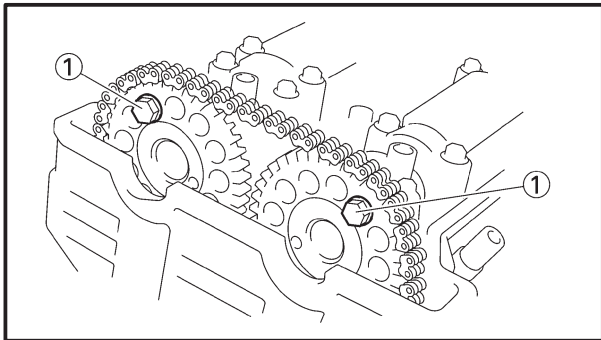
Order	Job name/Part name	Q'ty	Remarks
10	Intake camshaft	1	For installation, reverse the removal procedure.
11	Exhaust camshaft	1	

**REMOVAL**

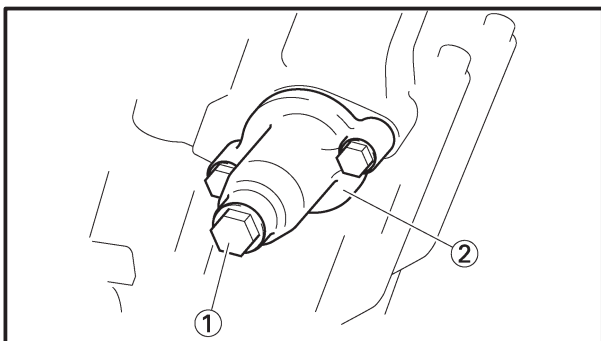
1. Remove:
 - Timing plug
2. Align:
 - "I" mark (a) on the A.C. magneto rotor (with the stationary pointer (b) on the A.C. magneto cover)

NOTE:

- Turn the crankshaft clockwise.
- When piston #4 is at TDC on the compression stroke, align the "I" mark (a) with the stationary pointer (b) on the A.C. magneto rotor.
- TDC on the compression stroke can be found when the camshaft lobes are turned away from each other.

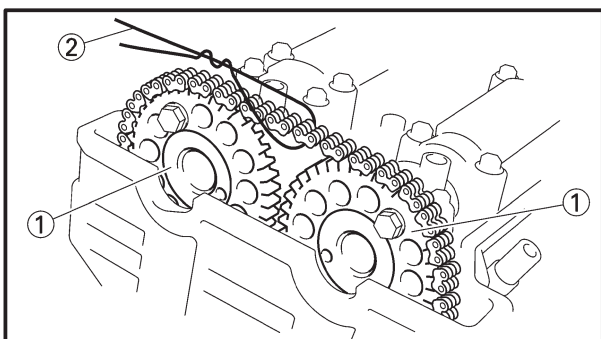


3. Loosen:
 - Camshaft sprocket bolts (1)



4. Loosen:
 - Timing chain tensioner cap bolt (1)

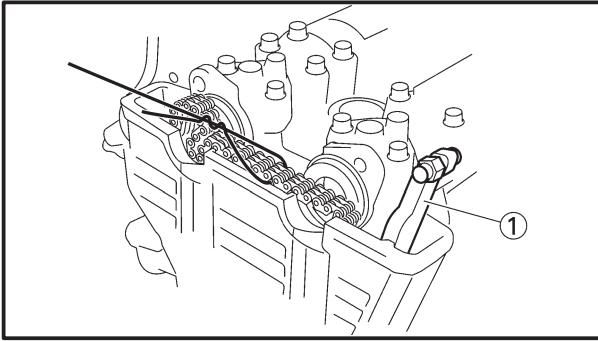
5. Remove:
 - Timing chain tensioner (2)
 - Gasket



6. Remove:
 - Camshaft sprockets (1)

NOTE:

To prevent the timing chain from falling into the crankcase, fasten it with a wire (2).

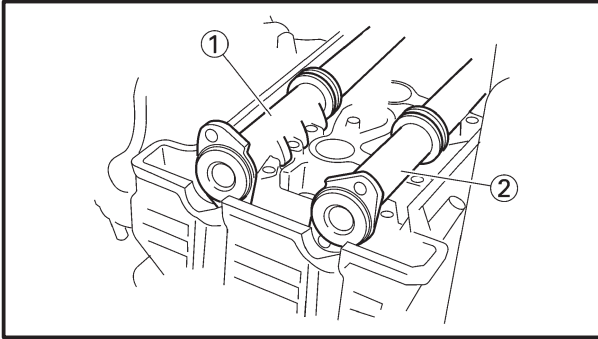


7. Remove:

- Timing chain guide (exhaust side) ①
- Camshaft caps
- Dowel pins

CAUTION:

To prevent damage to the cylinder head, camshafts or camshafts caps, loosen the camshaft cap bolts in stages and in a criss-cross pattern, working from the outside in.



8. Remove:

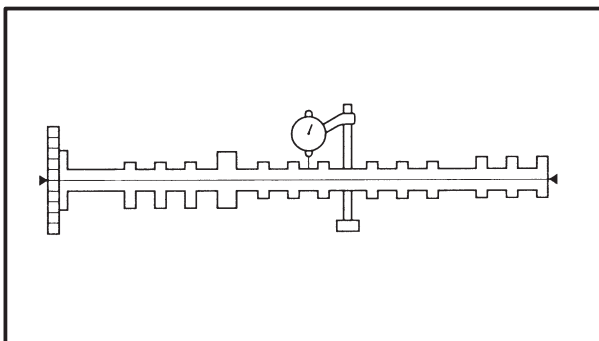
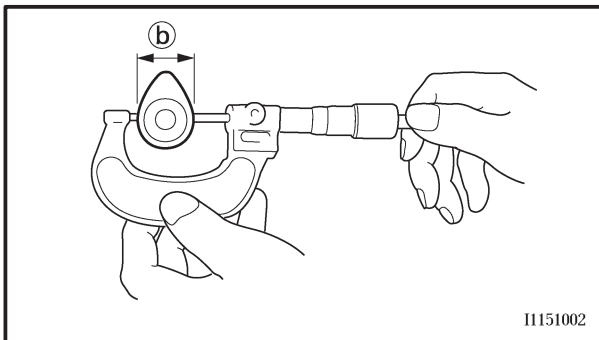
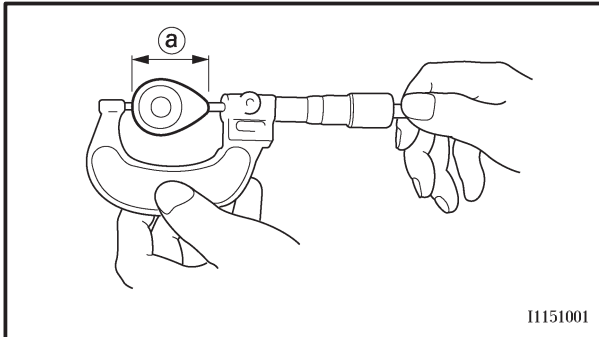
- Intake camshaft ①
- Exhaust camshaft ②



INSPECTION

1. Inspect:

- Camshaft lobes
Blue discoloration/pitting/scratches → Replace the camshaft.



2. Measure:

- Camshaft lobe dimensions (a) and (b)
Out of specification → Replace the camshaft.

**Camshaft dimensions:****Intake:**

<Limit>: (a) 32.40 mm (1.2756 in)
(b) 24.85 mm (0.9783 in)

Exhaust:

<Limit>: (a) 32.85 mm (1.2933 in)
(b) 24.85 mm (0.9783 in)

3. Measure:

- Camshaft runout
Out of specification → Replace.

**Camshaft runout:**

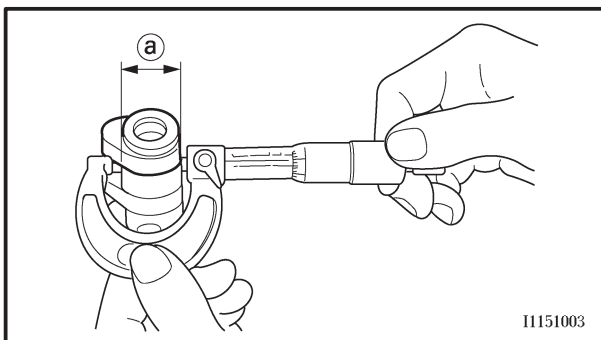
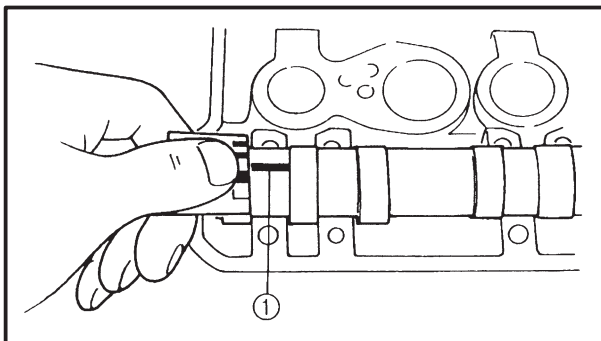
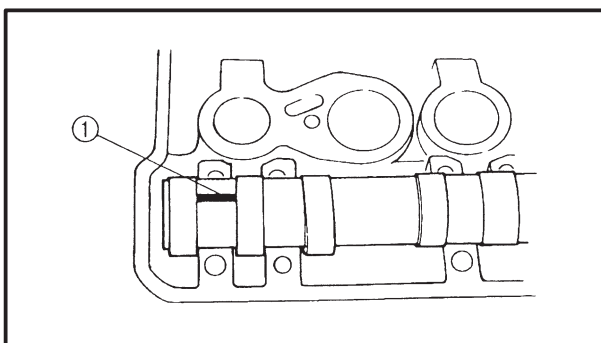
0.03 mm (0.0012 in)

4. Measure:

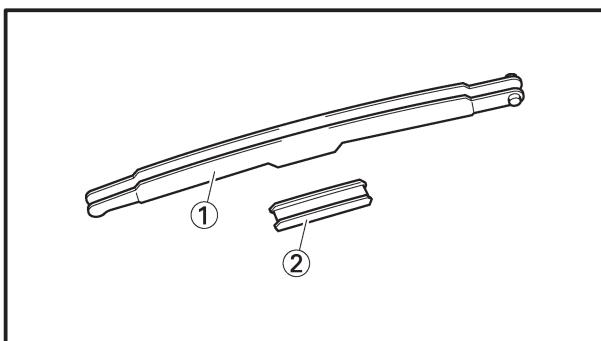
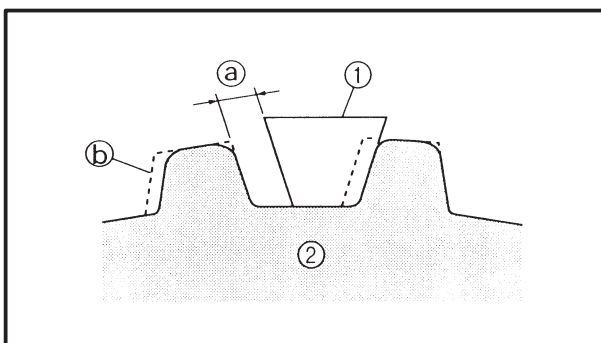
- Camshaft-journal-to-camshaft-cap clearance
Out of specification → Measure the camshaft journal diameter.

**Camshaft-journal-to-camshaft-cap clearance:**

0.028 ~ 0.062 mm
(0.0011 ~ 0.0024 in)



11151003

**Measurement steps:**

- Install the camshaft into the cylinder head (without the dowel pins and camshaft caps).
- Position a strip of Plastigauge® (1) onto the camshaft journal.
- Install the dowel pins and camshaft caps.

NOTE:

- Tighten the camshaft cap bolts in stages and in a crisscross pattern, working from the inner caps out.
- Do not turn the camshaft when measuring the camshaft journal-to-camshaft cap clearance with the Plastigauge®.



Bolt (camshaft cap):
10 Nm (1.0 m•kg, 7.2 ft•lb)

- Remove the camshaft caps and then measure the width of the Plastigauge® (1).

5. Measure:

- Camshaft journal diameter (a)
Out of specification → Replace the camshaft.
Within specification → Replace the cylinder head and the camshaft caps as a set.



Camshaft journal diameter:
24.459 ~ 24.472 mm
(0.9630 ~ 0.9635 in)

6. Inspect:

- Camshaft sprocket
More than 1/4 tooth (a) wear → Replace the camshaft sprockets and the timing chain as a set.

(a) 1/4 tooth

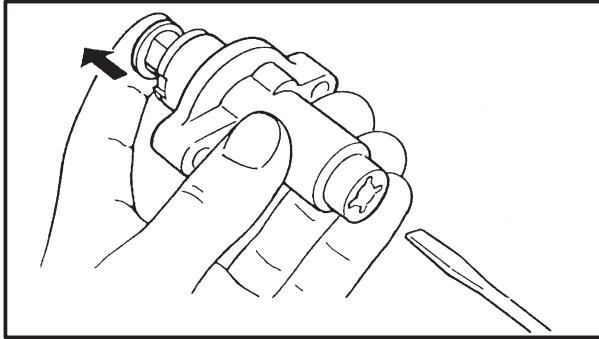
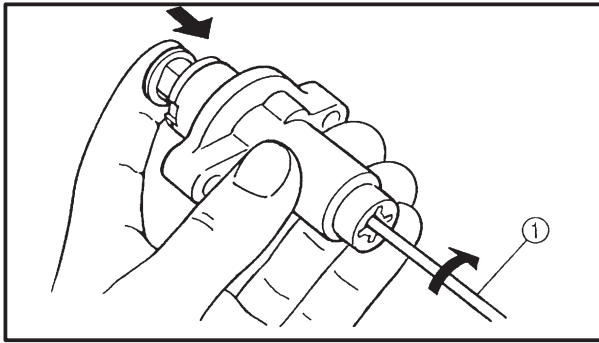
(b) Correct

(1) Timing chain roller

(2) Camshaft sprocket

7. Inspect:

- Timing chain guide (exhaust side (1) and top side (2))
Damage/wear → Replace the timing drain guide.



8. Inspect:

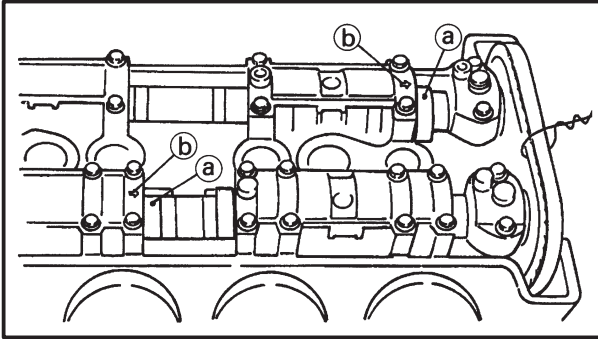
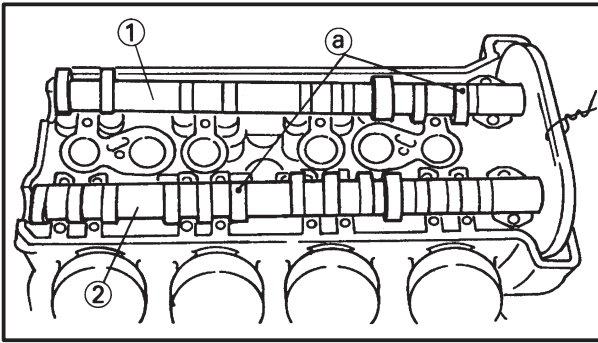
- Timing chain tensioner
Cracks/damage → Replace.

Inspection steps:

- While lightly pressing the timing chain tensioner rod by hand, turn the tensioner rod fully clockwise with a thin screwdriver ①.
- Remove the screwdriver and slowly release the timing chain tensioner rod.
- Make sure that the timing chain tensioner rod comes out of the timing chain tensioner housing smoothly. If there is rough movement, replace the timing chain tensioner.

9. Inspect:

- All parts
Damage/wear → Replace the defective part (-s).

**INSTALLATION**

1. Install:

- Exhaust camshaft ①
- Intake camshaft ②

NOTE:

Install the camshafts with the punch mark (a) facing up.

2. Install:

- Dowel pins
- Intake camshaft caps
- Exhaust camshaft caps

NOTE:

Make sure that the punch marks (a) on the camshafts are aligned with the arrow marks (b) on the camshaft caps.

Out of alignment → Reinstall.

3. Install:

- Camshaft cap bolts

**Bolt (camshaft cap):**

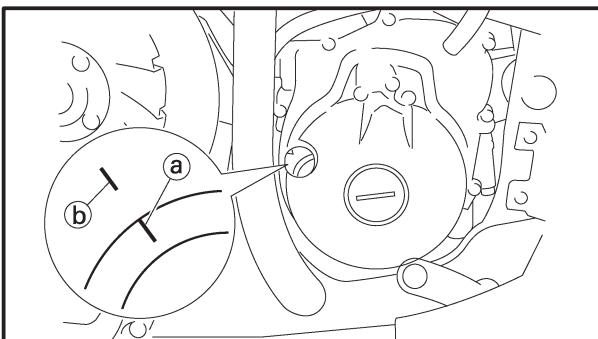
10 Nm (1.0 m•kg, 7.2 ft•lb)

NOTE:

Tighten the camshaft cap bolts in stages and in a crisscross pattern, working from the inner caps out.

CAUTION:

The camshaft cap bolts must be tightened evenly or damage to the cylinder head, camshaft caps, and camshafts will result.



4. Install:

- Intake camshaft sprocket
- Exhaust camshaft sprocket

Installation steps:

- Turn the crankshaft clockwise
- When piston #4 is at TDC on the compression stroke, align the "I" mark (a) with the stationary pointer (b) on the A.C. magneto rotor.



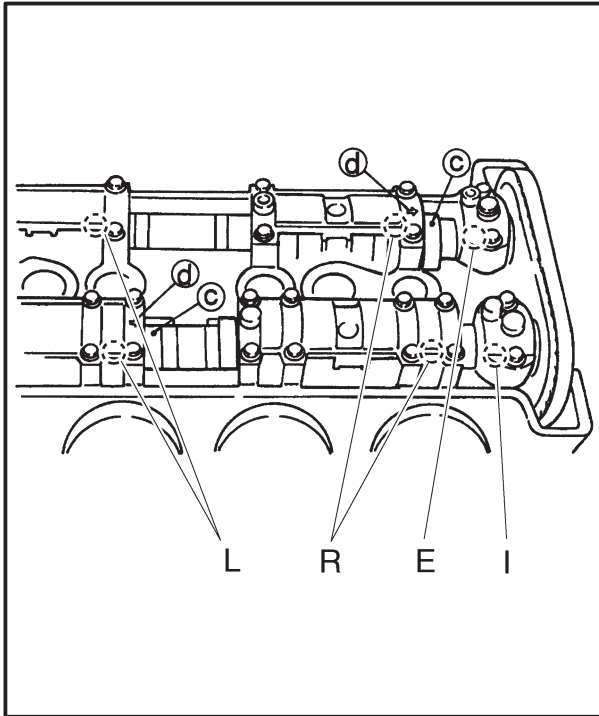
- Place the timing chain onto both camshaft sprockets and then install the camshaft sprockets onto the camshafts.

NOTE:

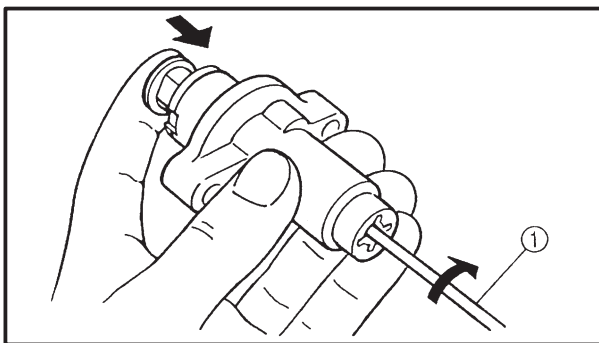
When installing the camshaft sprockets, start with the exhaust camshaft and be sure to keep the timing chain as tight as possible on the exhaust side.

CAUTION:

Do not turn the crankshaft when installing the camshaft to avoid damage or improper valve timing.



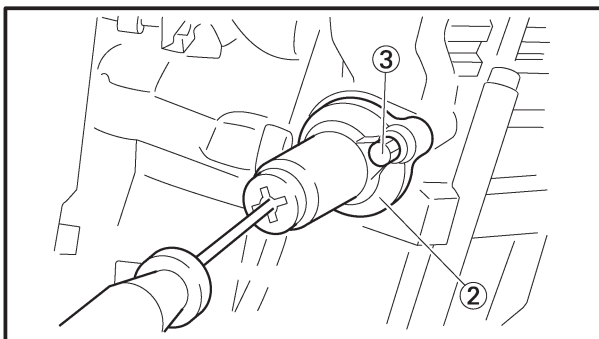
- Turn both camshafts opposite each other so that the punch marks (C) in the camshaft are aligned with the arrow marks (d) in the camshaft caps as shown.
- While holding the camshafts, temporarily tighten the camshaft sprocket bolts.



5. Install:
- Timing chain tensioner

Installation steps:

- While lightly pressing the timing chain tensioner rod by hand, turn the tensioner rod fully clockwise with a thin screwdriver (1).



- With the timing chain tensioner rod turned all the way into the timing chain tensioner housing (with the thin screwdriver still installed), install the gasket and the timing chain tensioner (2) onto the cylinder block.

⚠ WARNING

Always use a new gasket.



- Tighten the timing chain tensioner bolts ③ to the specified torque.



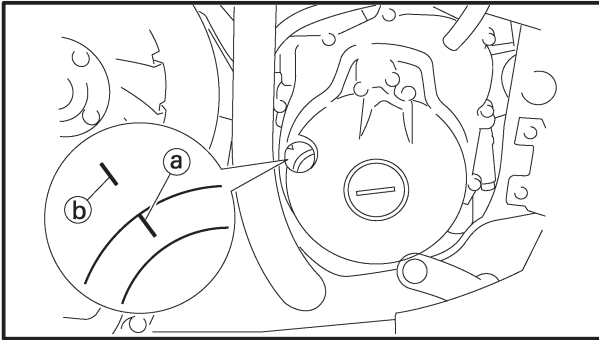
Bolt (timing chain tensioner):
10 Nm (1.0 m•kg, 7.2 ft•lb)

- Remove the screwdriver, make sure that the timing chain tensioner rod releases, and then tighten the cap bolt to the specified torque.



Bolt (cap):
6 Nm (0.6 m•kg, 4.3 ft•lb)

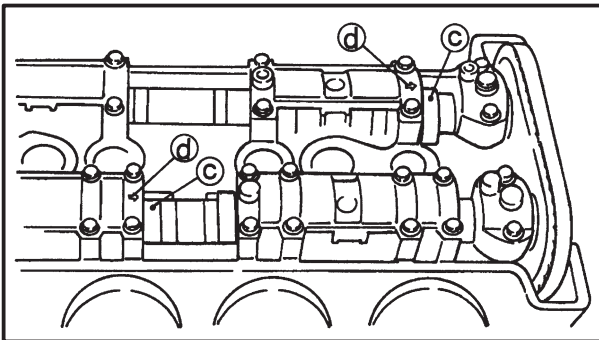
- Turn the crankshaft (several turns clockwise)



6. Inspect:

Inspection steps:

- “I” mark ①
Make sure that the “I” mark on the A.C. magneto rotor is aligned with the stationery pointer ② on the A.C. magneto rotor cover.



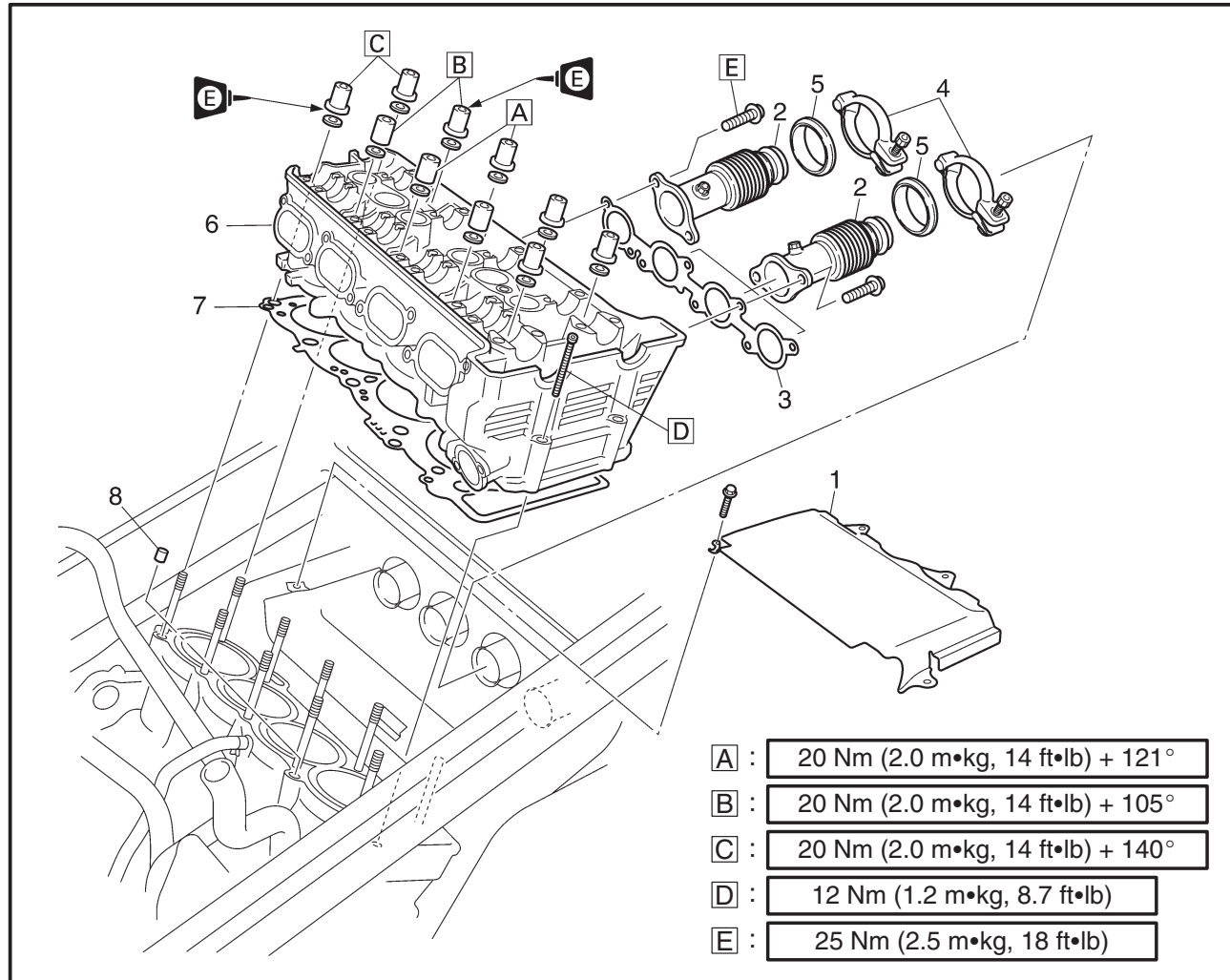
- Camshaft punch marks ③
Make sure that the punch marks ③ on the camshaft are aligned with the arrow mark ④ on the camshaft caps.
Out of alignment → Adjust.
Refer to the installation steps above.

7. Measure:

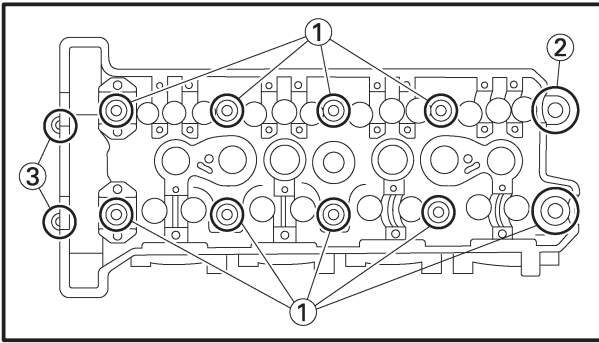
- Valve clearance
Out of specification → Adjust.



CYLINDER HEAD



Order	Job name/Part name	Q'ty	Remarks
	Cylinder head removal		
	Seat and fuel tank		Remove the parts in the order listed below.
	Intake and exhaust camshafts		Refer to "SEAT AND FUEL TANK".
1	Cover	1	Refer to "CAMSHAFTS".
2	Exhaust joint pipe	4	
3	Exhaust joint pipe gasket	1	
4	Band	4	
5	Gasket	4	
6	Cylinder head	1	
7	Cylinder head gasket	1	
8	Dowel pin	2	
			For installation, reverse the removal procedure.

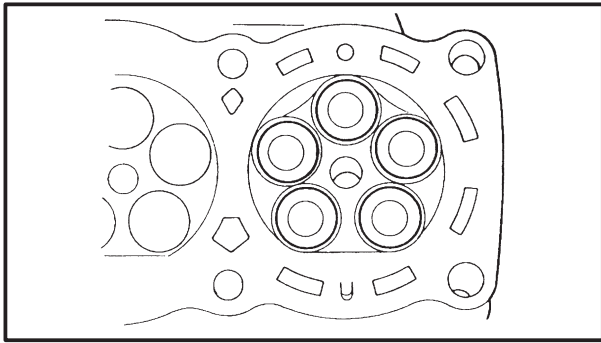
**REMOVAL**

1. Remove:

- Cylinder head nuts ①
- Cylinder head cap nut ②
- Cylinder head bolts ③

NOTE:

- Loosen the nuts in the proper sequence as shown.
- Loosen each nut 1/2 of a turn at a time. After all of the nuts are fully loosened, remove them.

**INSPECTION**

1. Eliminate:

- Carbon deposits
(from the combustion chambers)
Use the rounded scraper.

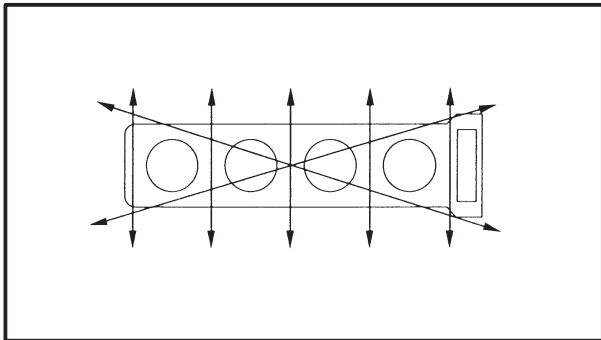
NOTE:

Do not use a sharp instrument to avoid damaging or scratching:

- Spark plug threads
- Valve seats

2. Inspect:

- Cylinder head
Damage/scratches → Replace.
- Cylinder head water jacket
Mineral deposits/rust → Eliminate.

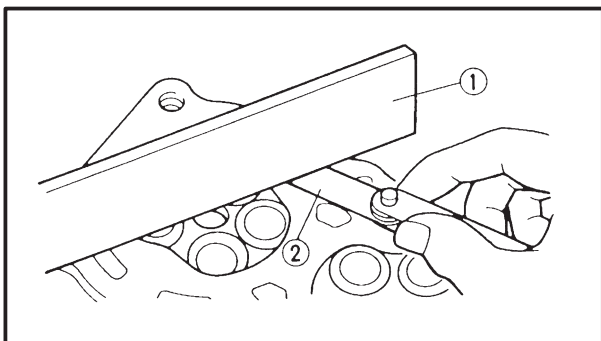


3. Measure:

- Cylinder head warpage
Out of specification → Resurface the cylinder head.



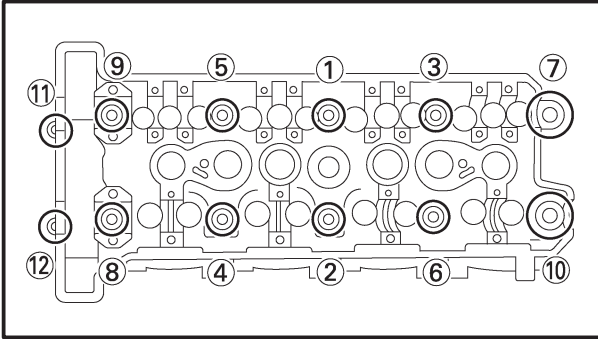
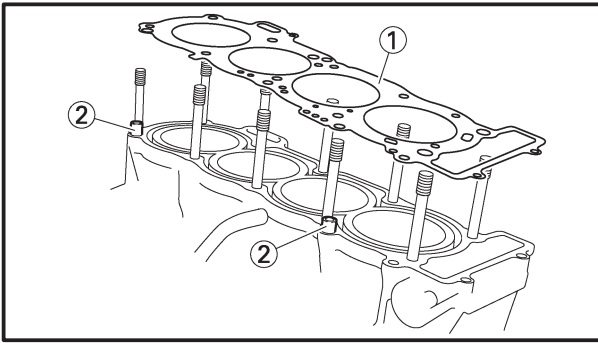
Warpage limit:
0.1 mm (0.004 in)

**Measurement steps:**

- Place a straightedge ① and a thickness gauge ② across the cylinder head.
- Measure the warpage.
- If the limit is exceeded, resurface the cylinder head as follows.
- Place a 400 ~ 600 grit wet sandpaper on the surface plate and resurface the cylinder head using a figure-eight sanding pattern.

NOTE:

To ensure an even surface, rotate the cylinder head several times.

**INSTALLATION****1. Install:**

- Gasket (cylinder head) **New** ①
- Dowel pins ②
- Cylinder head

NOTE:

Pass the timing chain through the timing chain cavity.

2. Tighten:

- Cylinder head nuts ① ~ ⑩
- Cylinder head bolts ⑪, ⑫

NOTE:

- First, tighten the nuts ① ~ ⑩ to approximately 20 Nm (2.0 m•kg, 15 ft•lb) with a torque wrench.
- Retighten the nuts to specification torque.

Tightening steps:

- Tighten the nuts ①, ②

**Nut (cylinder head):**

1st 20 Nm (2.0 m•kg, 14 ft•lb)
2nd 121°

- Tighten the nuts ③ ~ ⑥, ⑧, ⑨

**Nut (cylinder head):**

1st 20 Nm (2.0 m•kg, 14 ft•lb)
2nd 105°

- Tighten the nuts ⑦, ⑩

**Nut (cylinder head):**

1st 20 Nm (2.0 m•kg, 14 ft•lb)
2nd 140°

- Cylinder head bolts ⑪, ⑫

**Bolt (cylinder head):**

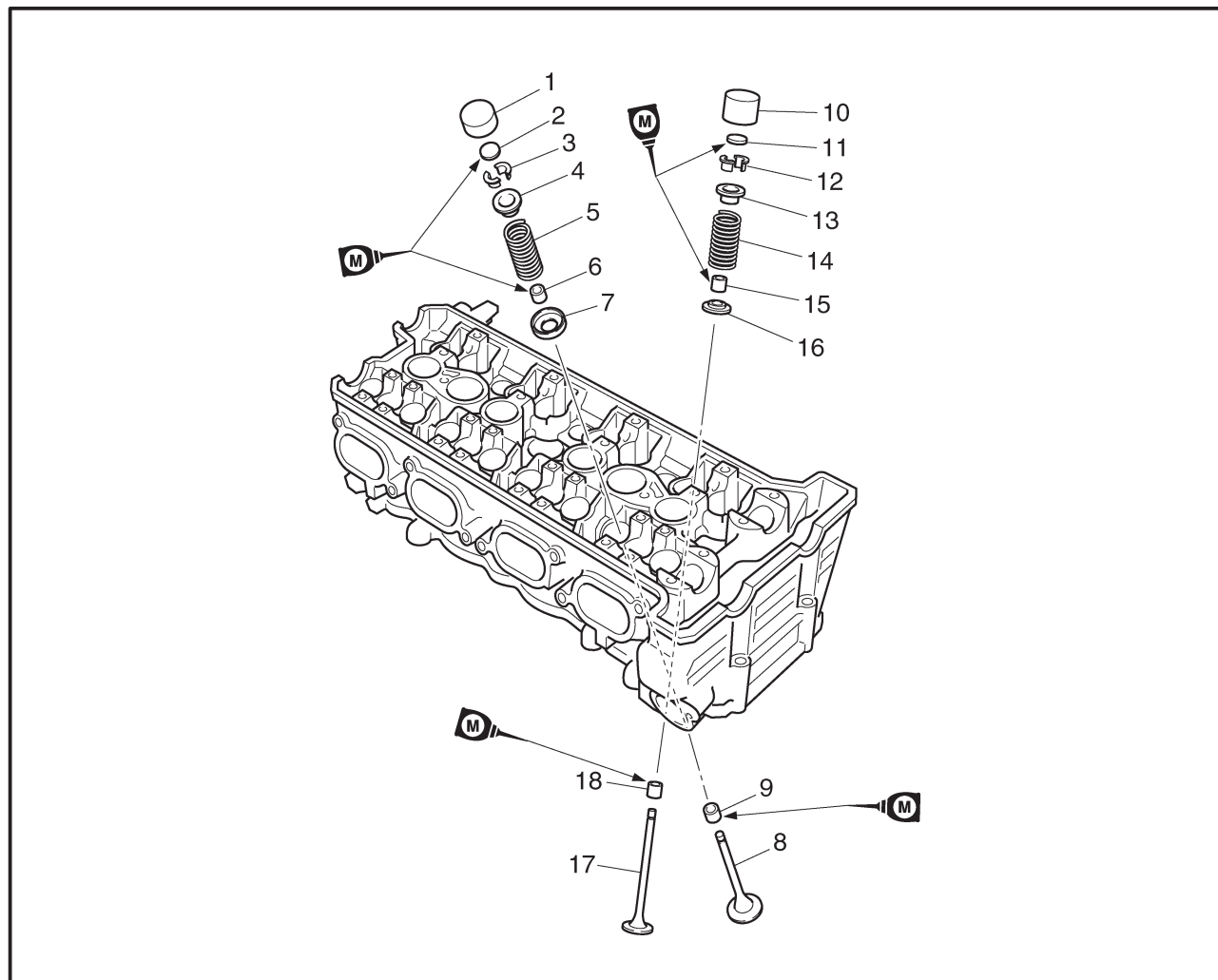
12 Nm (1.2 m•kg, 8.7 ft•lb)

NOTE:

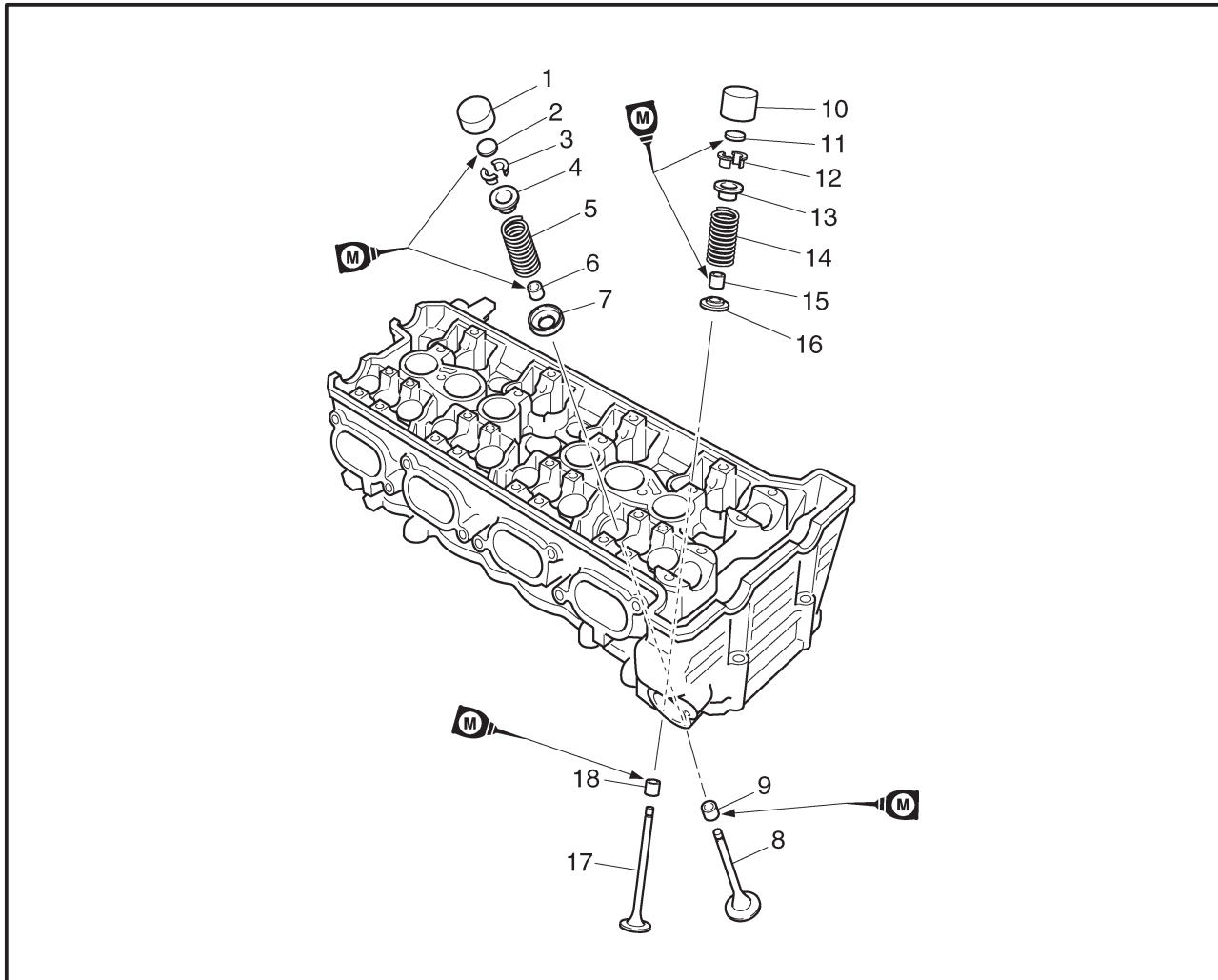
- Apply engine oil onto the threads of the cylinder head nuts.
- Tighten the cylinder head nuts in the proper tightening sequence as shown and torque them in two stages.



VALVES AND VALVE SPRINGS



Order	Job name/Part name	Q'ty	Remarks
	Valves and valve springs removal		
	Cylinder head		Remove the parts in the order listed below. Refer to "CYLINDER HEAD".
1	Intake valve lifter	12	
2	Intake valve pad	12	
3	Intake valve cotter	24	
4	Intake valve retainer	12	
5	Intake valve spring	12	
6	Intake valve stem seal	12	
7	Intake valve spring seat	12	
8	Intake valve	12	
9	Intake valve guide	12	
10	Exhaust valve lifter	8	
11	Exhaust valve pad	8	
12	Exhaust valve cotter	16	
13	Exhaust valve retainer	8	



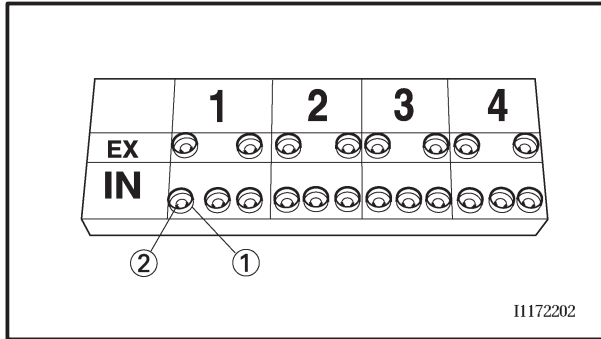
Order	Job name/Part name	Q'ty	Remarks
14	Exhaust valve spring	8	For installation, reverse the removal procedure.
15	Exhaust valve stem seal	8	
16	Exhaust valve spring seat	8	
17	Exhaust valve	8	
18	Exhaust valve guide	8	



REMOVAL

NOTE:

Before removing the internal parts of the cylinder head (e.g., valves, valve springs, valve seats), make sure that the valves properly seal.

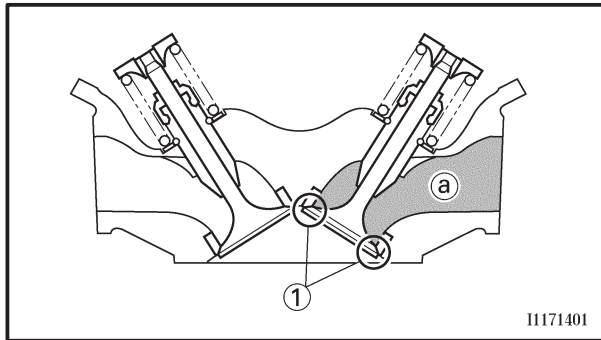


1. Remove:

- Valve lifter ①
- Valve pad ②

NOTE:

Make a note of the position of each valve lifter and valve pad so that they can be reinstalled in their original place.



2. Inspect:

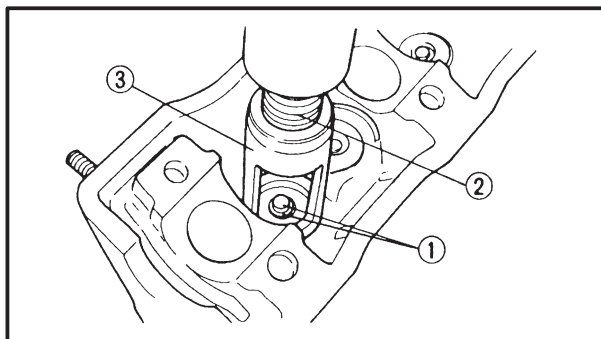
- Valve sealing
Leakage at the valve seat → Inspect the valve face, valve seat, and valve seat width.

Inspection steps:

- Pour a clean solvent ① into the intake and exhaust ports.
- Check that the valves properly seal.

NOTE:

There should be no leakage at the valve seat ①.



3. Remove:

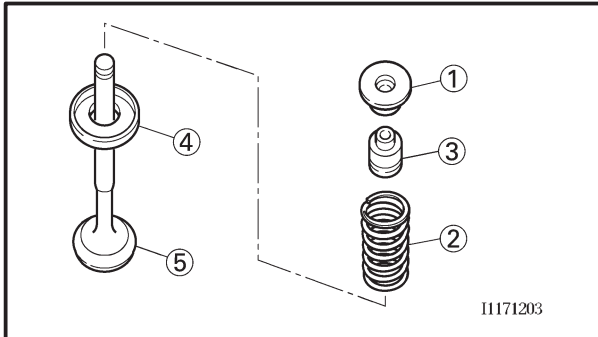
- Valve cotters ①

NOTE:

Remove the valve cotters by compressing the valve spring with the valve spring compressor ② and attachment ③.



Valve spring compressor
90890-04019, YM-04019
Valve spring compressor attachment
Intake valve
90890-04114, YM-4114
Exhaust valve
90890-04108, YM-4108

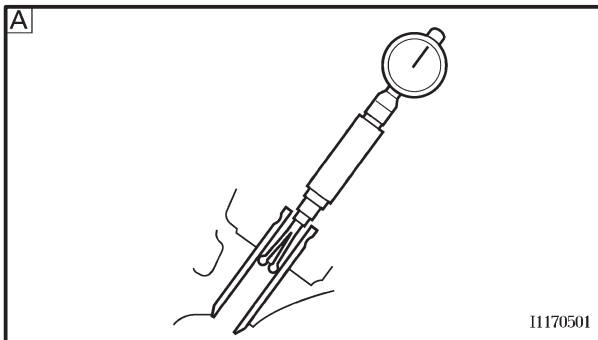


4. Remove:

- Valve retainer ①
- Valve spring ②
- Stem seal ③
- Valve spring seat ④
- Valve ⑤

NOTE:

Identify the position of each part very carefully so that it can be reinstalled in its original place.



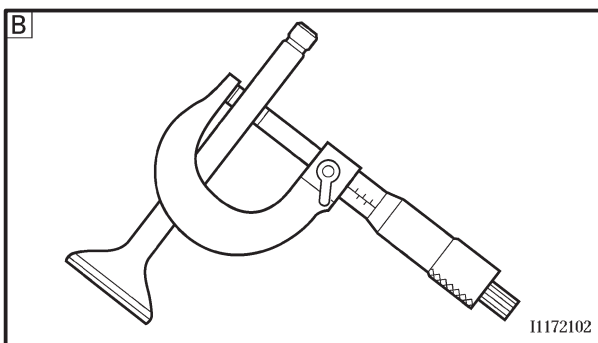
INSPECTION

1. Measure:

- Valve-stem-to-valve-guide clearance

Valve-stem-to-valve-guide clearance =
Valve guide inside diameter [A] –
Valve stem diameter [B]

Out of specification → Replace the valve guide.



Valve-stem-to-valve-guide clearance:

Intake

0.010 ~ 0.037 mm
(0.0004 ~ 0.0015 in)

Exhaust

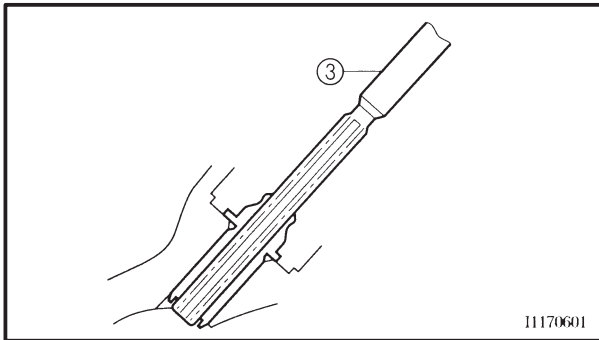
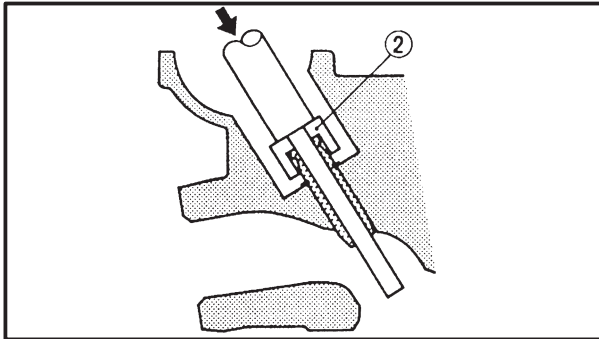
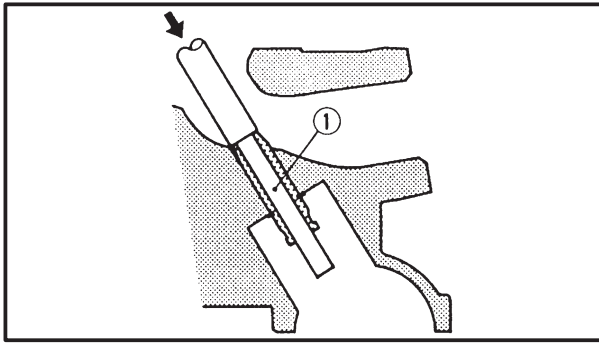
0.025 ~ 0.052 mm
(0.0010 ~ 0.0020 in)

2. Replace:

- Valve guide

NOTE:

To ease valve guide removal and installation, and to maintain the correct fit, heat the cylinder head to 100 °C in an oven.



Replacement steps:

- Remove the valve guide with a valve guide remover ①.
- Install the new valve guide with a valve guide installer ② and valve guide remover ①.
- After installing the valve guide, bore the valve guide with a valve guide reamer ③ to obtain the proper valve-stem-valve-guide clearance.

NOTE:

After replacing the valve guide, reface the valve seat.



Valve guide remover:

Intake (ø4)

90890-04111, YM-04111

Exhaust (ø4.5)

90890-04116, YM-04116

Valve guide installer:

Intake (ø4)

90890-04112, YM-04112

Exhaust (ø4.5)

90890-04117, YM-04117

Valve guide reamer:

Intake

90890-04113, YM-04113

Exhaust

90890-04118, YM-04118

3. Eliminate:

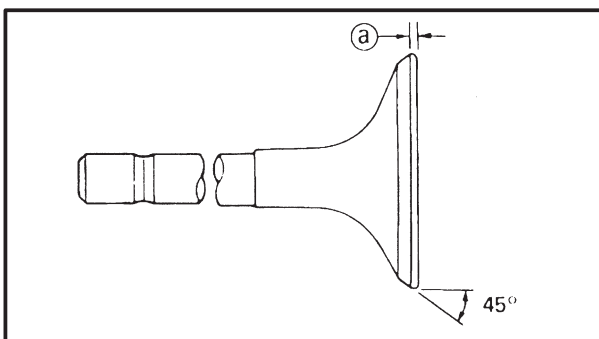
- Carbon deposits
(from the valve face and valve seat)

4. Inspect:

- Valve face
Pitting/wear → Grind the valve face.
- Valve stem end
Mushroom shape or diameter larger than the body of the valve stem → Replace the valve.

5. Measure:

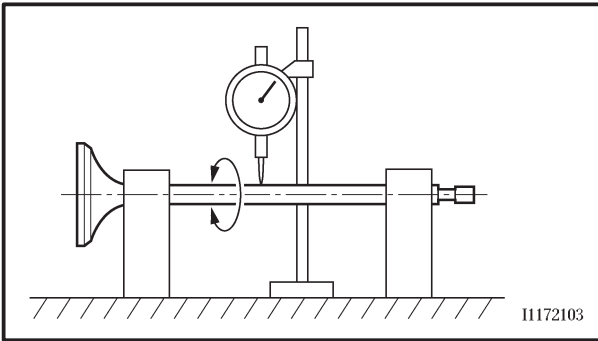
- Valve margin thickness (a)
Out of specification → Replace the valve.



Valve margin thickness:

0.5 ~ 0.9 mm

(0.020 ~ 0.035 in)



6. Measure:

- Valve stem runout
Out of specification → Replace the valve.

NOTE:

- When installing a new valve, always replace the valve guide.
- If the valve is removed or replaced, always replace the oil seal.



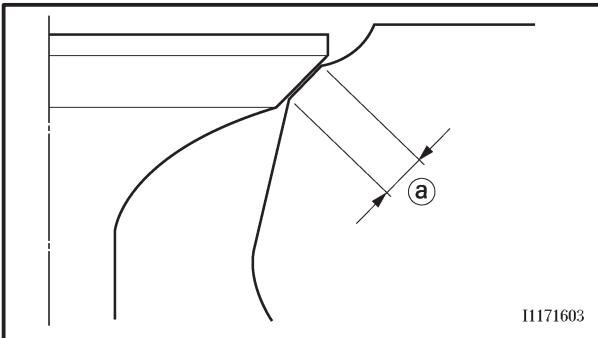
Valve stem runout:
0.01 mm (0.0004 in)

7. Eliminate:

- Carbon deposits
(from the valve face and valve seat)

8. Inspect:

- Valve seat
Pitting/wear → Replace the cylinder head.

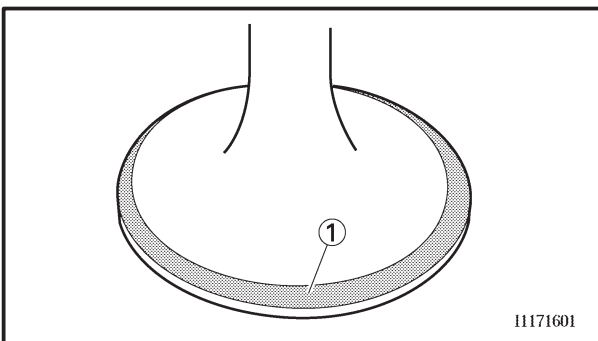


9. Measure:

- Valve seat width (a)
Out of specification → Replace the cylinder head.



Valve seat width:
Intake: 0.9 ~ 1.1 mm
(0.035 ~ 0.043 in)
Exhaust: 0.9 ~ 1.1 mm
(0.035 ~ 0.043 in)



Measurement steps:

- Apply Mechanic's blueing dye (Dykem) ① onto the valve face.
- Install the valve into the cylinder head.
- Press the valve through the valve guide and onto the valve seat to make a clear pattern.
- Measure the valve seat width.

NOTE:

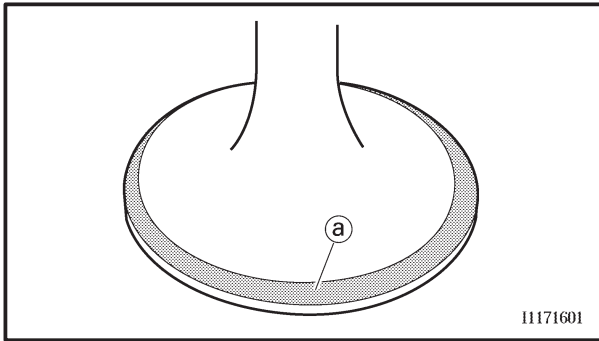
Where the valve seat and valve face contacted one another, the blueing will have been removed.

10. Lap:

- Valve face
- Valve seat

NOTE:

After replacing the cylinder head or replacing the valve and valve guide, the valve seat and valve face should be lapped.



Lapping steps:

- Apply a coarse lapping compound (a) to the valve face.

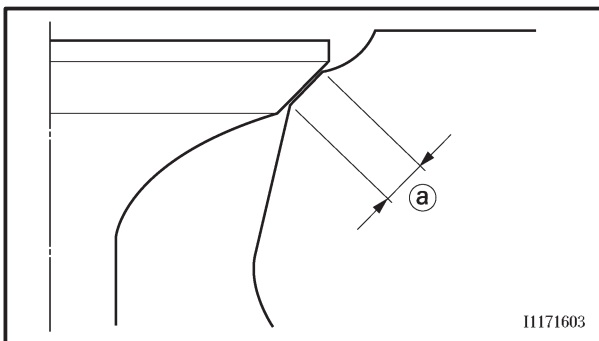
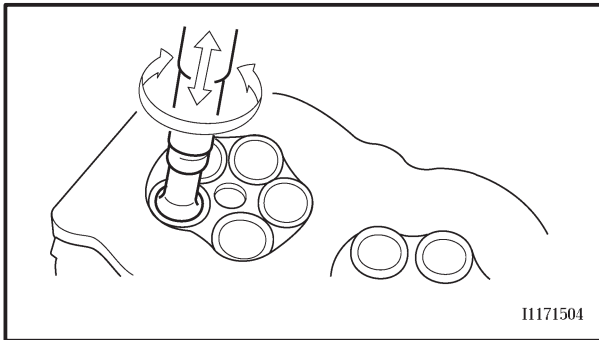
CAUTION:

Do not let the lapping compound enter the gap between the valve stem and the valve guide.

- Apply molybdenum disulfide oil onto the valve stem.
- Install the valve into the cylinder head.
- Turn the valve until the valve face and valve seat are evenly polished, then clean off all of the lapping compound.

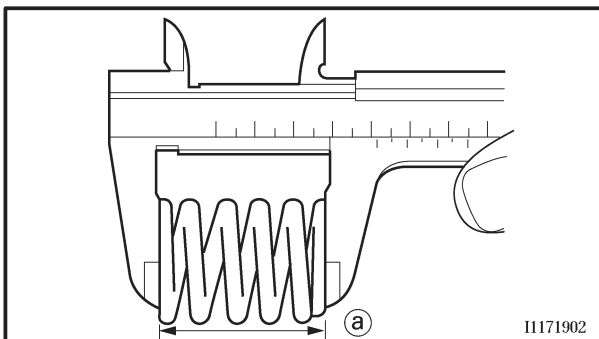
NOTE:

For the best lapping results, lightly tap the valve seat while rotating the valve back and forth between your hand.



- Apply a fine lapping compound to the valve face and repeat the above steps.
- After every lapping procedure, be sure to clean off all of the lapping compound from the valve face and valve seat.

- Apply Mechanic's blueing dye (Dykem) onto the valve face.
- Install the valve into the cylinder head.
- Press the valve through the valve guide and onto the valve seat to make a clear impression.
- Measure the valve seat width (a) again. If the valve seat width is out of specification, reface and lap the valve seat.



11. Measure:

- Valve spring free length (a)
Out of specification → Replace the valve spring.



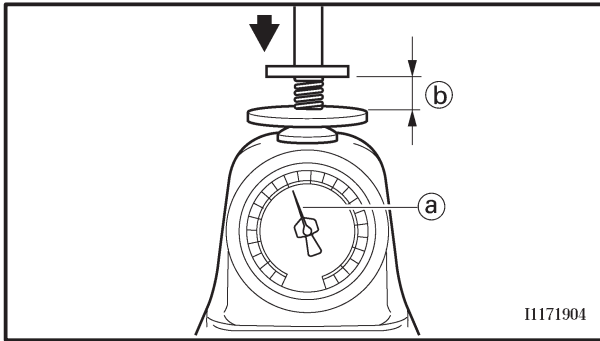
Free length (valve spring):

Intake

38.90 mm (1.53 in)

Exhaust

40.67 mm (1.60 in)



12. Measure:

- Compressed spring force (a)
Out of specification → Replace the valve spring.

(b) Installed length



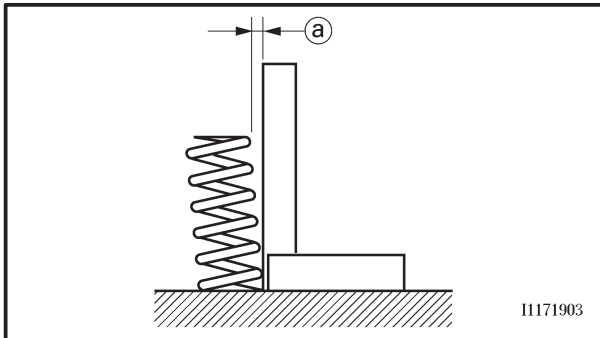
Compressed spring force:

Intake

82 ~ 96 N at 34.5 mm
(8.2 ~ 9.6 kg at 34.5 mm,
18.1 ~ 21.2 lb at 1.36 in)

Exhaust

110 ~ 126 N at 35.0 mm
(11.0 ~ 12.6 kg at 35.0 mm,
24.3 ~ 27.8 lb at 1.38 in)



13. Measure:

- Valve spring tilt (a)
Out of specification → Replace the valve spring.



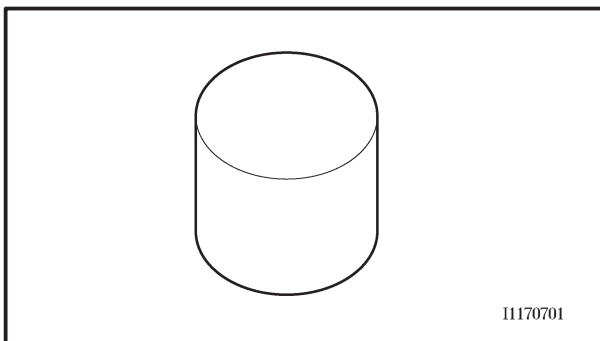
Spring tilt:

Intake

2.5° / 1.7 mm (0.067 in)

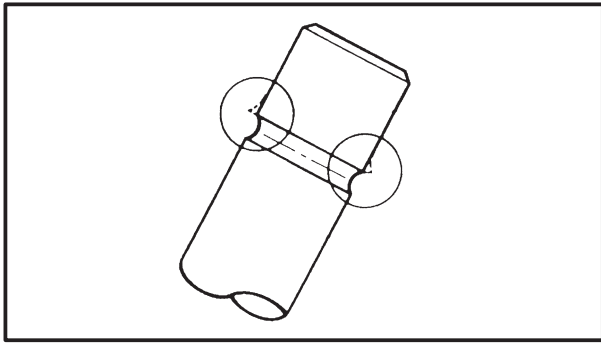
Exhaust

2.5° / 1.8 mm (0.071 in)



14. Inspect:

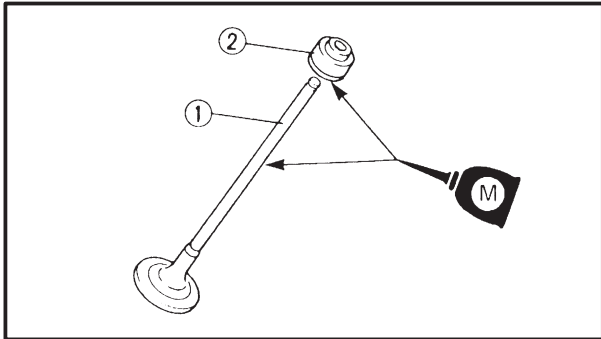
- Valve lifter
Damage/scratches → Replace the valve lifters and cylinder head.



INSTALLATION

1. Deburr:

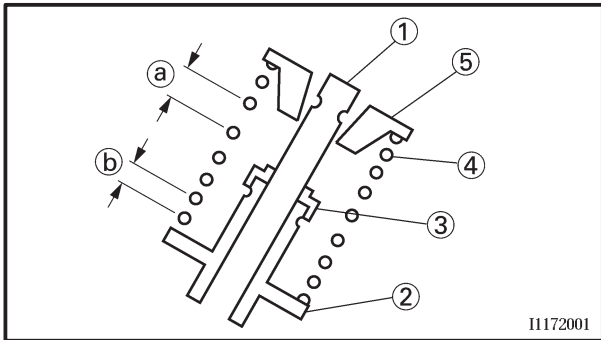
- Valve stem end
(with an oil stone)



2. Lubricate:

- Valve stem ①
- Valve stem seal ②
(with the recommended lubricant)

	Recommended lubricant Molybdenum disulfide oil
---	---



3. Install:

- Valve ①
- Lower spring seat ②
- Oil seal ③
- Valve spring ④
- Upper spring seat ⑤
(into the cylinder head)

NOTE:

Install the valve spring with the larger pitch (a) facing up.

Smaller pitch (b)

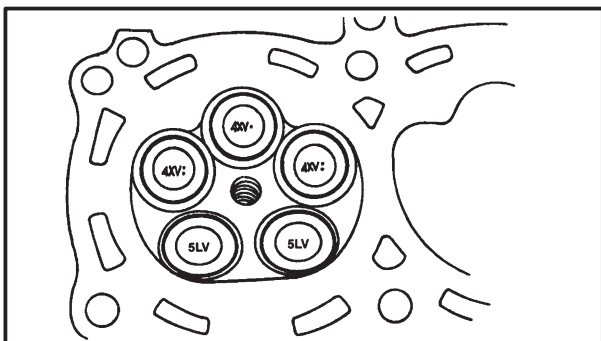
NOTE:

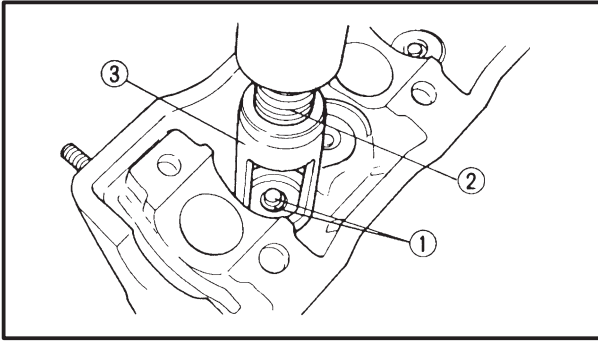
Make sure that each valve is installed in its original place. Refer to the following embossed marks.

Right and left intake valve(-s): "4XV:"

Middle intake valve(-s): "4XV."

Exhaust valve(-s): "5LV"





4. Install:
- Valve cotteners ①

NOTE:

Install the valve cotteners by compressing the valve spring with the valve spring compressor ② and attachment ③.



Valve spring compressor:

90890-04019, YM-04019

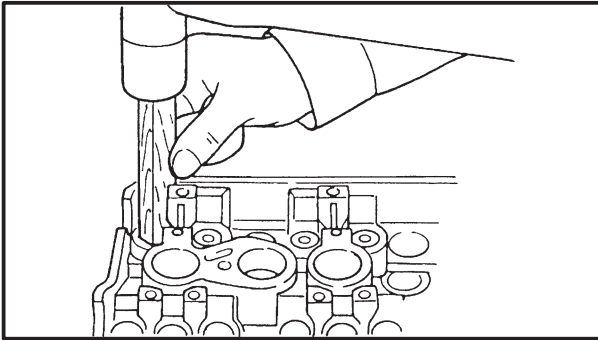
Attachment:

Intake valve

90890-04114, YM-4114

Exhaust valve

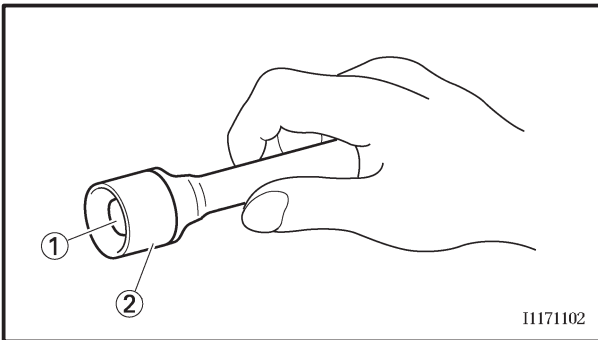
90890-04108, YM-4108



5. To secure the valve cotteners onto the valve stem, lightly tap the valve tip with a soft-face hammer.

CAUTION:

Hitting the valve tip with excessive force could damage the valve.



6. Install:
- Valve pad ①
 - Valve lifter ②

NOTE:

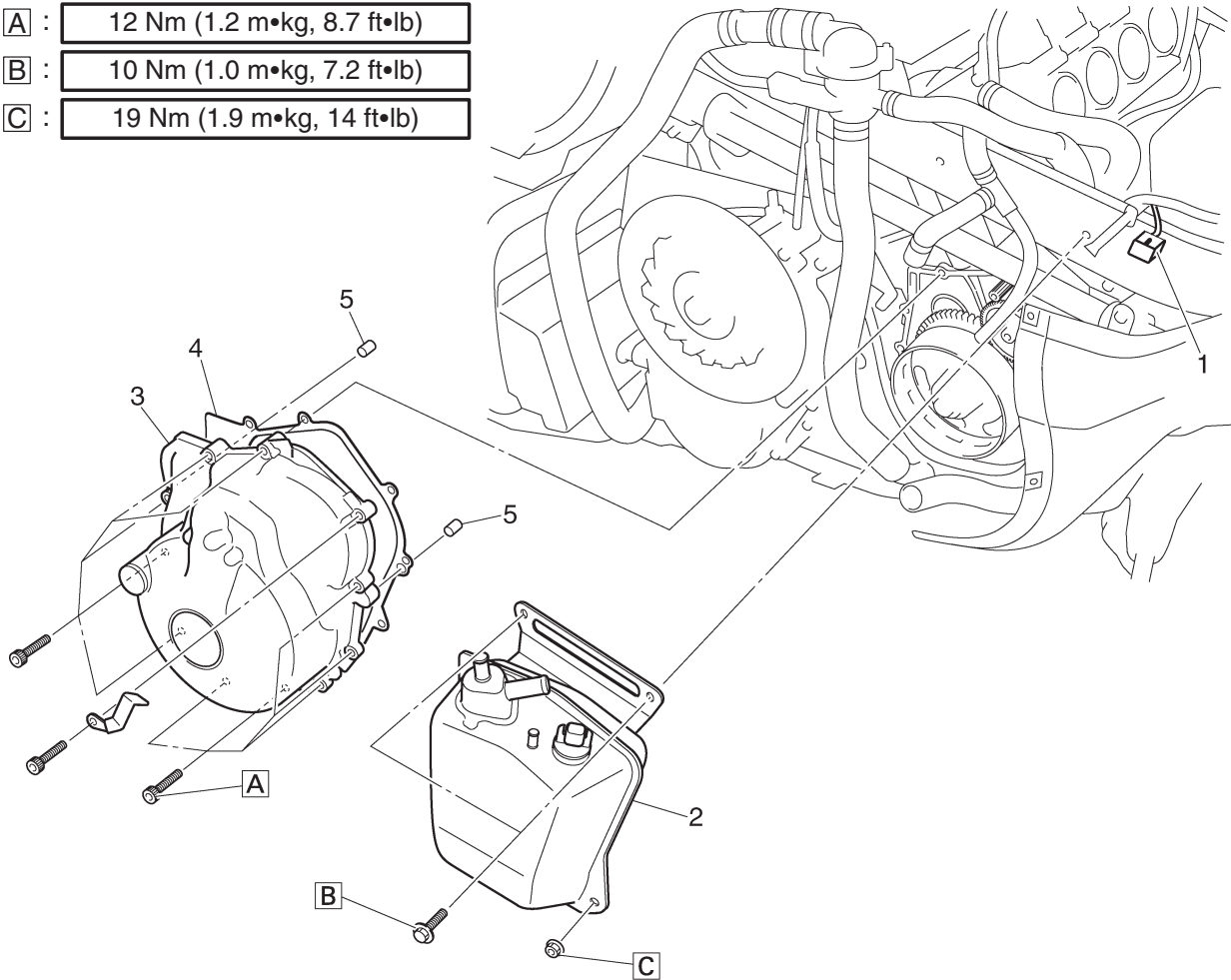
- Apply molybdenum disulfide oil onto the valve lifter and valve pad.
- The valve lifter must move smoothly when rotated with a finger.
- Each valve lifter and valve pad must be reinstalled in its original position.



A.C. MAGNETO AND STARTER CLUTCH

A.C. MAGNETO ROTOR COVER

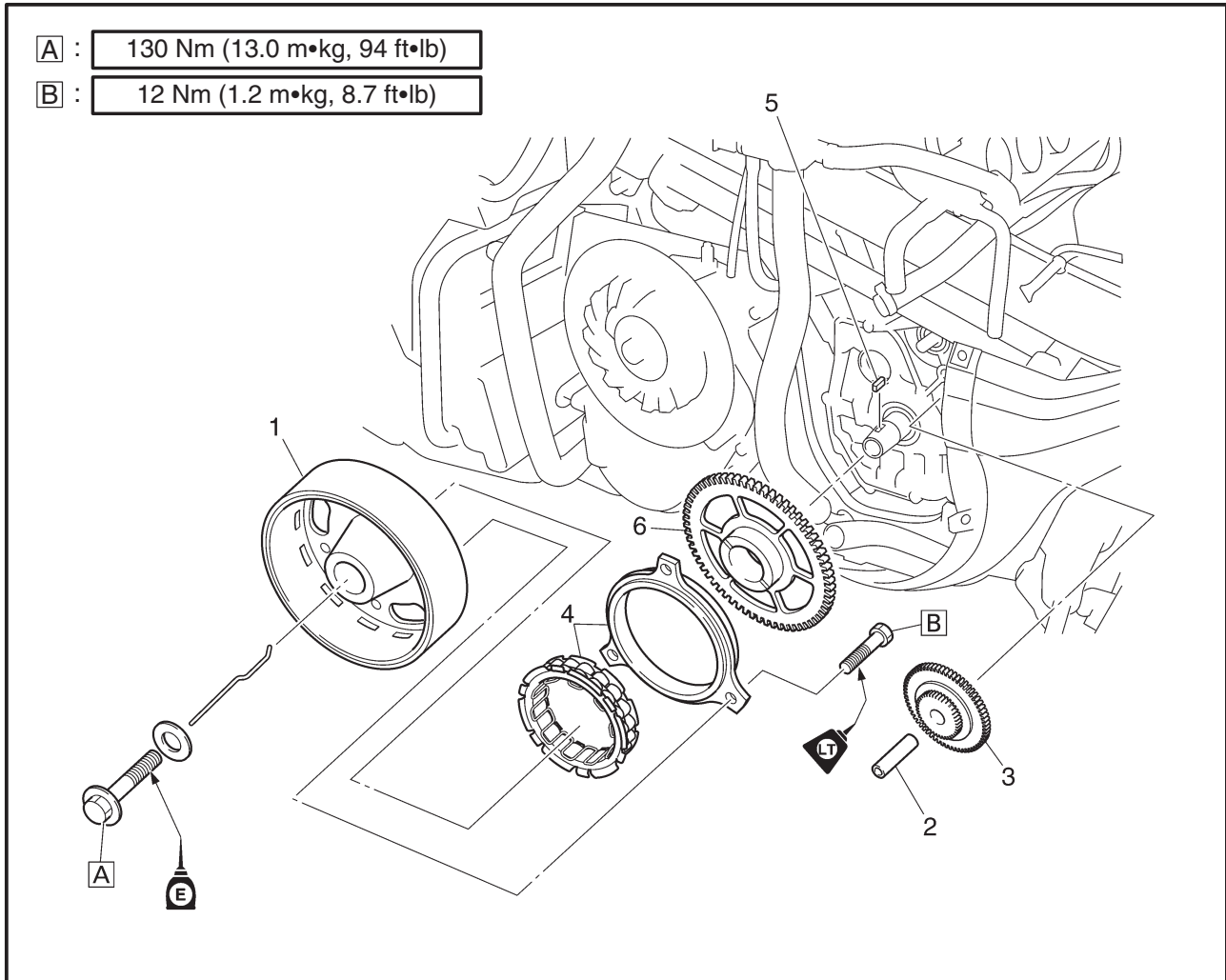
- A : 12 Nm (1.2 m•kg, 8.7 ft•lb)
 B : 10 Nm (1.0 m•kg, 7.2 ft•lb)
 C : 19 Nm (1.9 m•kg, 14 ft•lb)



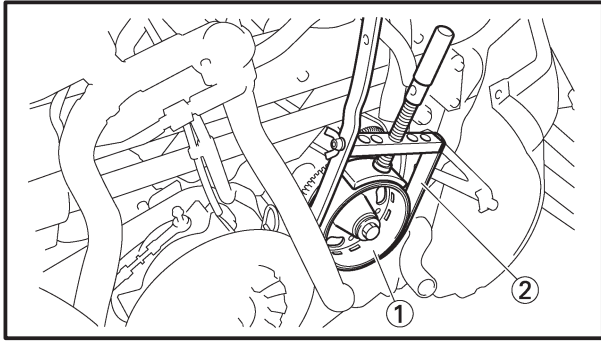
Order	Job name/Part name	Q'ty	Remarks
	A.C. magneto rotor cover removal		
	Right side cover		Remove the parts in the order listed below. Refer to "DRIVE CHAIN HOUSING" in CHAPTER 4.
	Engine oil		Drain. Refer to "ENGINE OIL REPLACEMENT" in CHAPTER 2.
1	Oil level switch coupler	1	Disconnect.
2	Oil tank	1	
3	A.C. magneto rotor cover	1	
4	Gasket	1	
5	Dowel pin	2	
			For installation, reverse the removal procedure.



A.C. MAGNETO ROTOR AND STARTER CLUTCH



Order	Job name/Part name	Q'ty	Remarks
	A.C. magneto rotor and starter clutch removal		Remove the parts in the order listed below.
1	A.C. magneto rotor	1	
2	Idle gear shaft	1	
3	Starter motor idle gear	1	
4	Starter clutch	1	
5	Woodruff key	1	
6	Starter clutch gear	1	
			For installation, reverse the removal procedure.



REMOVAL

1. Remove:

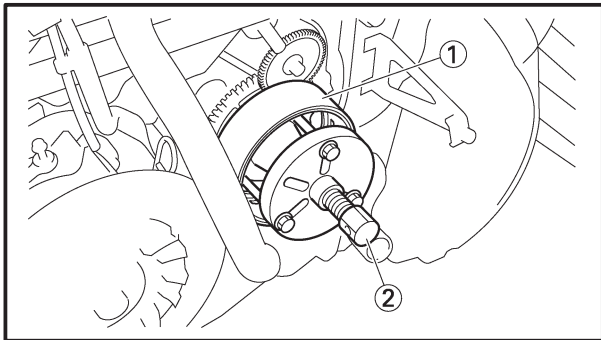
- A.C. magneto rotor bolt
- Washer

NOTE:

- While holding the A.C. magneto rotor ① with the sheave holder ②, loosen the magneto rotor bolt.
- Do not allow the sheave holder to touch the projection on the A.C. magneto rotor.



Sheave holder:
90890-01701, YS-01880



2. Remove:

- A.C. magneto rotor ①
(with the rotor holding puller ② and rotor holding puller attachment)
- Woodruff key

CAUTION:

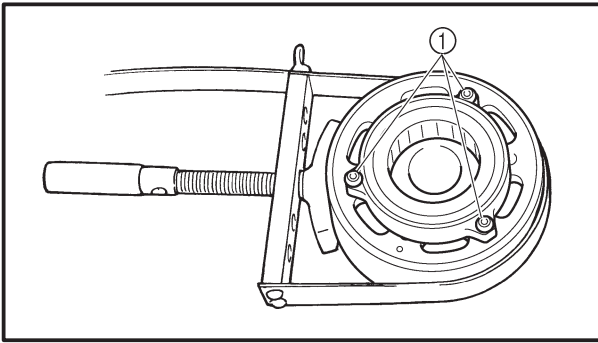
To protect the end of the crankshaft, place an appropriate sized socket between the rotor holding puller set's center bolt and the crankshaft.

NOTE:

Make sure the rotor holding puller is centered over the A.C. magneto rotor.



Rotor holding puller:
90890-01362, YU-33270
Flywheel puller attachment
90890-04089, YM-33282



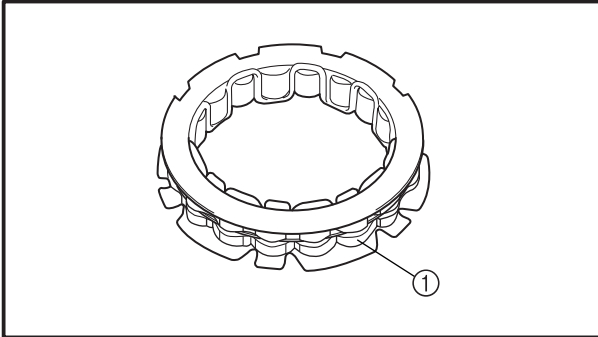
3. Remove:
 - Starter clutch

NOTE:

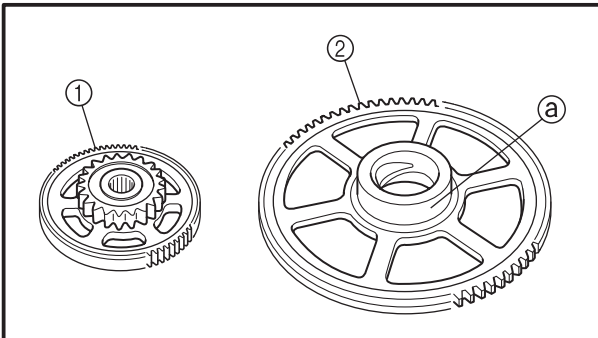
- While holding the magneto rotor with the sheave holder, remove the starter clutch bolt ①.
- Do not allow the sheave holder to touch the projection on the magneto rotor.



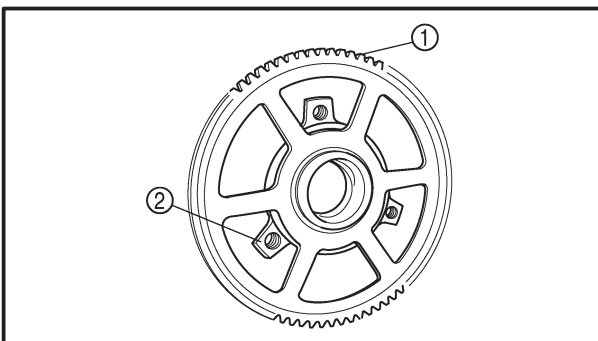
Sheave holder
90890-01701, YS-01880



4. Inspect:
 - Starter clutch rollers ①
Damage/wear → Replace.



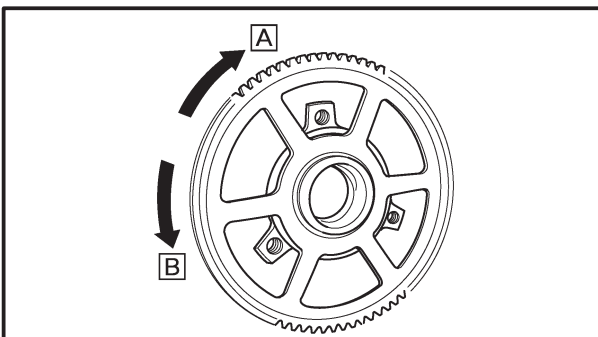
5. Inspect:
 - Starter clutch idle gear ①
 - Starter clutch gear ②
Burns/chips/roughness/wear → Replace the defective part(s).
 - Starter clutch gear's contacting surfaces (a)
Damage/pitting/wear → Replace the starter clutch gear.



6. Inspection:
 - Starter clutch operation

Installation steps:

- Install the starter clutch gear ① onto the starter clutch ② and hold the starter clutch.
- When turning the starter clutch gear clockwise [A], the starter clutch and the starter clutch gear should engage, otherwise the starter clutch is faulty and must be replaced.
- When turning the starter clutch gear counter-clockwise [B], it should turn freely, otherwise the starter clutch is faulty and must be replaced.





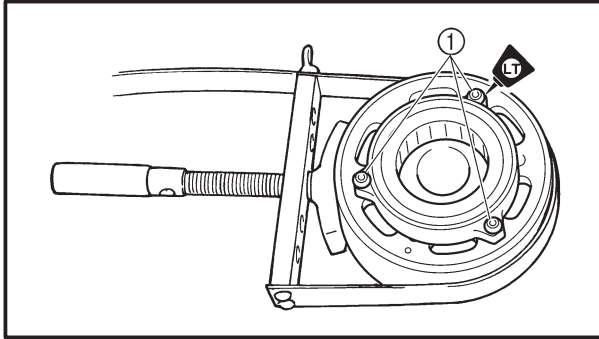
INSTALLATION

1. Install:

- Starter clutch

NOTE:

- While holding the magneto rotor with the sheave holder, tighten the starter clutch bolt.
- Do not allow the sheave holder to touch the projection on the magneto rotor.



Sheave holder

90890-01701, YS-01880-A

2. Tighten:

- Bolts ①



Bolt (starter clutch):

12 Nm (1.2 m•kg, 8.7 ft•lb)

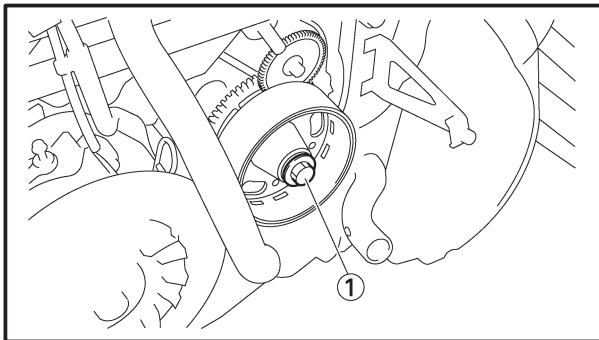
LOCTITE®

3. Install:

- Woodruff key
- Magneto rotor
- Washer
- Bolt

NOTE:

- Clean the tapered portion of the crankshaft and the magneto rotor hub.
- When installing the magneto rotor, make sure the woodruff key is properly seated in the key-way of the crankshaft.



4. Tighten:

- Bolt ①

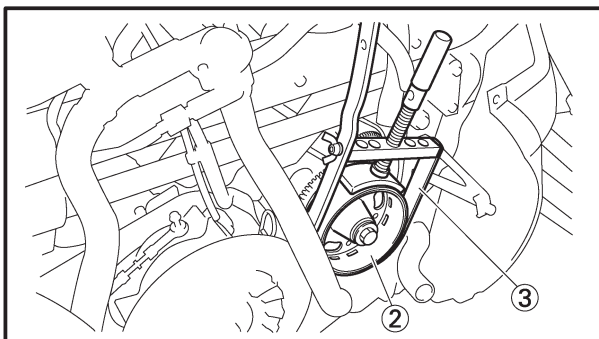


Bolt (A.C. magneto rotor):

130 Nm (13.0 m•kg, 94.0 ft•lb)

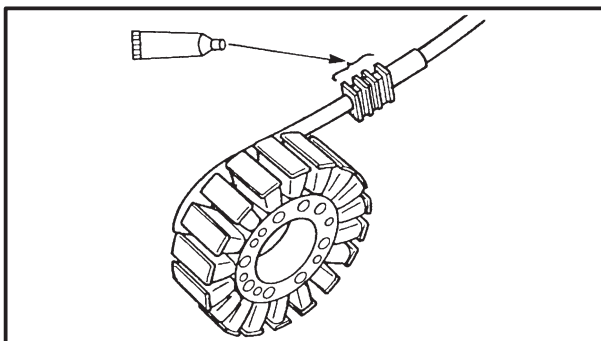
NOTE:

- While holding the A.C. magneto rotor ② with the sheave holder ③, tighten the magneto rotor bolt.
- Do not allow the sheave holder to touch the projection on the magneto rotor.



Sheave holder

90890-01701, YS-01880



5. Apply:
- Sealant
(onto the stator coil assembly lead grommet)



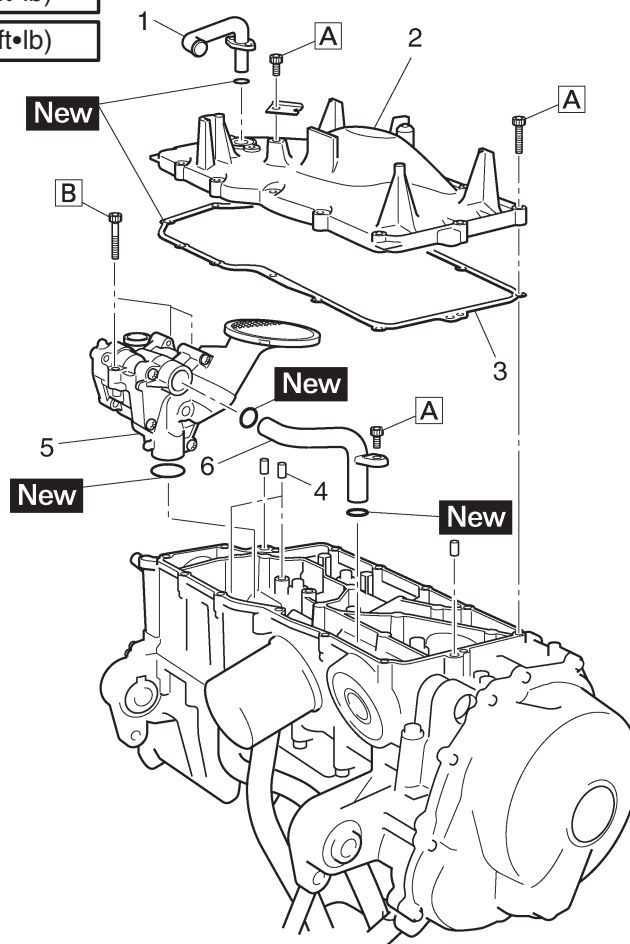
Yamaha bond No. 1215

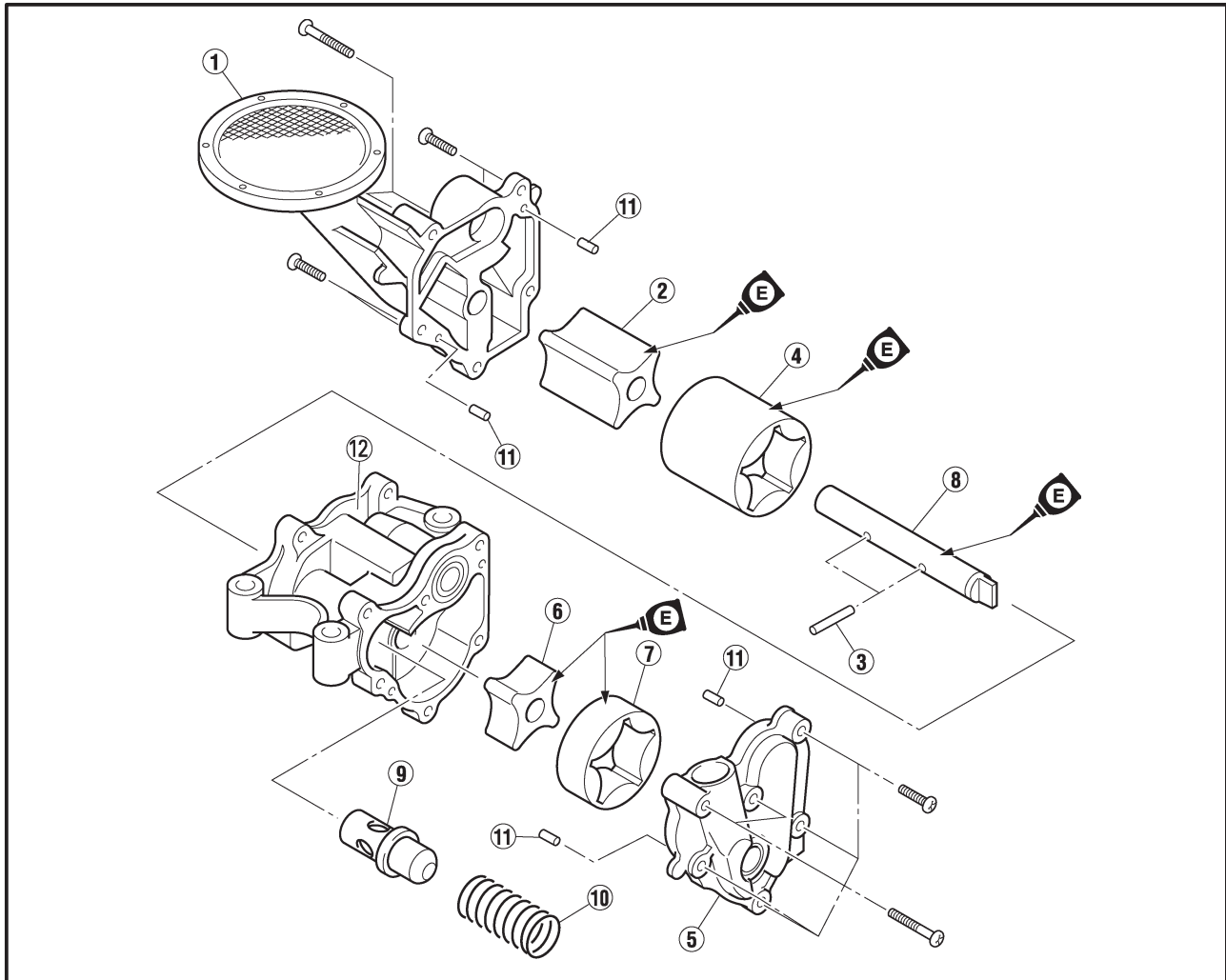
90890-85505

Quick gasket[®]

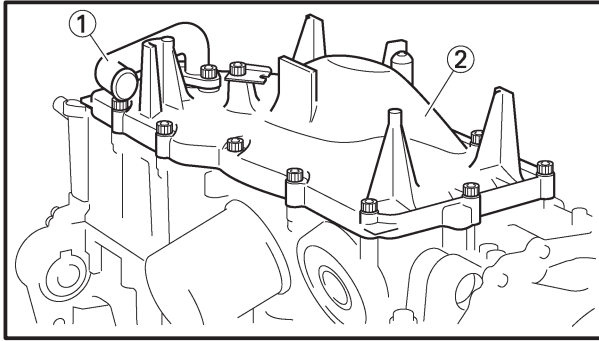
ACC-1100-15-01

B : 12 Nm (1.2 m•kg, 8.7 ft•lb)

5-37



Order	Job name/Part name	Q'ty	Remarks
	Oil pump disassembly		Disassemble the parts in the order listed below.
①	Oil pump cover 1	1	
②	Oil pump inner rotor 1	1	
③	Pin	2	
④	Oil pump outer rotor 1	1	
⑤	Oil pump cover 2	1	
⑥	Oil pump inner rotor 2	1	
⑦	Oil pump outer rotor 2	1	
⑧	Oil pump shaft	1	
⑨	Valve	1	
⑩	Spring	1	
⑪	Pin	4	
⑫	Oil pump housing	1	
			For assembly, reverse the disassembly procedure.

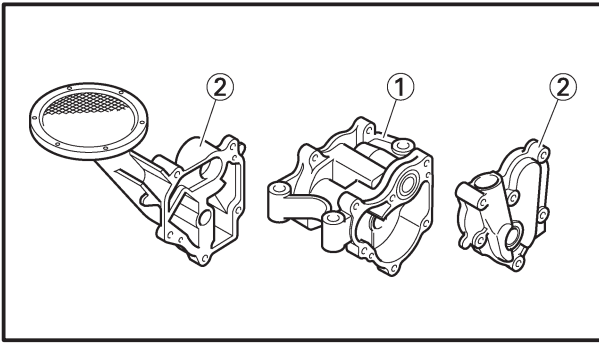
**REMOVAL**

1. Remove:

- Pipe ①
- Oil pan ②
- Oil pump

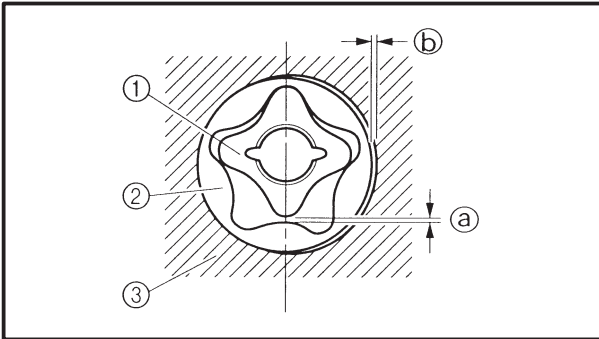
NOTE:

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

**INSPECTION****1. Inspection:**

- Oil pump housing ①
- Oil pump cover ②

Cracks/damage/wear → Replace the defective part(-s).

**2. Measure:**

- Inner-rotor-to-outer-rotor-tip clearance ① (between inner rotor ① and outer rotor ②)
- Outer-rotor-to-oil-pump-housing clearance ② (between outer rotor ② and pump housing ③)

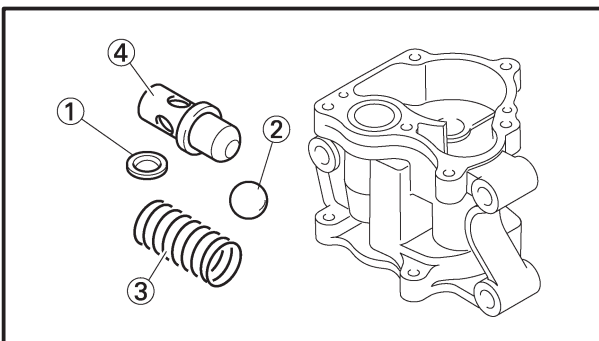
Out of specifications → Replace oil pump assembly.

**Inner-rotor-to-outer-rotor-tip clearance:**

0.09 ~ 0.15 mm
(0.004 ~ 0.006 in)

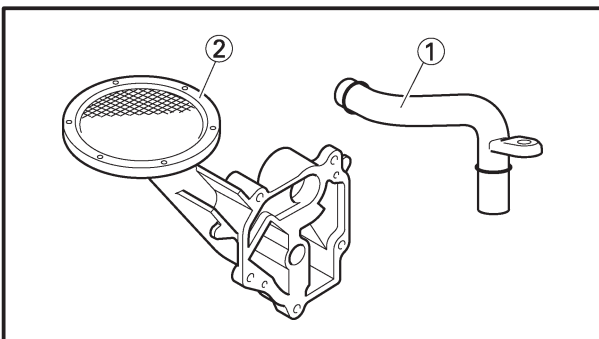
Outer-rotor-to-oil-pump-housing clearance:

0.03 ~ 0.08 mm
(0.001 ~ 0.003 in)

**3. Inspect:**

- Check ball seat ①
- Check ball ②
- Spring ③
- Valve ④

Damage/wear → Replace the defective part (-s).

**4. Inspect:**

- Pipe ①
- Oil strainer ②

Damage → Replace.

Obstruction → Wash and blow out with compressed air.

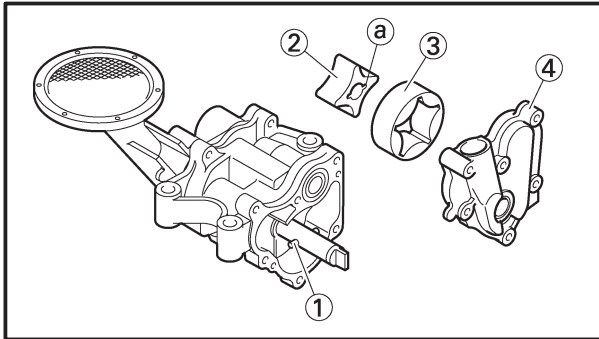
Contaminants → Clean with engine oil.

**INSTALLATION**

1. Lubricate:
 - Inner rotor
 - Outer rotor
 - Oil pump shaft
(with the recommended lubricant)



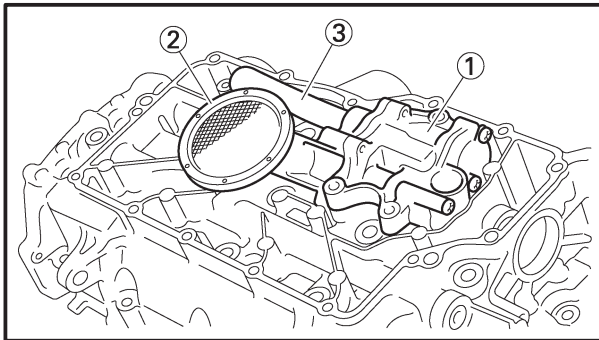
Recommended lubricant
Engine oil



2. Install:
 - Pin ①
 - Inner rotor ②
 - Outer rotor ③
 - Housing ④

NOTE:

When installing the inner rotor, align the pin ① in the oil pump shaft with the groove (a) on the inner rotor ②.



3. Inspect:
 - Oil pump operation
Unsmooth operation → Replace.
4. Install:
 - Oil pump assembly ①
 - Oil strainer ②
 - Pipe ③

5. Install:
 - Dowel pin
 - Gasket
 - Oil pan
6. Tighten:
 - Oil pan bolts



Bolt (oil pan):
10 Nm (1.0 m•kg, 7.2 ft•lb)

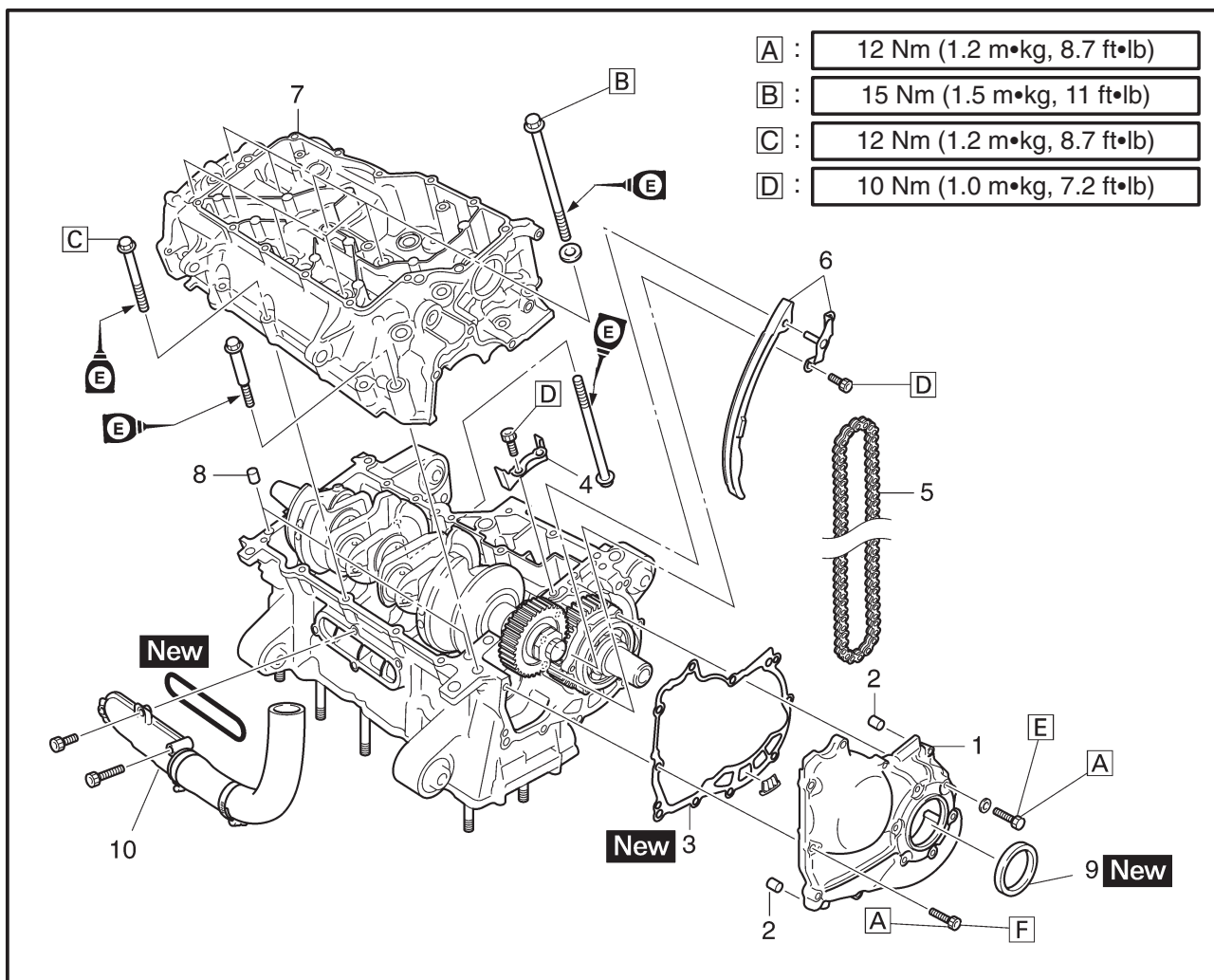
NOTE:

Tighten the oil pan bolts in stages and in a criss-cross pattern.



CRANKCASE

CRANKCASE

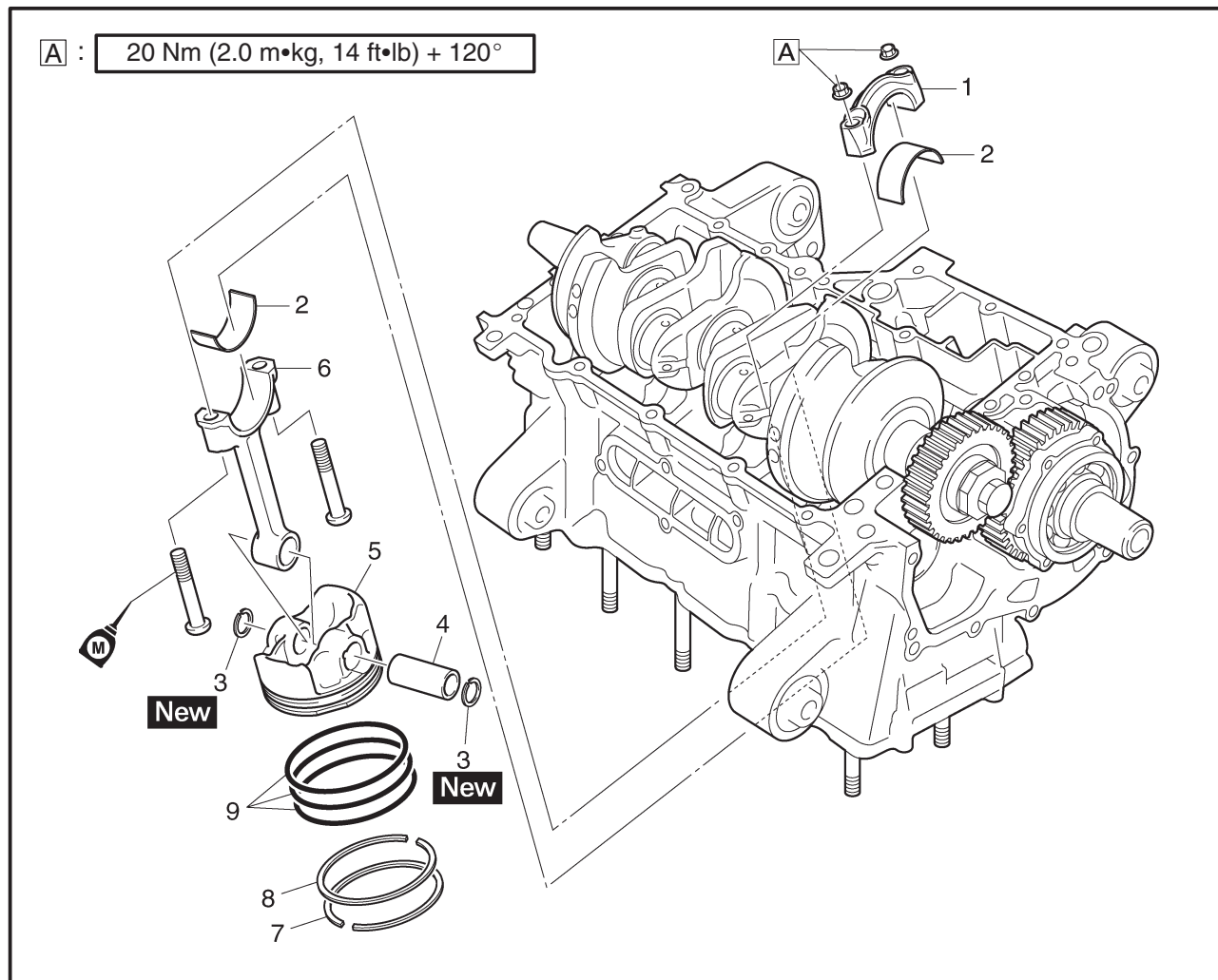


E Tighten these bolts first. **F** Tighten these bolts second.

Order	Job name/Part name	Q'ty	Remarks
	Crankcase removal		
1	Countershaft cover	1	Remove the parts in the order listed below.
2	Dowel pin	2	
3	Gasket	1	
4	Oil pump drive chain guide	1	
5	Timing chain	1	
6	Timing chain guide (intake side)	1	
7	Lower crankcase	1	
8	Dowel pin	2	
9	Counter shaft oil seal	1	
10	Cover	1	For installation, reverse the removal procedure.



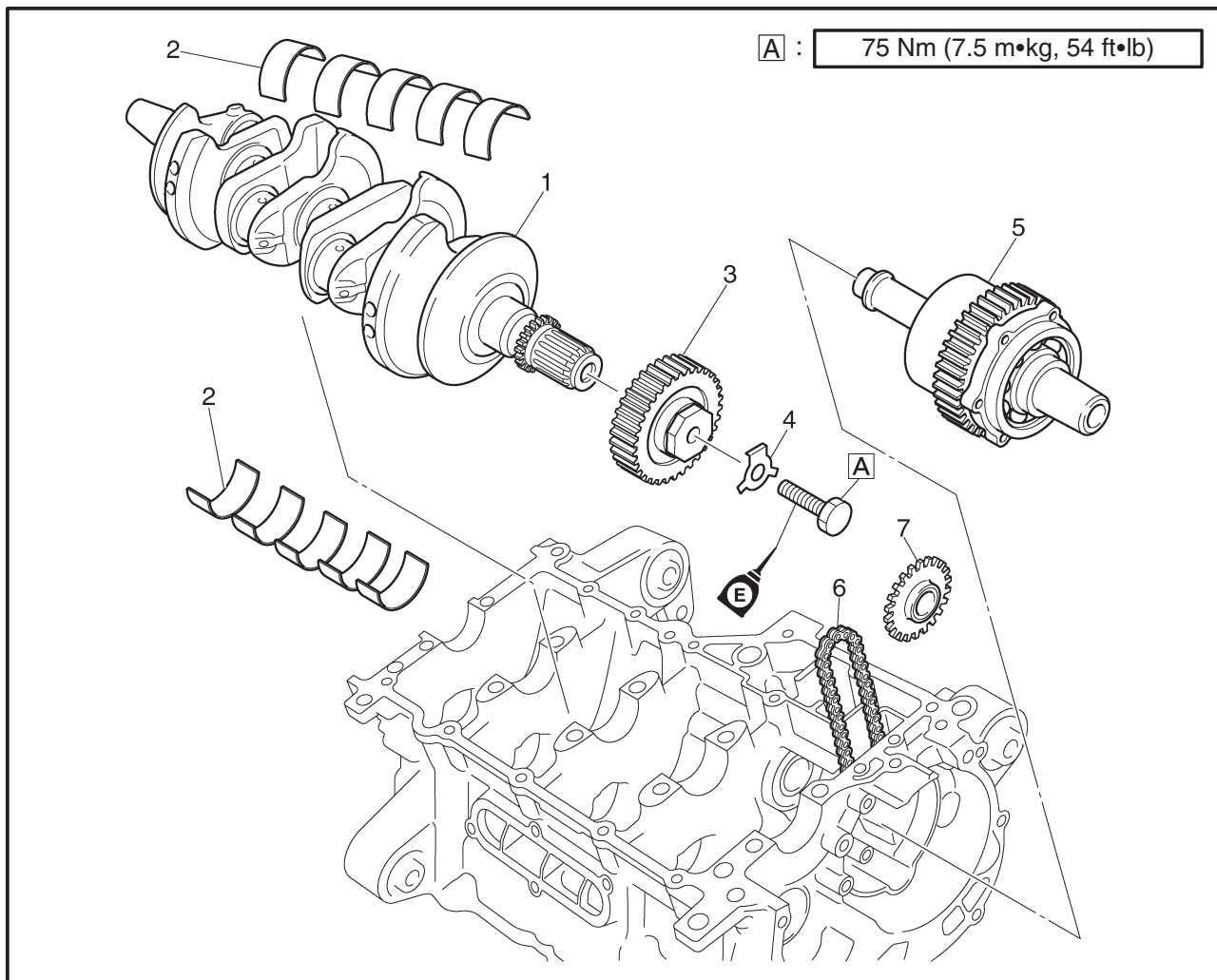
CONNECTING RODS AND PISTONS



Order	Job name/Part name	Q'ty	Remarks
	Connecting rods and pistons removal		Remove the parts in the order listed below.
1	Connecting rod cap	4	
2	Big end bearing	8	
3	Piston pin clip	8	
4	Piston pin	4	
5	Piston	4	
6	Connecting rod	4	
7	Top ring	4	
8	2nd ring	4	
9	Oil ring	4	
			For installation, reverse the removal procedure.

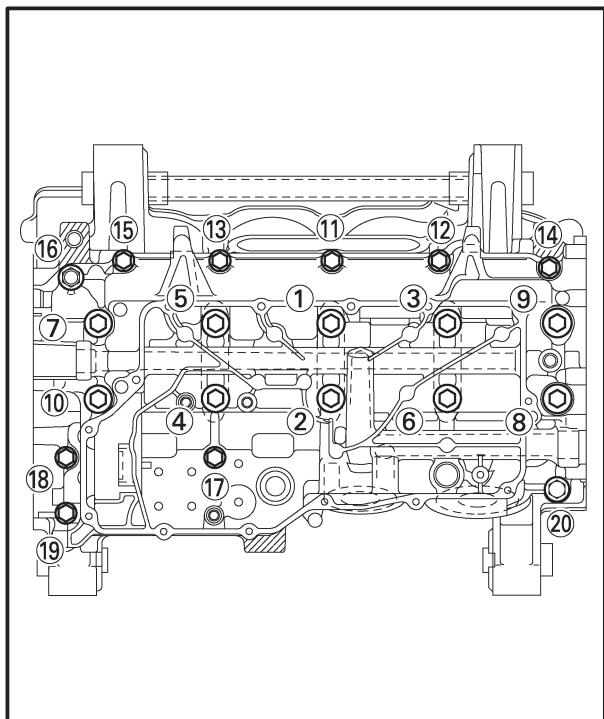


CRANKSHAFT AND COUNTER SHAFT



A This bolt has a left-hand thread.

Order	Job name/Part name	Q'ty	Remarks
	Crankshaft and counter shaft removal		Remove the parts in the order listed below.
1	Crankshaft	1	
2	Crankshaft journal bearing	10	
3	Drive gear	1	
4	Lock plate	1	
5	Counter shaft assembly	1	
6	Oil pump drive chain	1	
7	Oil pump driven gear	1	
			For installation, reverse the removal procedure.

**REMOVAL**

1. Remove:

- Crankcase bolts

NOTE:

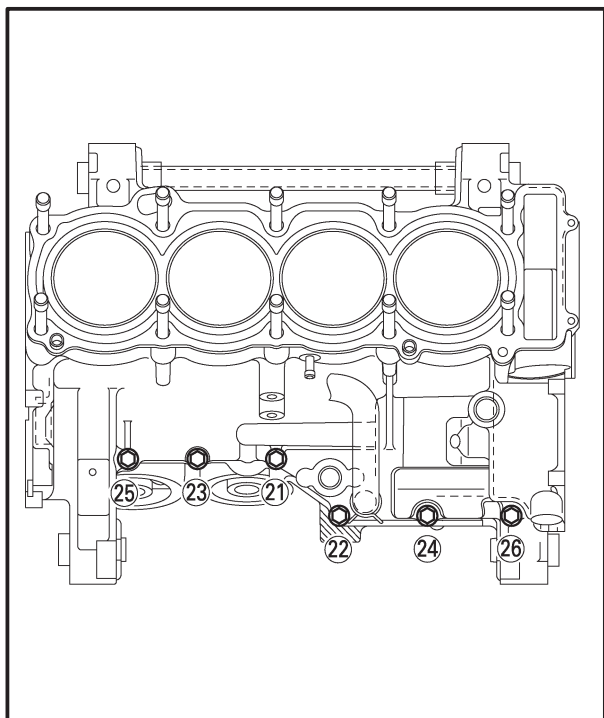
- Place the engine upside down.
- Loosen each bolt 1/4 of a turn at a time, in stages and in a crisscross pattern. After all of the bolts are fully loosened, remove them.
- Loosen the bolts in decreasing numerical order (refer to the numbers in the illustration).
- The numbers embossed on the crankcase indicate the crankcase tightening sequence.

2. Remove:

- Lower crankcase

CAUTION:

Tap on one side of the crankcase with a soft-face hammer. Tap only on reinforced portions of the crankcase, not on the crankcase mating surfaces. Work slowly and carefully and make sure that the crankcase halves separate evenly.

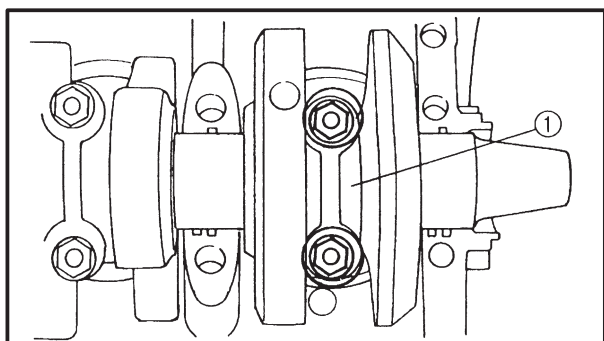


3. Remove:

- Dowel pins
- Crankshaft journal bearing

NOTE:

Identify the position of each crankshaft journal lower bearing so that it can be reinstalled in its original place.

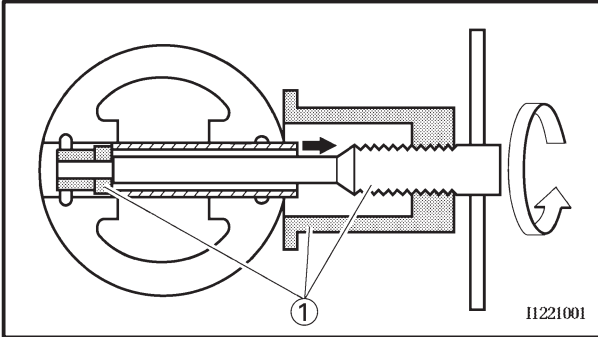
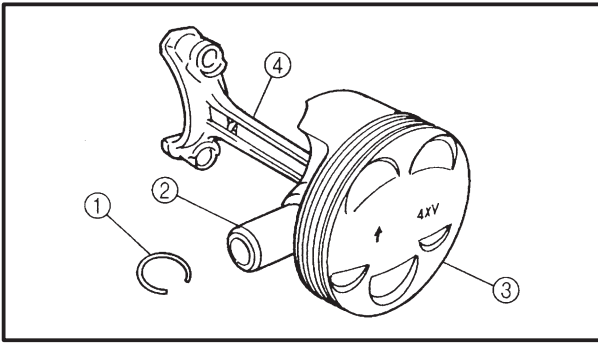


4. Remove:

- Connecting rod cap ①
- Big end bearing

NOTE:

Identify the position of each big end bearing so that it can be reinstalled in its original place.



5. Remove:

- Piston pin clips ①
- Piston pin ②
- Piston ③
- Connecting rod ④

CAUTION:

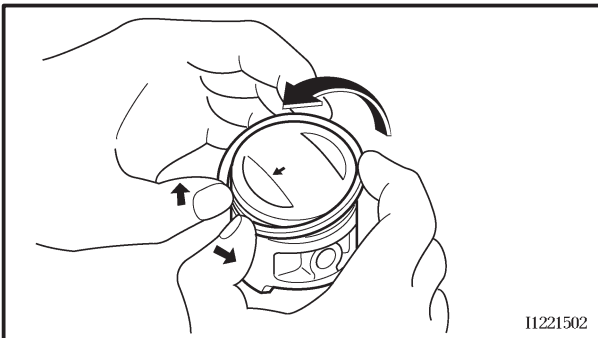
Do not use a hammer to drive the piston pin out.

NOTE:

- For reference during installation, put identification marks on the piston crown.
- Before removing the piston pin, deburr the piston pin clip's groove and the piston's pin bore area. If both areas are deburred and the piston pin is still difficult to remove, remove it with the piston pin puller ①.



Piston pin puller:
90890-01304, YU-01304



6. Remove:

- Top ring
- 2nd ring
- Oil ring

NOTE:

When removing a piston ring, open the end gap with your fingers and lift the other side of the ring over the piston crown.

7. Remove:

- Crankshaft
- Crankshaft journal bearing

NOTE:

Identify the position of each crankshaft journal upper bearing so that it can be reinstalled in its original place.

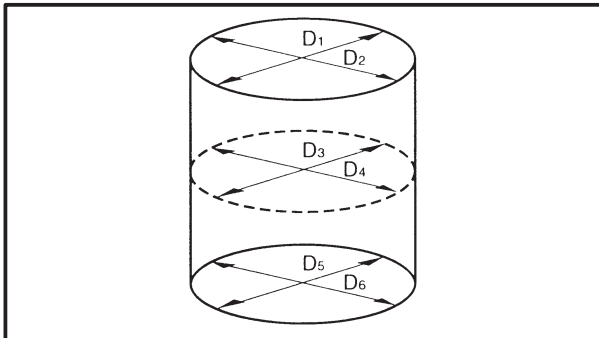
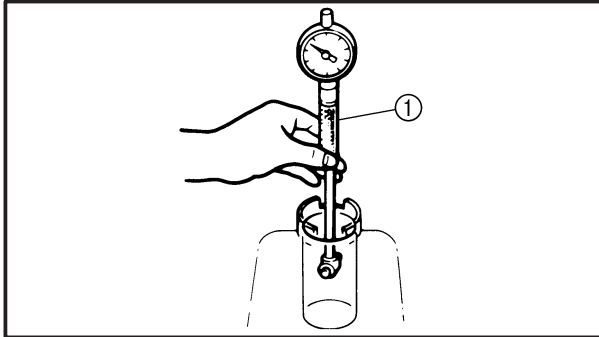


INSPECTION

1. Inspect:

- Piston wall and cylinder wall

Vertical scratches → Rebore or replace the cylinder, and replace the piston and piston rings as a set.



2. Measure:

- Piston-to-cylinder clearance

Measurement steps:

1st step:

- Measure cylinder bore “C” with the cylinder bore gauge ①.

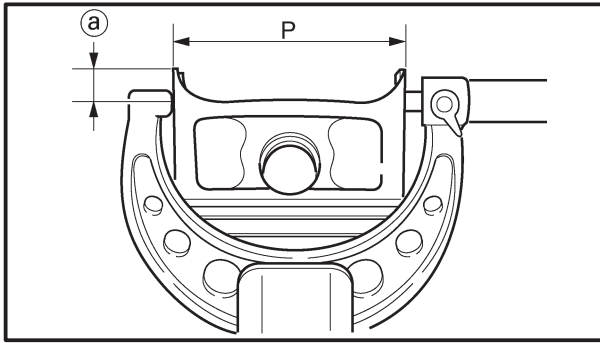
NOTE:

Measure cylinder bore “C” by taking side-to-side and front-to-back measurements of the cylinder. Then, find the average of the measurements.

Cylinder bore “C”	74.000 ~ 74.010 mm (2.9134 ~ 2.9138 in)
Wear limit	74.06 mm (2.9157 in)
Taper limit “T”	0.05 mm (0.0020 in)
Out of round “R”	0.05 mm (0.0020 in)

“C” = maximum of D ₁ ~ D ₆
“T” = maximum of D ₁ or D ₂ – maximum of D ₅ or D ₆
“R” = maximum of D ₁ D ₃ or D ₅ – maximum of D ₂ D ₄ or D ₆

- If out of specification, replace the cylinder, and the piston and piston rings as a set.



2nd step:

- Measure piston skirt diameter “P” with the micrometer.

(a) 5 mm (0.20 in) from the bottom edge of the piston.



Piston size (standard) (P):

73.955 ~ 73.970 mm

(2.9116 ~ 2.9122 in)

- If out of specification, replace the piston and piston rings as a set.

3rd step:

- Calculate the piston-to-cylinder clearance with the following formula.

Piston-to-cylinder clearance =

Cylinder bore “C” –

Piston skirt diameter “P”



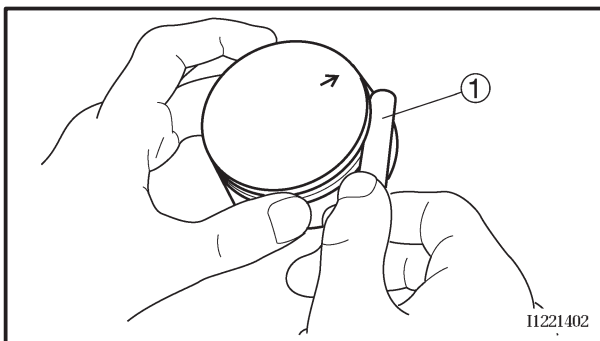
Piston-to-cylinder clearance:

0.030 ~ 0.055 mm

(0.0012 ~ 0.0022 in)

<Limit>: 0.12 mm (0.0047 in)

- If out of specification, replace the cylinder, and the piston and piston rings as a set.



3. Measure:

- Side clearance (piston rings)
Use the thickness gauge ①
Out of specification → Replace the piston and piston rings as a set.

NOTE:

Eliminate the carbon deposits from the piston ring grooves and rings before measuring the side clearance.



Piston rings side clearance:

Top ring

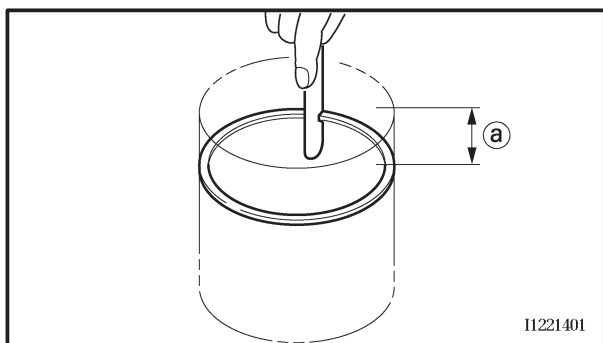
0.030 ~ 0.065 mm

(0.0012 ~ 0.0026 in)

2nd ring

0.020 ~ 0.055 mm

(0.0008 ~ 0.0022 in)



4. Install:
 - Piston ring
(into the cylinder)

NOTE: _____
Level the piston ring in the cylinder with the piston crown.

① 5 mm (0.20 in)

5. Measure:
 - End gap (piston rings)
Out of specification → Replace the piston rings as a set.

NOTE: _____
The oil ring expander spacer's end gap cannot be measured. If the oil ring rail's gap is excessive, replace all three piston rings.



Piston ring end gap:

Top ring

0.32 ~ 0.44 mm
(0.010 ~ 0.020 in)

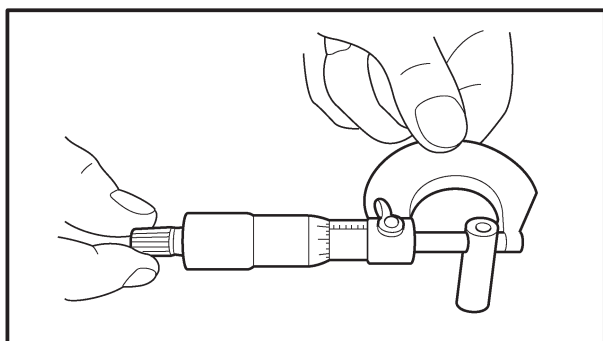
2nd ring

0.43 ~ 0.58 mm
(0.017 ~ 0.023 in)

Oil ring

0.10 ~ 0.35 mm
(0.004 ~ 0.014 in)

6. Inspect:
 - Piston pin
Blue discoloration/grooves → Replace the piston pin and then check the lubrication system.

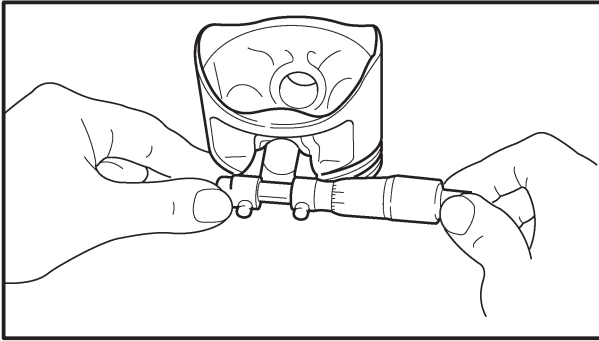


7. Measure:
 - Outside diameter (piston pin)
Out of specification → Replace the piston pin.



Piston pin outside diameter:

16.991 ~ 17.000 mm
(0.6689 ~ 0.6693 in)



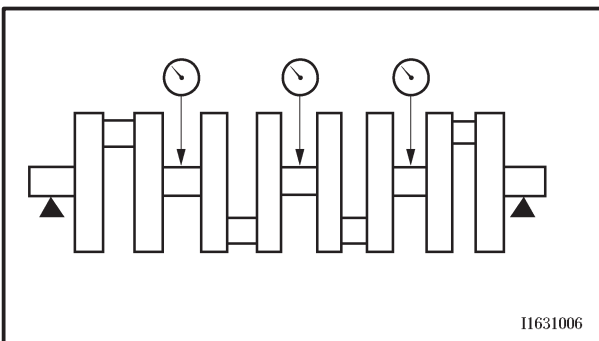
8. Measure:

- Piston pin bore inside diameter
Out of specification → Replace the piston.

**Piston pin bore inside diameter:****17.002 ~ 17.013 mm****(0.6694 ~ 0.6698 in)**

9. Calculate:

- Piston pin to piston pin bore clearance
Out of specification → Replace the piston pin and piston as a set.

**Piston pin to piston pin bore clearance =****Piston pin bore size –****Piston pin outside diameter****Piston pin to piston pin bore clearance****0.002 ~ 0.022 mm****(0.00008 ~ 0.0009 in)****<Limit>: 0.072 mm (0.0028 in)**

10. Measure:

- Runout
Use the V-blocks and a dial gauge.
Out of specification → Replace the crankshaft.

**Dial gauge:****90890-03097, YU-03097****Crankshaft runout:****0.03 mm (0.0012 in)**



11. Inspect:

- Crankshaft journal surfaces
- Crankshaft pin surfaces
- Bearing surfaces

Scratches/wear → Replace the crankshaft.

12. Measure:

- Crankshaft-journal-to-crankshaft-journal-bearing clearance
- Out of specification → Replace the crankshaft journal bearings.



Crankshaft-journal-to-crankshaft-journal-bearing clearance:

0.004 ~ 0.028 mm

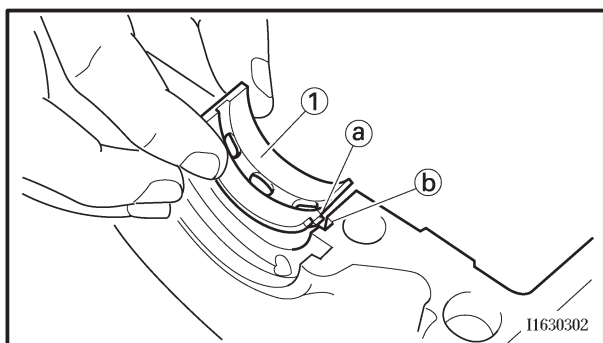
(0.0002 ~ 0.0011 in)

Measurement steps:

CAUTION:

Do not interchange the crankshaft journal bearings. To obtain the correct crankshaft-journal-to-crankshaft-journal-bearing clearance and prevent engine damage, the crankshaft journal bearings must be installed in their original positions.

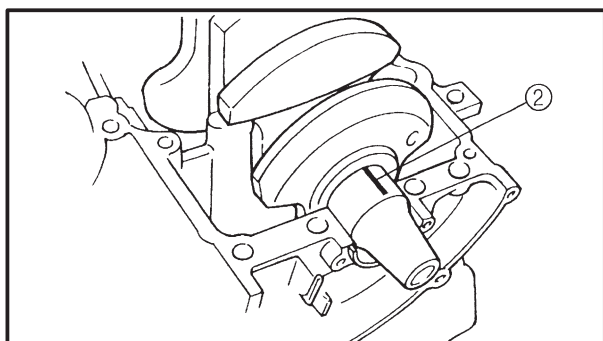
- Clean the crankshaft journal bearings, crankshaft journals, and bearing portions of the crankcase.
- Place the upper crankcase upside down on a bench.



- Install the crankshaft journal upper bearings ① and the crankshaft into the upper crankcase.

NOTE:

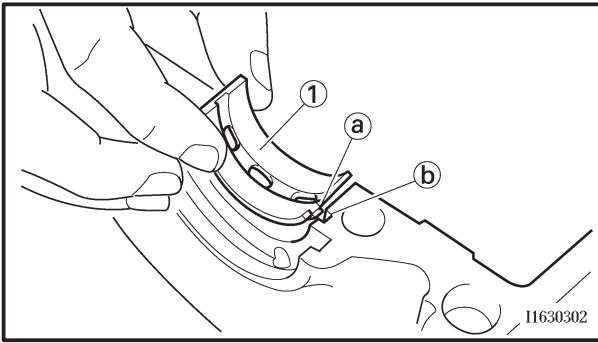
Align the projections (a) of the crankshaft journal upper bearings with the notches (b) in the crankcase.



- Put a piece of Plastigauge® (2) on each crankshaft journal.

NOTE:

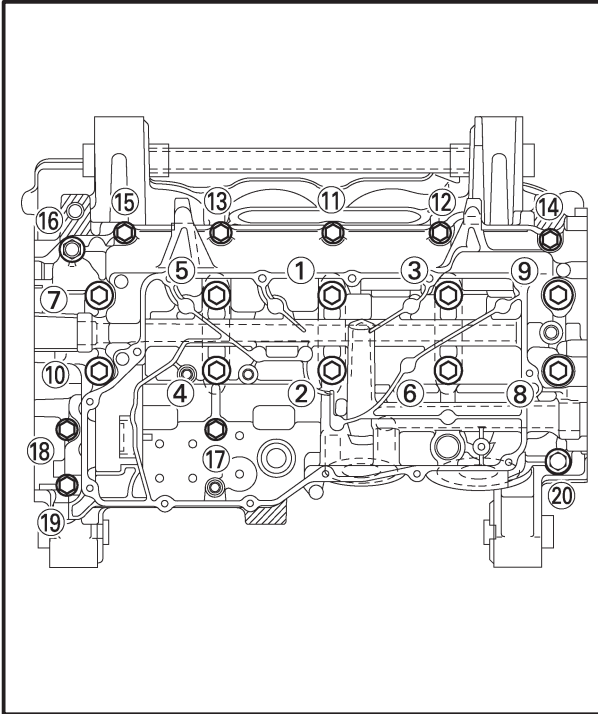
Do not put the Plastigauge® over the oil hole in the crankshaft journal.



- Install the crankshaft journal lower bearings ① into the lower crankcase and assemble the crankcase halves.

NOTE:

- Align the projections ② of the crankshaft journal lower bearings with the notches ③ in the crankcase.
- Do not move the crankshaft until the clearance measurement has been completed.



Crankcase bolt:

Bolt ① ~ ⑩

1st: 15 Nm

(1.5 m•kg, 11 ft•lb)

2nd: 15 Nm

(1.5 m•kg, 11 ft•lb) +

45 ~ 50°

Bolt ⑪ ~ ⑲

12Nm (1.2 m•kg, 8.7 ft•lb)

M9 × 105 mm bolts: ① ~ ⑩

M8 × 65 mm bolts: ⑱, ⑲

M5 × 90 mm bolts: ⑲

M5 × 80 mm bolts: ⑲

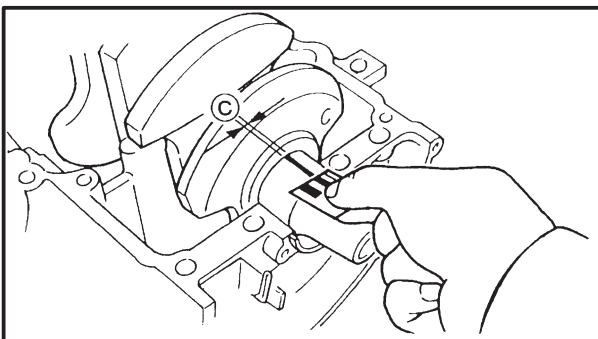
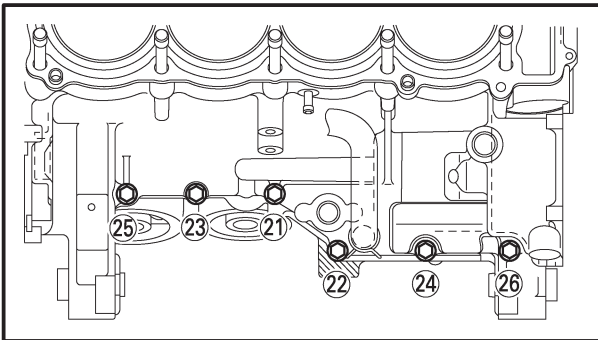
M5 × 55 mm bolts: ⑪ ~ ⑮

M5 × 45 mm bolts: ⑮, ⑲, ⑲ ~ ⑲

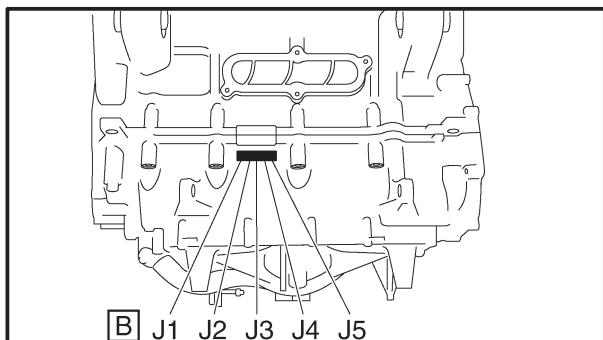
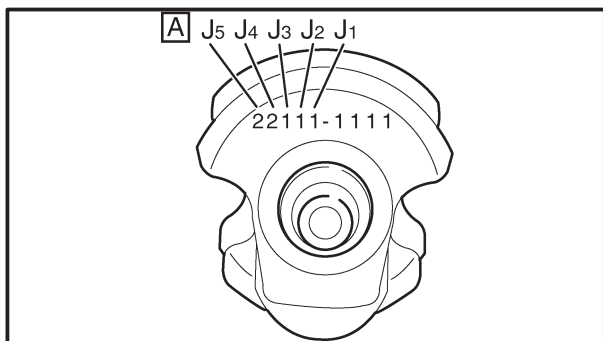
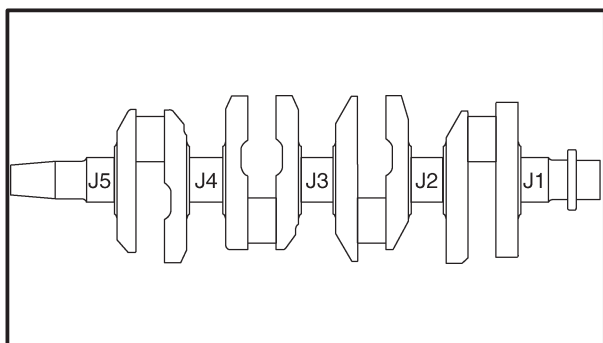
M5 × 25 mm bolts: ⑲

NOTE:

Lubricate the crankcase bolt threads with engine oil.



- Remove the lower crankcase and the crankshaft journal lower bearings.
- Measure the compressed Plastigauge® width ③ on each crankshaft journal. If the clearance is out of specification, select replacement crankshaft journal bearings.



13. Select:

- Crankshaft journal bearings (J1 ~ J5)

NOTE:

- The numbers **A** stamped into the crankshaft web and the numbers **B** stamped into the lower crankcase are used to determine the replacement crankshaft journal bearing sizes.
- “J1 ~ J5” refer to the bearings shown in the crankshaft illustration.
- If “J1 ~ J5” are the same, use the same size for all of the bearings.

Selection of bearings:

For example, if the crankcase “J₁” and crankshaft web “J₁” numbers are “6” and “2” respectively, then the bearing size for “J₁” is:

Bearing size for J₁:

$$\text{J1 (crankcase)} - \text{J1 (crankshaft web)} \\ - 2 = 6 - 2 - 2 = 2 \text{ (black)}$$

CRANKSHAFT JOURNAL BEARING COLOR CODE

-1	Violet
0	White
1	Blue
2	Black
3	Brown

14. Measure:

- Crankshaft-pin-to-big-end-bearing clearance
Out of specification → Replace the big end bearings.



Crankshaft-pin-to-big-end-bearing clearance:

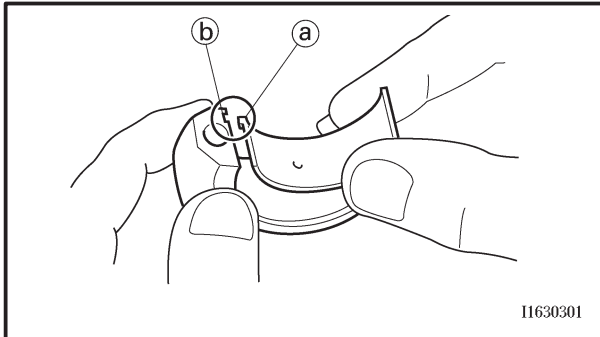
0.016 ~ 0.040 mm
(0.0006 ~ 0.0016 in)



Measurement steps:

CAUTION:

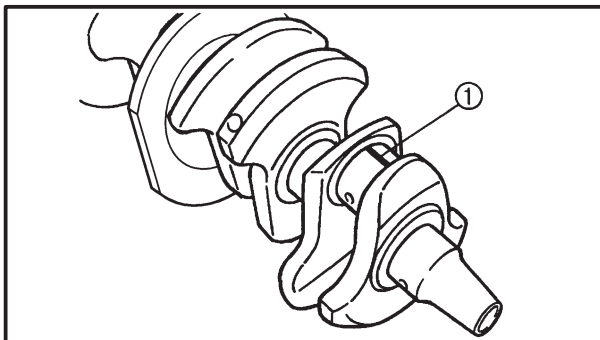
Do not interchange the big end bearings and connecting rods. To obtain the correct crankshaft-pin-to-big-end-bearing clearance and prevent engine damage, the big end bearings must be installed in their original positions.



- Clean the big end bearings, crankshaft pins, and bearing portions of the connecting rods.
- Install the big end upper bearing into the connecting rod and the big end lower bearing into the connecting rod cap.

NOTE:

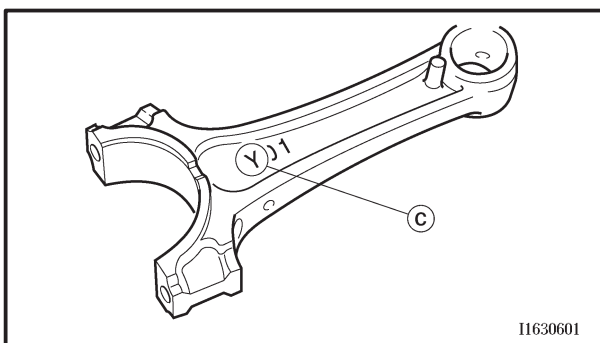
Align the projections (a) on the big end bearings with the notches (b) in the connecting rod and connecting rod cap.



- Put a piece of Plastigauge® ① on the crankshaft pin.
- Assemble the connecting rod halves.

NOTE:

- Do not move the connecting rod or crankshaft until the clearance measurement has been completed.
- Apply molybdenum disulfide grease onto the bolts, threads, and nut seats.
- Make sure that the “Y” mark (c) on the connecting rod faces towards the left side of the crankshaft.
- Make sure that the characters (d) on both the connecting rod and connecting rod cap are aligned.

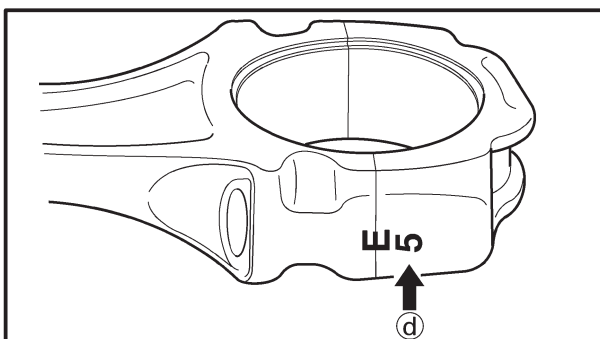


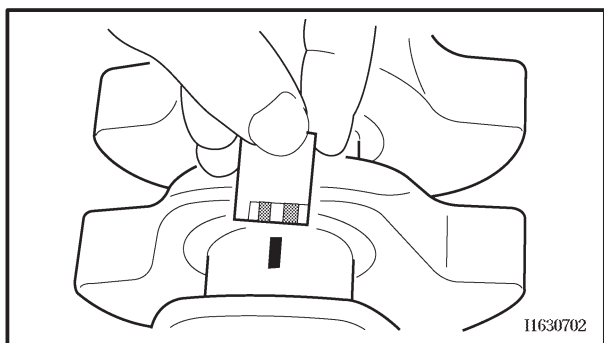
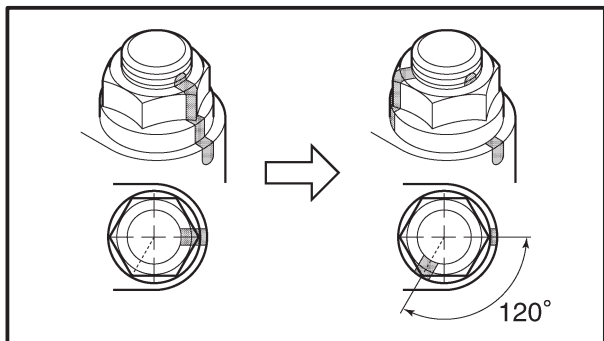
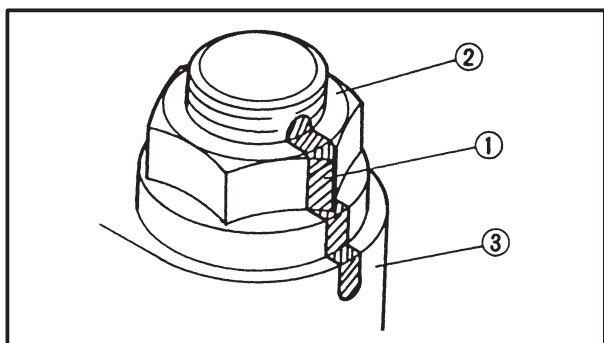
- Tighten the connecting rod nuts.



Nut (connecting rod):

20 Nm (2.0 m•kg, 14 ft•lb)+120°





- Replace the connecting rod bolts and nuts with new ones.

CAUTION:

Tighten the connecting rod bolts using the plastic-region tightening angle method. Always install new bolts and nuts.

- Clean the connecting rod bolts and nuts.
- Tighten the connecting rod nuts.
- Put a mark (1) on the corner of the connecting rod nut (2) and the connecting rod (3).
- Tighten the nut further to reach the specified angle (120°).

⚠ WARNING

When the nut is tightened more than the specified angle, do not loosen the nut and then retighten it.

Replace the bolt with a new one and perform the procedure again.

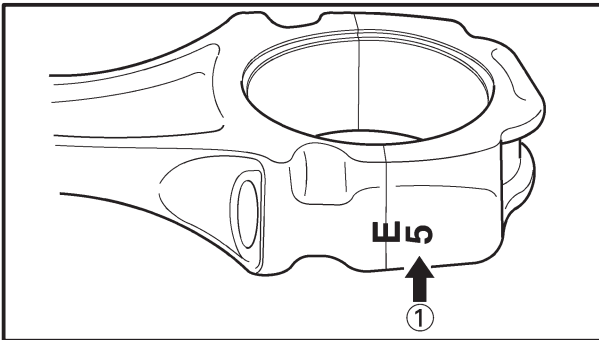
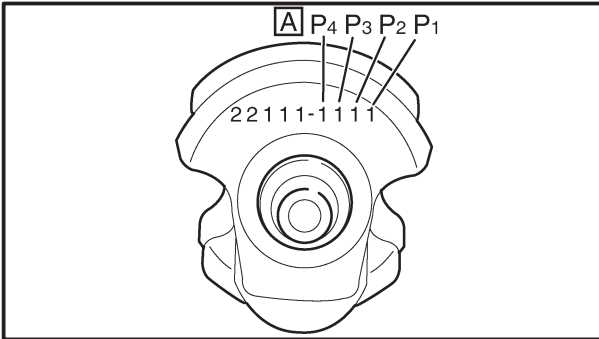
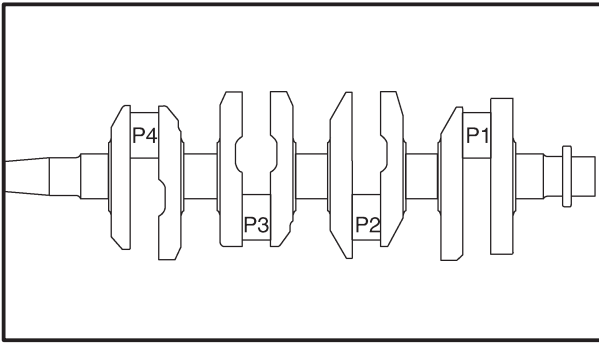
CAUTION:

- Do not use a torque wrench to tighten the nut to the specified angle.
- Tighten the nut until it is at the specified angles.

NOTE:

When using a hexagonal nut, note that the angle from one corner to another is 60°

- Remove the connecting rod and big end bearings.
- Measure the compressed Plastigauge® width on the crankshaft pin.
If the clearance is out of specification, select replacement big end bearings.



15. Select:

- Big end bearings ($P_1 \sim P_4$)

NOTE:

- The numbers **A** stamped into the crankshaft web and the numbers ① on the connecting rods are used to determine the replacement big end bearing sizes.
- “P1” ~ “P4” refer to the bearings shown in the crankshaft illustration.

Selection of bearings:

For example, if the connecting rod “P₁” and the crankshaft web “P₁” numbers are “5” and “1” respectively, then the bearing size for “P₁” is:

Bearing size for “P₁”:

$$\begin{aligned} & \text{“P}_1\text{” (connecting rod) – “P}_1\text{”} \\ & \text{(crankshaft) – 2 =} \\ & 5 - 1 - 2 = 2 \text{ (Black)} \end{aligned}$$

BIG END BEARING COLOR CODE

-1	Violet
0	White
1	Blue
2	Black
3	Brown

16. Inspect:

- Crankcase:
Cracks/damage → Replace.

NOTE:

Thoroughly wash the crankcase halves in a mild solvent.

Thoroughly clean all the gasket surfaces and crankcase mating surfaces.

- Oil delivery passages
Obstruction → Blow out with compressed air.



17. Inspect:

- Bearings

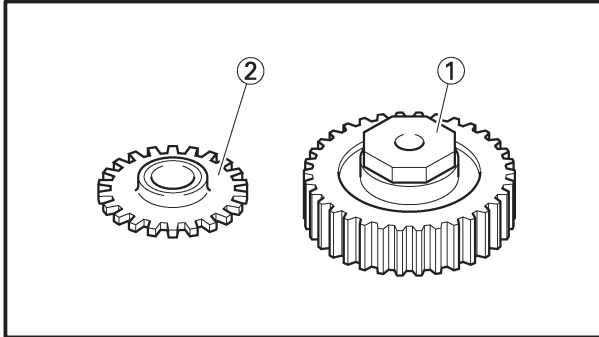
Clean and lubricate the bearings, then rotate the inner race with your finger.

Rough movement → Replace.

18. Inspect:

- Oil seals

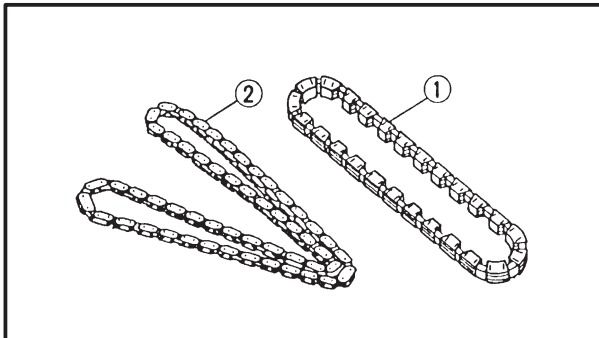
Damage/wear → Replace.



19. Inspect:

- Primary drive gear ①
- Oil pump driven gear ②

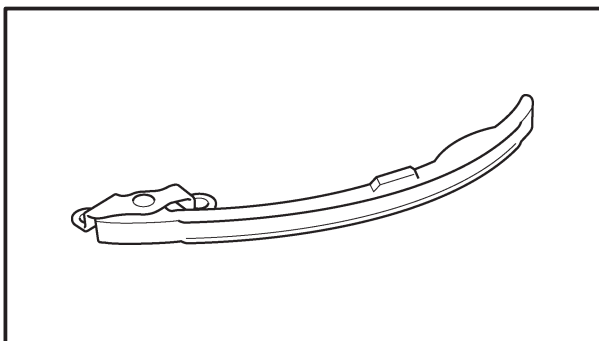
Cracks/damage/wear → Replace the defective part(-s).



20. Inspect:

- Timing chain ①
- Oil pump drive chain ②

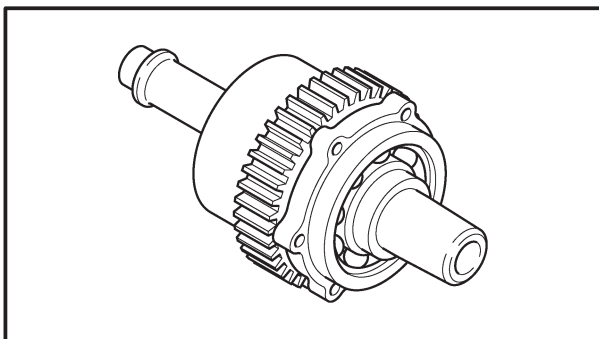
Damage/stiffness → Replace the chain and sprocket as a set.



21. Inspect:

- Timing chain guide (intake side)

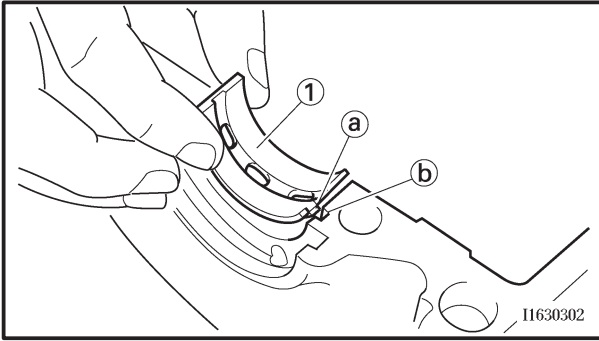
Damage/wear → Replace the timing chain guide.



22. Inspect:

- Counter shaft assembly

Damage → Replace.



INSTALLATION

1. Install:

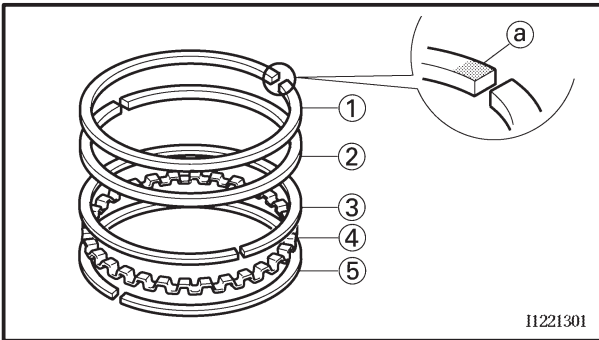
- Crankshaft journal bearing ①
(into the upper crankcase)

NOTE:

- Align the projections (a) on the crankshaft journal upper bearings with the notches (b) in the crankcase.
- Be sure to install each crankshaft journal upper bearing in its original place.

2. Install:

- Crankshaft

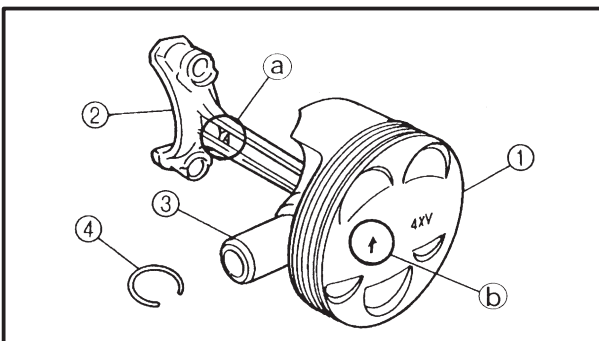


3. Install:

- Top ring ①
- 2nd ring ②
- Upper oil ring rail ③
- Oil ring expander ④
- Lower oil ring rail ⑤

NOTE:

Be sure to install the piston rings so that the manufacturer's marks or numbers (a) face up.



4. Install:

- Piston ①
(onto the respective connecting rod ②)
- Piston pin ③
- Piston pin clip **New** ④

NOTE:

- Apply engine oil onto the piston pin.
- Make sure that the "Y" mark (a) on the connecting rod faces left when the arrow mark (b) on the piston is pointing up. Refer to the illustration.
- Reinstall each piston into its original cylinder (numbering order starting from the left: #1 to #4).

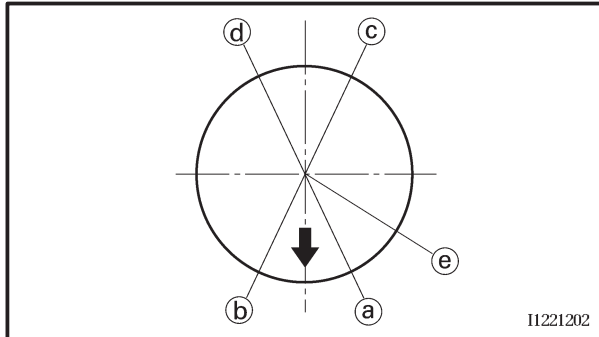


5. Lubricate:

- Piston
- Piston rings
- Cylinder
- Crankshaft pins
- Big end bearings
(with the recommended lubricant)



**Recommended lubricant
Engine oil**



6. Offset:

- Piston ring end gaps

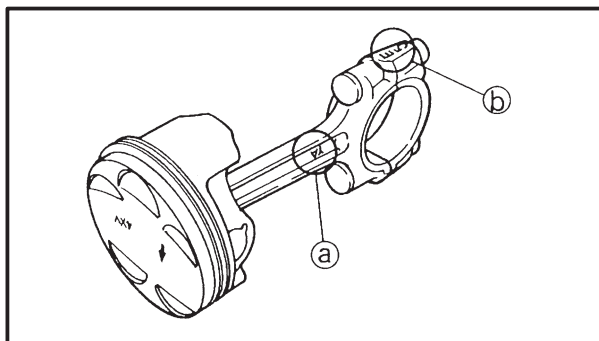
- Ⓐ Top ring
- Ⓑ Lower oil ring rail
- Ⓒ Upper oil ring rail
- Ⓓ 2nd ring
- Ⓔ Oil ring expander

7. Install:

- Big end bearings
- Connecting rod assembly
(into the cylinder and onto the crankshaft pin).
- Connecting rod cap
(onto the connecting rod)

NOTE:

- Align the projections on the big end bearings with the notches in the connecting rods and connecting rod caps.
- Be sure to reinstall each big end bearing in its original place.
- While compressing the piston rings with one hand, install the connecting rod assembly into the cylinder with the other hand.
- Make sure that the “Y” marks Ⓐ on the connecting rods face towards the right side of the crankshaft.
- Make sure that the characters Ⓑ on both the connecting rod and connecting rod cap are aligned.

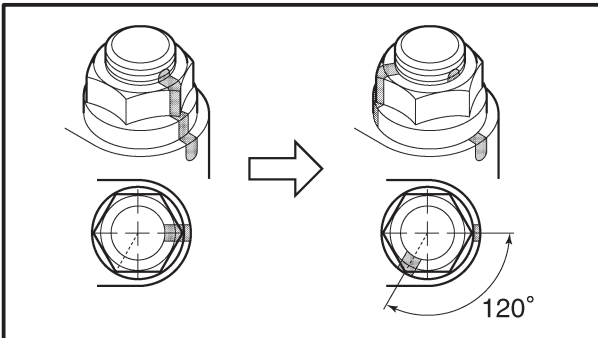
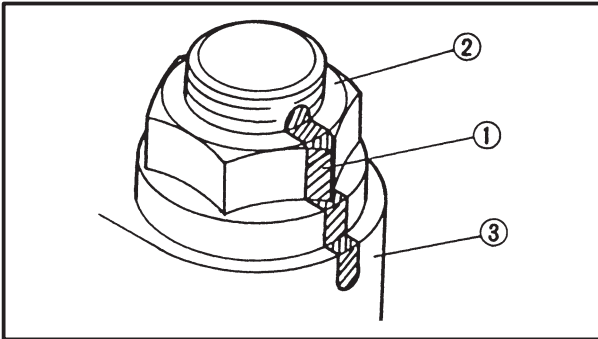




8. Align:
 - Bolt heads
(with the connecting rod caps)
9. Tighten:
 - Connecting rod nuts



Nut (connecting rod):
20 Nm (2.0 m•kg, 14 ft•lb)+120°



- Replace the connecting rod bolts and nuts with new ones.

CAUTION:

Tighten the connecting rod bolts using the plastic-region tightening angle method. Always install new bolts and nuts.

- Clean the connecting rod bolts and nuts.
- Tighten the connecting rod nuts.
- Put a mark ① on the corner of the connecting rod nut ② and the connecting rod ③.
- Tighten the nut further to reach the specified angle (120°).

⚠ WARNING

When the nut is tightened more than the specified angle, do not loosen the nut and then retighten it.

Replace the bolt with a new one and perform the procedure again.

CAUTION:

- Do not use a torque wrench to tighten the nut to the specified angle.
- Tighten the nut until it is at the specified angles.

NOTE:

When using a hexagonal nut, note that the angle from one corner to another is 60°.

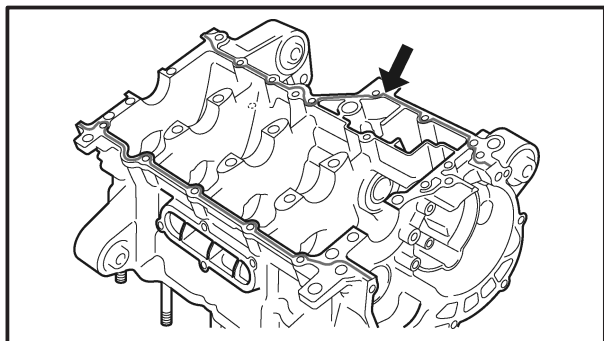


10. Lubricate:

- Crankshaft journal bearings
(with the recommended lubricant)



Recommended lubricant
Engine oil



11. Apply:

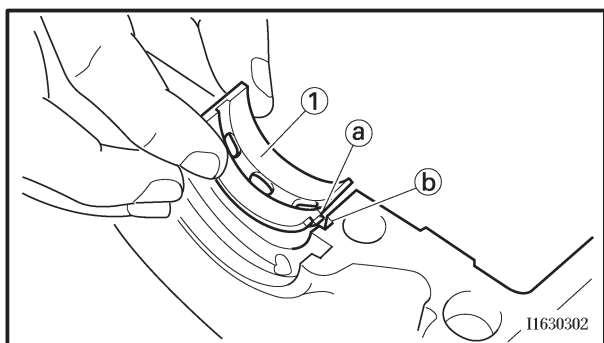
- Sealant
(onto the crankcase mating surfaces)



Yamaha bond No. 1215
90890-85505, ACC-1100-15-01

NOTE:

Do not allow any sealant to come into contact with the oil gallery or crankshaft journal bearings. Do not apply sealant to within 2 ~ 3 mm of the crankshaft journal bearings.

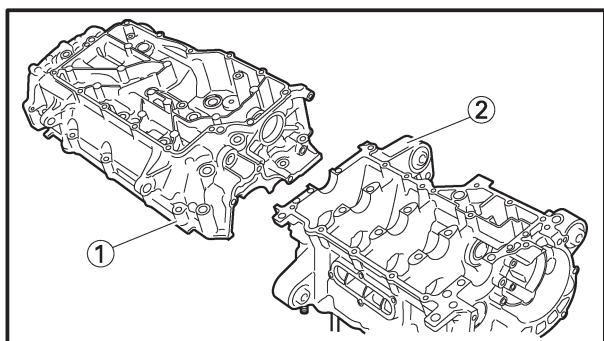


12. Install:

- Crankcase journal bearings ①
(into the lower crankcase)

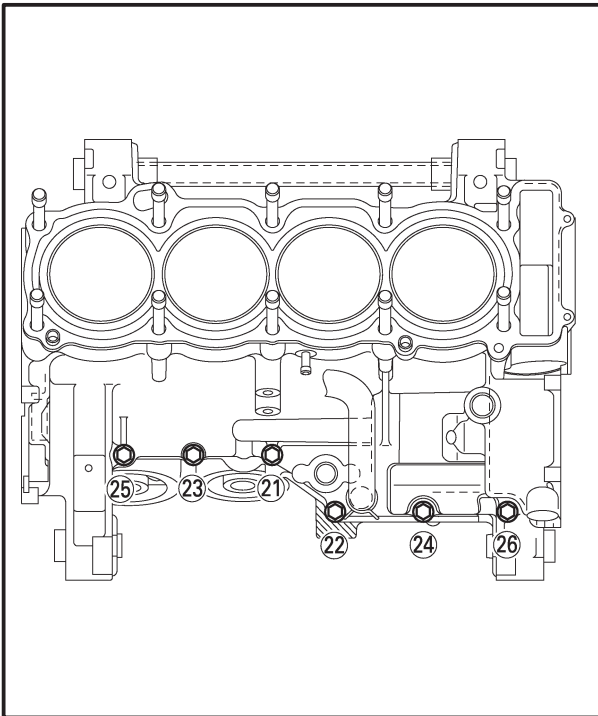
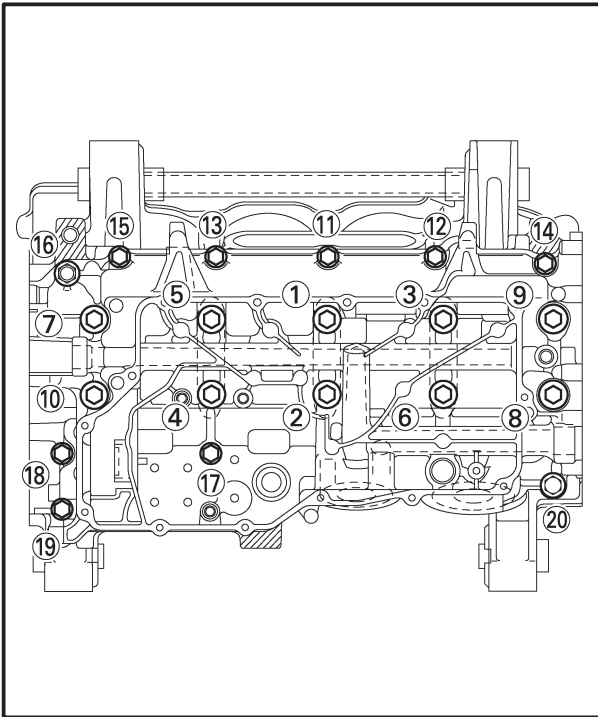
NOTE:

- Align the projections (a) on the crankshaft journal lower bearings with the notches (b) in the crankcase.
- Install each crankshaft journal lower bearing in its original place.



13. Install:

- Lower crankcase ①
(onto the upper crankcase ②)



14. Install:

- Crankcase bolts

NOTE:

- Lubricate the bolt threads with engine oil.
- Tighten the bolts in increasing numerical order.
- Install washers on bolts ① ~ ⑩.



Crankcase bolt

Bolt ① ~ ⑩

1st: 15 Nm

(1.5 m•kg, 11 ft•lb)

2nd: 15 Nm

(1.5 m•kg, 11 ft•lb) +

45 ~ 50°

Bolt ⑪ ~ ⑳

12 Nm (1.2 m•kg, 8.7 ft•lb)

M9 × 105 mm bolts: ① ~ ⑩

M8 × 65 mm bolts: ⑯, ⑳

M5 × 90 mm bolts: ㉔

M5 × 80 mm bolts: ㉕

M5 × 55 mm bolts: ⑪ ~ ⑮

M5 × 45 mm bolts: ⑰, ⑱, ㉑ ~ ㉔

M5 × 25 mm bolts: ⑱

15. Install:

- Counter shaft assembly
- Timing chain
- Oil pump drive chain

16. Install:

- Gasket
- Counter shaft cover
- Bolts



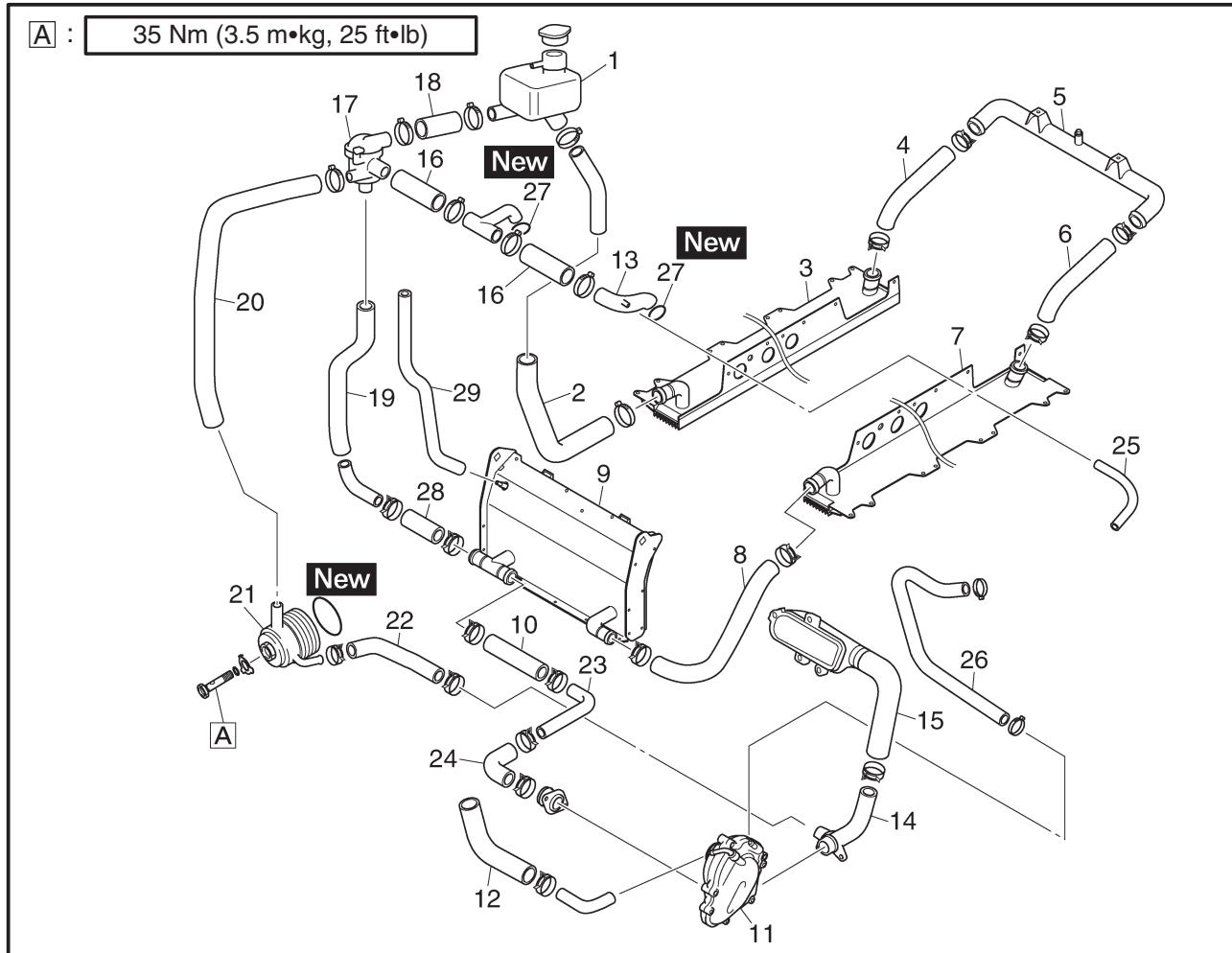
Bolts (countershaft cover):

12 Nm (1.2 m•kg, 8.7 ft•lb)



COOLING SYSTEM

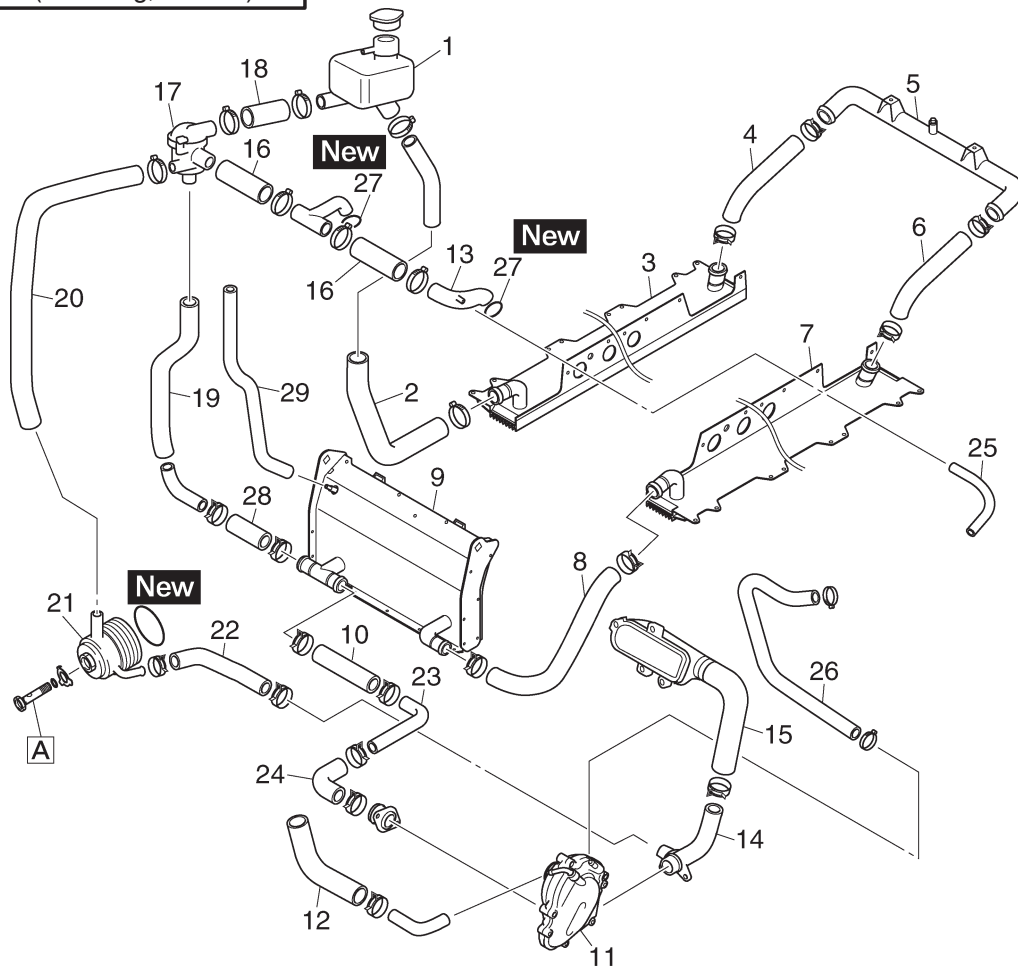
HEAT EXCHANGER



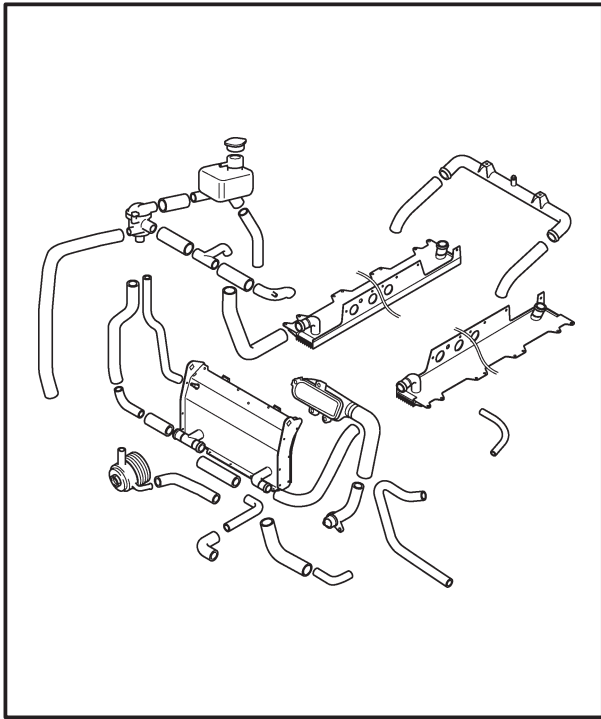
Order	Job name/Part name	Q'ty	Remarks
	Heat exchanger removal		Remove the parts in the order listed below. Drain. Refer to "COOLING SYSTEM" in CHAPTER 2. Refer to "PRIMARY SHEAVE AND DRIVE V-VELT" in CHAPTER 4.
	Coolant		
	Primary sheave assembly		
1	Coolant reservoir tank	1	
2	Coolant hose 1	1	
3	Heat exchanger (right)	1	
4	Coolant hose 2	1	
5	Heat exchanger (rear)	1	
6	Coolant hose 3	1	
7	Heat exchanger (left)	1	
8	Coolant hose 4	1	
9	Heat exchanger (front)	1	
10	Coolant hose 5	1	
11	Water pump assembly	1	
12	Coolant hose 6	1	
13	Coolant pipe 1	1	



A : 35 Nm (3.5 m•kg, 25 ft•lb)



Order	Job name/Part name	Q'ty	Remarks
14	Coolant pipe 2	1	For installation, reverse the removal procedure.
15	Coolant hose 7	1	
16	Coolant hose 8	2	
17	Thermostat assembly	1	
18	Coolant hose 9	1	
19	Coolant hose 10	1	
20	Oil cooler outlet hose	1	
21	Oil cooler	1	
22	Oil cooler inlet hose	1	
23	Pipe 3	1	
24	Water pump hose	1	
25	Carburetor heater hose	1	
26	Heat exchanger hose	1	
27	O-ring	1	
28	Coolant hose 11	1	
29	Coolant hose 12	1	

**INSPECTION**

1. Inspect:

- Coolant hoses
 - Heat exchangers
 - Oil cooler
 - Coolant pipes
- Cracks/damage → Replace.

2. Measure:

- Filler cap opening pressure
- Cap opens with a pressure below the specified pressure → Replace.

**Filler cap opening pressure:**

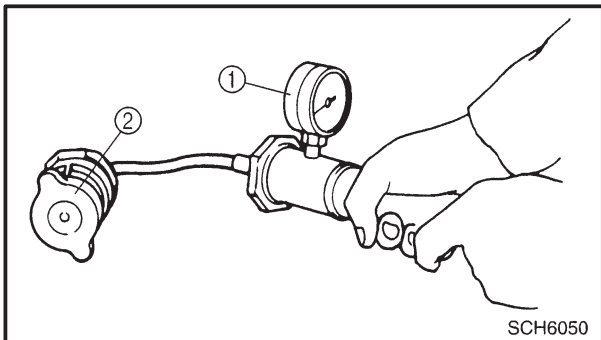
95 ~ 125 kPa

(0.95 ~ 1.25 kg/cm²,

14 ~ 18 psi)

Measurement steps:

- Attach the cooling system tester ① to the coolant filler cap ②.

**Cooling system tester:**

90890-01325, YU-24460-01

Adapter:

90890-01352, YU-33984

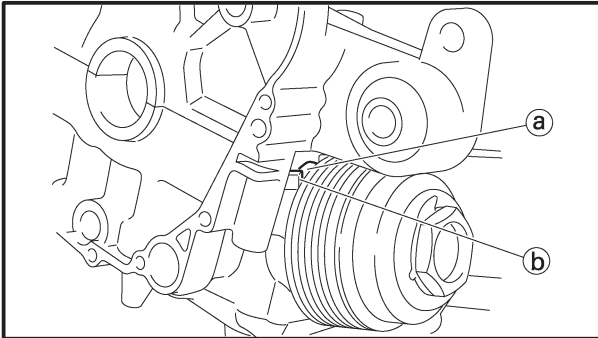
- Apply the specified pressure for 10 seconds and make sure there is no pressure drop.

**INSTALLATION**

1. Install:
 - Heat exchangersUse the rivet gun.
2. Install:
 - O-ring
 - Oil cooler
 - Lock washer
 - Bolt (oil cooler bolt)



Bolt (oil cooler):
35 Nm (3.5 m•kg, 25 ft•lb)

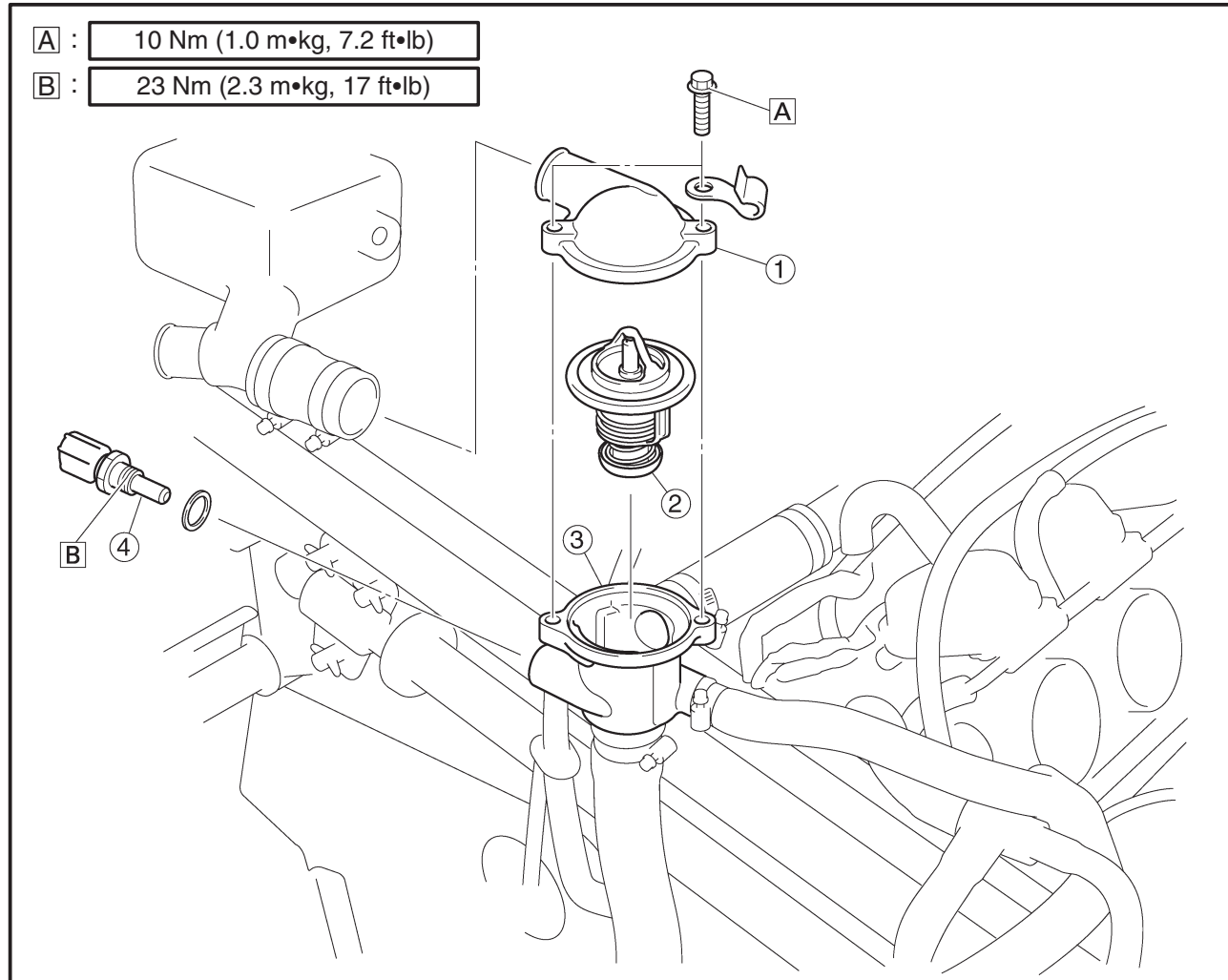
**NOTE:** _____

- Before installing the oil cooler, lubricate the oil cooler bolt and O-ring with a thin coat of engine oil.
- Make sure the O-ring is positioned properly.
- Align the projection (a) on the oil cooler with the slot (b) in the crankcase.

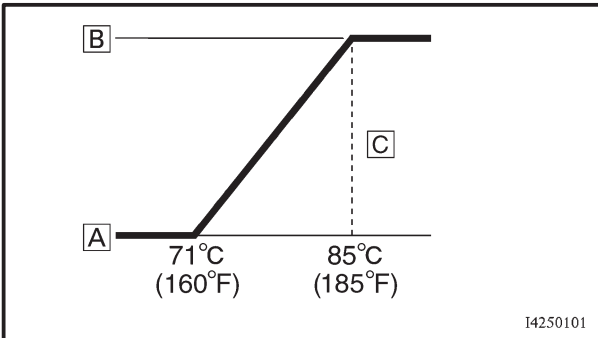
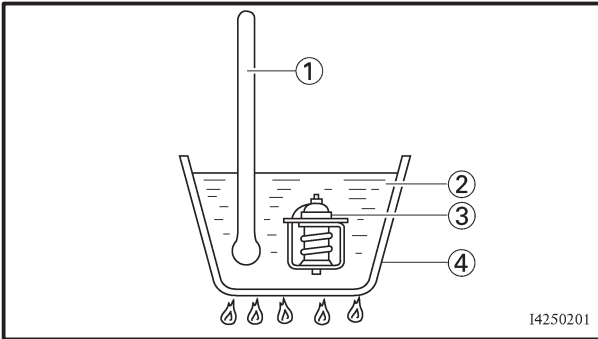
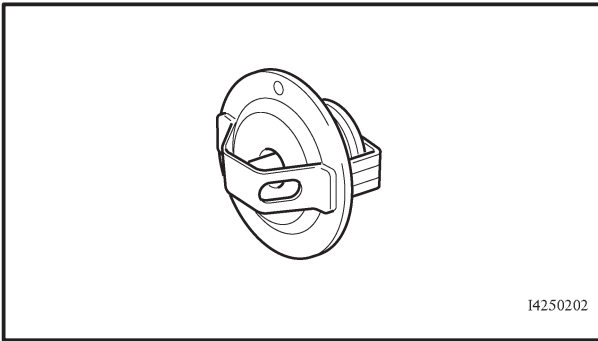
- Bend the lock washer tab along a flat side of the bolt.



THERMOSTAT



Order	Job name/Part name	Q'ty	Remarks
	Thermostat disassembly		Disassemble the parts in the order listed below.
①	Thermostat housing cover	1	
②	Thermostat	1	
③	Thermostat housing	1	
④	Water temperature sensor	1	For assembly, reverse the disassembly procedure.

**INSPECTION**

1. Inspect:

- Thermostat

Does not open at 71 ~ 85°C (160 ~ 185°F)

→ Replace.

Inspection steps:

- Suspend the thermostat in a container filled with water.
- Slowly heat the water.
Place a thermometer in the water.
- While stirring the water, observe the thermostat and thermometer's indicated temperature.

① Thermometer

② Water

③ Thermostat

④ Container

A Fully closed

B Fully open

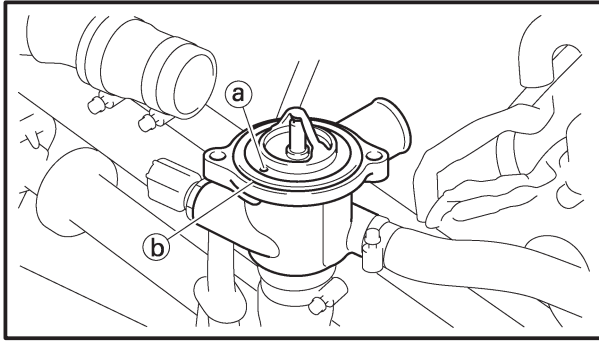
C More than 7 mm (0.276 in)

NOTE:

If the accuracy of the thermostat is in doubt, replace it. A faulty thermostat could cause serious overheating or overcooling.

2. Inspect:

- Thermostat housing cover
 - Thermostat housing
- Cracks/damage → Replace.

**INSTALLATION**

1. Install:

- Thermostat
(into the thermostat housing)

NOTE:

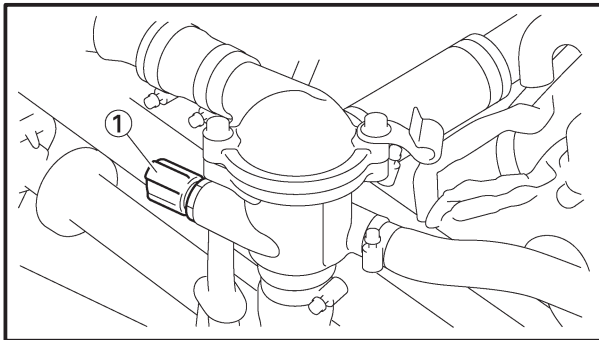
Install the thermostat with its breather hole (a) aligned with the this place (b) on the thermostat housing.

2. Install:

- Thermostat cover
- Bolts
(thermostat housing)



Bolt (thermostat housing):
10 Nm (1.0 m•kg, 7.2 ft•lb)



3. Install:

- Water temperature sensor (1)
(to the thermostat housing)



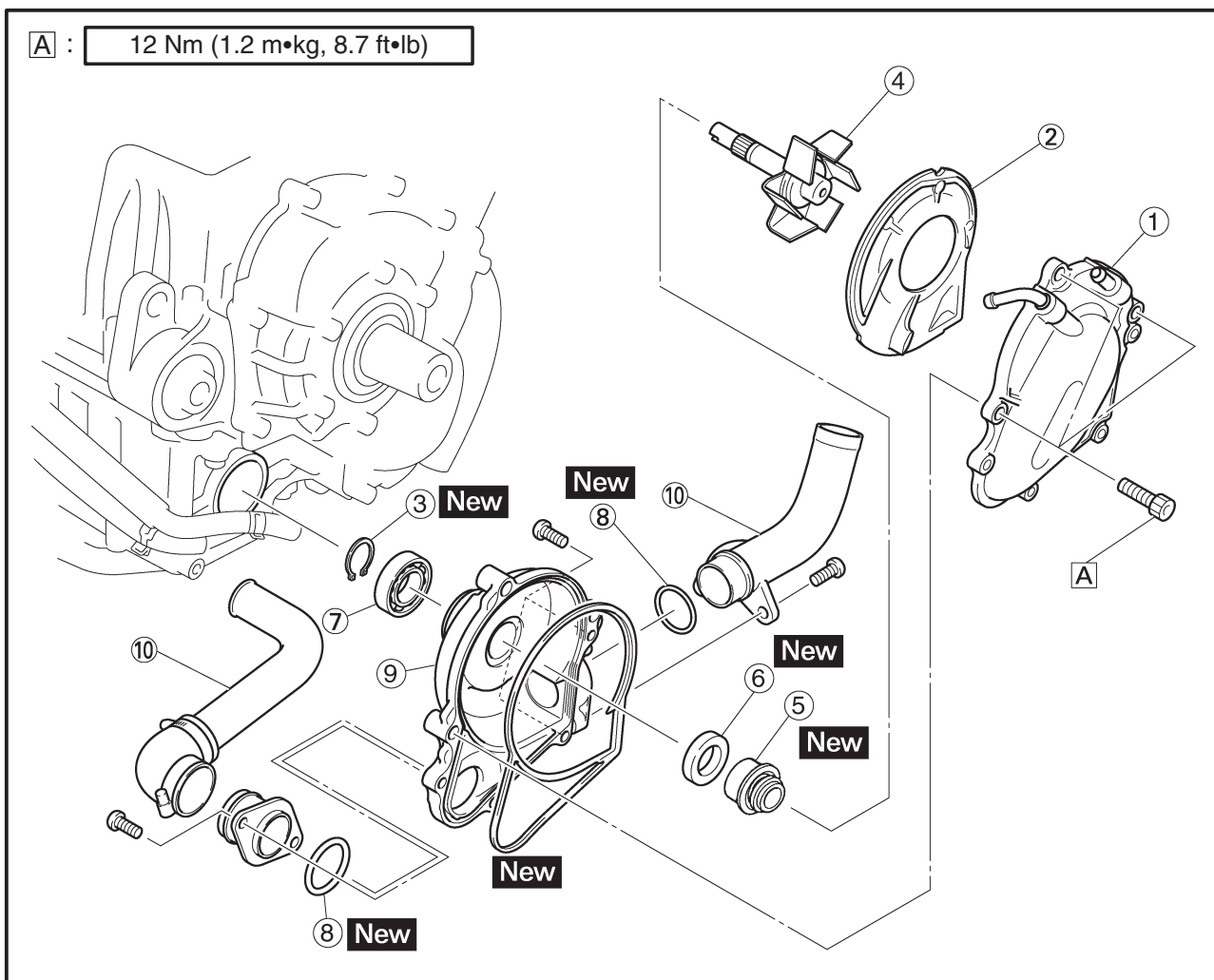
Water temperature sensor
23 Nm (2.3 m•kg, 17 ft•lb)

CAUTION:

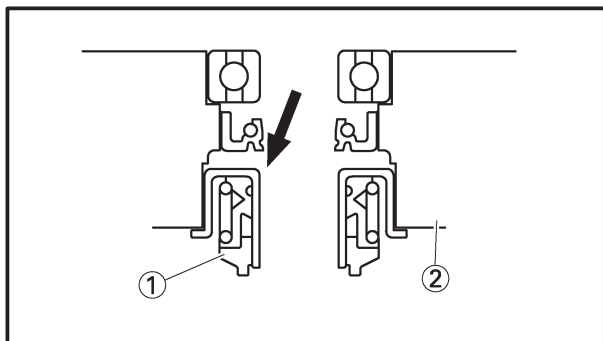
Use extreme care when handling the water temperature sensor. Replace any part that was dropped or subjected to a strong impact.



WATER PUMP



Order	Job name/Part name	Q'ty	Remarks
	Water pump disassembly		
①	Oil pan	1	Disassembly the parts in the order listed below. Refer to "OIL PAN AND OIL PUMP".
②	Water pump cover	1	
③	Plate	1	
④	Circlip	1	
⑤	Impeller shaft	1	
⑥	Water pump seal	1	
⑦	Oil seal	1	
⑧	Bearing	1	
⑨	O-ring	2	
⑩	Water pump housing	1	
	Pipe	2	
			For assembly, reverse the disassembly procedure.



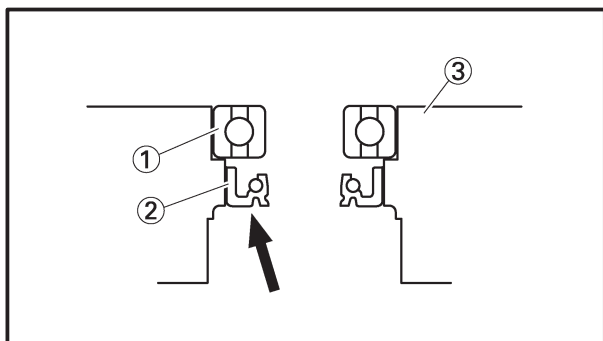
DISASSEMBLY

1. Remove:

- Impeller
- Water pump seal ①

NOTE:

Remove the water pump seal ① from the inside of the water pump housing ②.

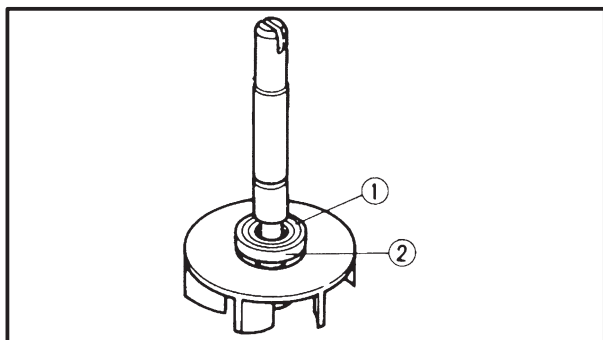


2. Remove:

- Bearing ①
- Oil seal ②

NOTE:

Remove the bearing ① and oil seal ② from the inside of the water pump housing ③.

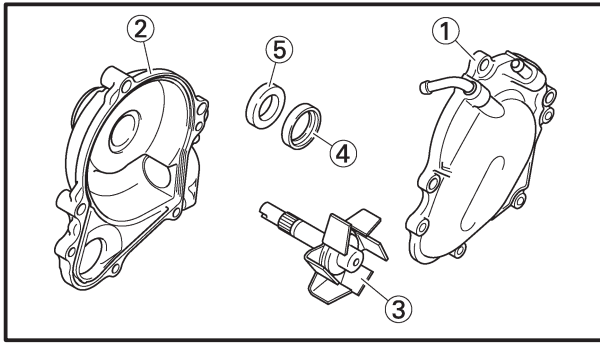


3. Remove:

- Rubber damper holder ①
- Rubber damper ②
(from the impeller, with a thin, flat-head screwdriver)

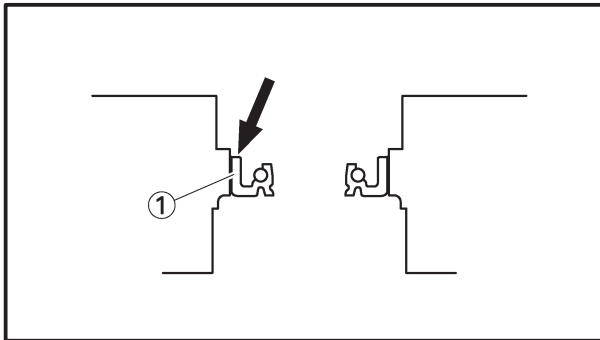
NOTE:

Do not scratch the impeller shaft.



INSPECTION

1. Inspect:
 - Water pump housing cover ①
 - Water pump housing ②
 - Impeller ③
 - Rubber damper ④
 - Rubber damper holder ⑤
 - Water pump seal
 - Oil seal
 - Cracks/damage/wear → Replace.
2. Inspect:
 - Bearing
 - Rough movement → Replace.



ASSEMBLY

1. Install:
 - Oil seal **New** ①
 - (to the water pump housing)

NOTE: _____

- Before installing the oil seal, apply tap water or coolant onto its outer surface.
- Install the oil seal with a socket that matches its outside diameter.

2. Install:
 - Bearing

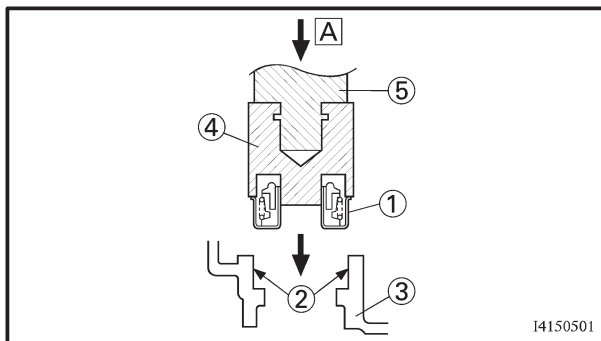
NOTE: _____

Install the bearing with a socket that matches its outside diameter.

3. Install:
 - Water pump seal **New**

CAUTION:

Never apply oil or grease onto the water pump seal surface.



NOTE:

- Install the water pump seal ① with the water pump seal installers ④ ⑤.
- Before installing the water pump seal, apply Yamaha bond No.1215 ② to the water pump housing ③.



Water pump seal installer:

90890-04078, YM-33221

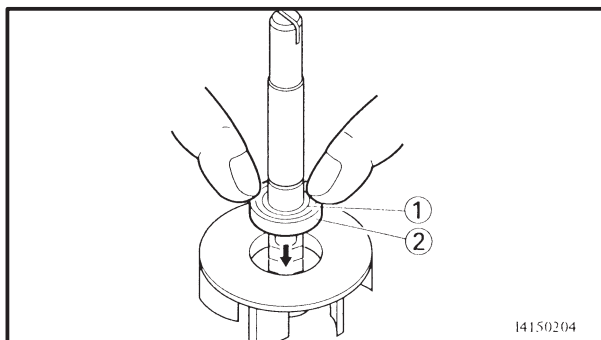
40 and 50 mm Bearing driver:

90890-04058, YM-4058

Yamaha bond No.1215

90890-85505, ACC-11001-05-01

A Push down

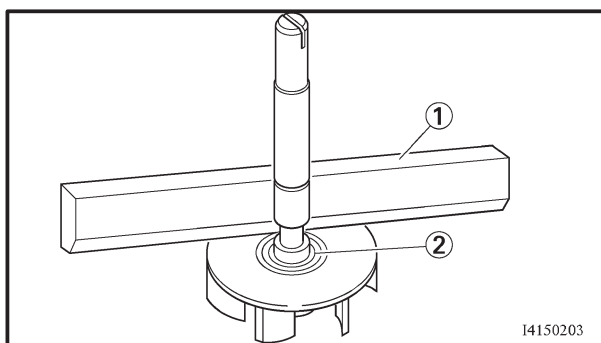


4. Install:

- Rubber damper holder ①
- Rubber damper ②

NOTE:

Before installing the rubber damper, apply tap water or coolant onto its outer surface.



5. Measure:

- impeller shaft tilt

Out of specification → Repeat steps (4) and (5).

CAUTION:

Make sure the rubber damper and rubber damper holder are flush with the impeller.



Max. impeller shaft tilt:

0.15 mm (0.0059 in)

<Limit>: 0.072 mm (0.0028 in)

① Straightedge

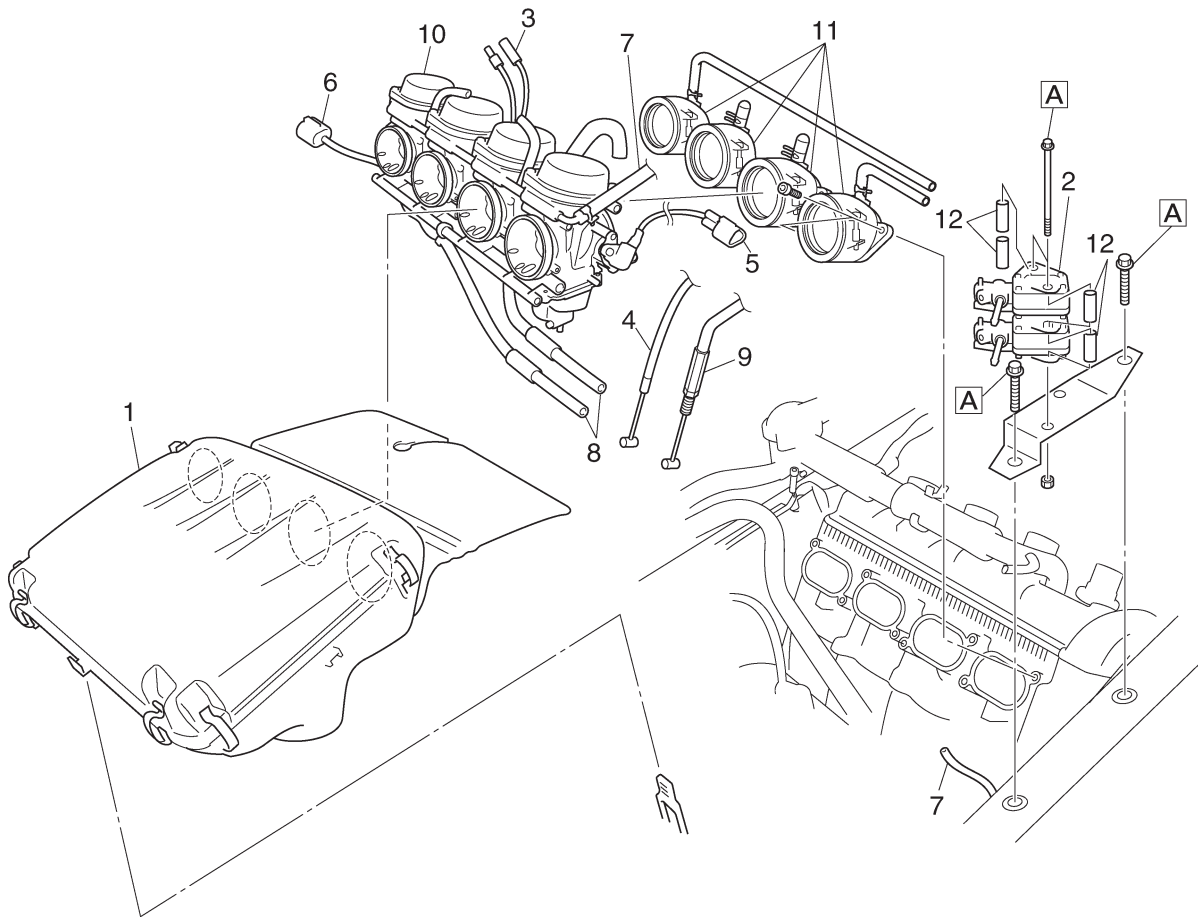
② Impeller



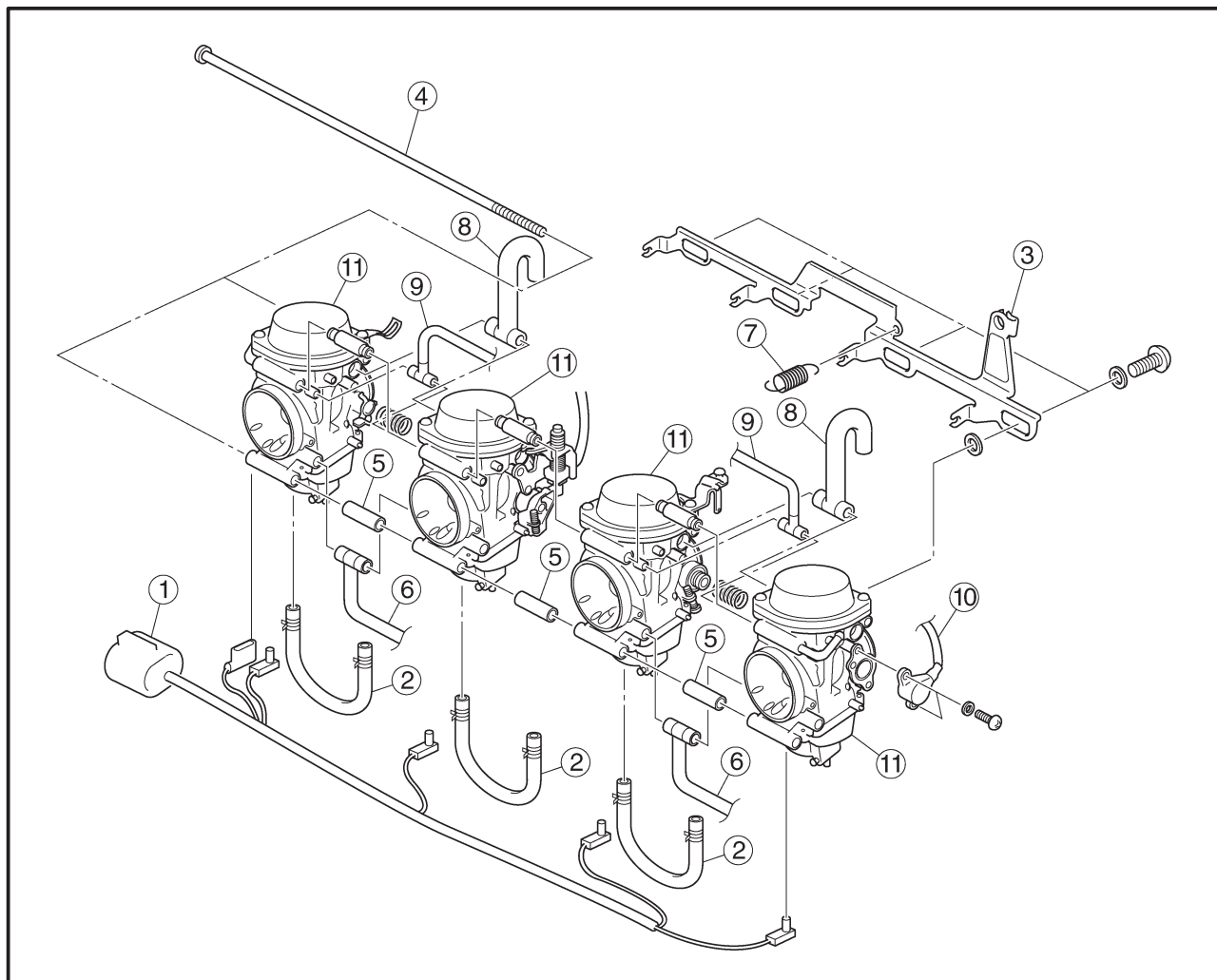
CARBURETION

CARBURETORS

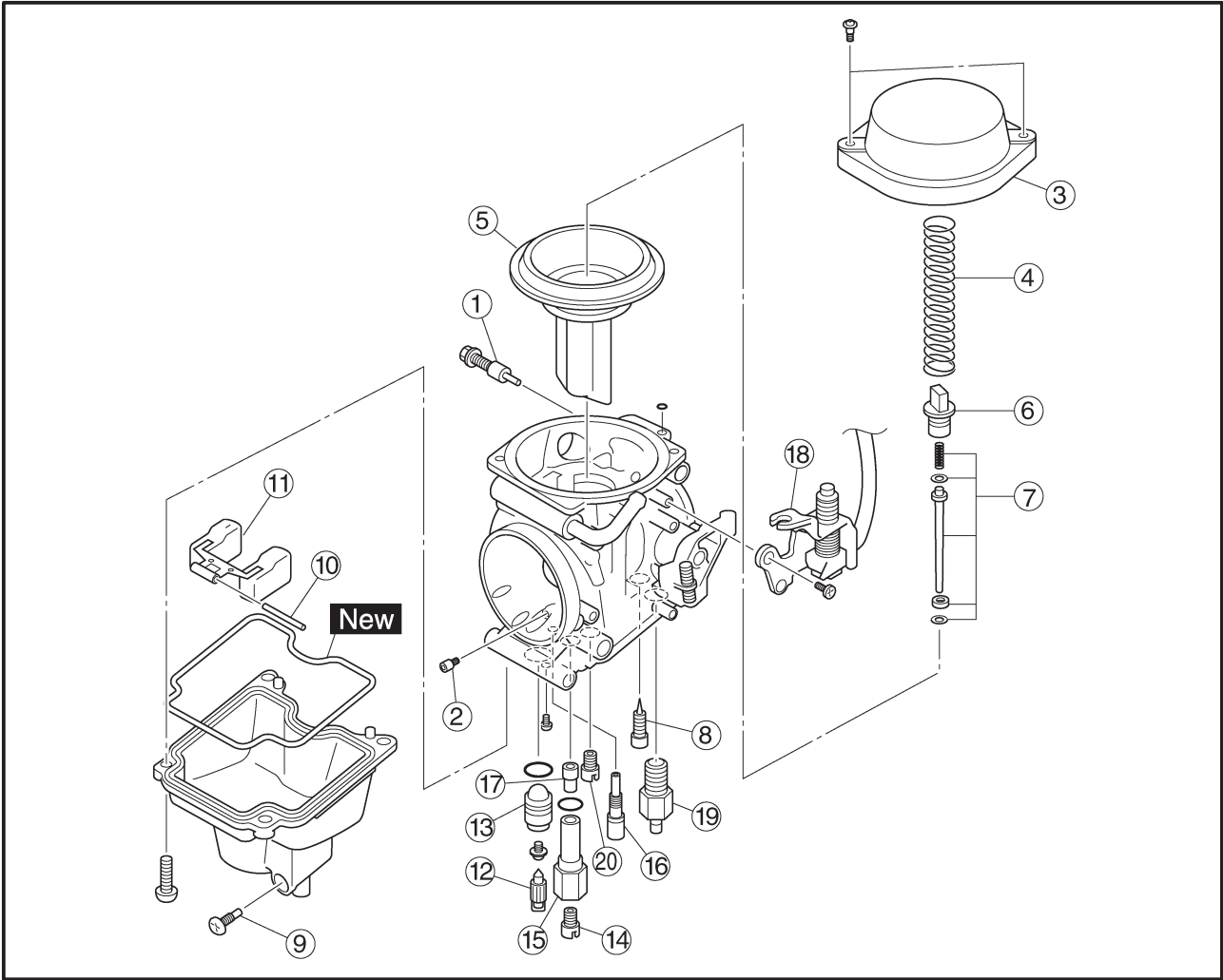
A : 10 Nm (1.0 m•kg, 7.2 ft•lb)



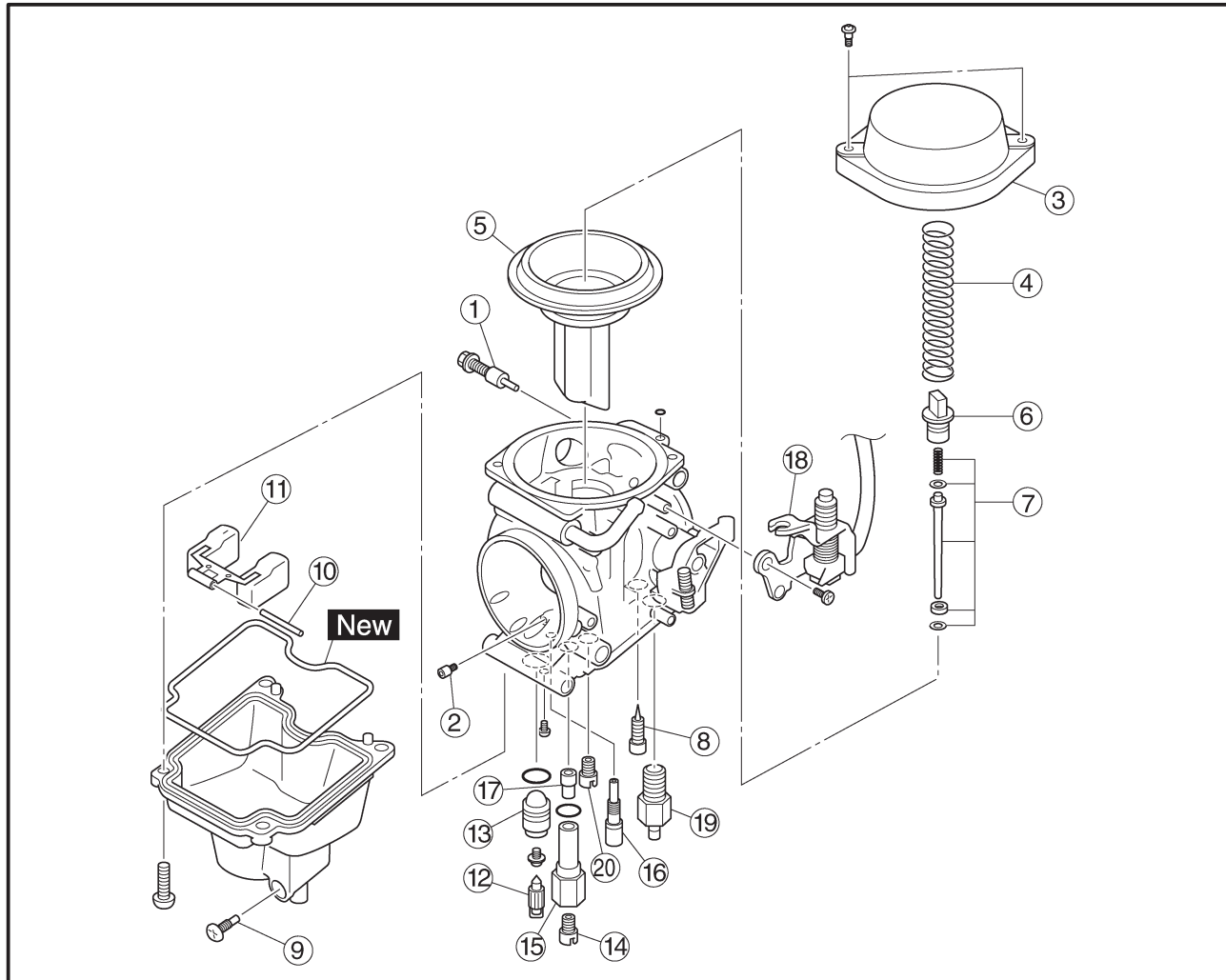
Order	Job name/Part name	Q'ty	Remarks
	Carburetors removal		Remove the parts in the order listed below.
1	Intake silencer	1	
2	Fuel pump	1	
3	Carburetor switch (T.O.R.S.) lead	2	Disconnect.
4	Starter cable	1	
5	Throttle position sensor coupler	1	Disconnect.
6	Carburetor heater lead	1	Disconnect.
7	Carburetor heating hose	2	
8	Fuel hose	2	
9	Throttle cable	1	
10	Carburetor assembly	1	
11	Caburetor joint	4	
12	Collar	4	
			For installation, reverse the removal procedure.



Order	Job name/Part name	Q'ty	Remarks
	Carburetor separation		Remove the parts in the order listed below.
①	Carburetor heater harness	1	
②	Carburetor heating hose	3	
③	Starter plunger link	1	
④	Connecting bolt	2	
⑤	Spacer	3	
⑥	Fuel inlet pipe	2	
⑦	Spring	1	
⑧	Vacuum chamber air vent hose	2	
⑨	Float chamber air vent hose	2	
⑩	Throttle position sensor	1	
⑪	Carburetor	4	For installation, reverse the removal procedure.



Order	Job name/Part name	Q'ty	Remarks
	Carburetor disassembly		Disassemble the parts in the order listed below. NOTE: _____ The following procedure applies to all of the carburetors. _____
①	Starter plunger	1	
②	Pilot air jet	1	
③	Vacuum chamber cover	1	
④	Piston valve spring	1	
⑤	Piston valve	1	
⑥	Jet needle holder	1	
⑦	Jet needle kit	1	
⑧	Pilot screw	1	
⑨	Fuel drain bolt	1	
⑩	Float pin	1	



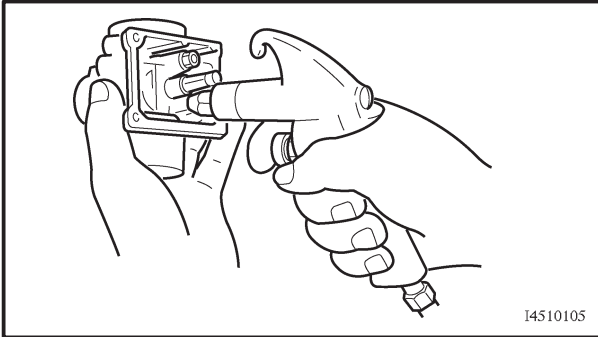
Order	Job name/Part name	Q'ty	Remarks
⑪	Float	1	For assembly, reverse the disassembly procedure.
⑫	Needle valve	1	
⑬	Needle valve seat	1	
⑭	Main jet	1	
⑮	Main jet holder	1	
⑯	Pilot jet	1	
⑰	Needle jet	1	
⑱	Carburetor switch (T.O.R.S.)	1	
⑲	Carburetor heater	1	
⑳	Starter jet	1	



INSPECTION

1. Inspect:

- Carburetor body
 - Float chamber
 - Jet housing
- Cracks/damage → Replace.

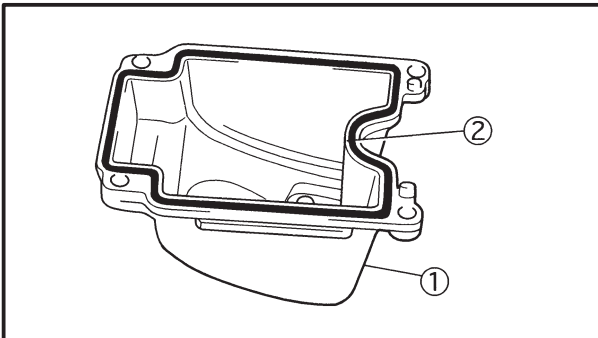


2. Inspect:

- Fuel passages
- Obstruction → Clean.

NOTE:

- Use a petroleum based solvent for cleaning.
- Blow out all passage and jets with compressed air.

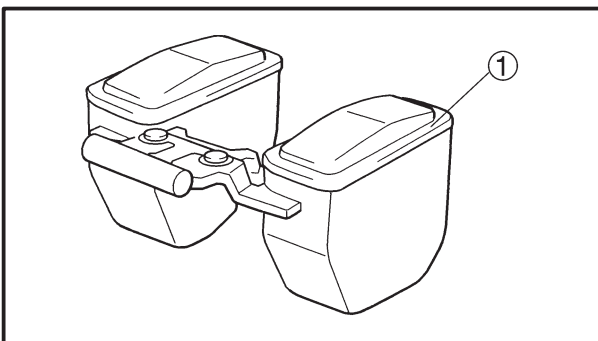


3. Inspect:

- Float chamber body ①

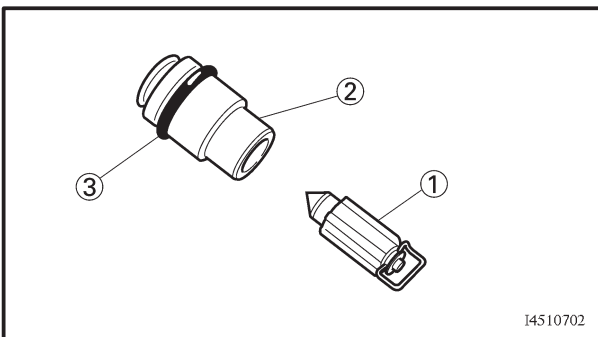
4. Inspect:

- Float chamber rubber gasket ②
- Cracks/damage/wear → Replace.



5. Inspect:

- Float ①
- Damage → Replace.

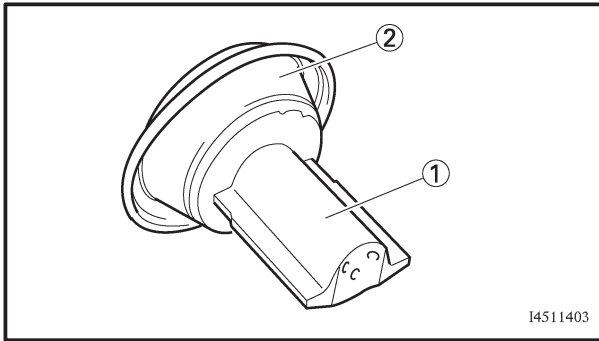


6. Inspect:

- Needle valve ①
 - Needle valve seat ②
- Damage/obstruction/wear → Replace the needle valve, needle valve seat and O-ring as a set.

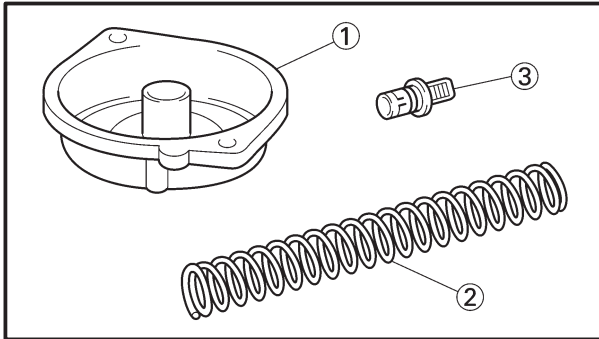
7. Inspect:

- O-ring ③
- Damage/wear → Replace the needle valve, needle valve seat and O-ring as a set.



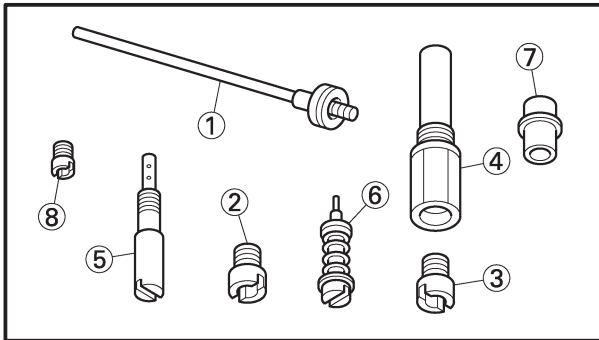
8. Inspect:

- Piston valve ①
Damage/scratches/wear → Replace.
- Rubber diaphragm ②
Cracks/tears → Replace.



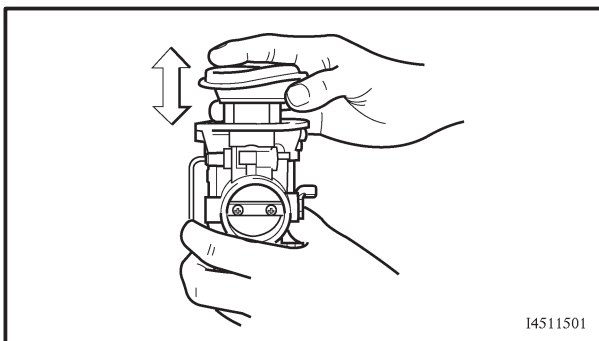
9. Inspect:

- Vacuum chamber cover ①
- Piston valve spring ②
- Jet needle holder ③
Cracks/damage → Replace.



10. Inspect:

- Jet needle kit ①
- Starter jet ②
- Main jet ③
- Main jet holder ④
- Pilot jet ⑤
- Pilot screw ⑥
- Needle jet ⑦
- Pilot air jet ⑧
Bends/damage/wear → Replace.
Obstruction → Clean.
Blow out the jets with compressed air.



11. Inspect:

- Piston valve movement
Insert the piston valve into the carburetor body and move it up and down.
Tightness → Replace the piston valve.

12. Inspect:

- Fuel feed pipes
- Hose joint
Cracks/damage → Replace.
Obstruction → Clean.
Blow out the pipes with compressed air.

13. Inspect:

- Fuel feed hoses
- Fuel hoses
Cracks/damage/wear → Replace.
Obstruction → Clean.
Blow out the hoses with compressed air.



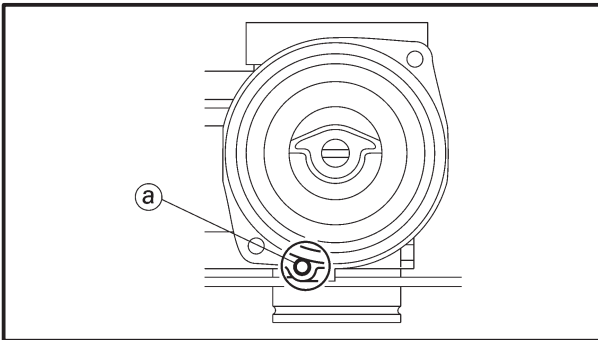
ASSEMBLY

NOTE:

- Before assembling the carburetors, wash all of the parts in a petroleum based solvent.
- Always use a new gasket and O-rings.

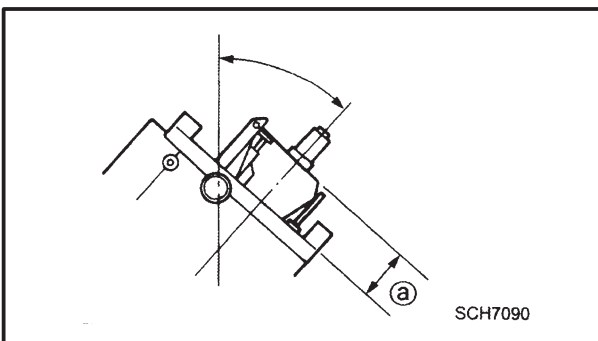
1. Install:

- Jet needle kit
- Needle jet
- Pilot jet
- Main jet



2. Inspect:

- Piston valve
- Piston valve spring
- Vacuum chamber cover
- O-ring (a)



3. Measure:

- Float height (a)
- Out of specification → Adjust.



Float height:

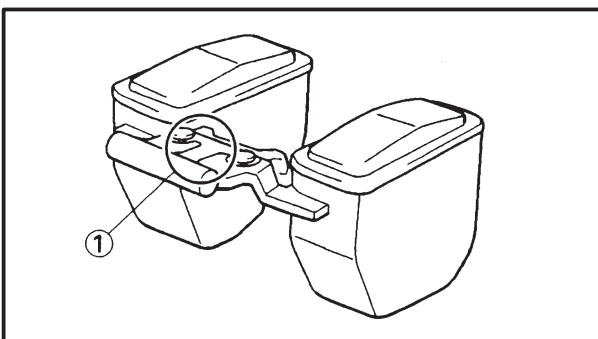
11 ~ 15 mm (0.43 ~ 0.59 in)

Measurement and adjustment steps:

- Hold the carburetor upside down.
- Measure the distance between the carburetor body and top of the floats.

NOTE:

The float arm should be resting on the needle valve without exerting pressure on it.



- If the float height is not within specification, inspect the valve seat and needle valve.
- If either is worn, replace them both.
- If both are fine, adjust the float height by bending the float arm tang (1) on the float.
- Recheck the float height.



INSTALLATION

NOTE:

After installing all parts, refer to “CABLE ROUTING” in CHAPTER 9, to check the cable, lead and hose routing.

1. Adjust:

- Carburetor synchronization

Refer to “SYNCHRONIZING THE CARBURETORS” in CHAPTER 2.

2. Adjust:

- Engine idling speed

**Engine idle speed:**

$1,350 \pm 100$ r/min

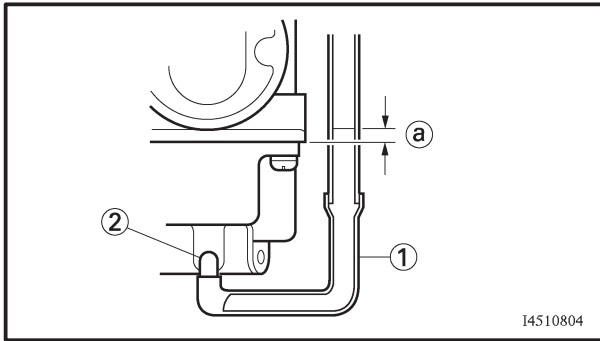
(1,250 ~ 1,450 r/min)

Refer to “ENGINE IDLE SPEED ADJUSTMENT” in CHAPTER 2.

3. Adjust:

- Throttle cable free play

Refer to “THROTTLE CABLE FREE PLAY” in CHAPTER 2.

**FUEL LEVEL ADJUSTMENT****1. Measure:**

- Fuel level ①
- Out of specification → Adjust.



Fuel level (below the line on the float chamber):
3.0 ~ 4.0 mm (0.118 ~ 0.157 in)

Measurement steps:

- Install the fuel level gauge ① to the fuel drain pipe ②.

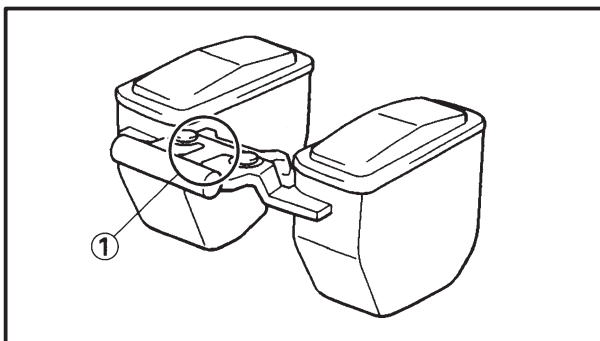
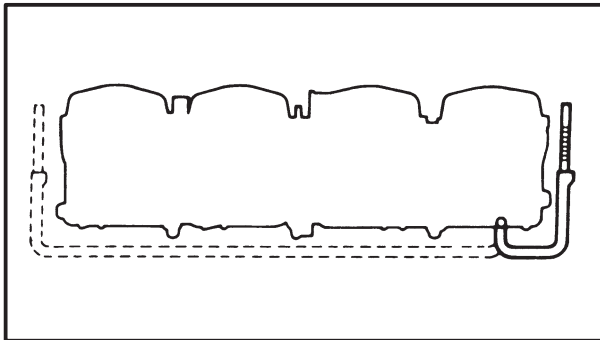


Fuel level gauge
90890-01312, YU-01312-A

- Loosen the fuel drain screw.
- Hold the fuel level gauge vertically next to the line on the float chamber.
- Measure the fuel level ① on both sides of the carburetor assembly.

NOTE:

The fuel level readings should be equal on both sides.

**2. Adjust:**

- Fuel level

Adjustment steps:

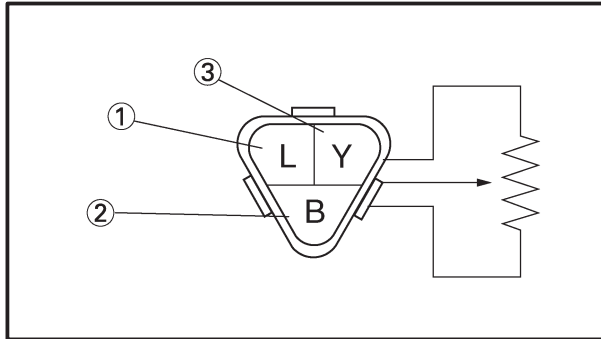
- Remove the carburetor assembly.
- Inspect the needle valve seat and needle valve.
- If either is worn, replace them as a set.
- If both are fine, adjust the float height by bending the float tang ① or the float.
- Recheck the fuel level.



THROTTLE POSITION SENSOR (T.P.S.) INSPECTION AND ADJUSTMENT

NOTE:

Before adjusting the throttle position sensor, properly adjust the idle speed.



1. Inspect:

- Throttle position sensor.

Inspection steps:

- Disconnect throttle position sensor coupler.
- Connect the pocket tester ($\Omega \times 1k$) to the throttle position sensor coupler.

Tester (–) lead → Blue terminal ①

Tester (+) lead → Black terminal ②

- Check the throttle position sensor resistance.



**Throttle position sensor
resistance “R₁”:**

**4 ~ 6 k Ω at 20°C (68°F)
(Blue – Black)**

Out of specification → Replace the throttle position sensor.

- Connect the pocket tester ($\Omega \times 1k$) to the throttle position sensor coupler.

Tester (–) lead → Yellow ③

Tester (+) lead → Black ②

- While slowly pushing the throttle check the throttle position sensor resistance.



**Throttle position sensor
resistance “R₂”:**

**0 ~ 4 k Ω at 20°C (68°F)
(Yellow – Black)**

Out of specification → Replace the throttle position sensor.

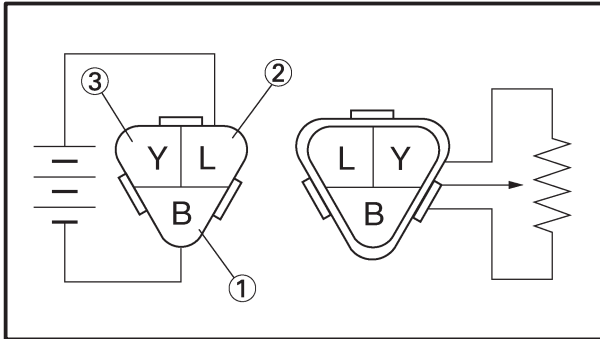


2. Adjust:

- Throttle position sensor position

Adjustment steps:

- Disconnect the throttle position sensor coupler.
- Connect the test coupler to the throttle position sensor.
- Connect three dry cells (1.5 V × 3 pcs.) in series to the test coupler.



Dry cells (-) → ①

Dry cells (+) → ②

- Connect the digital multimeter to the test coupler.

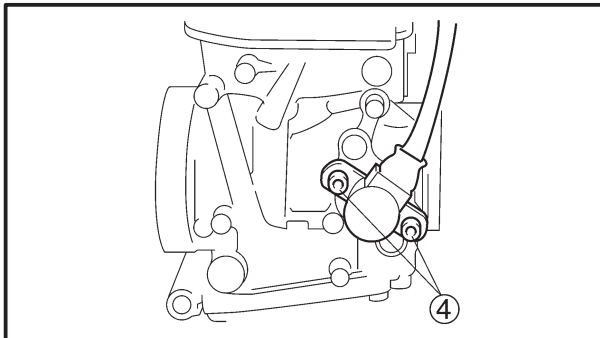
Digital multimeter (-) lead → ①

Digital multimeter (+) lead → ③

- Measure the voltage ①.

NOTE:

When measuring the voltage ① be sure that the test coupler is connected to the throttle position sensor.



- Calculate the specified voltage ②.

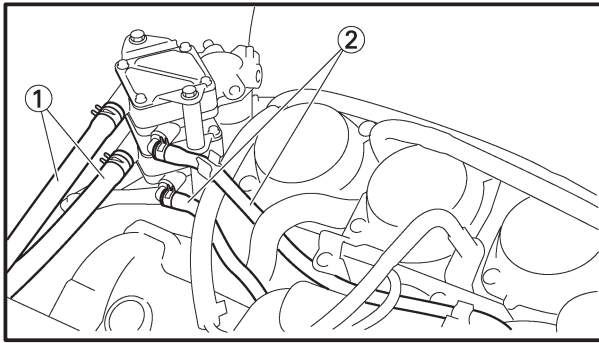
Specified voltage ② = Voltage ① × (0.136)

- Loosen the throttle position sensor bolts ④.
- Connect the digital multimeter to the test coupler

Digital multimeter (-) lead → ①

Digital multimeter (+) lead → ③

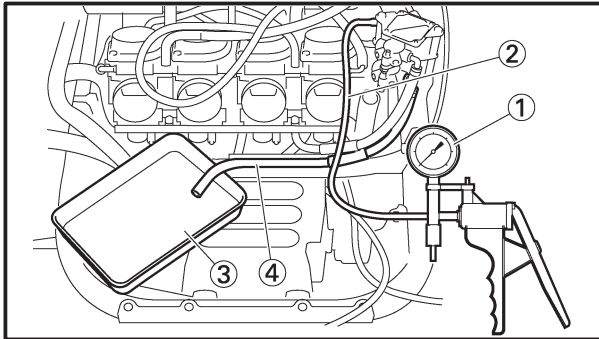
- Adjust the throttle position sensor position to obtain the specified voltage ②.
- Tighten the throttle position sensor bolts ④.
- Disconnect the test coupler and connect the throttle position sensor coupler.



INSPECTION

1. Inspect:

- Fuel hose ①
 - Vacuum hose ②
- Clogs/damage → Replace.



2. Inspect:

- Fuel pump operation.

Inspection steps:

- Connect the Mity vac ① to the vacuum hose ②.



Mity vac:

90890-06756, YB-35956

- Place a container ③ under the end of the fuel hoses ④.
- Operate the Mity vac ① while checking that fuel flows from the fuel hoses ④.
- If fuel does not flow out, replace the fuel pump.

INSTALLATION

NOTE:

After installing all parts, refer to “CABLE ROUTING” in CHAPTER 9, to check the cable, lead and hose routings.

ELECTRICAL

SWITCH INSPECTION
SWITCH INSPECTION

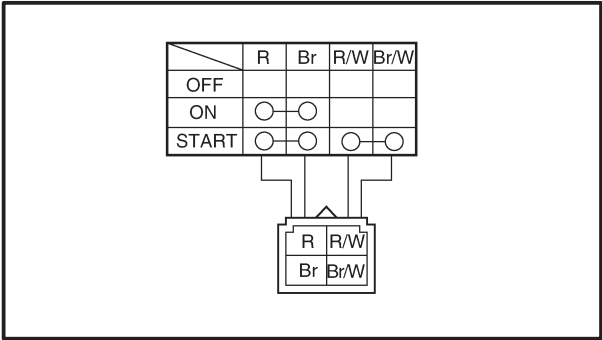
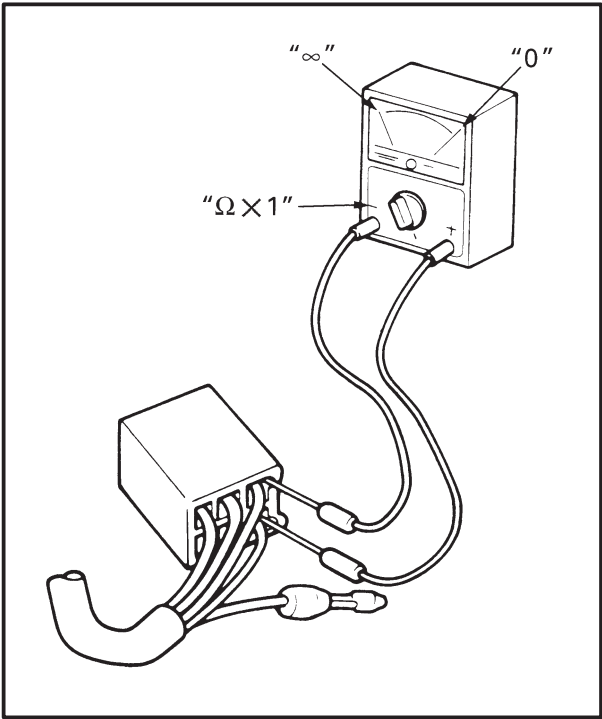
Use a pocket tester to check the terminals for continuity. If the continuity is faulty at any point, replace the switch.



Pocket tester:
90890-03112, YU-03112

NOTE:

- Set the pocket tester to “0” before starting a test.
- When testing the switch for continuity the pocket tester should be set to the “× 1” Ω range.
- When checking the switch turn it on and off a few times.



INSPECTING A SWITCH SHOWN IN THE
MANUAL

The terminal connections for switches (main switch, handlebar switch, engine stop switch, light switch, etc.) are shown in a chart similar to the one on the left.

This chart shows the switch positions in the column and the switch lead colors in the top row. For each switch position, “○—○” indicates the terminals with continuity.

The example chart shows that:

- ① There is continuity between the “Red and Brown” leads when the switch is set to “ON”.
- ② There is continuity between the “Red/White and Brown/White” leads when the switch is set to “START”.

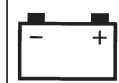
The diagram illustrates the electrical system for a vehicle, showing the connection of various components. The central control unit (16) is connected to the battery (23) and the alternator (24). The system includes a starter motor (12), a fuel pump (13), and various lights and switches (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 17, 18, 19, 20, 21, 22, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100). The diagram also includes a legend for wire harnesses and a list of components.

Legend:

- ④ WIRE HARNESS 1
- ⑤ WIRE HARNESS 2
- ⑥ WIRE HARNESS 3
- ⑦ WIRE HARNESS 4
- ⑧ WIRE HARNESS 5
- ⑨ WIRE HARNESS 6
- ⑩ WIRE HARNESS 7
- ⑪ WIRE HARNESS 8
- ⑫ WIRE HARNESS 9
- ⑬ WIRE HARNESS 10
- ⑭ WIRE HARNESS 11
- ⑮ WIRE HARNESS 12
- ⑯ WIRE HARNESS 13
- ⑰ WIRE HARNESS 14
- ⑱ WIRE HARNESS 15
- ⑲ WIRE HARNESS 16
- ⑳ WIRE HARNESS 17
- ㉑ WIRE HARNESS 18
- ㉒ WIRE HARNESS 19
- ㉓ WIRE HARNESS 20
- ㉔ WIRE HARNESS 21
- ㉕ WIRE HARNESS 22
- ㉖ WIRE HARNESS 23
- ㉗ WIRE HARNESS 24
- ㉘ WIRE HARNESS 25
- ㉙ WIRE HARNESS 26
- ㉚ WIRE HARNESS 27
- ㉛ WIRE HARNESS 28
- ㉜ WIRE HARNESS 29
- ㉝ WIRE HARNESS 30
- ㉞ WIRE HARNESS 31
- ㉟ WIRE HARNESS 32
- ㊱ WIRE HARNESS 33
- ㊲ WIRE HARNESS 34
- ㊳ WIRE HARNESS 35
- ㊴ WIRE HARNESS 36
- ㊵ WIRE HARNESS 37
- ㊶ WIRE HARNESS 38
- ㊷ WIRE HARNESS 39
- ㊸ WIRE HARNESS 40
- ㊹ WIRE HARNESS 41
- ㊺ WIRE HARNESS 42
- ㊻ WIRE HARNESS 43
- ㊼ WIRE HARNESS 44
- ㊽ WIRE HARNESS 45
- ㊾ WIRE HARNESS 46
- ㊿ WIRE HARNESS 47

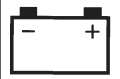
Components:

- 1. BATTERY
- 2. ALTERNATOR
- 3. STARTER MOTOR
- 4. FUEL PUMP
- 5. IGNITION SWITCH
- 6. HEADLIGHTS
- 7. BRAKE LIGHTS
- 8. TURN SIGNALS
- 9. HORN
- 10. WIPER MOTOR
- 11. WINDOW MOTOR
- 12. DOOR LOCK MOTOR
- 13. TRUNK LOCK MOTOR
- 14. TRUNK LAMP
- 15. TRUNK LOCK
- 16. CENTRAL CONTROL UNIT
- 17. FUSE BLOCK
- 18. RELAY
- 19. RELAY
- 20. RELAY
- 21. RELAY
- 22. RELAY
- 23. BATTERY
- 24. ALTERNATOR
- 25. STARTER MOTOR
- 26. FUEL PUMP
- 27. IGNITION SWITCH
- 28. HEADLIGHTS
- 29. BRAKE LIGHTS
- 30. TURN SIGNALS
- 31. HORN
- 32. WIPER MOTOR
- 33. WINDOW MOTOR
- 34. DOOR LOCK MOTOR
- 35. TRUNK LOCK MOTOR
- 36. TRUNK LAMP
- 37. TRUNK LOCK
- 38. CENTRAL CONTROL UNIT
- 39. FUSE BLOCK
- 40. RELAY
- 41. RELAY
- 42. RELAY
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- 94. RELAY
- 95. RELAY
- 96. RELAY
- 97. RELAY
- 98. RELAY
- 99. RELAY
- 100. RELAY



IGNITION SYSTEM CIRCUIT DIAGRAM

- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Main relay
- ⑤ Fuse (MAIN)
- ⑧ Battery
- ⑨ Engine stop switch
- ⑩ Throttle switch
- ⑪ Carburetor switch
- ⑫ CDI unit
- ⑬ ignition coil
- ⑭ Spark plug
- ⑮ Fuse (IGNITION)



TROUBLESHOOTING

NO SPARK OR WEAK SPARK.

Check the main fuse and ignition fuse.

Refer to "FUSE INSPECTION"

in CHAPTER 2.



OK

FAULTY



Replace the main fuse and/or ignition fuse.

Check the battery.

Refer to "BATTERY INSPECTION"

in CHAPTER 2.



OK

OUT OF SPECIFICATION



Replace and/or charge the battery.

Refer to "BATTERY CHARGING" in CHAPTER 2.

Check the stator coil and pickup coil.



OK

OUT OF SPECIFICATION



Replace the stator coil assembly.

Check the spark plug gap.



OK

OUT OF SPECIFICATION



Repair or replace the spark plug.

Check the ignition coil resistance.



OK

OUT OF SPECIFICATION



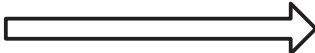
Replace the ignition coil.

Check the engine stop switch, throttle switch, carburetor switch and main switch.



OK

FAULTY



Replace the handlebar switch (right), carburetor switch, and/or main switch.

Check the main relay.



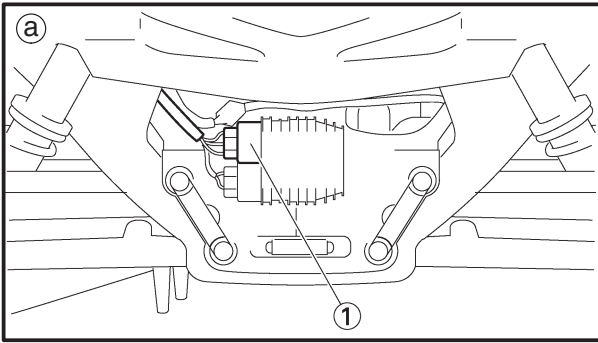
OK

FAULTY



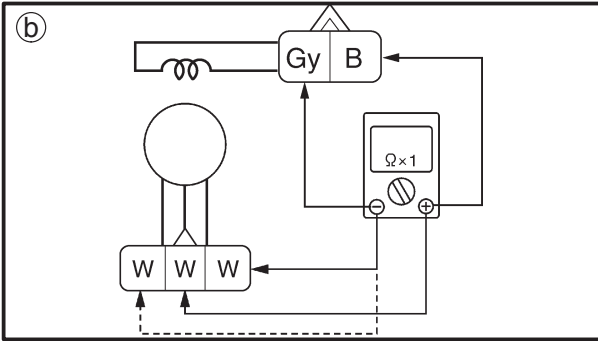
Replace the main relay.

Correct the connection and/or replace the rectifier/regulator and/or the CDI unit.



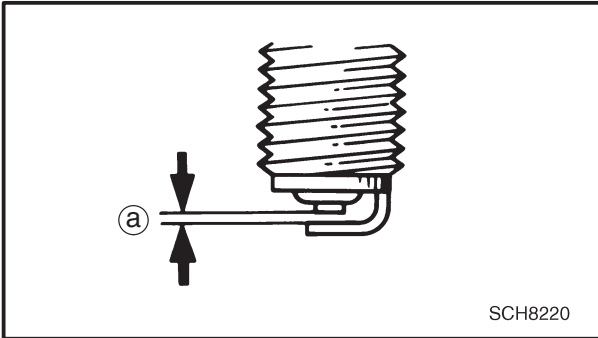
A.C. MAGNETO

1. Disconnect:
 - A.C. magneto coupler ①
 2. Connect:
 - Pocket tester
(to the A.C. magneto coupler)
 3. Measure:
 - Stator coil resistance ②/pickup coil resistance ③
- Out of specification → Replace.



Pickup coil resistance:
(Gray – Black)
189 ~ 231 Ω at 20°C (68°F)

Stator coil resistance:
(White – White)
0.19 ~ 0.24 Ω at 20°C (68°F)



SPARK PLUG

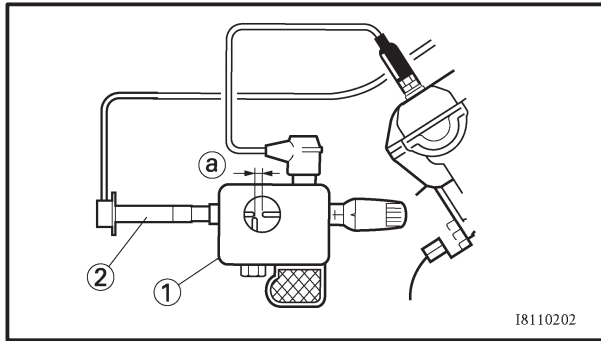
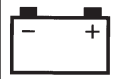
1. Remove:
 - Spark plugs
2. Measure:
 - Spark plug gap ④

Standard spark plug:
CR9E (NGK)



Spark plug gap:
0.7 ~ 0.8 mm
(0.028 ~ 0.031 in)

SCH8220



IGNITION SPARK GAP

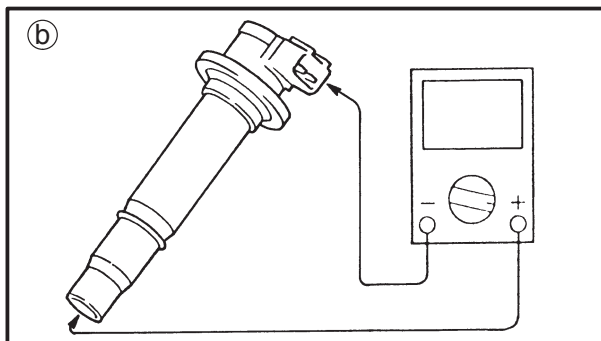
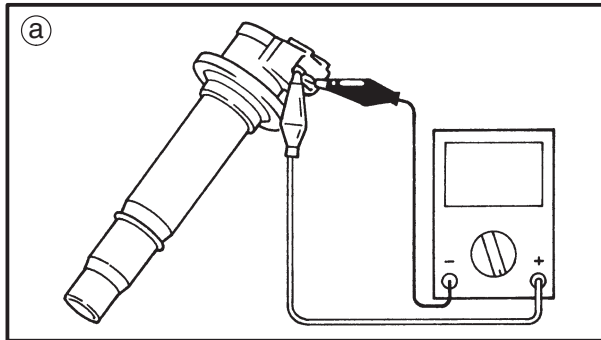
1. Remove:
 - Ignition coil
2. Measure:
 - Ignition spark gap
 Out of specification → Replace the ignition coil

Measurement steps:

- Disconnect the ignition coil ② from the spark plug.
- Connect the dynamic spark tester ①.
- Set the main switch to "ON".
- Measure the ignition spark gap ③.



Spark gap:
6 mm (0.24 in)

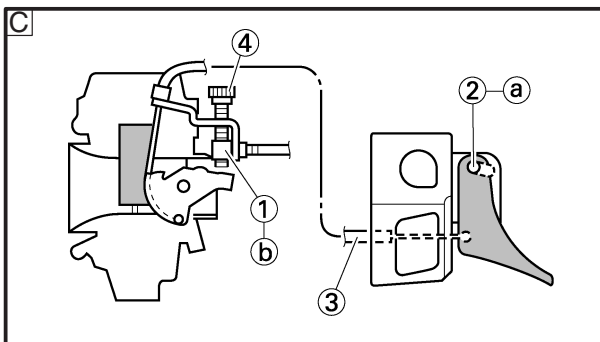
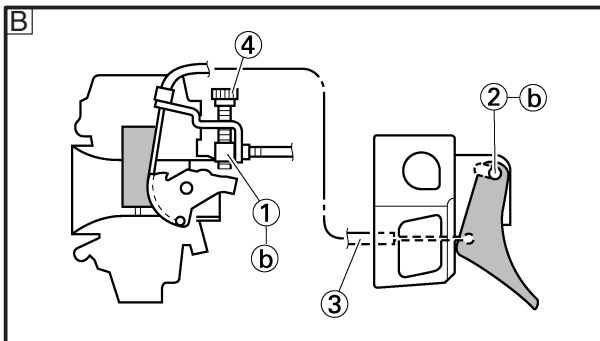
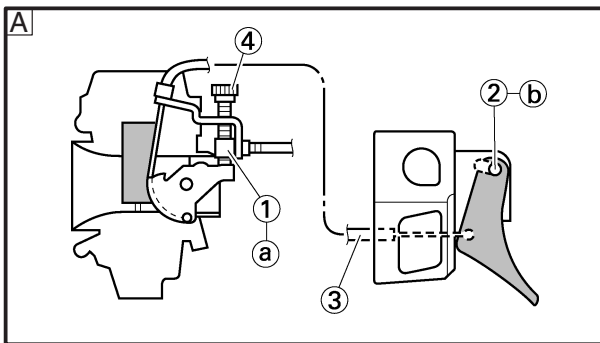
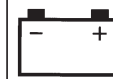


IGNITION COIL

1. Disconnect:
 - Ignition coil lead
2. Connect:
 - Pocket tester
3. Measure:
 - Primary coil resistance ③
 - Secondary coil resistance ④
 Out of specification → Replace.



Primary coil resistance:
0.16 ~ 0.22 Ω at 20°C (68°F)
Secondary coil resistance:
5.0 ~ 6.8 k Ω at 20°C (68°F)



THROTTLE OVERRIDE SYSTEM (T.O.R.S.)

If the carburetor or throttle cable should malfunction during operation, T.O.R.S. will operate when the throttle lever is released.

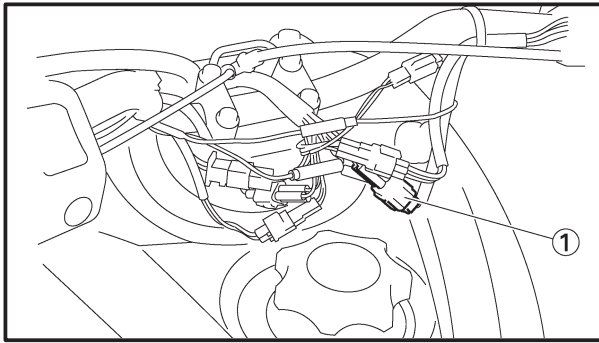
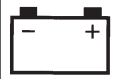
T.O.R.S. is designed to interrupt the ignition and keep the engine revolutions between 2,800 and 3,000 r/min if the carburetor fails to return to idle when the lever is released.

⚠ WARNING

- If T.O.R.S. operates, make sure that the cause of the malfunction is corrected and that the engine can be operated without a problem before restarting the engine.
- Be sure to use the standard resistance-type spark plug and spark plug cap. Otherwise, T.O.R.S. will not work properly.

Status	A Idling or starting	B Running	C Trouble
Switch			
Throttle switch	OFF	ON	OFF
Carburetor switch	ON	OFF	OFF
Engine	Running	Running	T.O.R.S. operating

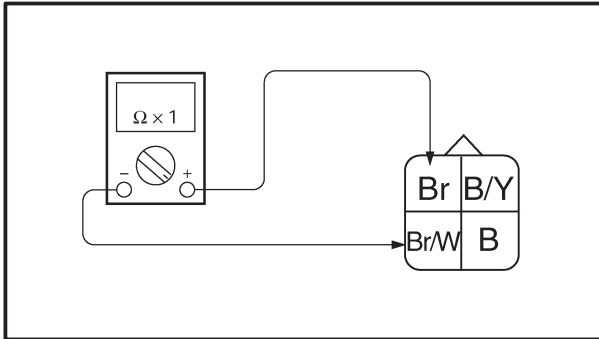
- ① Carburetor switch
- ② Throttle switch
- ③ Throttle cable
- ④ Throttle stop screw
- a ON
- b OFF



HANDLEBAR SWITCH (RIGHT)

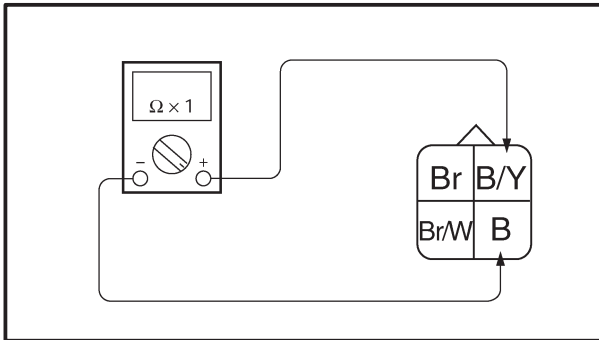
Engine stop switch and throttle switch

1. Disconnect:
 - Handlebar switch (right) coupler ①
2. Connect:
 - Pocket tester



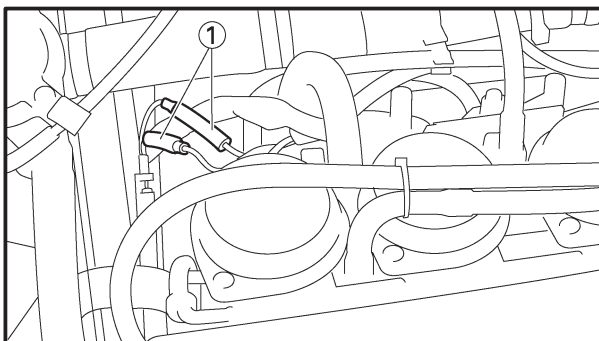
3. Inspect:
 - Engine stop switch continuity
Faulty → Replace the handlebar switch (right).

Switch position	Continuity
RUN (pulled out)	Yes
OFF (pushed in)	No



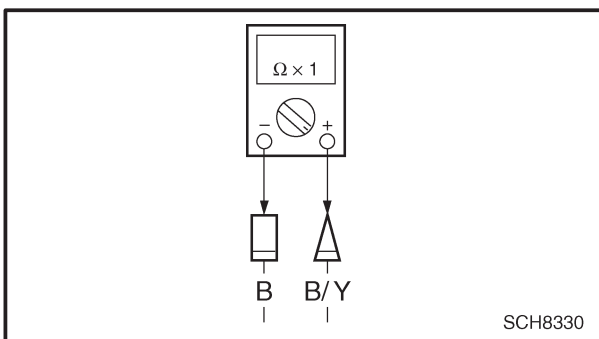
4. Inspect:
 - Throttle switch continuity
Faulty → Replace the handlebar switch (right).

Throttle switch position	Continuity
Throttle lever is operated.	Yes
Throttle lever is not operated.	No



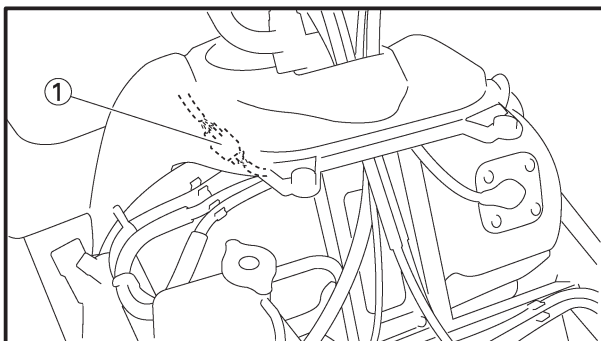
CARBURETOR SWITCH

1. Disconnect:
 - Carburetor switch lead ①
2. Connect:
 - Pocket tester
3. Inspect:
 - Carburetor switch continuity
Faulty → Replace.



Carburetor switch position	Continuity
Throttle lever is operated.	No
Throttle lever is not operated.	Yes

SCH8330



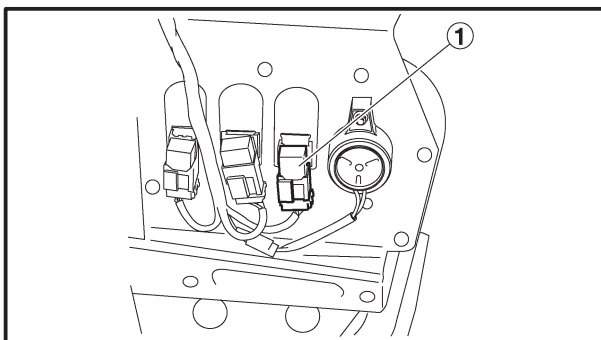
MAIN SWITCH

1. Disconnect:
 - Main switch coupler ①
2. Connect:
 - Pocket tester
3. Inspect:
 - Main switch continuity
 Faulty → Replace.

Switch position	Continuity
OFF	Yes
ON	No

Switch position	Color code			
	Br	R/Y	Br/W	R/W
OFF				
ON	○	○		
START	○	○	○	○

○ — ○ Continuity



MAIN RELAY

1. Inspect:
 - Main relay ①

Inspection steps:

- Disconnect the main relay from the coupler.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the main relay terminals as shown.

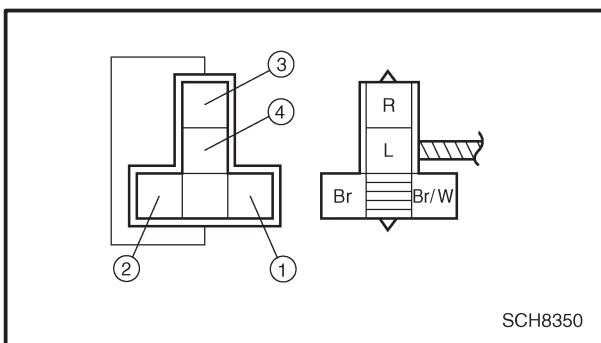
Positive battery terminal → Brown ①

Negative battery terminal → Brown/White ②

Positive tester probe → Red ③

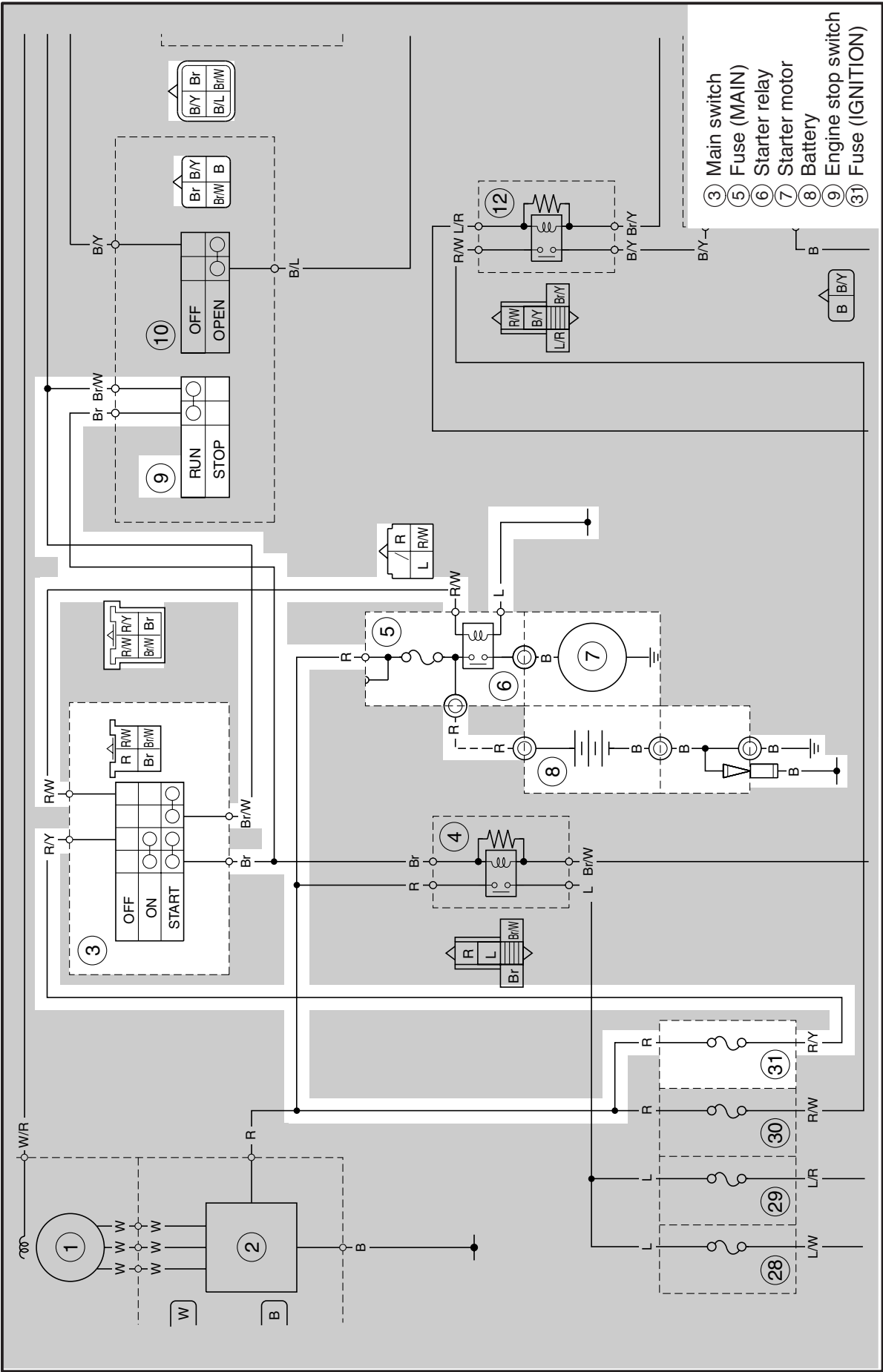
Negative tester probe → Blue ④

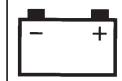
- If main relay does not have continuity between the red and blue terminals, replace it.



SCH8350

ELECTRICAL STARTING SYSTEM
CIRCUIT DIAGRAM





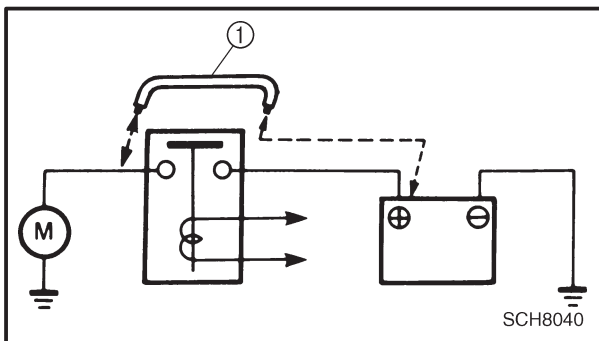
TROUBLESHOOTING

STARTER MOTOR DOES NOT OPERATE.

⚠ WARNING

Before starter motor operation, push the engine stop switch to “OFF”.

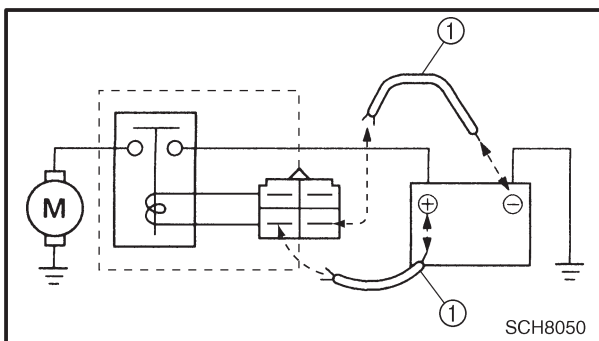
1. Connect:
 - Starter relay terminals (battery side and starter motor side)



- ① Jumper lead
2. Check:
 - Starter motor operation



3. Disconnect:
 - Starter relay coupler
4. Connect:
 - Starter relay coupler terminals



- ① Jumper lead
5. Inspect:
 - Starter motor operation



*

NO



Check the battery and connectors.
Refer to “BATTERY INSPECTION” in CHAPTER 2.

OK



Repair or replace the starter motor.



NO

Charge and/or replace the battery.
Refer to “BATTERY INSPECTION” in CHAPTER 2.

⚠ WARNING

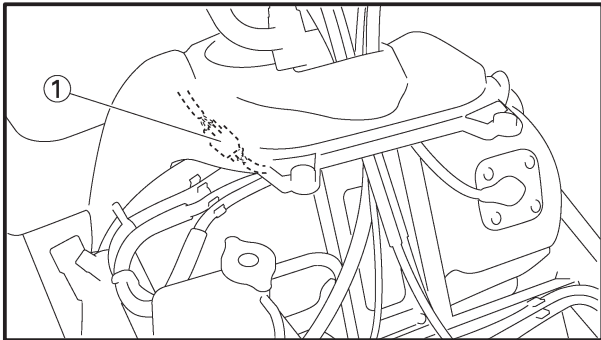
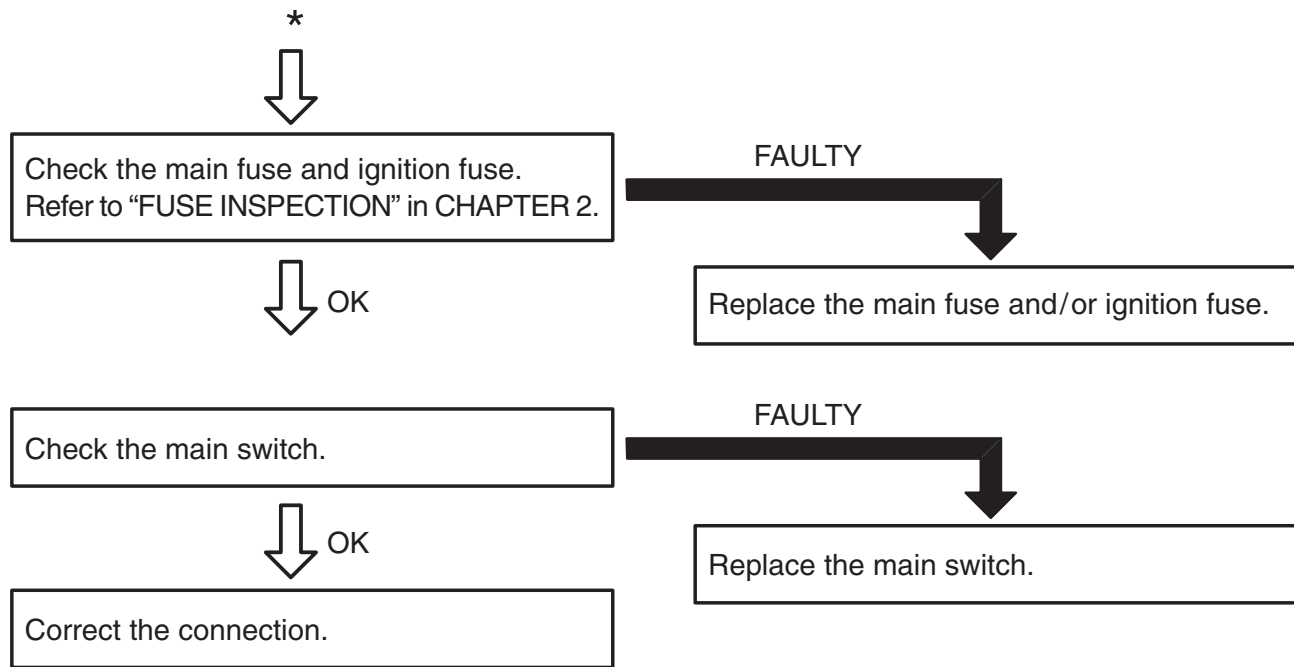
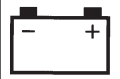
A wire for the jumper lead ① must have the equivalent capacity as that of the battery lead or more, otherwise it may cause the jumper lead to be burned.

This check is likely to produce sparks, so be sure that no flammable gas or fluid is in the vicinity.

NO



Replace the starter relay.

**MAIN SWITCH**

1. Disconnect:
 - Main switch coupler ①
2. Connect:
 - Pocket tester
3. Inspect:
 - Main switch continuity
Faulty → Replace.

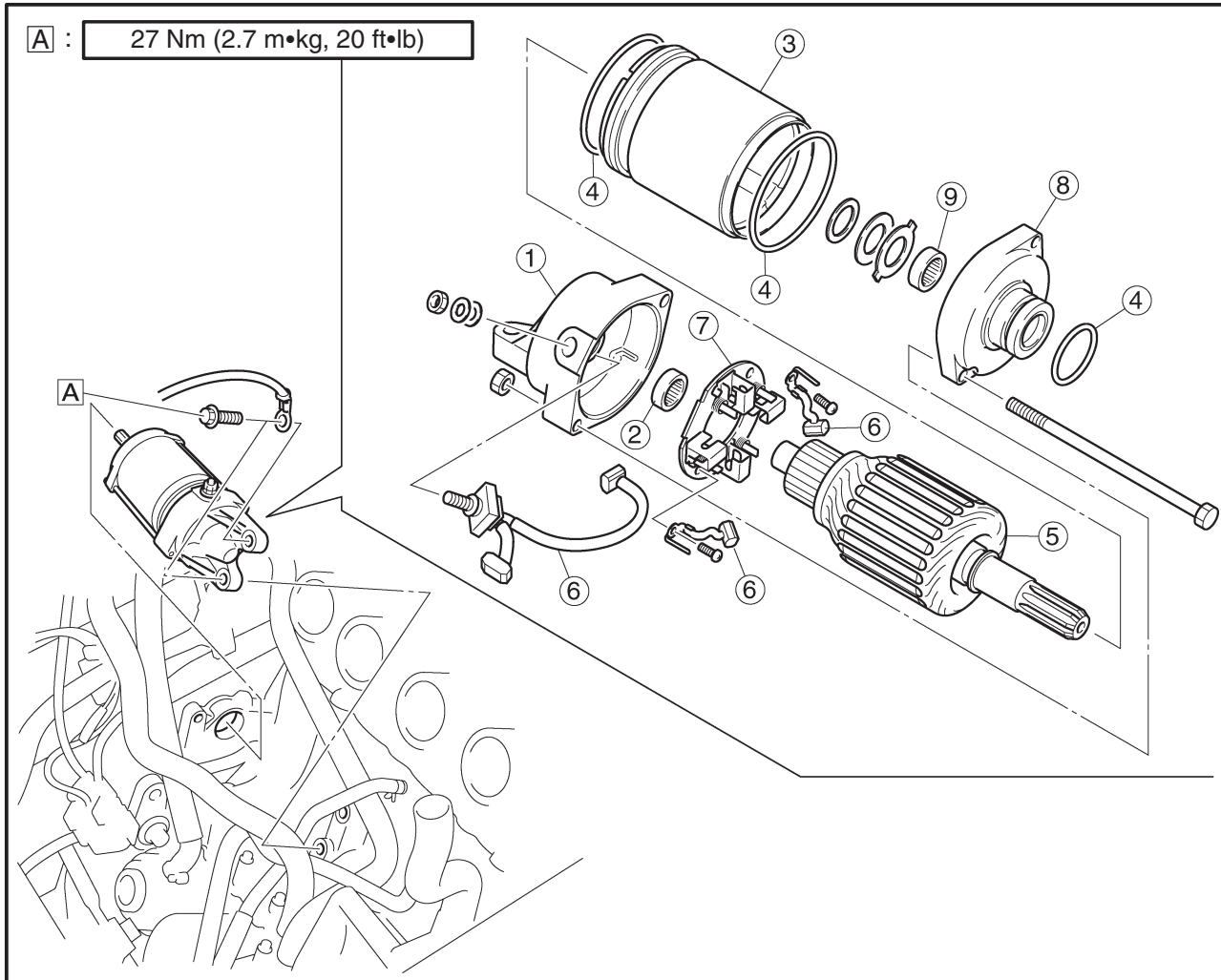
Switch position	Continuity
OFF	Yes
ON	No

Switch position	Color code			
	Br	R/Y	Br/W	R/W
OFF				
ON	○—○	○—○		
START	○—○	○—○	○—○	○—○

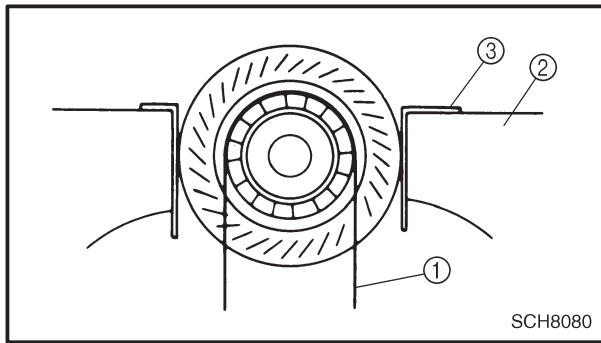
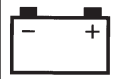
○—○ Continuity



STARTER MOTOR



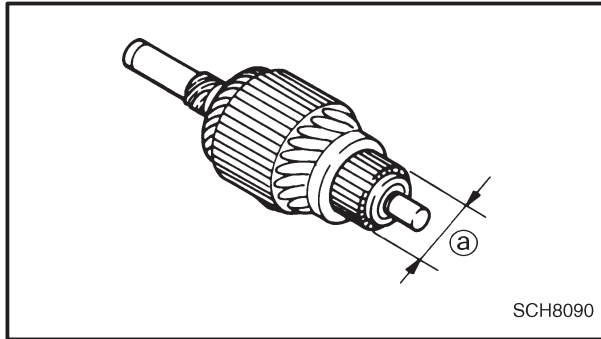
Order	Job name/Part name	Q'ty	Remarks
	Starter motor disassembly		
	Starter motor removal		Disassemble the parts in the order listed below. Refer to "ENGINE REMOVAL" in CHAPTER 5.
①	Rear bracket	1	
②	Bearing	1	
③	Starter motor yoke	1	
④	O-ring	3	
⑤	Armature assembly	1	
⑥	Brush	3	
⑦	Brush holder	1	
⑧	Starter motor front cover	1	
⑨	Bearing	1	
			For assembly, reverse the disassembly procedure.

**Inspection****1. Inspect:**

- Commutator (outer surface)
Dirty → Clean with #600 grit sandpaper ①.
Hold the armature in a vise ② and copper or aluminium plate ③.

CAUTION:

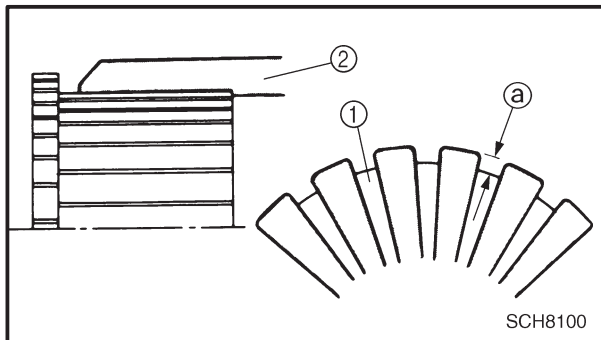
Lightly grip the armature with a vise.

**2. Measure:**

- Commutator (diameter)
Measure the diameter ① of the commutator at points where the brush comes in contact.
Out of specification → Replace the starter motor.



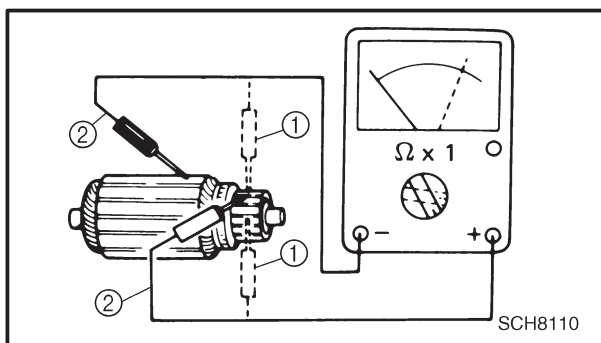
Commutator wear limit:
27.5 mm (1.08 in)

**3. Measure:**

- Mica (insulation depth) ①
(between commutator segments)
Out of specification → Scrape mica to proper limits ①.
Use a hacksaw blade ② that is ground to fit.



Mica undercut:
1.5 mm (0.059 in)

**4. Measure:**

- Armature coil resistance
(insulation/continuity)
Defect(s) → Replace the starter motor.

Inspection steps:

- Connect the pocket tester for the continuity check ① and the insulation check ②.
- Measure the armature coil resistances.

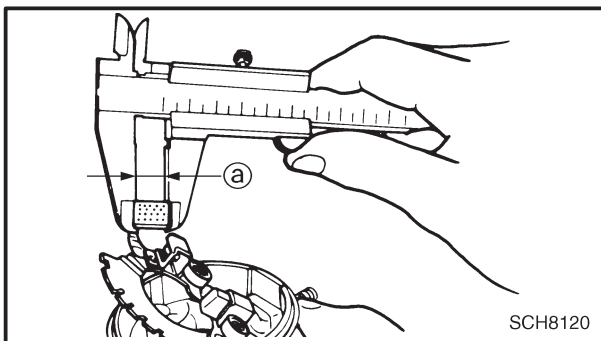
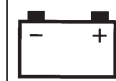
**Armature coil resistance:****Continuity check:**

**0.008 ~ 0.010 Ω at 20°C
(68°F)**

Insulation check:

**More than 100 k Ω at 20°C
(68°F)**

- If the resistance is incorrect, replace the starter motor.



5. Measure:

- Brush length (a)

Out of specification → Replace the starter motor.



Brush wear limit:
5 mm (0.20 in)

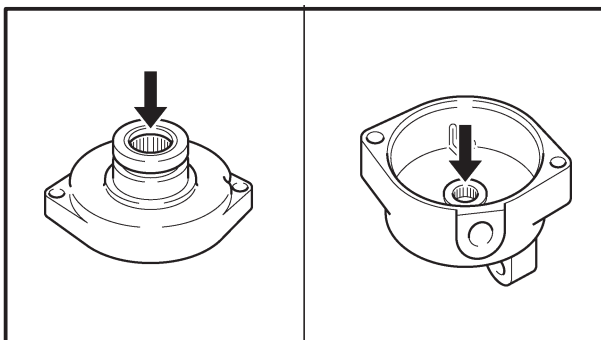
6. Measure:

- Brush spring pressure

Fatigue/out of specification → Replace as a set.



Brush spring pressure:
7.36 ~ 11.04 N
(736 ~ 1,104 g, 26.0 ~ 38.9 oz)

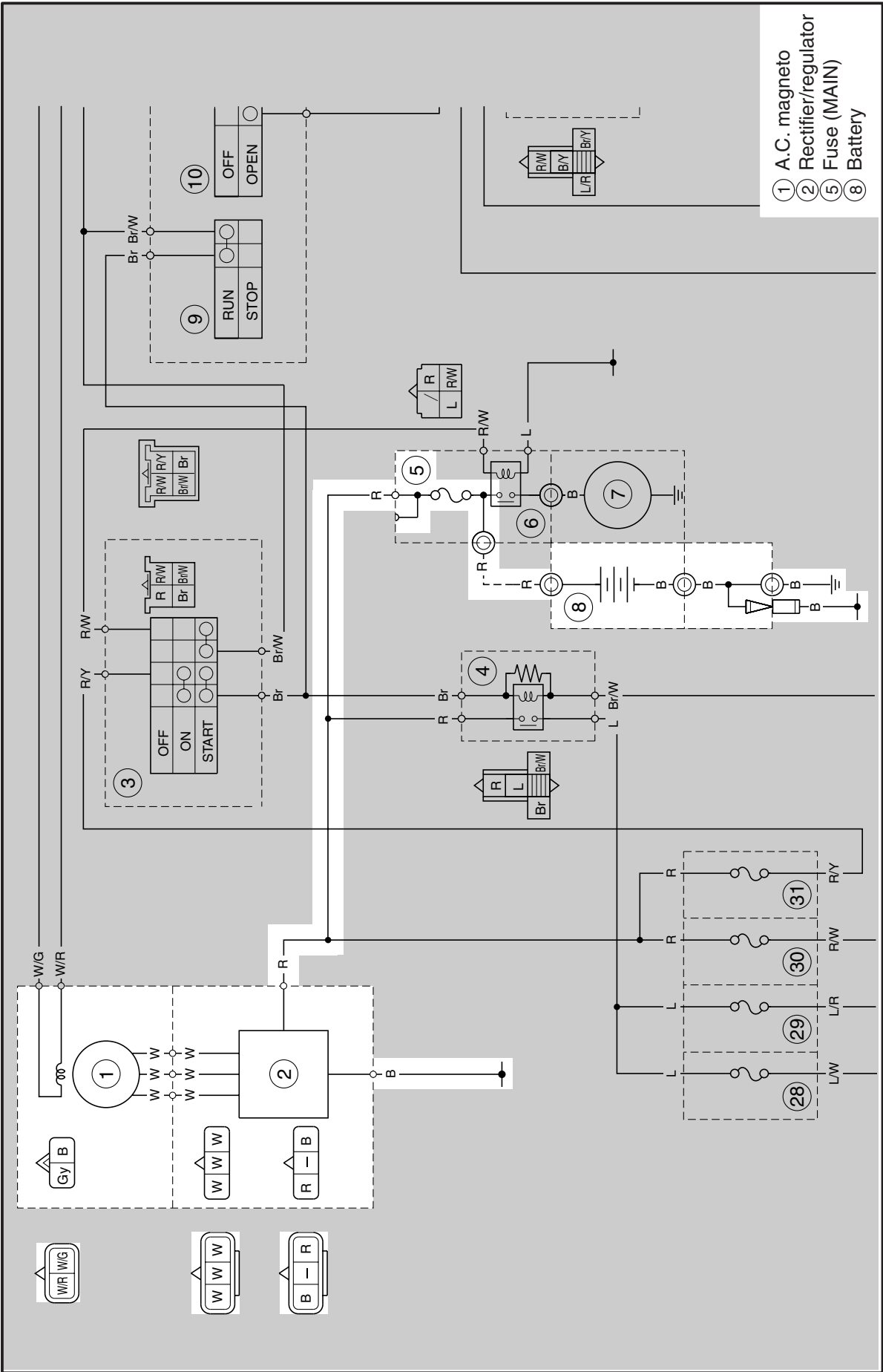
**Assembly**

Reverse the “Disassembly” procedure.

Note the following points.

1. Before installing the front bracket and rear bracket, apply bearing grease to the bearings of the front bracket and rear bracket.
2. Make sure the front bracket and rear bracket cover are fitted with O-rings.
3. When installing the rear bracket assembly, take care not to scratch the brushes.
4. Install:
 - Securing bolts (starter motor)

CHARGING SYSTEM CIRCUIT DIAGRAM





TROUBLESHOOTING

BATTERY IS NOT CHARGED.

1. Connect:
 - Pocket tester
(to the battery terminals)
2. Measure:
 - Battery voltage



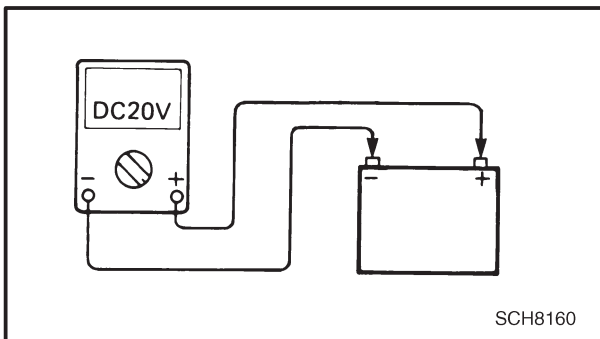
Battery voltage:
more than 12 V at 20°C (68°F)



3. Start the engine and accelerate to 5,000 r/min.
4. Measure:
 - Charging voltage



Charging voltage:
14 V/5,000 r/min



⚠ WARNING

Be sure the V-belt is removed.

CAUTION:

Never disconnect battery cables while generator is operating, otherwise, the rectifier/regulator will be damaged.



Correct connector.

OUT OF SPECIFICATIONS



- Check the battery.
- Replace and/or charge the battery.
Refer to “BATTERY INSPECTION” in CHAPTER 2.

OUT OF SPECIFICATION



- Check the main fuse.
Refer to “FUSE INSPECTION” in CHAPTER 2.
- Check the startor coil.

OK

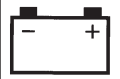


Replace the rectifier/regulator.

FAULTY



Replace the main fuse, rectifier/regulator and/or the startor coil assembly.

**BATTERY****Inspection**

1. Inspect:

- Battery condition

Refer to “BATTERY INSPECTION” in CHAPTER 2.

Battery Storage

The battery should be stored if the vehicle is not going to be used for a long period.

1. Remove:

- Battery

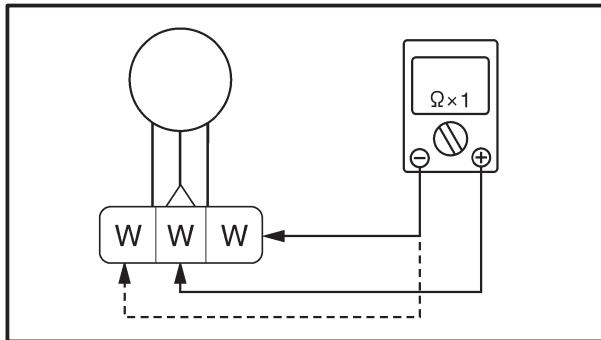
WARNING

When removing the battery, disconnect the negative lead first.

Battery storage and maintenance tips:

- Recharge the battery periodically.
- Store the battery in a cool, dry place.
- Recharge the battery before reinstalling.

Refer to “BATTERY INSPECTION” in CHAPTER 2.

**STATOR COIL**

1. Measure:

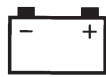
- Stator coil resistance

Out of specification → Replace stator coil assembly.

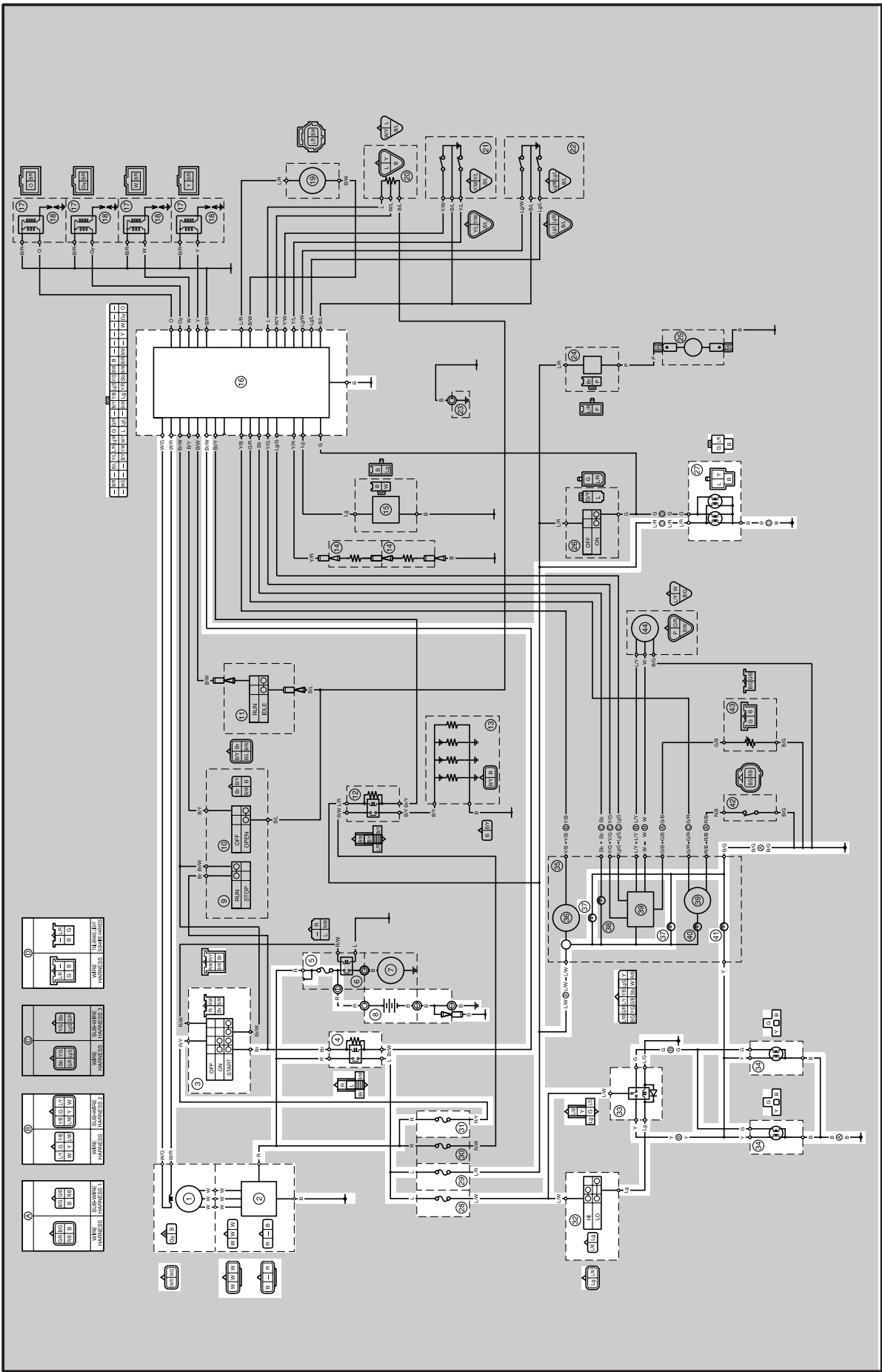
**Stator coil resistance:**

(White – White)

0.19 ~ 0.24 at 20°C (68°F)



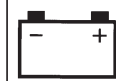
LIGHTING SYSTEM
CIRCUIT DIAGRAM





LIGHTING SYSTEM CIRCUIT DIAGRAM

- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Main relay
- ⑤ Fuse (MAIN)
- ⑧ Battery
- ⑯ CDI unit
- ⑳ Tail/brake light
- ㉔ Fuse (HEADLIGHT)
- ㉕ Fuse (SIGNAL)
- ㉗ Fuse (IGNITION)
- ㉘ Headlight beam switch
- ㉙ Headlight relay
- ㉚ Headlight
- ㉞ Meter light
- ㉟ Hi beam indicator light



TROUBLESHOOTING

HEADLIGHT AND/OR METER LIGHT DO NOT COME ON.

Check the bulb(s).



OK

NO CONTINUITY



Replace the bulb(s).

Check the main fuse, ignition fuse and headlight fuse.

Refer to "FUSE INSPECTION" in CHAPTER 2.



OK

FAULTY



Replace the main fuse, ignition fuse and/or headlight fuse.

Check the battery.

Refer to "BATTERY INSPECTION" in CHAPTER 2.



OK

OUT OF SPECIFICATION



Replace and/or charge the battery.
Refer to "BATTERY INSPECTION" in CHAPTER 2.

Check the stator coil and pickup coil.



OK

OUT OF SPECIFICATION



Replace the stator coil and pickup coil assembly.

Check the main switch.

Refer to "IGNITION SYSTEM".



OK

FAULTY



Replace the main switch.

Check the headlight beam switch.



OK

FAULTY



Replace the headlight beam switch.

Check the headlight relay.



OK

FAULTY



Replace the headlight relay.

Check the main relay.

Refer to "IGNITION SYSTEM".



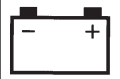
OK

FAULTY



Replace the main relay.

Correct the connection and/or
replace the rectifier/regulator
and/or the CDI unit.

**TAIL LIGHT DOES NOT COME ON.**

Check the tail/brake light bulb(s).



OK

NO CONTINUITY



Replace the tail/brake light bulb(s).

Check the main fuse, ignition fuse and signal fuse.

Refer to "FUSE INSPECTION" in CHAPTER 2.



OK

FAULTY



Replace the main fuse, ignition fuse and/or signal fuse.

Check the battery.

Refer to "BATTERY INSPECTION" in CHAPTER 2.



OK

OUT OF SPECIFICATION

Replace and/or charge the battery.
Refer to "BATTERY INSPECTION" in CHAPTER 2.

Check the stator coil and pickup coil.



OK

OUT OF SPECIFICATION



Replace the stator coil and pickup coil assembly.

Check the main switch.

Refer to "IGNITION SYSTEM".



OK

FAULTY



Replace the main switch.

Check the main relay.

Refer to "IGNITION SYSTEM"



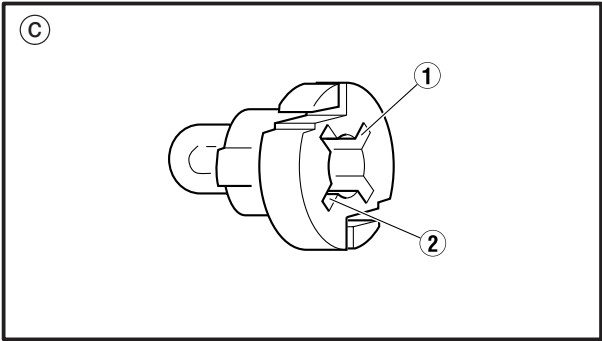
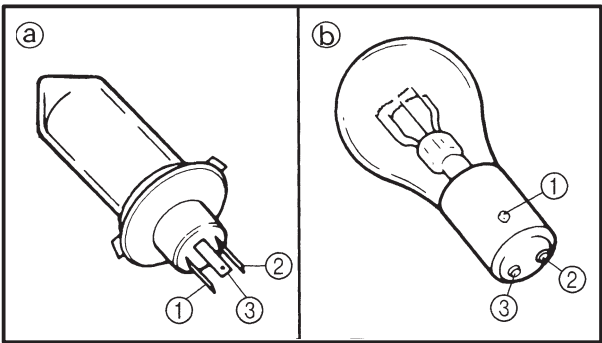
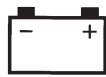
OK

FAULTY



Replace the main relay.

Correct the connection and/or
replace the rectifier/regulator
and/or the CDI unit.



BULB(S)

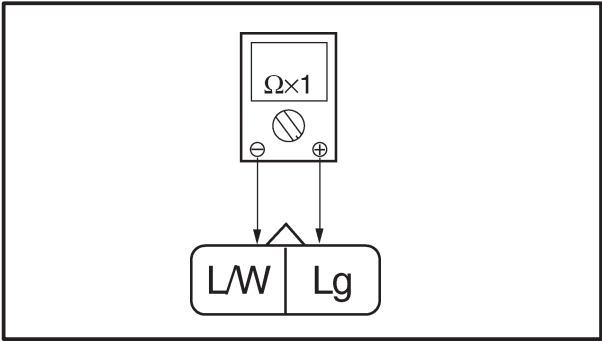
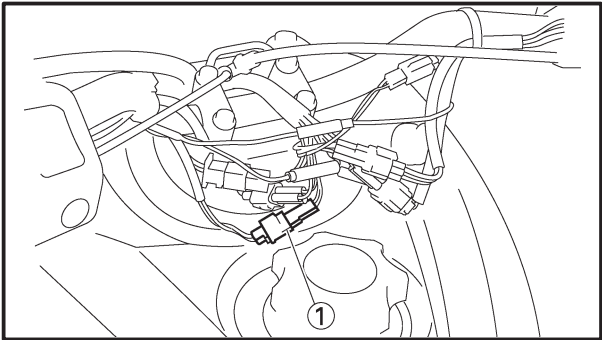
1. Remove:
 - Headlight bulb (a)
 - Tail/brake light bulb (b)
 - Meter light bulb (c)
2. Connect:
 - Pocket tester
(to the bulb terminals)

! WARNING

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

3. Inspect:
 - Bulb(s)

Terminal	Continuity
① - ②	Yes
① - ③	Yes

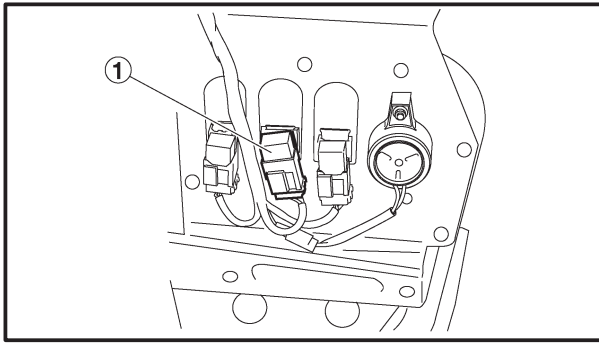
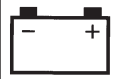


HEADLIGHT BEAM SWITCH

1. Disconnect:
 - Headlight beam switch coupler (1)
2. Connect:
 - Pocket tester
(to the headlight beam switch coupler)

3. Inspect:
 - Headlight beam switch continuity
Faulty → Replace.

Switch position	Continuity
HI	Yes
LO	No



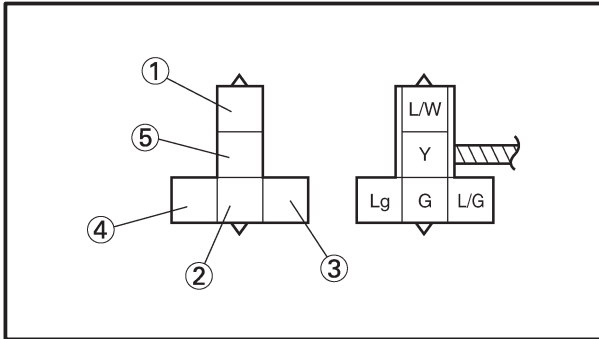
HEADLIGHT RELAY

1. Inspect:

- Headlight relay (black coupler) ①

Inspection steps:

- Disconnect the headlight relay from the coupler.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the headlight relay terminals as shown.



Low beam

Positive tester probe → Blue/White ①

Negative tester probe → Green ②

High beam

Positive battery terminal → Light green ③

Negative battery terminal → Blue/green ④

Positive tester probe → Blue/White ①

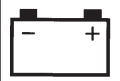
Negative tester probe → Yellow ⑤

- If headlight relay does not have continuity between the blue/white and yellow terminals, replace it.

The diagram illustrates the electrical system for a vehicle, featuring a central control unit (19) and various sub-harnesses (1-18) connected to a main harness (19). The system includes the engine (20) and various sensors (21-28). The diagram is labeled with various electrical symbols and components, including fuses, relays, and switches.

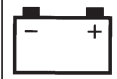
Legend:

- 1. SUB-HARNESS 1
- 2. SUB-HARNESS 2
- 3. SUB-HARNESS 3
- 4. SUB-HARNESS 4
- 5. SUB-HARNESS 5
- 6. SUB-HARNESS 6
- 7. SUB-HARNESS 7
- 8. SUB-HARNESS 8
- 9. SUB-HARNESS 9
- 10. SUB-HARNESS 10
- 11. SUB-HARNESS 11
- 12. SUB-HARNESS 12
- 13. SUB-HARNESS 13
- 14. SUB-HARNESS 14
- 15. SUB-HARNESS 15
- 16. SUB-HARNESS 16
- 17. SUB-HARNESS 17
- 18. SUB-HARNESS 18
- 19. MAIN HARNESS
- 20. ENGINE
- 21. SENSOR
- 22. SENSOR
- 23. SENSOR
- 24. SENSOR
- 25. SENSOR
- 26. SENSOR
- 27. SENSOR
- 28. SENSOR



SIGNAL SYSTEM CIRCUIT DIAGRAM

- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Main relay
- ⑤ Fuse (MAIN)
- ⑧ Battery
- ⑯ CDI unit
- ⑲ Water temperature sensor
- ⑳ Back buzzer
- ㉑ Gear position switch
- ㉒ Brake light switch
- ㉓ Tail/brake light
- ㉕ Fuse (SIGNAL)
- ㉗ Fuse (IGNITION)
- ㉘ Water temperature indicator light
- ㉙ Multi-function meter
- ㉚ Warning light
- ㉛ Oil level switch
- ㉜ Fuel sender
- ㉝ Speedosensor



TROUBLESHOOTING

BRAKE LIGHT DOES NOT COME ON.

Check the tail/brake light bulb(s).
Refer to "LIGHTING SYSTEM".

↓ OK NO CONTINUITY → Replace the tail/brake light bulbs.

Check the main fuse, ignition fuse and signal fuse.
Refer to "FUSE INSPECTION" in CHAPTER 2.

↓ OK FAULTY → Replace the main fuse, ignition fuse and/or signal fuse.

Check the stator coil and pickup coil.

↓ OK OUT OF SPECIFICATION → Replace the stator coil and pickup coil assembly.

Check the battery.
Refer to "BATTERY INSPECTION" in CHAPTER 2.

↓ OK OUT OF SPECIFICATION → Replace and/or charge the battery.
Refer to "BATTERY INSPECTION" in CHAPTER 2.

Check the main switch.
Refer to "IGNITION SYSTEM".

↓ OK FAULTY → Replace the main switch.

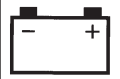
Check the brake light switch.

↓ OK FAULTY → Replace the brake light switch.

Check the main relay.
Refer to "IGNITION SYSTEM".

↓ OK FAULTY → Replace the main relay.

Correct the connection and/or
replace the rectifier/regulator
and/or the CDI unit.

**WATER TEMPERATURE INDICATOR LIGHT DOES NOT COME ON.**

Check the water temperature indicator light bulb(s).

Refer to "LIGHTING SYSTEM".



OK

NO CONTINUITY



Replace the bulb(s).

Check the main fuse, ignition fuse and signal fuse.

Refer to "FUSE INSPECTION" in CHAPTER 2.



OK

FAULTY



Replace the main fuse, ignition fuse and/or signal fuse.

Check the stator coil and pickup coil.



OK

OUT OF SPECIFICATION



Replace the stator coil and pickup coil assembly.

Check the battery.

Refer to "BATTERY INSPECTION" in CHAPTER 2.



OK

OUT OF SPECIFICATION



Replace and/or charge the battery.
Refer to "BATTERY INSPECTION" in CHAPTER 2.

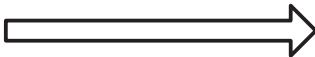
Check the main switch.

Refer to "IGNITION SYSTEM".



OK

FAULTY



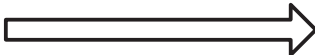
Replace the main switch.

Check the water temperature sensor.



OK

FAULTY



Replace the water temperature sensor.

Check the main relay.

Refer to "IGNITION SYSTEM".



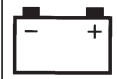
OK

FAULTY



Replace the main relay.

Correct the connection and/or
replace the meter assembly
and/or the rectifier/regulator
and/or the CDI unit.

**FUEL METER AND/OR WARNING LIGHT DO NOT OPERATE.**

Check the warning light bulb.
Refer to "LIGHTING SYSTEM".

↓ OK NO CONTINUITY → Replace the bulb.

Check the main fuse, ignition fuse and signal fuse.
Refer to "FUSE INSPECTION" in CHAPTER 2.

↓ OK FAULTY → Replace the main fuse, ignition fuse and/or signal fuse.

Check the battery.
Refer to "BATTERY INSPECTION" in CHAPTER 2.

↓ OK OUT OF SPECIFICATION → Replace and/or charge the battery.
Refer to "BATTERY INSPECTION" in CHAPTER 2.

Check the stator coil and pickup coil.

↓ OK OUT OF SPECIFICATION → Replace the stator coil and pickup coil assembly

Check the main switch.
Refer to "IGNITION SYSTEM".

↓ OK FAULTY → Replace the main switch.

Check the fuel sender.

↓ OK FAULTY → Replace the fuel sender.

Check the main relay.
Refer to "IGNITION SYSTEM".

↓ OK FAULTY → Replace the main relay.

Correct the connection and/or
replace the meter assembly
and/or the rectifier/regulator
and/or the CDI unit.



ENGINE OIL INDICATOR LIGHT AND/OR WARNING LIGHT DO NOT COME ON.

Check the warning light bulb.
Refer to "LIGHTING SYSTEM".

↓ OK NO CONTINUITY → Replace the bulb.

Check the main fuse, ignition fuse and signal fuse.
Refer to "FUSE INSPECTION" in CHAPTER 2.

↓ OK FAULTY → Replace the main fuse, ignition fuse and/or signal fuse.

Check the battery.
Refer to "BATTERY INSPECTION" in CHAPTER 2.

↓ OK OUT OF SPECIFICATION → Replace and/or charge the battery.
Refer to "BATTERY INSPECTION" in CHAPTER 2.

Check the stator coil and pickup coil.

↓ OK OUT OF SPECIFICATION → Replace the stator coil and pickup coil assembly

Check the main switch.
Refer to "IGNITION SYSTEM".

↓ OK FAULTY → Replace the main switch.

Check the oil level switch.

↓ OK FAULTY → Replace the oil level switch.

Check the main relay.
Refer to "IGNITION SYSTEM".

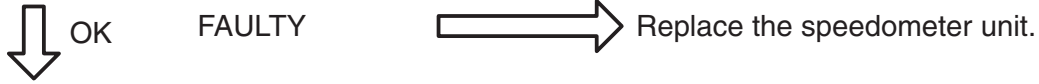
↓ OK FAULTY → Replace the main relay.

Correct the connection and/or
replace the meter assembly
and/or the rectifier/regulator
and/or the CDI unit.

**SPEEDOMETER DO NOT OPERATE.**

Check the speedometer unit.

Refer to "SPEEDOMETER UNIT INSPECTION" in CHAPTER 2.



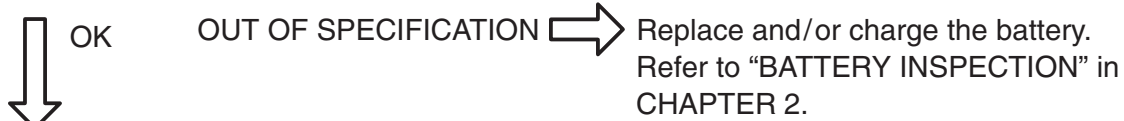
Check the main fuse, ignition fuse and signal fuse.

Refer to "FUSE INSPECTION" in CHAPTER 2.



Check the battery.

Refer to "BATTERY INSPECTION" in CHAPTER 2.



Check the stator coil and pickup coil.



Check the main switch.

Refer to "IGNITION SYSTEM".



Check the speedosensor.

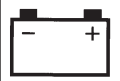


Check the main relay.

Refer to "IGNITION SYSTEM".



Correct the connection and/or
replace the meter assembly
and/or the rectifier/regulator
and/or the CDI unit.

**BACK BUZZER DOES NOT SOUND. (RX10R, RX10RS)**

Check the main fuse, ignition fuse and signal fuse.

Refer to "FUSE INSPECTION" in CHAPTER 2.



OK

FAULTY



Replace the main fuse, ignition fuse and/or signal fuse.

Check the battery.

Refer to "BATTERY INSPECTION" in CHAPTER 2.



OK

OUT OF SPECIFICATION



Replace and/or charge the battery.
Refer to "BATTERY INSPECTION" in CHAPTER 2.

Check the stator coil and pickup coil



OK

OUT OF SPECIFICATION



Replace the stator coil and pickup coil assembly.

Check the main switch.

Refer to "IGNITION SYSTEM".



OK

FAULTY



Replace the main switch.

Check the gear position switch.



OK

FAULTY



Replace the gear position switch.

Check the back buzzer.



OK

DOES NOT SOUND



Replace the back buzzer.

Check the main relay.

Refer to "IGNITION SYSTEM".



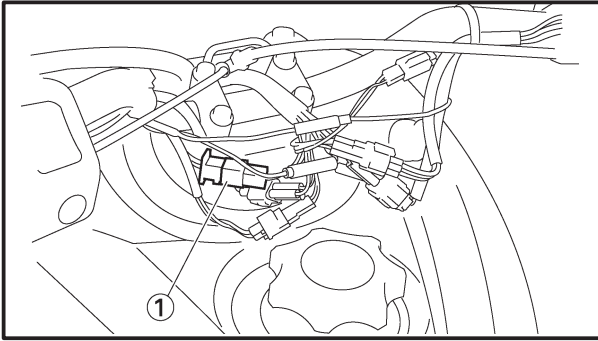
OK

FAULTY



Replace the main relay.

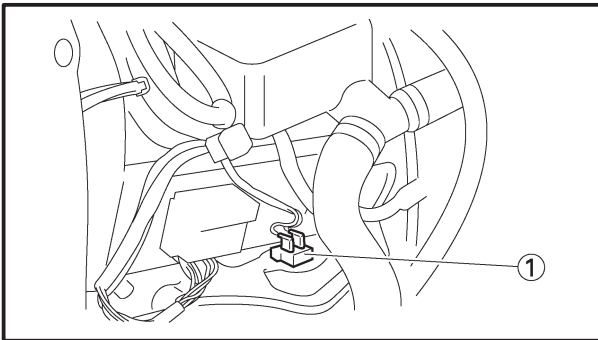
Correct the connection and/or
replace the rectifier/regulator
and/or the CDI unit.



BRAKE LIGHT SWITCH

1. Disconnect:
 - Brake light switch coupler ①
2. Inspect:
 - Brake light switch continuity
 Faulty → Replace.

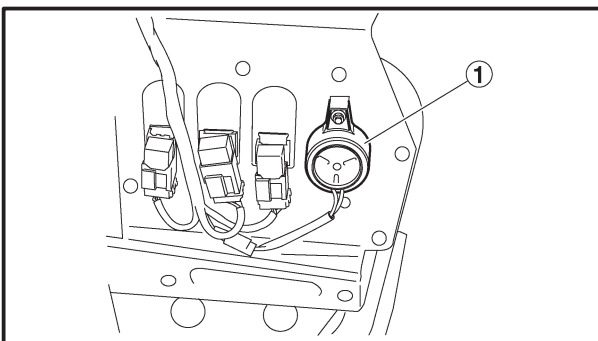
Switch position	Continuity
Brake lever operates	Yes
Brake lever does not operate	No



GEAR POSITION SWITCH (RX10R, RX10RS)

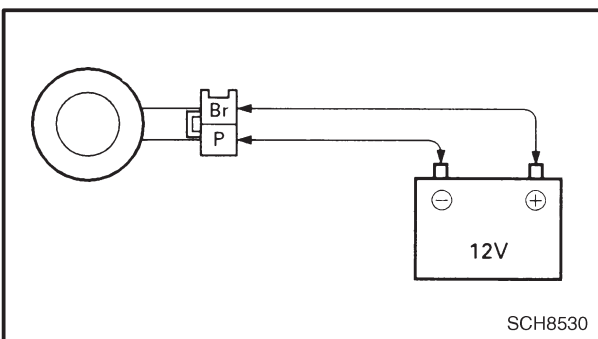
1. Inspect:
 - Gear position switch ① continuity
 Faulty → Replace.

Shift lever position	Continuity
FORWARD	No
REVERSE	Yes



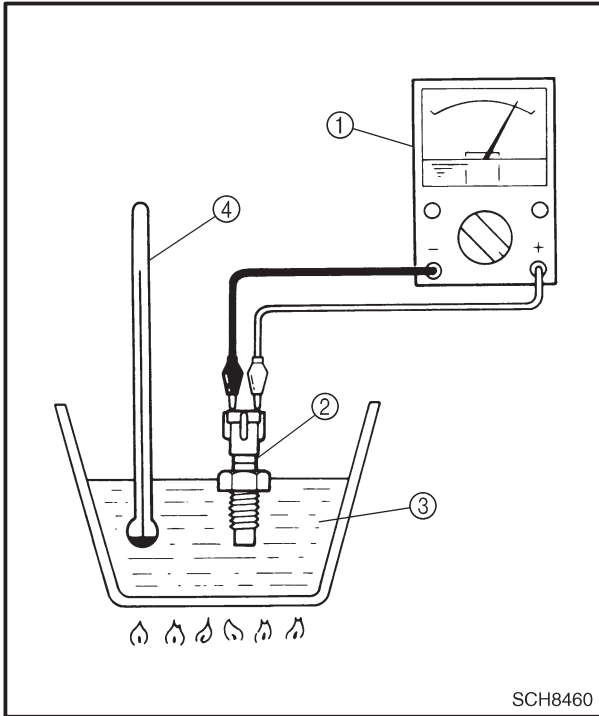
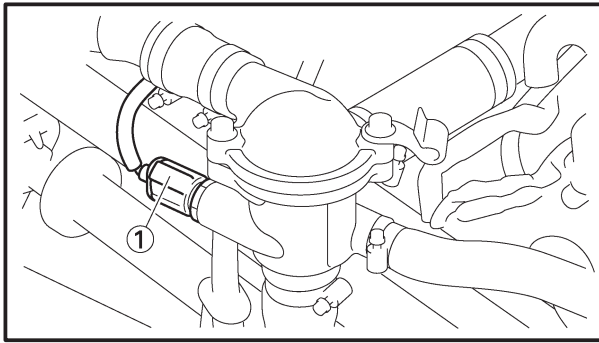
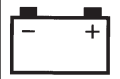
BACK BUZZER (RX10R, RX10RS)

1. Disconnect:
 - Back buzzer coupler ①



SCH8530

2. Connect:
 - Battery
3. Inspect:
 - Back buzzer
 Does not sound → Replace.



SCH8460

WATER TEMPERATURE SENSOR

1. Disconnect the water temperature sensor coupler ① and remove the water temperature sensor.

CAUTION:

Handle the water temperature sensor with special care. Never subject it to shock or allow it to be dropped. If it is dropped, it must be replaced.

2. Connect:
 - Pocket tester ① (to the water temperature sensor)

NOTE:

Set the tester selector to the " $\Omega \times 1$ " position.

3. Immerse the water temperature sensor ② in coolant ③ and check the water temperature sensor operation.



Water temperature sensor resistance:

5.2 ~ 6.4 k Ω at 0°C (34°F)
 0.300 ~ 0.364 k Ω at 80°C (176°F)
 0.170 ~ 0.208 k Ω at 100°C (212°F)

- ④ Temperature gauge

CAUTION:

Never heat the coolant to a temperature of 120°C (248.5°F) or more.

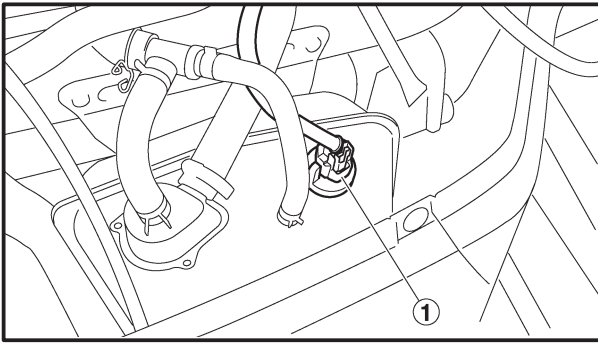
4. If the water temperature sensor operation is defective, replace it.
5. Install the water temperature sensor and connect the water temperature sensor lead.



Water temperature sensor:
 23 Nm (2.3 m•kg, 17 ft•lb)

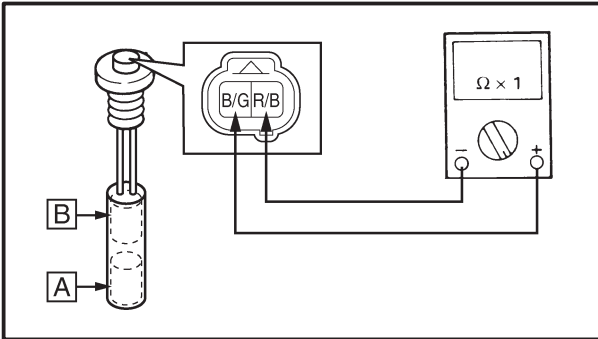
CAUTION:

Do not overtighten the water temperature sensor.



ENGINE OIL LEVEL SWITCH

- Remove:
 - Oil level gauge ①

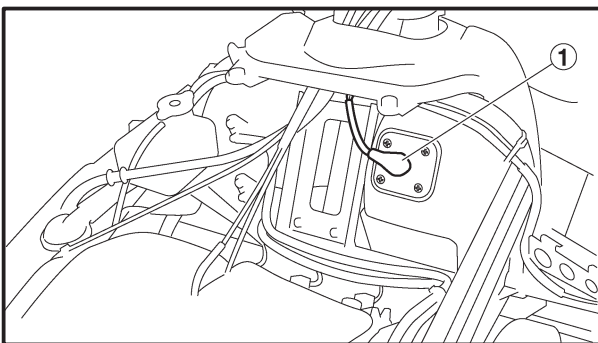


- Connect:
 - Pocket tester (to the oil level switch coupler)
- Inspect:
 - Oil level switch continuity
 Faulty → Replace.

Switch position		Good condition	Bad condition		
A	Down position	○	×	×	○
B	Up position	×	○	×	○

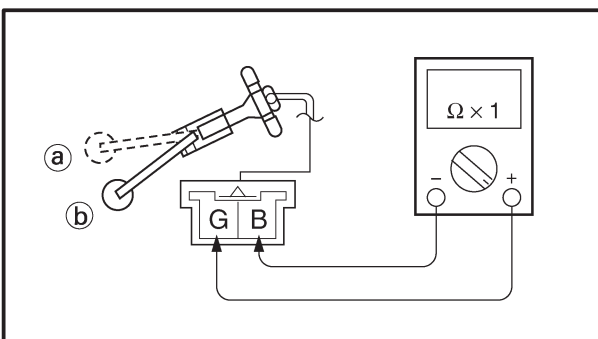
○ : Continuity

× : No continuity



FUEL SENDER

- Remove:
 - Intake silencer
 - Refer to “FUEL PUMP” in CHAPTER 7.
 - Fuel sender ① (from the fuel tank)
- Connect:
 - Pocket tester (to the fuel sender coupler)

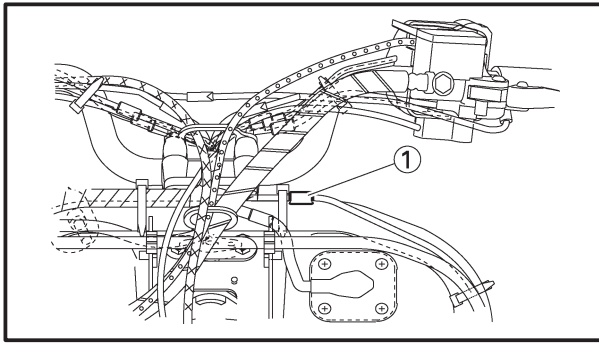
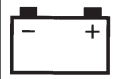


- Measure:
 - Full ①
 - Empty ②
 - Fuel sender resistance
 Out of specification → Replace.



Fuel sender resistance (full):
4 ~ 10 at 20°C (68°F)

Fuel sender resistance (empty):
90 ~ 100 at 20°C (68°F)



SPEED SENSOR

1. Inspect:

- Speed sensor

Inspection steps:

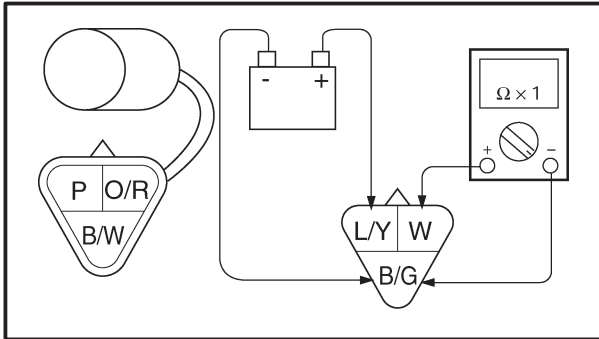
- Connect the pocket tester (DC 20 V) to the speed sensor coupler ① (wire harness side) as shown.

Positive tester probe → White

Negative tester probe → Black/Green

Positive battery terminal → Blue/Yellow

Negative battery terminal → Black/Green

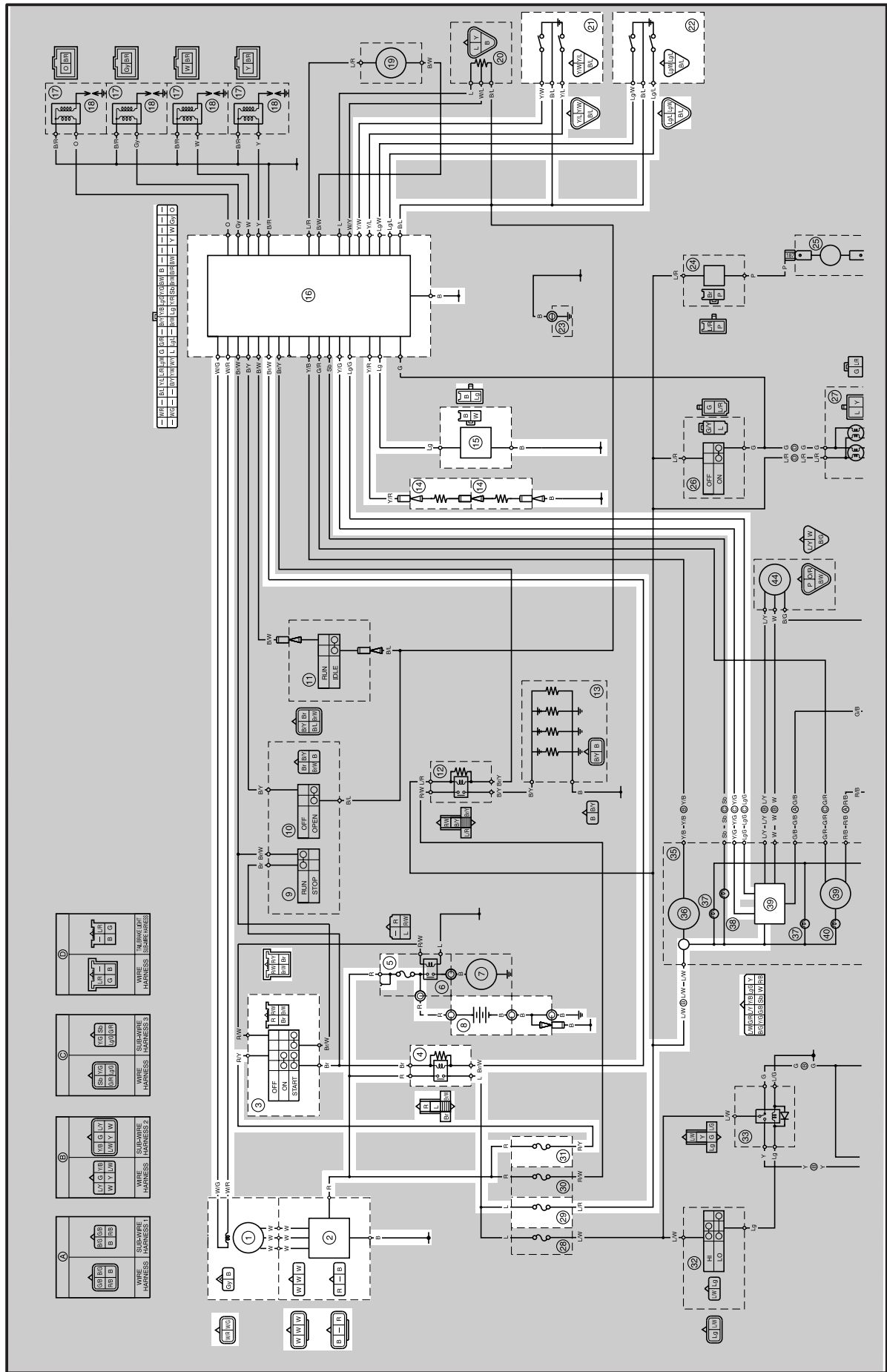


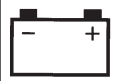
- Elevate the track and slowly rotate it.
- Measure the voltage (DC 5 V) of white and black/green. With each full rotation of the track the voltage reading should cycle from 0.6 V to 4.8 V to 0.6 V to 4.8 V.

Out of specification → Replace.



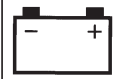
GRIP WARMER SYSTEM CIRCUIT DIAGRAM





GRIP WARMER SYSTEM CIRCUIT DIAGRAM

- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Main relay
- ⑤ Fuse (MAIN)
- ⑧ Battery
- ⑭ Grip warmer
- ⑮ Thumb warmer
- ⑯ CDI unit
- ⑰ Grip warmer switch
- ⑱ Thumb warmer switch
- ⑳ Fuse (SIGNAL)
- ㉑ Fuse (IGNITION)
- ㉓ Multi-function meter



TROUBLESHOOTING

GRIP WARMER AND THUMB WARMER DO NOT OPERATE.

Check the main fuse and signal fuse.

Refer to “FUSE INSPECTION” in CHAPTER 2.



OK

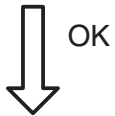
FAULTY



Replace the main fuse and/or ignition fuse.

Check the battery.

Refer to “BATTERY INSPECTION” in CHAPTER 2.



OK

OUT OF SPECIFICATION



Replace and/or charge the battery.
Refer to “BATTERY INSPECTION” in CHAPTER 2.

Check the stator coil and pickup coil.



OK

OUT OF SPECIFICATION



Replace the stator coil and pickup coil assembly.

Check the main switch.

Refer to “IGNITION SYSTEM”.



OK

NO CONTINUITY



Replace the main switch.

Check the grip and thumb warmer.



OK

NO CONTINUITY



Replace the grip and/or thumb warmer.

Check the grip warmer switch and thumb warmer switch



CORRECT

INCORRECT



Replace the left handlebar switch and/or right handlebar switch.

Check the main relay.

Refer to “IGNITION SYSTEM”.



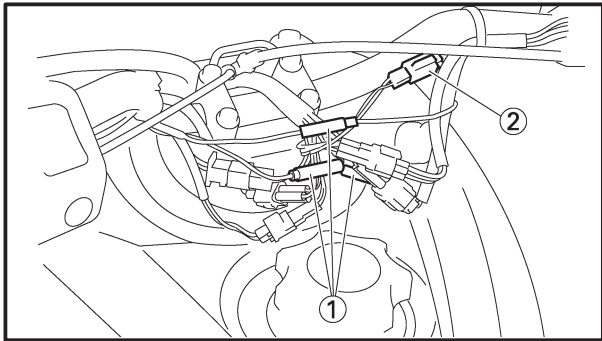
OK

FAULTY



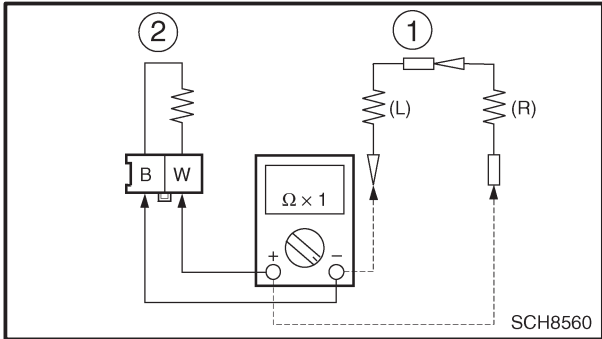
Replace the main switch.

Correct the connection and/or replace the rectifier/regulator and/or the CDI unit.

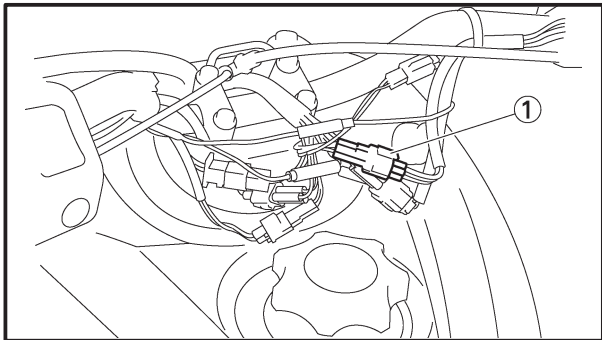


GRIP AND THUMB WARMER COIL

1. Disconnect:
 - Grip warmer leads ①
 - Thumb warmer coupler ②
2. Connect:
 - Pocket tester
(to the grip warmer coil leads and/or thumb warmer coil leads)

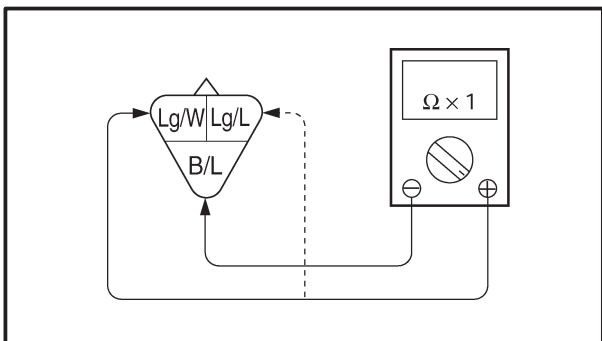


3. Inspect:
 - Grip warmer ① continuity
 - Thumb warmer ② continuity
 No continuity → Replace both grips together or separately and/or the handlebar switch.



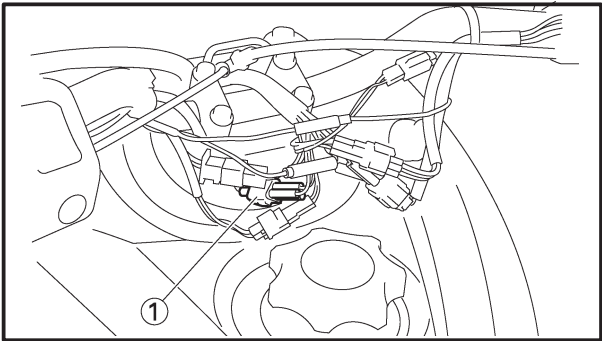
THUMB WARMER SWITCH

1. Disconnect:
 - Thumb warmer switch coupler ①
2. Connect:
 - Pocket tester
(to the switch coupler)



3. Inspect:
 - Thumb warmer switch continuity
 Switch is operated.
 Faulty → Replace the handlebar switch (right).

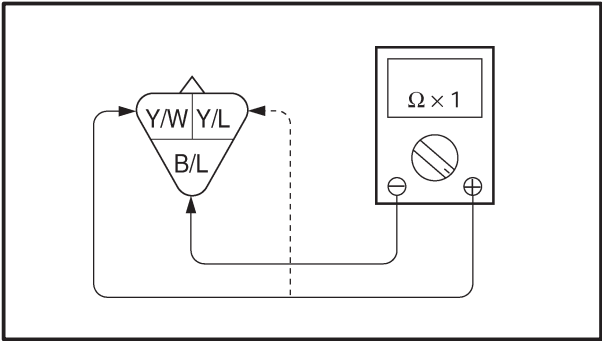
Thumb warmer switch position	Continuity
Switch is operated.	Yes
Switch is not operated.	No



GRIP WARMER SWITCH

1. Disconnect:
 - Grip warmer switch coupler ①
2. Connect:
 - Pocket tester (to the switch coupler)
3. Inspect:
 - Grip warmer switch continuity

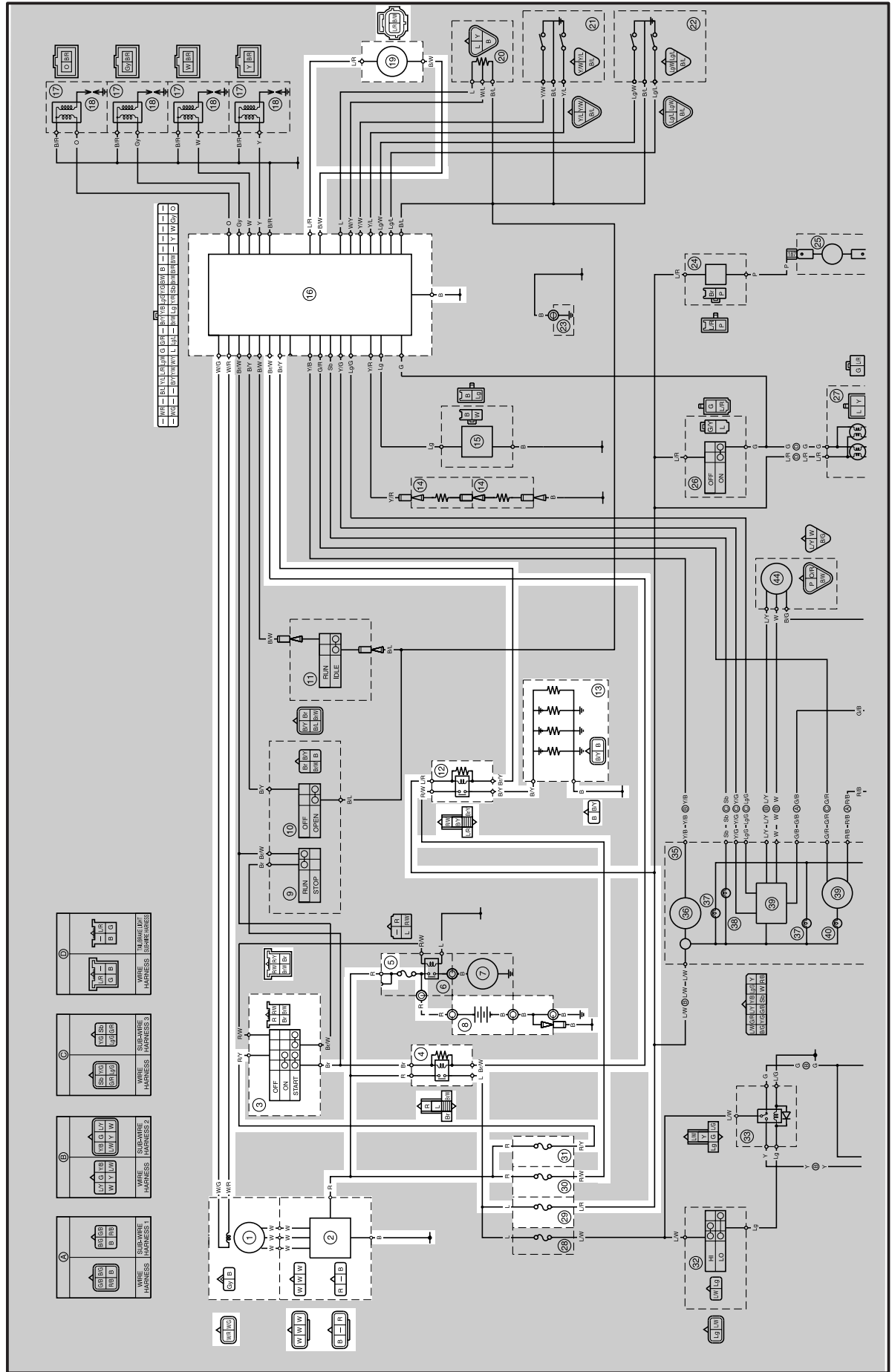
Switch is operated.
Faulty → Replace the handlebar switch (left).

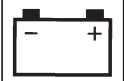


Grip warmer switch position	Continuity
Switch is operated.	Yes
Switch is not operated.	No



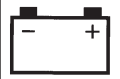
CARBURETOR HEATER SYSTEM CIRCUIT DIAGRAM





CARBURETOR HEATER SYSTEM CIRCUIT DIAGRAM

- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Main relay
- ⑤ Fuse (MAIN)
- ⑧ Battery
- ⑫ Carburetor heater relay
- ⑬ Carburetor heater
- ⑯ CDI unit
- ⑰ Water temperature sensor
- ⑳ Fuse (SIGNAL)
- ㉓ Fuse (CARBURETOR HEATER)
- ㉔ Fuse (IGNITION)



TROUBLESHOOTING

CARBURETOR HEATER DO NOT OPERATE.

Check the main fuse, signal fuse,
carburetor heater fuse and ignition fuse.

Refer to "FUSE INSPECTION" in CHAPTER 2.



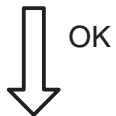
FAULTY



Replace the main fuse and/or signal fuse,
and/or carburetor heater fuse and/or
ignition fuse.

Check the battery.

Refer to "BATTERY INSPECTION" in CHAPTER 2.



OUT OF SPECIFICATION



Replace and/or charge the battery.
Refer to "BATTERY INSPECTION" in
CHAPTER 2.

Check the stator coil and pickup coil.



OUT OF SPECIFICATION



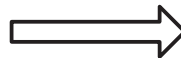
Replace the stator coil and pickup
coil assembly.

Check the main switch.

Refer to "IGNITION SYSTEM".



NO CONTINUITY



Replace the main switch.

Check the carburetor heater relay.



NO CONTINUITY



Replace the carburetor heater relay.

Check the carburetor heater.



CORRECT

INCORRECT



Replace the carburetor heater.

Check the water temperature sensor.

Refer to "SIGNAL SYSTEM".



FAULTY



Replace the water temperature sensor.

Check the main relay.

Refer to "IGNITION SYSTEM".

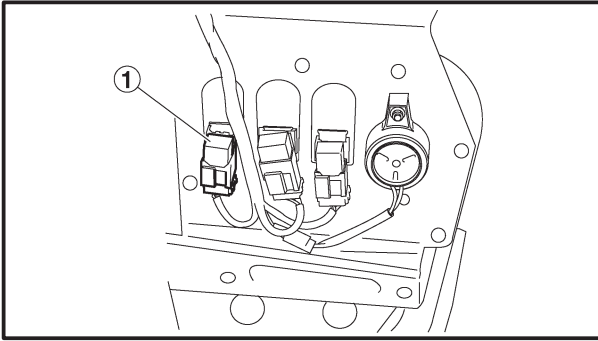


FAULTY



Replace the main relay.

Correct the connection and/or
replace the rectifier/regulator
and/or the CDI unit.



CARBURETOR HEATER RELAY

1. Inspect:

- Carburetor heater relay (1)

Inspection steps:

- Disconnect the carburetor heater relay from the coupler.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the carburetor heater relay terminals as shown.

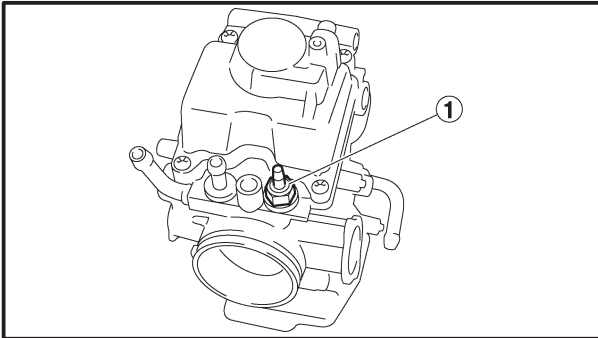
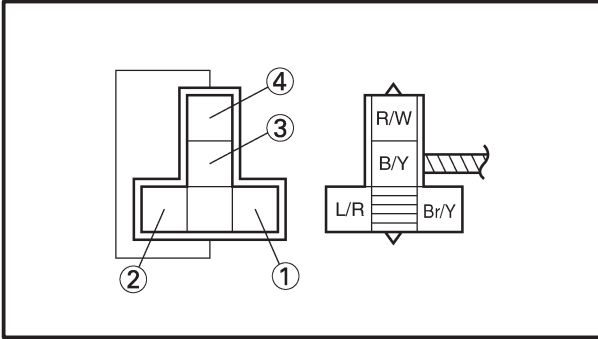
Positive battery terminal → Blue/Red (1)

Negative battery terminal → Brown/Yellow (2)

Positive tester probe → Black/Yellow (3)

Negative tester probe → Red/White (4)

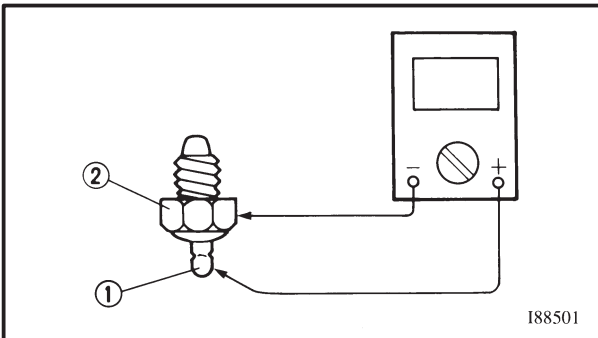
- If carburetor heater relay does not have continuity between the black/yellow and red/white terminals, replace it.



CARBURETOR HEATER

1. Remove:

- Carburetor heater (1)



2. Connect:

- Pocket tester
 - Positive tester probe → Heater terminal (1)
 - Negative tester probe → Heater body (2)

3. Inspect:

- Carburetor heater resistance
 - Out of specification → Replace the carburetor heater

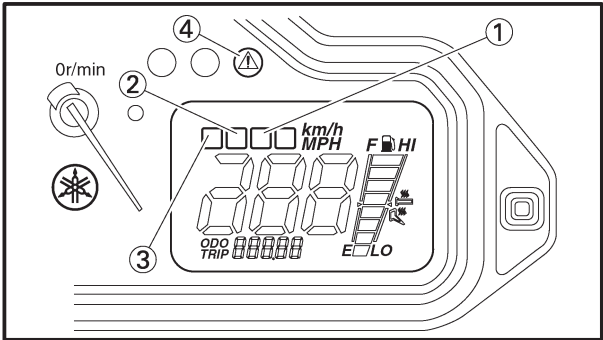


Carburetor heater resistance:

6 ~ 10 Ω at 20°C (68°F)

SELF-DIAGNOSIS

This model features a self-diagnosing system for following displays.



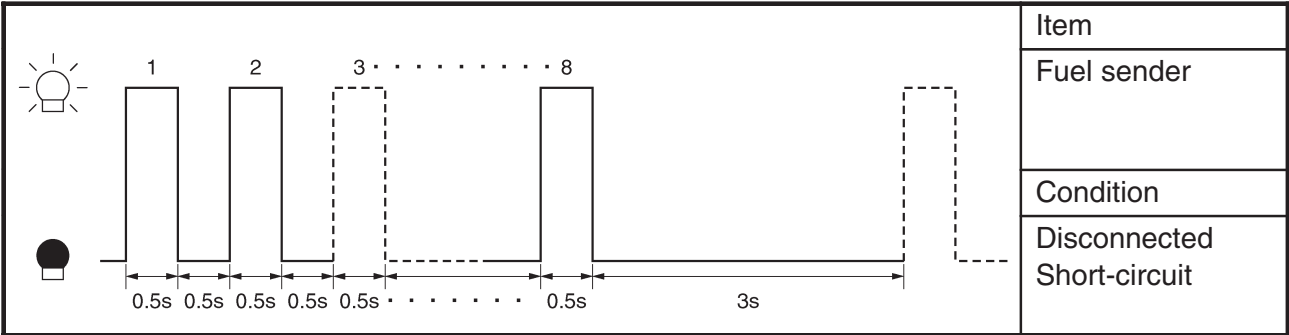
- 1. Fuel meter, fuel level warning indicator ① and the warning light ④
- 2. Coolant temperature warning light ② and the warning light ④
- 3. Self-diagnosis warning indicator ③ and the warning light ④

NOTE: The oil level warning indicator and the warning light come on when the engine oil level is low. If the oil level warning indicator and the warning light come on, place the snowmobile on a level surface and allow it to idle for one minute. If the oil level warning indicator and the warning light go off, the engine oil level is sufficient, however it is getting low. Add engine oil as soon as possible. If the oil level warning indicator and the warning light do not go off, check the engine oil level in the oil tank, and add engine oil if necessary.

1. FUEL METER, FUEL LEVEL WARNING INDICATOR AND THE WARNING LIGHT

The fuel meter, fuel level warning indicator and the warning light faults are displayed as follows

- Fuel sender



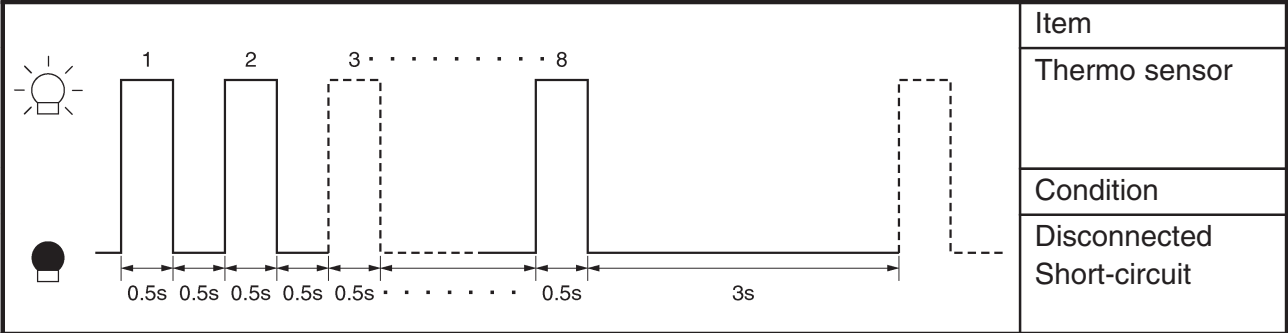
- ON Warning light ON
- OFF Warning light OFF

s Time (second)

2. COOLANT TEMPERATURE WARNING LIGHT AND THE WARNING LIGHT

The coolant temperature warning light and the warning light faults are displayed as follows

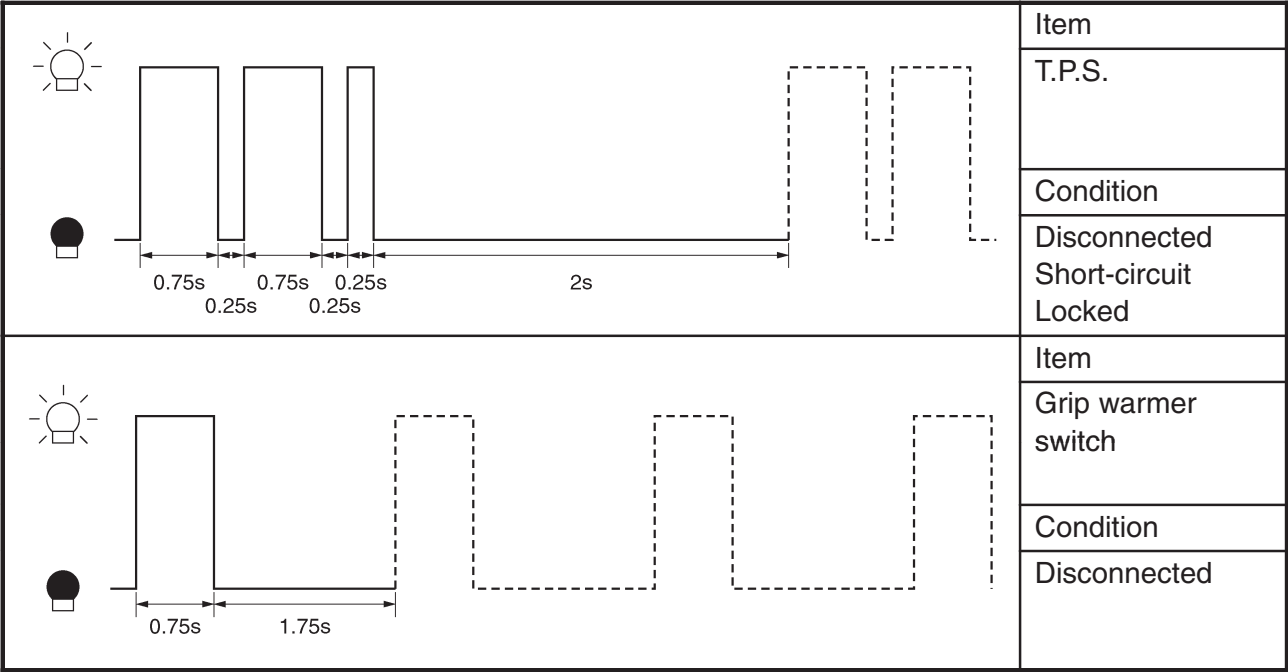
- Thermo sensor



3. SELF-DIAGNOSIS WARNING INDICATOR AND THE WARNING LIGHT

The self-diagnosis warning indicator and the warning light faults are displayed as follows

- Throttle position sensor (T.P.S.)
- Variable resistor (grip and thumb warmer)
- Grip and thumb warmer
- Voltage



-  ON Warning light ON
-  OFF Warning light OFF

s Time (second)

SELF-DIAGNOSIS

ELEC



  	Item
	Grip warmer
	Condition
  	Item
	Thumb warmer switch
	Condition
  	Item
	Thumb warmer
	Condition
  	Item
	Voltage
	Condition
  	Item
	Wrong
	Condition

-  ON Warning light ON
-  OFF Warning light OFF

s Time (second)



SPECIFICATIONS

GENERAL SPECIFICATIONS

Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS
Model code number:	8FA1 (RX10 for U.S.A/Canada) 8EU1 (RX10S for U.S.A/Canada) 8ER1 (RX10R for U.S.A/Canada) 8EW1 (RX10RS for U.S.A/Canada) 8EP1 (RX10M for U.S.A/Canada) 8EV1 (RX10MS for U.S.A/Canada) 8FA2 (RX10 for Europe) 8ER2 (RX10R for Europe) 8EW2 (RX10RS for Europe) 8EP2 (RX10M for Europe)
Dimensions:	
Overall length	2,755 mm (108.5 in) (RX10, RX10S, RX10R, RX10RS)
Overall width	3,185 mm (125.4 in) (RX10M, RX10MS)
Overall height	1,210 mm (47.6 in) (RX10, RX10S, RX10R, RX10RS) 1,115 mm (43.9 in) (RX10M, RX10MS)
Weight:	
Dry weight	253 kg (557.9 lb) (RX10, RX10S) 256 kg (564.5 lb) (RX10R, RX10RS) 267 kg (588.7 lb) (RX10M, RX10MS)
Minimum turning radius:	
Clockwise	3.9 m (12.8 ft) (RX10, RX10S, RX10R, RX10RS) 4.3 m (14.1 ft) (RX10M, RX10MS)
Counterclockwise	3.9 m (12.8 ft) (RX10, RX10S, RX10R, RX10RS) 4.3 m (14.1 ft) (RX10M, RX10MS)
Engine:	
Engine type	Liquid-cooled, 4-stroke, DOHC
Cylinder type	Backward-inclined parallel 4-cylinder
Displacement	998 cm ³ (60.9 cu.in)
Bore × stroke	74 × 58 mm (2.91 × 2.28 in)
Compression ratio	11.8
Maximum hose power	r/min 10,250 r/min
Maximum torque	r/min 7,500 r/min
Standard compression pressure (at sea level)	1,450 kPa (14.5 kg/cm ² , 206 psi) at 400 r/min
Starting system	Electric starter
Lubrication system:	Dry sump
Engine oil:	
Type	API SE, SF, SG or higher SAE5W-30
Oil capacity	
Periodic oil change	2.8 L (2.5 Imp qt, 3.0 US qt)
With oil filter replacement	3.0 L (2.6 Imp qt, 3.2 US qt)
Total amount	3.8 L (3.3 Imp qt, 4.0 US qt)

GENERAL SPECIFICATIONS

SPEC



Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS
Oil filter: Oil filter type	Cartridge (paper)
Drive chain housing oil: Type Capacity	Gear oil API "GL-3" SAE#75 or #80 0.25 L (8.8 Imp oz, 8.5 US oz)
Coolant: Capacity	4.7 L (4.1 Imp qt, 5.0 US qt)
Fuel: Type Tank capacity	Regular unleaded gasoline (Pump Octane $\frac{R+M}{2}$; 88 or higher) Research Octane; 93 or higher (for Europe) 38 L (8.4 Imp gal, 10.0 US gal)
Carburetors: Type/Quantity Manufacture	BSR37 $\times$ 4 MIKUNI
Spark plug: Type Manufacture Gap	CR9E NGK 0.7 ~ 0.8 mm (0.028 ~ 0.031 in)
Primary reduction: Primary reduction system Primary reduction ratio	Spur gear 1.19 (37/31)
Transmission: Primary reduction system Primary reduction ratio Clutch type Secondary reduction system Secondary reduction ratio Reverse system	V-Belt 3.8 : 1 ~ 1 : 1 Automatic centrifugal engagement Chain 1.58 (38/24) (RX10, RX10S, RX10R, RX10RS) 1.90 (40/21) (RX10M, RX10MS) No (RX10, RX10S, RX10M, RX10MS) Yes (RX10R, RX10RS)
Chassis: Frame type Caster Ski stance (center to center)	Monocoque 23° 1,068 mm (42.0 in) (RX10, RX10S, RX10R, RX10RS) 980 mm (38.6 in) (RX10M, RX10MS)
Suspension: Front suspension type Rear suspension type	Independent double wishbone suspension Slide rail suspension

GENERAL SPECIFICATIONS

SPEC

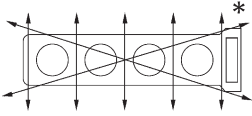
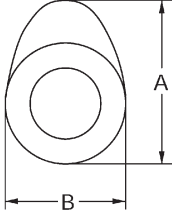
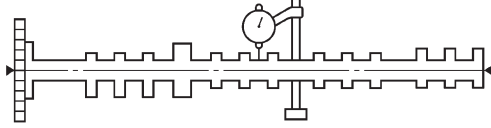


Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS
Track: Track type Track width Length on ground Track deflection mm/ 100 N (10 kg, 22 lb)	Internal drive type 381 mm (15.0 in) 752 mm (29.6 in) (RX10, RX10S, RX10R, RX10RS) 1,071 mm (42.2 in) (RX10M, RX10MS) 25 ~ 30 mm (0.98 ~ 1.18 in)
Brake: Brake type Operation method	Caliper type disc brake handlebar, left hand operated
Electrical: Ignition system Generator system	DC-CDI/MITSUBISHI A.C. magneto
Bulb wattage × Quantity: Headlight Tail/Brake light Meter light High beam indicator light Information indicator light	12 V, 60 W/55 W × 2 12 V, 5 W/21 W × 2 14 V, 50 mA × 6 14 V, 80 mA 14 V, 80 mA

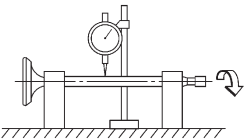


MAINTENANCE SPECIFICATIONS

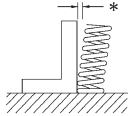
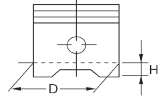
ENGINE

Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS
Cylinder head: Volume (with spark plug) <Warpage limit> 	13.45 ~ 14.00 cm³ (0.82 ~ 0.85 cu. in) 0.1 mm (0.004 in) * Lines indicate straight edge measurement.
Cylinder: Material Bore size <Taper limit> <Out of round> <Wear limit>	Aluminum alloy with dispersion coating 74.000 ~ 74.010 mm (2.9134 ~ 2.9138 in) 0.05 mm (0.002 in) 0.05 mm (0.002 in) 74.06 mm (2.9157 in)
Camshaft: Drive system Camshaft cap inside diameter Camshaft journal diameter Camshaft-journal-to-camshaft-cap clearance Camshaft dimensions Intake "A" <Limit> "B" <Limit> Exhaust "A" <Limit> "B" <Limit>  Camshaft runout 	Chain drive (left) 24.500 ~ 24.521 mm (0.9646 ~ 0.9654 in) 24.459 ~ 24.472 mm (0.9630 ~ 0.9635 in) 0.028 ~ 0.062 mm (0.0011 ~ 0.0024 in) 32.50 ~ 32.60 mm (1.2795 ~ 1.2835 in) 32.40 mm (1.2756 in) 24.95 ~ 25.05 mm (0.9823 ~ 0.9862 in) 24.85 mm (0.9783 in) 32.95 ~ 33.05 mm (1.2972 ~ 1.3012 in) 32.85 mm (1.2933 in) 24.95 ~ 25.05 mm (0.9823 ~ 0.9862 in) 24.85 mm (0.9783 in) 0.03 mm (0.0012 in)
Timing chain: Model/number of links Tensioning system	RH2015/130 Automatic
Valves, valve seats, valve guides: Valve clearance (cold) Intake Exhaust	0.11 ~ 0.20 mm (0.0043 ~ 0.0079 in) 0.21 ~ 0.25 mm (0.0083 ~ 0.0098 in)

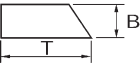
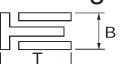
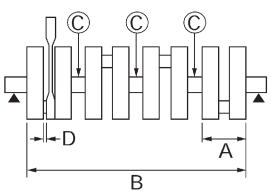


Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS	
Valve dimensions:		
Valve head diameter A		
Intake		22.9 ~ 23.1 mm (0.9016 ~ 0.9094 in)
Exhaust		24.4 ~ 24.6 mm (0.9606 ~ 0.9685 in)
	Head Diameter	
Valve face width B		
Intake		1.76 ~ 2.90 mm (0.0693 ~ 0.1142 in)
Exhaust		1.76 ~ 2.90 mm (0.0693 ~ 0.1142 in)
	Face Width	
Valve seat width C		
Intake		0.9 ~ 1.1 mm (0.035 ~ 0.043 in)
Exhaust		0.9 ~ 1.1 mm (0.035 ~ 0.043 in)
	Seat Width	
Valve margin thickness D		
Intake		0.5 ~ 0.9 mm (0.020 ~ 0.035 in)
Exhaust		0.5 ~ 0.9 mm (0.020 ~ 0.035 in)
	Margin Thickness	
Valve stem diameter		
Intake		3.975 ~ 3.900 mm (0.1565 ~ 0.1535 in)
<Limit>		3.945 mm (0.1553 in)
Exhaust		4.460 ~ 4.475 mm (0.1756 ~ 0.1762 in)
<Limit>		4.43 mm (0.1744 in)
Valve guide inside diameter		
Intake		4.000 ~ 4.012 mm (0.1575 ~ 0.1580 in)
<Limit>		4.05 mm (0.1594 in)
Exhaust		4.500 ~ 4.512 mm (0.1772 ~ 0.1776 in)
<Limit>		4.55 mm (0.1791 in)
Valve-stem-to-valve-guide clearance		
Intake		0.010 ~ 0.037 mm (0.0004 ~ 0.0015 in)
<Limit>		0.08 mm (0.0031 in)
Exhaust		0.025 ~ 0.052 mm (0.0010 ~ 0.0020 in)
<Limit>		0.10 mm (0.0039 in)
Valve stem runout limit		0.01 mm (0.0004 in)
		
Valve seal width		
Intake		0.9 ~ 1.1 mm (0.035 ~ 0.043 in)
Exhaust		0.9 ~ 1.1 mm (0.035 ~ 0.043 in)



Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS
Valve spring: Free length Intake Exhaust Installed length (valve closed) Intake Exhaust Compressed spring force (installed) Intake Exhaust Spring tilt Intake Exhaust Winding direction (top view) Intake Exhaust 	38.90 mm (1.53 in) 40.67 mm (1.60 in) 34.50 mm (1.36 in) 35.00 mm (1.38 in) 82 ~ 96 N (8.2 ~ 9.6 kg, 18.1 ~ 21.2 lb) 110 ~ 126 N (11.0 ~ 12.6 kg, 24.3 ~ 27.8 lb) 2.5°/1.7 mm (0.067 in) 2.5°/1.8 mm (0.071 in) Clockwise Clockwise
Valve lifter: Valve lifter outside diameter Intake <Limit> Exhaust <Limit> Valve lifter hole inside diameter Intake <Limit> Exhaust <Limit>	27.978 ~ 28.002 mm (1.1015 ~ 1.1024 in) 27.958 mm (1.1007 in) 27.978 ~ 28.002 mm (1.1015 ~ 1.1024 in) 27.958 mm (1.1007 in) 27.996 ~ 28.020 mm (1.1022 ~ 1.1031 in) 28.05 mm (1.1043 in) 27.996 ~ 28.020 mm (1.1022 ~ 1.1031 in) 28.05 mm (1.1043 in)
Piston: Piston size (D) Measuring point (H) Piston to-cylinder clearance <Limit> Piston pin bore off set Off-set direction Piston pin bore inside diameter 	73.955 ~ 73.970 mm (2.9116 ~ 2.9122 in) 5 mm (0.20 in) 0.030 ~ 0.055 mm (0.0012 ~ 0.0022 in) 0.12 mm (0.0047 in) 0.5 mm (0.0197 in) Intake side 17.002 ~ 17.013 mm (0.6694 ~ 0.6698 in)



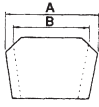
Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS
Piston pin: Piston pin outside diameter Piston pin length Piston pin to piston pin bore clearance <Limit>	16.991 ~ 17.000 mm (0.6689 ~ 0.6693 in) 51.4 ~ 51.5 mm (2.0236 ~ 2.0276 in) 0.002 ~ 0.022 mm (0.00008 ~ 0.0009 in) 0.072 mm (0.0028 in)
Piston ring: Sectional sketch Top ring  Ring type Dimensions (B × T) 2nd ring  Ring type Dimensions (B × T) Oil ring  Dimensions (B × T) End gap (installed) Top ring 2nd ring Oil ring Side clearance (installed) Top ring 2nd ring	Barrel 0.90 × 2.75 mm (0.035 × 0.108 in) Taper 0.8 × 2.8 mm (0.031 × 0.110 in) 1.5 × 2.6 mm (0.059 × 0.101 in) 0.32 ~ 0.44 mm (0.010 ~ 0.020 in) 0.43 ~ 0.58 mm (0.017 ~ 0.023 in) 0.10 ~ 0.35 mm (0.004 ~ 0.0014 in) 0.030 ~ 0.065 mm (0.0012 ~ 0.0026 in) 0.020 ~ 0.055 mm (0.0008 ~ 0.0022 in)
Connecting rod: Crankshaft-pin-to-big-end-bearing clearance Bearing color code	0.016 ~ 0.040 mm (0.0006 ~ 0.0016 in) -1 = Violet 0 = White 1 = Blue 2 = Black 3 = Brown
Crankshaft:  Width A Width B Crankshaft runout C Big end side clearance D Crankshaft-journal-to-crankshaft-journal-bearing clearance Bearing color code	52.40 ~ 57.25 mm (2.063 ~ 2.254 in) 300.75 ~ 302.65 mm (11.84 ~ 11.92 in) 0.03 mm (0.0012 in) 0.160 ~ 0.262 mm (0.006 ~ 0.010 in) 0.004 ~ 0.028 mm (0.0002 ~ 0.0011 in) -1 = Violet 0 = White 1 = Blue 2 = Black 3 = Brown



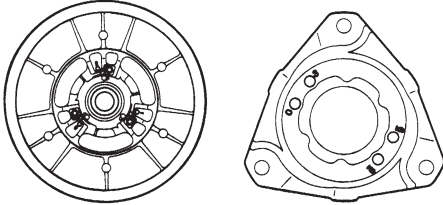
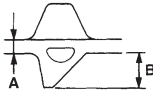
Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS
Carburetor:	
Type/Quantity	BSR37/4
Manufacturer	MIKUNI
I.D. mark	8FA100
Main jet (M.J)	#135
Main air jet (M.A.J)	#120
Jet needle (J.N)	Ab-3
Needle jet (N.J)	P4M
Pilot jet (P.J)	#17.5
Pilot air jet (P.A.J.1)	#85
(P.A.J.2)	#125
Pilot outlet (P.O)	1.0
Bypass 1 (B.P.1)	0.8
(B.P.2)	0.8
(B.P.3)	0.8
Pilot screw (P.S)	Approx 2
Throttle valve (Th.V)	#115
Valve seat size (V.S)	1.5
Starter jet (G.S)	#95
Float height (F.H)	11 ~ 15 mm (0.43 ~ 0.59 in)
Fuel level (below the line on the float chamber)	3.0 ~ 4.0 mm (1.118 ~ 0.157 in)
Engine idle speed	1,350 ± 100 r/min (1,250 ~ 1,450 r/min)
Fuel pump:	
Type	Diaphragm
Manufacturer	8FA (MIKUNI)
Oil filter:	
Oil filter type	Cartridge (paper)
Bypass valve opening pressure	78 ~ 118 kPa (0.78 ~ 1.18 kg/cm ² , 11.1 ~ 16.8 psi)
Oil pump:	
Oil pump type	Trochoidal
Inner-rotor-to-outer-rotor-tip clearance	0.09 ~ 0.15 mm (0.004 ~ 0.006 in)
Outer-rotor-to-oil-pump-housing clearance	0.03 ~ 0.08 mm (0.001 ~ 0.003 in)
Max. impeller shaft tilt	0.15 mm (0.0059 in)
<Limit>	0.072 mm (0.0028 in)
Relief valve operating pressure	430 ~ 550 kPa (4.3 ~ 5.5 kg/cm ² , 61.2 ~ 78.2 psi)
Oil pressure (hot)	50 kPa (0.5 kg/cm ² , 7.1 psi) at 1,450 r/min
Cooling system:	
Filler cap opening pressure	95 ~ 125 kPa (0.95 ~ 1.25 kg/cm ² , 14 ~ 18 psi)
Water pump type	Single-suction centrifugal pump (Impeller type)
Reduction ratio	37/31 × 23/18 (1.525)
Coolant type	High quality silicate-free ethylene glycol antifreeze containing corrosion inhibitors
Coolant mixing ratio (coolant: water)	3 : 2 (60% : 40%)
Capacity	4.7 L (4.14 Imp qt, 4.97 US qt)



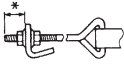
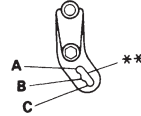
POWER TRAIN

Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS
Transmission: Type Range of ratio Engagement speed r/min Shift r/min Sheave distance Sheave offset	V-belt automatic 3.8 ~ 1.0 : 1 3,600 ± 200 r/min (3,400 ~ 3,800 r/min) (RX10, RX10S, RX10R, RX10RS) 4,200 ± 200 r/min (4,000 ~ 4,400 r/min) (RX10M, RX10MS) 10,250 ± 250 r/min (10,000 ~ 10,500 r/min) 268.5 mm (10.57 in) (267 ~ 270 mm (10.51 ~ 10.63 in)) 15 mm (0.59 in) (13.5 ~ 16.5 mm (0.53 ~ 0.65 in))
V-belt: Part number/Manufacturer Circumference Width "A" Wear limit "B"	8DN-17641-00/MITSUBOSHI 1,129 ~ 1,137 mm (44.4 ~ 44.8 in) 34.5 mm (1.36 in) 32.5 mm (1.28 in)
	
Primary sheave spring: Part number Color code Diameter Wire diameter Preload Spring rate Number of coils Free length Set length	90501-582L1 (RX10, RX10S, RX10R, RX10RS) 90501-624L8 (RX10M, RX10MS) Yellow – Silver – Yellow (RX10, RX10S, RX10R, RX10RS) Orange – Silver – Orange (RX10M, RX10MS) 60 mm (2.36 in) 5.8 mm (0.228 in) (RX10, RX10S, RX10R, RX10RS) 6.2 mm (0.244 in) (RX10M, RX10MS) 343 N (35 kg, 77 lb) 24.5 N/mm (2.50 kg/mm, 140 lb/in) (RX10, RX10S, RX10R, RX10RS) 31.9 N/mm (3.25 kg/mm, 182 lb/in) (RX10M, RX10MS) 4.92 (RX10, RX10S, RX10R, RX10RS) 5.00 (RX10M, RX10MS) 87.4 mm (3.44 in) (RX10, RX10S, RX10R, RX10RS) 84.2 mm (3.32 in) (RX10M, RX10MS) 73.4 mm (2.89 in)
Primary sheave weight arm: Part number (with bush) Weight (without bush and rivets)	8FA-17605-00 69.43 g (2.449 oz)
Rivet: Outer Part number Material Size Quantity Hole quantity Inner Part number Material Size Quantity Hole quantity None (outer and inner)	None (RX10M, RX10MS) 90269-06006 (RX10, RX10S, RX10R, RX10RS) Steel (RX10, RX10S, RX10R, RX10RS) 17.2 mm (0.677 in) (RX10, RX10S, RX10R, RX10RS) 3 (RX10, RX10S, RX10R, RX10RS) 3 None (RX10M, RX10MS) 90261-06033 (RX10, RX10S, RX10R, RX10RS) Steel (RX10, RX10S, RX10R, RX10RS) 17.2 mm (0.677 in) (RX10, RX10S, RX10R, RX10RS) 3 (RX10, RX10S, RX10R, RX10RS) 3 RX10M, RX10MS



Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS
Secondary sheave spring: Part number Color code Outside diameter Wire diameter Hole position Sheave side-spring side (twist angle) 	90508-60012 (RX10, RX10S, RX10R, RX10RS) 90508-60007 (RX10M, RX10MS) PINK (RX10, RX10S, RX10R, RX10RS) White (RX10M, RX10MS) 69.5 mm (2.736 in) 6 mm (0.236 in) 3-3 (60°) (RX10, RX10S, RX10R, RX10RS) 1-6 (70°) (RX10M, RX10MS)
Spring rate Number of coils Free length Torque cam angle	12.32 N/mm (1.256 kg/mm, 70.34 lb/in) (RX10, RX10S, RX10R, RX10RS) 13.45 N/mm (1.372 kg/mm, 76.84 lb/in) (RX10M, RX10MS) 5.53 (RX10, RX10S, RX10R, RX10RS) 5.19 (RX10M, RX10MS) 75 mm (2.95 in) 51-43° (RX10, RX10S, RX10R, RX10RS) 45° (RX10M, RX10MS)
Drive chain: Type Number of links Secondary reduction ratio	Borg Warner Automotive 23RH303-70ASM 70L 38/24 (1.58) (RX10, RX10S, RX10R, RX10RS) 40/21 (1.90) (RX10M, RX10MS)
Track: Part number Width Length Pitch Number of links Thickness "A" Height "B"  Track deflection at 100 N (10 kg, 22 lb)	8DY-47110-00 (RX10, RX10S, RX10R, RX10RS for U.S.A./Canada) 8ER-47110-00 (RX10, RX10R, RX10RS for EUR) 8EP-47110-00 (RX10M, RX10MS) 381 mm (15.0 in) 3,072 mm (120.9 in) (RX10, RX10S, RX10R, RX10RS) 3,840 mm (151.2 in) (RX10M, RX10MS) 64 mm (2.52 in) 48 (RX10, RX10S, RX10R, RX10RS) 60 (RX10M, RX10MS) 5.1 mm (0.20 in) (RX10, RX10S, RX10R, RX10RS) 5.8 mm (0.23 in) (RX10M, RX10MS) 25.4 mm (1.00 in) (RX10, RX10S, RX10R, RX10RS for U.S.A./Canada) 31.8 mm (1.25 in) (RX10, RX10R, RX10RS for EUR) 50.8 mm (2.00 in) (RX10M, RX10MS) 25 ~ 30 mm (0.98 ~ 1.18 in)



Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS
Slide rail suspension (Rear suspension): Center travel Rear travel Suspension spring rate Front Rear Suspension wire diameter Front Rear	221 mm (8.70 in) (RX10, RX10S, RX10R, RX10RS) 188 mm (7.40 in) (RX10M, RX10MS) 298 mm (11.73 in) (RX10, RX10S, RX10R, RX10RS) 237 mm (9.33 in) (RX10M, RX10MS) 28 – 50 N/mm (2.8 – 5.0 kg/mm, 157 – 280 lb/in) (RX10, RX10S, RX10R, RX10RS) 44.1 N/mm (4.4 kg/mm, 247 lb/in) (RX10M, RX10MS) 34.3 – 52 N/mm (3.4 – 5.2 kg/mm, 192 – 291 lb/in) (RX10, RX10S, RX10R, RX10RS) 17.7 – 39.2 N/mm (1.8 – 3.9 kg/mm, 99 – 220 lb/in) (RX10M, RX10MS) 8.8 mm (0.347 in) (RX10, RX10S, RX10R, RX10RS) 9.5 mm (0.374 in) (RX10M, RX10MS) 11.8 mm (0.465 in) (RX10, RX10S, RX10R, RX10RS) 10.5 mm (0.413 in) (RX10M, RX10MS)
Suspension setting position: Hook setting length *(Standard)  (Maximum) (Minimum) Full rate adjusting position ** 	25 ± 0.5 mm (0.98 ± 0.02 in) (RX10, RX10S, RX10R, RX10RS) 10 ± 0.5 mm (0.39 ± 0.02 in) (RX10M, RX10MS) 35 mm (1.37 in) 10 mm (0.40 in) B
Shock absorber: Damping force Front Extension Compression Rear Extension Compression	910 N/0.3 m/s (91 kg/0.3 m/s, 201 lb/0.3 m/s) (RX10, RX10S, RX10R, RX10RS) 540 N/0.3 m/s (54 kg/0.3 m/s, 119 lb/0.3 m/s) (RX10M, RX10MS) 2,280 N/0.3 m/s (228 kg/0.3 m/s, 503 lb/0.3 m/s) (RX10, RX10S, RX10R, RX10RS) 1,820 N/0.3 m/s (182 kg/0.3 m/s, 401 lb/0.3 m/s) (RX10M, RX10MS) 2,090 N/0.3 m/s (209 kg/0.3 m/s, 461 lb/0.3 m/s) (RX10, RX10S, RX10R, RX10RS) 1,340 N/0.3 m/s (134 kg/0.3 m/s, 295 lb/0.3 m/s) (RX10M, RX10MS) 470 N/0.3 m/s (47 kg/0.3 m/s, 104 lb/0.3 m/s) (RX10, RX10S, RX10R, RX10RS) 970 N/0.3 m/s (97 kg/0.3 m/s, 214 lb/0.3 m/s) (RX10M, RX10MS)

MAINTENANCE SPECIFICATIONS**SPEC**

Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS
Slide runner: Thickness Wear limit	17.8 mm (0.70 in) 10 mm (0.39 in)
Track sprocket wheel: Material Number of teeth	High molecular weight polyethylene 9 T (RX10, RX10S, RX10R, RX10RS) 8 T (RX10M, RX10MS)
Rear guide wheel: Material Outside diameter	High molecular weight polyethylene with rubber 178 mm (7.01 in)
Brake: Pad thickness Pad wear limit Pad to disk clearance Disc outside diameter Disc minimum thickness	13 mm (0.51 in) 7.5 mm (0.30 in) 0.025 ~ 0.115 mm (0.001 ~ 0.005 in) 220 mm (8.66 in) 4.5 mm (0.18 in)



CHASSIS

Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS
Frame: Frame material Seat height Luggage box location	Aluminum 738 mm (29.1 in) Front
Steering: Lock-to-lock angle (left) (right) Ski alignment Toe-out size Caster angle	30.0° (R ski) 34.7° (L ski) 34.7° (R ski) 30.0° (L ski) Toe-out 0 ~ 15 mm (0 ~ 0.59 in) 23°
Ski: Ski material Length Width	Plastic 1,020 mm (40.2 in) 132.0 mm (5.20 in)
Ski suspension (Front suspension): Type Travel Spring type Spring rate Wire diameter	Double wishbone system 221 mm (8.70 in) (RX10, RX10S, RX10R, RX10RS) 175 mm (6.89 in) (RX10M, RX10MS) Coil spring 19 – 30 N/mm (1.9 – 3.0 kg/mm, 106 – 168 lb/in) (RX10, RX10S, RX10R, RX10RS) 25 N/mm (2.5 kg/mm, 140 lb/in) (RX10M, RX10MS) 8.5 mm (0.335 in) (RX10, RX10S, RX10R, RX10RS) 8.0 mm (0.315 in) (RX10M, RX10MS)
Shock absorber: damping force Extension Compression	2,090 N/0.3 m/s (209 kg/0.3 m/s, 461 lb/0.3 m/s) (RX10, RX10S, RX10R, RX10RS) 1,950 N/0.3 m/s, (195 kg/0.3 m/s, 430 lb/0.3 m/s) (RX10M, RX10MS) 610 N/0.3 m/s (61 kg /0.3 m/s, 135 lb/0.3 m/s) (RX10, RX10S, RX10R, RX10RS) 600 N/0.3 m/s (60 kg/0.3 m/s, 132 lb/0.3 m/s) (RX10M, RX10MS)



ELECTRICAL

Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS
Voltage	12 V
Ignition system: Ignition timing (B.T.D.C.) Advanced type	5° at 1,450 r/min Digital type
Ignition coil: Model/Manufacturer Primary coil resistance Secondary coil resistance	F6T54973/MITSUBISHI 0.16 ~ 0.22 Ω at 20°C (68°F) 5.0 ~ 6.8 kΩ at 20°C (68°F)
Charging system: Type Nominal output	AC magneto 14 V/21 A at 5,000 r/min
DC-CDI: Magneto model/Manufacturer Standard Pickup coil resistance (color code) Stator coil resistance (color code) CDI unit model/Manufacturer	F4T47371/MITSUBISHI 14 V 30 A, 420 W at 5,000 r/min 189 ~ 231 Ω at 20°C (68°F) (Gray – Black) 0.19 ~ 0.24 Ω at 20°C (68°F) (White – White) F8T39371/MITSUBISHI
Rectifier/regulator: Type Model/Manufacturer No load regulated voltage (DC) Capacity (DC) Withstand voltage	Short circuit type FH001/SHINDENGEN 14.1 ~ 14.9 V 35 A 40 V
Battery: Specific gravity Manufacture Type Ten hour rate amperage	1.32 GS YTX20L-BS 12V-18Ah 18 A
Electric starter system: Type	Constant mesh type
Starter motor: Model/Manufacturer Output Armature coil resistance Continuity check Insulation check Brush Overall length Wear limit Spring pressure Commutator diameter Wear limit Mica undercut	8FA1/MORIC 12 V – 0.95 kW 0.008 ~ 0.010 Ω at 20°C (68°F) More than 100 kΩ at 20°C (68°F) 9.8 mm (0.39 in) 5 mm (0.20 in) 7.36 ~ 11.04 N (736 ~ 1,104 g, 26.0 ~ 38.9 oz) 28.5 mm (1.12 in) 27.5 mm (1.08 in) 1.5 mm (0.059 in)

MAINTENANCE SPECIFICATIONS

SPEC



Model	RX10, RX10S, RX10R, RX10RS, RX10M, RX10MS	
Starter relay:		
Model/Manufacturer	MS5F-441/JIDECO	
Amperage rating	180 A	
Coil resistance	4.2 ~ 4.6 Ω at 20°C (68°F)	
T.P.S. (throttle position sensor):		
Model/Manufacturer	TS67/02-1C/MIKUNI	
Resistance	4 ~ 6 K Ω at 20°C (68°F) (Blue – Black) 0 ~ 4 K Ω at 20°C (68°F) (Yellow – Black)	
Oil level switch:		
Model/Manufacturer	8FA/ASTI	
Fuel sender:		
Model/Manufacturer	8FA/NIPPON SEIKI	
Sender resistance	Full	4 ~ 10 Ω at 20°C (68°F)
	Empty	90 ~ 100 Ω at 20°C (68°F)
Headlight relay:		
Model/Manufacturer	5DM/OMRON	
Coil resistance	95 ~ 116 Ω at 20°C (68°F)	
Grip warmer:		
Heater resistance	(left)	1.53 ~ 1.87 Ω at 20°C (68°F)
	(right)	1.53 ~ 1.87 Ω at 20°C (68°F)
Thumb warmer:		
Heater resistance	37.0 ~ 45.2 Ω at 20°C (68°F)	
Circuit breaker:		
Type	Fuse	
Amperage for individual circuit		
Main fuse	30 A × 1	
Headlight fuse	20 A × 1	
Signal fuse	10 A × 1	
Ignition fuse	10 A × 1	
Carburetor heater fuse	20 A × 1	
Reserve fuse	30 A × 1	
Reserve fuse	20 A × 1	
Reserve fuse	10 A × 1	
Water temperature sensor:		
Model/Manufacturer	8CC/MITSUBISHI	
Resistance	5.2 ~ 6.4 k Ω at 0°C (34°F) 0.300 ~ 0.364 k Ω at 80°C (176°F) 0.170 ~ 0.208 k Ω at 100°C (212°F)	
Indicator light	(ON)	90 ~ 110°C (194 ~ 230°F)
	(OFF)	85 ~ 105°C (185 ~ 221°F)
Speed sensor:		
Model/Manufacture	8EK/NIPPON SEIKI	
Carburetor heater:		
Model/Manufacture	5FU/NIPPON THERMOSTAT	
Wattage	30 W	
Resistance	6 ~ 10 Ω at 20°C (68°F)	

**HIGH ALTITUDE SETTINGS**

RX10, RX10S, RX10R, RX10RS

Altitude \ Temperature	-40°C (-40°F)		-20°C (-4°F)		0°C (32°F)	16°C (60°F)	Idling speed (r/min)
0 ~ 200 m (0 ~ 670 ft)	MJ PS	#140 STD	MJ PS	#137.5 STD	MJ PS	#135 STD	1350
200 ~ 1000 m (~ 1700 ft)	MJ PS	#137.5 STD	MJ PS	#135 STD	MJ PS	#132.5 STD	1350
1000 ~ 2000 m (~ 6700 ft)	MJ PS	#135 3/4	MJ PS	#132.5 3/4	MJ PS	#130 3/4	1350
2000 ~ 3000 m (~ 10000 ft)	MJ PS	#132.5 1+1/4	MJ PS	#130 1+1/4	MJ PS	#127.5 1+1/4	1400

[Production spec] MJ#1, 2, 3, 4:#135 PS:Approx 2 #:Main jet number PS:Pilot screw turns in

HIGH ALTITUDE SETTINGS

RX10M, RX10MS

Altitude \ Temperature	-40°C (-40°F)		-20°C (-4°F)		0°C (32°F)	16°C (60°F)	Idling speed (r/min)
0 ~ 200 m (0 ~ 670 ft)	MJ PS	#140 STD	MJ PS	#137.5 STD	MJ PS	#135 STD	1350
200 ~ 1000 m (~ 1700 ft)	MJ PS	#137.5 STD	MJ PS	#135 STD	MJ PS	#132.5 STD	1350
1000 ~ 2000 m (~ 6700 ft)	MJ PS	#135 3/4	MJ PS	#132.5 3/4	MJ PS	#130 3/4	1350
2000 ~ 3000 m (~ 10000 ft)	MJ PS	#132.5 1+1/4	MJ PS	#130 1+1/4	MJ PS	#127.5 1+1/4	1400

[Production spec] MJ#1, 2, 3, 4:#135 PS:Approx 2 #:Main jet number PS:Pilot screw turns in



TIGHTENING TORQUE

ENGINE

Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Spark plug	13	1.3	9.4	Left-hand thread.
Cylinder head nut (M10 × 1.25) × 2	20 + 121°	2.0 + 121°	14 + 121°	
Cylinder head nut (M10 × 1.25) × 6	20 + 105°	2.0 + 105°	14 + 105°	
Cylinder head nut × 2	20 + 140°	2.0 + 140°	14 + 140°	
Cylinder head bolt	12	1.2	8.7	
Camshaft cap and cylinder head	10	1.0	7.2	
Cylinder head cover	12	1.2	8.7	
Connecting rod and cap	20 + 120°	2.0 + 120°	14 + 120°	
A.C. magneto rotor	130	13.0	94	
Crankshaft and drive gear	75	7.5	54	
Primary reduction gear bearing housing	12	1.2	8.7	
Timing chain tensioner	10	1.0	7.2	
Thermostat housing	10	1.0	7.2	
Water temperature sensor	23	2.3	17	
Timing chain tensioner cap	6	0.6	4.3	
Camshaft and camshaft sprocket	24	2.4	17	
Hose band	2	0.2	1.4	
Water pump	12	1.2	8.7	
Coolant reservoir tank	7	0.7	5.0	
Pipe	10	1.0	7.2	
Oil cooler	35	3.5	25	
Oil pan	10	1.0	7.2	
Engine mounting adjust bolt	7	0.7	5.1	
Engine mounting nut	65	6.5	47	
Countershaft cover	12	1.2	8.7	See NOTE.
Oil pan drain bolt	30	3.0	22	
Oil filter union bolt	70	7.0	51	
Oil filter	17	1.7	12	
Oil pump	12	1.2	8.7	
Oil pump drive chain guide	10	1.0	7.2	
Oil tank drain bolt	16	1.6	11	
Oil tank and frame (bolt)	10	1.0	7.2	
Oil tank and frame (nut)	19	1.9	14	
Oil gallery bolt	10	1.0	7.2	
Exhaust joint	25	2.5	18	
Muffler band	9	0.9	6.5	
Exhaust pipe	25	2.5	18	
Exhaust sampling bolt	10	1.0	7.2	
Muffler	16	1.6	11	
Exhaust cover	6	0.6	4.3	
Muffler band	20	2.0	14	
Muffler protector	11	1.1	8.0	
Cylinder head stud bolt	10	1.0	7.2	
Crankcase (M9 × 1.5) (1st)	15	1.5	11	
(2nd)	15+ 45~50°	1.5+ 45~50°	11+ 45~50°	
Crankcase (M6 × 1.0)	12	1.2	8.7	Apply LOCTITE® Apply LOCTITE®
Countershaft cover	12	1.2	8.7	
A.C. magneto rotor cover	12	1.2	8.7	
Starter clutch	12	1.2	8.7	
Stator coil	10	1.0	7.2	
Starter motor	27	2.7	20	
Pickup coil	6	0.6	4.3	

TIGHTENING TORQUE**SPEC**

Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Fuel pump	10	1.0	7.2	
Fuel pump stay	10	1.0	7.2	

NOTE:

1. First, tighten the bolt to approximately 15 Nm (1.5 m•kg, 11 ft•lb) with a torque wrench, then loosen the bolt completely.
2. Retighten the bolt to 15 Nm (1.5 m•kg, 11 ft•lb), and tighten another 45 ~ 50° with a angle gauge.



POWER TRAIN

Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Primary sheave (1st)	120	12	85	Tighten the bolt in two stages. See NOTE. Left-hand thread. Apply LOCTITE®
(2nd)	60	6.0	43	
Spider and sliding sheave	200	20.0	145	
Primary sheave cap and sliding sheave	14	1.4	10	Apply LOCTITE®
Roller and weight (primary sheave)	6	0.6	4.3	
Secondary sheave	64	6.4	46	
Stopper (secondary sheave)	7	0.7	5.1	
Spring seat (secondary sheave)	23	2.3	17	
Bolt (secondary sheave clearance)	10	1.0	7.2	
Drive sprocket	90	9.0	65	
Locknut chain tensioner	24	2.4	17	
Chain housing and frame	48	4.8	35	
Driven sprocket	48	4.8	35	
Drain bolt (drive chain housing)	16	1.6	12	
Chain housing cover	24	2.4	17	
Shift lever assembly	10	1.0	7.2	
Lever and drive chain housing cover	10	1.0	7.2	
Shaft (reverse drive gear)	10	1.0	7.2	Apply LOCTITE® (RX10R, RX10RS) Apply LOCTITE® (RX10R, RX10RS) Apply LOCTITE® (RX10R, RX10RS) Apply LOCTITE®
Reverse driven gear	48	4.8	35	
Counter gear	10	1.0	7.2	
Spacer set screw	6	0.6	4.3	
Chain housing and brake caliper	48	4.8	35	
Bleed screw (brake caliper)	6	0.6	4.3	
Brake hose union bolt (caliper side)	30	3.0	22	
Brake hose union bolt (brake master cylinder side)	30	3.0	22	
Bearing set screw (Secondary shaft)	8	0.8	5.8	
Parking brake	13	1.3	9.4	
Stopper band	4	0.4	2.9	Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE®
Hook and front pivot arm	16	1.6	12	
Wheel bracket and sliding frame	24	2.4	17	
Bracket bolt (front)	72	7.2	52	
Bracket bolt (rear)	30	3.0	22	
Front pivot arm and front pivot arm bracket	72	7.2	52	
Front pivot arm bracket and sliding frame	72	7.2	52	
Suspension wheel	72	7.2	52	
Rear axle	75	7.5	54	
Slide rail suspension mounting bolt (M10)	72	7.2	52	
Rear pivot arm and bracket	24	2.4	17	Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE® Apply LOCTITE®
Shock absorber and rear pivot arm	49	4.9	35	
Rear pivot arm and rod	49	4.9	35	
Rear suspension bracket and rod	49	4.9	35	
Shock absorber and rear suspension bracket	49	4.9	35	
Control rod and sliding frame	72	7.2	52	
Shock absorber and front pivot arm	49	4.9	35	
Shock absorber and front suspension bracket	49	4.9	35	
Rear pivot arm bracket	72	7.2	52	
Rear bracket and suspension wheel	72	7.2	52	

TIGHTENING TORQUE

SPEC

Parts be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Wheel bracket shaft and sliding frame	72	7.2	52	Apply LOCTITE®
Set bolt (front axle)	9	0.9	6.5	
Speed sensor	20	2.0	14	
Gear unit (speed sensor)	40	4.0	29	

NOTE:

Tightening steps:

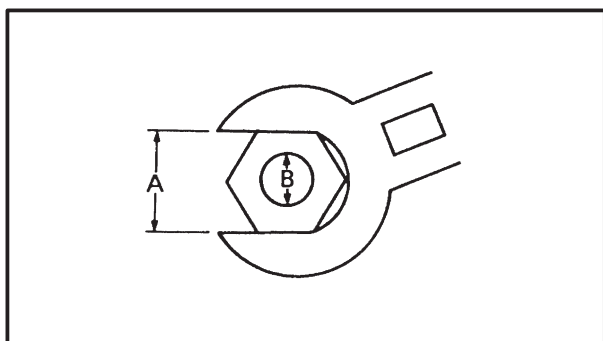
1. Tighten the bolt to a torque at 155 Nm (15.5 m•kg, 112 ft•lb).
2. Loosen the bolt completely.
3. Retighten the bolt to a torque of 60 Nm (6.0 m•kg, 43 ft•lb).



GENERAL TORQUE SPECIFICATIONS

This chart specifies torque for standard fasteners with standard I.S.O. pitch threads. Torque specifications for special components or assemblies are included in the applicable sections of this book. To avoid warpage, tighten multi-fastener assemblies in a crisscross fashion, in progressive stages, until full torque is reached. Unless otherwise specified, torque specifications call for clean, dry threads. Components should be at room temperature.

A (nut)	B (bolt)	General torque specifications		
		Nm	m•kg	ft•lb
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94

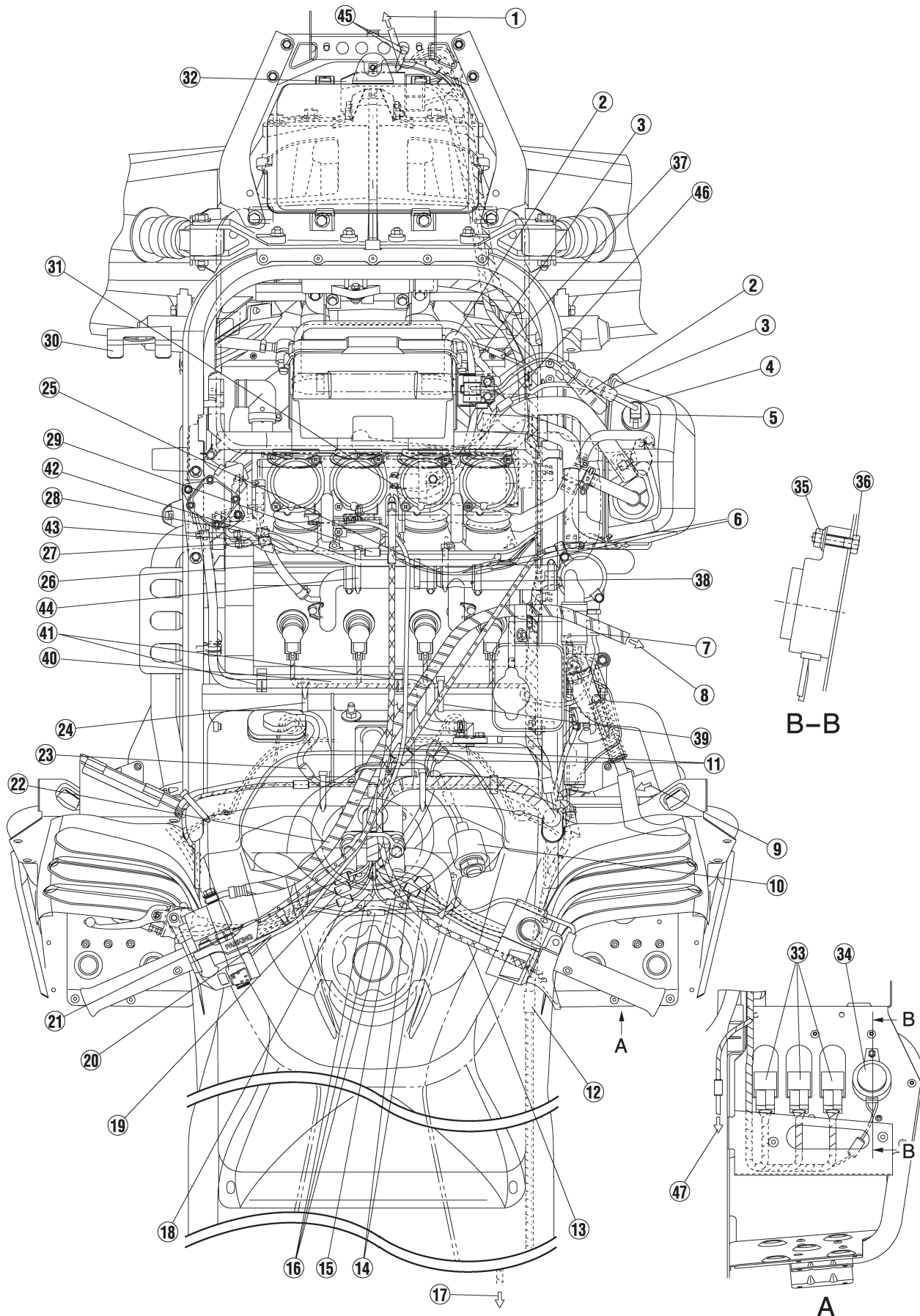


A: Distance across flats

B: Outside thread diameter

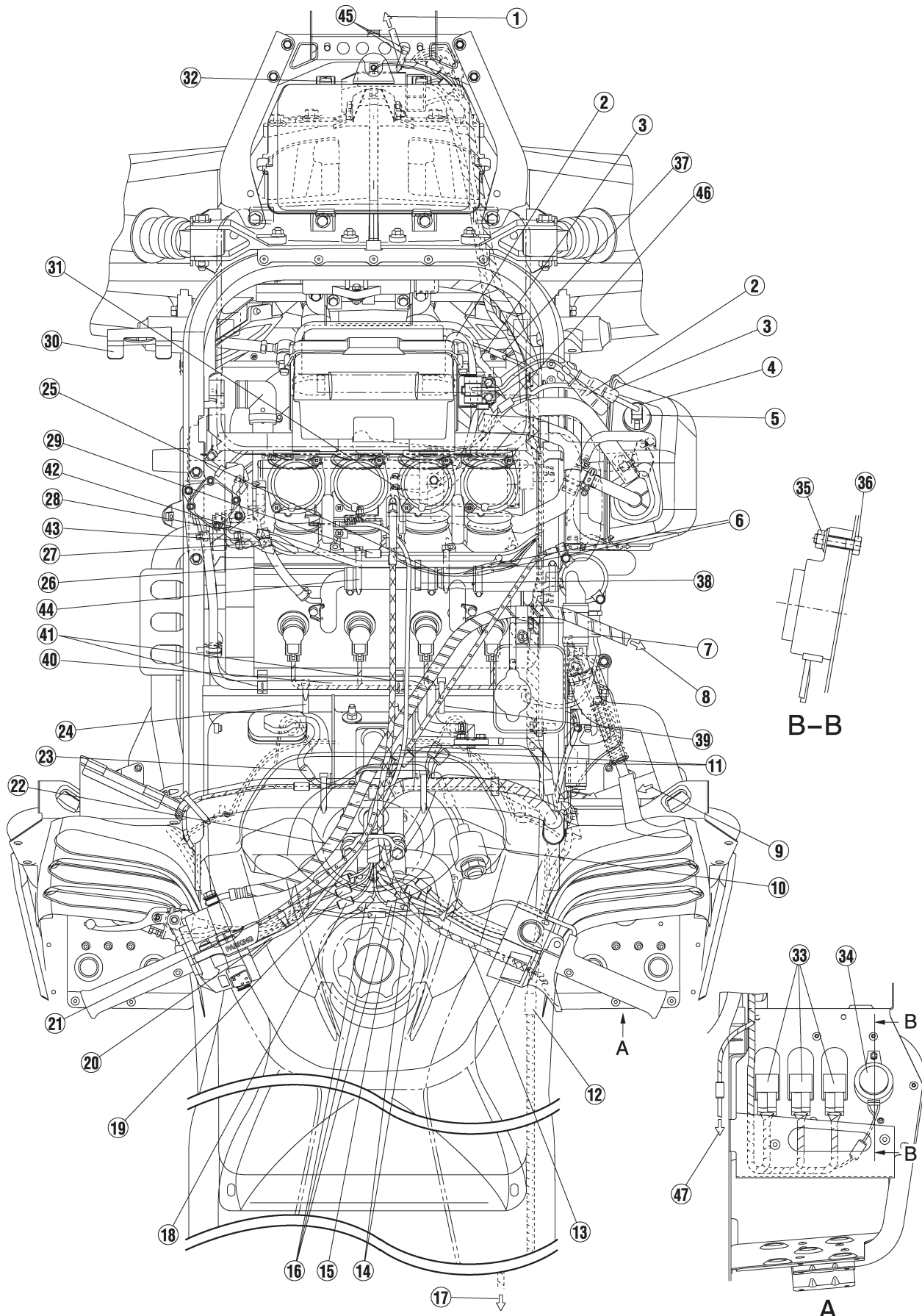
DEFINITION OF UNITS

Unit	Read	Definition	Measurement
mm	Millimeter	10^{-3} meter	Length
cm	Centimeter	10^{-2} meter	Length
kg	Kilogram	10^3 gram	Weight
N	Newton	$1 \text{ kg} \times \text{m/sec}^2$	Force
Nm	Newton meter	$\text{N} \times \text{m}$	Torque
m•kg	Meter kilogram	$\text{m} \times \text{kg}$	Torque
Pa	Pascal	N/m^2	Pressure
N/mm	Newtons per millimeter	N/mm	Spring rate
L	Liter	—	Volume or capacity
cm ³	Cubic centimeter	—	
r/min	Rotations per minute	—	Engine speed



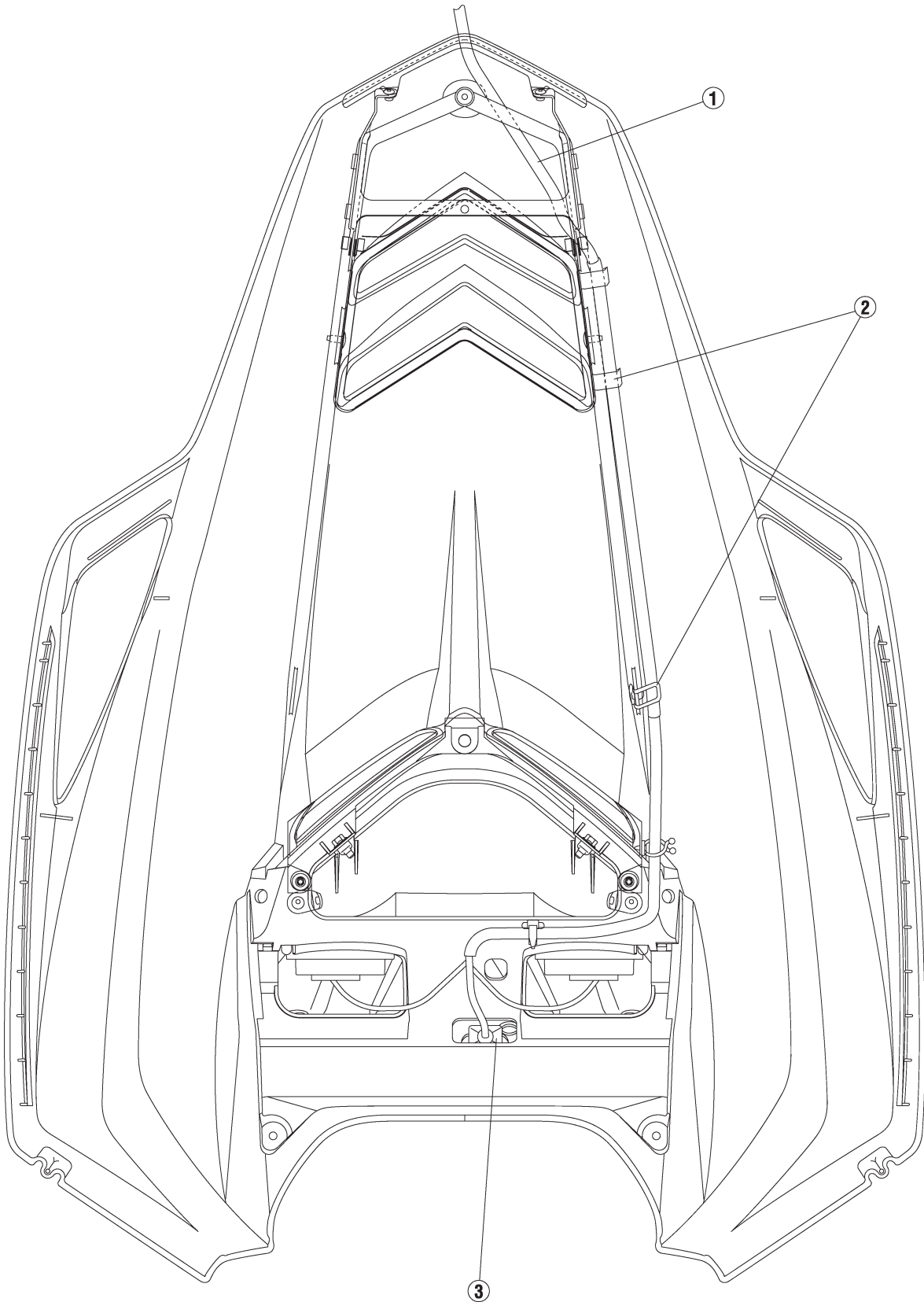


- ① To the headlight and meter assembly
- ② Battery negative lead
- ③ Battery positive lead
- ④ Oil level switch lead coupler
- ⑤ Oil level switch
- ⑥ Carburetor switch lead connector
- ⑦ Coolant temperature sensor lead coupler
- ⑧ To the brake caliper
- ⑨ To the heat exchanger
- ⑩ Main switch
- ⑪ Joint connector
- ⑫ Tail/brake light lead coupler
- ⑬ Throttle cable
- ⑭ Right handlebar switch lead coupler
- ⑮ Thumb warmer switch lead coupler
- ⑯ Grip warmer switch lead connector
- ⑰ To the tail/brake light
- ⑱ Hi/Lo switch lead coupler
- ⑲ Left handlebar switch lead coupler
- ⑳ Starter cable
- ㉑ Brake light switch lead coupler
- ㉒ Brake hose
- ㉓ Fuel sender lead coupler
- ㉔ Clamp it with the lower fuel hose
- ㉕ Clamp the throttle position sensor
- ㉖ Route the coolant hose between the upper fuel hose and the lower fuel hose
- ㉗ Route it under the coolant hose
- ㉘ Route it with the coolant hose
- ㉙ Throttle position sensor lead coupler
- ㉚ Drive guard bracket



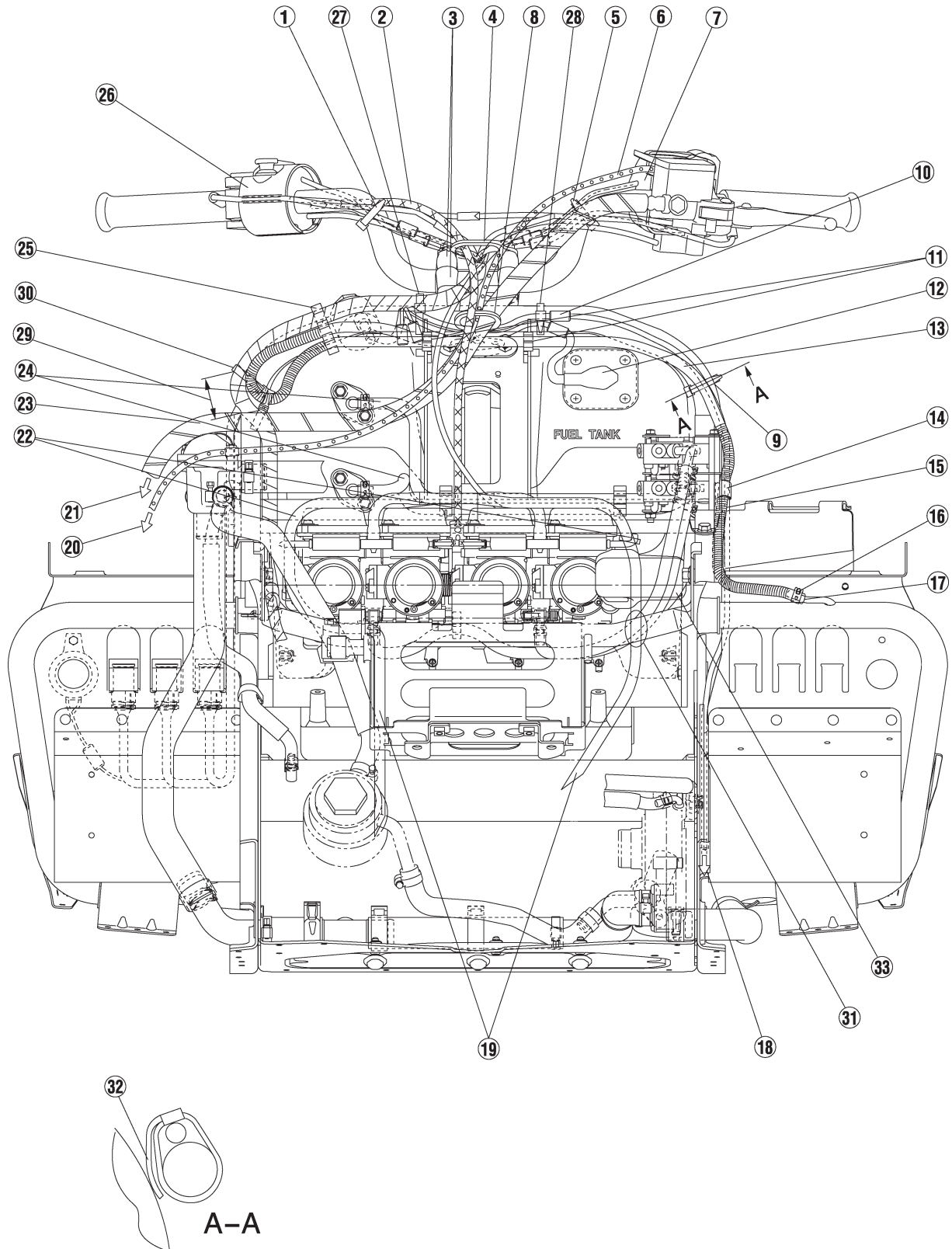


- ③1 Connect the battery negative lead to the starter motor mounting bolt
- ③2 Voltage regulator
- ③3 Relay
- ③4 Back buzzer (RX10R, RX10RS)
- ③5 Nut
- ③6 Bolt
- ③7 Battery negative lead
- ③8 Clamp the vacuum hose to the coolant hose
- ③9 Clamp the ignition coil lead to the frame
- ④0 Route the fuel hose under the clamp
- ④1 Clamp the fuel hose
- ④2 Clamp the coolant hose and vacuum hose 2
- ④3 Clamp the coolant hose and vacuum hose
- ④4 Clamp the throttle position sensor
- ④5 Clamp the headlight sub-harness
- ④6 Carburetor heater lead coupler
- ④7 To the tail/brake light



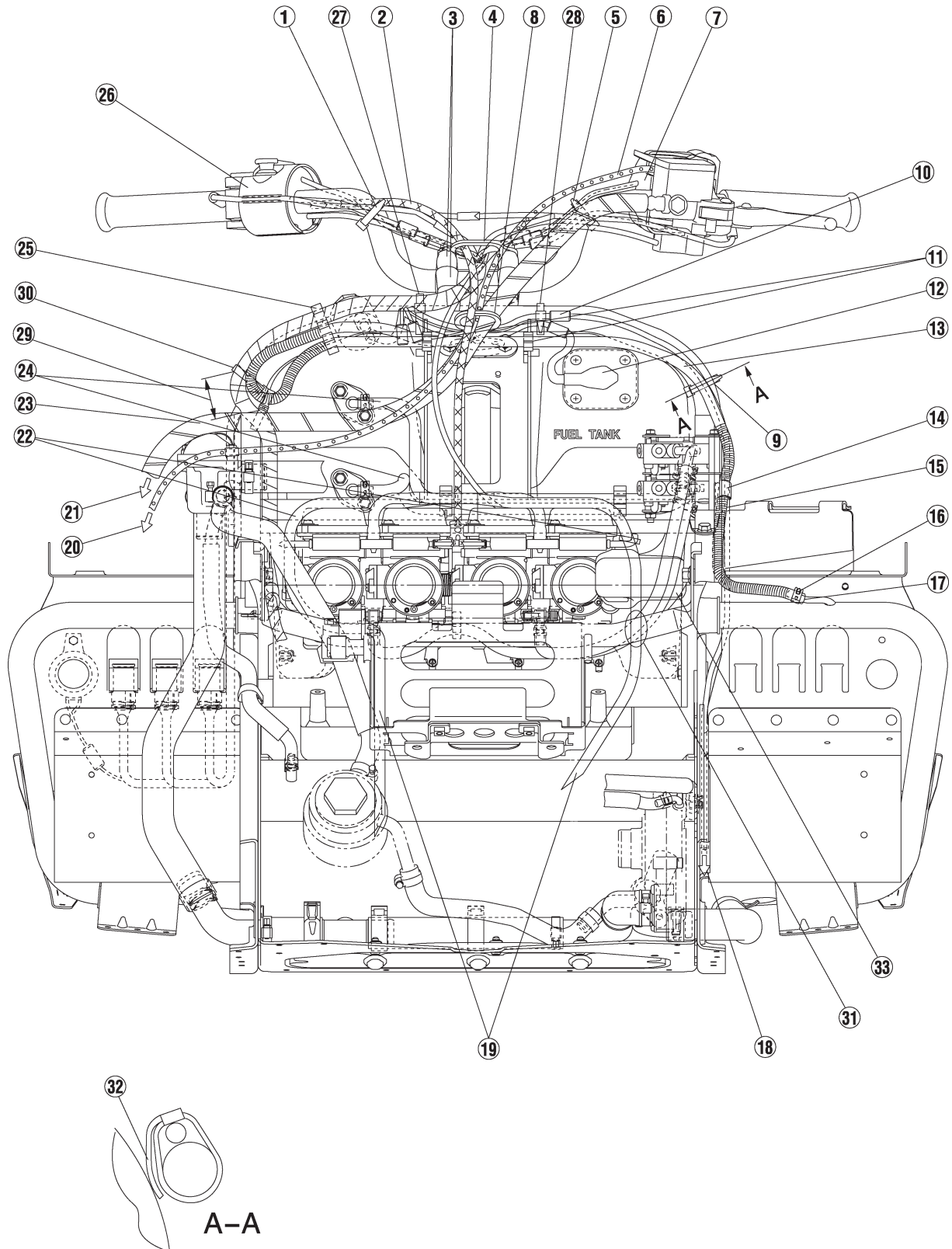


- ① Headlight wire harness
- ② Align it with the positioning tape of the headlight wire harness
- ③ Meter coupler (Securety fit in the rubber cover)



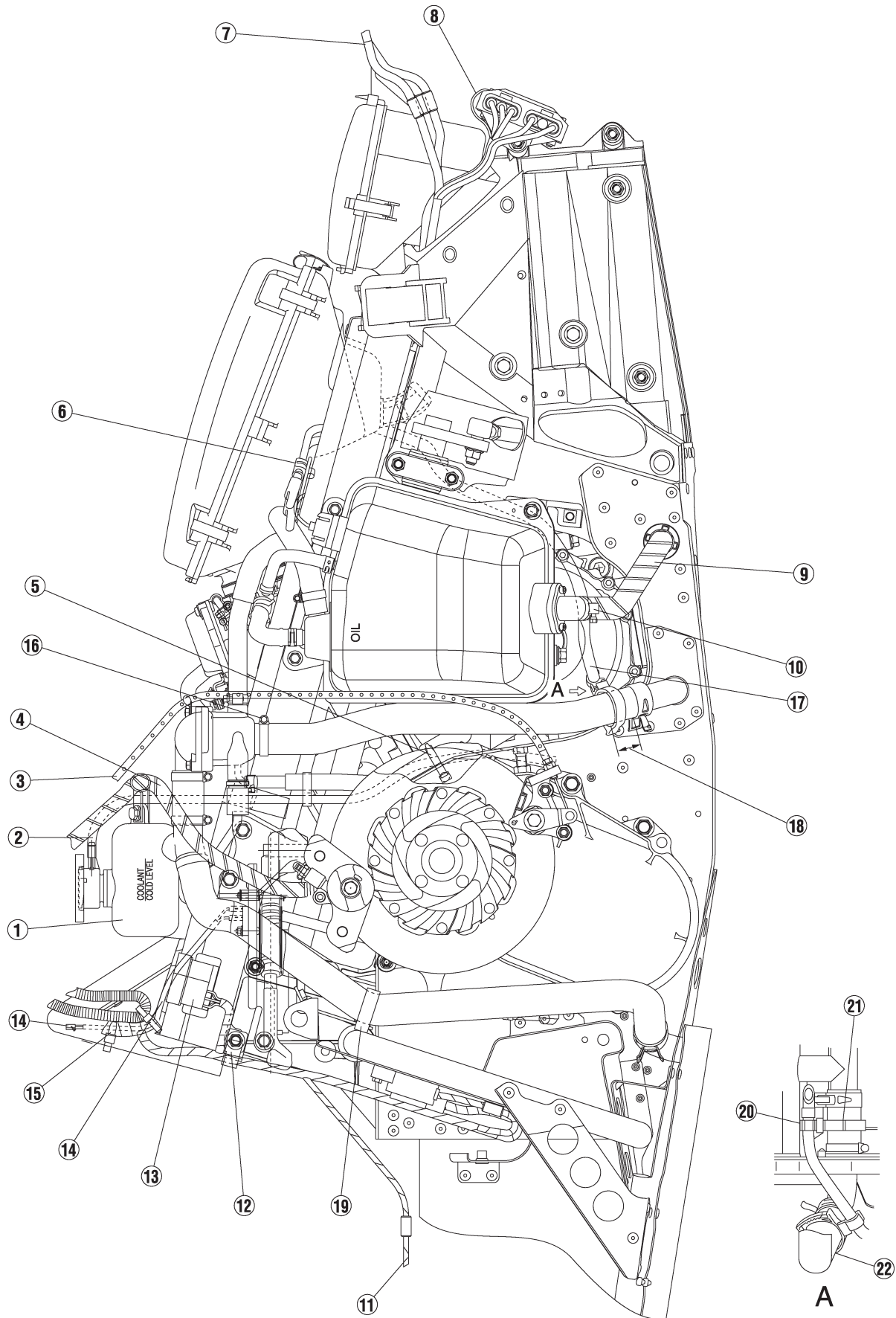


- ① Do not clamp the throttle cable
- ② Throttle cable
- ③ Handlebar holder
- ④ All leads and cables except brake hose and parking brake cable
- ⑤ Clamp the tail/brake light lead, headlight beam switch lead and grip warmer lead
- ⑥ Parking brake cable
- ⑦ Left handlebar switch
- ⑧ Brake hose and parking brake cable through lower loop
- ⑨ Clamp the speed sensor lead only
- ⑩ Speed sensor coupler
- ⑪ Clamp the fuel tank breather hose
- ⑫ Fuel sender lead cover
- ⑬ Route the fuel breather hose along the steering gate
- ⑭ Clamp the compression spring section of the fuel breather hose
- ⑮ Compression spring
- ⑯ Point the clip position to the upward
- ⑰ Insert the fuel breather hose until it contacts the pipe
- ⑱ To the speed sensor
- ⑲ Carburetor air vent hoses
- ⑳ To the parking brake
- ㉑ To the brake caliper
- ㉒ Carburetor air vent hose
- ㉓ Brake hose
- ㉔ Fuel hose
- ㉕ Clamp the wire harness and fuel breather hose from the lower side



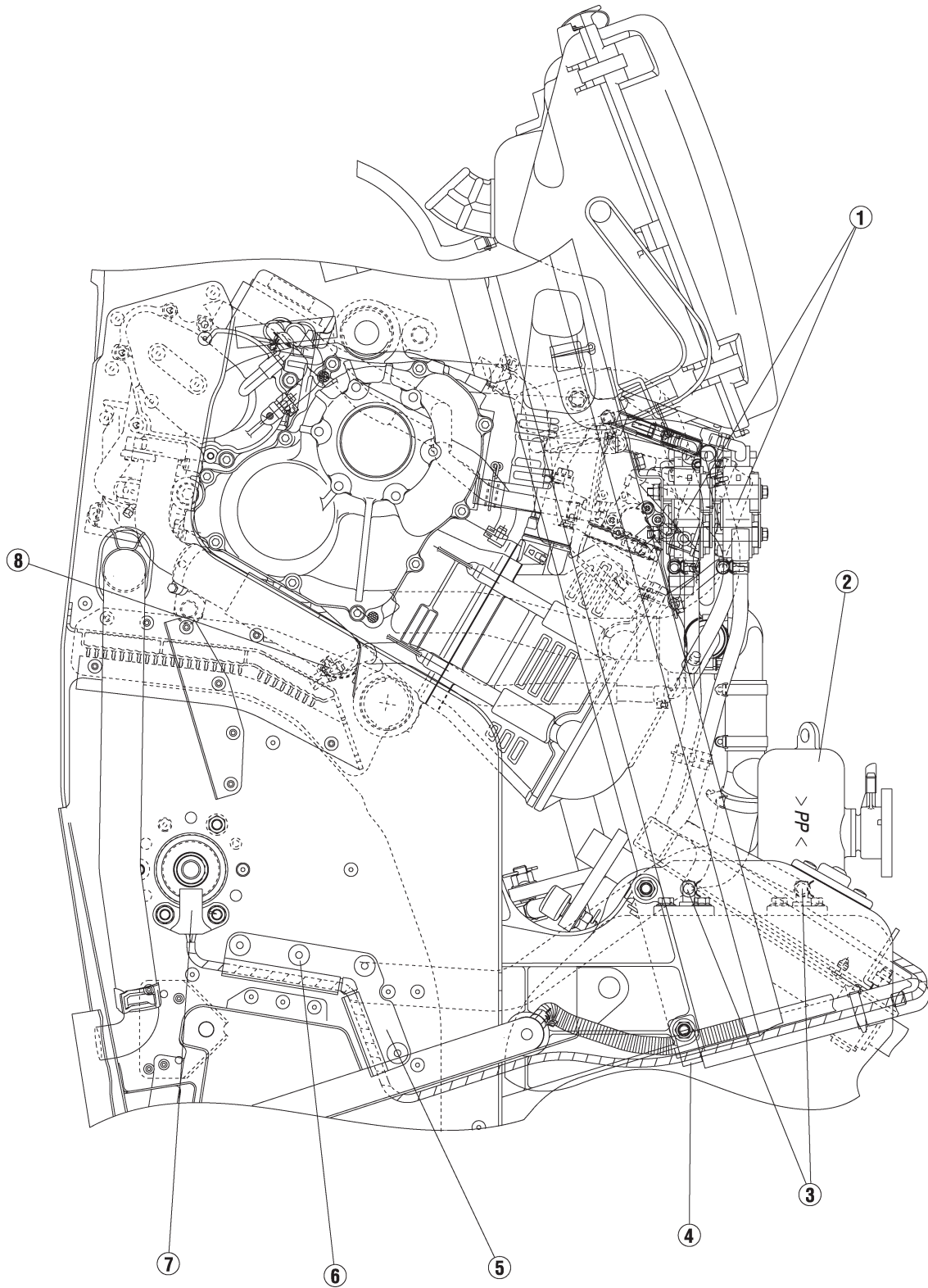


- ②⑥ Right handlebar switch
- ②⑦ Clamp the wire harness only
- ②⑧ Clamp the fuel sender head
and speed sensor lead
- ②⑨ Less than 50 mm (2.0 in)
- ③⑩ Clamp the wire harness
- ③① Route the carburetor air vent
hose under the fuel hose
- ③② Push into the end of clamp be-
tween frame and fuel tank
- ③③ Breather tank



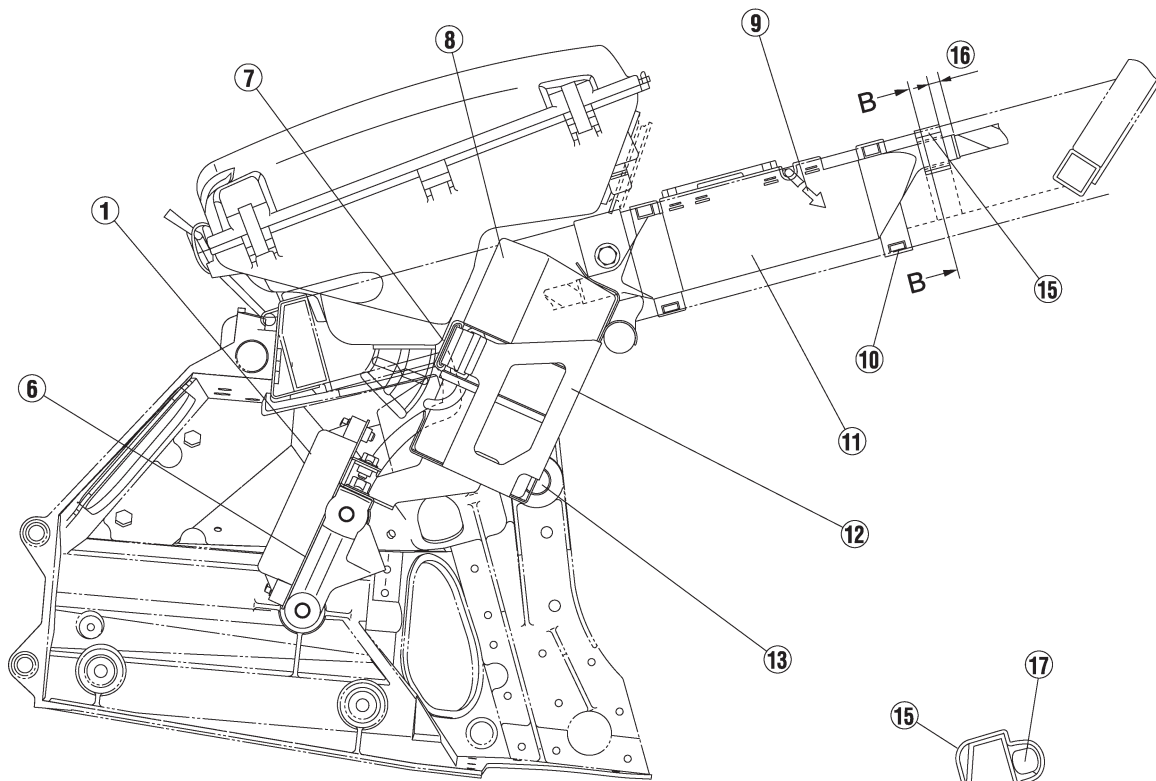
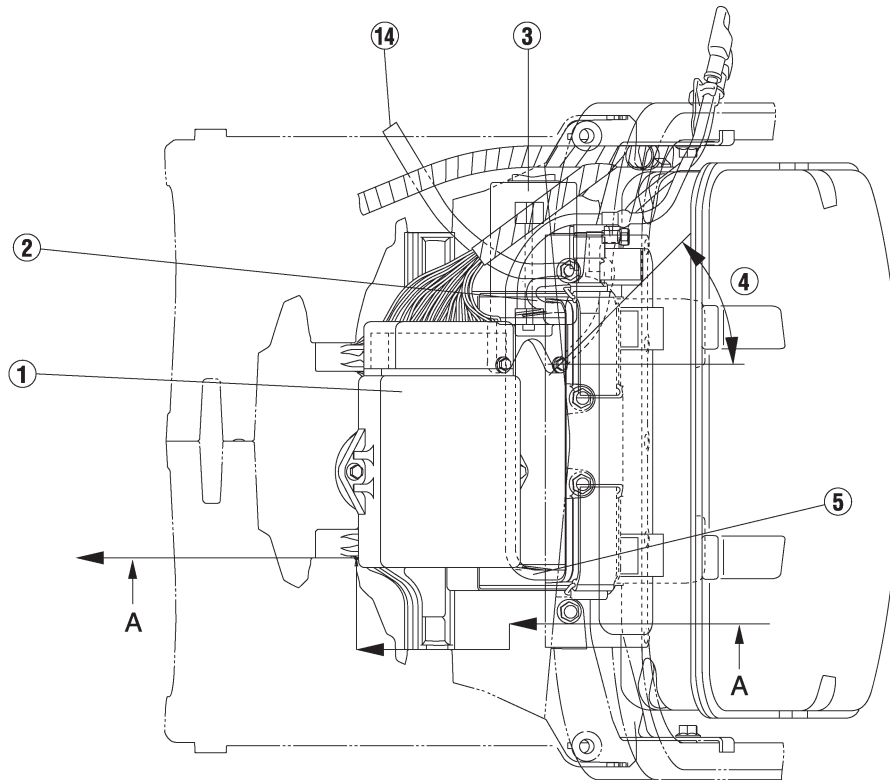


- ① Coolant reservoir tank
- ② Reservoir tank hose
- ③ Parking brake cable
- ④ Brake hose
- ⑤ Clamp the hose at the white paint position. Point the clamp position to the front outside
- ⑥ Clamp the battery positive lead
- ⑦ Headlight lead
- ⑧ Tighten the frame ground and voltage regulator upper bolt together
- ⑨ Engine oil tank hose
- ⑩ Point the clamp tightening direction to the downward
- ⑪ to the tail/brake light
- ⑫ Tighten the frame cross member and frame together
- ⑬ Fuse box
- ⑭ Route the gear position switch lead to the reverse gear if the reverse function is equipped, or fold it back and secure it if the reverse function is not provided
- ⑮ Wire harness
- ⑯ Point the clamp position to the front outside
- ⑰ Drain hose
- ⑱ Less than 30 mm (1.2 in)
- ⑲ Clamp the coolant hose
- ⑳ Clamp it at the white paint position
- ㉑ Point the clamp position to the downward
- ㉒ Point the clamp position to the inside





- ① Fuel pump
- ② Coolant reservoir tank
- ③ Point the pawl of clip to the upward
- ④ Clamp the fuel tank breather and speed sensor lead. Tighten the frame cross member and frame together
- ⑤ Wire harness clamp
- ⑥ Rivets
- ⑦ Speed sensor
- ⑧ Point the pawl of clip to the downward



A-A

B-B



- ① CDI unit
- ② Battery negative lead
- ③ Starter motor
- ④ Position the negative lead on the engine at 45°
- ⑤ Battery positive lead
- ⑥ CDI unit bracket
- ⑦ Battery band
- ⑧ Battery cover
- ⑨ To the carburetor
- ⑩ Equip it with the frame cross member
- ⑪ Wire harness holder
- ⑫ Battery bracket
- ⑬ Battery seat
- ⑭ Air box drain hose
- ⑮ Plate cover
- ⑯ 0 ~ 5 mm (0.20 in)
- ⑰ Wire harness
- ⑱ Frame cross member

- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Main relay
- ⑤ Fuse (MAIN)
- ⑥ Starter relay
- ⑦ Starter motor
- ⑧ Battery
- ⑨ Engine stop switch
- ⑩ Throttle switch
- ⑪ Carburetor switch
- ⑫ Carburetor heater relay
- ⑬ Carburetor heater
- ⑭ Grip warmer
- ⑮ Thumb warmer
- ⑯ CDI unit
- ⑰ Ignition coil
- ⑱ Spark plug
- ⑲ Water temperature sensor
- ⑳ Throttle position sensor
- ㉑ Grip warmer switch
- ㉒ Thumb warmer switch
- ㉓ Body ground
- ㉔ Back buzzer (RX10R, RX10RS)
- ㉕ Gear position switch (RX10R, RX10RS)
- ㉖ Brake light switch
- ㉗ Tail/brake light
- ㉘ Fuse (HEADLIGHT)
- ㉙ Fuse (SIGNAL)
- ㉚ Fuse (CARBURETOR HEATER)
- ㉛ Fuse (IGNITION)
- ㉜ Headlight beam switch
- ㉝ Headlight relay
- ㉞ Headlight
- ㉟ Meter assembly
- ㊱ Tachometer
- ㊲ Meter light
- ㊳ Water temperature indicator light
- ㊴ Multi-function meter
- ㊵ Warning light
- ㊶ Hi beam indicator light
- ㊷ Oil level switch
- ㊸ Fuel sender
- ㊹ Speed sensor

COLOR CODE

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



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SUPPLEMENTARY SERVICE MANUAL

RXW10J/RXW10SJ

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and new data for the RXW10J, RXW10SJ.

For complete information, on service procedures, it is necessary to use this Supplementary Service Manual together with following manual:

**RX10H/RX10SH
RX10MH/RX10MSH
RX10RH/RX10RSH
SERVICE MANUAL:
8FA-28197-10 (981073)
(LIT-12618-02-28)**

NOTICE

This manual was written by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so it is assumed that persons using this book to perform maintenance and repairs on Yamaha snowmobiles have a basic understanding of the mechanical concepts and procedures inherent in snowmobile repair. Without such knowledge, attempted repairs or service to this model may render it unfit and/or unsafe to use.

Yamaha Motor Company, Ltd. is continually striving to improve all models manufactured by Yamaha.

Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha dealers and will, where applicable, appear in future editions of this manual.

RXW10J/RXW10SJ SUPPLEMENTARY SERVICE MANUAL

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Corporation, U.S.A.
1st Edition, June 2003**

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unauthorized use without the written
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U.S.A. is expressly prohibited.**

**Printed in U.S.A.
P/N.LIT-12618-02-33**

HOW TO USE THIS MANUAL

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



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

WARNING

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

CAUTION:

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

NOTE:

A **NOTE** provides key information that can make procedures easier or clearer.

MANUAL FORMAT

All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all inspection, repair, assembly, and disassembly operations.

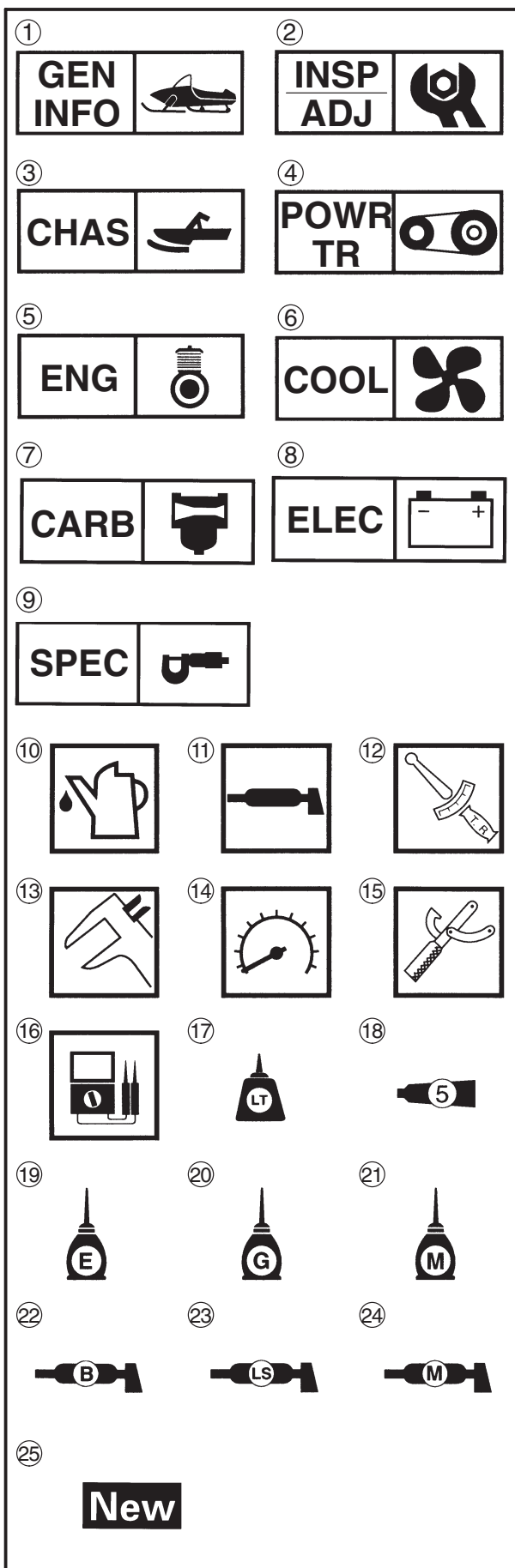
In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required to correct the problem will follow the symbol, e.g.,

• Bearings

Pitting/damage → Replace.

EXPLODED DIAGRAM

Each chapter provides exploded diagrams before each disassembly section to facilitate correct disassembly and assembly procedures.



ILLUSTRATED SYMBOLS (Refer to the illustration)

Illustrated symbols ① to ⑨ are designed as thumb tabs to indicate the chapter's number and content.

- ① General information
- ② Periodic inspections and adjustments
- ③ Chassis
- ④ Power train
- ⑤ Engine
- ⑥ Cooling system
- ⑦ Carburetion
- ⑧ Electrical
- ⑨ Specifications

Illustrated symbols ⑩ to ⑯ are used to identify the specifications which appear.

- ⑩ Filling fluid
- ⑪ Lubricant
- ⑫ Tightening
- ⑬ Wear limit, clearance
- ⑭ Engine speed
- ⑮ Special tool
- ⑯ Ω , V, A

Illustrated symbols ⑰ to ⑳ in the exploded diagram indicate grade of lubricant and location of lubrication point.

- ⑰ Apply locking agent (LOCTITE®)
- ⑱ Apply Yamabond No.5®
- ⑲ Apply engine oil
- ⑳ Apply gear oil
- ㉑ Apply molybdenum disulfide oil
- ㉒ Apply wheel bearing grease
- ㉓ Apply low-temperature lithium-soap base grease
- ㉔ Apply molybdenum disulfide grease
- ㉕ Use new one

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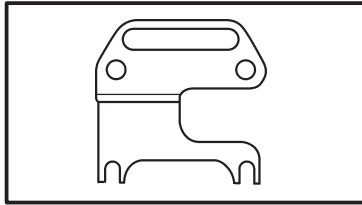


SPECIAL TOOLS

Some special tools are necessary for a completely accurate tune-up and assembly. Using the correct special tool will help prevent damage that can be caused by the use of improper tools or improvised techniques.

NOTE:

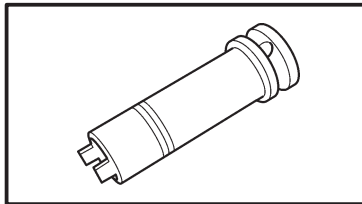
- Be sure to use the correct part number when ordering the tool, since the part number may differ according to country.
- For USA and Canada, use part number starting with “YB-”, “YM-”, “YU-” or “YS-”, “ACC-”.
- For others, use part number starting with “90890-”.



FOR TUNE UP

- Steering linkage alignment plate
P/N: YS-01487 (for U.S.A./Canada)
90890-01487 (for Europe)

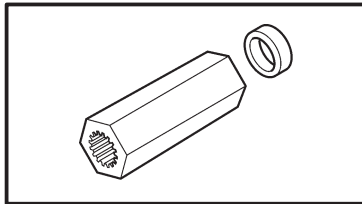
Locks steering relay arms in place while adjusting the steering linkage for front-end alignment.



FOR ENGINE SERVICE

- Engine mount spacer wrench
P/N: YS-01489 (for U.S.A./Canada)
90890-01489 (for Europe)

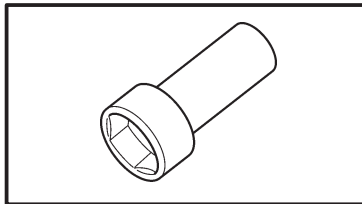
Used to turn the engine mounting bolts when removing/installing engine.



FOR POWER TRAIN SERVICE

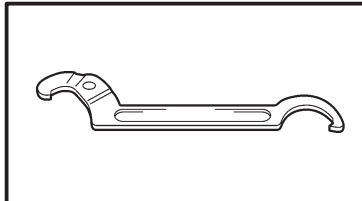
- Secondaryshaft Slide & Holder
P/N: YS-01492 (for U.S.A./Canada)
90890-01492 (for Europe)

Remove and install secondaryshaft bearing tapered collar. Also used to hold the secondaryshaft when used with the drive gear socket (YS-01490/90890-01490).



- Drive gear socket
P/N: YS-01490 (for U.S.A./Canada)
90890-01490 (for Europe)

Remove and install chaincase drive sprocket nut (36 mm (1.4 in) × 100 mm (4 in) deep well socket).



- Ring nut wrench
P/N: YU-01268 (for U.S.A./Canada)
90890-01268 (for Europe)

Remove and install secondaryshaft bearing nut



PERIODIC INSPECTION AND ADJUSTMENT

INTRODUCTION

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

PERIODIC MAINTENANCE TABLE

Item	Remarks	Preoperation check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every
				Seasonally or 3,200 km (2,000 mi) (160 hr)
Spark plugs	Check condition. Adjust gap and clean. Replace if necessary.			●
*Valve clearance	Check clearance. Adjust clearance when engine is cold.	Every 40,000 km (25,000 mi)		
Engine oil	Check oil level.	●		
	*Replace.		●	●
*Engine oil filter cartridge	Replace.		●	Every 20,000 km (12,000 mi)
Fuel	Check fuel level.	●		
*Fuel filter	Check condition. Replace if necessary.			●
*Fuel line	Check fuel hose for cracks or damage. Replace if necessary.			●
Engine coolant	Check coolant level.	●		
	*Air bleed the cooling system if necessary.			●
Carburetor	Check the throttle lever operation.	●		
	*Adjust the jets.	Whenever operating condition (elevation/temperature) is changed.		
Engine stop switch	Check operation. *Repair if necessary.	●		
Throttle override system (T.O.R.S.)	Check operation. *Repair if necessary.	●		
Throttle lever	Check operation. *Repair if necessary.	●		
*Exhaust system	Check for leakage. Tighten or replace gasket if necessary.			●
Drive guard	Check for cracks, bends or damage. *Replace if necessary.	●		
V-belt	Check for wear and damage. Replace if necessary.	●		
Drive track and idler wheels	Check deflection, and for wear and damage. *Adjust/replace if necessary.	●		
Slide runners	Check for wear and damage.	●		
	*Replace if necessary.			●

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

PERIODIC MAINTENANCE TABLE

INSP
ADJ



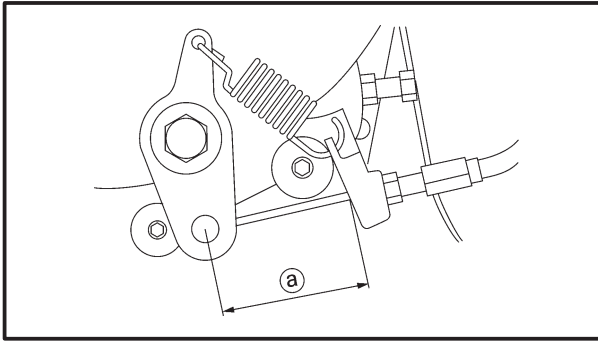
Item	Remarks	Preopera- tion check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every
				Seasonally or 3,200 km (2,000 mi) (160 hr)
Brake and parking brake	Check operation and fluid leakage.	●		
	*Adjust free play and/or replace pads if necessary.			●
	*Repair brake fluid.	See NOTE.		
*Disc brake installation	Check for slight free play. Lubricate shaft with specified grease as required.			Every 1,600 km (1,000 mi)
Drive chain oil	Check oil level.		●	
	*Replace.			●
Drive chain	Check deflection. *Adjust if necessary.	Initial at 500 km (300 mi) and every 800 km (500 mi) thereafter.		
Skis and ski runners	Check for wear and damage.	●		
	*Repair if necessary.			●
Steering system	Check operation.	●		
	*Adjust toe-out if necessary.			●
Lights	Check operation. Replace bulbs if necessary.	●		
*Primary and secondary clutches	Check engagement and shift speed. Adjust if necessary.			●
	Inspect sheaves for wear/damage. Inspect weights/rollers and bushings for wear-for primary. Inspect ramp shoes/bushings for wear-for secondary. Replace if necessary.			●
	Lubricate with specified grease.			●
		Whenever operating elevation is changed.		
*Steering column bearing	Lubricate with specified grease.			●
*Ski and front suspension	Lubricate with specified grease.			●
*Suspension component	Lubricate with specified grease.			●
*Parking brake cable end and lever end/throttle cable end	Lubricate with specified grease.			●
	Check cable damage. Replace if necessary.			●
Shroud latches	Make sure that the shroud latches are hooked.	●		
Fittings and fasteners	Check tightness. *Replace if necessary.	●		
Tool kit and recommended equipment	Check for proper placement.	●		

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

NOTE:

Brake fluid replacement:

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



POWER TRAIN

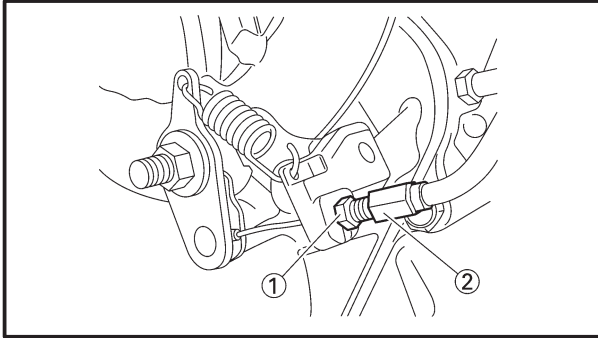
PARKING BRAKE ADJUSTMENT

1. Measure:

- Parking brake cable distance ①
- Out of specification → Adjust.



Parking brake cable distance:
43.5 ~ 46.5 mm
(1.713 ~ 1.831 in)



2. Adjust:

- Parking brake cable

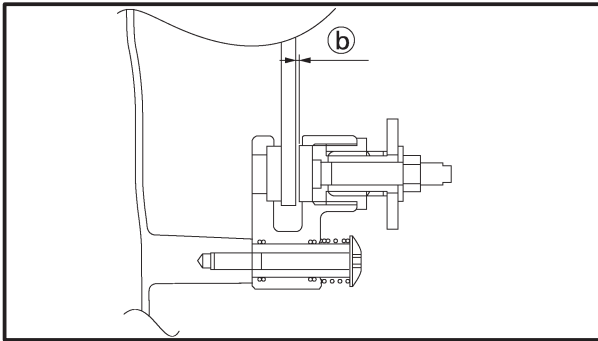
Adjustment steps:

- Loosen the locknut ①
- Turn the adjuster ② in or out until the specified distance ① is obtained.

Turning in → Distance ① is increased.

Turning out → Distance ① is decreased.

- Tighten the locknut.

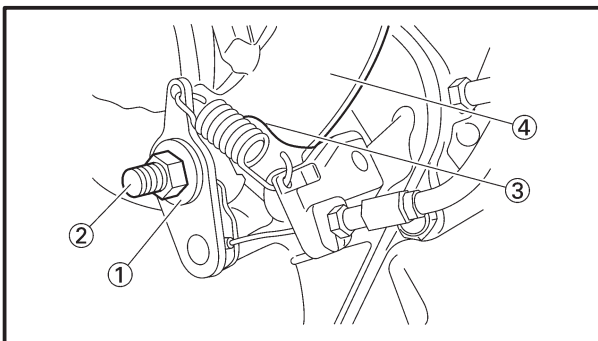


3. Measure:

- Brake pad clearance ②
- Out of specification → Adjust.



Brake pad clearance:
1.5 ~ 2.0 mm
(0.059 ~ 0.079 in)

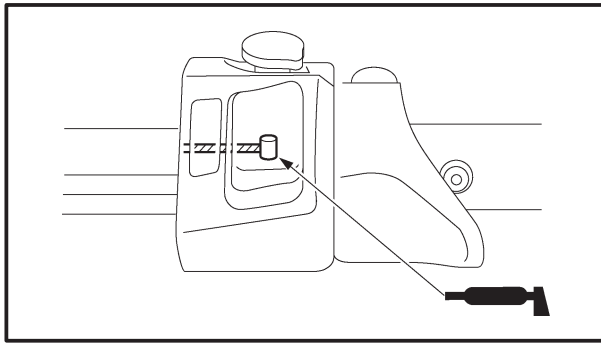


4. Adjust:

- Brake pad clearance

Adjustment steps:

- Loosen the locknut ①
- Turn the adjuster ② in or out to until the specified clearance between the brake pad ③ and brake disc ④ is obtained.
- Tighten the locknut.



CHASSIS LUBRICATION

Brake lever, throttle lever and throttle cable end

1. Lubricate the brake lever pivot, throttle lever and the ends of the throttle cables.

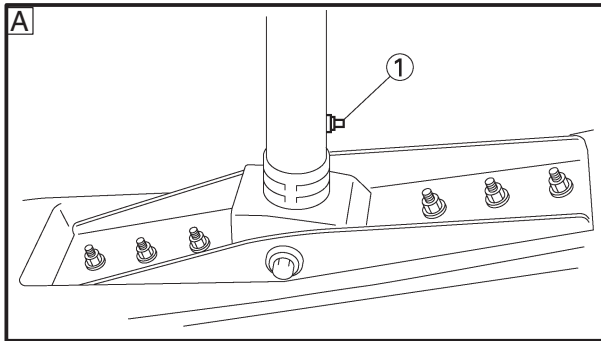
 **Recommended lubricant:**
ESSO Beacon 325 Grease

⚠ WARNING

Apply a dab of grease onto only the end of the cables.

Do not grease the throttle cables.

They could freeze and cause a loss of control.



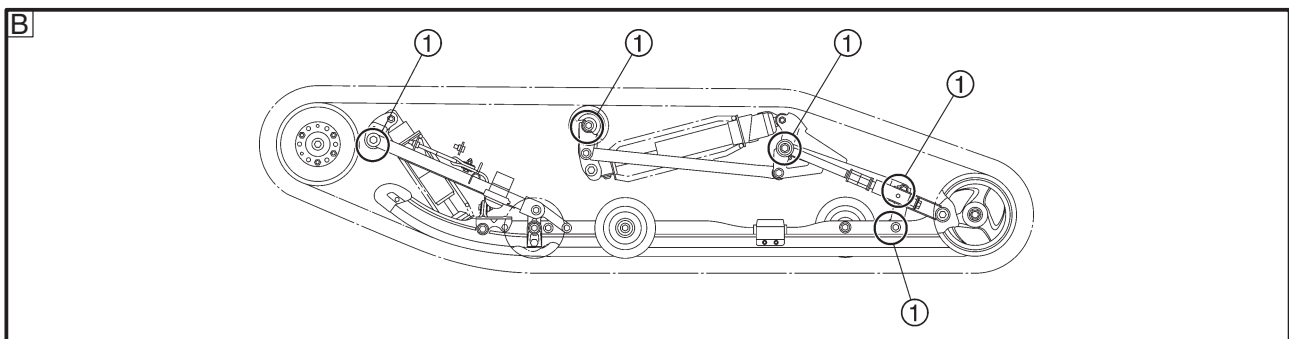
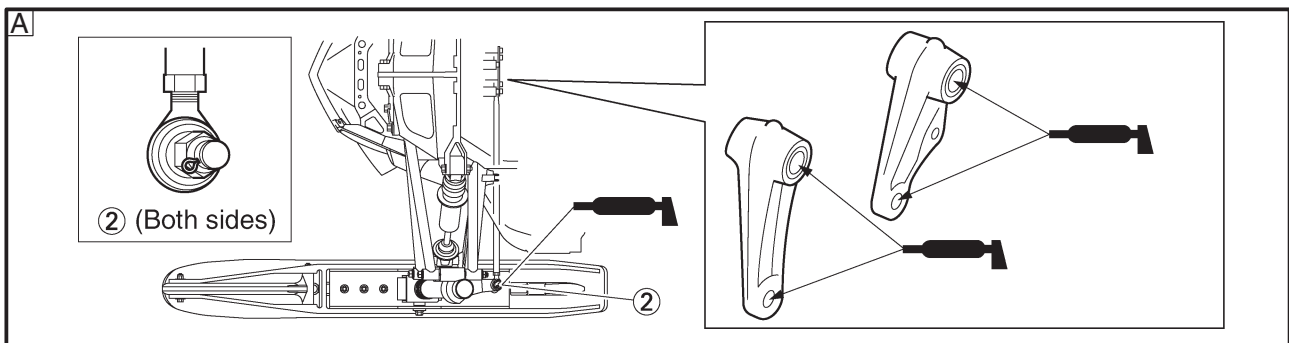
Front and rear suspension

1. Use a grease gun to inject grease into the nipples ①.
2. Apply grease ②.

 **Recommended lubricant:**
Esso Beacon 325 Grease or
Aeroshell Grease #7A

A Front

B Rear





TUNING CLUTCH High altitude

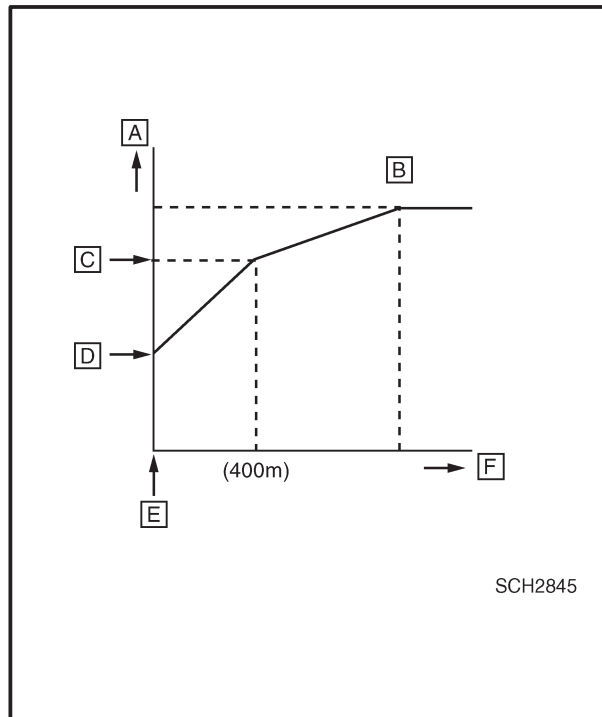
G	Green	P	Pink	W	White
S	Silver	Y	Yellow		

A	Elevation	~ 800 m (~ 2,500 ft)	600 ~ 1,400 m (2,000 ~ 4,500 ft)	1,200 ~ 2,000 m (4,000 ~ 6,500 ft)	1,800 ~ 2,600 m (6,000 ~ 8,500 ft)	2,400 ~ 3,000 m (8,000 ~ 10,000 ft)
B	Engine idle speed	1,350 ± 100 r/min	←	←	←	←
C	Engagement r/min	3,600 ± 200 r/min	←	3,700 ± 200 r/min	←	3,800 ± 200 r/min
D	Shift r/min	10,250 ± 250 r/min	←	←	←	←
E	Main jet	d Refer to "HIGH ALTITUDE SETTINGS" in "MAINTENANCE SPECIFICATIONS".				
F	Pilot jet*1					
G	Pilot screw					
H	Secondary reduction ratio (number of links)	38/23 (70 L)	←	38/22 (68 L)	38/21 (68 L)	←
I	Primary sheave spring	90501-582L1	←	90501-582L2	90501-602L3	←
J	Color	Y-S-Y	←	G-S-G	P-S-P	←
K	Free length	87.4 mm (3.44 in)	←	←	85.1 mm (3.35 in)	←
L	Preload	343 N (35 kg, 77 lb)	←	←	←	←
M	Spring rate	24.5 N/mm (2.50 kg/mm, 140 lb/in)	←	27 N/mm (2.75 kg/mm, 154 lb/in)	29.4 Nm (3.00 kg/mm, 168 lb/in)	←
N	Wire diameter	5.8 mm (0.228 in)	←	←	6.0 mm (0.236 in)	←
O	Outside diameter	60 mm (2.36 in)	←	←	←	←
P	Weight (ID)	8FA-17605-10 (8FA00)	←	←	←	←
Q	Weight rivet	OUT	Steel 17.2 with-hole	Steel 13.3	Steel 13.3 with-hole	Aluminum 13.3 with-hole
		IN	Steel 17.2 with-hole	Steel 13.3	Steel 13.3 with-hole	Steel 13.3 with-hole
R	Weight bushing	VESPEL TP-8549	←	←	←	←
S	Roller outer dia.	15.6 mm (0.61 in)	←	←	←	←
T	Roller bushing	VESPEL TP-8549	←	←	←	←
U	Pri. clutch shim	None	←	←	←	←
V	Secondary sheave spring	90508-60007	←	←	←	←
W	Color	W	←	←	←	←
X	Free length	75 mm (2.95 in)	←	←	←	←
Y	Preload rate	60° (3-3) 1290 kg•mm/rad	←	←	←	←
Z	Wire diameter	6.0 mm (0.236 in)	←	←	←	←
a	Outside diameter	69.5 mm (2.736 in)	←	←	←	←
b	Sec. torque cam angle	51 – 43°	←	←	←	←
c	Sec. clutch shim	1.0 mm (0.04 in)	←	←	←	←

NOTE:

*1: Number of return rotation of pilot screw may vary depending on each cylinder.

Make sure to rotate the screw backward after listing its present number of return rotation on each cylinder.



The clutch may require tuning depending upon where the machine will be operated and the desired handling characteristics. The clutch can be tuned by changing the engagement and shifting speeds.

Clutch engagement speed is defined as the engine speed at which the machine first begins to move from a complete stop.

Clutch shifting speed is defined as the engine speed reached when the machine has travelled 800 m (2,500 ft) after being started at full-throttle from a dead stop.

Normally, when a machine reaches shifting speed, the vehicle speed increases but the engine speed remains nearly constant. Under unfavorable conditions (wet snow, icy snow, hills, or rough terrain), however, engine speed may decrease after the shifting speed has been reached.

- A** Engine speed
- B** Good condition
- C** Clutch shifting speed
- D** Clutch engagement speed
- E** Starting position
- F** Distance travelled 800 m (2,500 ft)

GEAR SELECTION

The reduction ratio of the driven gear to the drive gear must be set according to the snow conditions. If there are many rough surfaces or unfavorable snow conditions, the drive/driven gear ratio should be increased. If the surfaces are fairly smooth or better snow conditions exist, decrease the ratio.

Gear ratio chart

The drive and driven gears and the chains shown in the gear ratio chart are available as options. The figures containing a decimal point represent the drive/driven gear ratios, while the bottom numbers designate the number of links in the chain.



① Chain and sprocket part number

[A] Parts name	[B] Teeth & links	[C] Parts no.	[D] Standard
[E] Drive sprocket	20 teeth	8FA-17682-00	
	21 teeth	8FA-17682-10	
	22 teeth	8FA-17682-20	
	23 teeth	8FA-17682-30	RXW10J, RXW10SJ
	24 teeth	8FA-17682-40	
[F] Driven sprocket	38 teeth	8FB-47587-80	RXW10J, RXW10SJ
	39 teeth	8FB-47587-90	
	40 teeth	8FB-47587-00	
[G] Chain	68 links	94890-09068	
	70 links	94890-09070	RXW10J, RXW10SJ

② Gear ratio

[A] Drive gear \ [B] Driven gear	20 teeth	21 teeth	22 teeth	23 teeth	24 teeth
38 teeth	1.90 68 links	1.81 68 links	1.73 68 links	1.65 70 links	1.58 70 links
39 teeth	1.95 68 links	1.86 68 links	1.77 70 links	1.70 70 links	1.63 70 links
40 teeth		1.91 70 links	1.82 70 links	1.74 70 links	1.67 70 links

③ Secondary sheave spring

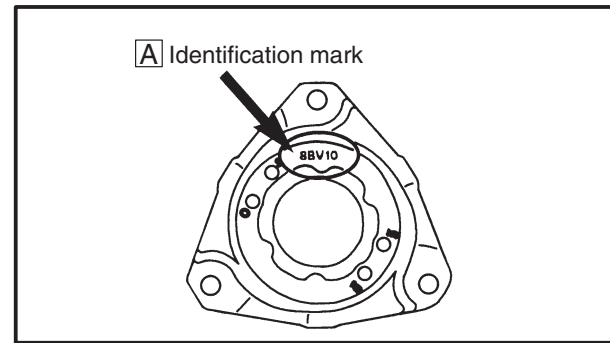
[A] Part no.	[B] Spring rate (Torsion) N•mm/rad (kg•mm/rad)	[C] Spring rate (Compression) N/mm (kg/mm) (lb/in)	[D] Color	[E] Wire gauge mm (in)	[F] No. of coils	[G] Free length mm (in)	[H] Outside diameter mm (in)	[I] Standard
90508-500B1	6003 (613)	6.2 (0.63), 35.28	Brown	5.0 (0.196)	5.19	75 (2.95)	69.5 (2.736)	
90508-536A9	7147 (729)	7.3 (0.74), 41.44	Red	5.3 (0.209)	5.53	75 (2.95)	69.5 (2.736)	
90508-556A2	8314 (848)	8.5 (0.87), 48.72	Green	5.5 (0.217)	5.53	75 (2.95)	69.5 (2.736)	
90508-556A7	9460 (965)	10.21 (1.04), 58.24	Silver	5.5 (0.217)	4.86	75 (2.95)	69.5 (2.736)	
90508-60012	11876 (1211)	12.32 (1.256), 70.34	Pink	6.0 (0.236)	5.53	75 (2.95)	69.5 (2.736)	
90508-60007	12654 (1290)	13.45 (1.372), 76.84	White	6.0 (0.236)	5.19	75 (2.95)	69.5 (2.736)	RXW10J, RXW10SJ

④ Secondary spring twist angle

[B] Sheave \ [A] Seat	0	3	6	9
1	10°	40°	70°	100°
2	20°	50°	80°	110°
3	30°	60°	90°	120°



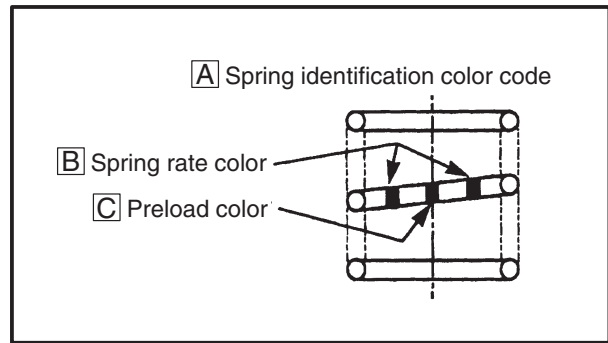
⑤ Torque cam (secondary spring seat)



[B] Effects	[C] Part no.	[D] Cam angle	[E] Identification mark	[F] Standard
[G] Quicker upshifting during acceleration  [H] Quicker backshifting under load	8FA-17604-00	51-43°	8BVFA	RXW10J, RXW10SJ
	8BV-17604-71	47°	8BV71	
	8BV-17604-51	45°	8BV51	
	8BV-17604-31	43°	8BV31	
	8BV-17604-11	41°	8BV11	
	8BV-17604-91	39°	8BV91	



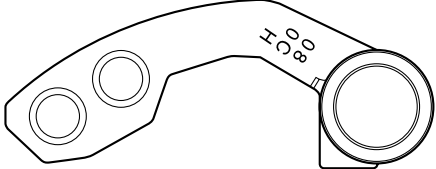
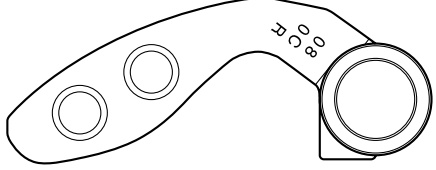
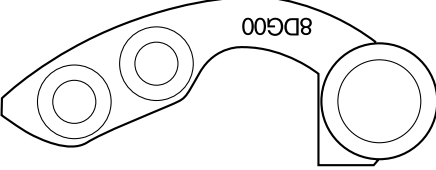
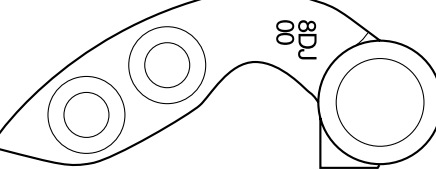
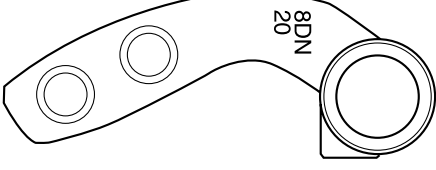
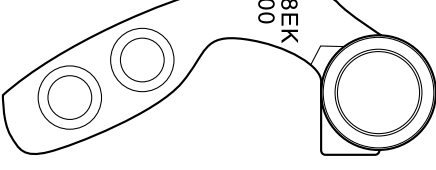
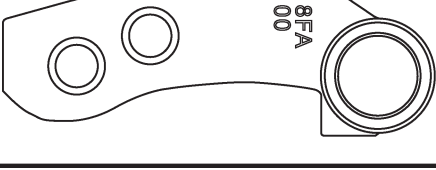
⑥ Primary spring



D Parts No.	E Spring rate N/mm (kg/mm)	F Preload N (kg)	G Color	H Wire gauge mm (in)	I Outside diameter mm (in)	J No. of coils	K Free length mm (in)	L Standard
90501-551L3	19.6 (2.00)	294 (30)	Blue-Pink-Blue	5.5 (0.216)	60 (2.36)	4.91	88.4 (3.48)	
90501-551L9	19.6 (2.00)	343 (35)	Blue-Silver-Blue	5.5 (0.216)	60 (2.36)	4.91	90.9 (3.58)	
90501-552L5	19.6 (2.00)	392 (40)	Blue-Green-Blue	5.5 (0.216)	60 (2.36)	4.91	93.4 (3.68)	
90501-581L5	24.5 (2.50)	294 (30)	Yellow-Pink-Yellow	5.8 (0.228)	60 (2.36)	4.92	85.4 (3.36)	
90501-581L6	27 (2.75)	294 (30)	Green-Pink-Green	5.8 (0.228)	60 (2.36)	4.66	84.3 (3.32)	
90501-582L1	24.5 (2.50)	343 (35)	Yellow-Silver-Yellow	5.8 (0.228)	60 (2.36)	4.92	87.4 (3.44)	RXW10J, RXW10SJ
90501-582L2	27 (2.75)	343 (35)	Green-Silver-Green	5.8 (0.228)	60 (2.36)	4.66	86.1 (3.39)	
90501-582L6	22.1 (2.25)	392 (40)	White-Green-White	5.8 (0.228)	60 (2.36)	5.25	91.2 (3.59)	
90501-582L7	24.5 (2.50)	392 (40)	Yellow-Green-Yellow	5.8 (0.228)	60 (2.36)	4.92	89.4 (3.52)	
90501-583L0	19.6 (2.00)	441 (45)	Blue-White-Blue	5.8 (0.228)	60 (2.36)	5.65	95.9 (3.78)	
90501-583L1	22.1 (2.25)	441 (45)	White-White-White	5.8 (0.228)	60 (2.36)	5.25	93.4 (3.68)	
90501-583L4	22.1 (2.25)	343 (35)	White-Silver-White	5.8 (0.228)	60 (2.36)	5.25	89.0 (3.50)	
90501-583L5	22.1 (2.25)	294 (30)	White-Pink-White	5.8 (0.228)	60 (2.36)	5.25	86.7 (3.41)	
90501-601L7	29.4 (3.00)	294 (30)	Pink-Pink-Pink	6.0 (0.236)	60 (2.36)	4.82	83.4 (3.28)	
90501-601L8	31.9 (3.25)	294 (30)	Orange-Pink-Orange	6.0 (0.236)	60 (2.36)	4.60	82.6 (3.25)	
90501-602L3	29.4 (3.00)	343 (35)	Pink-Silver-Pink	6.0 (0.236)	60 (2.36)	4.82	85.1 (3.35)	
90501-602L8	27.0 (2.75)	392 (40)	Green-Green-Green	6.0 (0.236)	60 (2.36)	5.08	87.9 (3.46)	
90501-602L9	29.4 (3.00)	392 (40)	Pink-Green-Pink	6.0 (0.236)	60 (2.36)	4.82	86.7 (3.41)	
90501-603L2	24.5 (2.50)	441 (45)	Yellow-White-Yellow	6.0 (0.236)	60 (2.36)	5.39	91.4 (3.60)	
90501-603L3	27.0 (2.75)	441 (45)	Green-White-Green	6.0 (0.236)	60 (2.36)	5.08	89.8 (3.54)	
90501-624L8	31.9 (3.25)	343 (35)	Orange-Silver-Orange	6.2 (0.244)	60 (2.36)	5.00	84.2 (3.32)	

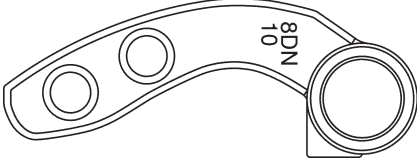


⑦ Clutch weight

A Parts no.	B Weight g (oz) without bush and rivets	C Shape & ID mark	D Standard
8CH-17605-10	35.32 (1.247)		
8CR-17605-10	38.09 (1.345)		
8DG-17605-00	34.26 (1.209)		
8DJ-17605-00	37.77 (1.333)		
8DN-17605-20	42.09 (1.486)		
8EK-17605-00	39.00 (1.376)		
8FA-17605-00	63.8 (2.25)		



⑦ Clutch weight

A Parts no.	B Weight g (oz) without bush and rivets	C Shape & ID mark	D Standard
8DN-17605-10	39.76 (1.40)		
8FA-17605-10	63.8 (2.25)		RXW10J, RXW10SJ

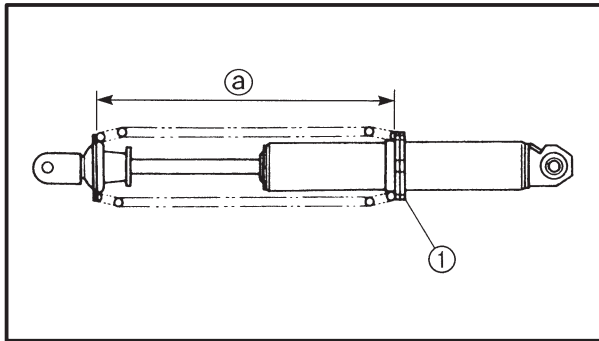


⑧ Weight rivets

A Parts No.	B Material	C Length mm (in)	D Weight g (oz)	E Standard	F Effects
90261-06033	Steel	17.2 (0.677)	4.5 (0.159)	IN: RXW10J, RXW10SJ	G Increased Force H Decreased Force
90269-06006	Steel	17.2 (0.677)	3.6 (0.127) with hole	OUT: RXW10J, RXW10SJ	
90261-06019	Steel	13.3 (0.524)	3.1 (0.109)		
90266-06002	Steel	13.3 (0.524)	2.4 (0.085) with hole		
90266-06001	Aluminum	13.3 (0.524)	0.8 (0.028) with hole		
None					

⑨ Rollers

I.D. 9 mm (0.354 in)					
A Roller with bushing part number	B Outside diameter mm (in)	C Bushing type (P/N)	D Identification mark (Width)	E Standard	F Effects
8FG-17624-00	14.5 (0.57)	VESPEL TP-8549 90386-09001	G Grooved & Machined (14.6 mm)		L Increased force M Decreased force
8FG-17624-10	15.0 (0.59)	VESPEL TP-8549 90386-09001	H Grooved (14.6 mm)		
8FG-17624-20	15.6 (0.61)	VESPEL TP-8549 90386-09001	I No Mark (14.6 mm)	RXW10J, RXW10SJ	
8FG-17624-30	16.0 (0.63)	VESPEL TP-8549 90386-09001	J Grooved & Grooved (14.6 mm)		
8FG-17624-40	16.5 (0.65)	VESPEL TP-8549 90386-09001	K Machined (14.6 mm)		



FRONT SUSPENSION

Spring preload

1. Adjust:
 - Spring preload

Adjustment steps:

- Turn the spring seat ① in or out.

Spring seat distance	Standard	
	Shorter ←	→ Longer
Preload	Harder ←	→ Softer
Length ①	Min.	Max.
	248 mm (9.76 in)	258 mm (10.16 in)

CAUTION:

Be sure that the left and right spring preloads are the same.

⚠ WARNING

This shock absorber contains highly pressurized nitrogen gas.

Do not tamper with or attempt to open the shock absorber assembly.

Do not subject the shock absorber assembly to flames or high heat, which could cause it to explode.

REAR SUSPENSION

Stopper band

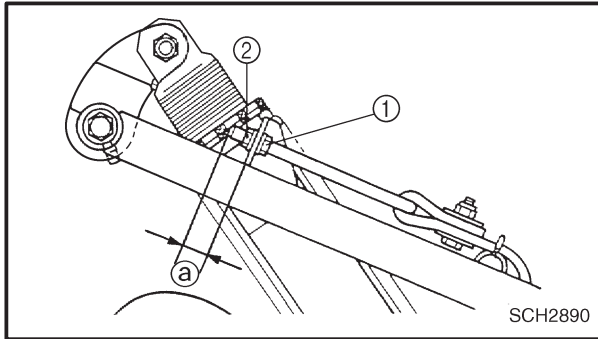
1. Adjust:
 - Stopper band tension

CAUTION:

Make sure the left and right sides of the rear suspension stopper band are adjusted evenly.

NOTE:

This adjustment affects the handling characteristics of the machine.



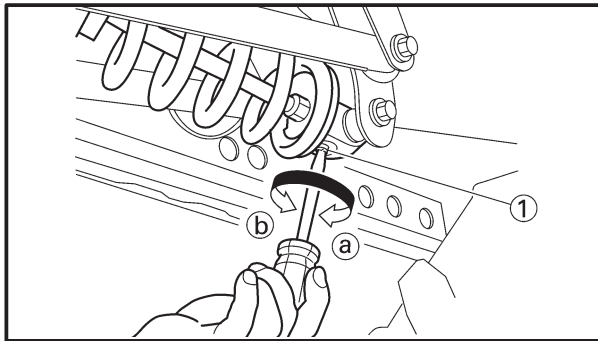
Adjustment steps:

- Loosen the locknut (1).
- Turn the adjusting nut (2) in or out to adjust the stopper band tension.

Adjuster thread length (a)	$15 \pm 0.5 \text{ mm}$ ($0.59 \pm 0.02 \text{ in}$) Maximum: 35 mm (1.37 in) Minimum: 10 mm (0.40 in)
Effects	Longer More weight on skis; Less weight transfer Shorter Less weight on skis; More weight transfer

- Tighten the locknut.

	Locknut: 16 Nm (1.6 m•kg, 12 ft•lb)
--	--



Rear suspension damping force adjustment

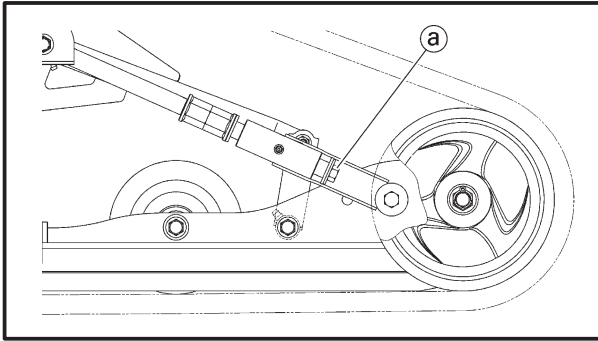
The damping force can be adjusted by turning the adjuster (1).

	16 clicks out 7 clicks out 1 click out Minimum Standard Maximum Turns out ← → Turns in (b)* (a)
Damping force	Soft ← → Hard

* With the adjuster fully turned lightly in direction (a)

CAUTION:

- Do not continue to turn the adjuster in direction (a) after it stops. The shock absorber can be damaged and damping force adjustments cannot be made.
- Do not turn the adjuster in direction (b) more than 16 clicks. Even if the adjuster is continually turned after 16 clicks, there will be no change in the damping force.
- Be sure to stop the adjuster at a position where there is a click.

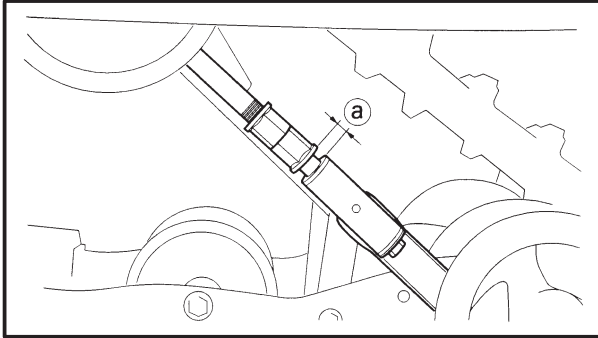


Control rod

1. Check
 - Control rod bolt (a)



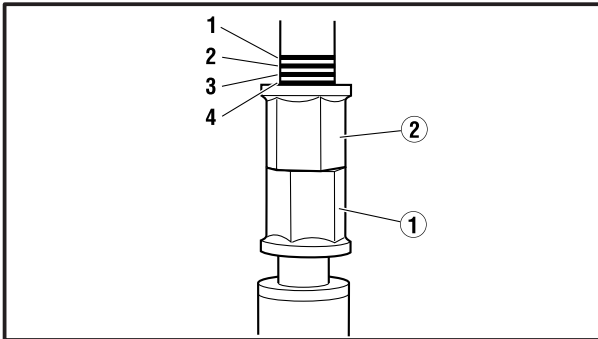
Bolt (control rod bolt):
32 Nm (3.2 m•kg, 23 ft•lb)



2. Adjust:
 - Control rod stroke (a)

CAUTION:

Make sure the adjusting bolt ends are set at the same position on each side.



Adjustment steps:

- Loosen the lock nut (1).
- Turn the adjusting nut (2) in or out to adjust the control rod stroke.

Adjusting position	1	2	3	4
Effect	Increase weight transfer ←		→ Decrease pitching	
Standard	3			

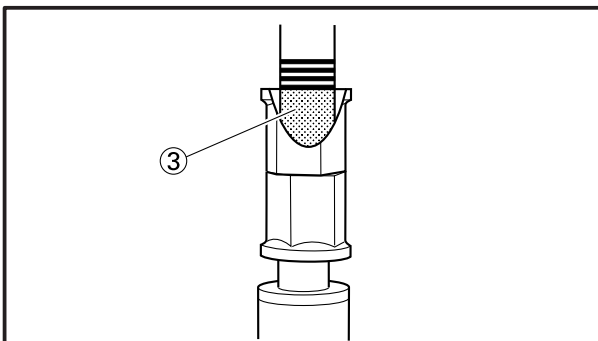
⚠ WARNING

Never adjust the control rods beyond the maximum range indicated on the rods with red paint (3).

- While holding the adjusting bolt securely, tighten the locknut (1).



Locknut:
25 Nm (2.5 m•kg, 18 ft•lb)





CHASSIS

STEERING
INSTALLATION

1. Install:

- Relay arms ①
- Bushings ②
- Washers ②



Bolt (relay arm):
67 Nm (6.7 m•kg, 49 ft•lb)

- Clips ③

2. Install:

- Idler arm ④
- Bushings ⑤
- Washers ⑤
- Relay rod ⑤



Nut (idler arm):
35 Nm (3.5 m•kg, 25 ft•lb)
Nut (relay rod):
30 Nm (3.0 m•kg, 22 ft•lb)

3. Install:

- Tie rod ①
- Locknuts ②
- Joints ③

A Tie rod part number	B Set length a	C Tie rod length b
8FA-23830-00	418.0 mm (16.4567 in)	355.0 mm (13.9764 in)

4. Check:

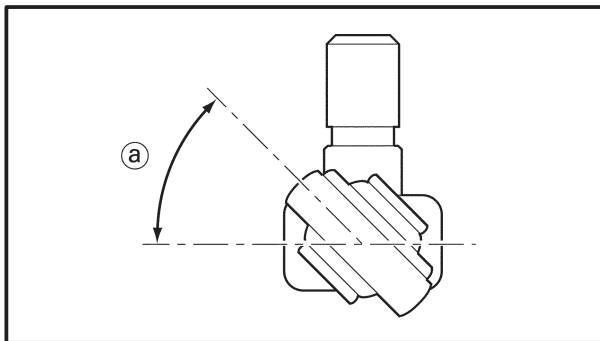
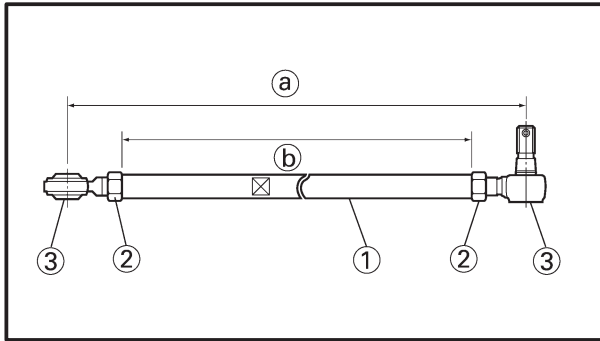
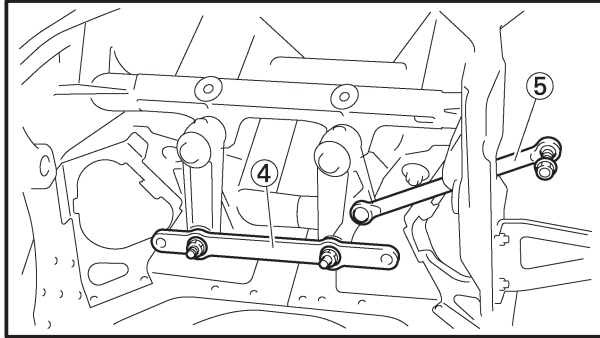
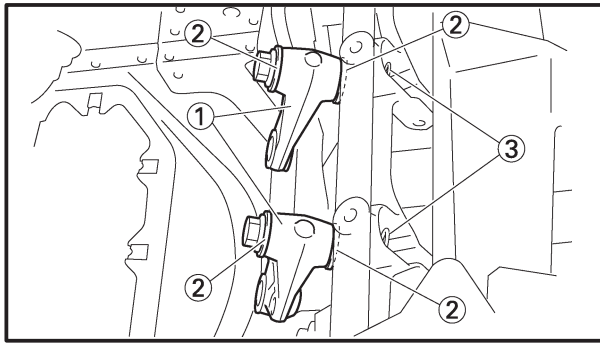
- Tie rod angle **a**

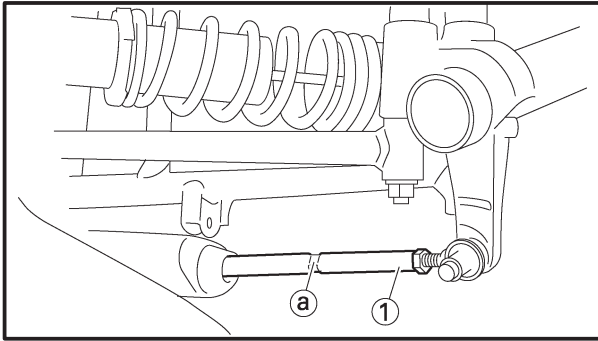


Tie rod angle:
47°

CAUTION:

After tightening the inside and outside ball joint locknut ②, make sure the tie rod ① can be rotated freely through the ball joint travel. If not, loosen the locknut ② and re-position the ball joint so that the tie rod ① can be rotated freely. Tighten the locknut to specification.





5. Install:
- Tie rods ①

NOTE:

- Make sure that the indentation ① on the tie rod faces out.
- The threads on both rod ends must be the same length.

CAUTION:

Always use new cotter pins.

**Locknut (rod end):**

25 Nm (2.5 m•kg, 18 ft•lb)

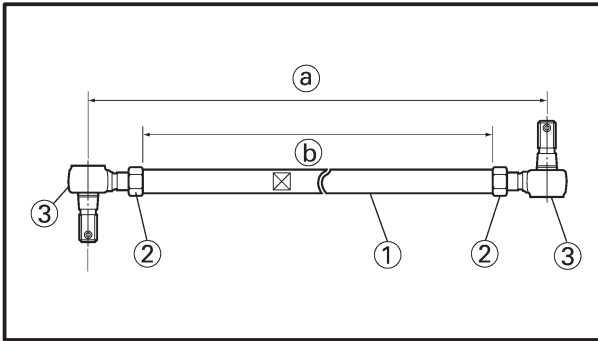
LOCTITE®

Nut (tie rod-idler arm):

30 Nm (3.0 m•kg, 22 ft•lb)

Nut (tie rod-steering arm):

35 Nm (3.5 m•kg, 25 ft•lb)



6. Install:
- Steering shaft ①
 - Locknuts ②
 - Joints ③

A Steering shaft part number	B Set length a	C Shaft length b
8FA-23840-00	227.8 mm (8.9685 in)	170.0 mm (6.6929 in)

NOTE:

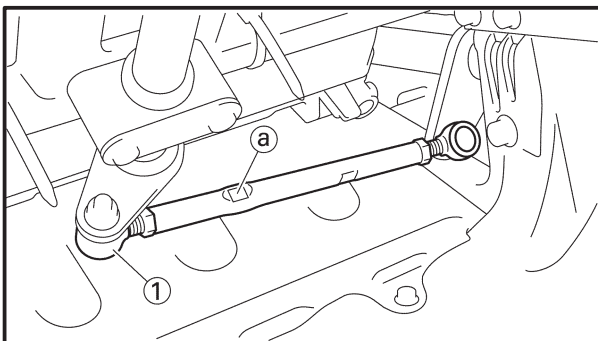
Make sure that the end of the steering shaft (white plating side ①) is connected to the steering column.

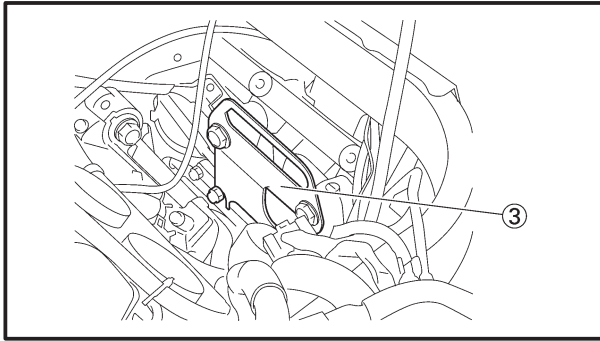
CAUTION:

Always use new cotter pins.

**Nut (steering shaft):**

35 Nm (3.5 m•kg, 25 ft•lb)





7. Adjust:
- Handlebar

Adjustment steps:

- Temporarily install the handlebar.
- Install the steering linkage alignment plate (3).



Steering linkage alignment plate
90890-01487, YS-01487

- Loosen the locknuts (steering shaft) (1).
- Turn the steering shaft (2) clockwise or counterclockwise and then secure the handle bar in the straight position.

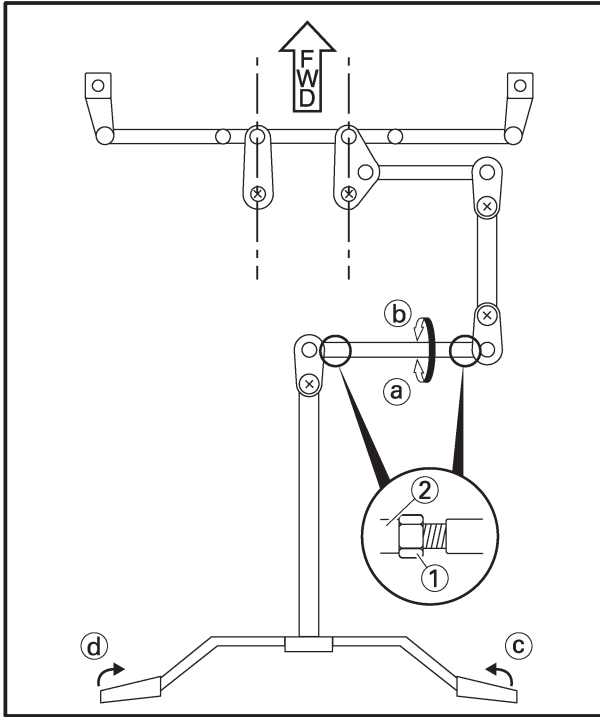
Turning the steering shaft in direction (a)	Turning the handlebar in direction (c)
Turning the steering shaft in direction (b)	Turning the handlebar in direction (d)

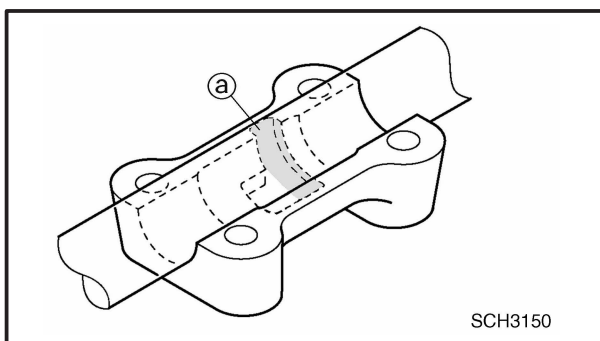
- Tighten the locknuts (steering shaft) (1).



Locknut (steering shaft):
25 Nm (2.5 m•kg, 18 ft•lb)
LOCTITE®

- Remove the steering linkage alignment plate (3).
8. Install:
- Toe-out
 - Refer to "STEERING SYSTEM" in CHAPTER 2.

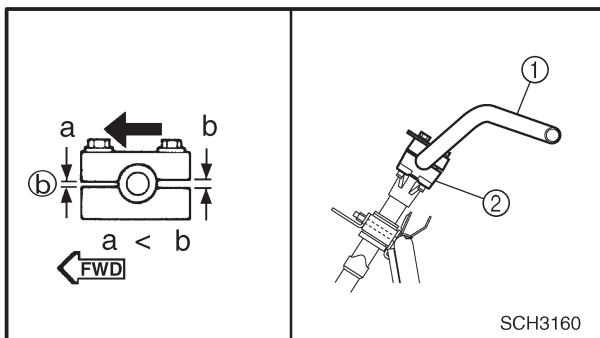




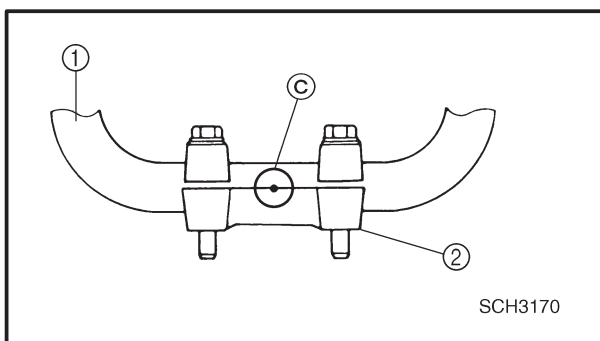
9. Install:
- Handlebar

CAUTION:

- Be sure the projection on the handlebar is not installed into the area ① shown.
- Be sure the side of the holder with the small gap ② faces forward.
② = 0 mm (0 in)
- First tighten the bolts on the front side of the handlebar holder, and then tighten the bolts on the rear side.
- Center the match mark ③ on the handlebar ① between the lower handlebar holders ②.

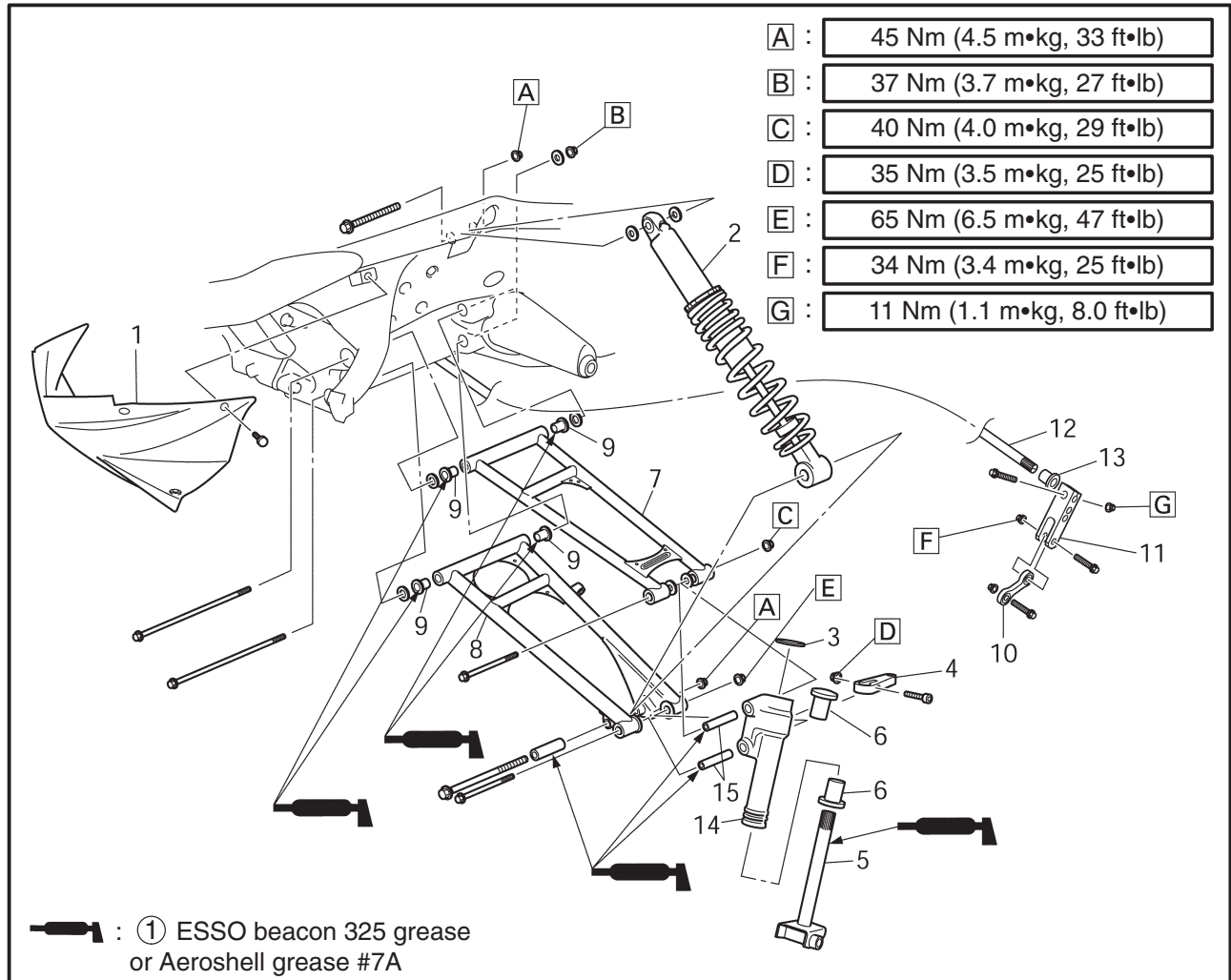


Bolt (handlebar holder):
15 Nm (1.5 m•kg, 11 ft•lb)

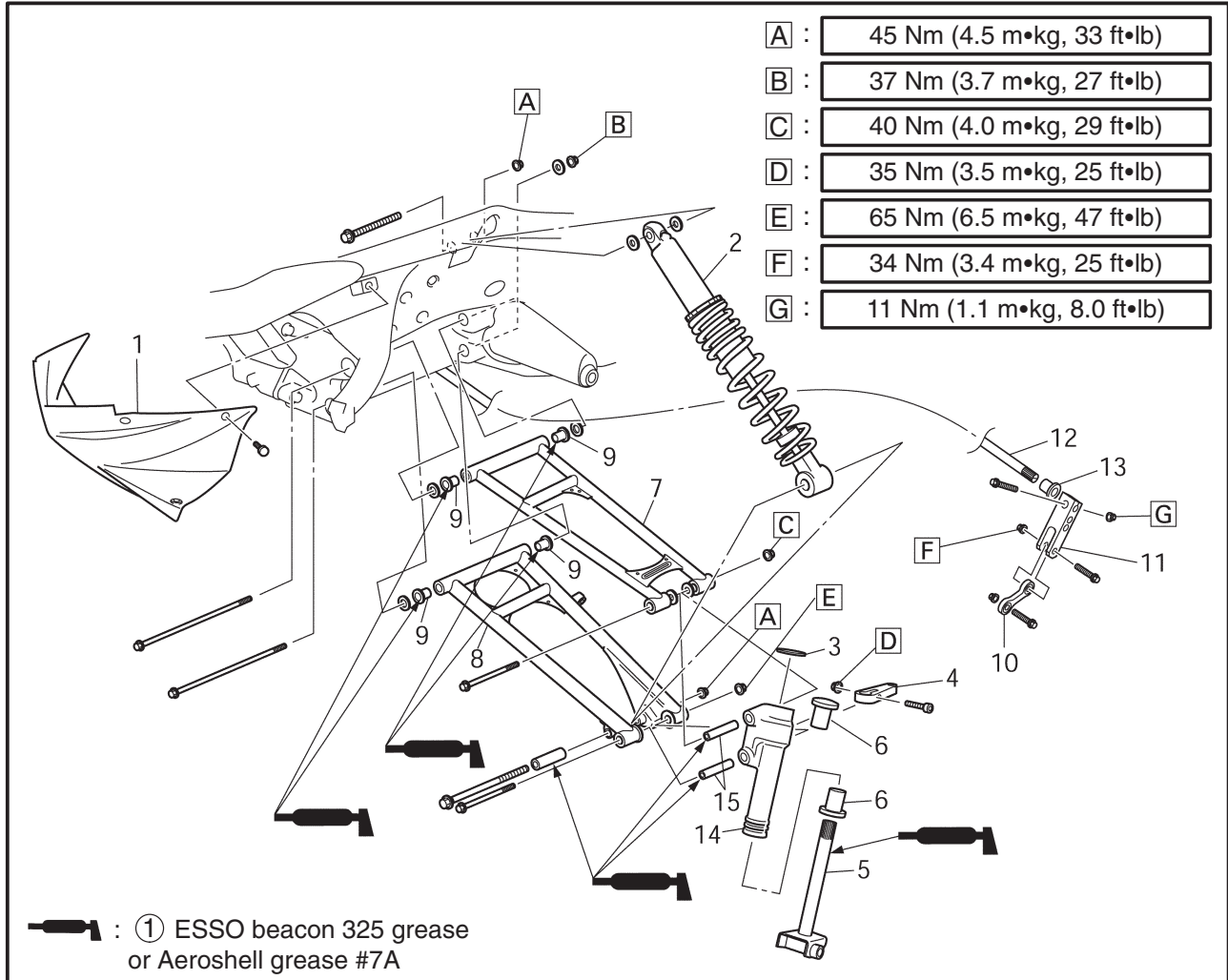




FRONT SUSPENSION



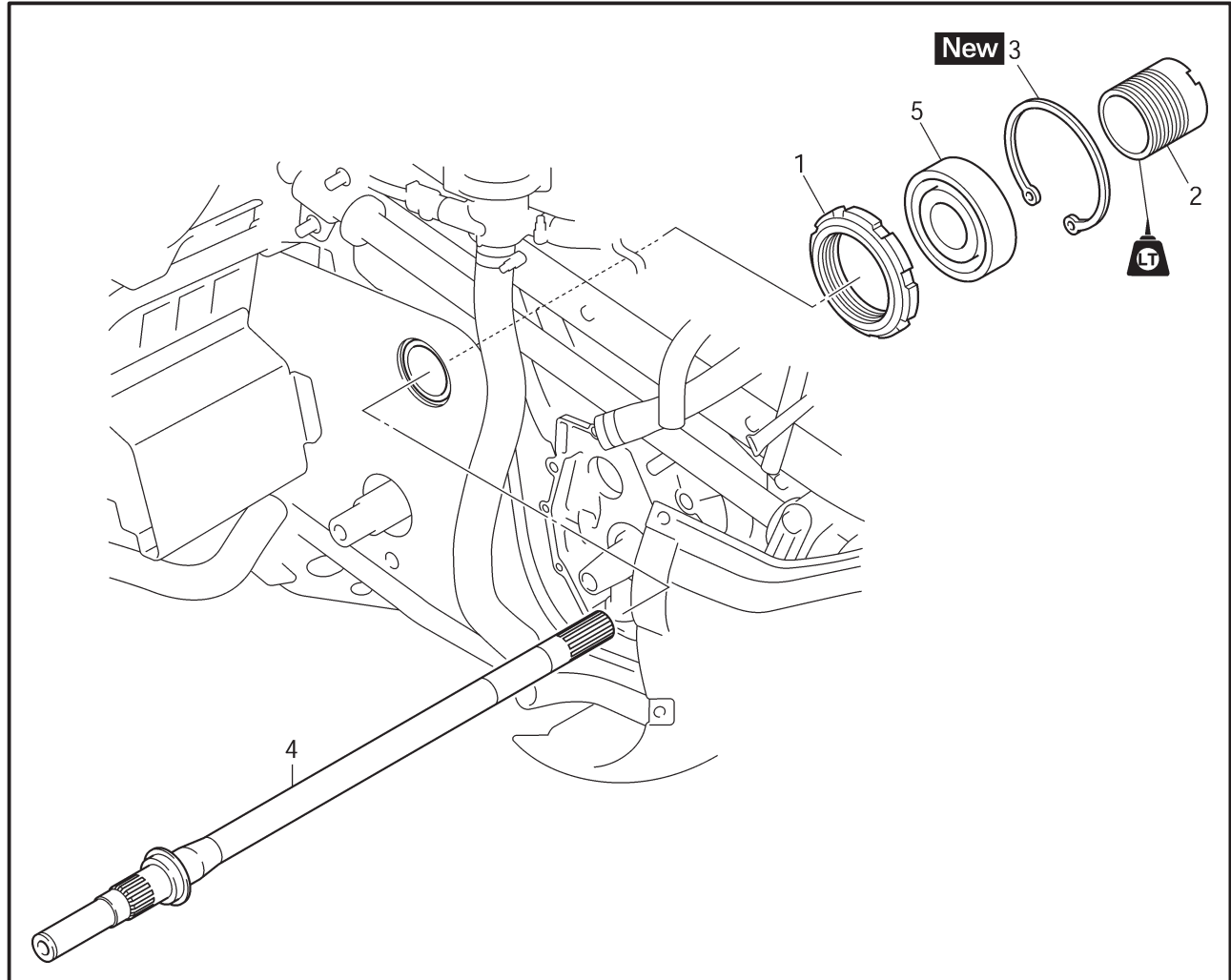
Order	Job name/Part name	Q'ty	Remarks
	Front suspension removal		
	Ski		Remove the parts in the order listed below. Refer to "SKI".
1	Front cover	1	
2	Shock absorber	1	
3	Cap	1	
4	Steering arm	1	
5	Ski column	1	
6	Bushing	1	
7	Upper arm	1	
8	Lower arm	1	
9	Bushing	4	
10	Connecting rod	1	
11	Stabilizer arm	1	



Order	Job name/Part name	Q'ty	Remarks
12	Stabilizer	1	For installation, reverse the removal procedure.
13	Bushing	1	
14	Steering knuckle	1	
15	Collar	2	

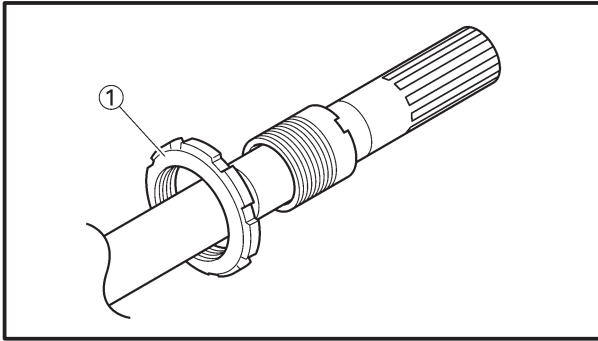
POWER TRAIN

SECONDARYSHAFT



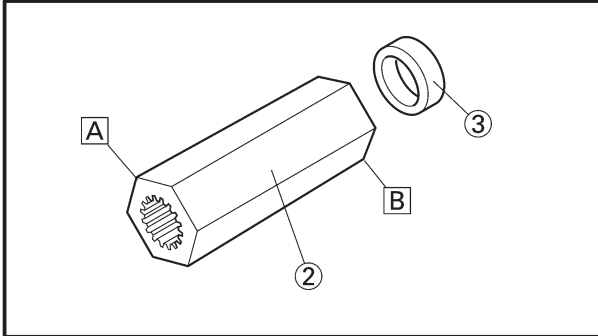
4

Order	Job name/Part name	Q'ty	Remarks
	Secondary shaft removal		
	Secondary sheave		Remove the parts in the order listed below.
	Drive chain housing		Refer to "SECONDARY SHEAVE".
1	Collar nut	1	Refer to "DRIVE CHAIN HOUSING".
2	Collar	1	
3	Circlip	1	
4	Secondary shaft	1	
5	Bearing	1	
			For installation, reverse the removal procedure.



REMOVAL

1. Remove:
 - Drive chain housing parts
Refer to “DRIVE CHAIN HOUSING WITH REVERSE MODEL” in CHAPTER 4
 - Secondary sheave assembly
Refer to “SECONDARY SHEAVE” in CHAPTER 4



2. Install:
 - Secondary shaft slide & holder ②

A Outside

B Inside

NOTE: _____

- Do not use the collar ③.

CAUTION:

Contact the secondary shaft slide & holder only with the inner race of the bearing.



Secondary shaft Slide & Holder
90890-01492, YU-01492

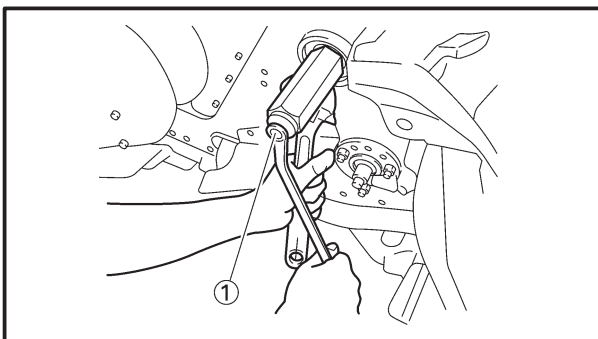
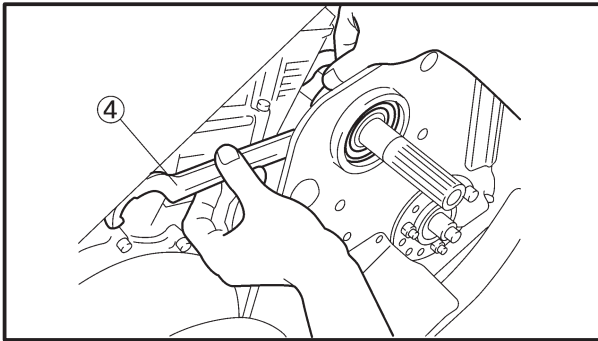
3. Remove:
 - Bearing collar nut ①

NOTE: _____

Remove the bearing collar nut by ring nut wrench ④.



Ring nut wrench
90890-01268, YU-01268

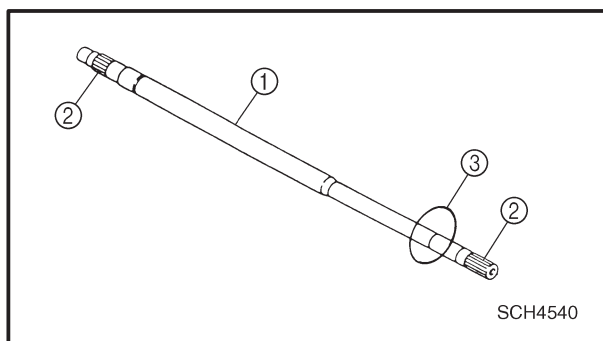


4. Install:
 - Secondary sheave mounting bolt ① and washer.

NOTE: _____

Use the secondary sheave mounting bolt ① and washer.

5. Tighten:
 - Secondary sheave bolt ①
6. Remove
 - Secondary shaft



INSPECTION

1. Inspect:

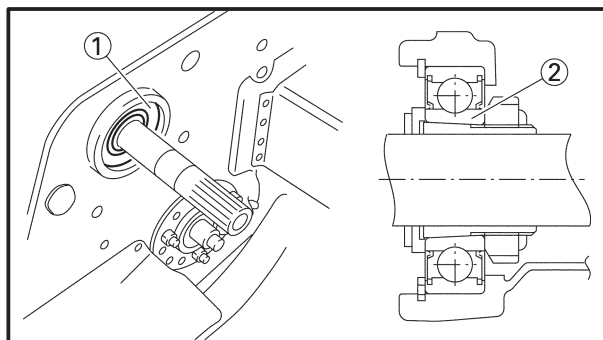
- Secondary shaft ①
Scratches (excessive)/damage → Replace.
- Splines ②
Wear/damage → Replace the secondary shaft.
- Bearing contact surface ③
Scratches/wear/damage → Replace the secondary shaft.

2. Inspect:

- Bearing ①
Pitting/damage → Replace.

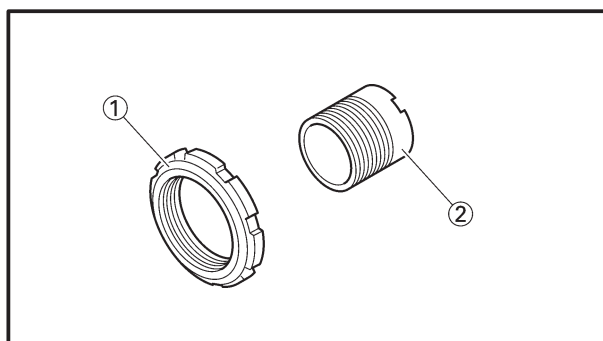
NOTE:

When install the bearing ①, larger side of the inner race ② is outside of the frame.



3. Inspect:

- Bearing collar nut ①
Cracks/damage → Replace.
- Collar ②
Cracks/damage → Replace.



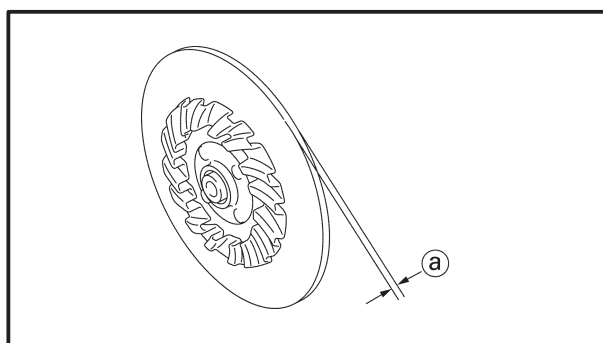
4. Measure:

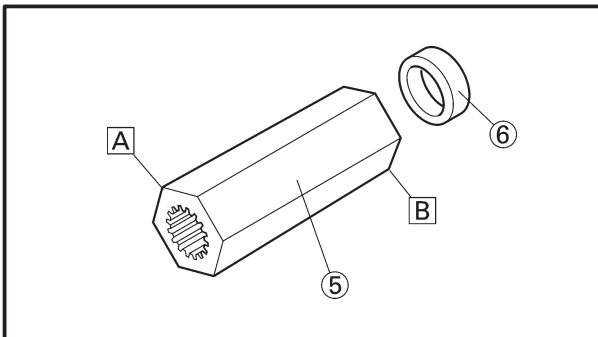
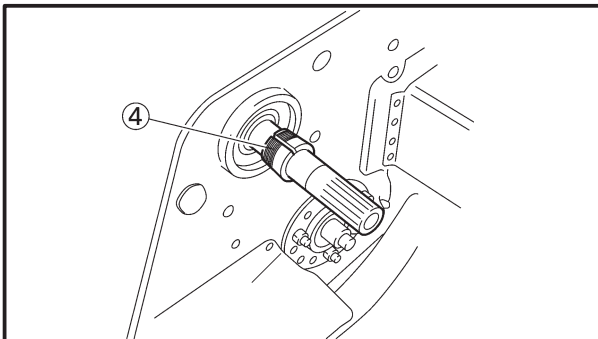
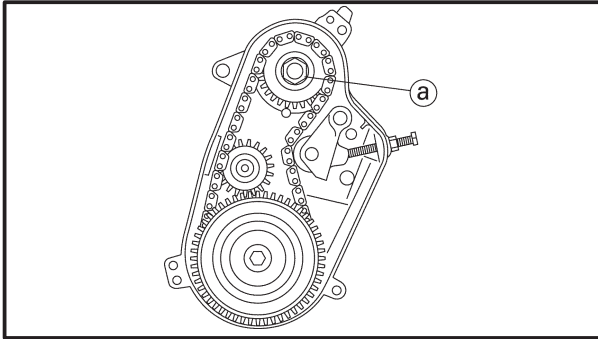
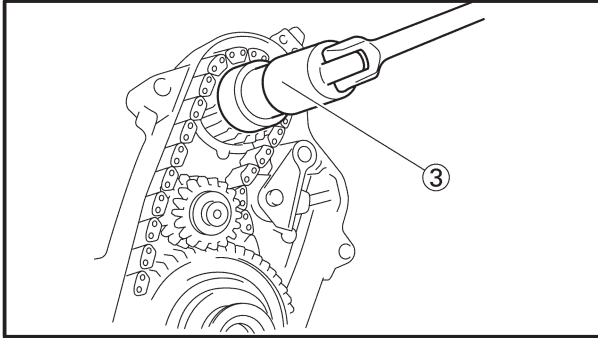
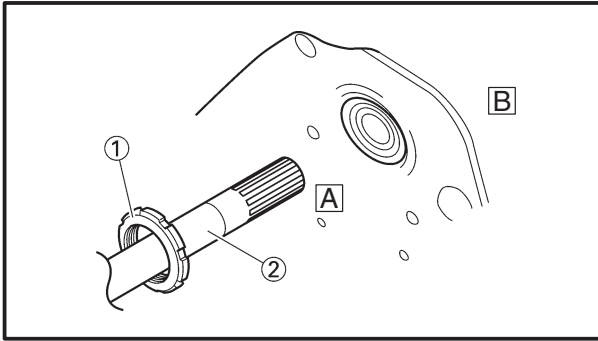
- Brake disc thickness ①
Out of specification → Replace.



**Minimum thickness:
5.0 mm (0.20 in)**

Measuring point: 1 ~ 3 mm (0.04 ~ 0.12 in) from the edge of the brake disc.





INSTALLATION

1. Install
 - Drive chain housing parts
Refer to "DRIVE CHAIN HOUSING WITH REVERSE MODEL" in CHAPTER 4.

2. Install:
 - Bearing collar nut ①
 - Secondary shaft ②

A Engine side

B Secondary clutch side

3. Install:
 - Drive gear socket ③



Drive gear socket
90890-01490, YU-01490

4. Tighten:
 - Drive gear nut ④



Drive gear nut
90 N•m (9.0 m•kg, 65 ft•lb)

5. Install:
 - Collar ④
6. Install:
 - Secondary shaft slide & holder ⑤

A Outside

B Inside

NOTE: _____

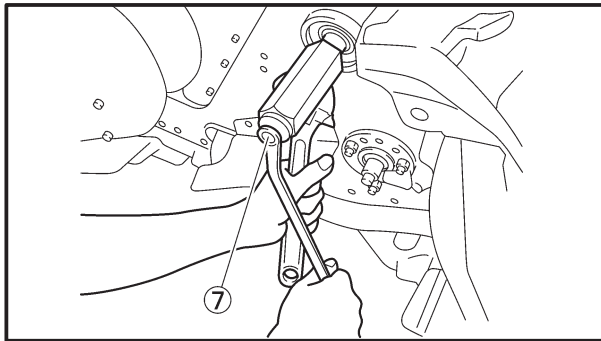
- Use the collar ⑥.

CAUTION: _____

- Contact the secondary shaft slide & holder only with the inner race of the bearing.



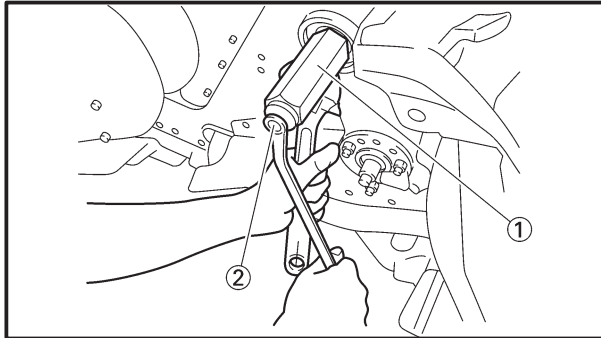
Secondary shaft Slide & Holder
90890-01492, YS-01492



7. Install:
- Secondary sheave mounting bolt ⑦

NOTE:

- Use the secondary sheave mounting bolt ⑦ and washer which tighten the secondary clutch.

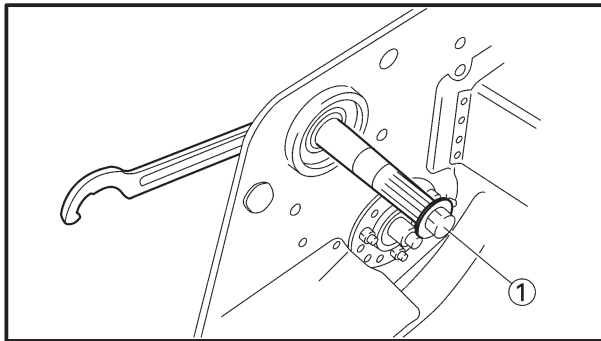


8. Tighten:
- Secondary sheave mounting bolt ⑦



Secondary sheave mounting bolt
30 N•m (3.0 m•kg, 22 ft•lb)

9. Remove:
- Secondary shaft & slide & holder ①
 - Secondary sheave mounting bolt ②



10. Install:
- Secondary sheave mounting bolt ①

11. Tighten:
- Bearing collar nut



Ring nut wrench
90890-01268, YU-01268



Bearing collar nut
55Nm (5.5m•kg, 40ft•lb)
LOCTITE®

NOTE:

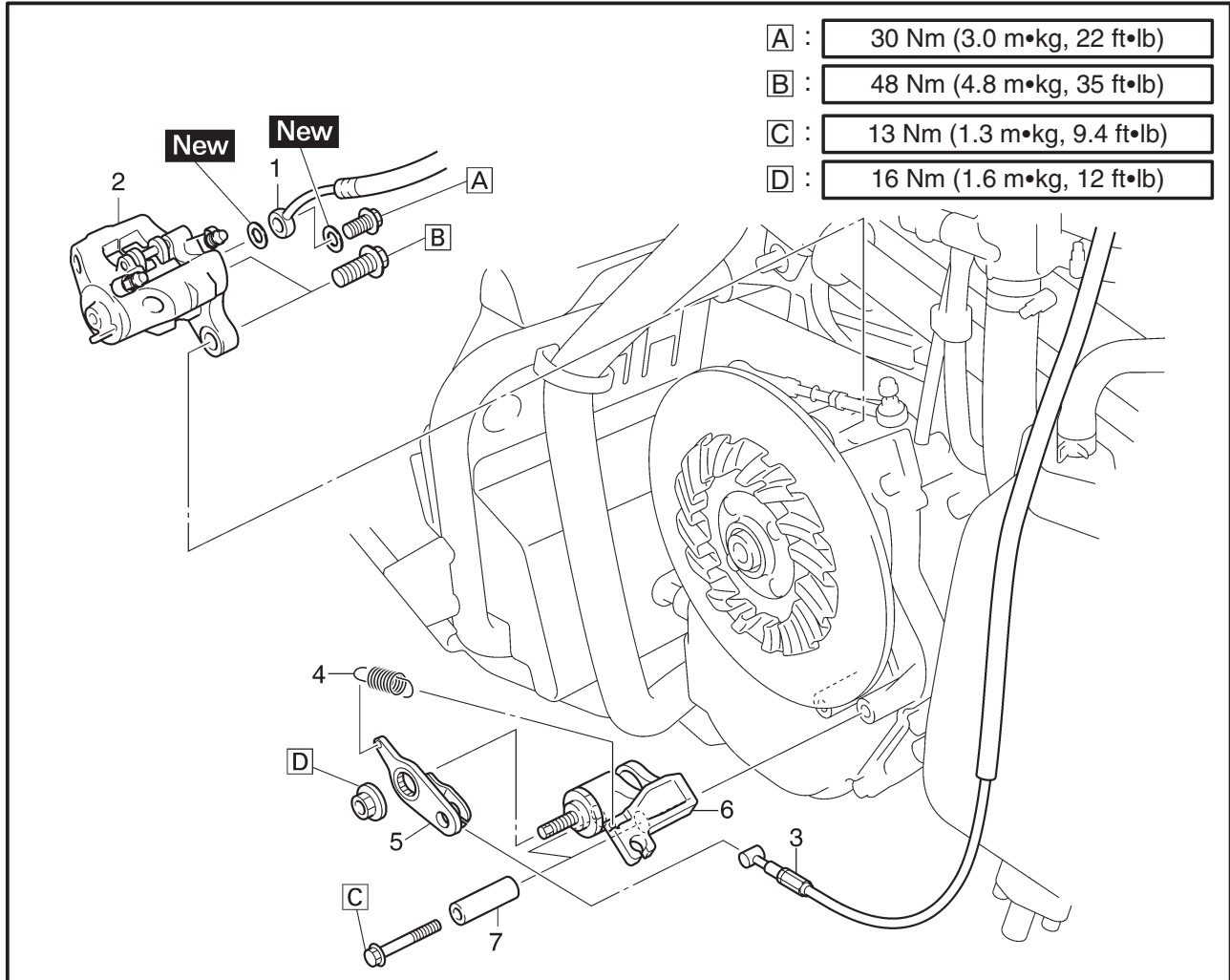
Install the ring nut wrench and then tighten the secondary sheave mounting bolt ①.

12. Check:
- Secondary shaft stiffness

CAUTION:

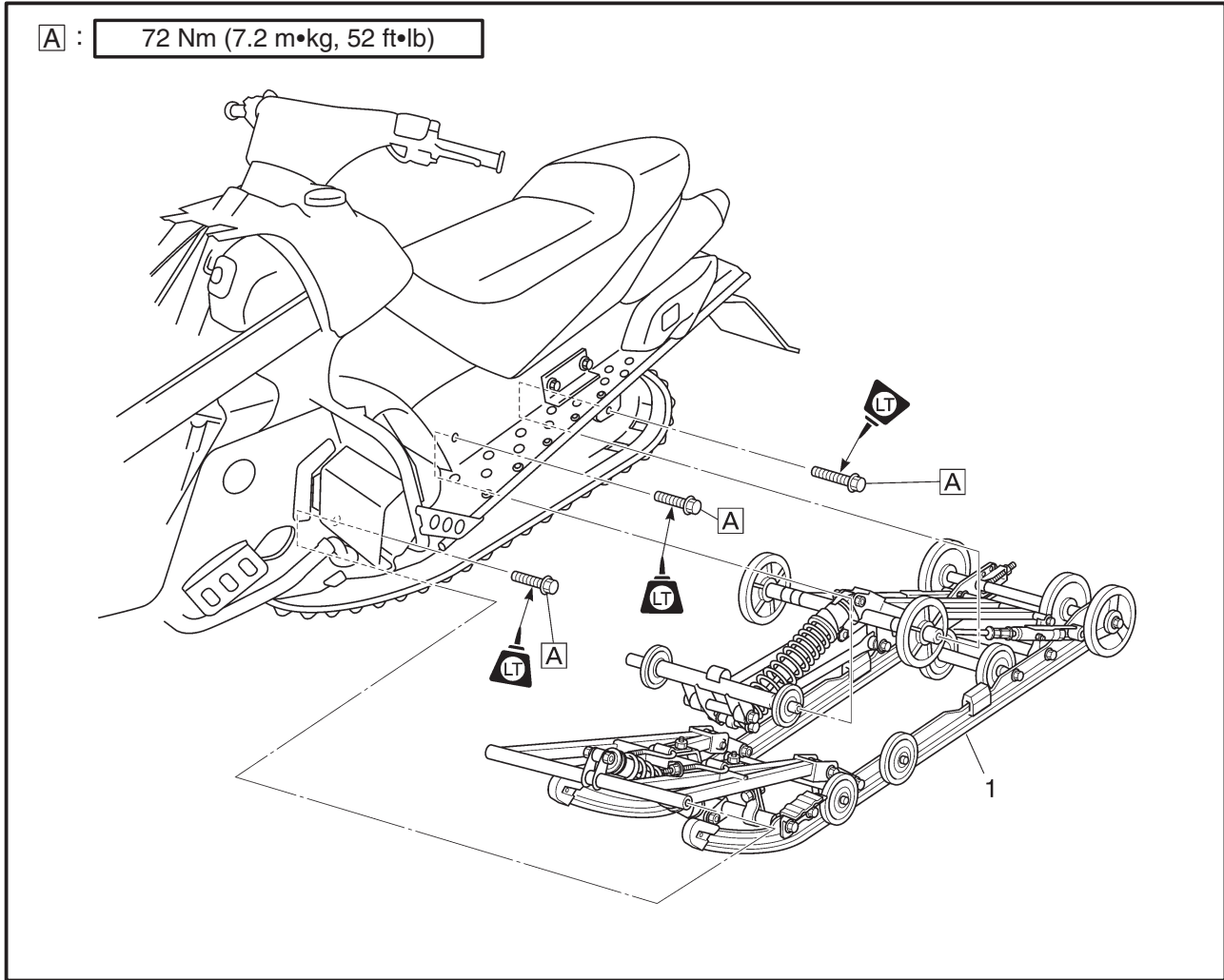
When the secondary shaft is operated in periodic motion, and if its movement is heavy, install it again correctly.

BRAKE



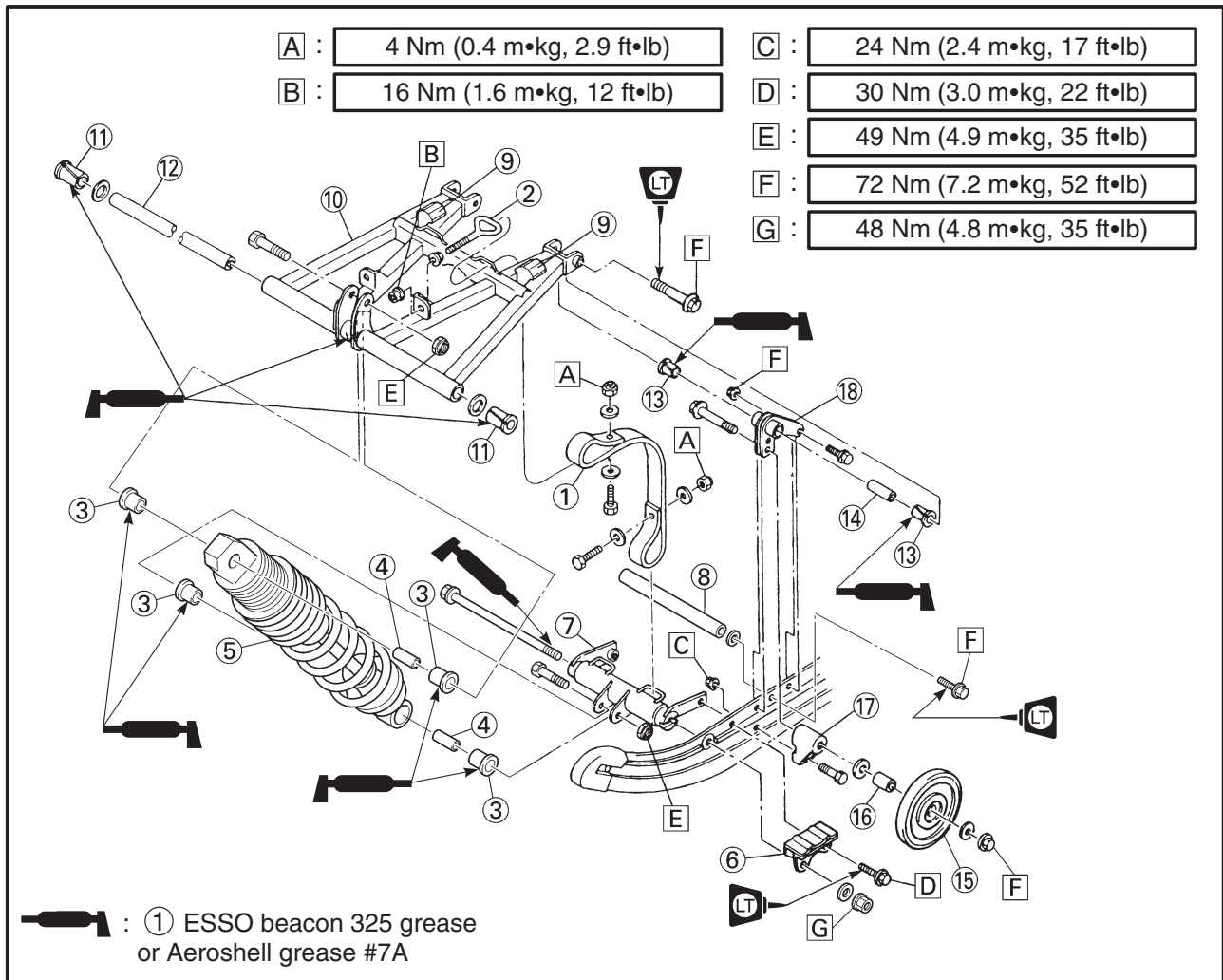
Order	Job name/Part name	Q'ty	Remarks
	Brake caliper and parking brake removal		Remove the parts in the order listed below.
	Brake fluid		Drain.
1	Brake hose	1	
2	Brake caliper assembly	1	
3	Parking brake cable	1	
4	Spring	1	
5	Lever	1	
6	Parking brake assembly	1	
7	Collar	1	
			For installation, reverse the removal procedure.

SLIDE RAIL SUSPENSION

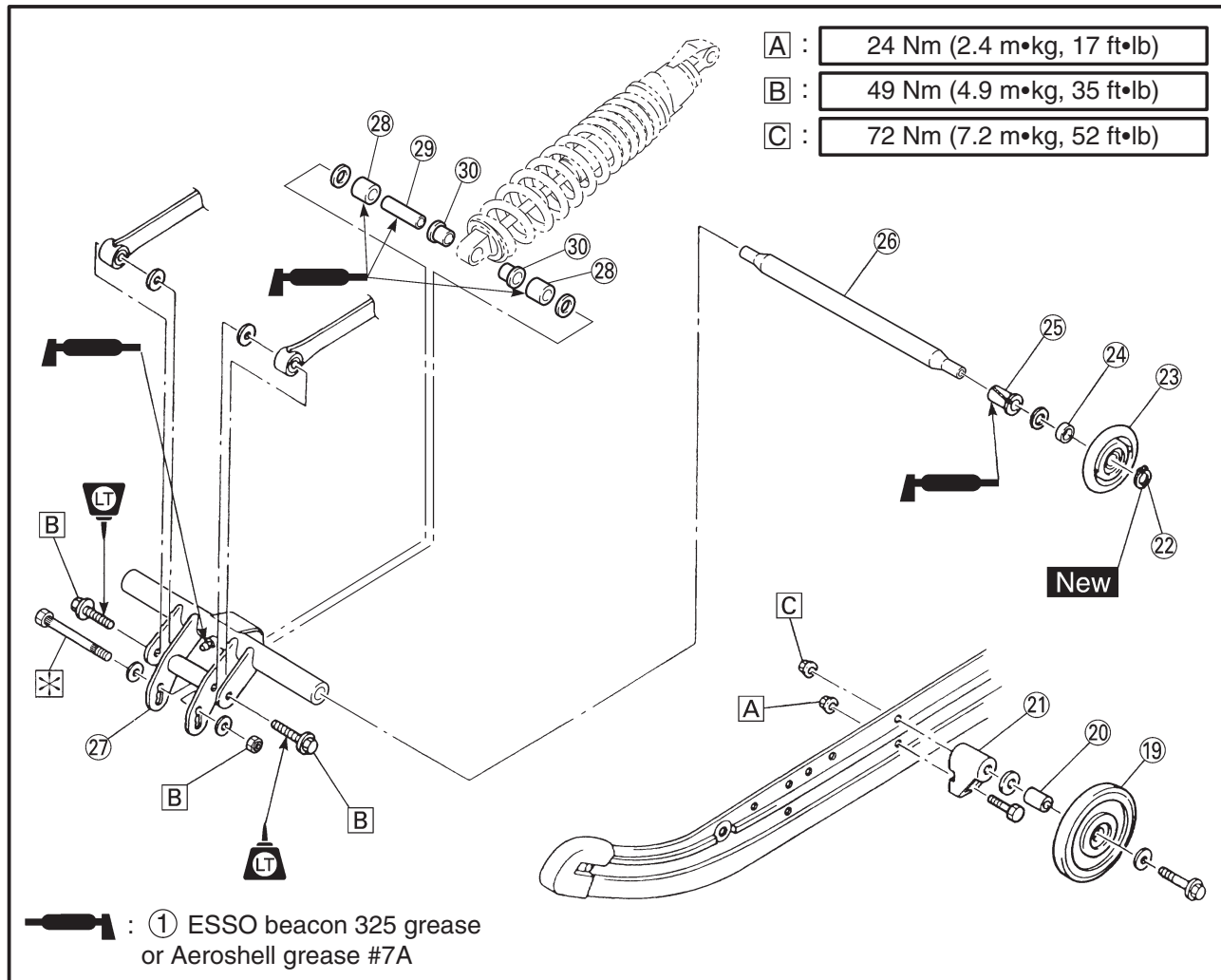


Order	Job name/Part name	Q'ty	Remarks
1	Slide rail suspension removal Rear axle nut Tension adjuster Left side cover Slide rail suspension	1	Remove the parts in the order listed below. Loosen. Loosen. Refer to "PRIMARY SHEAVE AND DRIVE VELT". For installation, reverse the removal procedure.

SLIDE RAIL SUSPENSION



Order	Job name/Part name	Q'ty	Remarks
	Slide rail suspension disassembly		Remove the parts in the order listed below.
①	Stopper band	2	
②	Hook	2	
③	Bushing	4	
④	Bushing	2	
⑤	Front shock absorber	1	
⑥	Bracket	2	
⑦	Front suspension bracket	1	
⑧	Shaft	1	
⑨	Rubber damper	2	
⑩	Front pivot arm	1	
⑪	Bushing	2	
⑫	Shaft	1	
⑬	Bushing	4	
⑭	Collar	2	
⑮	Suspension wheel	2	
⑯	Collar	2	
⑰	Wheel bracket	2	
⑱	Front pivot arm bracket	2	



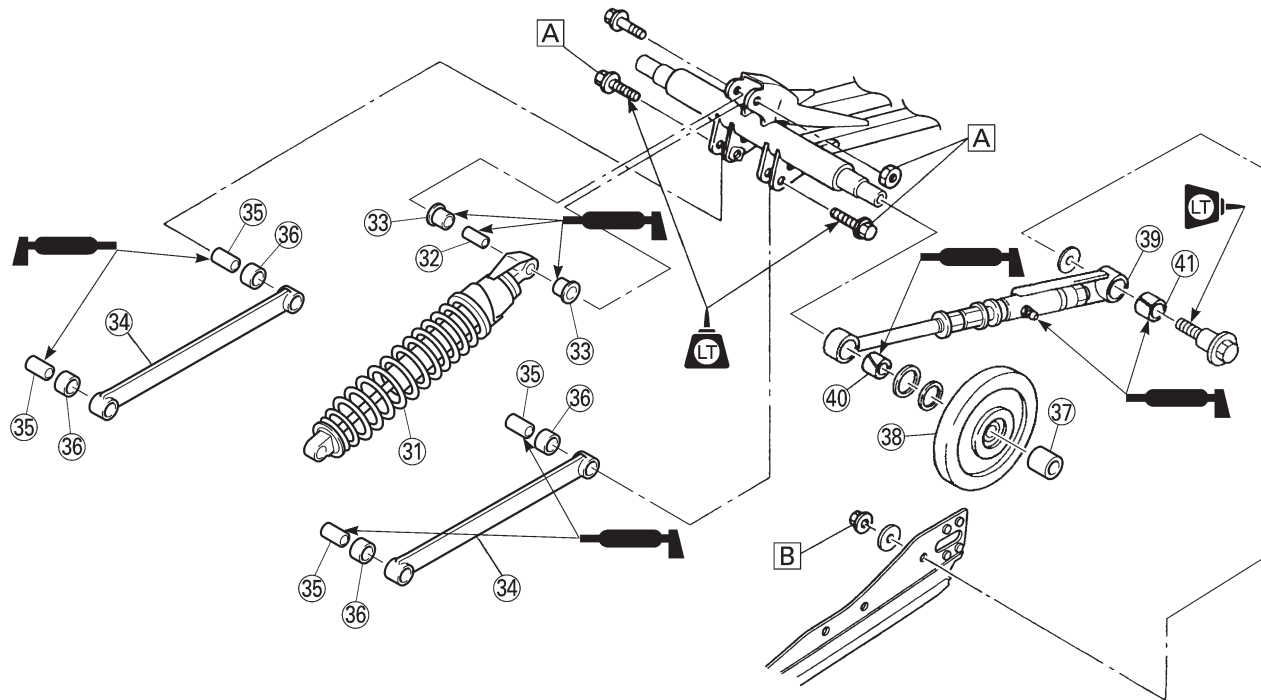
Order	Job name/Part name	Q'ty	Remarks
①9	Suspension wheel	2	
②0	Collar	2	
②1	Wheel bracket	2	
②2	Circlip	2	
②3	Suspension wheel	2	
②4	Collar	2	
②5	Bushing	2	
②6	Shaft	1	
②7	Rear suspension bracket	1	
②8	Spacer	2	
②9	Collar	1	
③0	Bushing	2	

✱ This model has a “Easy adjust” system for the full rate adjuster. The bolt has teeth on it. So when the bolt is turned, it rides up and down the bracket.

NOTE:

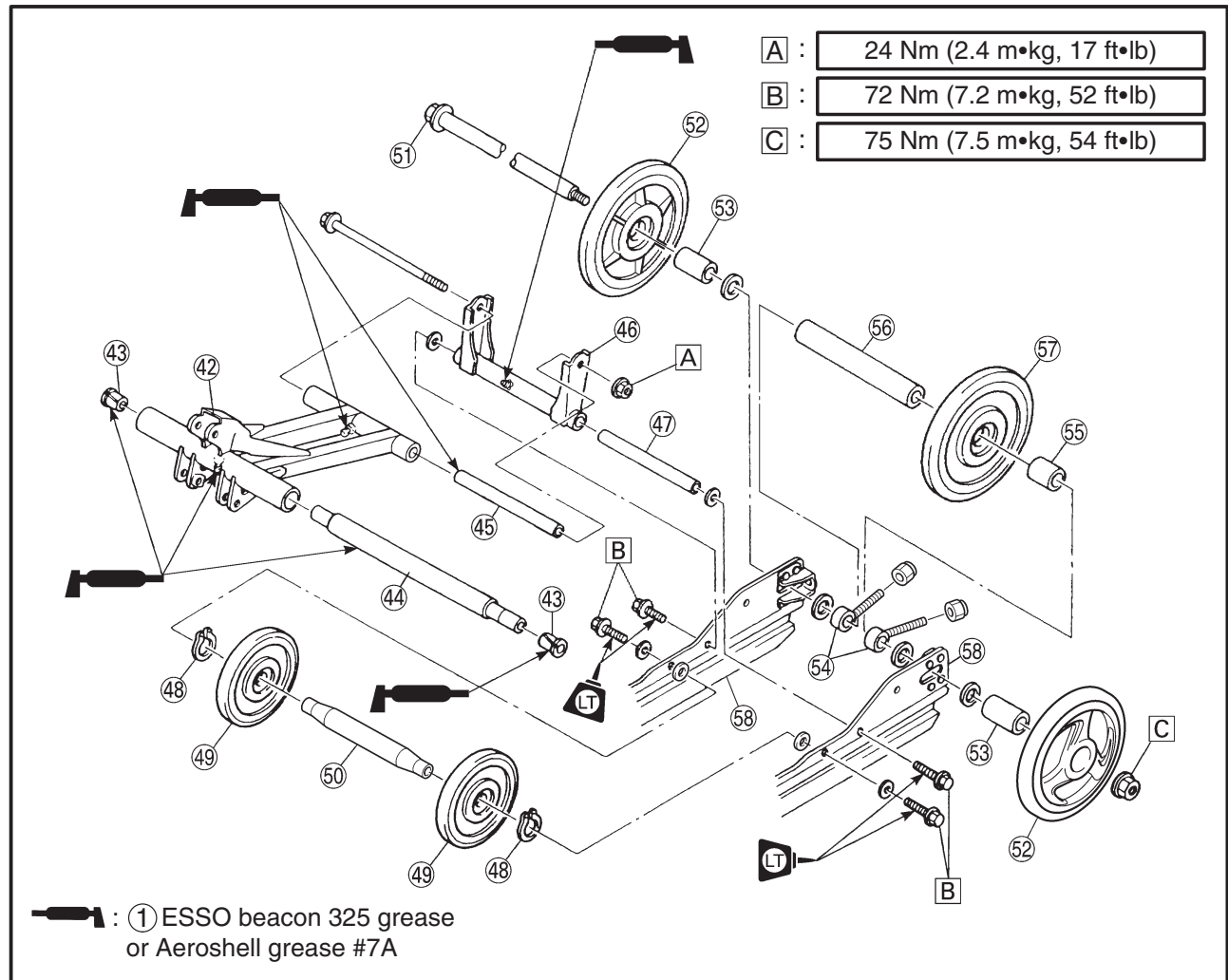
- The nut has to be loosened first, while the bolt is held in place with a wrench.
- Then the bolt can be turned to adjust the shock position up or down.
- If the bolt is turned with the nut tight, it is possible to strip the teeth off the bolt.

A : 49 Nm (4.9 m•kg, 35 ft•lb)

B : 72 Nm (7.2 m•kg, 52 ft•lb)

 : ① ESSO beacon 325 grease
or Aeroshell grease #7A

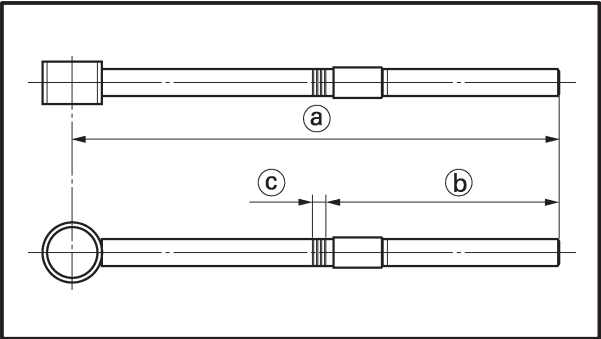
Order	Job name/Part name	Q'ty	Remarks
③①	Rear shock absorber	1	
③②	Collar	1	
③③	Bushing	2	
③④	Pull rod	2	
③⑤	Collar	4	
③⑥	Bushing	4	
③⑦	Collar	2	
③⑧	Suspension wheel	2	
③⑨	Control rod	2	
④①	Bushing	2	
④②	Bushing	2	

SLIDE RAIL SUSPENSION



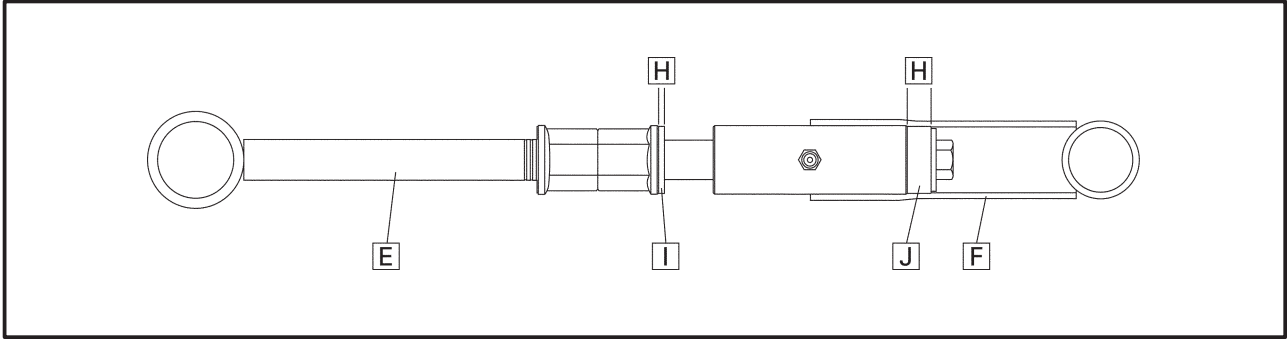
Order	Job name/Part name	Q'ty	Remarks
④②	Rear pivot arm	1	For assembly, reverse the disassembly procedure.
④③	Bushing	2	
④④	Shaft	1	
④⑤	Shaft	1	
④⑥	Rear pivot arm bracket	1	
④⑦	Shaft	1	
④⑧	Circlip	2	
④⑨	Suspension wheel	2	
⑤①	Wheel bracket shaft	1	
⑤②	Rear axle	1	
⑤③	Guide wheel	2	
⑤④	Collar	2	
⑤⑤	Tension adjuster	2	
⑤⑥	Collar	1	
⑤⑦	Collar	1	
⑤⑧	Guide wheel	1	
⑤⑨	Sliding frame	2	

INSTALLATION
Control rod parts number



A Control rod 1	B Length a mm (in)	C Length b mm (in)	D Length c mm (in)
RXW10J, RXW10SJ	303.5(11.95)	160.0(6.30)	$2.5P \times 3 = 7.5$ ($0.098P \times 3 = 0.295$)

E Control rod 1 parts number	F Control rod 2 parts number	G Washer plate parts number	
		H Washer plate thickness mm (in)	
		I Upper	J Lower
8FG-4745A-00	8CR-4745B-00	90202-16229 2.5 (0.098)	90202-16232 10.0 (0.394)





ENGINE

ENGINE ASSEMBLY
INSTALLATION

NOTE:

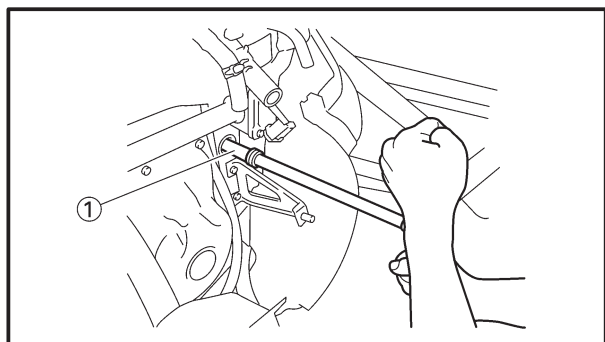
After installing all parts, refer to "CABLE ROUTING" in CHAPTER 9, to check the cable, lead and hose routing.

1. Install:

- Engine mounting adjust bolts
- Engine
- Engine mounting bolts and nuts

NOTE:

- Use the pivot shaft wrench to tighten the engine mounting adjust bolts.



Installation steps:

- Install the special tool ①



Engine mount spacer wrench
90890-01489, YS-01489

- Tighten the rear engine mounting adjust bolt.



Bolt (engine mounting adjust):
7 Nm (0.7 m•kg, 5.1 ft•lb)

- Tighten the rear engine mounting nut.



Nut (engine mounting):
65 Nm (6.5 m•kg, 47 ft•lb)

- Tighten the front right and left engine mounting adjust bolts until they come to contact with the engine damper. At this time, do not apply torque to the engine mounting adjust bolts.
- Tighten the front right and left engine mounting nuts.



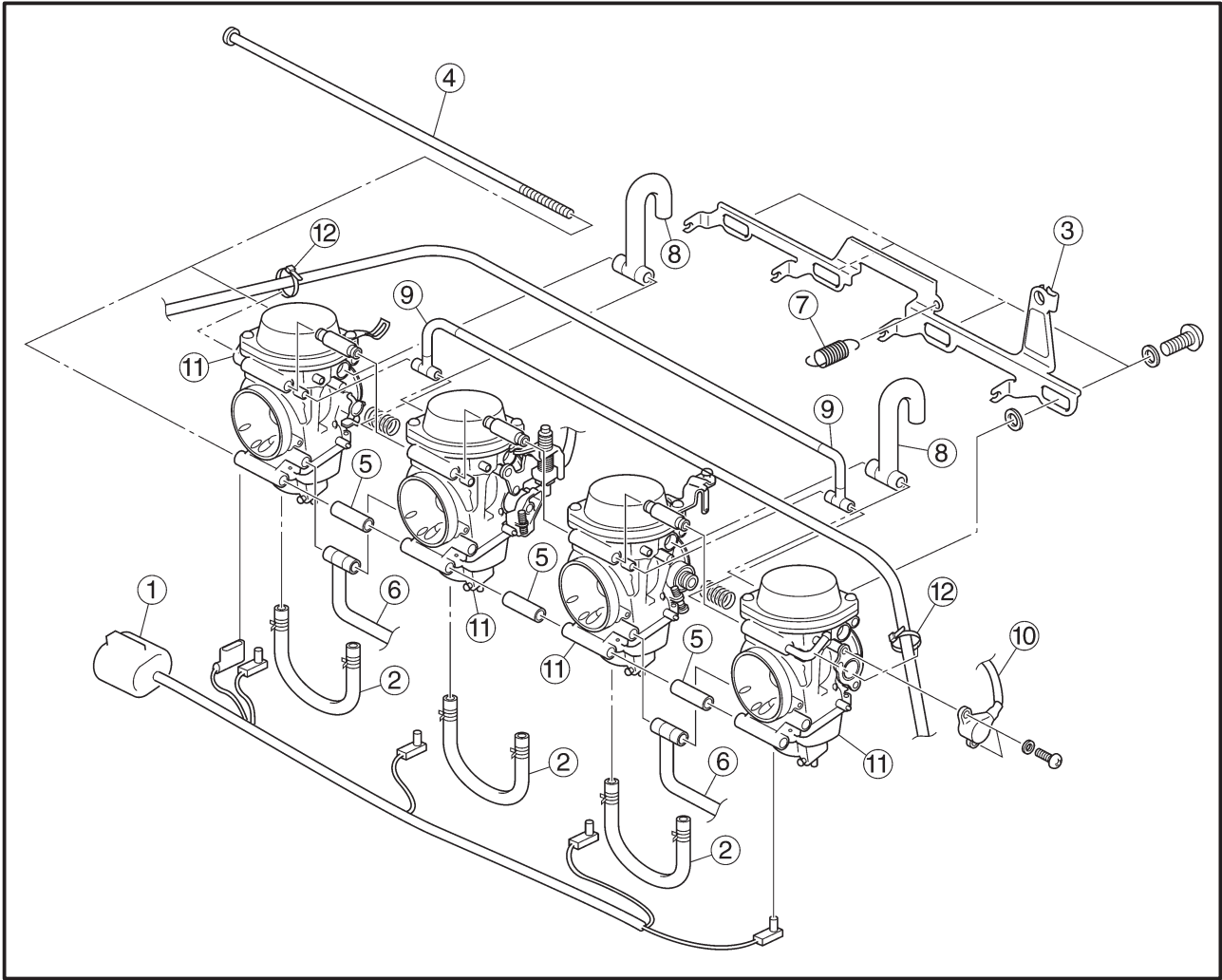
Nut (engine mounting):
65 Nm (6.5 m•kg, 47 ft•lb)

5

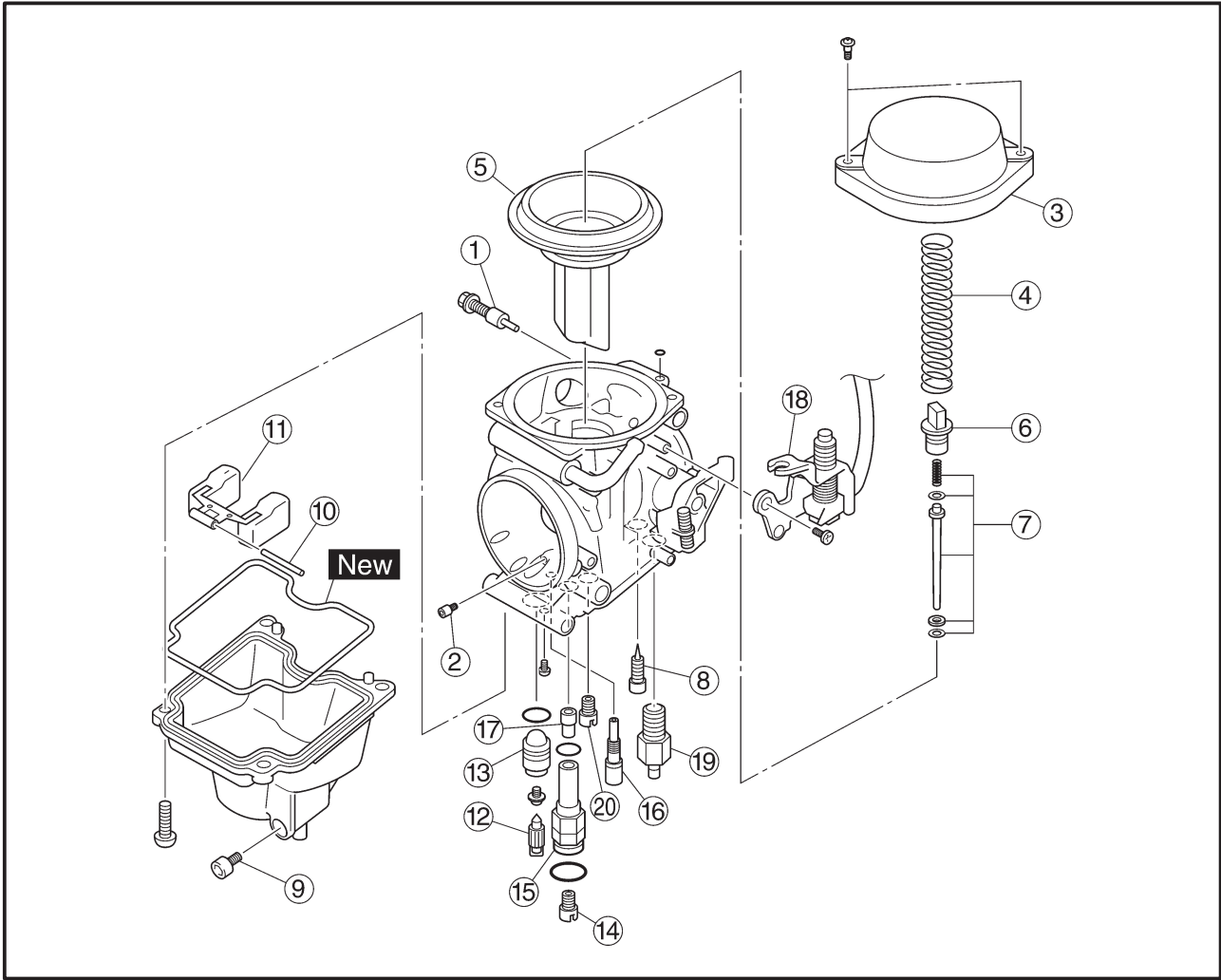


2. Fill:
 - Coolant
Refer to “COOLING SYSTEM” in CHAPTER 2.
3. Fill:
 - Engine oil
Refer to “ENGINE OIL REPLACEMENT” in CHAPTER 2.

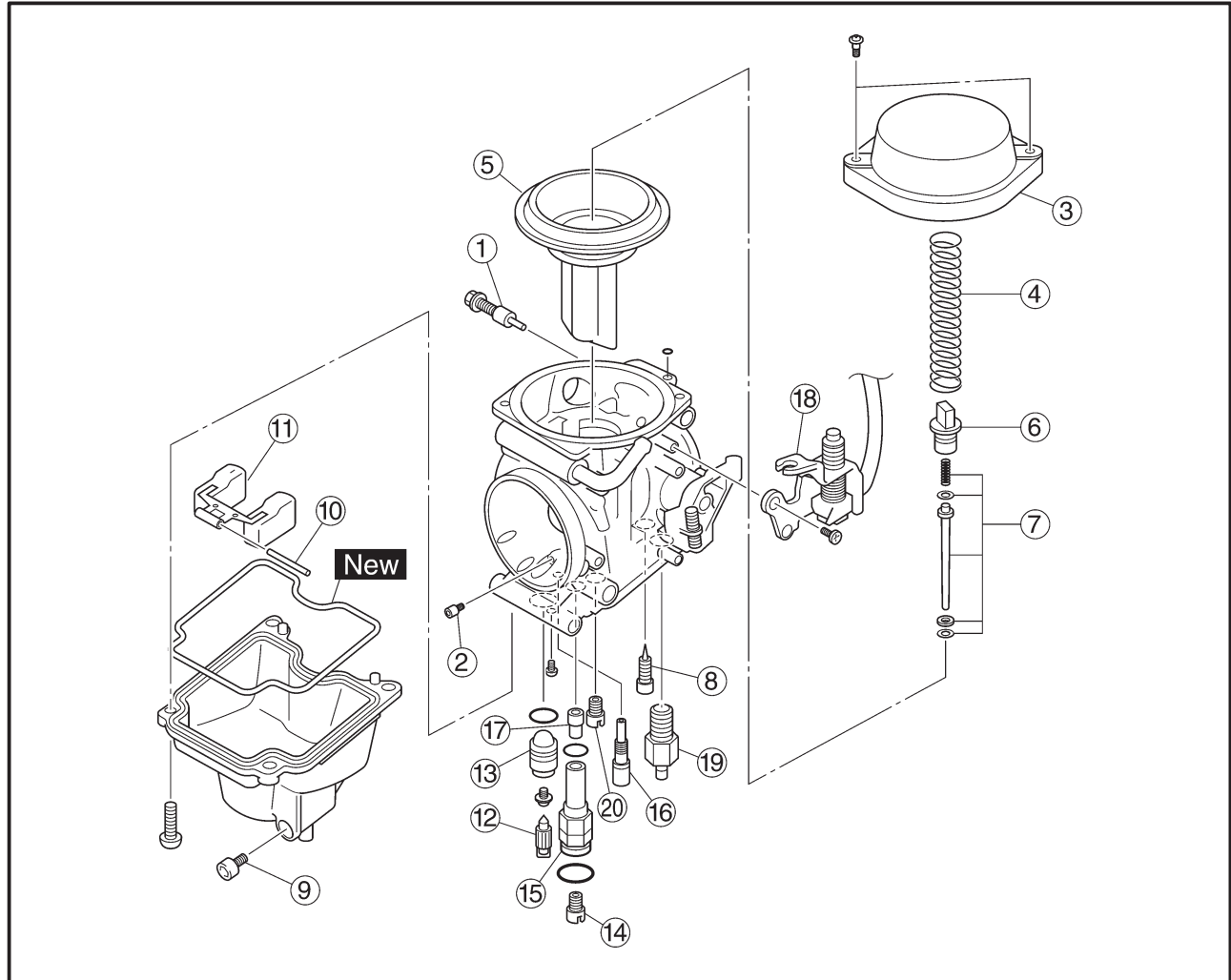
CARBURETORS



Order	Job name/Part name	Q'ty	Remarks
	Carburetor separation		Remove the parts in the order listed below.
①	Carburetor heater harness	1	
②	Carburetor heating hose	3	
③	Starter plunger link	1	
④	Connecting bolt	2	
⑤	Spacer	3	
⑥	Fuel inlet pipe	2	
⑦	Spring	1	
⑧	Vacuum chamber air vent hose	2	
⑨	Float chamber air vent hose	2	
⑩	Throttle position sensor	1	
⑪	Carburetor	4	
⑫	Band	2	
			For installation, reverse the removal procedure.



Order	Job name/Part name	Q'ty	Remarks
	Carburetor disassembly		
①	Starter plunger	1	Disassemble the parts in the order listed below.
②	Pilot air jet	1	NOTE: _____
③	Vacuum chamber cover	1	The following procedure applies to all of the carburetors.
④	Piston valve spring	1	_____
⑤	Piston valve	1	
⑥	Jet needle holder	1	
⑦	Jet needle kit	1	
⑧	Pilot screw	1	
⑨	Fuel drain bolt	1	
⑩	Float pin	1	



Order	Job name/Part name	Q'ty	Remarks
⑪	Float	1	For assembly, reverse the disassembly procedure.
⑫	Needle valve	1	
⑬	Needle valve seat	1	
⑭	Main jet	1	
⑮	Main jet holder	1	
⑯	Pilot jet	1	
⑰	Needle jet	1	
⑱	Carburetor switch (T.O.R.S.)	1	
⑲	Carburetor heater	1	
⑳	Starter jet	1	



SPECIFICATIONS

GENERAL SPECIFICATIONS

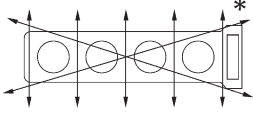
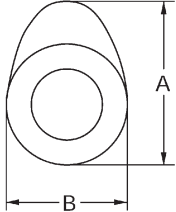
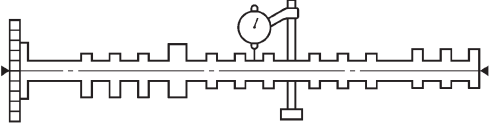
Model	RXW10J, RXW10SJ
Model code number:	8FG1 (for U.S.A./Canada) 8FH1 (for U.S.A./Canada) 8FG2 (for Europe) 8FH2 (for Europe)
Dimensions:	
Overall length	3,000 mm (118.1 in)
Overall width	1,210 mm (47.6 in)
Overall height	1,190 mm (46.9 in)
Weight:	
Dry weight	264 kg (581 lb)
Minimum turning radius:	
Clockwise	4.1 m (13.5 ft)
Counterclockwise	4.1 m (13.5 ft)
Engine:	
Engine type	Liquid-cooled, 4-stroke, DOHC
Cylinder type	Backward-inclined parallel 4-cylinder
Displacement	998 cm ³ (60.9 cu.in)
Bore × stroke	74 × 58 mm (2.91 × 2.28 in)
Compression ratio	11.8
Maximum hose power	r/min 10,250 r/min
Maximum torque	r/min 7,500 r/min
Standard compression pressure (at sea level)	1,450 kPa (14.5 kg/cm ² , 206 psi) at 400 r/min
Starting system	Electric starter
Lubrication system:	Dry sump
Engine oil:	
Type	API SE, SF, SG or higher SAE5W-30
Oil capacity	
Periodic oil change	2.8 L (2.5 Imp qt, 3.0 US qt)
With oil filter replacement	3.0 L (2.6 Imp qt, 3.2 US qt)
Total amount	3.8 L (3.3 Imp qt, 4.0 US qt)
Oil filter:	
Oil filter type	Cartridge (paper)
Drive chain housing oil:	
Type	Gear oil API “GL-3” SAE#75 or #80
Capacity	0.25 L (8.8 Imp oz, 8.5 US oz)
Coolant:	
Capacity	4.7 L (4.14 Imp qt, 4.97 US qt)
Fuel:	
Type	Regular unleaded gasoline (Pump Octane $\frac{R+M}{2}$; 88 or higher) Research Octane; 93 or higher (for Europe)
Tank capacity	38 L (8.4 Imp gal, 10.0 US gal)



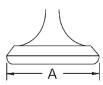
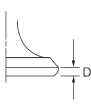
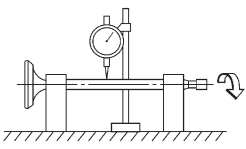
Model	RXW10J, RXW10SJ
Carburetors: Type/Quantity Manufacture	BSR37 × 4 MIKUNI
Spark plug: Type Manufacture Gap	CR9E NGK 0.7 ~ 0.8 mm (0.028 ~ 0.031 in)
Primary reduction: Primary reduction system Primary reduction ratio	Spur gear 1.19 (37/31)
Transmission: Primary reduction system Primary reduction ratio Clutch type Secondary reduction system Secondary reduction ratio Reverse system	V-Belt 3.8 : 1 ~ 1 : 1 Automatic centrifugal engagement Chain 1.65 (38/23) Yes
Chassis: Frame type Caster Ski stance (center to center)	Monocoque 23° 1,068 mm (42.0 in)
Suspension: Front suspension type Rear suspension type	Independent double wishbone suspension Slide rail suspension
Track: Track type Track width Length on ground Track deflection mm/ 100 N (10 kg, 22 lb)	Internal drive type 381 mm (15.0 in) 944 mm (37.2 in) 25 ~ 30 mm (0.98 ~ 1.18 in)
Brake: Brake type Operation method	Caliper type disc brake handlebar, left hand operated
Electrical: Ignition system Generator system	DC-CDI/MITSUBISHI A.C. magneto
Bulb wattage × Quantity: Headlight Tail/Brake light Meter light High beam indicator light Information indicator light Low coolant temperature indicator light	12 V, 60 W/55 W × 2 12 V, 5 W/21 W × 2 14 V, 50 mA × 6 14 V, 80 mA 14 V, 80 mA 14 V, 80 mA



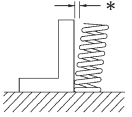
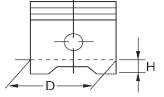
MAINTENANCE SPECIFICATIONS ENGINE

Model	RXW10J, RXW10SJ
Cylinder head: Volume (with spark plug) <Warpage limit> 	13.45 ~ 14.00 cm³ (0.82 ~ 0.85 cu. in) 0.1 mm (0.004 in) * Lines indicate straight edge measurement.
Cylinder: Material Bore size <Taper limit> <Out of round> <Wear limit>	Aluminum alloy with dispersion coating 74.000 ~ 74.010 mm (2.9134 ~ 2.9138 in) 0.05 mm (0.002 in) 0.05 mm (0.002 in) 74.06 mm (2.9157 in)
Camshaft: Drive system Camshaft cap inside diameter Camshaft journal diameter Camshaft-journal-to-camshaft-cap clearance Camshaft dimensions Intake "A" <Limit> "B" <Limit> Exhaust "A" <Limit> "B" <Limit>  Camshaft runout 	Chain drive (left) 24.500 ~ 24.521 mm (0.9646 ~ 0.9654 in) 24.459 ~ 24.472 mm (0.9630 ~ 0.9635 in) 0.028 ~ 0.062 mm (0.0011 ~ 0.0024 in) 32.50 ~ 32.60 mm (1.2795 ~ 1.2835 in) 32.40 mm (1.2756 in) 24.95 ~ 25.05 mm (0.9823 ~ 0.9862 in) 24.85 mm (0.9783 in) 32.95 ~ 33.05 mm (1.2972 ~ 1.3012 in) 32.85 mm (1.2933 in) 24.95 ~ 25.05 mm (0.9823 ~ 0.9862 in) 24.85 mm (0.9783 in) 0.03 mm (0.0012 in)
Timing chain: Model/number of links Tensioning system	RH2015/130 Automatic
Valves, valve seats, valve guides: Valve clearance (cold) Intake Exhaust	0.11 ~ 0.20 mm (0.0043 ~ 0.0079 in) 0.21 ~ 0.30 mm (0.0083 ~ 0.0118 in)

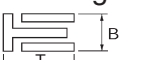
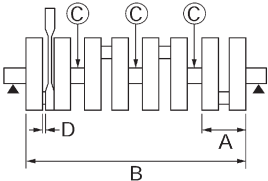


Model	RXW10J, RXW10SJ
Valve dimensions: Valve head diameter A Intake Exhaust  Head Diameter Valve face width B Intake Exhaust  Face Width Valve seat width C Intake Exhaust  Seat Width Valve margin thickness D Intake Exhaust  Margin Thickness Valve stem diameter Intake <Limit> Exhaust <Limit> Valve guide inside diameter Intake <Limit> Exhaust <Limit> Valve-stem-to-valve-guide clearance Intake <Limit> Exhaust <Limit> Valve stem runout limit  Valve seal width Intake Exhaust	22.9 ~ 23.1 mm (0.9016 ~ 0.9094 in) 24.4 ~ 24.6 mm (0.9606 ~ 0.9685 in) 1.76 ~ 2.90 mm (0.0693 ~ 0.1142 in) 1.76 ~ 2.90 mm (0.0693 ~ 0.1142 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in) 0.5 ~ 0.9 mm (0.020 ~ 0.035 in) 0.5 ~ 0.9 mm (0.020 ~ 0.035 in) 3.975 ~ 3.900 mm (0.1565 ~ 0.1535 in) 3.945 mm (0.1553 in) 4.460 ~ 4.475 mm (0.1756 ~ 0.1762 in) 4.43 mm (0.1744 in) 4.000 ~ 4.012 mm (0.1575 ~ 0.1580 in) 4.05 mm (0.1594 in) 4.500 ~ 4.512 mm (0.1772 ~ 0.1776 in) 4.55 mm (0.1791 in) 0.010 ~ 0.037 mm(0.0004 ~ 0.0015 in) 0.08 mm (0.0031 in) 0.025 ~ 0.052 mm (0.0010 ~ 0.0020 in) 0.10 mm (0.0039 in) 0.01 mm (0.0004 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in)



Model	RXW10J, RXW10SJ
Valve spring: Free length Intake 38.90 mm (1.53 in) Exhaust 40.67 mm (1.60 in) Installed length (valve closed) Intake 34.50 mm (1.36 in) Exhaust 35.00 mm (1.38 in) Compressed spring force (installed) Intake 82 ~ 96 N (8.2 ~ 9.6 kg, 18.1 ~ 21.2 lb) Exhaust 110 ~ 126 N (11.0 ~ 12.6 kg, 24.3 ~ 27.8 lb) Spring tilt Intake 2.5°/1.7 mm (0.067 in) Exhaust 2.5°/1.8 mm (0.071 in) Winding direction (top view) Intake Clockwise Exhaust Clockwise 	
Valve lifter: Valve lifter outside diameter Intake 19.982 ~ 19.988 mm (0.7867 ~ 0.7869 in) <Limit> 19.957 mm (0.7857 in) Exhaust 19.488 ~ 22.482 mm (0.7672 ~ 0.8851 in) <Limit> 19.463 mm (0.7663 in) Valve lifter hole inside diameter Intake 20.000 ~ 20.018 mm (0.7874 ~ 0.7881 in) <Limit> 20.048 mm (0.7893 in) Exhaust 22.500 ~ 22.518 mm (0.8853 ~ 0.8865 in) <Limit> 22.548 mm (0.8877 in)	
Piston: Piston size (D) 73.955 ~ 73.970 mm (2.9116 ~ 2.9122 in) Measuring point (H) 5 mm (0.20 in) Piston to-cylinder clearance 0.030 ~ 0.055 mm (0.0012 ~ 0.0022 in) <Limit> 0.12 mm (0.0047 in) Piston pin bore off set 0.5 mm (0.0197 in) Off-set direction Intake side Piston pin bore inside diameter 17.002 ~ 17.013 mm (0.6694 ~ 0.6698 in) 	



Model	RXW10J, RXW10SJ
Piston pin: Piston pin outside diameter Piston pin length Piston pin to piston pin bore clearance <Limit>	16.991 ~ 17.000 mm (0.6689 ~ 0.6693 in) 51.4 ~ 51.5 mm (2.0236 ~ 2.0276 in) 0.002 ~ 0.022 mm (0.00008 ~ 0.0009 in) 0.072 mm (0.0028 in)
Piston ring: Sectional sketch Top ring  Ring type Dimensions (B × T) 2nd ring  Ring type Dimensions (B × T) Oil ring  Dimensions (B × T) End gap (installed) Top ring 2nd ring Oil ring Side clearance (installed) Top ring 2nd ring	Barrel 0.90 × 2.75 mm (0.035 × 0.108 in) Taper 0.8 × 2.8 mm (0.031 × 0.110 in) 1.5 × 2.6 mm (0.059 × 0.101 in) 0.32 ~ 0.44 mm (0.010 ~ 0.020 in) 0.43 ~ 0.58 mm (0.017 ~ 0.023 in) 0.10 ~ 0.35 mm (0.004 ~ 0.0014 in) 0.030 ~ 0.065 mm (0.0012 ~ 0.0026 in) 0.020 ~ 0.055 mm (0.0008 ~ 0.0022 in)
Connecting rod: Crankshaft-pin-to-big-end-bearing clearance Bearing color code	0.016 ~ 0.040 mm (0.0006 ~ 0.0016 in) -1 = Violet 0 = White 1 = Blue 2 = Black 3 = Brown
Crankshaft:  Width A Width B Crankshaft runout C Big end side clearance D Crankshaft-journal-to-crankshaft-journal-bearing clearance Bearing color code	52.40 ~ 57.25 mm (2.063 ~ 2.254 in) 300.75 ~ 302.65 mm (11.84 ~ 11.92 in) 0.03 mm (0.0012 in) 0.160 ~ 0.262 mm (0.006 ~ 0.010 in) 0.004 ~ 0.028 mm (0.0002 ~ 0.0011 in) -1 = Violet 0 = White 1 = Blue 2 = Black 3 = Brown



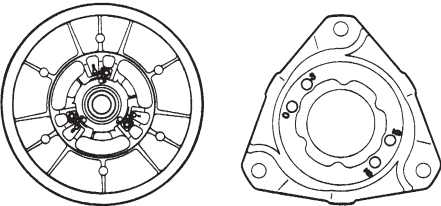
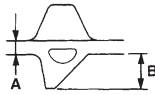
Model	RXW10J, RXW10SJ
Carburetor: Type/Quantity Manufacturer I.D. mark Main jet (M.J) Main air jet (M.A.J) Jet needle (J.N) Needle jet (N.J) Pilot jet (P.J) Pilot air jet (P.A.J.1) Pilot outlet (P.O) Bypass 1 (B.P.1) Bypass 2 (B.P.2) Bypass 3 (B.P.3) Pilot screw (P.S) Throttle valve (Th.V) Valve seat size (V.S) Starter jet (G.S) Float height (F.H) Fuel level (below the line on the float chamber) Engine idle speed	BSR37/4 MIKUNI 8FA101 #135 #120 5DHP50-53-3 P4M #17.5 #140 1.0 0.8 0.8 0.8 Approx 2 #115 1.5 #75 11 ~ 15 mm (0.43 ~ 0.59 in) 3.0 ~ 4.0 mm (1.118 ~ 0.157 in) 1,350 ± 100 r/min (1,250 ~ 1,450 r/min)
Fuel pump: Type Manufacturer	Diaphragm 8FA (MIKUNI)
Oil filter: Oil filter type Bypass valve opening pressure	Cartridge (paper) 78 ~ 118 kPa (0.78 ~ 1.18 kg/cm ² , 11.1 ~ 16.8 psi)
Oil pump: Oil pump type Inner-rotor-to-outer-rotor-tip clearance Outer-rotor-to-oil-pump-housing clearance Max. impeller shaft tilt <Limit> Relief valve operating pressure Oil pressure (hot)	Trochoidal 0.09 ~ 0.15 mm (0.004 ~ 0.006 in) 0.03 ~ 0.08 mm (0.001 ~ 0.003 in) 0.15 mm (0.0059 in) 0.072 mm (0.0028 in) 430 ~ 550 kPa (4.3 ~ 5.5 kg/cm ² , 61.2 ~ 78.2 psi) 50 kPa (0.5 kg/cm ² , 7.1 psi) at 1,450 r/min
Cooling system: Filler cap opening pressure Water pump type Reduction ratio Coolant type Coolant mixing ratio (coolant: water) Capacity	95 ~ 125 kPa (0.95 ~ 1.25 kg/cm ² , 14 ~ 18 psi) Single-suction centrifugal pump (Impeller type) 37/31 × 23/18 (1.525) High quality silicate-free ethylene glycol antifreeze containing corrosion inhibitors 3 : 2 (60% : 40%) 4.7 L (4.14 Imp qt, 4.97 US qt)



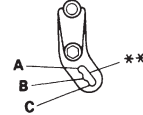
POWER TRAIN

Model	RXW10J, RXW10SJ
Transmission: Type Range of ratio Engagement speed r/min Shift r/min Sheave distance Sheave offset	V-belt automatic 3.8 ~ 1.0 : 1 3,600 ± 200 r/min (3,400 ~ 3,800 r/min) 10,250 ± 250 r/min (10,000 ~ 10,500 r/min) 268.5 ± 1.5 mm (10.57 ± 5.91 in) (267 ~ 270 mm (10.51 ~ 10.63 in)) 15 ± 1.5 mm (0.59 ± 5.91 in) (13.5 ~ 16.5 mm (0.53 ~ 0.65 in))
V-belt: Part number/Manufacturer Circumference Width "A" Wear limit "B"	8DN-17641-00/MITSUBOSHI 1,129 ~ 1,137 mm (44.4 ~ 44.8 in) 34.5 mm (1.36 in) 32.5 mm (1.28 in)
	
Primary sheave spring: Part number Color code Diameter Wire diameter Preload Spring rate Number of coils Free length Set length	90501-582L1 Yellow – Silver – Yellow 60 mm (2.36 in) 5.8 mm (0.228 in) 343 N (35 kg, 77 lb) 24.5 N/mm (2.50 kg/mm, 140 lb/in) 4.92 87.4 mm (3.44 in) 73.4 mm (2.89 in)
Primary sheave weight arm: Part number (with bush) Weight (without bush and rivets)	8FA-17605-10 63.8 g (2.25 oz)
Rivet: Outer Part number Material Size Quantity Hole quantity Inner Part number Material Size Quantity Hole quantity	90269-06006 Steel 17.2 mm (0.677 in) with-hole 3 3 90261-06033 Steel 17.2 mm (0.677 in) with-hole 3 3



Model	RXW10J, RXW10SJ
Secondary sheave spring: Part number Color code Outside diameter Wire diameter Hole position Sheave side-spring side (twist angle)  Spring rate Number of coils Free length Torque cam angle	90508-60007 White 69.5 mm (2.736 in) 6 mm (0.236 in) 3-3 (60°) 13.45 N/mm (1.372 kg/mm, 76.84 lb/in) 5.19 75 mm (2.95 in) 51-43°
Drive chain: Type Number of links Secondary reduction ratio	Borg Warner Automotive 23RH303-70ASM 70L 38/23 (1.65)
Track: Part number Width Length Pitch Number of links Thickness "A" Height "B"  Track deflection at 100 N (10 kg, 22 lb)	8FG-47110-00 381 mm (15.0 in) 3,456 mm (136.1 in) 64 mm (2.52 in) 54 5.1 mm (0.20 in) 36.9 mm (1.45 in) 25 ~ 30 mm (0.98 ~ 1.18 in)
Slide rail suspension (Rear suspension): Center travel Rear travel Suspension spring rate Center Rear Suspension wire diameter Center Rear	221 mm (8.70 in) 298 mm (11.73 in) 28 – 50 N/mm (2.8 – 5.0 kg/mm, 157 – 280 lb/in) 23 – 42 N/mm (2.3 – 4.3 kg/mm, 131 – 240 lb/in) 8.8 mm (0.346 in) 10.6 mm (0.417 in)



Model	RXW10J, RXW10SJ
Suspension setting position: Hook setting length *(Standard)  (Maximum) (Minimum) Full rate adjusting position ** 	$15 \pm 0.5 \text{ mm}$ ($0.59 \pm 0.02 \text{ in}$) 35 mm (1.37 in) 10 mm (0.40 in) B
Shock absorber: Damping force Center Extension Compression Rear Extension Compression	$910 \text{ N}/0.3 \text{ m/s}$ (93 kg/0.3 m/s, 204 lb/0.3 m/s) $1,800 \text{ N}/0.3 \text{ m/s}$ (183 kg/0.3 m/s, 404 lb/0.3 m/s) $2,050 \text{ N}/0.3 \text{ m/s}$ (209 kg/0.3 m/s, 461 lb/0.3 m/s) $1,350 \text{ N}/0.3 \text{ m/s}$ (138 kg/0.3 m/s, 303 lb/0.3 m/s)
Slide runner: Thickness Wear limit	17.8 mm (0.70 in) 10 mm (0.4 in)
Track sprocket wheel: Material Number of teeth	High molecular weight polyethylene 9 T
Rear guide wheel: Material Outside diameter	High molecular weight polyethylene with rubber 178 mm (7.01 in)
Brake: Pad thickness Pad wear limit Pad to disk clearance Disc outside diameter Disc minimum thickness	13 mm (0.51 in) 7.5 mm (0.30 in) $0.025 \sim 0.115 \text{ mm}$ (0.001 ~ 0.005 in) 220 mm (8.66 in) 5.0 mm (0.20 in)



CHASSIS

Model	RXW10J, RXW10SJ
Frame: Frame material Seat height Luggage box location	Aluminum 680 mm (26.8 in) Front
Steering: Lock-to-lock angle (left) (right) Ski alignment Toe-out size Caster angle	30.0° (R ski) 34.7° (L ski) 34.7° (R ski) 30.0° (L ski) Toe-out 0 ~ 15 mm (0 ~ 0.59 in) 23°
Ski: Ski material Length Width	Plastic 1,020 mm (40.2 in) 132.0 mm (5.20 in)
Ski suspension (Front suspension): Type Travel Spring type Spring rate Wire diameter	Double wishbone system 221 mm (8.70 in) Coil spring 21 N/mm (2.1 kg/mm, 118 lb/in) 8.2 mm (0.323 in)
Shock absorber: damping force Extension Compression	1,300 N/0.3 m/s (133 kg/0.3 m/s, 292 lb/0.3 m/s) 610 N/0.3 m/s (62 kg /0.3 m/s, 137 lb/0.3 m/s)



ELECTRICAL

Model	RXW10J, RXW10SJ
Voltage	12 V
Ignition system: Ignition timing (B.T.D.C.) Advanced type	5° at 1,350 r/min Digital type
Ignition coil: Model/Manufacturer Primary coil resistance Secondary coil resistance	F6T54973/MITSUBISHI 0.16 ~ 0.22 Ω at 20°C (68°F) 5.0 ~ 6.8 kΩ at 20°C (68°F)
Charging system: Type Nominal output	AC magneto 14 V/30 A at 5,000 r/min
DC-CDI: Magneto model/Manufacturer Standard Pickup coil resistance (color code) Stator coil resistance (color code) CDI unit model/Manufacturer	F4T47371/MITSUBISHI 14 V 30 A, 420 W at 5,000 r/min 189 ~ 231 Ω at 20°C (68°F) (Gray – Black) 0.19 ~ 0.24 Ω at 20°C (68°F) (White – White) F8T39371/MITSUBISHI
Rectifier/regulator: Type Model/Manufacturer No load regulated voltage (DC) Capacity (DC) Withstand voltage	Short circuit type FH001/SHINDENGEN 14.1 ~ 14.9 V 35 A 40 V
Battery: Specific gravity Manufacture Type Ten hour rate amperage	1.32 GS YTX20L-BS 12V-18Ah 18 A
Electric starter system: Type	Constant mesh type
Starter motor: Model/Manufacturer Output Armature coil resistance Continuity check Insulation check Brush Overall length Wear limit Spring pressure Commutator diameter Wear limit Mica undercut	8FA1/MORIC 12 V – 0.95 kW 0.008 ~ 0.010 Ω at 20°C (68°F) More than 100 kΩ at 20°C (68°F) 9.8 mm (0.39 in) 5 mm (0.20 in) 7.36 ~ 11.04 N (736 ~ 1,104 g, 26.0 ~ 38.9 oz) 28.5 mm (1.12 in) 27.5 mm (1.08 in) 1.5 mm (0.059 in)

MAINTENANCE SPECIFICATIONS

SPEC



Model	RXW10J, RXW10SJ	
Starter relay: Model/Manufacturer Amperage rating Coil resistance	MS5F-441/JIDECO 180 A 4.2 ~ 4.6 Ω at 20°C (68°F)	
T.P.S. (throttle position sensor): Model/Manufacturer Resistance	TS67/02-1C/MIKUNI 4 ~ 6 K Ω at 20°C (68°F) (Blue – Black) 0 ~ 4 K Ω at 20°C (68°F) (Yellow – Black)	
Oil level switch: Model/Manufacturer	8FA/ASTI	
Fuel sender: Model/Manufacturer Sender resistance	Full Empty	8FG/NIPPON SEIKI 10 ~ 12 Ω at 20°C (68°F)
		175 ~ 185 Ω at 20°C (68°F)
Headlight relay: Model/Manufacturer Coil resistance	5DM/OMRON 95 ~ 116 Ω at 20°C (68°F)	
Grip warmer: Heater resistance	(left) (right)	1.53 ~ 1.87 Ω at 20°C (68°F) 1.53 ~ 1.87 Ω at 20°C (68°F)
Thumb warmer: Heater resistance	37.0 ~ 45.2 Ω at 20°C (68°F)	
Circuit breaker: Type Amperage for individual circuit Main fuse Headlight fuse Signal fuse Ignition fuse Carburetor heater fuse Reserve fuse Reserve fuse Reserve fuse	Fuse 30 A $\times$ 1 20 A $\times$ 1 10 A $\times$ 1 10 A $\times$ 1 20 A $\times$ 1 30 A $\times$ 1 20 A $\times$ 1 10 A $\times$ 1	
Coolant temperature sensor: Model/Manufacturer Resistance	8CC/MITSUBISHI 5.2 ~ 6.4 k Ω at 0°C (34°F) 0.300 ~ 0.364 k Ω at 80°C (176°F) 0.170 ~ 0.208 k Ω at 100°C (212°F)	
Indicator light	(ON) (OFF)	90 ~ 110°C (194 ~ 230°F) 85 ~ 105°C (185 ~ 221°F)
Speed sensor: Model/Manufacture	8EK/NIPPON SEIKI	
Carburetor heater: Model/Manufacture Wattage Resistance	5FU/NIPPON THERMOSTAT 30 W 6 ~ 10 Ω at 20°C (68°F)	



HIGH ALTITUDE SETTINGS

Altitude \ Temperature	-40°C (-40°F)		-20°C (-4°F)		0°C (32°F)		16°C (60°F)		Idling speed (r/min)
	MJ	PS	MJ	PS	MJ	PS	MJ	PS	
0 ~ 200 m (0 ~ 670 ft)	MJ	PS	#140	STD	MJ	PS	#137.5	STD	1350
200 ~ 1000 m (~ 3300 ft)	MJ	PS	#137.5	STD	MJ	PS	#135	STD	1350
1000 ~ 2000 m (~ 6700 ft)	MJ	PS	#135	1+1/4	MJ	PS	#132.5	1+1/4	1350
2000 ~ 3000 m (~ 10000 ft)	MJ	PS	#132.5	3/4	MJ	PS	#130	3/4	1400

[Production spec] MJ#1, 2, 3, 4:#135 PS:Approx 2 #:Main jet number PS:Pilot screw turns out



TIGHTENING TORQUE

ENGINE

Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Spark plug	13	1.3	9.4	Left-hand thread.
Cylinder head nut (M10 × 1.25) × 2	20 + 121°	2.0 + 121°	14 + 121°	
Cylinder head nut (M10 × 1.25) × 6	20 + 105°	2.0 + 105°	14 + 105°	
Cylinder head nut × 2	20 + 140°	2.0 + 140°	14 + 140°	
Cylinder head bolt	12	1.2	8.7	
Camshaft cap and cylinder head	10	1.0	7.2	
Cylinder head cover	12	1.2	8.7	
Connecting rod and cap	20 + 120°	2.0 + 120°	14 + 120°	
A.C. magneto rotor	130	13.0	94	
Crankshaft and drive gear	75	7.5	54	
Primary reduction gear bearing housing	12	1.2	8.7	
Timing chain tensioner	10	1.0	7.2	
Thermostat housing	10	1.0	7.2	
Water temperature sensor	23	2.3	17	
Timing chain tensioner cap	6	0.6	4.3	
Camshaft and camshaft sprocket	24	2.4	17	
Hose band	2	0.2	1.4	
Water pump	12	1.2	8.7	
Coolant reservoir tank	7	0.7	5.0	Apply LOCTITE®
Pipe	10	1.0	7.2	
Oil cooler	35	3.5	25	
Oil pan	10	1.0	7.2	
Engine mounting adjust bolt	7	0.7	5.1	
Engine mounting nut	65	6.5	47	
Countershaft cover	12	1.2	8.7	
Oil pan drain bolt	30	3.0	22	
Oil filter union bolt	30	3.0	22	
Oil filter	17	1.7	12	
Oil pump	12	1.2	8.7	
Oil pump drive chain guide	10	1.0	7.2	
Oil tank drain bolt	16	1.6	11	
Oil tank and frame (bolt)	10	1.0	7.2	
Oil tank and frame (nut)	19	1.9	14	
Oil gallery bolt	10	1.0	7.2	
Exhaust joint	25	2.5	18	See NOTE.
Muffler band	9	0.9	6.5	
Exhaust pipe	25	2.5	18	
Exhaust sampling bolt	10	1.0	7.2	
Muffler	16	1.6	11	
Exhaust cover	6	0.6	4.3	
Muffler band	20	2.0	14	
Muffler protector	11	1.1	8.0	
Cylinder head stud bolt	10	1.0	7.2	
Crankcase (M9 × 1.5) (1st)	15	1.5	11	
(2nd)	15+ 45~50°	1.5+ 45~50°	11+ 45~50°	
Crankcase (M6 × 1.0)	12	1.2	8.7	Apply LOCTITE®
Countershaft cover	12	1.2	8.7	
A.C. magneto rotor cover	12	1.2	8.7	
Starter clutch	12	1.2	8.7	
Stator coil	10	1.0	7.2	
Starter motor	27	2.7	20	
Pickup coil	6	0.6	4.3	

TIGHTENING TORQUE

SPEC



Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Fuel pump	10	1.0	7.2	
Fuel pump stay	10	1.0	7.2	

NOTE:

1. First, tighten the bolt to approximately 15 Nm (1.5 m•kg, 11 ft•lb) with a torque wrench, then loosen the bolt completely.
2. Retighten the bolt to 15 Nm (1.5 m•kg, 11 ft•lb), and tighten another 45 ~ 50° with a angle gauge.



POWER TRAIN

Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Primary sheave (1st)	120	12	85	Tighten the bolt in two stages. See NOTE. Left-hand thread. Apply LOCTITE®
(2nd)	60	6.0	43	
Spider and sliding sheave	200	20.0	145	
Primary sheave cap and sliding sheave	14	1.4	10	Apply LOCTITE®
Roller and weight (primary sheave)	6	0.6	4.3	
Secondary sheave	64	6.4	46	
Stopper (secondary sheave)	7	0.7	5.1	
Spring seat (secondary sheave)	23	2.3	17	
Bolt (secondary sheave clearance)	10	1.0	7.2	
Drive sprocket	90	9.0	65	
Locknut chain tensioner	24	2.4	17	
Chain housing and frame	48	4.8	35	
Driven sprocket	48	4.8	35	
Drain bolt (drive chain housing)	16	1.6	12	Apply LOCTITE®
Chain housing cover	24	2.4	17	
Shift lever assembly	10	1.0	7.2	
Lever and drive chain housing cover	10	1.0	7.2	
Shaft (reverse drive gear)	10	1.0	7.2	
Reverse driven gear	48	4.8	35	
Counter gear	10	1.0	7.2	
Spacer set screw	6	0.6	4.3	
Chain housing and brake caliper	48	4.8	35	
Bleed screw (brake caliper)	6	0.6	4.3	
Brake hose union bolt (caliper side)	30	3.0	22	Apply LOCTITE®
Brake hose union bolt (brake master cylinder side)	30	3.0	22	
Bearing set screw (Secondary shaft)	8	0.8	5.8	
Parking brake	13	1.3	9.4	
Stopper band	4	0.4	2.9	
Hook and front pivot arm	16	1.6	12	
Wheel bracket and sliding frame	24	2.4	17	
Bracket bolt (front)	48	4.8	35	
Bracket bolt (rear)	30	3.0	22	
Front pivot arm and front pivot arm bracket	72	7.2	52	
Front pivot arm bracket and sliding frame	72	7.2	52	Apply LOCTITE®
Suspension wheel	72	7.2	52	
Rear axle	75	7.5	54	
Slide rail suspension mounting bolt (M10)	72	7.2	52	
Rear pivot arm and bracket	24	2.4	17	
Shock absorber and rear pivot arm	49	4.9	35	
Rear pivot arm and rod	49	4.9	35	
Rear suspension bracket and rod	49	4.9	35	
Shock absorber and rear suspension bracket	49	4.9	35	
Control rod and sliding frame	72	7.2	52	
Control rod bolt	32	3.2	23	Apply LOCTITE®
Shock absorber and front pivot arm	49	4.9	35	
Shock absorber and front suspension bracket	49	4.9	35	
Rear pivot arm bracket	72	7.2	52	
Rear bracket and suspension wheel	72	7.2	52	

TIGHTENING TORQUE

SPEC



Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Wheel bracket shaft and sliding frame	72	7.2	52	Apply LOCTITE®
Set bolt (front axle)	9	0.9	6.5	
Speed sensor	20	2.0	14	
Gear unit (speed sensor)	40	4.0	29	
Bearing nut	55	5.5	40	

NOTE:

Tightening steps:

1. Tighten the bolt to a torque at 120 Nm (12.0 m•kg, 85 ft•lb).
2. Loosen the bolt completely.
3. Retighten the bolt to a torque of 60 Nm (6.0 m•kg, 43 ft•lb).



CHASSIS

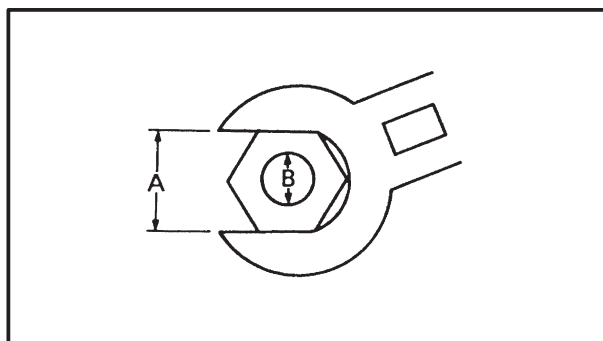
Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Handlebar holder	15	1.5	11	
Steering column (Upper)	23	2.3	17	
Steering column (Lower)	23	2.3	17	
Steering column 2 and steering shaft	35	3.5	25	
Steering shaft and steering column 1	35	3.5	25	
Steering column 1 and relay rod	30	3.0	22	
Relay rod and relay arm	30	3.0	22	
Relay arm and idler arm	35	3.5	25	
Idler arm and tie rod	30	3.0	22	
Tie rod and steering arm	35	3.5	25	
Relay arm	67	6.7	49	
Locknut (relay rod/tie rod)	25	2.5	18	
Ski	48	4.8	35	
Ski runner	19	1.9	14	
Ski column lower bracket	11	1.1	8.0	
Ski and ski handle	11	1.1	8.0	
Shock absorber (upper)	45	4.5	33	
Shock absorber (lower)	45	4.5	33	
Steering arm locknut	35	3.5	25	
Upper arm and frame	37	3.7	27	
Upper arm and knuckle	40	4.0	29	
Lower arm and frame	37	3.7	27	
Lower arm and knuckle	65	6.5	47	
Stabilizer bar and stabilizer arm	11	1.1	8.0	
Stabilizer arm and connecting rod	34	3.4	25	
Connecting rod and lower arm	34	3.4	25	
Frame cross member (front side)	30	3.0	22	
Frame cross member (rear side)	23	2.3	17	
Master cylinder assembly	10	1.0	7.2	
Brake lever adjuster locknut	6	0.6	4.3	
Rear cover	3	0.3	2.2	
Seat and frame	5	0.5	3.6	
Shroud	3	0.3	2.2	



GENERAL TORQUE SPECIFICATIONS

This chart specifies torque for standard fasteners with standard I.S.O. pitch threads. Torque specifications for special components or assemblies are included in the applicable sections of this book. To avoid warpage, tighten multi-fastener assemblies in a crisscross fashion, in progressive stages, until full torque is reached. Unless otherwise specified, torque specifications call for clean, dry threads. Components should be at room temperature.

A (nut)	B (bolt)	General torque specifications		
		Nm	m•kg	ft•lb
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94

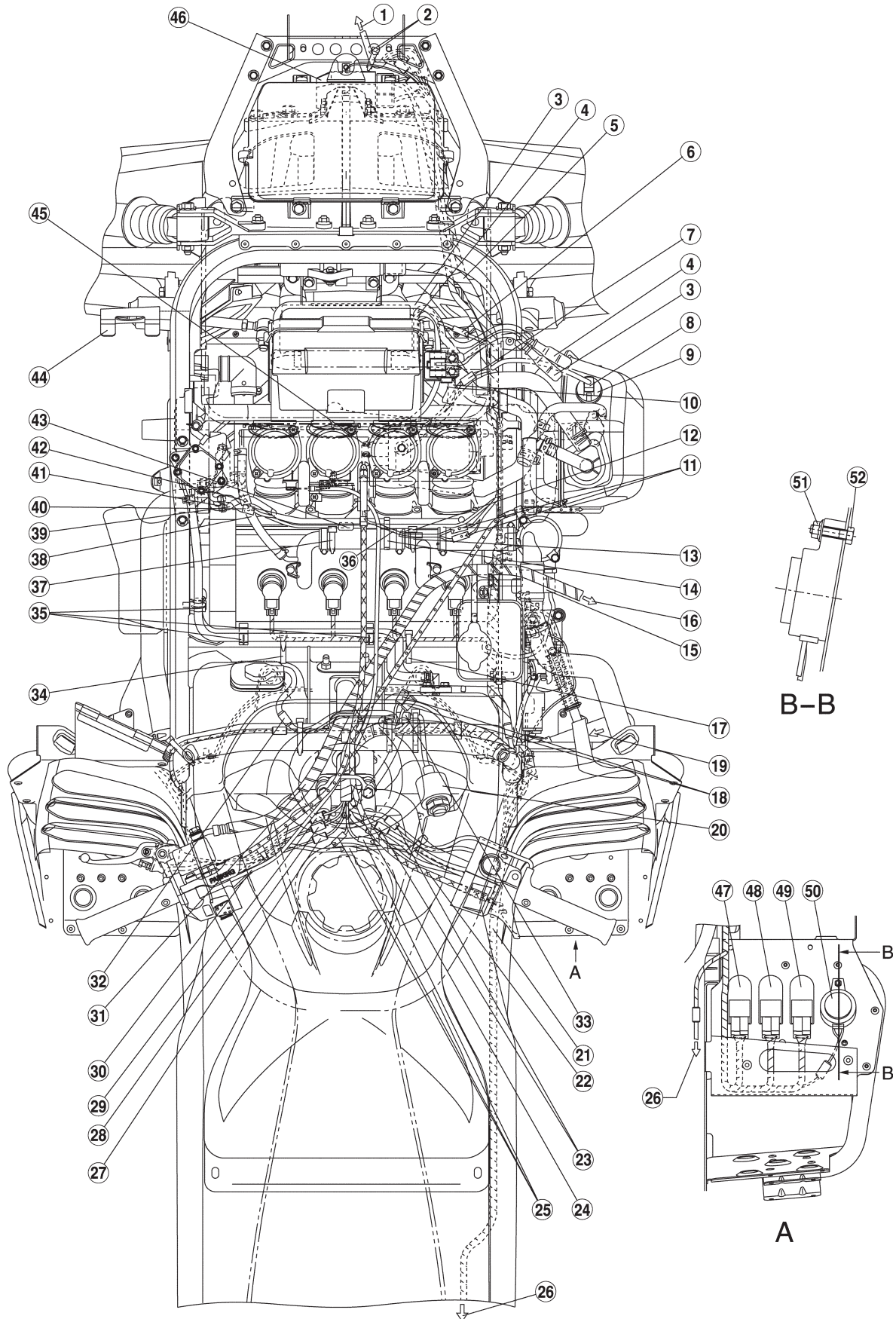


A: Distance across flats

B: Outside thread diameter

DEFINITION OF UNITS

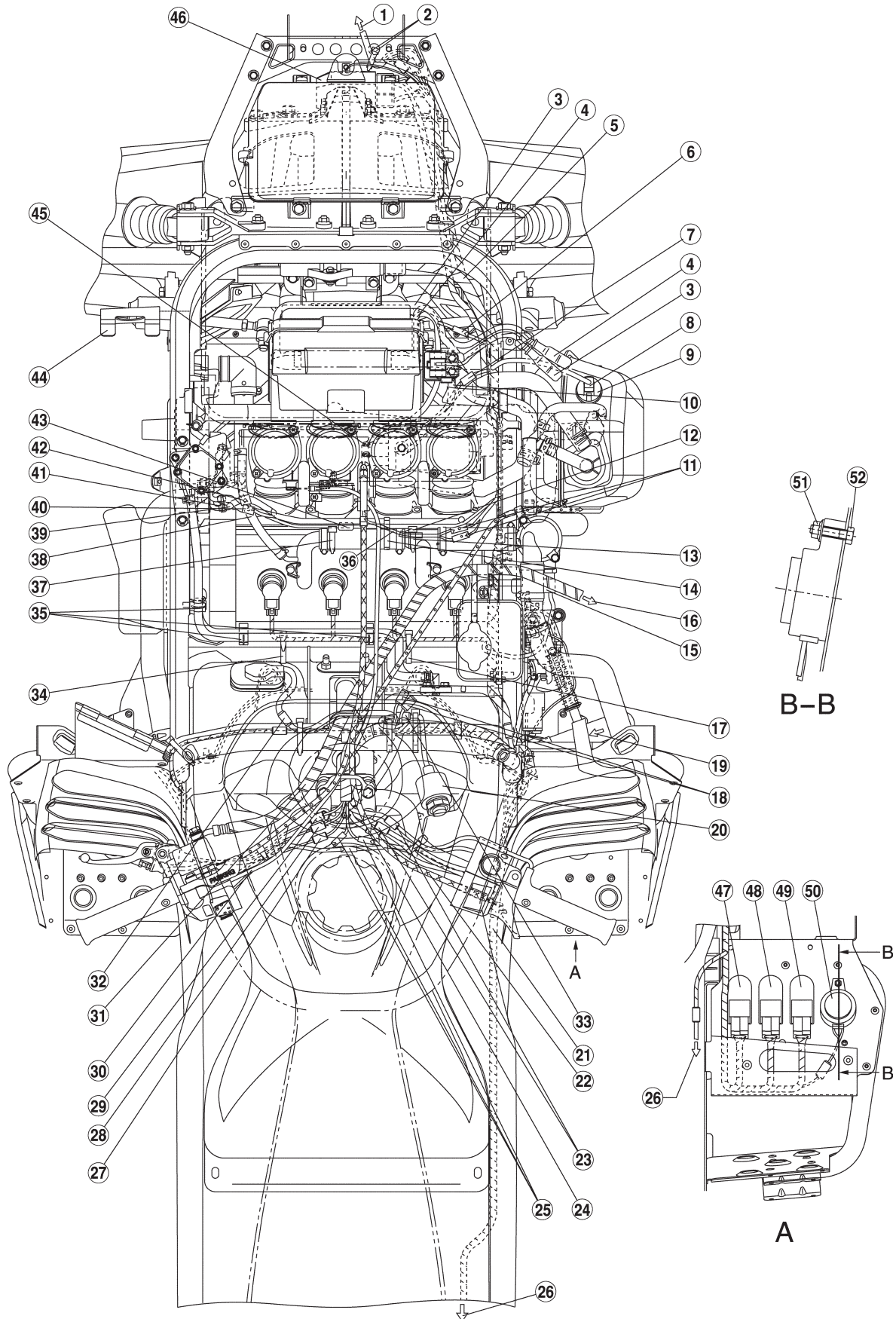
Unit	Read	Definition	Measurement
mm	Millimeter	10^{-3} meter	Length
cm	Centimeter	10^{-2} meter	Length
kg	Kilogram	10^3 gram	Weight
N	Newton	$1 \text{ kg} \times \text{m/sec}^2$	Force
Nm	Newton meter	$\text{N} \times \text{m}$	Torque
m•kg	Meter kilogram	$\text{m} \times \text{kg}$	Torque
Pa	Pascal	N/m^2	Pressure
N/mm	Newtons per millimeter	N/mm	Spring rate
L	Liter	—	Volume or capacity
cm^3	Cubic centimeter	—	Volume or capacity
r/min	Rotations per minute	—	Engine speed





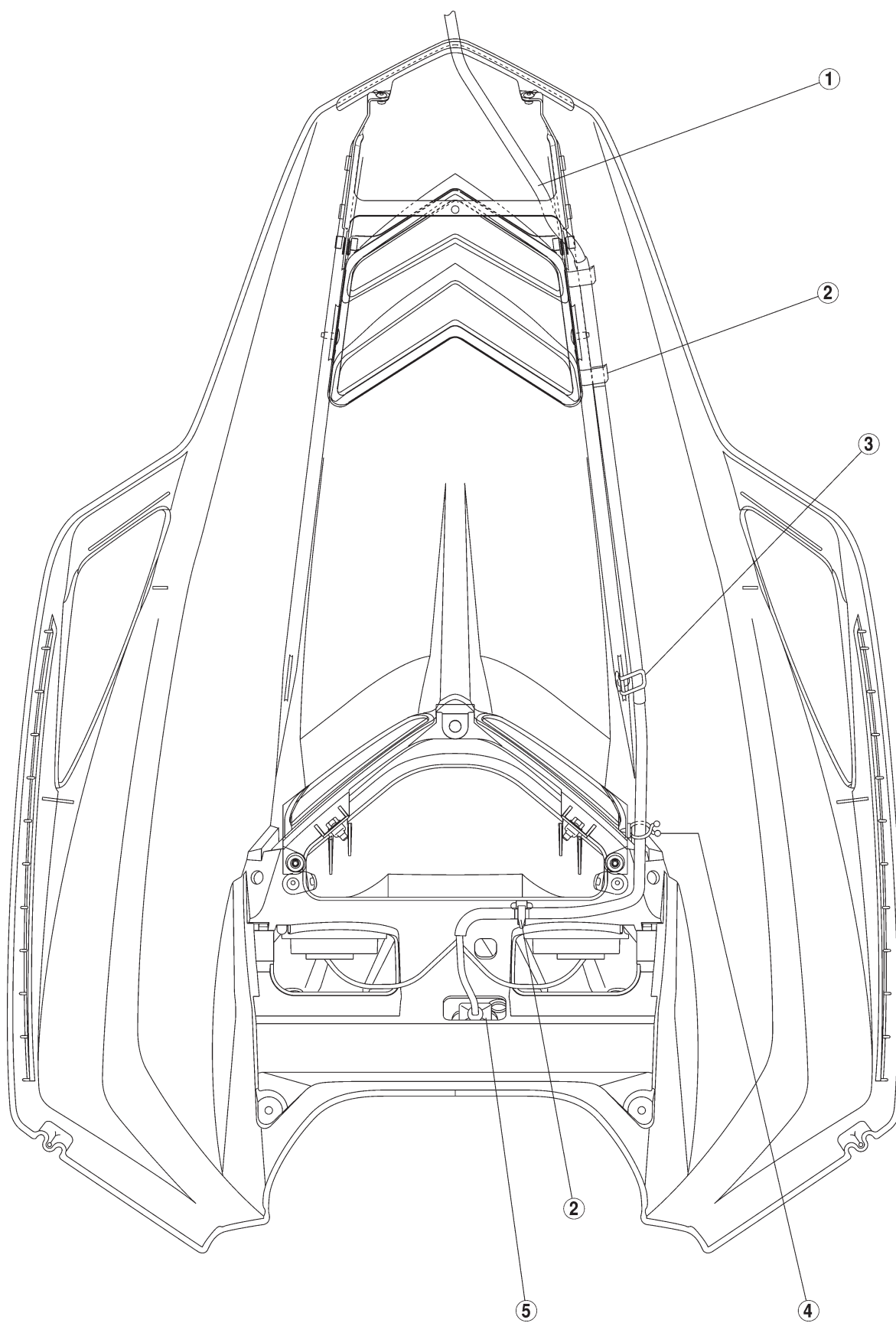
CABLE ROUTING

- ① To the headlight and meter assembly
- ② Clamp the lead at the position of white tape.
- ③ Battery positive lead
- ④ Battery negative lead
- ⑤ Main harness
- ⑥ Negative lead connector
- ⑦ Carburetor heater lead coupler
- ⑧ Oil level switch lead coupler
- ⑨ Oil level switch
- ⑩ Starter motor positive lead (under the battery bracket)
- ⑪ Carburetor switch lead connector
- ⑫ Clamp the throttle position switch lead and carburetor switch lead.
- ⑬ Clamp the coated section of the lead.
- ⑭ Clamp the vacuum hose 2.
- ⑮ Coolant temperature sensor lead coupler
- ⑯ To the brake caliper
- ⑰ Clamp the ignition coil lead.
- ⑱ Connectors
- ⑲ To the heat exchanger
- ⑳ Main switch
- ㉑ Tail/brake light lead coupler
- ㉒ Throttle cable
- ㉓ Right handlebar switch lead coupler
- ㉔ Thumb warmer switch lead coupler
- ㉕ Grip warmer switch lead connector
- ㉖ To the tail/brake light
- ㉗ Headlight beam switch lead coupler
- ㉘ Left handlebar switch lead coupler
- ㉙ Brake light switch lead coupler
- ㉚ Starter cable



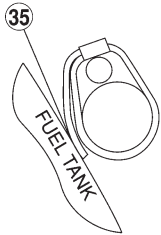
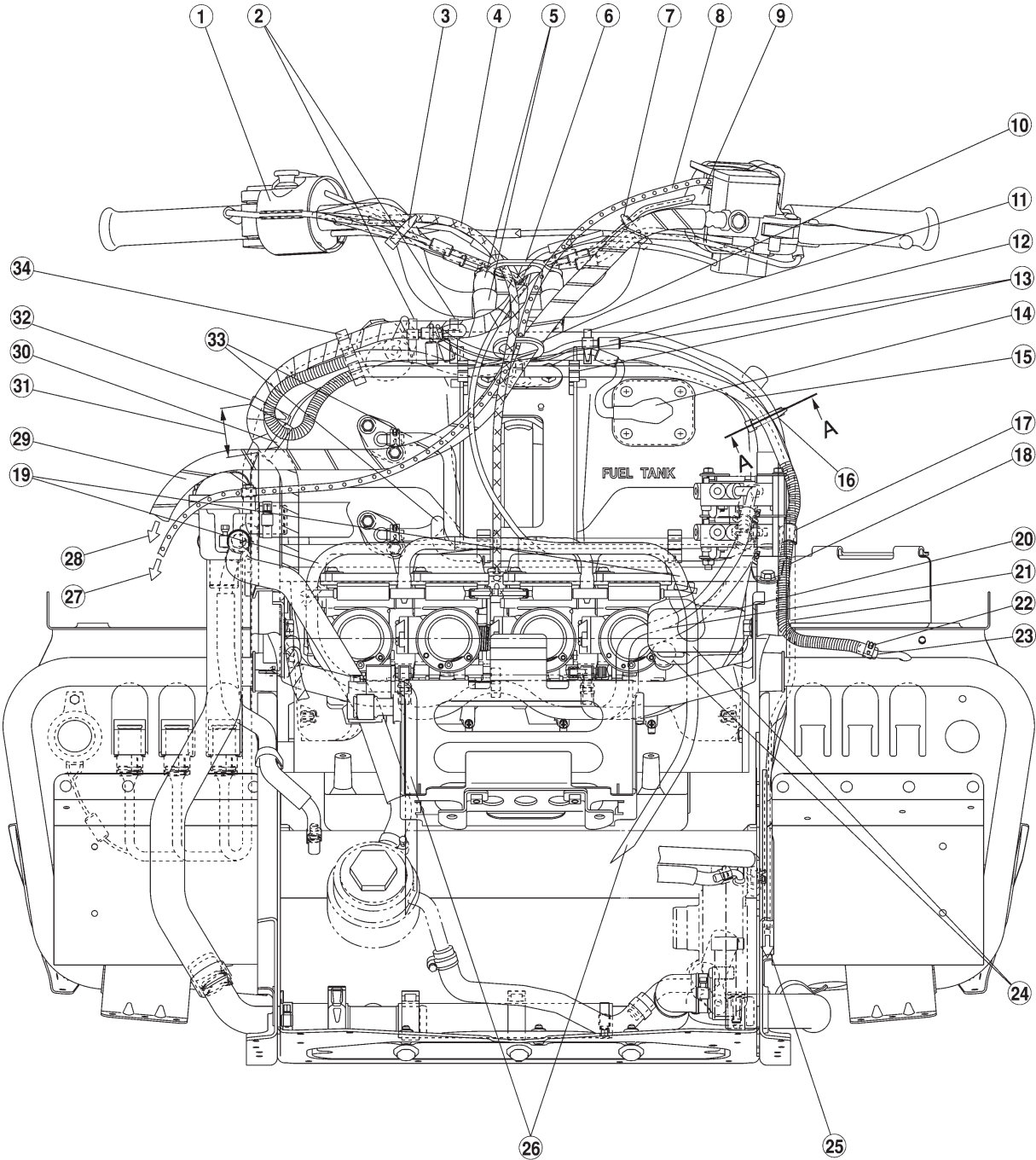


- ③1 Brake hose
- ③2 Fuel sender lead coupler
- ③3 Set the coupler in the rear space of the instrument panel
- ③4 Clamp the ignition coil lead under the fuel hose.
- ③5 Clamp the fuel hose.
- ③6 There should be no slack of leads.
- ③7 Clamp the throttle position switch lead.
- ③8 Route the coolant hose between the upper vacuum hose and lower vacuum hose.
- ③9 Route the vacuum hose under the coolant hose.
- ④0 Route the vacuum hose over the coolant hose.
- ④1 Clamp the coolant hose and vacuum hose.
- ④2 Clamp the coolant hose and vacuum hose 2.
- ④3 Throttle position sensor lead coupler. (under the vacuum hose)
- ④4 Drive guard bracket
- ④5 Connect the battery negative lead to the starter motor mounting bolt.
- ④6 Voltage regulator
- ④7 Carburetor heater relay
- ④8 Headlight relay
- ④9 Main relay
- ⑤0 Back buzzer (RXW10J, RXW10SJ)
- ⑤1 Flange nut
- ⑤2 Hexagon bolt





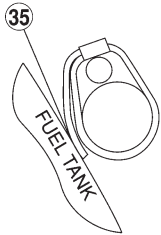
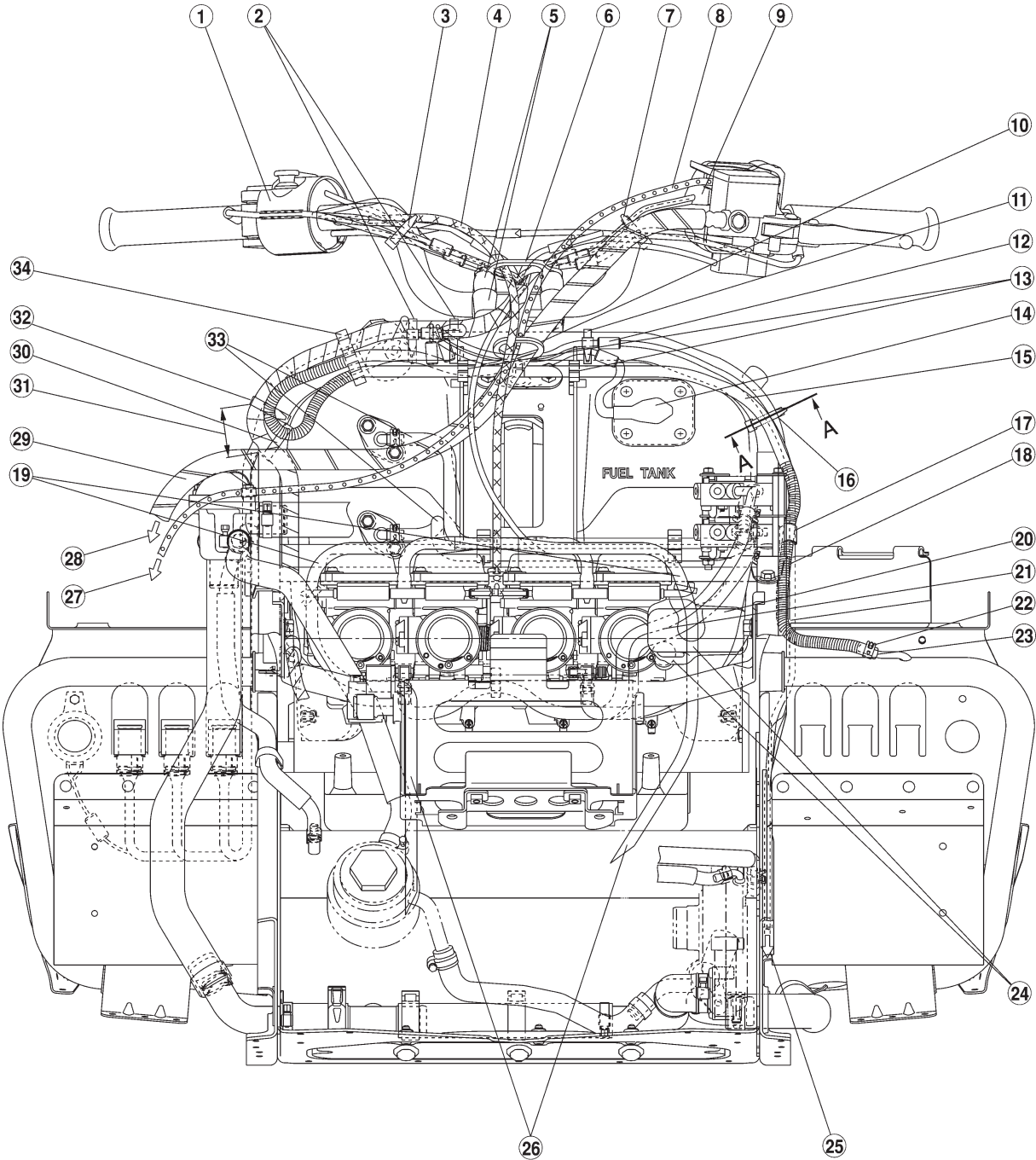
- ① Headlight wire harness
- ② Align it with the positioning tape of the headlight wire harness
- ③ Clamp 1
- ④ Clamp
- ⑤ Meter coupler (Securely fit in the rubber cover)



A-A



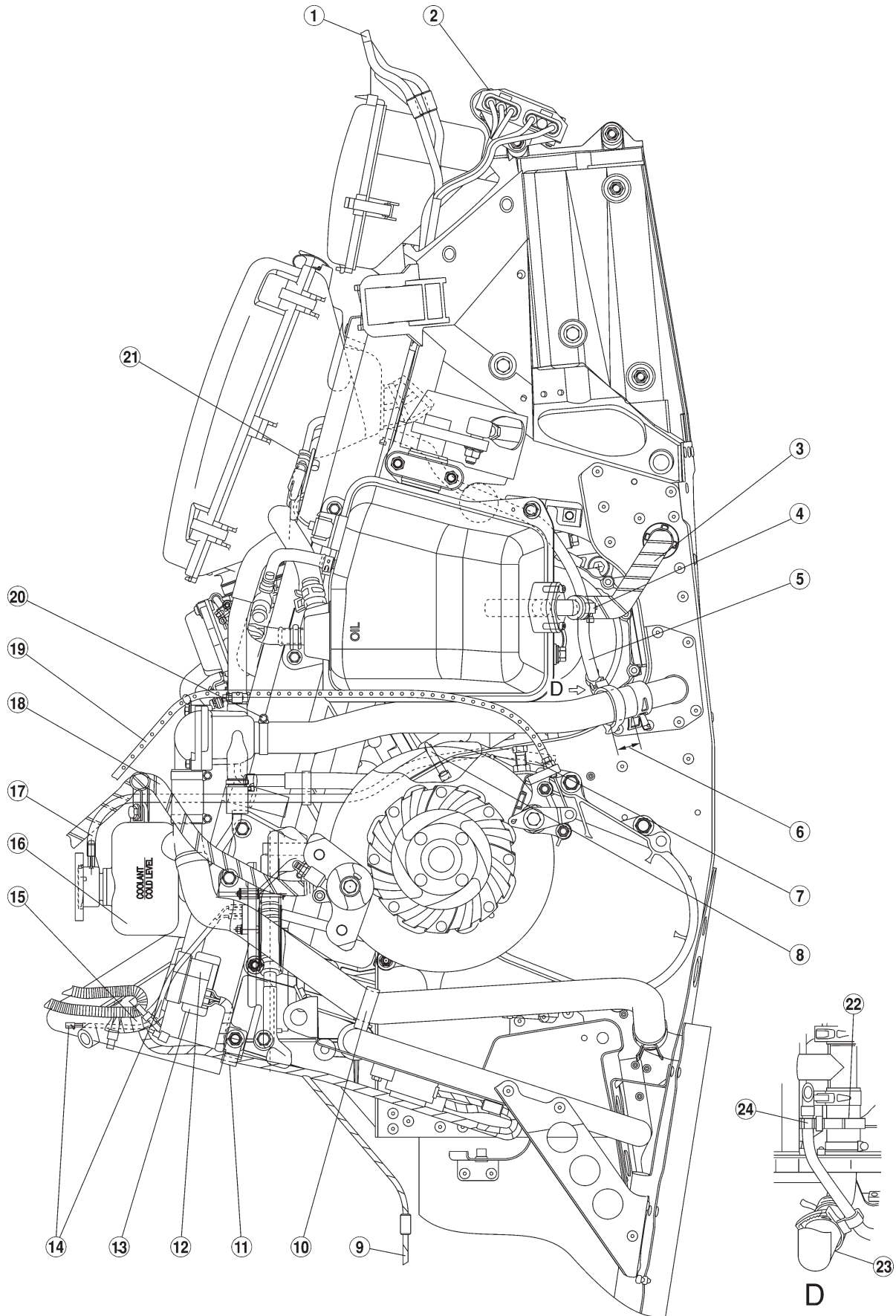
- ① Right handlebar switch
- ② Clamp the main harness, main switch and harness.
- ③ Clamp the grip warmer lead and the right handlebar switch lead.
- ④ Throttle cable
- ⑤ Handlebar holder
- ⑥ Pass all leads and cables through the cable holder. (Except for brake hose and parking brake cable.)
- ⑦ Clamp the tail/brake light lead, headlight beam switch lead and grip warmer lead.
- ⑧ Parking brake cable
- ⑨ Left handlebar switch
- ⑩ Pass the brake hose and the parking brake cable through the cable holder.
- ⑪ Clamp the fuel sender lead and speed sensor lead.
- ⑫ Speed sensor lead coupler
- ⑬ Clamp the fuel tank breather hose.
- ⑭ Fuel sender lead cover
- ⑮ Route the fuel tank breather hose along the frame cross member.
- ⑯ Clamp the speed sensor lead only.
- ⑰ Clamp the compression spring section of the fuel tank breather hose.
- ⑱ Compression spring
- ⑲ Carburetor air vent hose
- ⑳ Breather tank
- ㉑ Pass the fuel hose over the engine oil breather hose.
- ㉒ Point the clip position to the upward.
- ㉓ Insert the fuel tank breather hose until it contacts the projection.
- ㉔ Pass the carburetor air vent hose outside of the engine oil breather hose.
- ㉕ To the speed sensor.



A-A

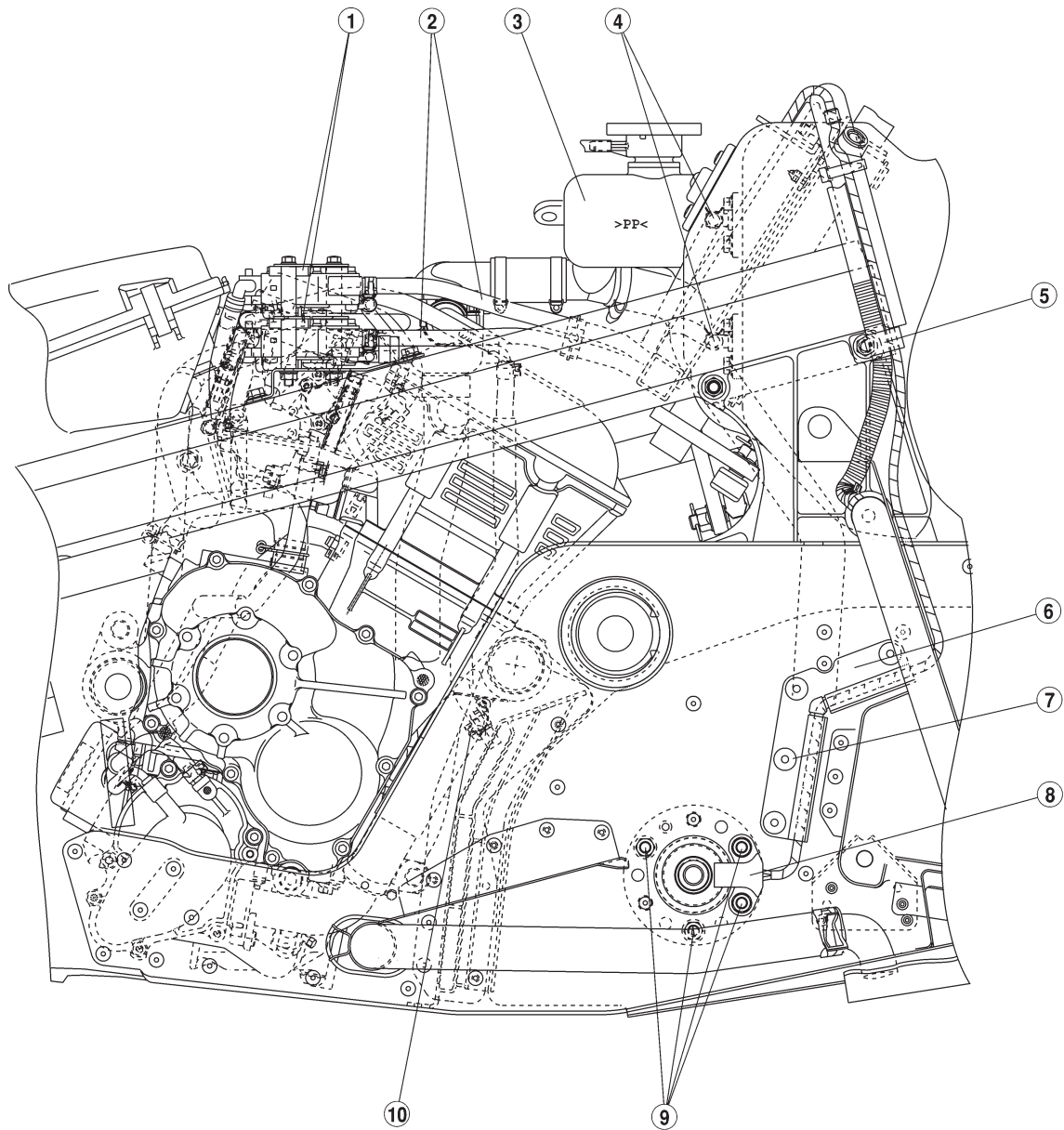


- ②6 Carburetor air vent hose
- ②7 To the parking brake.
- ②8 To the brake caliper
- ②9 Brake hose
- ③0 Clamp the wire harness and fuel tank breather hose from the top.
- ③1 Less than 50 mm (2.0 in).
- ③2 Clamp the wire harness.
- ③3 Fuel hose
- ③4 Clamp the wire harness and fuel tank breather hose from the lower side.
- ③5 Push into the end of clamp between frame cross member and fuel tank.



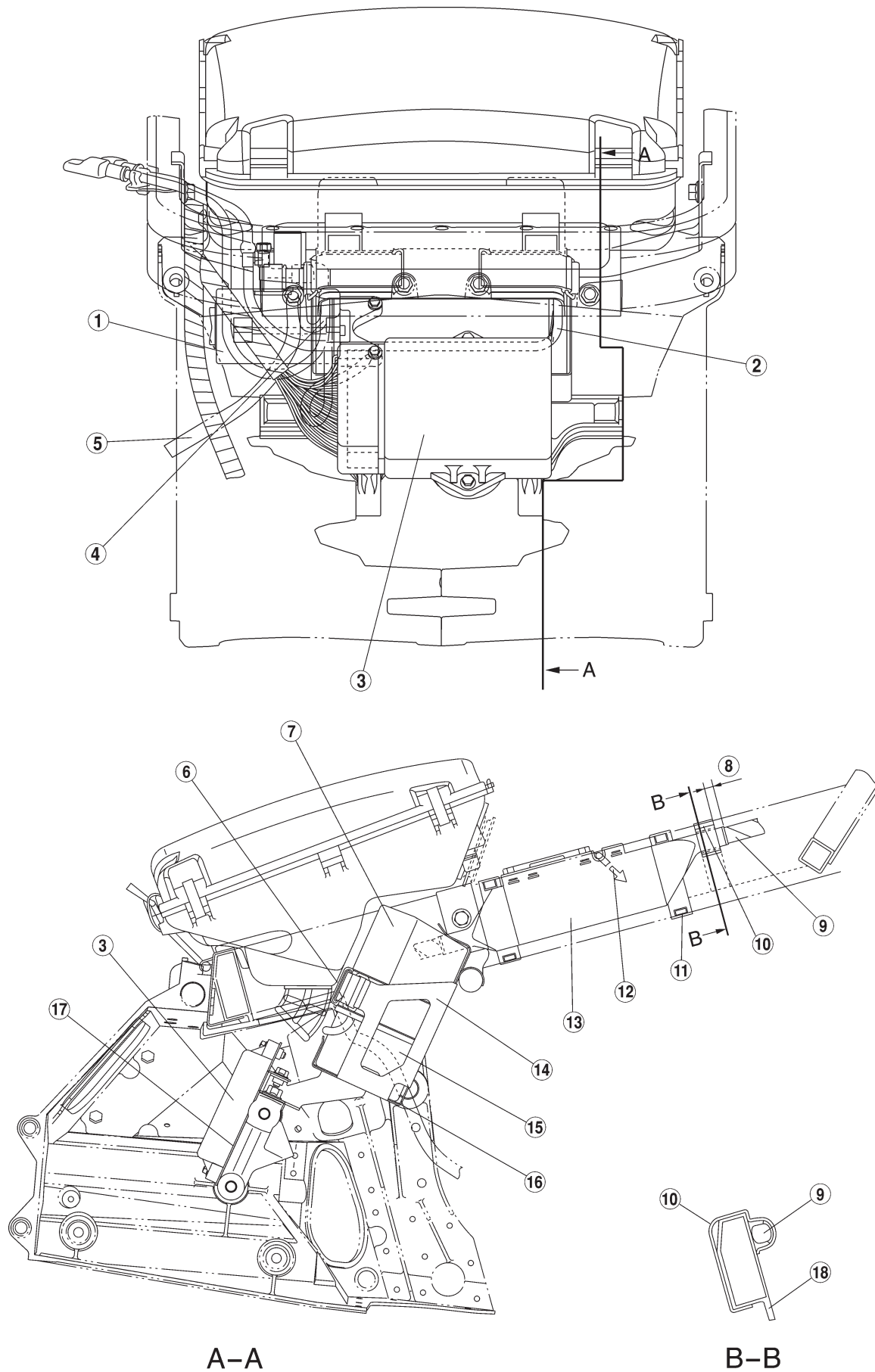


- ① Headlight wire harness
- ② Tighten the frame ground and voltage regulator upper bolt together.
- ③ Engine oil tank hose
- ④ Point the clamp tightening direction to the downward.
- ⑤ Drain hose
- ⑥ Less than 30 mm (1.2 in).
- ⑦ Pass the coolant reservoir tank breather hose through between engine and heat exchanger.
- ⑧ Clamp the hose at the white paint position. Point the clamp position to the front outside.
- ⑨ To the tail/brake light.
- ⑩ Clamp the coolant hose. Point the locked section of the clamp to the outside.
- ⑪ Clamp the wire harness. Tighten the frame cross member and frame together.
- ⑫ Fuse box
- ⑬ Bracket
- ⑭ Connect the gear position switch lead. (For model with the reverse) Fold back the gear position switch lead, and clamp it. (For model without reverse)
- ⑮ Wire harness
- ⑯ Coolant reservoir tank
- ⑰ Coolant reservoir tank breather hose
- ⑱ Brake hose
- ⑲ Parking brake cable
- ⑳ Point the clamp position to the front outside.
- ㉑ Clamp the battery positive lead and negative lead.
- ㉒ Point the clamp position to the downward.
- ㉓ Point the clamp position to the inside.
- ㉔ Clamp the leads before the fixture.





- ① Fuel pump
- ② Fuel hoses
- ③ Coolant reservoir tank
- ④ Point the pawl of clip to the upward.
- ⑤ Clamp the fuel tank breather hose and speed sensor lead.
Tighten the frame cross member and frame.
- ⑥ Wire harness clamp
- ⑦ Rivets
- ⑧ Speed sensor
- ⑨ Nylon nuts
- ⑩ Point the pawl of clip to the downward.





- ① Starter motor
- ② Battery positive lead
- ③ CDI unit
- ④ Battery negative lead
- ⑤ Air box drain hose
- ⑥ Battery band
- ⑦ Battery cover
- ⑧ 0 ~ 5 mm (0 ~ 0.20 in)
- ⑨ Wire harness
- ⑩ Plate cover
- ⑪ Clip it to the frame cross member
- ⑫ To the carburetor.
- ⑬ Wire harness holder
- ⑭ Battery bracket
- ⑮ Battery
- ⑯ Battery seat
- ⑰ CDI unit bracket
- ⑱ Frame cross member

- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Main relay
- ⑤ Fuse (MAIN)
- ⑥ Starter relay
- ⑦ Starter motor
- ⑧ Battery
- ⑨ Engine stop switch
- ⑩ Throttle switch
- ⑪ Carburetor switch
- ⑫ Carburetor heater relay
- ⑬ Carburetor heater
- ⑭ Grip warmer
- ⑮ Thumb warmer
- ⑯ CDI unit
- ⑰ Ignition coil
- ⑱ Spark plug
- ⑲ Coolant temperature sensor
- ⑳ Throttle position sensor
- ㉑ Grip warmer switch
- ㉒ Thumb warmer switch
- ㉓ Body ground
- ㉔ Back buzzer
- ㉕ Gear position switch
- ㉖ Brake light switch
- ㉗ Tail/brake light
- ㉘ Fuse (HEADLIGHT)
- ㉙ Fuse (SIGNAL)
- ㉚ Fuse (CARBURETOR HEATER)
- ㉛ Fuse (IGNITION)
- ㉜ Headlight beam switch
- ㉝ Headlight relay
- ㉞ Headlight
- ㉟ Meter assembly
- ㊱ Tachometer
- ㊲ Meter light
- ㊳ Coolant temperature indicator light
- ㊴ Multi-function meter
- ㊵ Warning light
- ㊶ Hi beam indicator light
- ㊷ Oil level switch
- ㊸ Fuel sender
- ㊹ Speed sensor

COLOR CODE

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

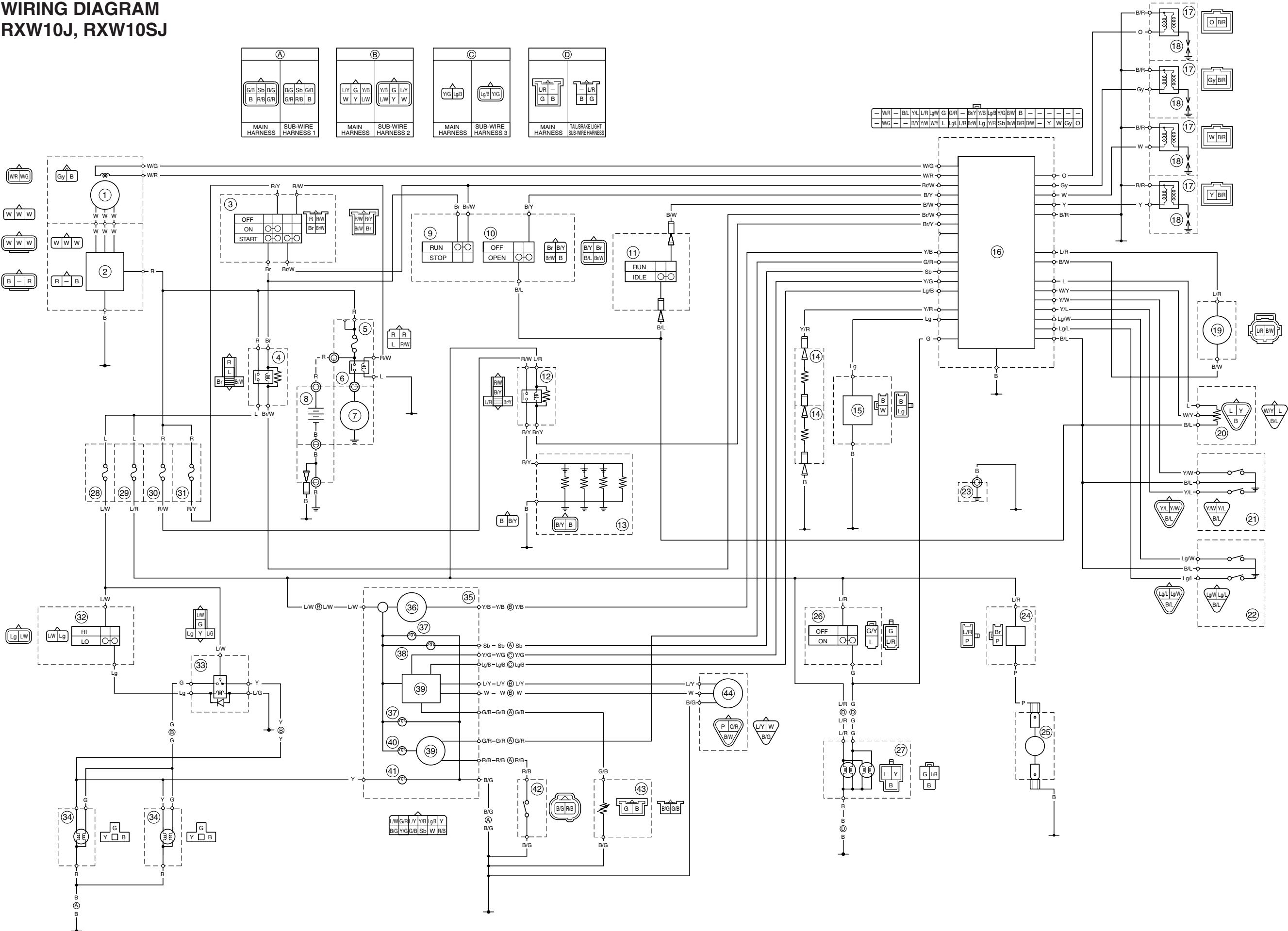


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WIRING DIAGRAM

RXW10J, RXW10SJ





SUPPLEMENTARY SERVICE MANUAL

RX10K
RX10RK/RX10RSK
RXW10K/RXW10SK
RX10MK/RX10MSK

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and new data for the RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK.

For complete information, on service procedures, it is necessary to use this Supplementary Service Manual together with following manual:

**RX10H/RX10SH
RX10MH/RX10MSH
RX10RH/RX10RSH
SERVICE MANUAL:
8FA-28197-10 (981073)
(LIT-12618-02-28)
RXW10J/RXW10SJ
SUPPLEMENTARY SERVICE MANUAL:
8FG-28197-10 (981089)
(LIT-12618-02-33)**

NOTICE

This manual was written by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so it is assumed that persons using this book to perform maintenance and repairs on Yamaha snowmobiles have a basic understanding of the mechanical concepts and procedures inherent in snowmobile repair. Without such knowledge, attempted repairs or service to this model may render it unfit and/or unsafe to use. Yamaha Motor Company, Ltd. is continually striving to improve all models manufactured by Yamaha.

Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha dealers and will, where applicable, appear in future editions of this manual.

**RX10K
RX10RK/RX10RSK
RXW10K/RXW10SK
RX10MK/RX10MSK
SUPPLEMENTARY SERVICE MANUAL**

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HOW TO USE THIS MANUAL

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



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

WARNING

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

CAUTION:

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

NOTE:

A **NOTE** provides key information that can make procedures easier or clearer.

MANUAL FORMAT

All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all inspection, repair, assembly, and disassembly operations.

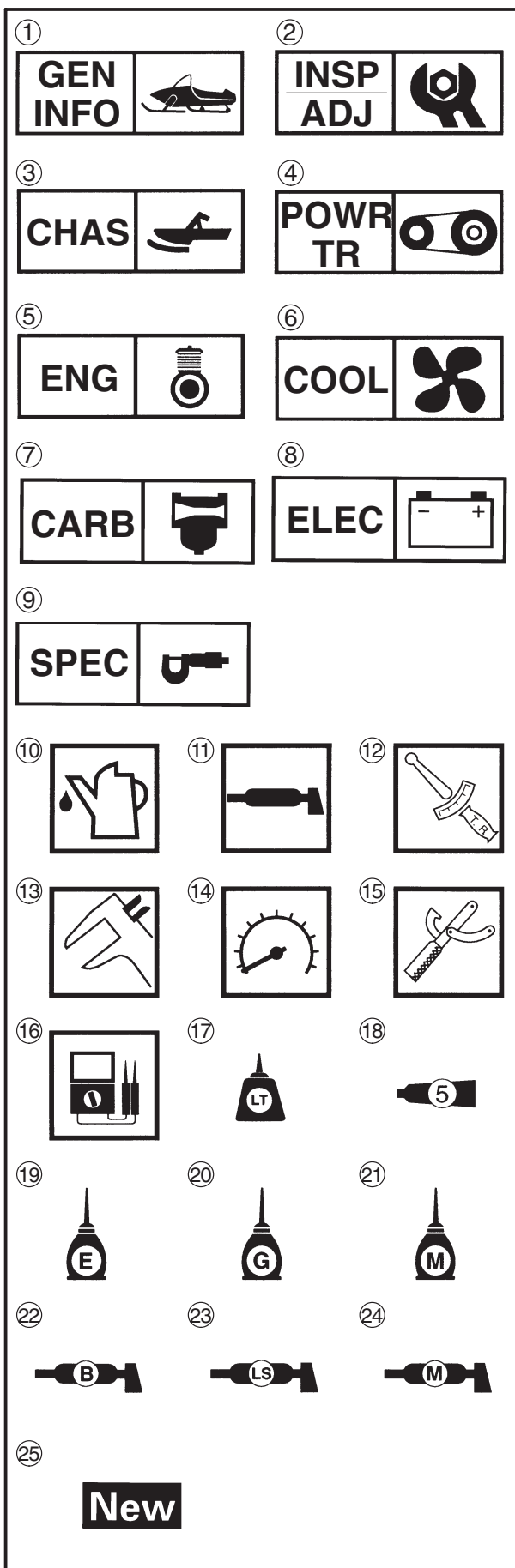
In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required to correct the problem will follow the symbol, e.g.,

• Bearings

Pitting/damage → Replace.

EXPLODED DIAGRAM

Each chapter provides exploded diagrams before each disassembly section to facilitate correct disassembly and assembly procedures.



ILLUSTRATED SYMBOLS (Refer to the illustration)

Illustrated symbols ① to ⑨ are designed as thumb tabs to indicate the chapter's number and content.

- ① General information
- ② Periodic inspections and adjustments
- ③ Chassis
- ④ Power train
- ⑤ Engine
- ⑥ Cooling system
- ⑦ Carburetion
- ⑧ Electrical
- ⑨ Specifications

Illustrated symbols ⑩ to ⑯ are used to identify the specifications which appear.

- ⑩ Filling fluid
- ⑪ Lubricant
- ⑫ Tightening
- ⑬ Wear limit, clearance
- ⑭ Engine speed
- ⑮ Special tool
- ⑯ Ω, V, A

Illustrated symbols ⑰ to ⑳ in the exploded diagram indicate grade of lubricant and location of lubrication point.

- ⑰ Apply locking agent (LOCTITE®)
- ⑱ Apply Yamabond No.5®
- ⑲ Apply engine oil
- ⑳ Apply gear oil
- ㉑ Apply molybdenum disulfide oil
- ㉒ Apply wheel bearing grease
- ㉓ Apply low-temperature lithium-soap base grease
- ㉔ Apply molybdenum disulfide grease
- ㉕ Use new one

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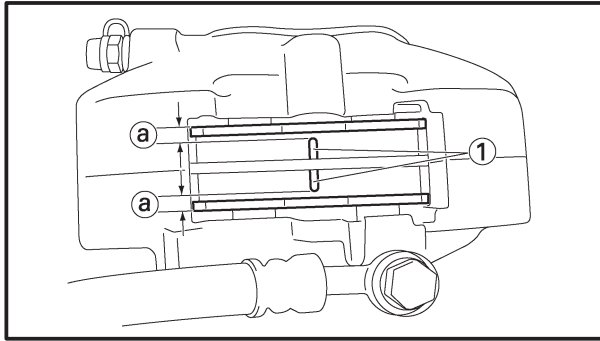
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PERIODIC INSPECTIONS AND ADJUSTMENTS

POWER TRAIN

BRAKE PAD INSPECTION

1. Apply the brake lever.
2. Inspect:
 - Brake pad wear (a)
 - Wear indicator (1) nearly contacts the brake disc → Replace as a set.



Wear limit:
7.5 mm (0.30 in)

2

BRAKE HOSE INSPECTION

1. Inspect:
 - Brake hose
 - Cracks/damage/wear → Replace.
2. Check:
 - Fluid leakage
 - Apply the brake lever several times.
 - Fluid leakage → Replace the defective parts.

AIR BLEEDING (HYDRAULIC BRAKE SYSTEM)

⚠ WARNING

Bleed the brake system in the following cases:

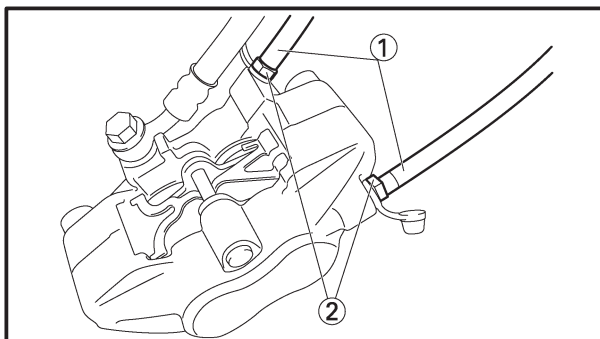
- The system has been disassembled.
- A brake hose is loosened or removed.
- The brake fluid has been very low.
- Brake operation is faulty.

If the brake system is not properly bled a loss of braking performance may occur.

1. Bleed:
 - Brake system

Air bleeding steps:

- Fill the brake master cylinder reservoir with the proper brake fluid.
- Install the diaphragm. Be careful not to spill any fluid or allow the brake master cylinder reservoir to overflow.
- Connect clear plastic hoses (1) tightly to the brake caliper bleed screws (2).
- Place the other ends of the hoses in a container.





- a. Slowly apply the brake lever several times.
- b. Pull the lever in, then hold the lever in position.
- c. Loosen the bleed screws and allow the brake lever to travel towards its limit.
- d. Tighten the bleed screws when the brake lever limit has been reached, then release the lever.
 - Repeat steps (a) to (d) until all of the air bubbles have disappeared from the fluid.
 - Tighten the bleed screws.



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.

- Add brake fluid to the proper level. Refer to “BRAKE FLUID LEVEL INSPECTION”.

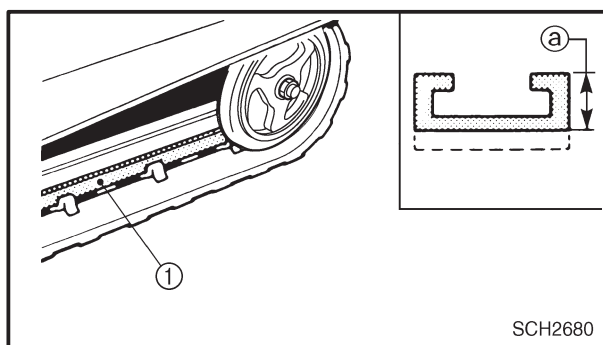
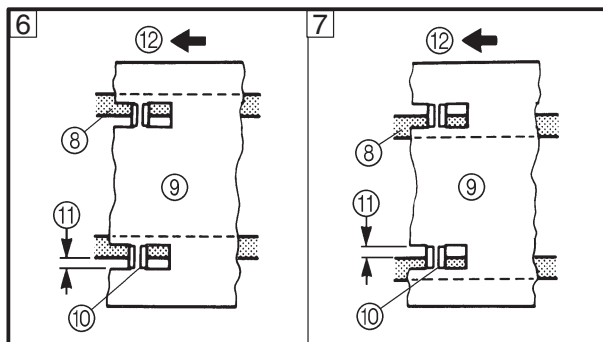
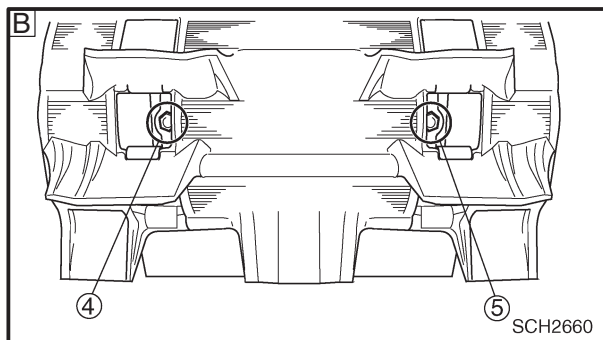
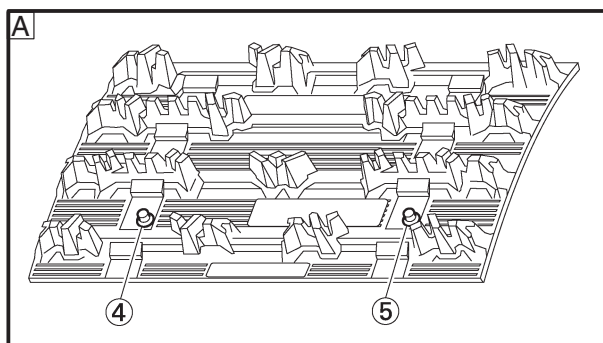


WARNING

After bleeding the brake system, check the brake operation.

TRACK TENSION ADJUSTMENT/ SLIDE RUNNER INSPECTION

**INSP
ADJ**



TRACK TENSION ADJUSTMENT

Track alignment	6 Shifted to right	7 Shifted to left
4 Left adjuster	Turn out	Turn in
5 Right adjuster	Turn in	Turn out

- 8** Slide runner **9** Track
10 Track metal **11** Gap **12** Forward

A RX10K, RX10RK, RX10RSK

B RX10MK, RX10MSK

c. Adjust the track deflection until the specified amount is obtained.

Track deflection	More than specified	Less than specified
4 Left adjuster	Turn in	Turn out
5 Right adjuster	Turn in	Turn out

CAUTION:

The adjusters should be turned an equal amount.

- Recheck the alignment and deflection. If necessary, repeat steps (a) to (c) until the specified amount is obtained.
- Tighten the rear axle nut.



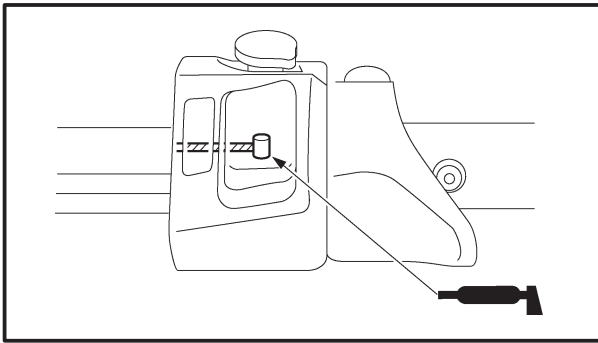
Nut (rear axle):
75 Nm (7.5 m•kg, 54 ft•lb)

SLIDE RUNNER INSPECTION

- Inspect:
 - Slide runner **1**
Cracks/damage/wear → Replace.
- Measure:
 - Slide runner thickness **a**
Out of specification → Replace.



Slide runner wear limit:
10 mm (0.39 in)



LUBRICATION

Brake lever, throttle lever and throttle cable end

1. Lubricate the brake lever pivot, throttle lever and the ends of the throttle cables.



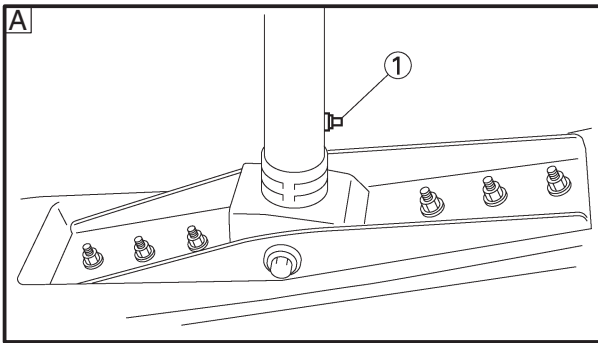
Recommended lubricant:
ESSO Beacon 325 Grease

⚠ WARNING

Apply a dab of grease onto only the end of the cables.

Do not grease the throttle cables.

They could freeze and cause a loss of control.



Front and rear suspension

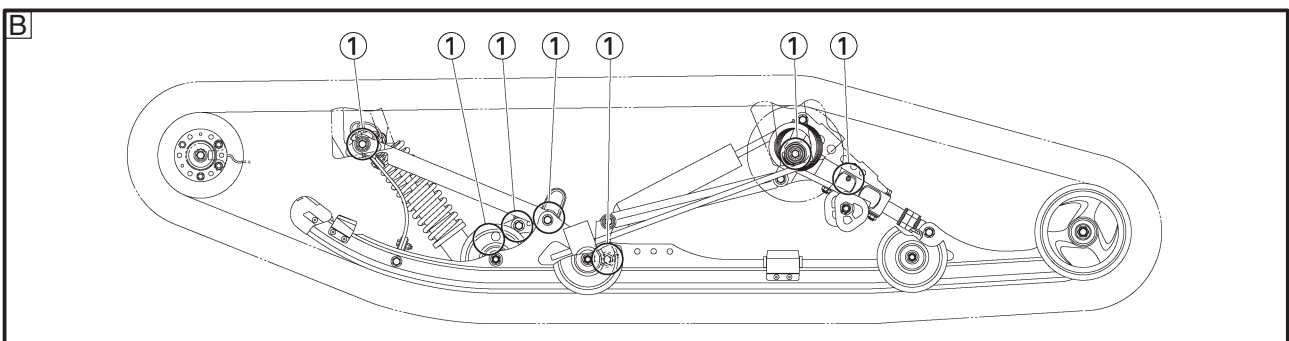
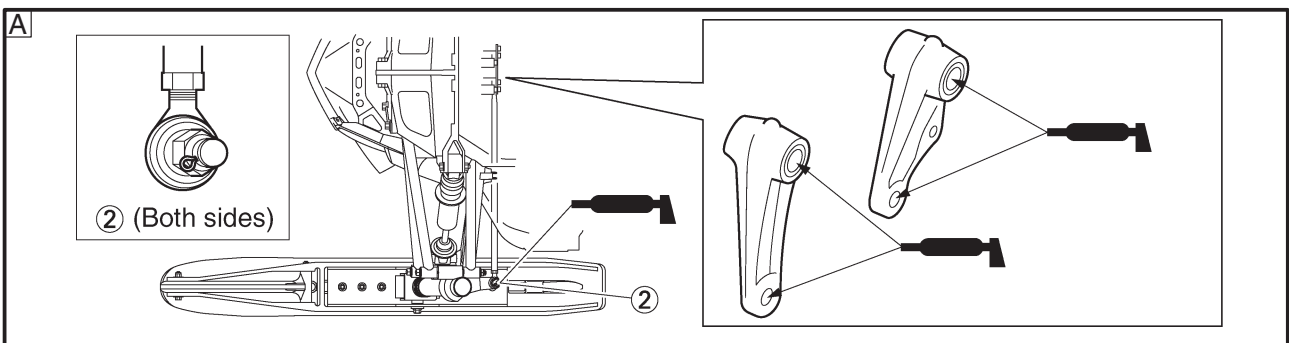
1. Use a grease gun to inject grease into the nipples ①.
2. Apply grease ②.



Recommended lubricant:
Esso Beacon 325 Grease or
Aeroshell Grease #7A

A Front

B Rear (RX10MK, RX10MSK)




CLUTCH
High altitude

G	Green	P	Pink
S	Silver	Y	Yellow

Specifications Model: RX10K, RX10RK, RX10RSK

A	Elevation	~ 800 m (~ 2,500 ft)	600 ~ 1,400 m (2,000 ~ 4,500 ft)	1,200 ~ 2,000 m (4,000 ~ 6,500 ft)	1,800 ~ 2,600 m (6,000 ~ 8,500 ft)	2,400 ~ 3,000 m (8,000 ~ 10,000 ft)
B	Engine idle speed	1,350 ± 100 r/min	←	←	←	←
C	Engagement r/min	3,600 ± 200 r/min	←	←	←	←
D	Shift r/min	10,250 ± 250 r/min	←	←	←	←
E	Main jet	d Refer to "HIGH ALTITUDE SETTINGS" in "MAINTENANCE SPECIFICATIONS".				
F	Pilot jet*1					
G	Pilot screw					
H	Secondary reduction ratio (number of links)	38/24 (70 L)	←	38/23 (70 L)	38/22 (68 L)	←
I	Primary sheave spring	90501-582L1	←	90501-582L2	90501-602L3	←
J	Color	Y-S-Y	←	G-S-G	P-S-P	←
K	Free length	87.4 mm (3.44 in)	←	←	85.1 mm (3.35 in)	←
L	Preload	343 N (35 kg, 77 lb)	←	←	←	←
M	Spring rate	24.5 N/mm (2.50 kg/mm, 140 lb/in)	←	27 N/mm (2.75 kg/mm, 154 lb/in)	29.4 N/mm (3.00 kg/mm, 168 lb/in)	←
N	Wire diameter	5.8 mm (0.228 in)	←	←	6.0 mm (0.236 in)	←
O	Outside diameter	59.5 mm (2.34 in)	←	←	←	←
P	Weight (ID)	8FA-17605-10 (8FA00)	←	←	←	←
Q	Weight rivet	OUT	Steel 17.2 with-hole	Steel 13.3	Steel 13.3 with-hole	Aluminum 13.3 with-hole
		IN	Steel 17.2	Steel 13.3	Steel 13.3 with-hole	Steel 13.3 with-hole
R	Weight bushing	VESPEL TP-8549	←	←	←	←
S	Roller outer dia.	15.6 mm (0.61 in)	←	←	←	←
T	Roller bushing	VESPEL TP-8549	←	←	←	←
U	Pri. clutch shim	None	←	←	←	←
V	Secondary sheave spring	90508-60012	←	←	←	←
W	Color	P	←	←	←	←
X	Free length	75 mm (2.95 in)	←	←	←	←
Y	Preload rate	60° (3-3) 1211 kg•mm/rad	←	←	←	←
Z	Wire diameter	6.0 mm (0.236 in)	←	←	←	←
a	Outside diameter	69.5 mm (2.736 in)	←	←	←	←
b	Sec. torque cam angle	51 – 43°	←	←	←	←
c	Sec. clutch shim	1.0 mm (0.04 in)	←	←	←	←

NOTE:

*1: Number of return rotation of pilot screw may vary depending on each cylinder.

Make sure to rotate the screw backward after listing its present number of return rotation on each cylinder.



S	Silver	O	Orange
W	White	P	Pink

Specifications Model: RX10MK, RX10MSK

[A] Elevation		~ 800 m (~ 2,500 ft)	600 ~ 1,400 m (2,000 ~ 4,500 ft)	1,200 ~ 2,000 m (4,000 ~ 6,500 ft)	1,800 ~ 2,600 m (6,000 ~ 8,500 ft)	2,400 ~ 3,000 m (8,000 ~ 10,000 ft)
[B] Engine idle speed		1,350 ± 100 r/min	←	←	←	←
[C] Engagement r/min		4,100 ± 200 r/min	←	←	4,200 ± 200 r/min	←
[D] Shift r/min		10,250 ± 250 r/min	←	←	←	←
[E] Main jet		[d] Refer to “HIGH ALTITUDE SETTINGS” in “MAINTENANCE SPECIFICATIONS”.				
[F] Pilot jet*1						
[G] Pilot screw						
[H] Secondary reduction ratio (number of links)		40/23 (70 L)	←	40/22 (70 L)	40/21 (70 L)	←
[I] Primary sheave spring		90501-624L8	←	90501-601L8	←	←
[J] Color		O-S-O	←	O-P-O	←	←
[K] Free length		84.2 mm(3.32 in)	←	82.6	←	←
[L] Preload		343 N (35 kg, 77 lb)	←	294 N (30 kg, 66 lb)	←	←
[M] Spring rate		31.9 N/mm (3.25 kg/mm, 182 lb/in)	←	←	←	←
[N] Wire diameter		6.2 mm (0.244 in)	←	←	←	←
[O] Outside diameter		59.5 mm (2.34 in)	←	←	←	←
[P] Weight (ID)		8FA-17605-10 (8FA00)	←	8BU-17605-20 (8BU10)	←	←
[Q] Weight rivet	OUT	Steel 17.2 with-hole	Steel 13.3	Steel 13.3	Steel 13.3	Aluminum 10.3
	IN	Steel 17.2	Steel 13.3 with-hole	Steel 13.3	Aluminum 10.3	Aluminum 10.3
[R] Weight bushing		VESPEL TP-8549	←	←	←	←
[S] Roller outer dia.		16.5 mm (0.65 in)	←	14.5 mm (0.57 in)	←	←
[T] Roller bushing		VESPEL TP-8549	←	←	←	←
[U] Pri. clutch shim		None	←	←	←	←
[V] Secondary sheave spring		90508-60007	←	←	←	←
[W] Color		W	←	←	←	←
[X] Free length		75 mm (2.95 in)	←	←	←	←
[Y] Preload rate		70° (1-6) 1290 kg•mm/rad	←	←	←	←
[Z] Wire diameter		6 mm (0.236 in)	←	←	←	←
[a] Outside diameter		69.5 mm (2.736 in)	←	←	←	←
[b] Sec. torque cam angle		45°	←	←	←	←
[c] Sec. clutch shim		1.0 mm (0.04 in)	←	←	←	←

NOTE:

*1: Number of return rotation of pilot screw may vary depending on each cylinder.

Make sure to rotate the screw backward after listing its present number of return rotation on each cylinder.



GEAR SELECTION

① Chain and sprocket part number

[A] Parts name	[B] Teeth & links	[C] Parts no.	[D] Standard
[E] Drive sprocket	19 teeth	8FA-17682-90	
	20 teeth	8FA-17682-00	
	21 teeth	8FA-17682-10	RX10MK, RX10MSK
	22 teeth	8FA-17682-20	
	23 teeth	8FA-17682-30	RXW10K, RXW10SK
	24 teeth	8FA-17682-40	RX10K, RX10RK, RX10RSK
[F] Driven sprocket	37 teeth	8DW-47587-71	
	38 teeth	8DW-47587-81	RX10K
	38 teeth	8FB-47587-80	RX10RK, RX10RSK, RXW10K, RXW10SK
	39 teeth	8DW-47587-91	
	39 teeth	8FB-47587-90	
	40 teeth	8DW-47587-01	RX10MK, RX10MSK
[G] Chain	68 links	94890-09068	
	70 links	94890-09070	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK

② Gear ratio

[A] Drive gear \ [B] Driven gear	19 teeth	20 teeth	21 teeth	22 teeth	23 teeth	24 teeth
37 teeth			1.76 68 links	1.68 68 links	1.61 68 links	1.54 70 links
38 teeth		1.90 68 links	1.81 68 links	1.73 68 links	1.65 70 links	1.58 70 links
39 teeth	2.05 68 links	1.95 68 links	1.86 68 links	1.77 70 links	1.70 70 links	1.63 70 links
40 teeth	2.11 68 links	2.00 68 links	1.91 70 links	1.82 70 links	1.74 70 links	1.67 70 links

③ Secondary sheave spring

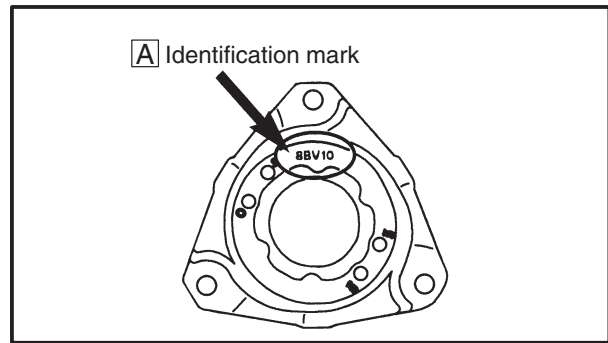
[A] Part no.	[B] Spring rate N•mm/rad (kg•mm/rad)	[C] Preload N/mm (kg/mm) (lb/in)	[D] Color	[E] Wire gauge mm (in)	[F] No. of coils	[G] Free length mm (in)	[H] Outside diameter mm (in)	[I] Standard
90508-500B1	6003 (613)	6.2 (0.63), 35.28	Brown	5.0 (0.196)	5.19	75 (2.95)	69.5 (2.736)	
90508-536A9	7147 (729)	7.3 (0.74), 41.44	Red	5.3 (0.209)	5.53	75 (2.95)	69.5 (2.736)	
90508-556A2	8314 (848)	8.5 (0.87), 48.72	Green	5.5 (0.217)	5.53	75 (2.95)	69.5 (2.736)	
90508-556A7	9460 (965)	10.21 (1.04), 58.24	Silver	5.5 (0.217)	4.86	75 (2.95)	69.5 (2.736)	
90508-60012	11876 (1211)	12.32 (1.256), 70.34	Pink	6.0 (0.236)	5.53	75 (2.95)	69.5 (2.736)	RX10K, RX10RK, RX10RSK
90508-60007	12654 (1290)	13.45 (1.372) 76.84	White	6.0 (0.236)	5.19	75 (2.95)	69.5 (2.736)	RXW10K, RXW10SK, RX10MK, RX10MSK

④ Secondary spring twist angle

[B] Sheave \ [A] Seat	0	3	6	9
1	10°	40°	70°	100°
2	20°	50°	80°	110°
3	30°	60°	90°	120°



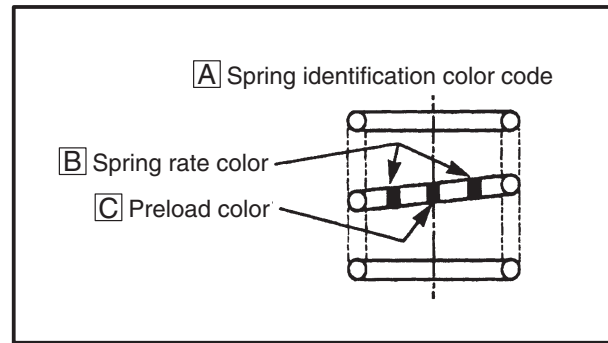
⑤ Torque cam (secondary spring seat)



[B] Effects	[C] Part no.	[D] Cam angle	[E] Identification mark	[F] Standard
[G] Quicker upshifting during acceleration  [H] Quicker backshifting under load	8FA-17604-00	51-43°	8BVFA	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK
	8BV-17604-71	47°	8BV71	
	8BV-17604-51	45°	8BV51	RX10MK, RX10MSK
	8BV-17604-31	43°	8BV31	
	8BV-17604-11	41°	8BV11	
	8BV-17604-91	39°	8BV91	



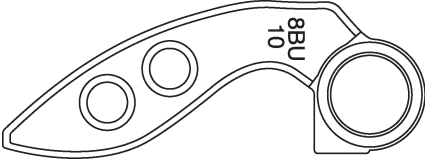
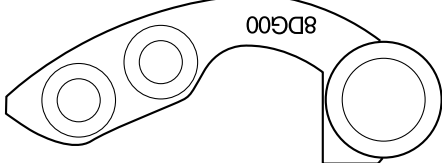
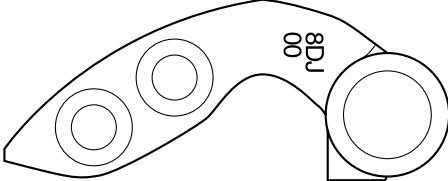
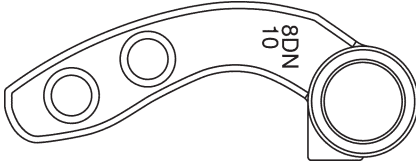
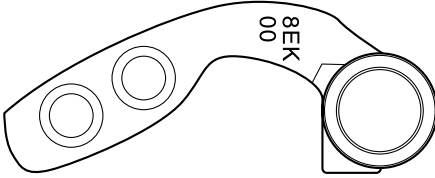
⑥ Primary spring



D Parts No.	E Spring rate N/mm (kg/mm)	F Preload N (kg)	G Color	H Wire gauge mm (in)	I Outside diameter mm (in)	J No. of coils	K Free length mm (in)	L Standard
90501-551L3	19.6 (2.00)	294 (30)	Blue-Pink-Blue	5.5 (0.216)	59.5 (2.34)	4.91	88.4 (3.48)	
90501-551L9	19.6 (2.00)	343 (35)	Blue-Silver-Blue	5.5 (0.216)	59.5 (2.34)	4.91	90.9 (3.58)	
90501-552L5	19.6 (2.00)	392 (40)	Blue-Green-Blue	5.5 (0.216)	59.5 (2.34)	4.91	93.4 (3.68)	
90501-581L5	24.5 (2.50)	294 (30)	Yellow-Pink-Yellow	5.8 (0.228)	59.5 (2.34)	4.92	85.4 (3.36)	
90501-581L6	27 (2.75)	294 (30)	Green-Pink-Green	5.8 (0.228)	59.5 (2.34)	4.66	84.3 (3.32)	
90501-582L1	24.5 (2.50)	343 (35)	Yellow-Silver-Yellow	5.8 (0.228)	59.5 (2.34)	4.92	87.4 (3.44)	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK
90501-582L2	27 (2.75)	343 (35)	Green-Silver-Green	5.8 (0.228)	59.5 (2.34)	4.66	86.1 (3.39)	
90501-582L6	22.1 (2.25)	392 (40)	White-Green-White	5.8 (0.228)	59.5 (2.34)	5.25	91.2 (3.59)	
90501-582L7	24.5 (2.50)	392 (40)	Yellow-Green-Yellow	5.8 (0.228)	59.5 (2.34)	4.92	89.4 (3.52)	
90501-583L0	19.6 (2.00)	441 (45)	Blue-White-Blue	5.8 (0.228)	59.5 (2.34)	5.65	95.9 (3.78)	
90501-583L1	22.1 (2.25)	441 (45)	White-White-White	5.8 (0.228)	59.5 (2.34)	5.25	93.4 (3.68)	
90501-583L4	22.1 (2.25)	343 (35)	White-Silver-White	5.8 (0.228)	59.5 (2.34)	5.25	89.0 (3.50)	
90501-583L5	22.1 (2.25)	294 (30)	White-Pink-White	5.8 (0.228)	59.5 (2.34)	5.25	86.7 (3.41)	
90501-601L7	29.4 (3.00)	294 (30)	Pink-Pink-Pink	6.0 (0.236)	59.5 (2.34)	4.82	83.4 (3.28)	
90501-601L8	31.9 (3.25)	294 (30)	Orange-Pink-Orange	6.0 (0.236)	59.5 (2.34)	4.60	82.6 (3.25)	RX10MK, RX10MSK
90501-602L3	29.4 (3.00)	343 (35)	Pink-Silver-Pink	6.0 (0.236)	59.5 (2.34)	4.82	85.1 (3.35)	
90501-602L8	27.0 (2.75)	392 (40)	Green-Green-Green	6.0 (0.236)	59.5 (2.34)	5.08	87.9 (3.46)	
90501-602L9	29.4 (3.00)	392 (40)	Pink-Green-Pink	6.0 (0.236)	59.5 (2.34)	4.82	86.7 (3.41)	
90501-603L2	24.5 (2.50)	441 (45)	Yellow-White-Yellow	6.0 (0.236)	59.5 (2.34)	5.39	91.4 (3.60)	
90501-603L3	27.0 (2.75)	441 (45)	Green-White-Green	6.0 (0.236)	59.5 (2.34)	5.08	89.8 (3.54)	
90501-624L8	31.9 (3.25)	343 (35)	Orange-Silver-Orange	6.2 (0.244)	59.5 (2.34)	5.00	84.2 (3.32)	



⑦ Clutch weight

A Parts no.	B Weight g (oz) without bush and rivets	C Shape & ID mark	D Standard
8BU-17605-20	45.41 (1.60)		RX10MK, RX10MSK
8DG-17605-00	34.26 (1.209)		
8DJ-17605-00	37.77 (1.333)		
8DN-17605-10	39.76 (1.40)		
8EK-17605-00	39.00 (1.376)		
8ES-17605-00	54.6 (1.93)		
8FA-17605-10	63.8 (2.25)		RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK

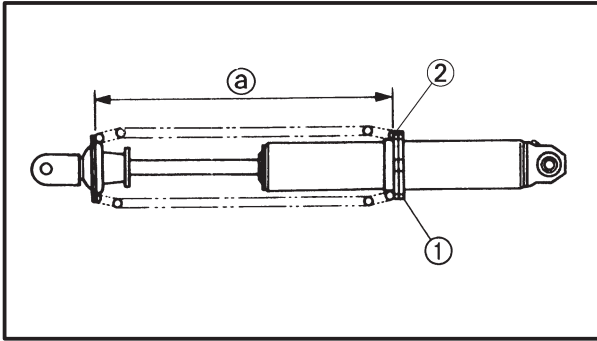


⑧ Weight rivets

A Parts No.	B Material	C Length mm (in)	D Weight g (oz)	E Standard	F Effects
90261-06033	Steel	17.2 (0.677)	4.5 (0.159)	IN: RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK	G Increased Force H Decreased Force
90269-06006	Steel	17.2 (0.677)	3.6 (0.127) with hole	OUT: RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK	
90261-06019	Steel	13.3 (0.524)	3.1 (0.109)		
90266-06002	Steel	13.3 (0.524)	2.4 (0.085) with hole		
90266-06001	Aluminum	13.3 (0.524)	0.8 (0.028) with hole	IN: RX10MK, RX10MSK OUT: RX10MK, RX10MSK	
None					

⑨ Rollers

I.D. 9 mm (0.354 in)					
A Roller with bushing part number	B Outside diameter mm (in)	C Bushing type (P/N)	D Identification mark (Width)	E Standard	F Effects
8FG-17624-00	14.5 (0.57)	VESPEL TP-8549 90386-09001	G Grooved & Machined (14.6 mm)		L Increased force M Decreased force
8FG-17624-10	15.0 (0.59)	VESPEL TP-8549 90386-09001	H Grooved (14.6 mm)		
8FG-17624-20	15.6 (0.61)	VESPEL TP-8549 90386-09001	I No Mark (14.6 mm)	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK	
8FG-17624-30	16.0 (0.63)	VESPEL TP-8549 90386-09001	J Grooved & Grooved (14.6 mm)		
8FG-17624-40	16.5 (0.65)	VESPEL TP-8549 90386-09001	K Machined (14.6 mm)		



FRONT SUSPENSION

Spring preload

1. Adjust:
 - Spring preload

Adjustment steps:

- Loosen the lock nut ①
- Turn the spring seat ② in or out.

RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK

Spring seat distance	Standard		
	Shorter ←		→ Longer
Preload	Harder ←		→ Softer
Length ①	Min.		Max.
	250 mm (9.84 in)	258 mm (10.16 in)	260 mm (10.24 in)

RX10MK, RX10MSK

Spring seat distance	Standard		
	Shorter ←		→ Longer
Preload	Harder ←		→ Softer
Length ①	Min.		Max.
	213 mm (8.39 in)	223 mm (8.78 in)	223 mm (8.78 in)

CAUTION:

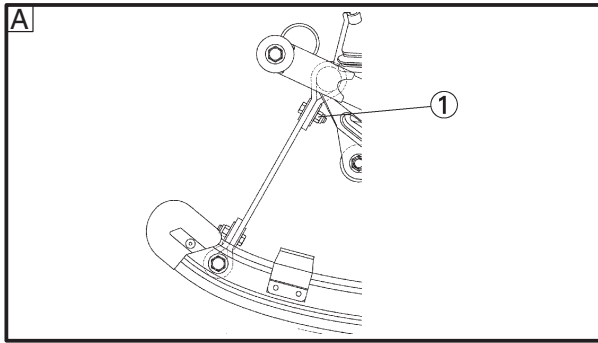
Be sure that the left and right spring preloads are the same.

⚠ WARNING

This shock absorber contains highly pressurized nitrogen gas.

Do not tamper with or attempt to open the shock absorber assembly.

Do not subject the shock absorber assembly to flames or high heat, which could cause it to explode.



REAR SUSPENSION

Stopper band

1. Adjust:
 - Stopper band tension

CAUTION:

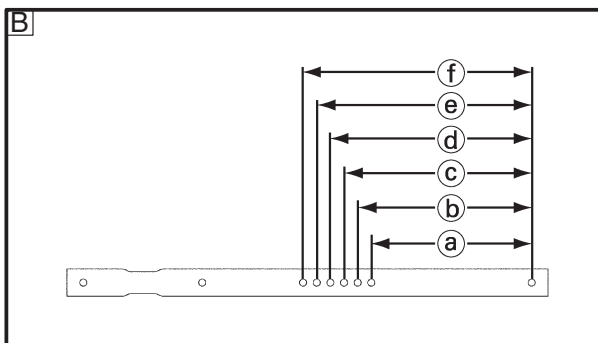
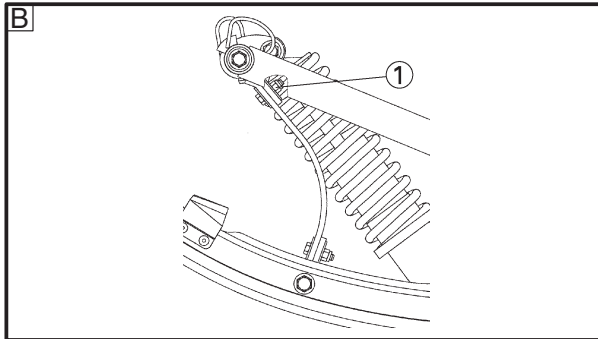
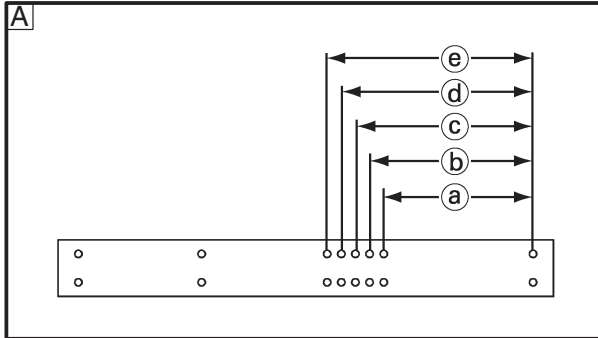
Make sure the left and right sides of the rear suspension stopper band are adjusted evenly. (RX10MK, RX10MSK)

NOTE:

This adjustment affects the handling characteristics of the machine.

Adjustment steps:

- Loosen the stopper band nut (1).
- The position of the hole of (a) ~ (e) or (f) is changed and the tension of a stopper band is adjusted.



Rength	RX10K, RX10RK, RX10RSK:	
	(a) ←	→ (e)
	RX10MK, RX10MSK:	
	(a) ←	→ (f)
	Longer (Maximum)	Shorter (Minimum)
Effects	Less weight on skis; More weight transfer	More weight on skis; Less weight transfer

- Tighten the stopper band nut.



Stopper band nut:
4 Nm (0.4 m•kg, 2.9 ft•lb)

A RX10K, RX10RK, RX10RSK

B RX10MK, RX10MSK



Spring preload (RX10K, RX10RK, RX10RSK)

1. Adjust:

- Spring preload

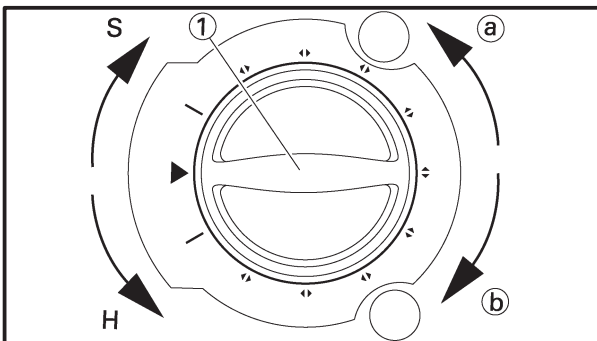
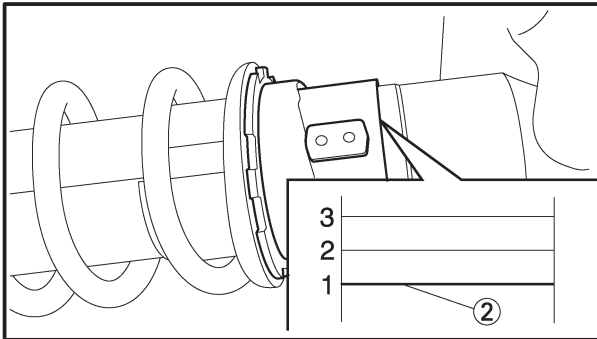
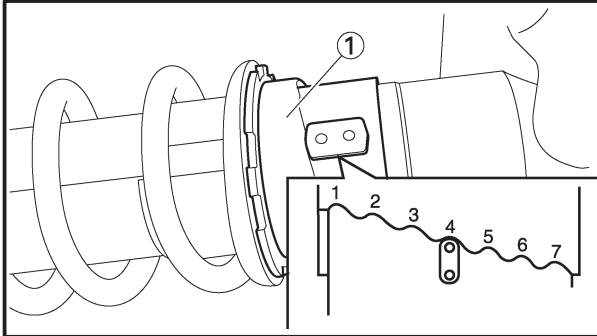
Adjustment step:

⚠ WARNING

This shock absorber contains highly pressurized nitrogen gas.

Do not tamper with or attempt to open the shock absorber assembly.

Do not subject the shock absorber assembly to flames or high heat, which could cause it to explode.



- Turn the adjusting ring (1) to the proper position.

Spring adjuster position	1	2	3	4	5	6	7
Preload	Softer ← → Harder						
Standard	4						

- Changing the stopper ring (2) to the proper position.

Spring adjuster position	1	2	3
Preload	Softer ← → Harder		
Standard	1		

Damping (RX10K, RX10RK, RX10RSK)

CAUTION:

Never go beyond the maximum or minimum adjustment positions.

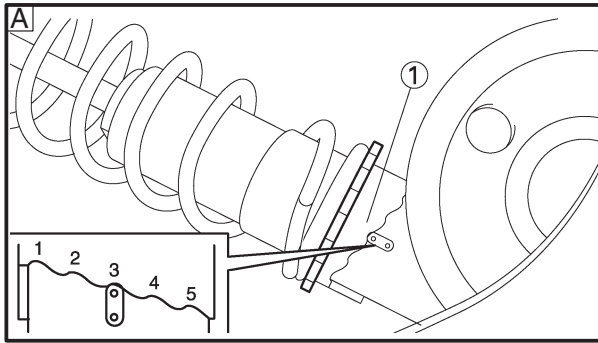
1. Adjust:

- Damping

Adjustment step:

- Turn the adjusting handle (1) in direction (a) or (b). (Maximum: 11 clicks)

Adjustment dial turning direction	S	H
Damping force	Softer ← → Harder	



Spring preload (RX10MK, RX10MSK)

1. Adjust:

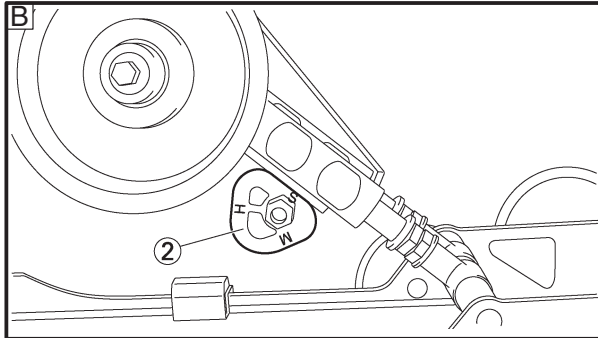
- Spring preload

Adjustment steps:

- Turn the adjusting ring (1) to the proper position.

Spring adjuster position	1	2	3	4	5
Preload	Softer ← → Harder				
A Front Standard	3				

- Turn the adjusting hook (2) to the proper position.



Spring adjuster position	S	M	H
Preload	Soft	Medium	Hard
B Rear Standard	M		

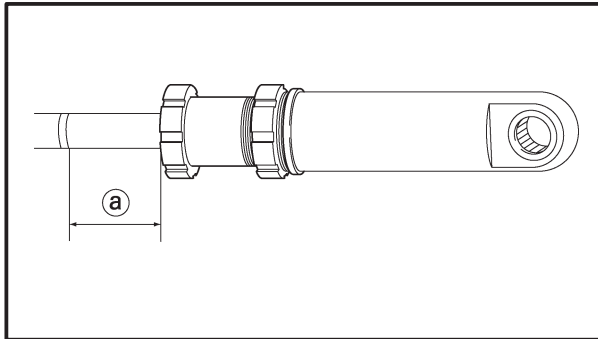
Control rod (RX10K, RX10RK, RX10RSK)

1. Adjust:

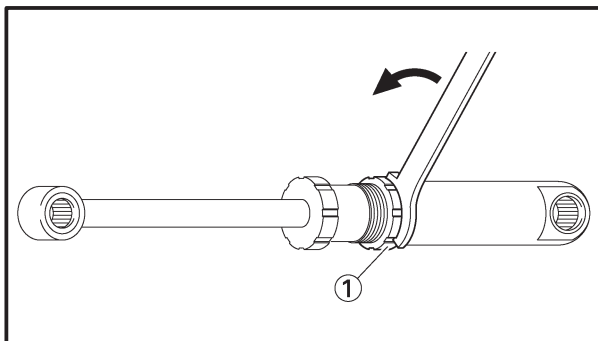
- Control rod stroke (a)

Adjustment steps:

- Loosen the locknut (1).
- Check the adjusting rod length using the scale on the special wrench (2) included in the owner's tool kit.

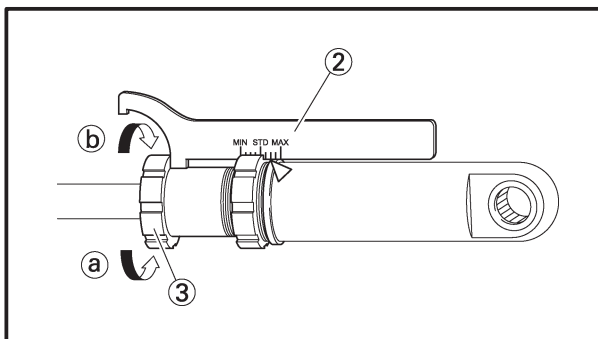


- Turn the adjusting rod (3) in direction (a) or (b) to adjust the control rod stroke.

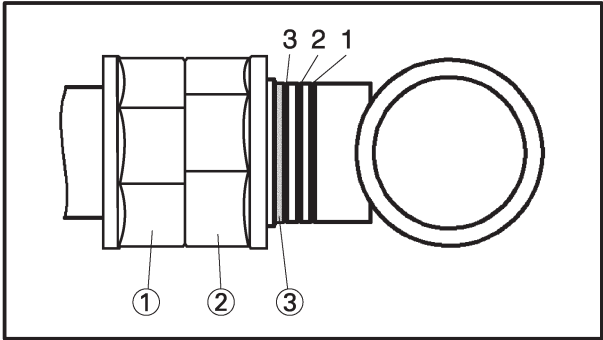
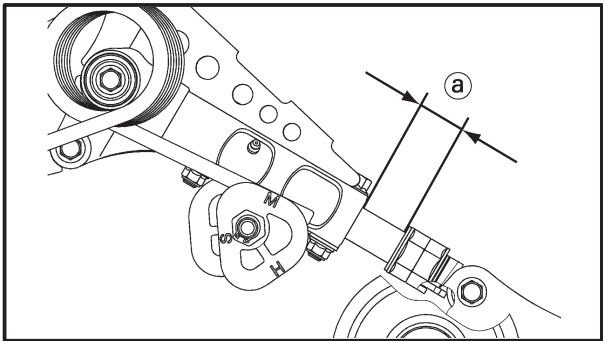


Adjusting position	MIN	STD	MAX
Effect	Decrease (b) pitching ← → (a) weight transfer Increase		
Standard	STD		

- While holding the adjusting rod (3) securely, tighten the locknut (1).



Locknut:
35 Nm (3.5 m•kg, 25 ft•lb)



Control rod (RX10MK, RX10MSK)

1. Adjust:
- Control rod stroke ①

CAUTION: _____

Make sure the adjusting bolt ends are set at the same position on each side.

Adjustment steps:

- Loosen the lock nut ①.
- Turn the adjusting nut ② in or out to adjust the control rod stroke.

Adjusting position	1	2	3
Effect	Increase weight transfer	← → Decrease pitching	
Standard	2		

⚠ WARNING _____

Never adjust the control rods beyond the maximum range indicated on the rods with red paint ③.

- While holding the adjusting bolt securely, tighten the locknut ①.



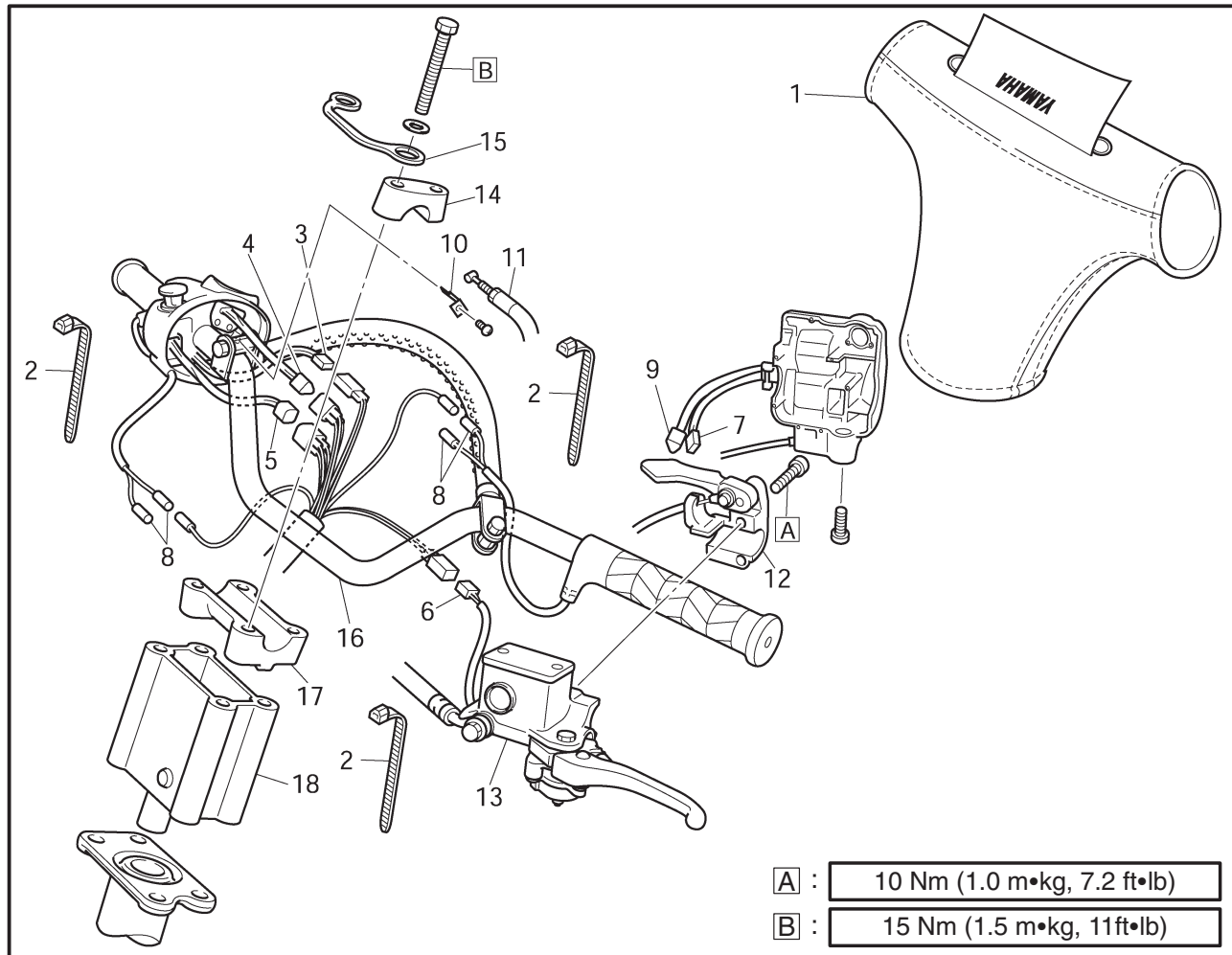
Locknut:
25 Nm (2.5 m•kg, 18 ft•lb)



CHASSIS

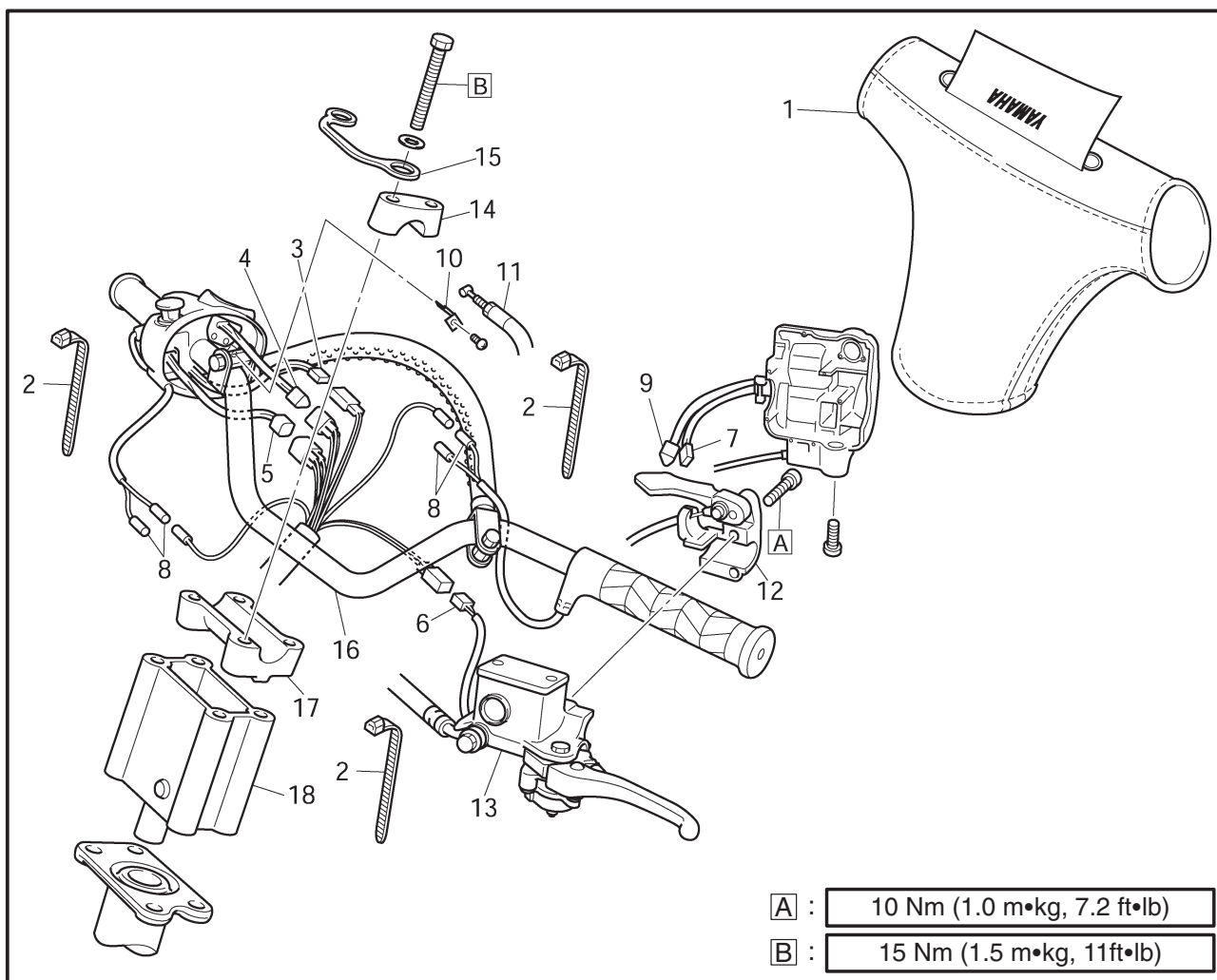
STEERING

RX10MK, RX10MSK



3

Order	Job name/Part name	Q'ty	Remarks
	Handlebar removal		Remove the parts in the order listed below.
1	Handlebar cover	1	
2	Plastic band	3	
3	Thumb warmer lead coupler	1	Disconnect.
4	Thumb warmer switch lead coupler	1	Disconnect.
5	Engine stop switch coupler	1	Disconnect.
6	Brake switch coupler	1	Disconnect.
7	Headlight beam switch coupler	1	Disconnect.
8	Grip warmer lead coupler	4	Disconnect.
9	Grip warmer switch lead coupler	1	Disconnect.
10	Throttle cable holder	1	
11	Throttle cable	1	
12	Brake lever holder	1	



Order	Job name/Part name	Q'ty	Remarks
13	Master cylinder assembly	1	NOTE: _____ After installing all parts, refer to "CABLE ROUTING" in CHAPTER 9, to check the cable, lead and hose routings. _____ For installation, reverse the removal procedure.
14	Handlebar holder (upper)	2	
15	Cable holder	1	
16	Handlebar	1	
17	Handlebar holder (lower)	1	
18	Handlebar joint	1	



SKI

RX10K, RX10RK, RX10RSK

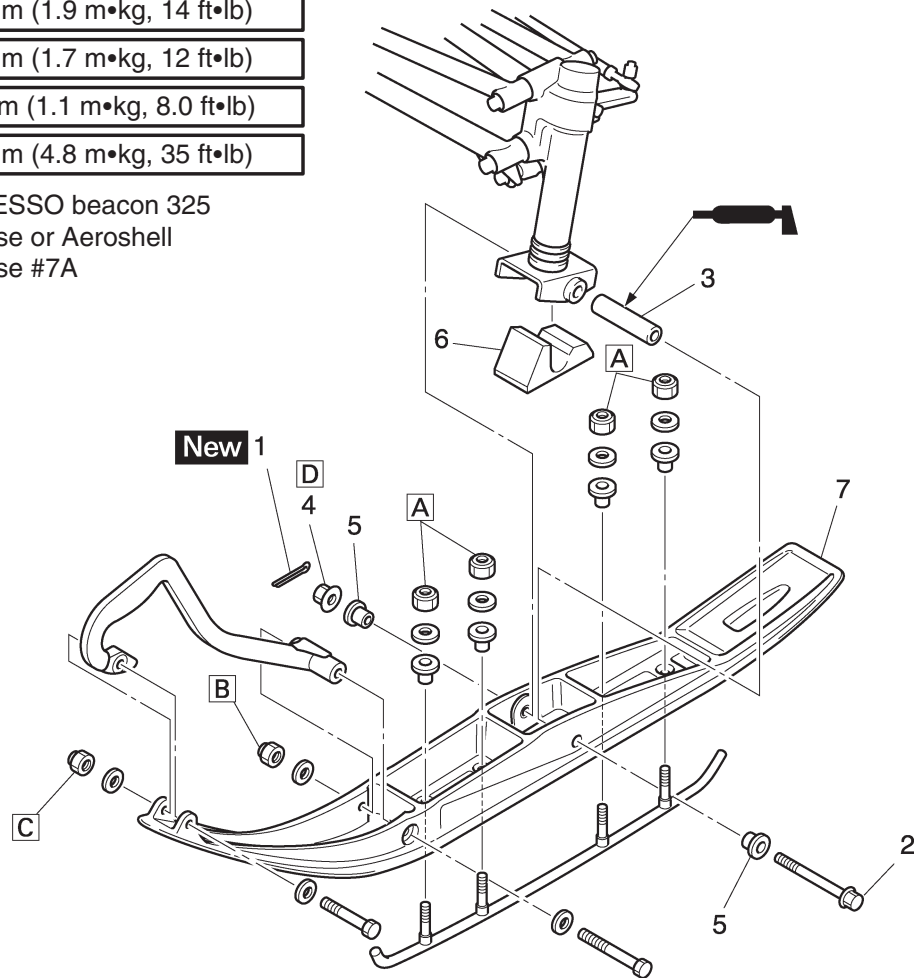
A : 19 Nm (1.9 m•kg, 14 ft•lb)

B : 17 Nm (1.7 m•kg, 12 ft•lb)

C : 11 Nm (1.1 m•kg, 8.0 ft•lb)

D : 48 Nm (4.8 m•kg, 35 ft•lb)

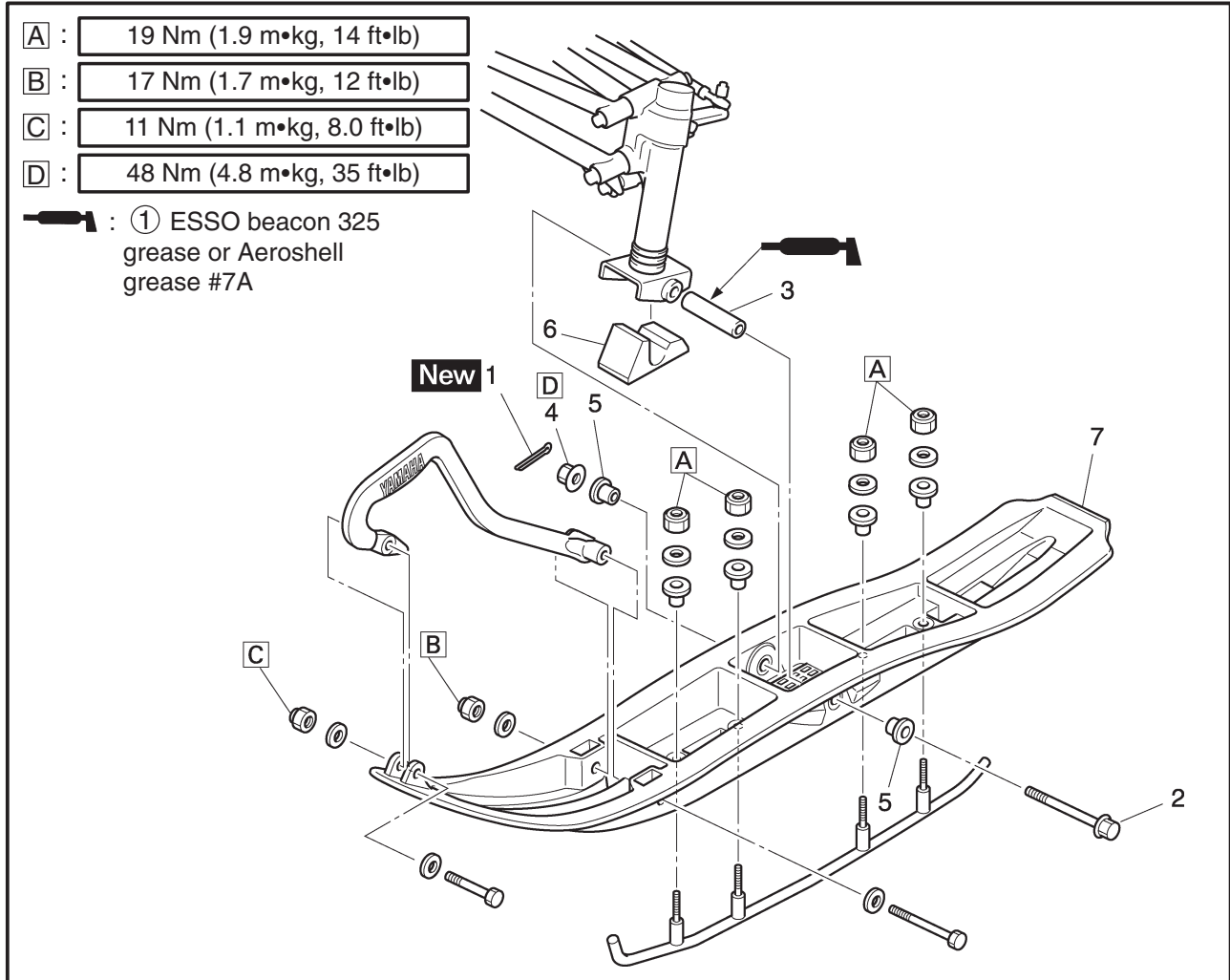
: ① ESSO beacon 325 grease or Aeroshell grease #7A



Order	Job name/Part name	Q'ty	Remarks
	Ski removal		Remove the parts in the order listed below.
1	Cotter pin	1	
2	Bolt	1	
3	Collar	1	
4	Nut	1	
5	Collar	2	
6	Ski stopper	1	
7	Ski	1	
			For installation, reverse the removal procedure.



RX10MK, RX10MSK

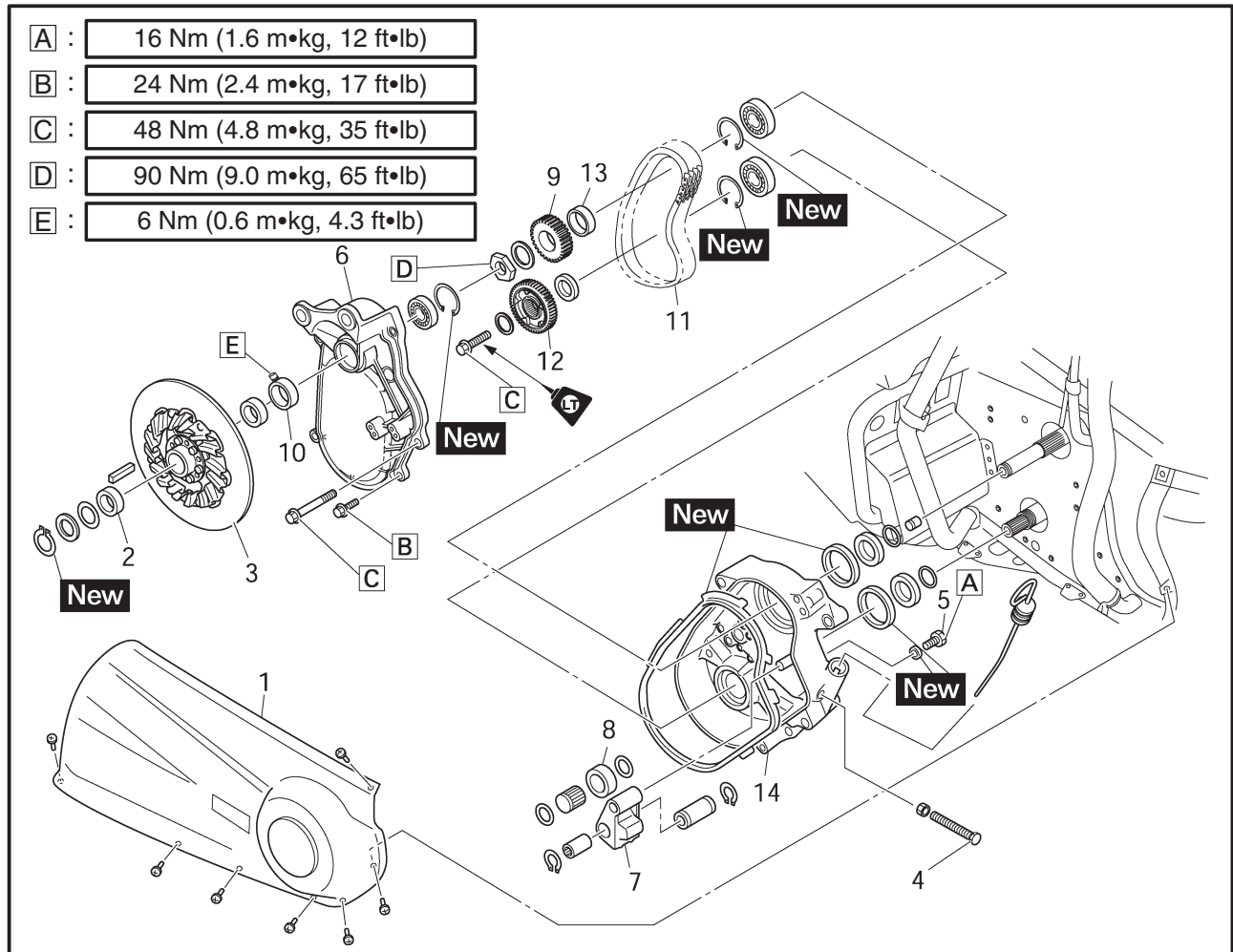


Order	Job name/Part name	Q'ty	Remarks
	Ski removal		Remove the parts in the order listed below.
1	Cotter pin	1	
2	Bolt	1	
3	Collar	1	
4	Nut	1	
5	Collar	2	
6	Ski stopper	1	
7	Ski	1	
			For installation, reverse the removal procedure.

POWER TRAIN

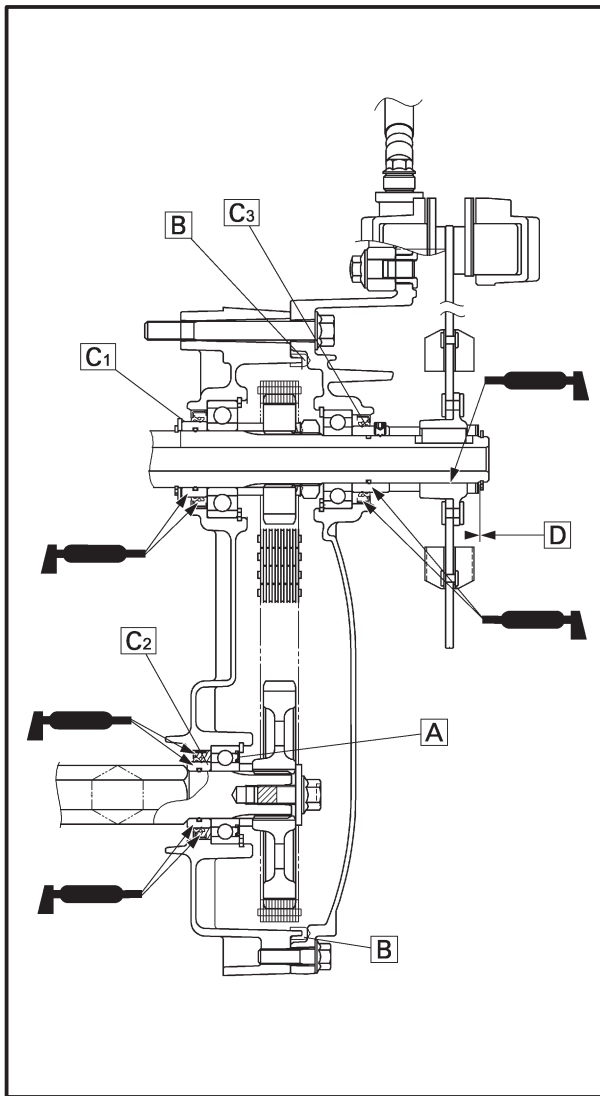
DRIVE CHAIN HOUSING

RX10K, RX10MK, RX10MSK



4

Order	Job name/Part name	Q'ty	Remarks
	Drive chain housing removal		Remove the parts in the order listed below. Refer to "BRAKE". Refer to "BRAKE".
1	Brake caliper	1	
2	Parking brake	1	
3	Right side cover	1	
4	Collar	1	
5	Brake disc	1	
6	Chain tension adjuster	1	Loosen.
7	Drain bolt	1	Drain.
8	Drive chain housing cover	1	
9	Chain tensioner	1	
10	Roller	1	
11	Drive sprocket	1	
12	Collar	1	
13	Drive chain	1	
14	Driven sprocket	1	
15	Collar	1	
16	Drive chain housing	1	
			For installation, reverse the removal procedure.



INSTALLATION

1. During installation, pay attention to the following.

A Make sure that the bearing seals face towards the drive chain as shown.

B Properly install the rubber seal onto the drive chain housing, making sure that there are no gaps.

C₁ **C₂** **C₃** Be sure to install the spacers in their original positions, otherwise the brake disc and jackshaft will stick.

D 0.2 ~ 0.7 mm (0.008 ~ 0.028 in)

 : ESSO beacon 325 grease or Aeroshell grease #7A

For the jackshaft and drive chain housing installation, refer to "SECONDARYSHAFT".

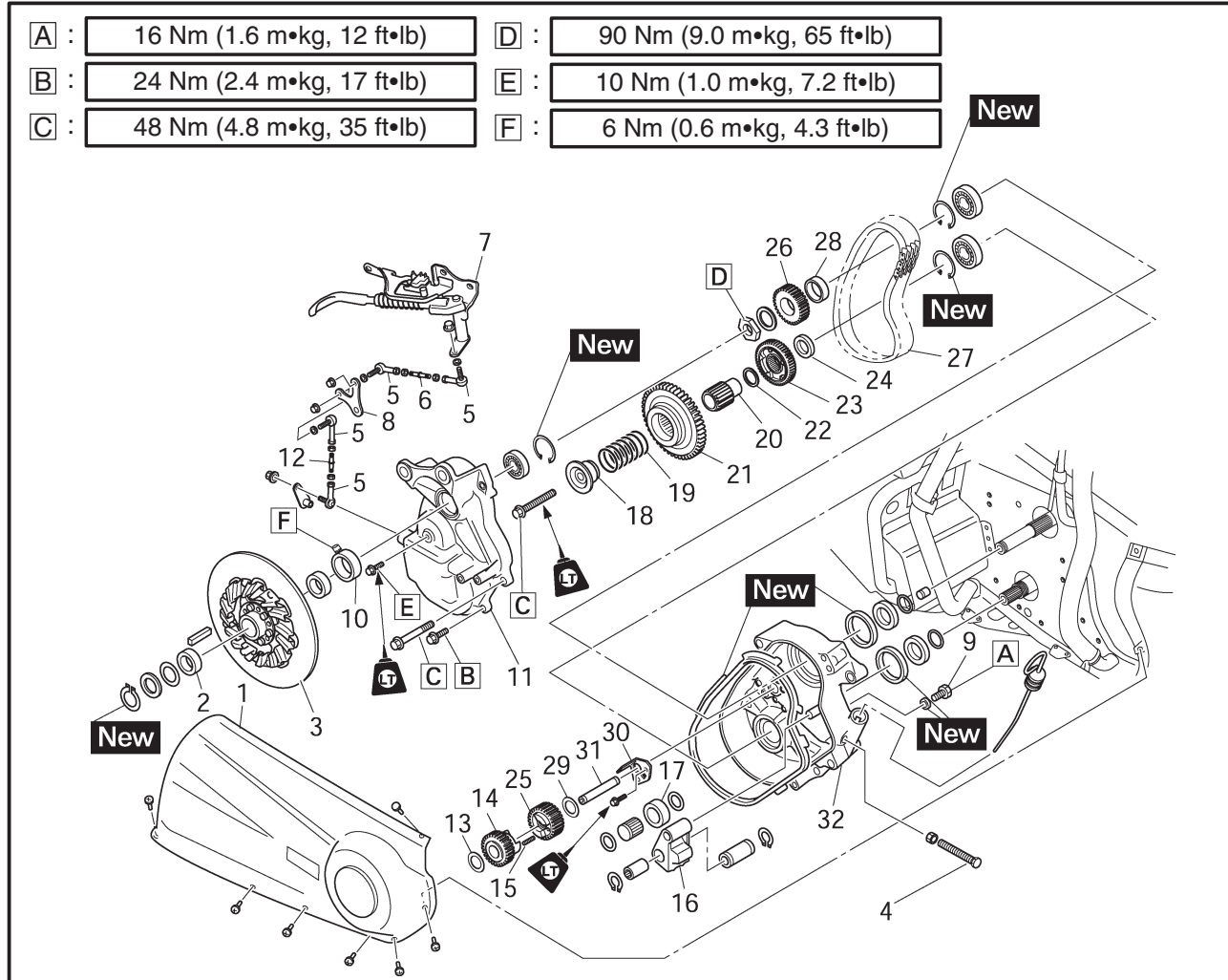
2. Fill:

- Drive chain housing oil
Refer to "DRIVE CHAIN" in CHAPTER 2.

3. Adjust:

- Drive chain slack
Refer to "DRIVE CHAIN" in CHAPTER 2.

WITH REVERSE MODEL RX10RK, RX10RSK

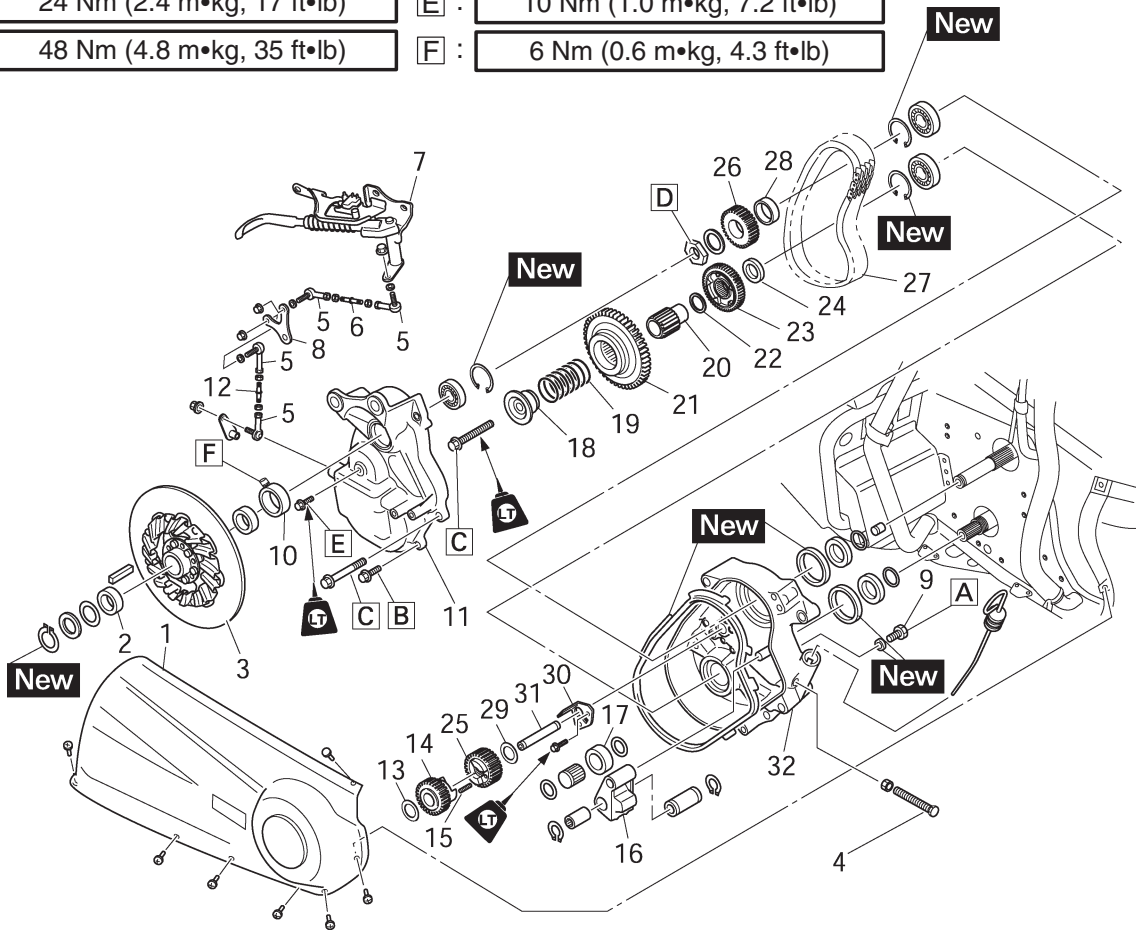


Order	Job name/Part name	Q'ty	Remarks
	Drive chain housing removal		Remove the parts in the order listed below. Refer to "BRAKE".
	Brake caliper		Refer to "BRAKE".
	Parking brake		Refer to "BRAKE".
1	Right side cover	1	
2	Collar	1	
3	Brake disc	1	
4	Chain tension adjuster	1	Loosen.
5	Joint	4	
6	Shift rod	1	
7	Shift lever assembly	1	Disconnect the gear position switch leads.
8	Lever	1	
9	Drain bolt	1	Drain.
10	Collar	1	
11	Drive chain housing cover	1	
12	Lever rod	1	
13	Washer	1	
14	Counter gear	1	
15	Spring	1	

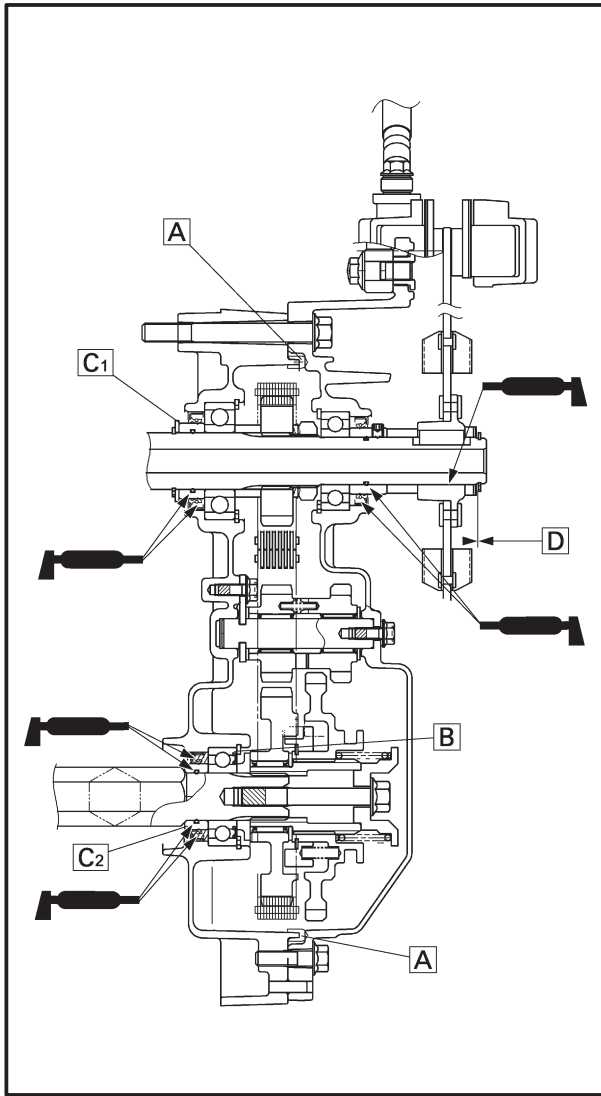
DRIVE CHAIN HOUSING



A :	16 Nm (1.6 m•kg, 12 ft•lb)	D :	90 Nm (9.0 m•kg, 65 ft•lb)
B :	24 Nm (2.4 m•kg, 17 ft•lb)	E :	10 Nm (1.0 m•kg, 7.2 ft•lb)
C :	48 Nm (4.8 m•kg, 35 ft•lb)	F :	6 Nm (0.6 m•kg, 4.3 ft•lb)



Order	Job name/Part name	Q'ty	Remarks
16	Chain tensioner	1	
17	Roller	1	
18	Collar	1	
19	Spring	1	
20	Journal	1	
21	Reverse driven gear	1	
22	Washer	1	
23	Forward driven sprocket	1	
24	Collar	1	
25	Reverse drive gear	1	
26	Drive sprocket	1	
27	Drive chain	1	
28	Collar	1	
29	Washer	1	
30	Plate	1	
31	Shaft	1	
32	Drive chain housing	1	
			For installation, reverse the removal procedure.



INSTALLATION

1. During installation, pay attention to the following.

A Properly install the rubber seal onto the drive chain housing, making sure that there are no gaps.

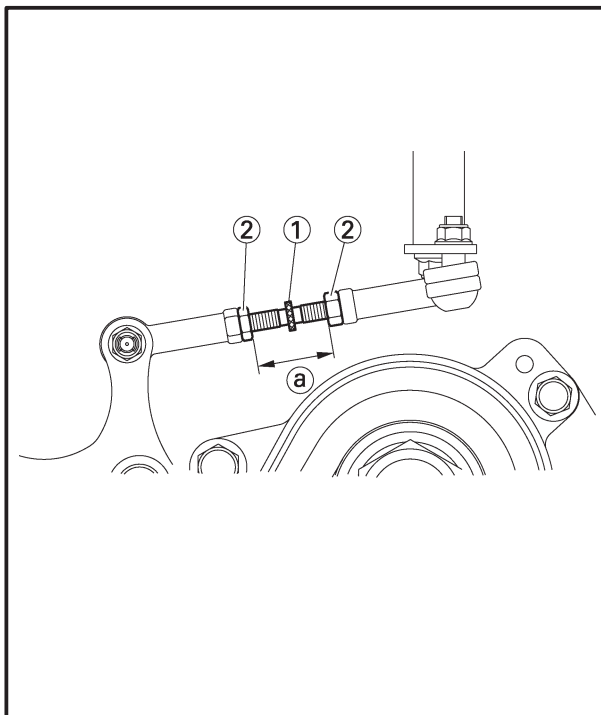
B Make sure that the bearing seals face towards the drive chain as shown.

C1 **C2** Be sure to install the spacers in their original positions, otherwise the brake disc and jackshaft will stick.

D 0.2 ~ 0.7 mm (0.008 ~ 0.028 in)

 : ESSO beacon 325 grease or Aeroshell grease #7A

For the jackshaft and drive chain housing installation, refer to "SECONDARYSHAFT".



2. Install:

- Lever rod ①

3. Adjust:

- Lever rod length ②

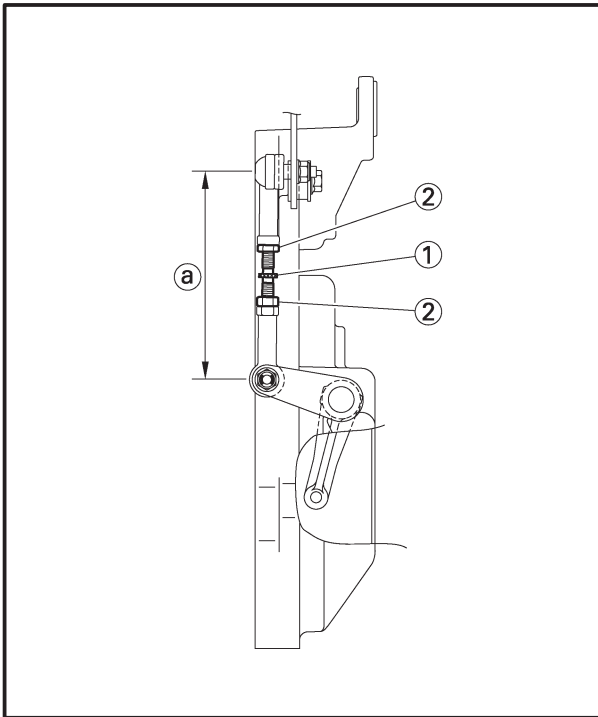
Adjustment steps:

- Loosen the locknuts ②.
- Turn the lever rod ① in or out until the specified length is obtained.



Lever rod length:
27 mm (1.06 in)

- Tighten the locknuts.

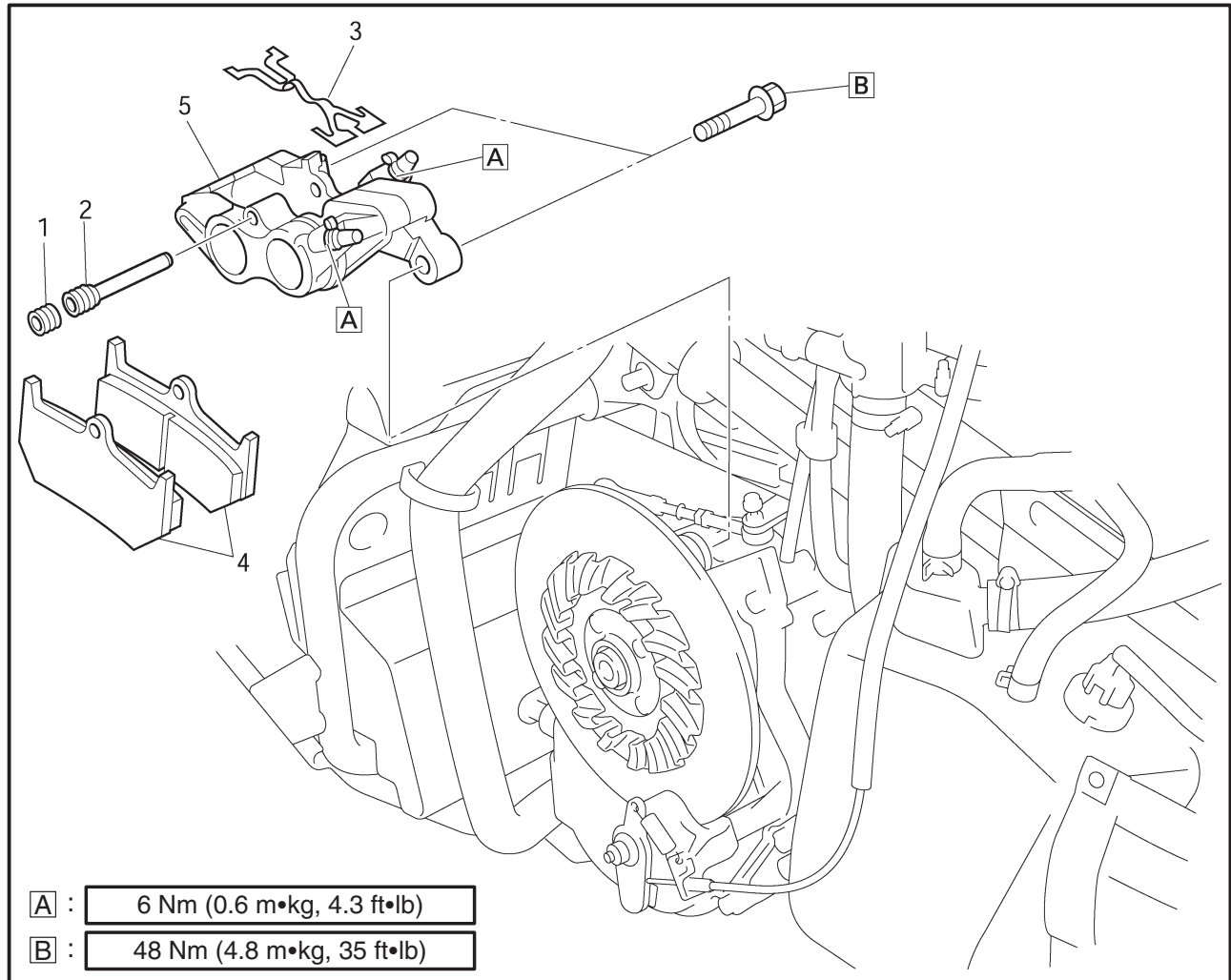


4. Install:
 - Shift rod (1)
5. Adjust:
 - Shift rod length (a)

Adjustment steps:

- Move the shift lever to the “FWD.” position.
 - Loosen the locknuts (2).
 - Turn the shift rod (1) so that shift rod free play is 0 mm (in direction where (a) can be shortened appropriately) and then turn back the shift rod 1/4 turns.
 - Tighten the locknuts.
6. Fill:
 - Drive chain housing oil
Refer to “DRIVE CHAIN” in CHAPTER 2.
 7. Adjust:
 - Drive chain slack
Refer to “DRIVE CHAIN” in CHAPTER 2.

BRAKE



Order	Job name/Part name	Q'ty	Remarks
	Brake pad removal		
1	Cap bolt	1	Remove the parts in the order listed below.
2	Retaining pin	1	
3	Pad spring	1	
4	Brake pad	2	
5	Brake caliper assembly	1	
			For installation, reverse the removal procedure.

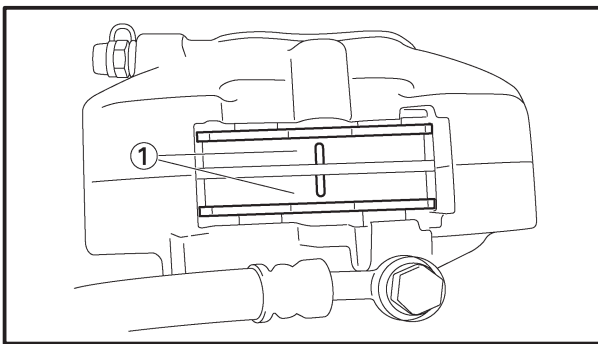
CAUTION:

Disc brake components rarely require disassembly. **DO NOT:**

- Do not disassemble components unless absolutely necessary.
- Do not use solvents on internal brake components.
- Do not use contaminated brake fluid for cleaning.
Use only clean brake fluid.
- Do not allow brake fluid to contact the eyes, otherwise eye injury may occur.
- Do not allow brake fluid to contact painted surfaces or plastic parts otherwise damage may occur.
- Do not disconnect any hydraulic connection, otherwise the entire system must be disassembled, drained, cleaned, and then properly filled and bled after reassembly.

BRAKE PAD REPLACEMENT**NOTE:**

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

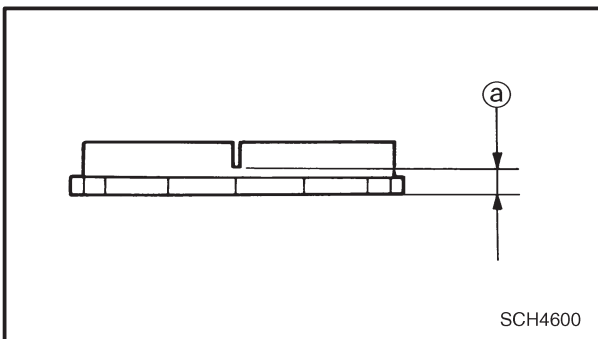


1. Remove:

- Brake pads ①

NOTE:

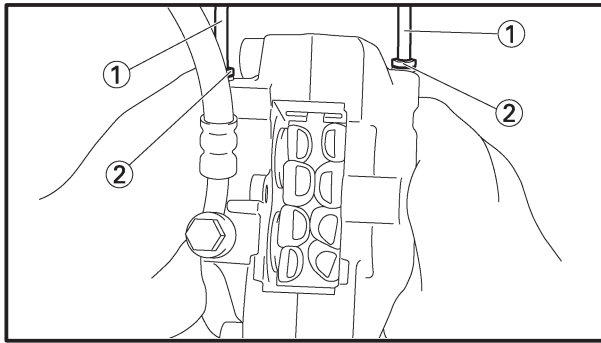
- Do not depress the brake lever when the caliper or disc is off the machine otherwise the brake pads will be forced shut.
- Install a new brake pad spring and shims when the brake pads are replaced.
- Replace the pads as a set if either one is found to be worn to the wear limit (a).



SCH4600



Wear limit:
7.5 mm (0.30 in)



2. Install:
- Brake pads
 - Pad spring

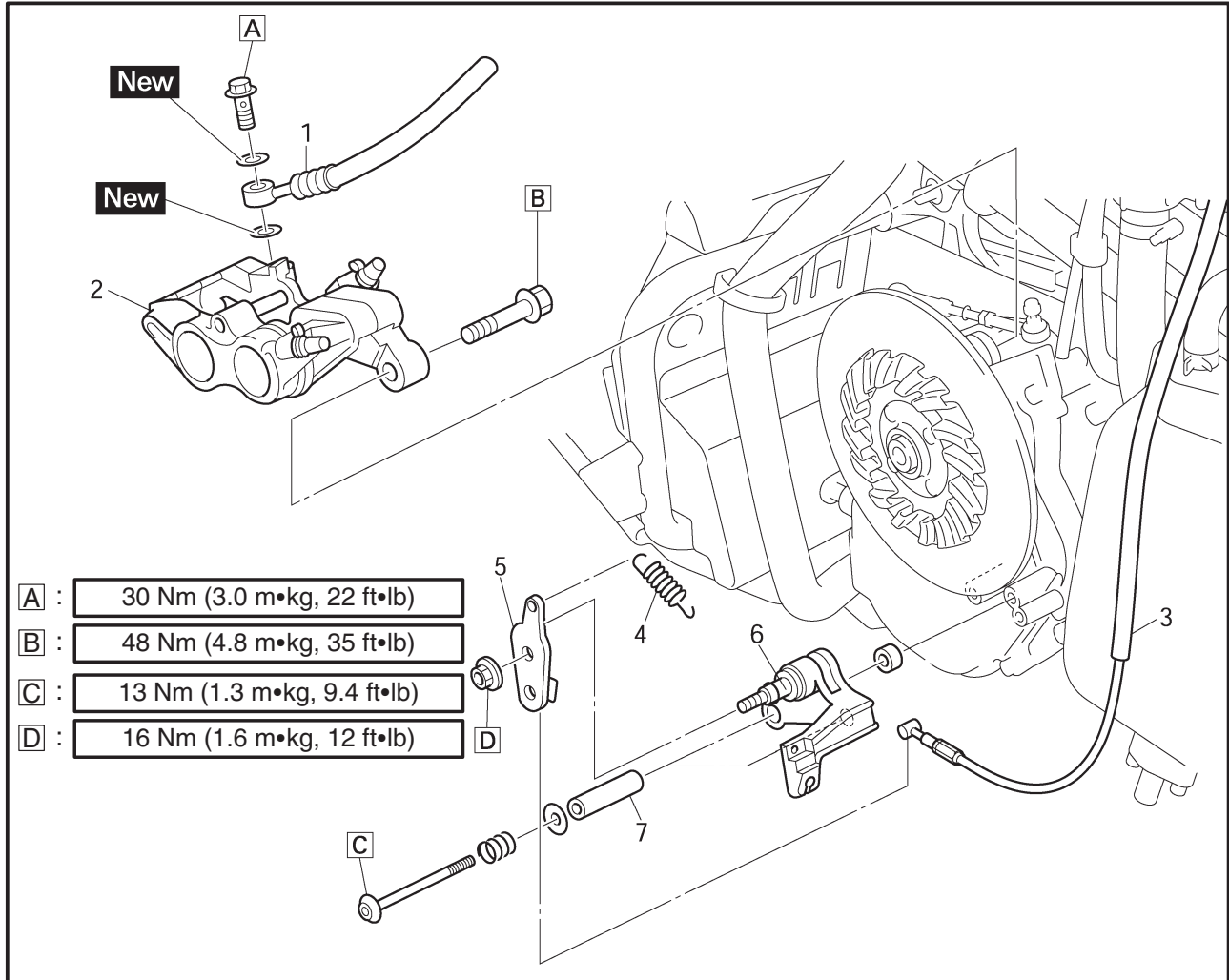
Installation steps:

- Connect a suitable hose ① tightly to the caliper bleed screw ②. Put the other end of this hose into an open container.
- Loosen the caliper bleed screw and push the pistons into the caliper with your finger.
- Tighten the caliper bleed screw ②.

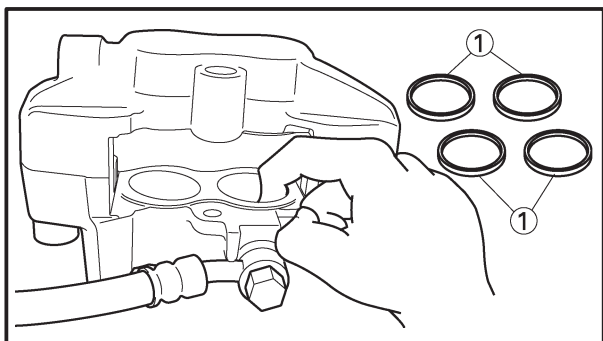
**Bleed screw:****6 Nm (0.6 m•kg, 4.3 ft•lb)**

- Install the brake pads and pad spring.

3. Inspect:
- Brake fluid level
Refer to “BRAKE FLUID LEVEL INSPECTION” in CHAPTER 2.
4. Check:
- Brake lever operation
A soft or spongy feeling → Bleed brake system.
Refer to “AIR BLEEDING (HYDRAULIC BRAKE SYSTEM)” in CHAPTER 2.



Order	Job name/Part name	Q'ty	Remarks
	Brake caliper and parking brake removal		Remove the parts in the order listed below.
	Brake fluid		Drain.
1	Brake hose	1	
2	Brake caliper assembly	1	
3	Parking brake cable	1	
4	Spring	1	
5	Lever	1	
6	Parking brake assembly	1	
7	Collar	1	
			For installation, reverse the removal procedure.



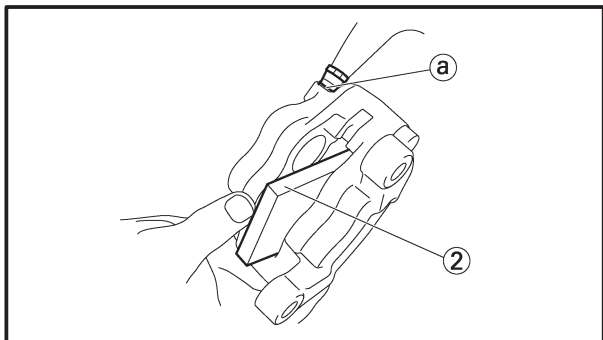
BRAKE CALIPER DISASSEMBLY

NOTE:

Before disassembling a caliper, drain brake fluid from brake hose, master cylinder, brake caliper and brake reservoir of their brake fluid.

1. Remove:

- Pistons
- Piston oil seals ①

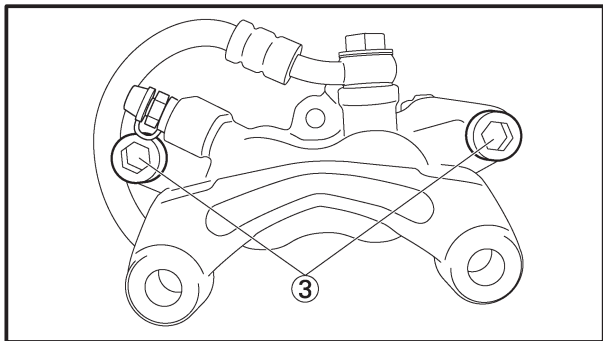


Removal steps:

- Using a piece of wood ②, lock the right piston.
- Blow compressed air into the hose joint opening ③ to force out the left piston from the caliper body.
- Remove the piston seals and reinstall the piston.
- Repeat the previous steps to force out the right piston from the caliper body.

⚠ WARNING

- Never try to pry out the pistons.
- Do not loosen the retaining pin ③.

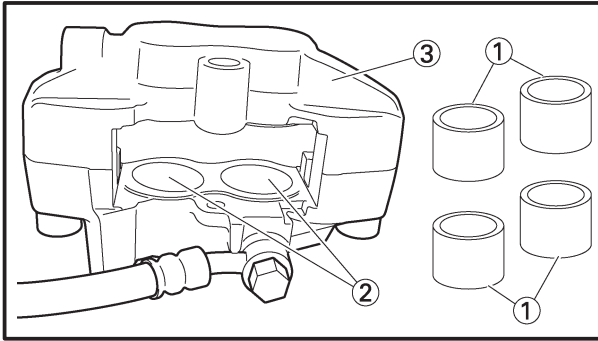


BRAKE CALIPER INSPECTION AND REPAIR

Recommended brake component replacement schedule	
Brake pads	As required
Piston seals and dust seals	Every two years
Brake hose	Every two years
Brake fluid	Only when brakes are disassembled.

⚠ WARNING

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



1. Inspect:

- Caliper piston ①
Scratches/rust/wear → Replace the caliper assembly.
- Caliper cylinder ②
Wear/scratches → Replace the caliper assembly.
- Caliper body ③
Cracks/damage → Replace.
- Oil delivery passage (caliper body)
Blow out with compressed air.

⚠ WARNING

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

BRAKE CALIPER ASSEMBLY

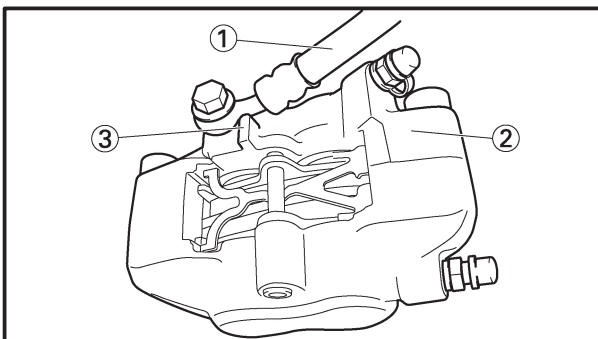
⚠ WARNING

- All internal parts should be cleaned only with new brake fluid.
- Internal parts should be lubricated with brake fluid when installed.



Recommended brake fluid:
DOT 4

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



BRAKE CALIPER INSTALLATION

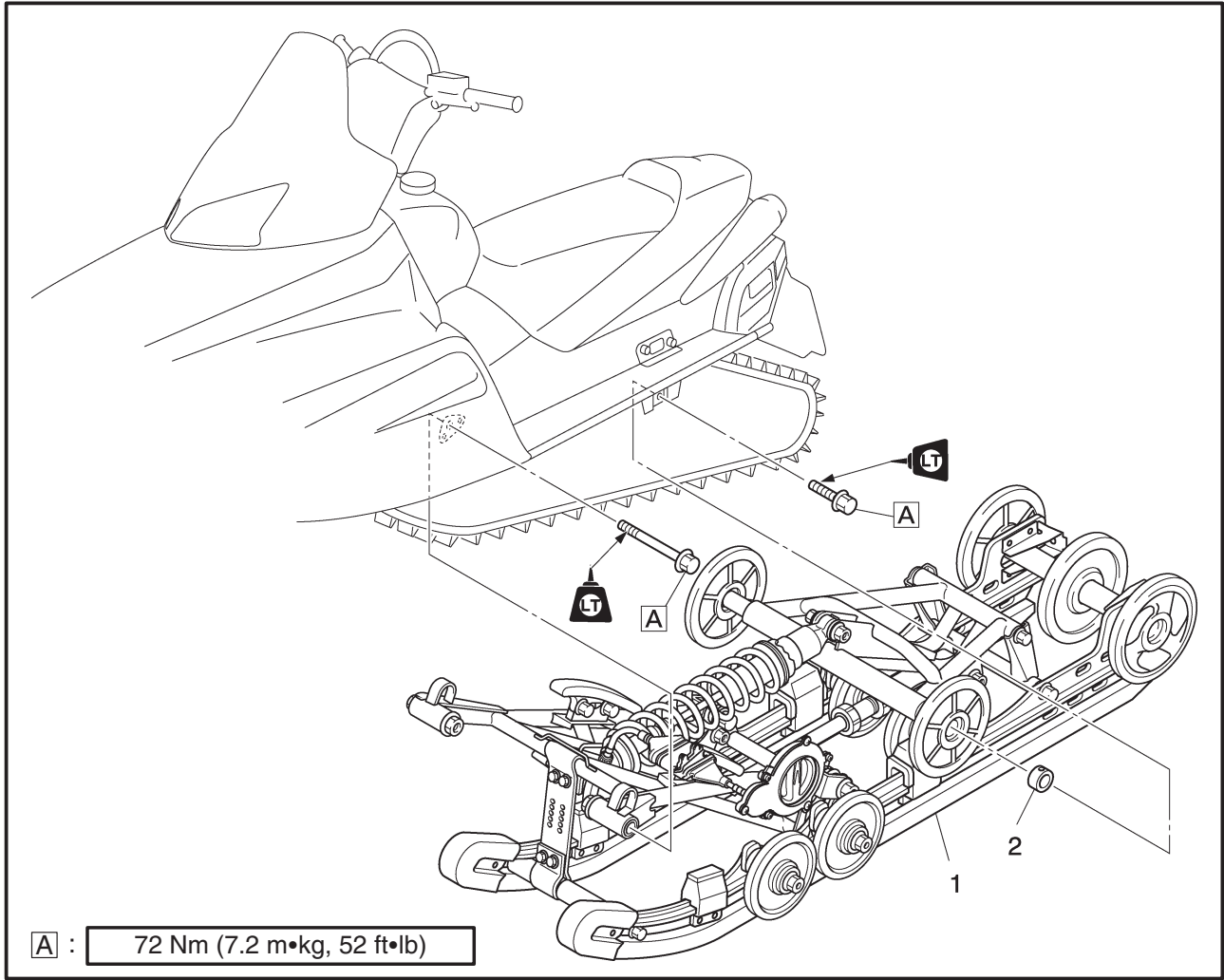
1. Install:

- Brake hose ①

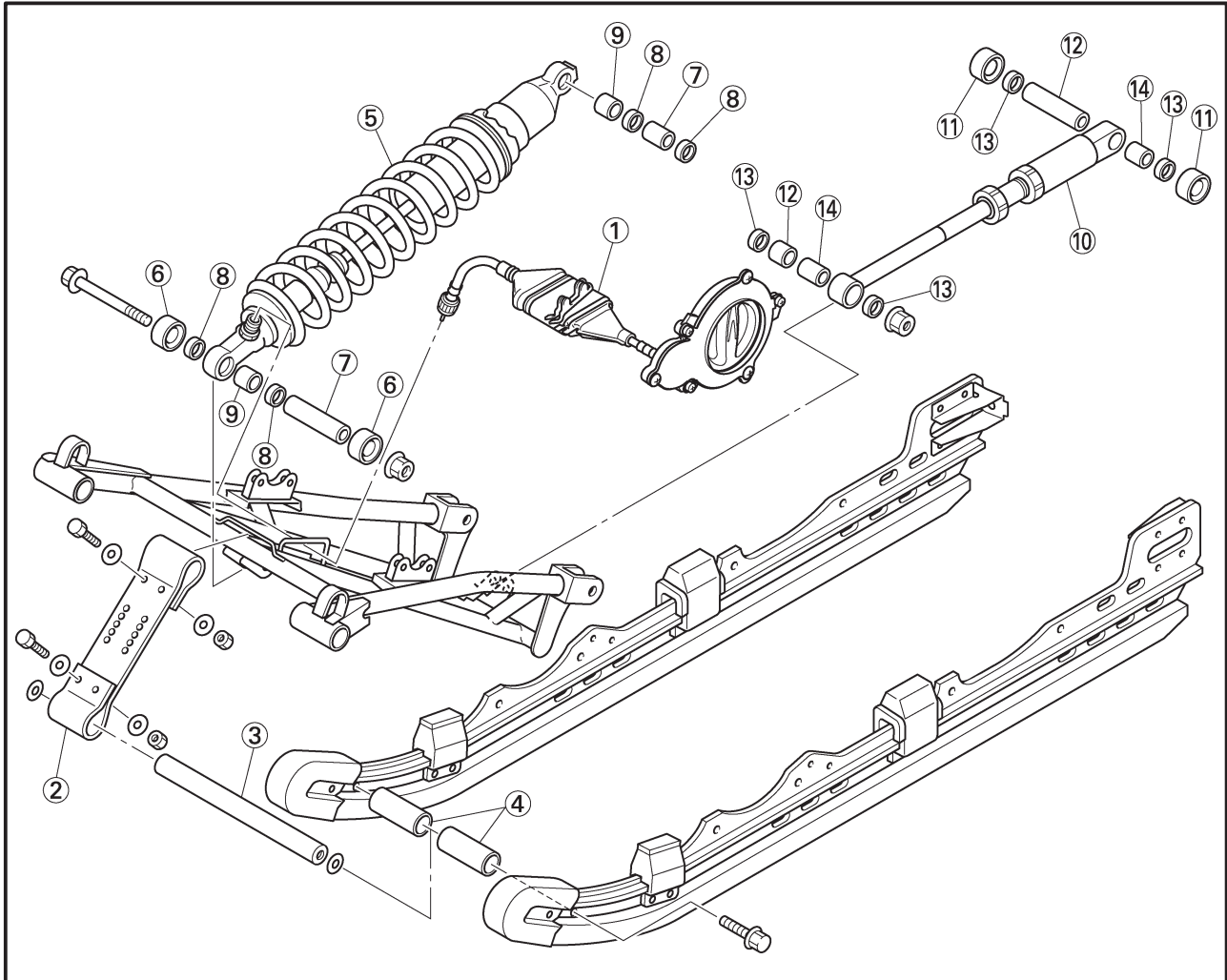
CAUTION:

When installing the brake hose ① onto the brake caliper ②, make sure that the brake pipe touches the projection ③ on the brake caliper.

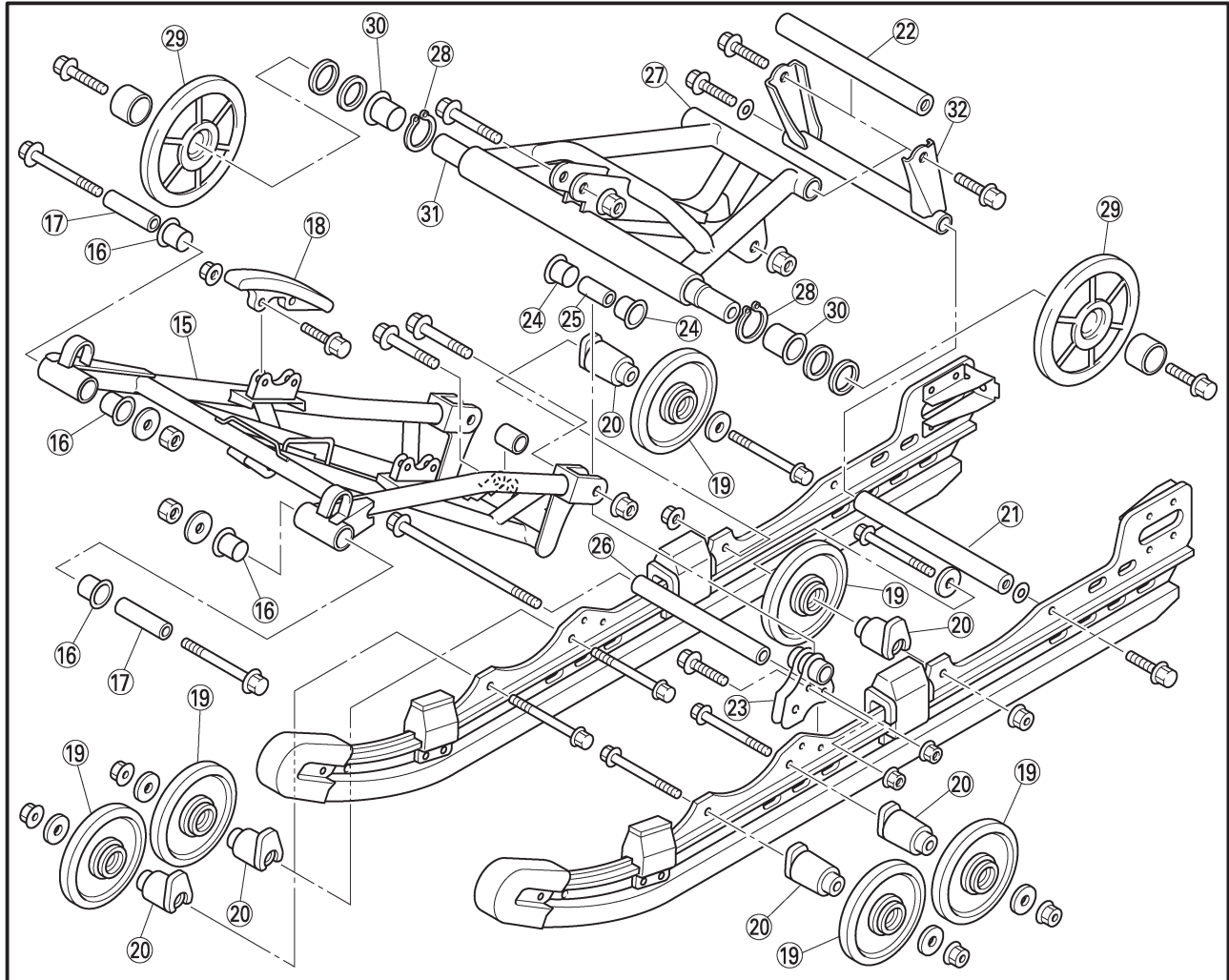
SLIDE RAIL SUSPENSION
RX10K, RX10RK, RX10RSK



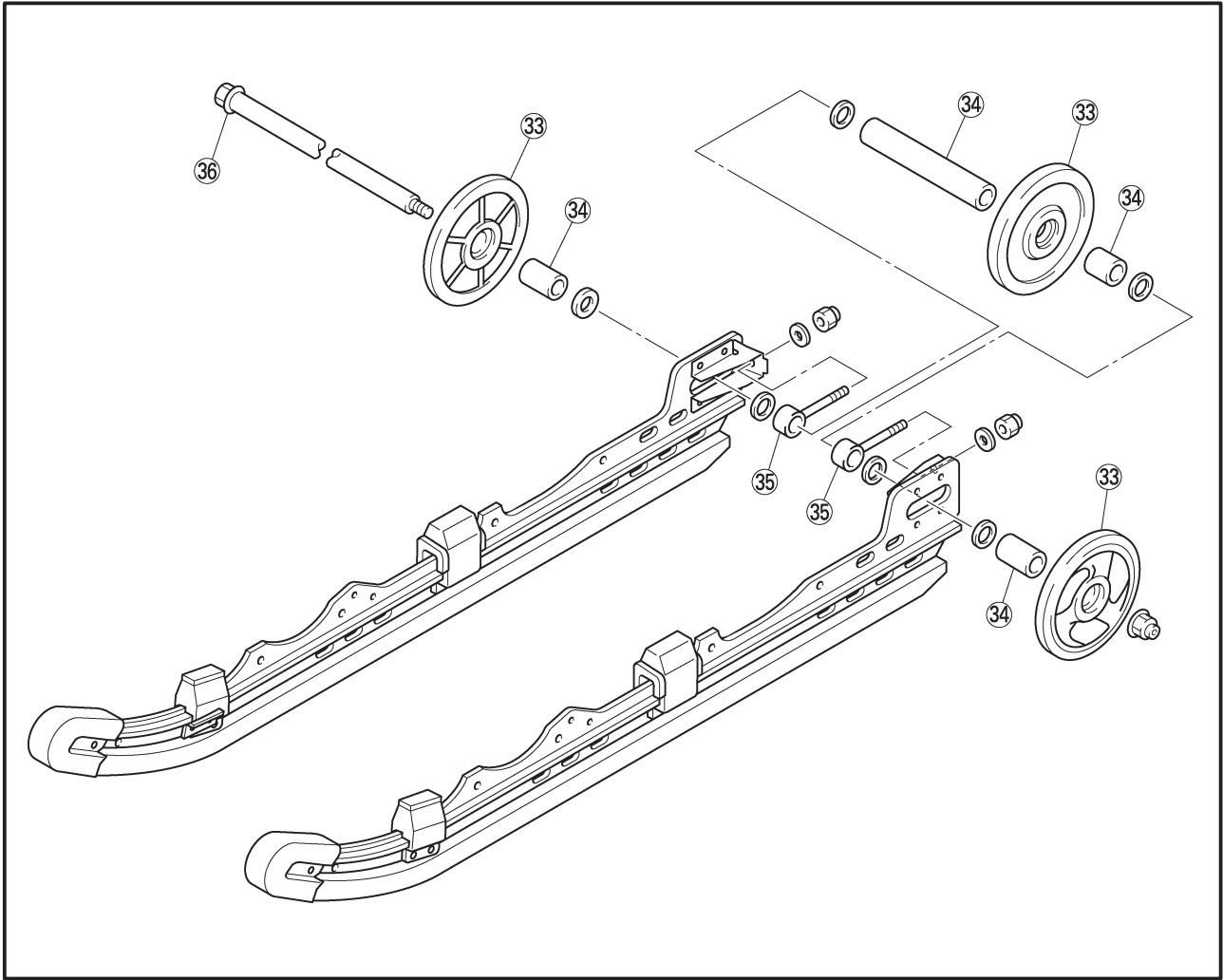
Order	Job name/Part name	Q'ty	Remarks
	Slide rail suspension removal		
1	Rear axle nut	1	Remove the parts in the order listed below. Loosen.
2	Tension adjuster	2	Loosen.
	Slide rail suspension		
	Collar		For installation, reverse the removal procedure.



Order	Job name/Part name	Q'ty	Remarks
	Slide rail suspension disassembly		Remove the parts in the order listed below.
①	Shock absorber adjuster assembly	1	
②	Stopper band	1	
③	Shaft	1	
④	Rubber collar	2	
⑤	Shock absorber	1	
⑥	Spacer	2	
⑦	Collar	2	
⑧	Oil seal	4	
⑨	Bearing	2	
⑩	Control rod assembly	1	
⑪	Spacer	2	
⑫	Collar	2	
⑬	Oil seal	4	
⑭	Bearing	2	



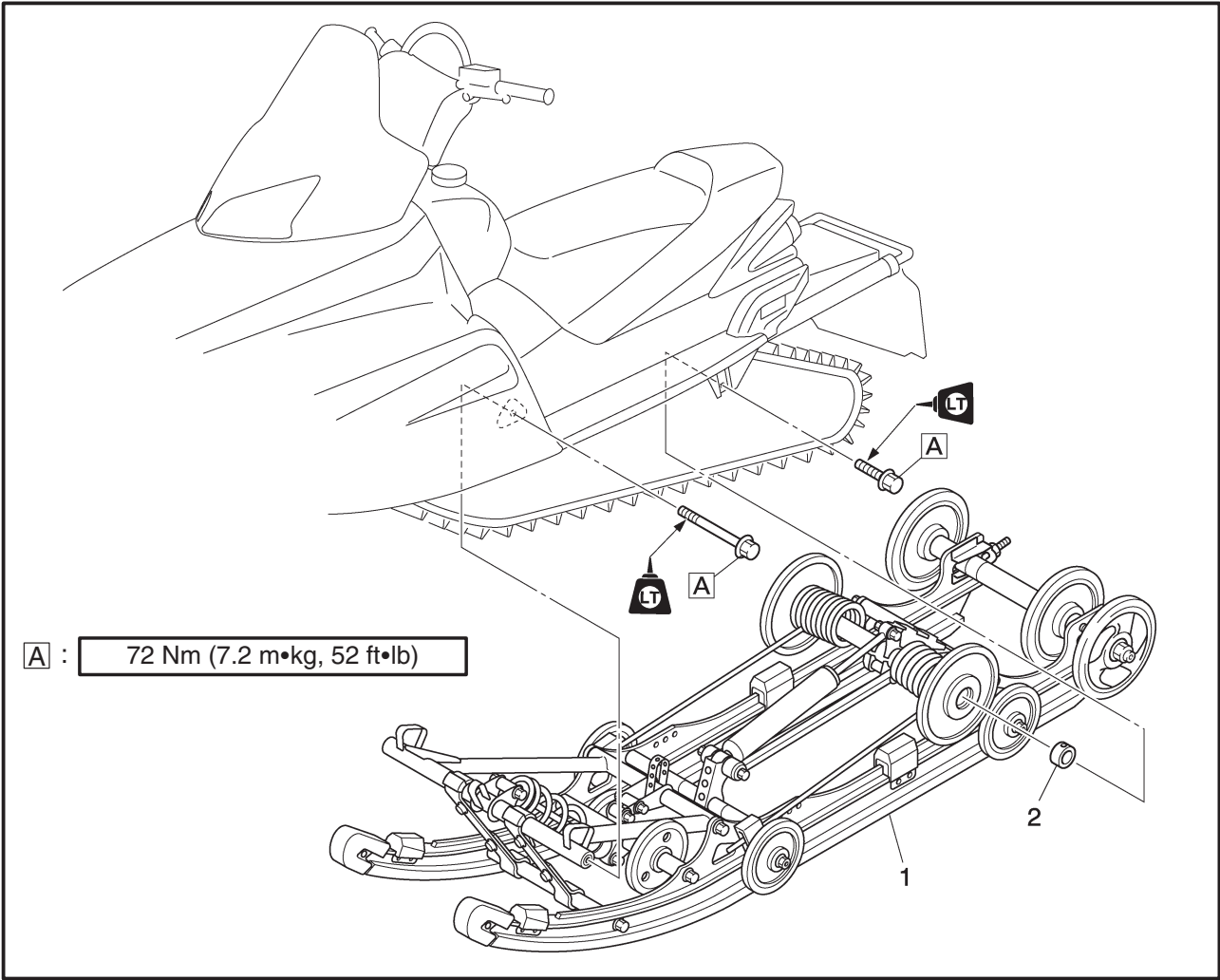
Order	Job name/Part name	Q'ty	Remarks
⑮	Front pivot arm	1	
⑯	Bushing	4	
⑰	Collar	2	
⑱	Sliding runner	2	
⑲	Suspension wheel	6	
⑳	Suspension wheel bracket	6	
㉑	Shaft	1	
㉒	Collar	1	
㉓	Front pivot arm bracket	2	
㉔	Bushing	4	
㉕	Collar	2	
㉖	Shaft	1	
㉗	Rear pivot arm	1	
㉘	Circlip	2	
㉙	Guide wheel	2	
㉚	Bushing	2	
㉛	Shaft	1	
㉜	Rear pivot arm bracket	1	



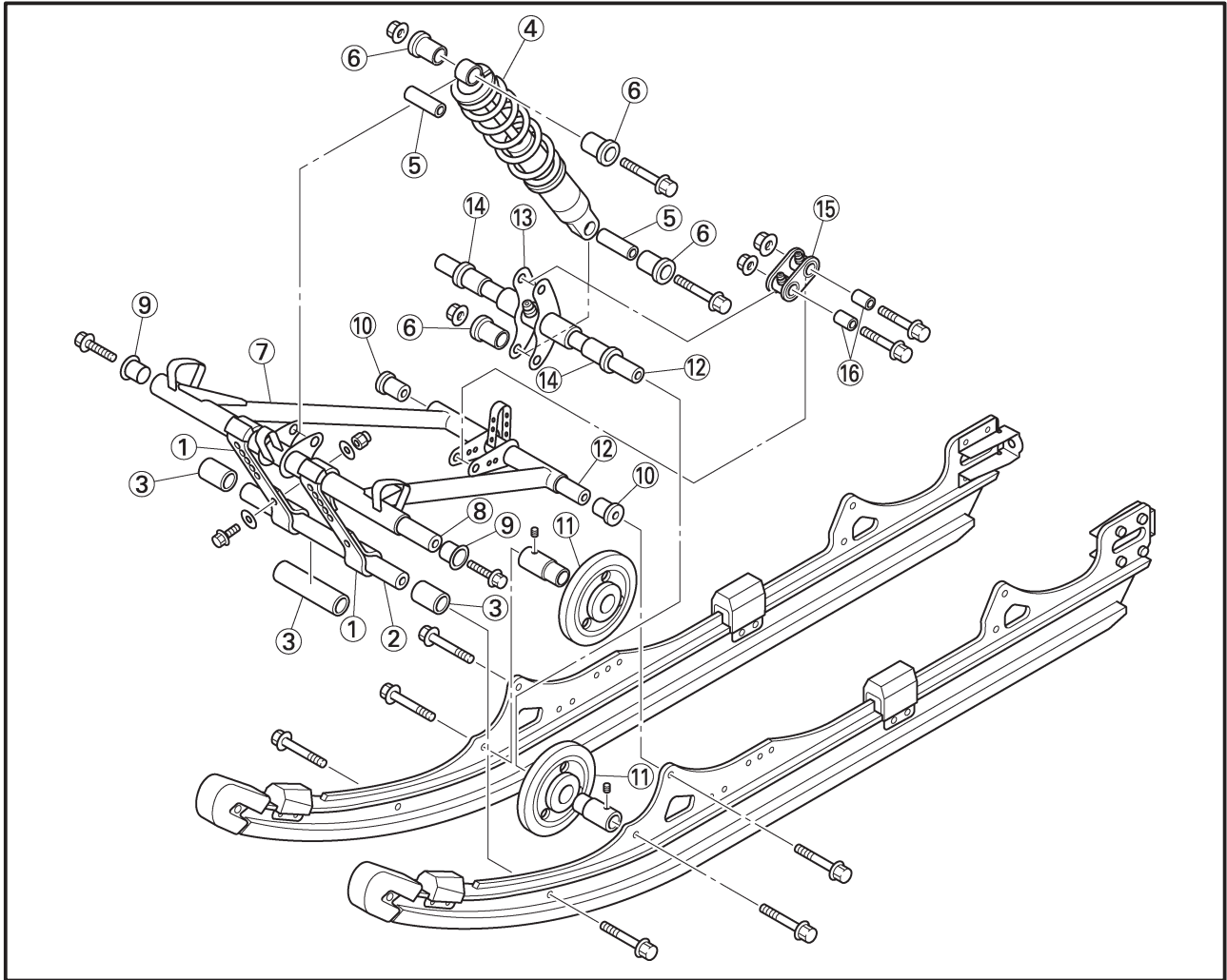
Order	Job name/Part name	Q'ty	Remarks
③③	Guide wheel	3	For assembly, reverse the disassembly procedure.
③④	Collar	4	
③⑤	Tension adjuster	2	
③⑥	Rear axle shaft	1	



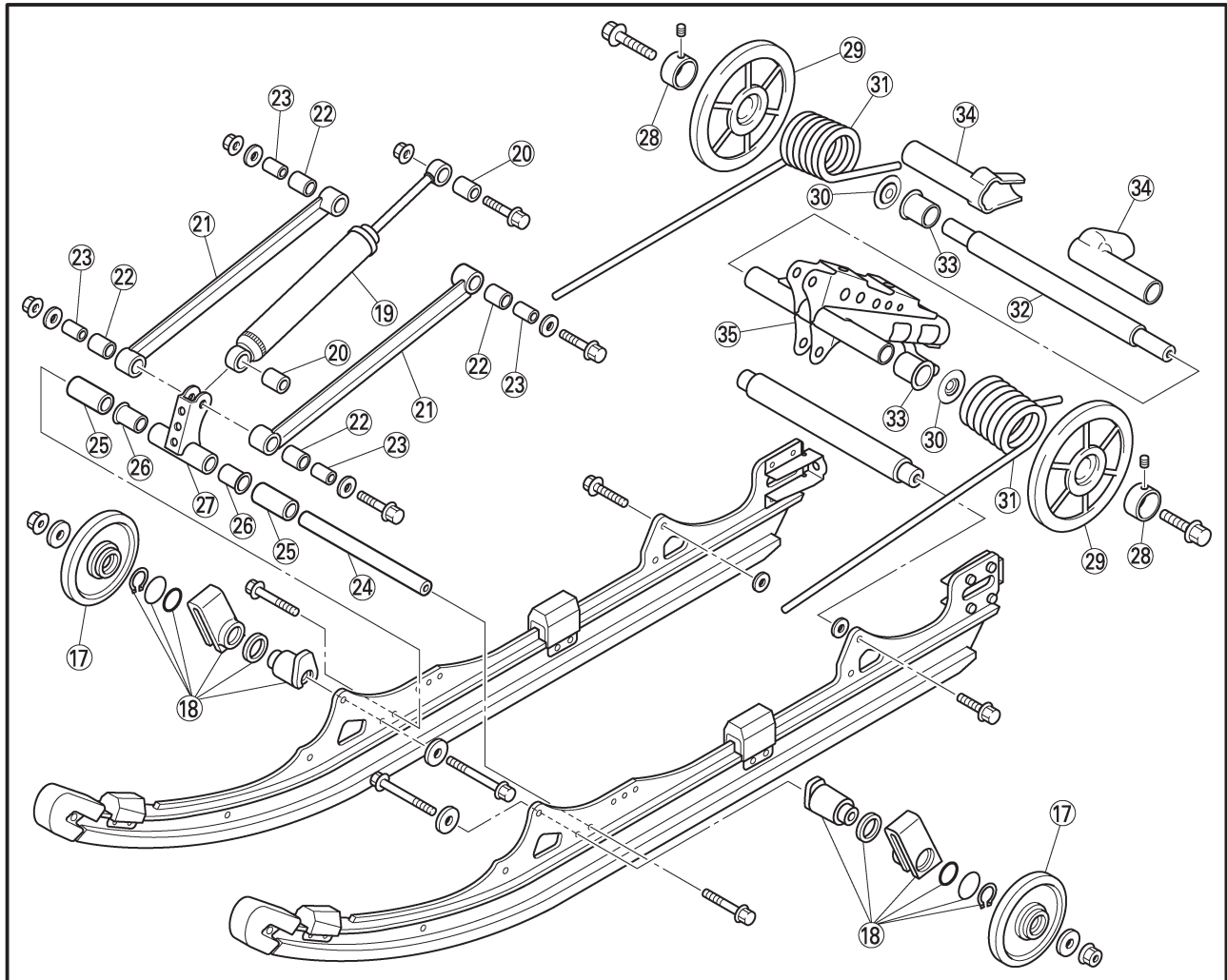
RX10MK, RX10MSK



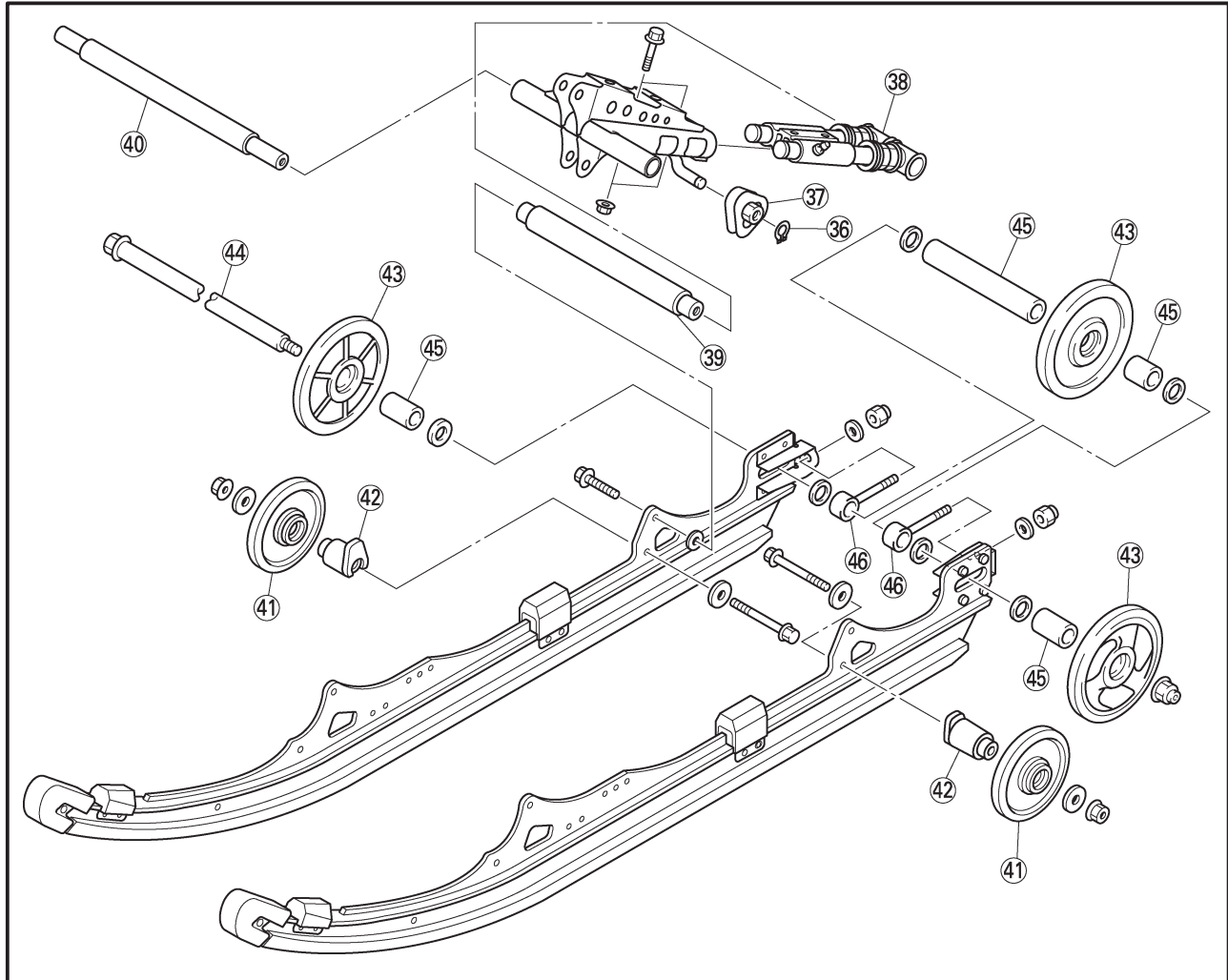
Order	Job name/Part name	Q'ty	Remarks
1	Slide rail suspension removal		
2	Rear axle nut	1	Remove the parts in the order listed below. Loosen.
	Tension adjuster	1	Loosen.
	Slide rail suspension		
	Collar	2	For installation, reverse the removal procedure.



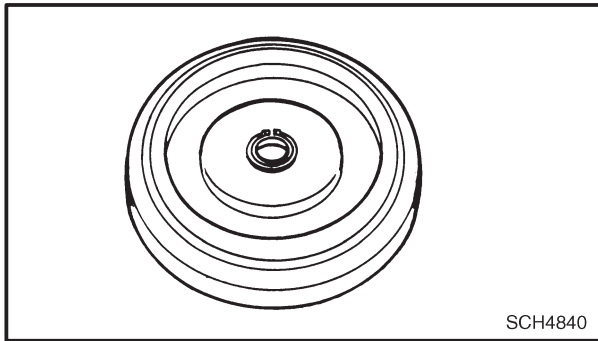
Order	Job name/Part name	Q'ty	Remarks
	Slide rail suspension disassembly		Remove the parts in the order listed below.
①	Stopper band	2	
②	Shaft	1	
③	Rubber collar	3	
④	Front shock absorber	1	
⑤	Collar	2	
⑥	Bushing	4	
⑦	Front pivot arm	1	
⑧	Shaft	1	
⑨	Bushing	2	
⑩	Collar	2	
⑪	Suspension wheel assembly	2	
⑫	Shaft	1	
⑬	Suspension bracket	1	
⑭	Bushing	2	
⑮	Bracket	1	
⑯	Collar	2	



Order	Job name/Part name	Q'ty	Remarks
①7	Suspension wheel	2	
①8	Hook assembly	2	
①9	Rear shock absorber	1	
②0	Collar	2	
②1	Rear rod	2	
②2	Collar	4	
②3	Bushing	4	
②4	Shaft	1	
②5	Collar	2	
②6	Bushing	2	
②7	Bracket	1	
②8	Collar	2	
②9	Guide wheel	2	
③0	Spacer	2	
③1	Rear spring	2	
③2	Shaft	1	
③3	Bushing	2	
③4	Rear pivot arm protector	2	
③5	Rear pivot arm	1	



Order	Job name/Part name	Q'ty	Remarks
③⑥	Circlip	2	For assembly, reverse the disassembly procedure.
③⑦	Hook	2	
③⑧	Control rod assembly	1	
③⑨	Shaft	1	
④①	Pivot shaft	1	
④①	Suspension wheel	2	
④②	Suspension bracket	2	
④③	Guide wheel	3	
④④	Rear axle shaft	1	
④⑤	Collar	4	
④⑥	Tension adjuster	2	



INSPECTION

1. Inspect:

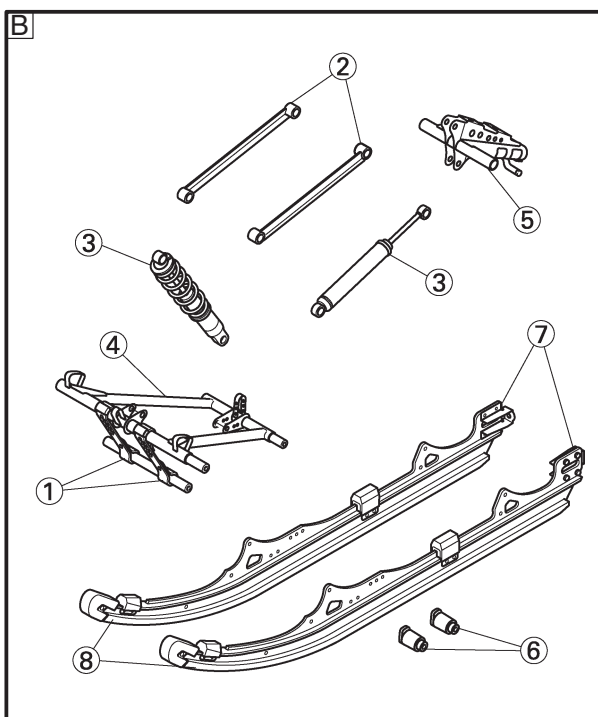
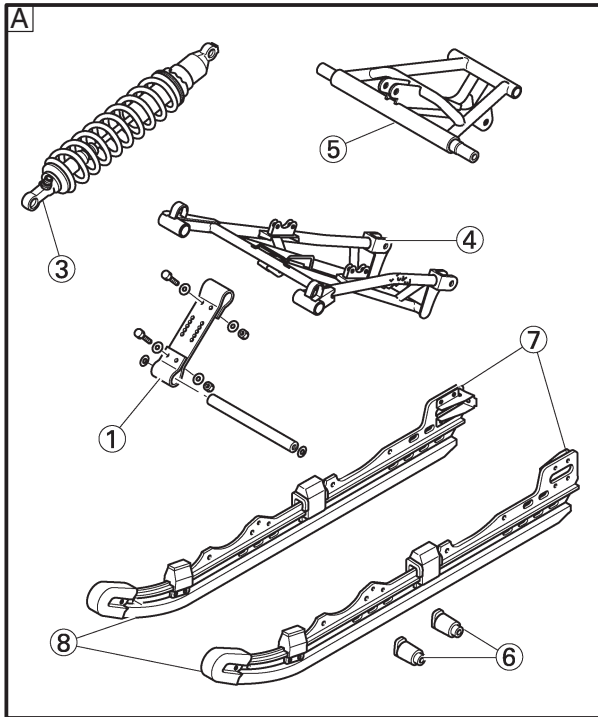
- Suspension wheel
- Guide wheel
- Cracks/damage → Replace.
- Wheel bearing
- Wheel turns roughly → Replace.

2. Inspect:

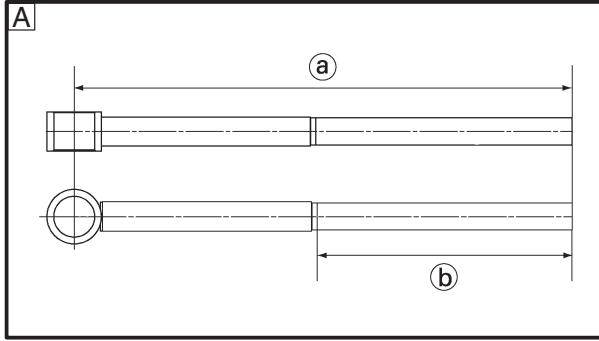
- Stopper band ①
- Frayed/damage → Replace.
- Relay rod ② (RX10MK, RX10MSK)
- Bends/damage → Replace.
- Shock absorber ③
- Oil leaks/damage → Replace.
- Bushings
- Wear/cracks/damage → Replace.
- Front pivot arm ④
- Rear pivot arm ⑤
- Suspension wheel bracket ⑥
- Sliding frame ⑦
- Cracks/damage → Replace.
- Slide runner ⑧
- Wear/damage → Replace.

A RX10K, RX10RK, RX10RSK

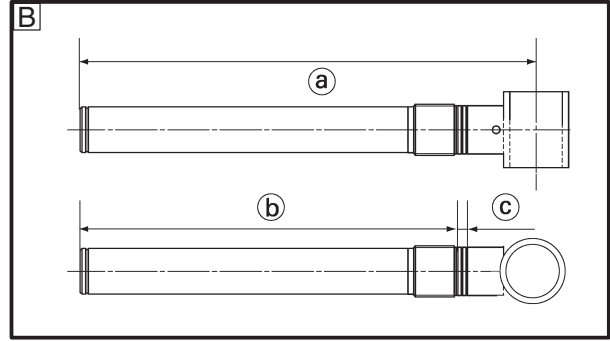
B RX10MK, RX10MSK



Control rod parts number



A RX10K, RX10RK, RX10RSK

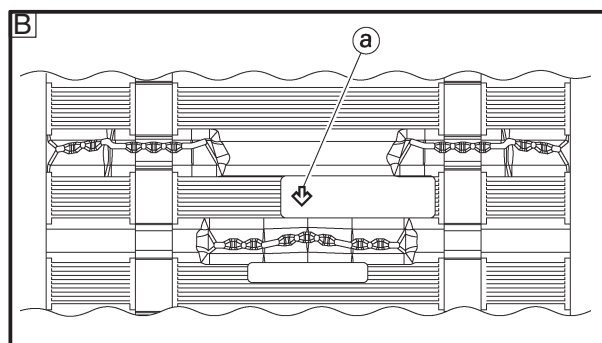
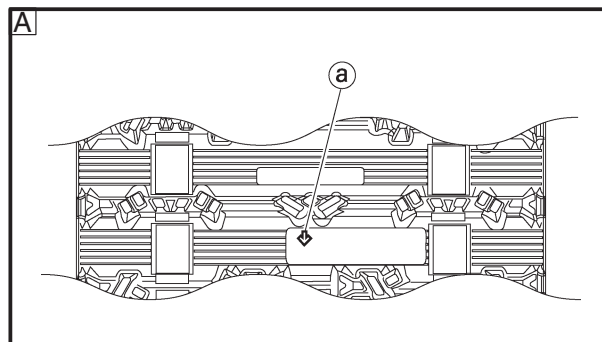
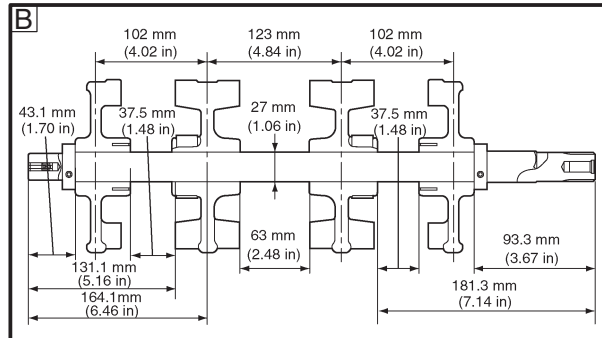
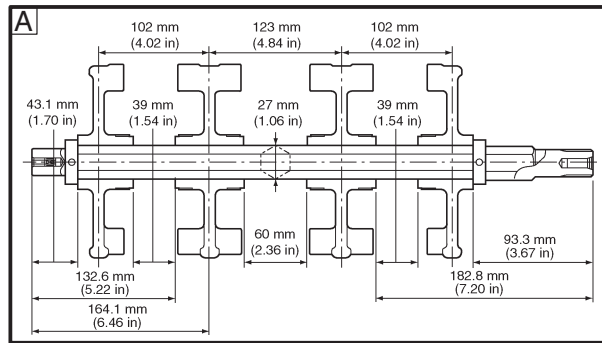


B RX10MK, RX10MSK

A Control rod 1	B Length a mm (in)	C Length b mm (in)	D Length c mm (in)
RX10K, RX10RK, RX10RSK	292.3 (11.51)	150.5 (5.93)	—
RX10MK, RX10MSK	228.8 (9.01)	198.7 (7.82)	$2.5P \times 2 = 5$ ($0.098P \times 2 = 0.196$)

E Control rod 1 parts number	F Control rod 2 parts number	H Washer plate parts number	
		I Washer plate thickness mm (in)	
		J Upper	K Lower
8FU-4745A-00 (RX10K, RX10RK, RX10RSK)	8FU-4745B-00	90202-16229 2.5 (0.098)	8FU-47384-00 7.5 (0.300)

E Control rod 1 parts number	G Stopper control 1 parts number	H Washer plate parts number	
		I Washer plate thickness mm (in)	
		J Upper	K Lower
8FK-4745A-00 (RX10MK, RX10MSK)	8ES-4745D-00	90202-16229 2.5 (0.098)	90202-16230 5.0 (0.197)



FRONT AXLE AND TRACK INSTALLATION

1. Install:

- Sprocket wheels
- Guide wheels

NOTE:

- When pressing the sprocket wheels onto the front axle, align the lugs on each sprocket wheel.
- Position each sprocket wheel on the axle as shown in the illustration.

A RX10K, RX10RK, RX10RSK

B RX10MK, RX10MSK

2. Place the track in the chassis.

NOTE:

For track with a direction of rotation mark (a):
Install the track with the mark pointing in the direction of track rotation.

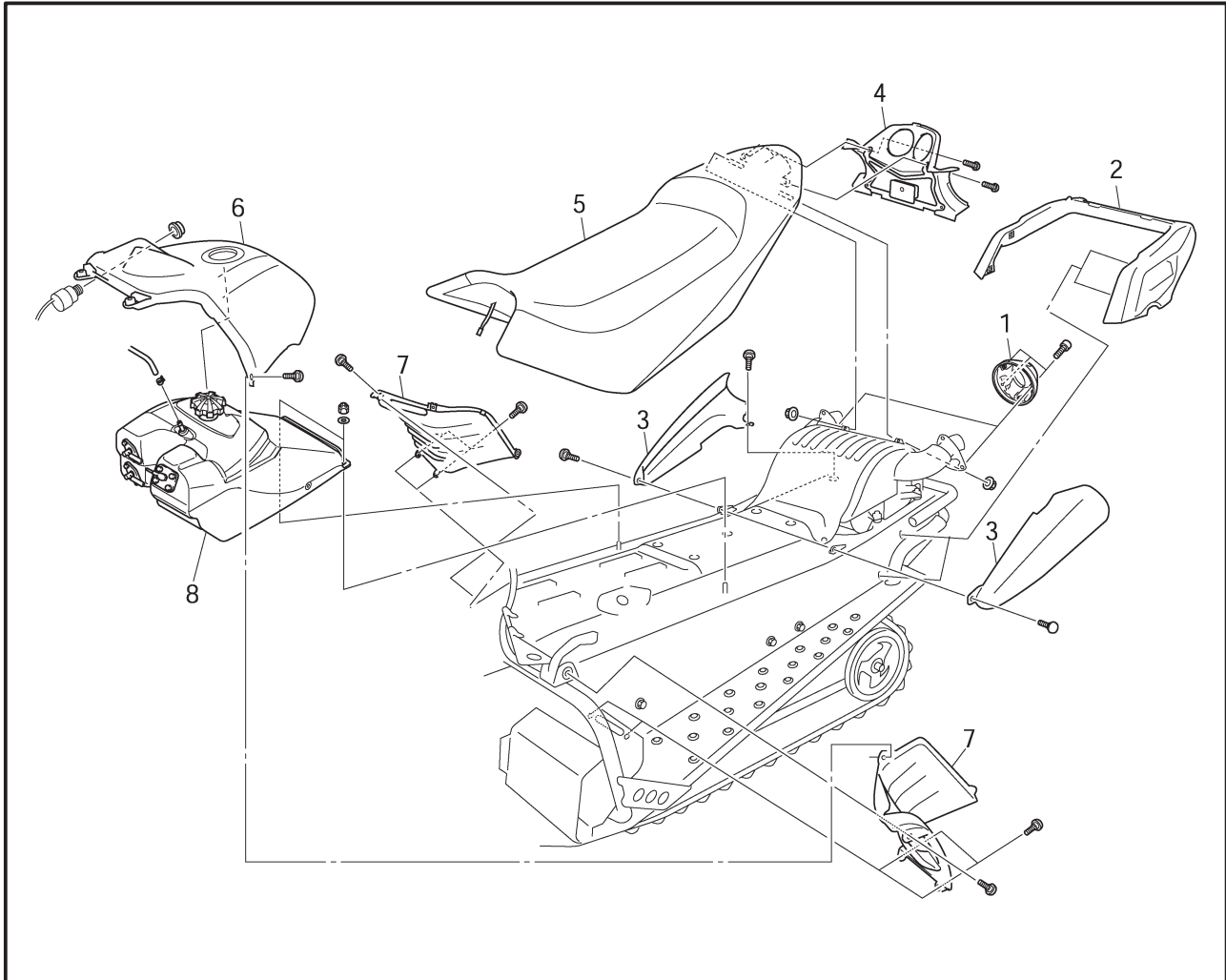
A RX10K, RX10RK, RX10RSK

B RX10MK, RX10MSK



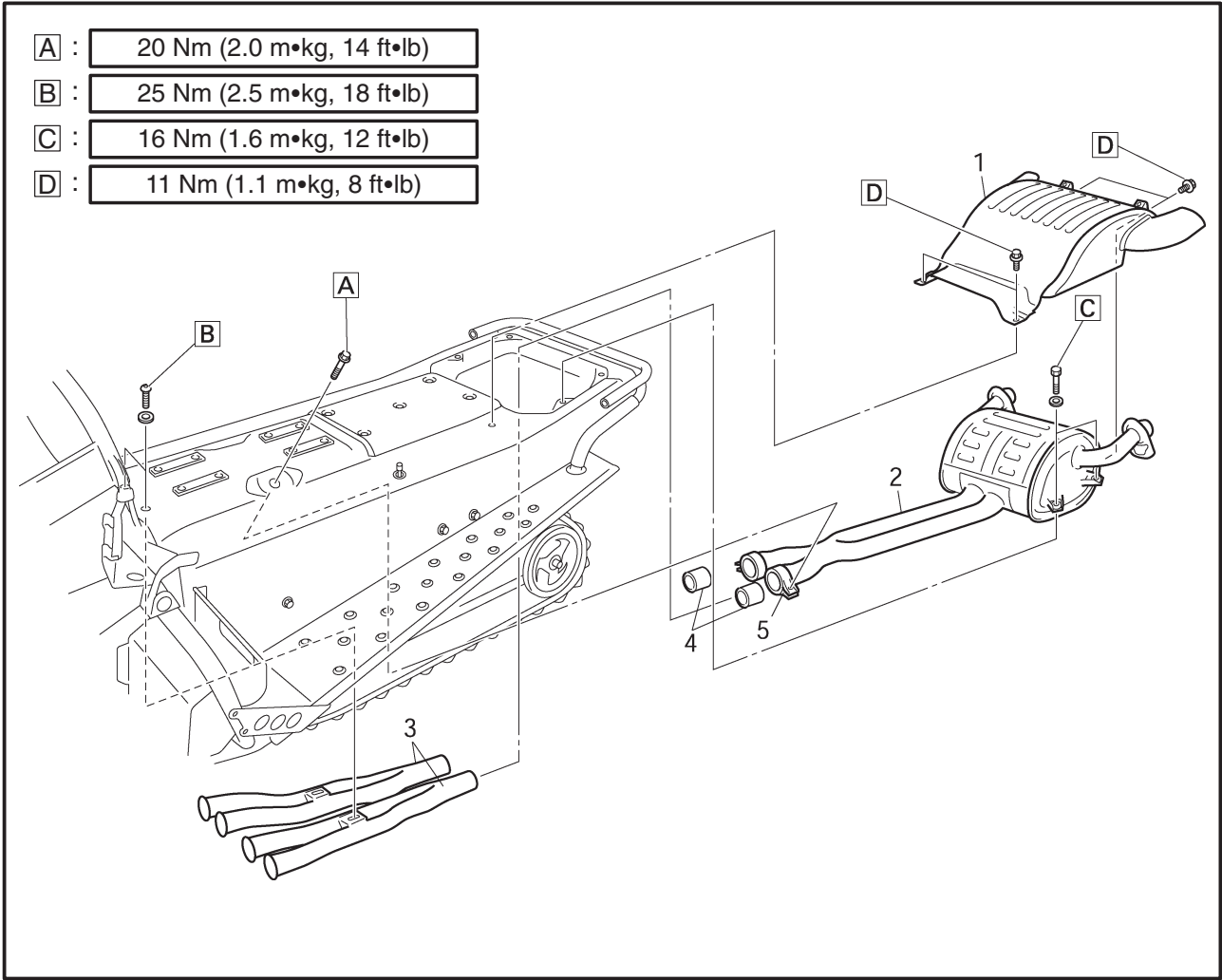
ENGINE

SEAT AND FUEL TANK



Order	Job name/Part name	Q'ty	Remarks
	Seat and fuel tank removal		
1	Muffler end pipe	2	Remove the parts in the order listed below.
2	Rear cover	1	
3	Muffler side cover	2	
4	Tail/brake light cover	1	
5	Seat	1	
6	Fuel tank cover	1	
7	Side cover	2	
8	Fuel tank	1	
			For installation, reverse the removal procedure.

EXHAUST PIPE AND MUFFLER



5

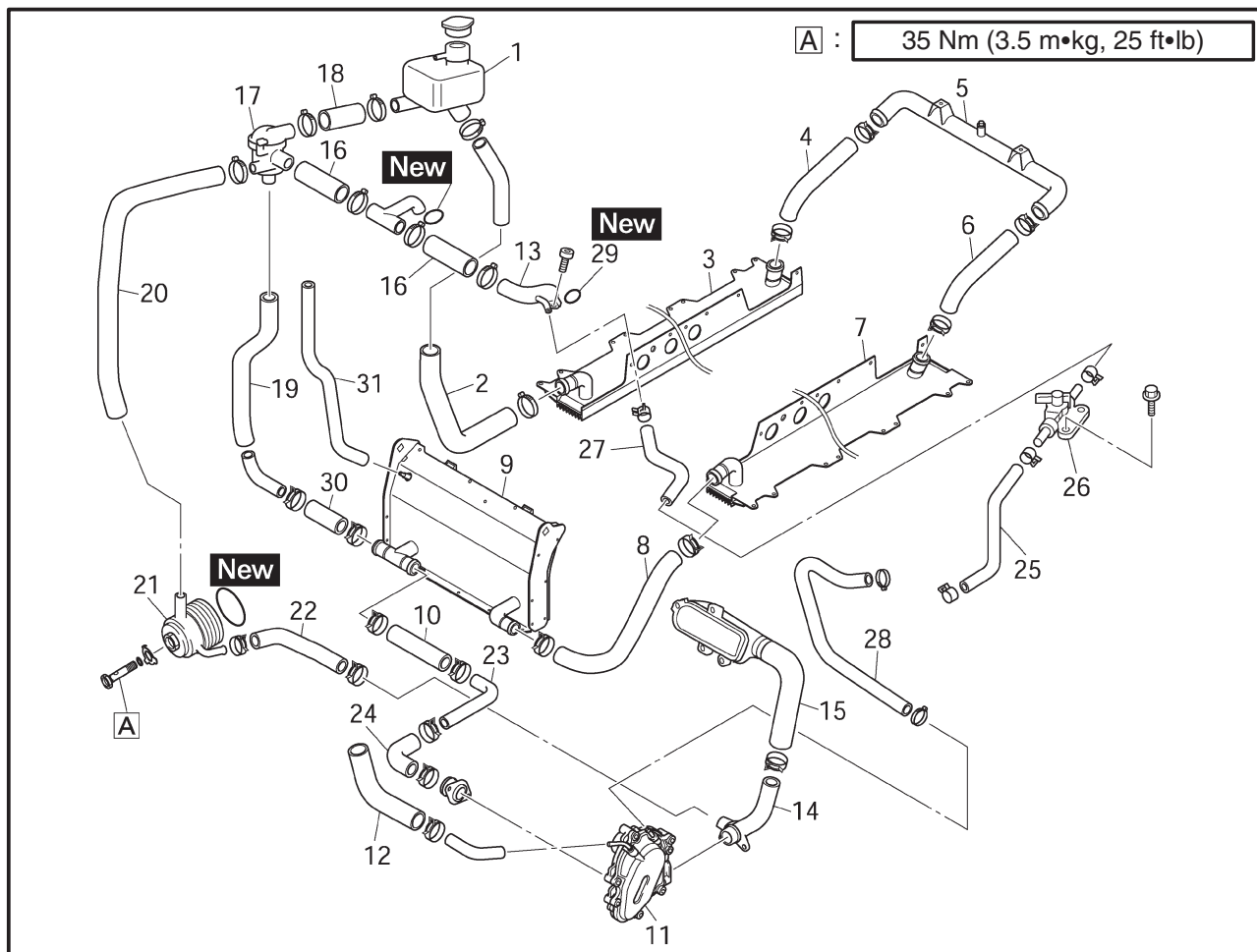
Order	Job name/Part name	Q'ty	Remarks
	Exhaust pipe and muffler removal		
	Slide rail suspension		Remove the parts in the order listed below. Refer to "SLIDE RAIL SUSPENSION" in CHAPTER 4.
	Front axle assembly		Refer to "FRONT AXLE AND TRACK" in CHAPTER 4.
	Track		Refer to "SEAT AND FUEL TANK".
	Seat and fuel tank		
1	Protector	1	
2	Muffler	1	
3	Exhaust pipe	2	
4	Gasket	2	
5	Band	2	
			For installation, reverse the removal procedure.



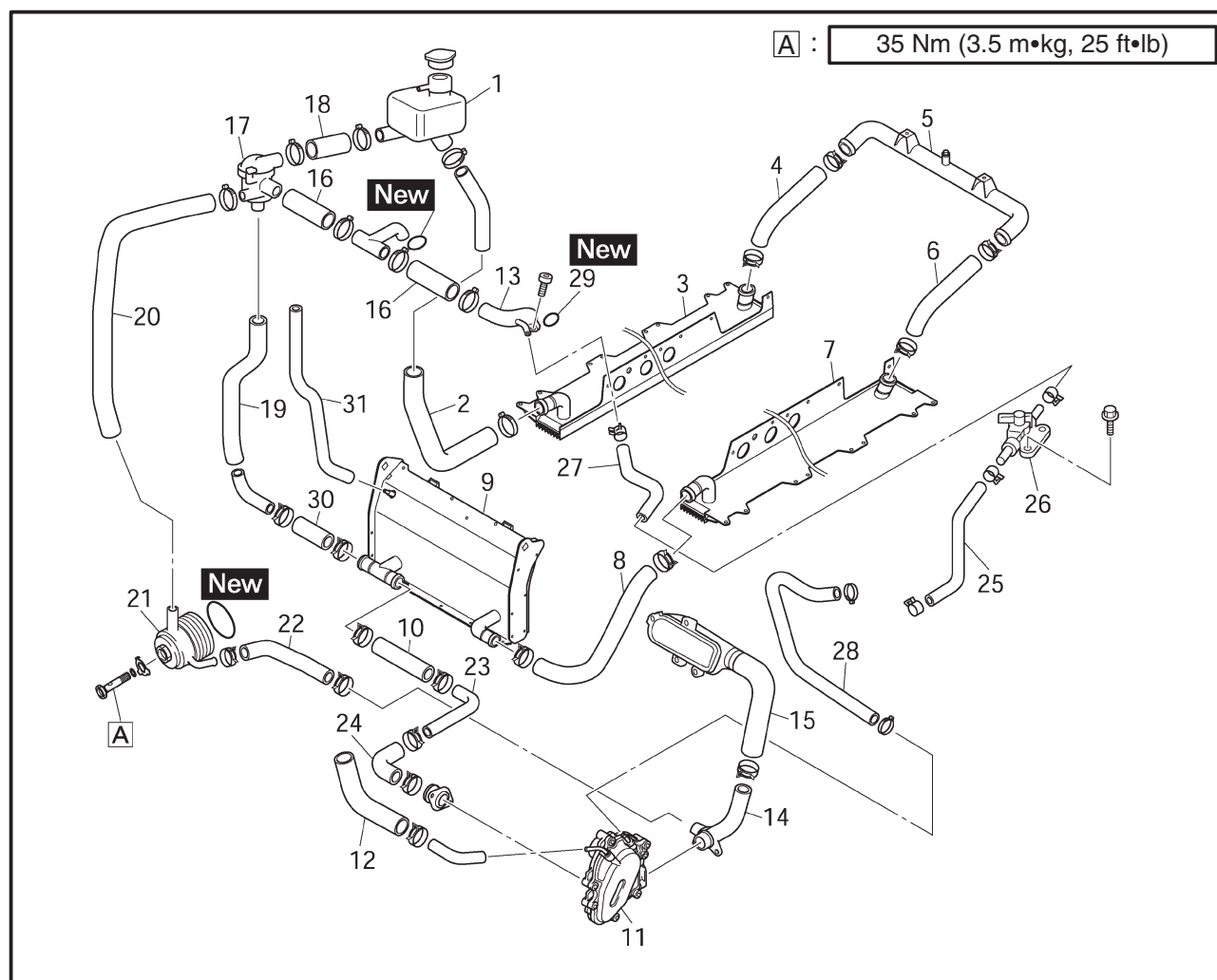
COOLING SYSTEM

HEAT EXCHANGER

RX10MK, RX10MSK

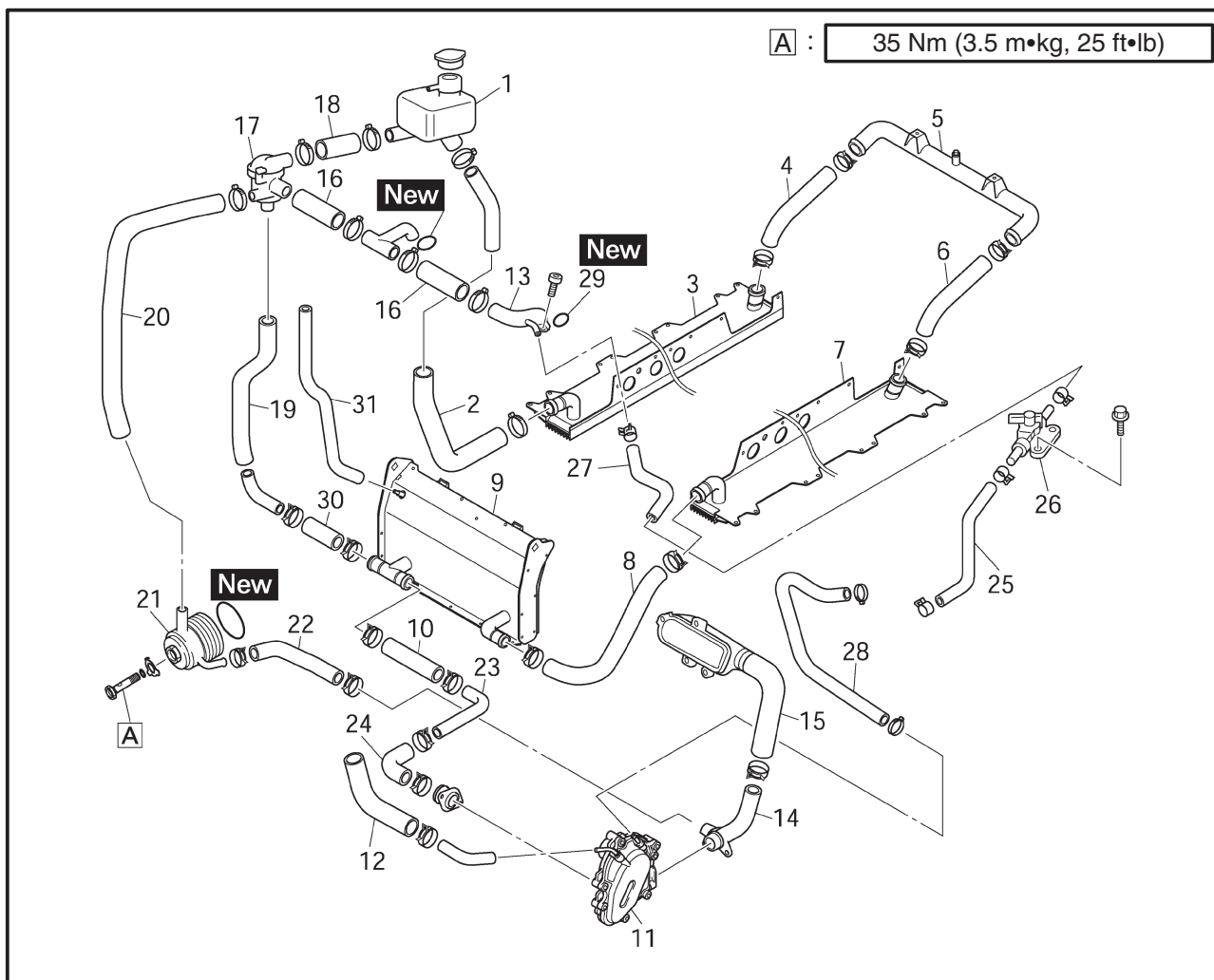


Order	Job name/Part name	Q'ty	Remarks
	Heat exchanger removal		Remove the parts in the order listed below. Drain. Refer to "COOLING SYSTEM" in CHAPTER 2. Refer to "PRIMARY SHEAVE AND DRIVE V-VELT" in CHAPTER 4.
	Coolant		
	Primary sheave assembly		
1	Coolant reservoir tank	1	
2	Coolant hose 1	1	
3	Heat exchanger (right)	1	
4	Coolant hose 2	1	
5	Heat exchanger (rear)	1	
6	Coolant hose 3	1	
7	Heat exchanger (left)	1	
8	Coolant hose 4	1	
9	Heat exchanger (front)	1	
10	Coolant hose 5	1	
11	Water pump assembly	1	
12	Coolant hose 6	1	



6

Order	Job name/Part name	Q'ty	Remarks
13	Coolant pipe 1	1	
14	Coolant pipe 2	1	
15	Coolant hose 7	1	
16	Coolant hose 8	2	
17	Thermostat assembly	1	
18	Coolant hose 9	1	
19	Coolant hose 10	1	
20	Oil cooler outlet hose	1	
21	Oil cooler	1	
22	Oil cooler inlet hose	1	
23	Pipe 3	1	
24	Water pump hose	1	
25	Carburetor heater hose	1	
26	Coolant cock 1	1	
27	Carburetor heater hose 1	1	
28	Heat exchanger hose	1	
29	O-ring	1	



Order	Job name/Part name	Q'ty	Remarks
30	Coolant hose 11	1	For installation, reverse the removal procedure.
31	Coolant hose 12	1	



SPECIFICATIONS

GENERAL SPECIFICATIONS

Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Model code number:	8FU1 (RX10K for U.S.A/Canada) 8FV1 (RX10RK for U.S.A/Canada) 8FY1 (RX10RSK for U.S.A/Canada) 8FX1 (RXW10K for U.S.A/Canada) 8GB1 (RXW10SK for U.S.A/Canada) 8FW1 (RX10MK for U.S.A/Canada) 8GA1 (RX10MSK, for U.S.A/Canada)
Dimensions:	
Overall length	2,755 mm (108.5 in) (RX10K, RX10RK, RX10RSK) 3,000 mm (118.1 in) (RXW10K, RXW10SK)
Overall width	3,185 mm (125.4 in) (RX10MK, RX10MSK) 1,210 mm (47.6 in) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK)
Overall height	1,165 mm (45.8 in) (RX10MK, RX10MSK) 1,215 mm (47.8 in) (RX10K, RX10RK, RXW10K, RX10MK) 1,150 mm (45.3 in) (RX10RSK, RXW10SK, RX10MSK)
Weight:	
Dry weight	247 kg (545.0 lb) (RX10K) 254 kg (560.1 lb) (RX10RK, RX10RSK) 264 kg (582.1 lb) (RXW10K, RXW10SK) 263 kg (579.9 lb) (RX10MK, RX10MSK)
Minimum turning radius:	
Clockwise	3.9 m (12.8 ft) (RX10K, RX10RK, RX10RSK) 4.2 m (13.8 ft) (RXW10K, RXW10SK)
Counterclockwise	4.3 m (14.1 ft) (RX10MK, RX10RSK) 3.9 m (12.8 ft) (RX10K, RX10RK, RX10RSK) 4.2 m (13.8 ft) (RXW10K, RXW10SK) 4.3 m (14.1 ft) (RX10MK, RX10MSK)
Engine:	
Engine type	Liquid-cooled, 4-stroke, DOHC
Cylinder type	Backward-inclined parallel 4-cylinder
Displacement	998 cm ³ (60.9 cu.in)
Bore × stroke	74 × 58 mm (2.91 × 2.28 in)
Compression ratio	11.8
Maximum hose power	r/min 10,250 r/min
Maximum torque	r/min 7,500 r/min
Standard compression pressure (at sea level)	1,450 kPa (14.5 kg/cm ² , 206 psi) at 400 r/min
Starting system	Electric starter
Lubrication system:	Dry sump

GENERAL SPECIFICATIONS

SPEC



Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Engine oil: Type Oil capacity Periodic oil change With oil filter replacement Total amount	API SE, SF, SG or higher SAE0W-30 2.8 L (2.5 Imp qt, 3.0 US qt) 3.0 L (2.6 Imp qt, 3.2 US qt) 3.8 L (3.3 Imp qt, 4.0 US qt)
Oil filter: Oil filter type	Cartridge (paper)
Drive chain housing oil: Type Capacity	Gear oil API "GL-3" SAE#75 or #80 0.25 L (8.8 Imp oz, 8.5 US oz)
Coolant: Capacity	4.9 L (4.32 Imp qt, 5.18 US qt) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 6.4 L (5.64 Imp qt, 6.76 US qt) (RX10MK, RX10MSK)
Fuel: Type Tank capacity	Regular unleaded gasoline (Pump Octane $\frac{R+M}{2}$; 88 or higher) Research Octane; 93 or higher (for Europe) 39.4 L (8.62 Imp gal, 10.4 US gal)
Carburetors: Type/Quantity Manufacture	BSR37 $\times$ 4 MIKUNI
Spark plug: Type Manufacture Gap	NGK R CR9E NGK 0.7 ~ 0.8 mm (0.028 ~ 0.031 in)
Primary reduction: Primary reduction system Primary reduction ratio	Spur gear 1.19 (37/31)
Transmission: Primary reduction system Primary reduction ratio Clutch type Secondary reduction system Secondary reduction ratio Reverse system	V-Belt 3.8 : 1 ~ 1 : 1 Automatic centrifugal engagement Chain 1.58 (38/24) (RX10K, RX10RK, RX10RSK) 1.65 (38/23) (RXW10K, RXW10RK) 1.90 (40/21) (RX10MK, RX10MSK) No (RX10K, RX10MK, RX10MSK) Yes (RX10RK, RX10RSK, RXW10K, RXW10SK)
Chassis: Frame type Caster Ski stance (center to center)	Monocoque 23° 1,068 mm (42.0 in) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10RSK) 980 mm (38.6 in) (RX10MK, RX10MSK)

GENERAL SPECIFICATIONS

SPEC

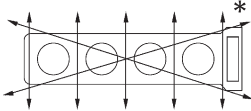
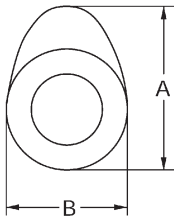
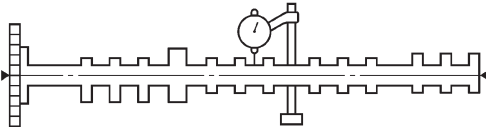


Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Suspension: Front suspension type Rear suspension type	Independent double wishbone suspension Slide rail suspension
Track: Track type Track width Length on ground Track deflection at 100 N (10 kg, 22 lb)	Internal drive type 381 mm (15.0 in) 768 mm (30.2 in) (RX10K, RX10RK, RX10RSK) 944 mm (37.2 in) (RXW10K, RXW10SK) 1,068 mm (42.0 in) (RX10MK, RX10MSK) 25 ~ 30 mm (0.98 ~ 1.18 in) (RXW10K, RXW10SK) 30 ~ 35 mm (1.18 ~ 1.38 in) (RX10K, RX10RK, RX10RSK, RX10MK, RX10MSK)
Brake: Brake type Operation method	Caliper type disc brake handlebar, left hand operated
Electrical: Ignition system Generator system	DC-CDI/MITSUBISHI A.C. magneto
Bulb wattage × Quantity: Headlight Tail/Brake light Meter light High beam indicator light Information indicator light Low coolant temperature light	12 V, 60 W/55 W × 2 12 V, 5 W/21 W × 2 14 V, 50 mA × 6 14 V, 80 mA 14 V, 80 mA 14 V, 80 mA

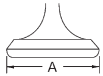
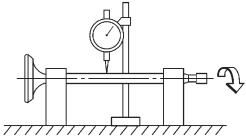


MAINTENANCE SPECIFICATIONS

ENGINE

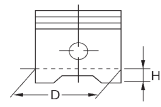
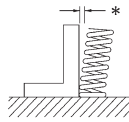
Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Cylinder head: Volume (with spark plug) <Warpage limit> 	13.45 ~ 14.05 cm³ (0.82 ~ 0.86 cu. in) 0.1 mm (0.004 in) * Lines indicate straight edge measurement.
Cylinder: Material Bore size <Taper limit> <Out of round> <Wear limit>	Aluminum alloy with dispersion coating 74.000 ~ 74.010 mm (2.9134 ~ 2.9138 in) 0.05 mm (0.002 in) 0.05 mm (0.002 in) 74.06 mm (2.9157 in)
Camshaft: Drive system Camshaft cap inside diameter Camshaft journal diameter Camshaft-journal-to-camshaft-cap clearance Camshaft dimensions Intake "A" <Limit> "B" <Limit> Exhaust "A" <Limit> "B" <Limit>  Camshaft runout 	Chain drive (left) 24.500 ~ 24.521 mm (0.9646 ~ 0.9654 in) 24.459 ~ 24.472 mm (0.9630 ~ 0.9635 in) 0.028 ~ 0.062 mm (0.0011 ~ 0.0024 in) 32.50 ~ 32.60 mm (1.2795 ~ 1.2835 in) 32.40 mm (1.2756 in) 24.95 ~ 25.05 mm (0.9823 ~ 0.9862 in) 24.85 mm (0.9783 in) 32.95 ~ 33.05 mm (1.2972 ~ 1.3012 in) 32.85 mm (1.2933 in) 24.95 ~ 25.05 mm (0.9823 ~ 0.9862 in) 24.85 mm (0.9783 in) 0.03 mm (0.0012 in)
Timing chain: Model/number of links Tensioning system	RH2015/130 Automatic
Valves, valve seats, valve guides: Valve clearance (cold) Intake Exhaust	0.11 ~ 0.20 mm (0.0043 ~ 0.0079 in) 0.21 ~ 0.25 mm (0.0083 ~ 0.0098 in)



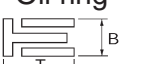
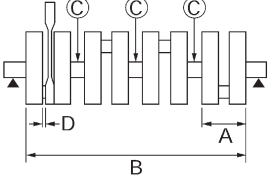
Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Valve dimensions: Valve head diameter A Intake Exhaust  Head Diameter Valve face width B Intake Exhaust  Face Width Valve seat width C Intake Exhaust  Seat Width Valve margin thickness D Intake Exhaust  Margin Thickness Valve stem diameter Intake <Limit> Exhaust <Limit> Valve guide inside diameter Intake <Limit> Exhaust <Limit> Valve-stem-to-valve-guide clearance Intake <Limit> Exhaust <Limit> Valve stem runout limit  Valve seat width Intake Exhaust	22.9 ~ 23.1 mm (0.9016 ~ 0.9094 in) 24.4 ~ 24.6 mm (0.9606 ~ 0.9685 in) 1.76 ~ 2.90 mm (0.0693 ~ 0.1142 in) 1.76 ~ 2.90 mm (0.0693 ~ 0.1142 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in) 0.5 ~ 0.9 mm (0.020 ~ 0.035 in) 0.5 ~ 0.9 mm (0.020 ~ 0.035 in) 3.975 ~ 3.990 mm (0.1565 ~ 0.1571 in) 3.945 mm (0.1553 in) 4.465 ~ 4.480 mm (0.1758 ~ 0.1764 in) 4.43 mm (0.1744 in) 4.000 ~ 4.012 mm (0.1575 ~ 0.1580 in) 4.05 mm (0.1594 in) 4.500 ~ 4.512 mm (0.1772 ~ 0.1776 in) 4.55 mm (0.1791 in) 0.010 ~ 0.037 mm (0.0004 ~ 0.0015 in) 0.08 mm (0.0031 in) 0.020 ~ 0.047 mm (0.0008 ~ 0.0019 in) 0.10 mm (0.0039 in) 0.01 mm (0.0004 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in)



Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Valve spring: Free length Intake Exhaust Installed length (valve closed) Intake Exhaust Compressed spring force (installed) Intake Exhaust Spring tilt Intake Exhaust Winding direction (top view) Intake Exhaust	38.90 mm (1.53 in) 40.67 mm (1.60 in) 34.50 mm (1.36 in) 35.00 mm (1.38 in) 82 ~ 96 N (8.2 ~ 9.6 kg, 18.1 ~ 21.2 lb) 110 ~ 126 N (11.0 ~ 12.6 kg, 24.3 ~ 27.8 lb) 2.5°/1.7 mm (0.067 in) 2.5°/1.8 mm (0.071 in) Clockwise Clockwise
Valve lifter: Valve lifter outside diameter Intake <Limit> Exhaust <Limit> Valve lifter hole inside diameter Intake <Limit> Exhaust <Limit>	19.982 ~ 19.988 mm (0.7867 ~ 0.7869 in) 19.957 mm (0.7857 in) 22.482 ~ 22.488 mm (0.8851 ~ 0.8854 in) 22.457 mm (0.8841 in) 20.000 ~ 20.018 mm (0.7874 ~ 0.7881 in) 20.048 mm (0.7893 in) 22.500 ~ 22.518 mm (0.8858 ~ 0.8865 in) 22.548 mm (0.8877 in)
Piston: Piston size (D) Measuring point (H) Piston to-cylinder clearance <Limit> Piston pin bore off set Off-set direction Piston pin bore inside diameter	73.955 ~ 73.970 mm (2.9116 ~ 2.9122 in) 5 mm (0.20 in) 0.030 ~ 0.055 mm (0.0012 ~ 0.0022 in) 0.12 mm (0.0047 in) 0.5 mm (0.0197 in) Intake side 17.002 ~ 17.013 mm (0.6694 ~ 0.6698 in)





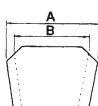
Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Piston pin: Piston pin outside diameter Piston pin length Piston pin to piston pin bore clearance <Limit>	16.991 ~ 17.000 mm (0.6689 ~ 0.6693 in) 51.4 ~ 51.5 mm (2.0236 ~ 2.0276 in) 0.002 ~ 0.022 mm (0.00008 ~ 0.0009 in) 0.072 mm (0.0028 in)
Piston ring: Sectional sketch Top ring  Ring type Dimensions (B × T) 2nd ring  Ring type Dimensions (B × T) Oil ring  Dimensions (B × T) End gap (installed) Top ring 2nd ring Oil ring Side clearance (installed) Top ring 2nd ring	Barrel 0.90 × 2.75 mm (0.035 × 0.108 in) Taper 0.8 × 2.8 mm (0.031 × 0.110 in) 1.5 × 2.6 mm (0.059 × 0.101 in) 0.32 ~ 0.44 mm (0.010 ~ 0.020 in) 0.43 ~ 0.58 mm (0.017 ~ 0.023 in) 0.10 ~ 0.35 mm (0.004 ~ 0.0014 in) 0.030 ~ 0.065 mm (0.0012 ~ 0.0026 in) 0.020 ~ 0.055 mm (0.0008 ~ 0.0022 in)
Connecting rod: Crankshaft-pin-to-big-end-bearing clearance Bearing color code	0.016 ~ 0.040 mm (0.0006 ~ 0.0016 in) -1 = Violet 0 = White 1 = Blue 2 = Black 3 = Brown
Crankshaft:  Width A Width B Crankshaft runout C Big end side clearance D Crankshaft-journal-to-crankshaft-journal-bearing clearance Bearing color code	52.40 ~ 57.25 mm (2.063 ~ 2.254 in) 300.75 ~ 302.65 mm (11.84 ~ 11.92 in) 0.03 mm (0.0012 in) 0.160 ~ 0.262 mm (0.006 ~ 0.010 in) 0.004 ~ 0.028 mm (0.0002 ~ 0.0011 in) -1 = Violet 0 = White 1 = Blue 2 = Black 3 = Brown



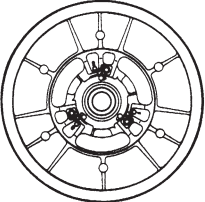
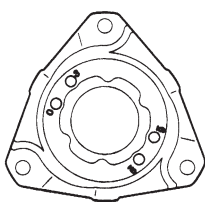
Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Carburetor: Type/Quantity Manufacturer I.D. mark Main jet (M.J) Main air jet (M.A.J) Jet needle (J.N) Needle jet (N.J) Pilot jet (P.J) Pilot air jet (P.A.J.) Pilot outlet (P.O) Bypass 1 (B.P.1) (B.P.2) (B.P.3) Pilot screw (P.S) Throttle valve (Th.V) Valve seat size (V.S) Starter jet (G.S) Float height (F.H) Fuel level (below the line on the float chamber) Engine idle speed	BSR37/4 MIKUNI 8FA102 #135 #120 5DHP50-53-3 P4M #17.5 #140 1.0 0.8 0.8 0.8 Approx 2 #115 1.5 #75 11 ~ 15 mm (0.43 ~ 0.59 in) 3.0 ~ 4.0 mm (1.118 ~ 0.157 in) 1,350 ± 100 r/min (1,250 ~ 1,450 r/min)
Fuel pump: Type Manufacturer	Diaphragm 8FA (MIKUNI)
Oil filter: Oil filter type Bypass valve opening pressure	Cartridge (paper) 78 ~ 118 kPa (0.78 ~ 1.18 kg/cm ² , 11.1 ~ 16.8 psi)
Oil pump: Oil pump type Inner-rotor-to-outer-rotor-tip clearance Outer-rotor-to-oil-pump-housing clearance Max. impeller shaft tilt <Limit> Relief valve operating pressure Oil pressure (hot)	Trochoidal 0.00 ~ 0.12 mm (0.000 ~ 0.005 in) 0.09 ~ 0.15 mm (0.004 ~ 0.006 in) 0.15 mm (0.0059 in) 0.072 mm (0.0028 in) 430 ~ 550 kPa (4.3 ~ 5.5 kg/cm ² , 61.2 ~ 78.2 psi) 50 kPa (0.5 kg/cm ² , 7.1 psi) at 1,450 r/min
Cooling system: Filler cap opening pressure Water pump type Reduction ratio Coolant type Coolant mixing ratio (coolant: water) Capacity	95 ~ 125 kPa (0.95 ~ 1.25 kg/cm ² , 14 ~ 18 psi) Single-suction centrifugal pump (Impeller type) 37/31 × 23/18 (1.525) High quality silicate-free ethylene glycol antifreeze containing corrosion inhibitors 3 : 2 (60% : 40%) 4.9 L (4.32 Imp qt, 5.18 US qt) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 6.4 L (5.64 Imp qt, 6.76 US qt) (RX10MK, RX10MSK)



POWER TRAIN

Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Transmission: Type Range of ratio Engagement speed r/min Shift r/min Sheave distance Sheave offset	V-belt automatic 3.8 ~ 1.0 : 1 3,600 ± 200 r/min (3,400 ~ 3,800 r/min) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 4,200 ± 200 r/min (4,000 ~ 4,400 r/min) (RX10MK, RX10MSK) 10,250 ± 250 r/min (10,000 ~ 10,500 r/min) 268.5 mm (10.57 in) (267 ~ 270 mm (10.51 ~ 10.63 in)) 15 mm (0.59 in) (13.5 ~ 16.5 mm (0.53 ~ 0.65 in))
V-belt: Part number/Manufacturer Circumference Width "A" Wear limit "B"	8DN-17641-00/MITSUBOSHI 1,129 ~ 1,137 mm (44.4 ~ 44.8 in) 34.5 mm (1.36 in) 32.5 mm (1.28 in)
	
Primary sheave spring: Part number Color code Diameter Wire diameter Preload Spring rate Number of coils Free length Set length	90501-582L1 (RX10K, RX10RK, RX10RSK, RXW10K, RXW10RK) 90501-624L8 (RX10MK, RX10MSK) Yellow – Silver – Yellow (RX10K, RX10RK, RX10RSK, RXW10K, RXW10RK) Orange – Silver – Orange (RX10MK, RX10MSK) 59.5 mm (2.34 in) 5.8 mm (0.228 in) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10RK) 6.2 mm (0.244 in) (RX10MK, RX10MSK) 343 N (35 kg, 77 lb) 24.5 N/mm (2.50 kg/mm, 140 lb/in) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10RK) 31.9 N/mm (3.25 kg/mm, 182 lb/in) (RX10MK, RX10MSK) 4.92 (RX10K, RX10RK, RX10RSK, RXW10K, RXW10RK) 5.00 (RX10MK, RX10MSK) 87.4 mm (3.44 in) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 84.2 mm (3.32 in) (RX10MK, RX10MSK) 73.4 mm (2.89 in)
Primary sheave weight arm: Part number (with bush) Weight (without bush and rivets)	8FA-17605-10 (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 8BU-17605-20 63.8 g (2.25 oz) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 45.41 g (1.60 oz) (RX10MK, RX10MSK)



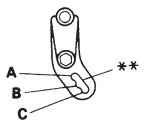
Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Rivet: Outer Part number Material Size Quantity Hole quantity Inner Part number Material Size Quantity Hole quantity	90269-06006 (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK) Steel (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK) 17.2 mm (0.677 in) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK) 3 (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK) 3 90261-06033 (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK) Steel (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK) 17.2 mm (0.677 in) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK) 3 (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK) 3
Secondary sheave spring: Part number Color code Outside diameter Wire diameter Hole position Sheave side-spring side (twist angle)   Spring rate Number of coils Free length Torque cam angle	90508-60012 (RX10K, RX10RK, RX10RSK) 90508-60007 (RXW10K, RXW10SK, RX10MK, RX10MSK) PINK (RX10K, RX10RK, RX10RSK) White (RX10MK, RX10MSK, RXW10K, RXW10SK) 69.5 mm (2.736 in) 6 mm (0.236 in) 3-3 (60°) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 1-6 (70°) (RX10MK, RX10MSK) 11.88 N/mm (1.211 kg/mm, 67.80 lb/in) (RX10K, RX10RK, RX10RSK) 12.66 N/mm (1.290 kg/mm, 72.25 lb/in) (RXW10K, RXW10SK, RX10MK, RX10MSK) 5.53 (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 5.19 (RX10MK, RX10MSK) 75 mm (2.95 in) 51° – 43 (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 45° (RX10MK, RX10MSK)



Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Drive chain: Type Number of links Secondary reduction ratio	Borg Warner Automotive 23RH303-70ASM 70L 38/23 (1.65) (RXW10K, RXW10SK) 38/24 (1.58) (RX10K, RX10RK, RX10RSK) 40/21 (1.90) (RX10MK, RX10MSK)
Track: Part number Width Length Pitch Number of links Thickness "A" Height "B" Track deflection at 100 N (10 kg, 22 lb)	8FA-47110-00 (RX10K, RX10RK, RX10RSK) 8FG-47110-00 (RXW10K, RXW10SK) 8EP-47110-00 (RX10MK, RX10MSK) 381 mm (15.0 in) 3,072 mm (120.9 in) (RX10K, RX10RK, RX10RSK) 3,456 mm (136.1 in) (RXW10K, RXW10SK) 3,840 mm (151.2 in) (RX10MK, RX10MSK) 64 mm (2.52 in) 48 (RX10K, RX10RK, RX10RSK) 54 (RXW10K, RXW10SK) 60 (RX10MK, RX10MSK) 5.1 mm (0.20 in) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 5.8 mm (0.23 in) (RX10MK, RX10MSK) 31.8 mm (1.25 in) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 50.8 mm (2.00 in) (RX10MK, RX10MSK) 30 ~ 35 mm (1.18 ~ 1.38 in) (RX10K, RX10RK, RX10RSK, RX10MK, RX10MSK) 25 ~ 30 mm (0.98 ~ 1.18 in) (RXW10K, RXW10SK)
Slide rail suspension (Rear suspension): Front travel Rear travel Suspension spring rate Front Rear Spring wire diameter Front Rear	256 mm (10.08 in) (RX10K, RX10RK, RX10RSK) 221 mm (8.70 in) (RXW10K, RXW10SK) 183 mm (7.20 in) (RX10MK, RX10MSK) 295 mm (11.61 in) (RX10K, RX10RK, RX10RSK) 298 mm (11.73 in) (RXW10K, RXW10SK) 315 mm (12.40 in) (RX10MK, RX10MSK) 39.20 N/mm (4.0 kg/mm, 224 lb/in) (RXW10K, RXW10SK) 20 N/mm (2.0 kg/mm, 114 lb/in) (RX10MK, RX10MSK) 44.1 N/mm (4.5 kg/mm, 252 lb/in) (RX10K, RX10RK, RX10RSK) 23 – 42 N/mm (2.4 – 4.3 kg/mm, 131 – 240 lb/in) (RXW10K, RXW10SK) 1,900 Nmm/deg (193.74 kg/mm, 10,849 lb/in) (RX10MK, RX10MSK) 8.8 mm (0.347 in) (RXW10K, RXW10SK) 7.5 mm (0.295 in) (RX10MK, RX10MSK) 11.5 mm (0.452 in) (RX10K, RX10RK, RX10RSK) 11.8 mm (0.465 in) (RXW10K, RXW10SK) 10.3 mm (0.406 in) (RX10MK, RX10MSK)





Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Suspension setting position: Hook setting length (Standard) (Maximum) (Minimum) Full rate adjusting position ** 	25 ± 0.5 mm (0.98 ± 0.02 in) (RX10K, RX10RK, RX10RSK) 15 ± 0.5 mm (0.59 ± 0.02 in) (RXW10K, RXW10SK) 10 ± 0.5 mm (0.39 ± 0.02 in) (RX10MK, RX10MSK) 35 mm (1.37 in) (RXW10K, RXW10SK) 10 mm (0.40 in) (RXW10K, RXW10SK) B (RXW10K, RXW10SK)
Shock absorber: Damping force Extension Compression Front Extension Compression Rear Extension Compression	2,430 N/0.3 m/s (247.61 kg/0.3 m/s, 546 lb/0.3 m/s) (RX10K, RX10RK, RX10RSK) 1,490 N/0.3 m/s (151.83 kg/0.3 m/s, 335 lb/0.3 m/s) (RX10K, RX10RK, RX10RSK) 420 N/0.3 m/s (42.83 kg/0.3 m/s, 94 lb/0.3 m/s) (RXW10K, RXW10SK) 610 N/0.3 m/s (62.15 kg/0.3 m/s, 137 lb/0.3 m/s) (RX10MK, RX10MSK) 1,470 N/0.3 m/s (149.90 kg/0.3 m/s, 330 lb/0.3 m/s) (RXW10K, RXW10SK) 910 N/0.3 m/s (92.73 kg/0.3 m/s, 204 lb/0.3 m/s) (RX10MK, RX10MSK) 1,280 N/0.3 m/s (130 kg/0.3 m/s, 288 lb/0.3 m/s) (RXW10K, RXW10SK) 880 N/0.3 m/s (89.67 kg/0.3 m/s, 198 lb/0.3 m/s) (RX10MK, RX10MSK) 980 N/0.3 m/s (100 kg/0.3 m/s, 220 lb/0.3 m/s) (RXW10K, RXW10SK) 460 N/0.3 m/s (46.87 kg/0.3 m/s, 103 lb/0.3 m/s) (RX10MK, RX10MSK)
Slide runner: Thickness Wear limit	17.8 mm (0.70 in) 10 mm (0.39 in)
Track sprocket wheel: Material Number of teeth	High molecular weight polyethylene 9 T (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 8 T (RX10MK, RX10MSK)
Rear guide wheel: Material Outside diameter	High molecular weight polyethylene with rubber 178 mm (7.01 in)
Brake: Pad thickness Pad wear limit Pad to disk clearance Disc outside diameter Disc minimum thickness	10.2 mm (0.40 in) 7.5 mm (0.30 in) 0.025 ~ 0.115 mm (0.001 ~ 0.005 in) 200 mm (7.87 in) 4 mm (0.16 in)



CHASSIS

Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Frame: Frame material Seat height Luggage box location	Aluminum 720 mm (28.3 in) Front
Steering: Lock-to-lock angle (left) (right) Ski alignment Toe-out size Caster angle	30.0° (R ski) 34.7° (L ski) 34.7° (R ski) 30.0° (L ski) Toe-out 0 ~ 15 mm (0 ~ 0.59 in) 23°
Ski: Ski material Length Width	Plastic 1,020 mm (40.2 in) (RXW10K, RXW10SK) 1,021 mm (40.2 in) (RX10K, RX10RK, RX10RSK, RX10MK, RX10MSK) 132.0 mm (5.20 in) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 182.0 mm (7.17 in) (RX10MK, RX10MSK)
Ski suspension (Front suspension): Type Travel Spring type Spring rate Wire diameter	Double wishbone system 221 mm (8.70 in) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK) 175 mm (6.89 in) (RX10MK, RX10MSK) Coil spring 19 N/mm (1.9 kg/mm, 108 lb/in) (RX10K, RX10RK, RX10RSK) 21 N/mm (2.1 kg/mm, 120 lb/in) (RXW10K, RXW10SK, RX10MK, RX10MSK) 8.0 mm (0.315 in) (RX10K, RX10RK, RX10RSK) 8.2 mm (0.323 in) (RXW10K, RXW10SK) 7.8 mm (0.307 in) (RX10MK, RX10MSK)
Shock absorber: damping force Extension Compression	2,090 N/0.3 m/s (209 kg/0.3 m/s, 461 lb/0.3 m/s) (RX10K, RX10RK, RX10RSK) 1,300 N/0.3 m/s (132 kg/0.3 m/s, 292 lb/0.3 m/s) (RXW10K, RXW10SK, RX10MK, RX10MSK) 610 N/0.3 m/s (61 kg /0.3 m/s, 135 lb/0.3 m/s) (RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK)



ELECTRICAL

Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK
Voltage	12 V
Ignition system: Ignition timing (B.T.D.C.) Advanced type	5° at 1,450 r/min Digital type
Ignition coil: Model/Manufacturer Primary coil resistance Secondary coil resistance	F6T54975/MITSUBISHI 0.16 ~ 0.22 Ω at 20°C (68°F) 5.0 ~ 6.8 kΩ at 20°C (68°F)
Charging system: Type Nominal output	AC magneto 14 V/21 A at 5,000 r/min
DC-CDI: Magneto model/Manufacturer Standard Pickup coil resistance (color code) Stator coil resistance (color code) CDI unit model/Manufacturer	F4T47371/MITSUBISHI 14 V 30 A, 420 W at 5,000 r/min 189 ~ 231 Ω at 20°C (68°F) (White/Red – White/Green) 0.19 ~ 0.24 Ω at 20°C (68°F) (White – White) F8T40471/MITSUBISHI
Rectifier/regulator: Type Model/Manufacturer No load regulated voltage (DC) Capacity (DC) Withstand voltage	Short circuit type FH001/SHINDENGEN 14.1 ~ 14.9 V 35 A 40 V
Battery: Specific gravity Manufacture Type Ten hour rate amperage	1.32 YUASA YTX14L-BS 12V-12Ah (RX10K, RX10MK, RX10MSK) YTX20L-BS 12V-18Ah (RX10RK, RX10RSK, RXW10K, RXW10SK) 12 A (RX10K, RX10MK, RX10MSK) 18 A (RX10RK, RX10RSK, RXW10K, RXW10SK)
Electric starter system: Type	Constant mesh type
Starter motor: Model/Manufacturer Output Armature coil resistance Continuity check Insulation check Brush Overall length Wear limit Spring pressure Commutator diameter Wear limit Mica undercut	8FA1/MORIC 12 V – 0.95 kW 0.008 ~ 0.010 Ω at 20°C (68°F) More than 100 kΩ at 20°C (68°F) 9.8 mm (0.39 in) 5 mm (0.20 in) 7.36 ~ 11.04 N (736 ~ 1,104 g, 26.0 ~ 38.9 oz) 28.5 mm (1.12 in) 27.5 mm (1.08 in) 1.5 mm (0.059 in)

MAINTENANCE SPECIFICATIONS

SPEC



Model	RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK, RX10MK, RX10MSK	
Starter relay: Model/Manufacturer Amperage rating Coil resistance	MS5F-421/JIDECO 180 A 4.2 ~ 4.6 Ω at 20°C (68°F)	
T.P.S. (throttle position sensor): Model/Manufacturer Resistance	TS67/02-1C/MIKUNI 4 ~ 6 kΩ at 20°C (68°F) (Blue – Black) 0 ~ 4 kΩ at 20°C (68°F) (Yellow – Black)	
Oil level switch: Model/Manufacturer	8FA/ASTI	
Fuel sender: Model/Manufacturer Sender resistance	Full	8FG/NIPPON SEIKI 10 ~ 12 Ω at 20°C (68°F)
	Empty	179 ~ 185 Ω at 20°C (68°F)
Headlight relay: Model/Manufacturer Coil resistance	5DM/OMRON 95 ~ 116 Ω at 20°C (68°F)	
Grip warmer: Heater resistance	(left)	1.53 ~ 1.87 Ω at 20°C (68°F)
	(right)	1.53 ~ 1.87 Ω at 20°C (68°F)
Thumb warmer: Heater resistance	37.0 ~ 45.2 Ω at 20°C (68°F)	
Circuit breaker: Type Amperage for individual circuit	Fuse	
Main fuse	30 A × 1	
Headlight fuse	20 A × 1	
Signal fuse	10 A × 1	
Ignition fuse	10 A × 1	
Carburetor heater fuse	20 A × 1	
Reserve fuse	30 A × 1	
Reserve fuse	20 A × 1	
Reserve fuse	10 A × 1	
Water temperature sensor: Model/Manufacturer Resistance	8CC/MITSUBISHI 5.2 ~ 6.4 kΩ at 0°C (34°F) 0.300 ~ 0.364 kΩ at 80°C (176°F) 0.170 ~ 0.208 kΩ at 100°C (212°F)	
Indicator light	(ON)	90 ~ 110°C (194 ~ 230°F)
	(OFF)	85 ~ 105°C (185 ~ 221°F)
Speed sensor: Model/Manufacture	8EK/NIPPON SEIKI	
Carburetor heater: Model/Manufacture Wattage Resistance	5FU/NIPPON THERMOSTAT 30 W 6 ~ 10 Ω at 20°C (68°F)	



HIGH ALTITUDE SETTINGS

RX10K, RX10RK, RX10RSK, RXW10K, RXW10SK

Altitude \ Temperature	-40°C (-40°F)		-20°C (-4°F)		0°C (32°F)	16°C (60°F)	Idling speed (r/min)
0 ~ 200 m (0 ~ 670 ft)	MJ PS	#140 STD	MJ PS	#137.5 STD	MJ PS	#135 STD	1350
200 ~ 1000 m (~ 1700 ft)	MJ PS	#137.5 STD	MJ PS	#135 STD	MJ PS	#132.5 STD	1350
1000 ~ 2000 m (~ 6700 ft)	MJ PS	#135 3/4	MJ PS	#132.5 3/4	MJ PS	#130 3/4	1350
2000 ~ 3000 m (~ 10000 ft)	MJ PS	#132.5 1+1/4	MJ PS	#130 1+1/4	MJ PS	#127.5 1+1/4	1400

[Production spec] MJ#1, 2, 3, 4:#135 PS:Approx 2 #:Main jet number PS:Pilot screw turns in

RX10MK, RX10MSK

Altitude \ Temperature	-40°C (-40°F)		-20°C (-4°F)		0°C (32°F)	16°C (60°F)	Idling speed (r/min)
0 ~ 200 m (0 ~ 670 ft)	MJ PS	#140 STD	MJ PS	#137.5 STD	MJ PS	#135 STD	1350
200 ~ 1000 m (~ 1700 ft)	MJ PS	#137.5 STD	MJ PS	#135 STD	MJ PS	#132.5 STD	1350
1000 ~ 2000 m (~ 6700 ft)	MJ PS	#135 3/4	MJ PS	#132.5 3/4	MJ PS	#130 3/4	1350
2000 ~ 3000 m (~ 10000 ft)	MJ PS	#132.5 1+1/4	MJ PS	#130 1+1/4	MJ PS	#127.5 1+1/4	1400

[Production spec] MJ#1, 2, 3, 4:#135 PS:Approx 2 #:Main jet number PS:Pilot screw turns in



TIGHTENING TORQUE

ENGINE

Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Spark plug	13	1.3	9.4	Left-hand thread.
Cylinder head nut (M10 × 1.25) × 2	20 + 121°	2.0 + 121°	14 + 121°	
Cylinder head nut (M10 × 1.25) × 6	20 + 105°	2.0 + 105°	14 + 105°	
Cylinder head nut × 2	20 + 140°	2.0 + 140°	14 + 140°	
Cylinder head bolt	12	1.2	8.7	
Camshaft cap and cylinder head	10	1.0	7.2	
Cylinder head cover	12	1.2	8.7	
Connecting rod and cap	20 + 120°	2.0 + 120°	14 + 120°	
A.C. magneto rotor	130	13.0	94	
Crankshaft and drive gear	75	7.5	54	
Primary reduction gear bearing housing	12	1.2	8.7	
Timing chain tensioner	10	1.0	7.2	
Thermostat housing	10	1.0	7.2	
Water temperature sensor	23	2.3	17	
Timing chain tensioner cap	6	0.6	4.3	
Camshaft and camshaft sprocket	24	2.4	17	
Hose band	2	0.2	1.4	
Water pump	12	1.2	8.7	
Coolant reservoir tank	7	0.7	5.0	
Pipe	10	1.0	7.2	
Oil cooler	35	3.5	25	
Oil pan	10	1.0	7.2	
Engine mounting adjust bolt	7	0.7	5.1	
Engine mounting nut	65	6.5	47	
Countershaft cover	12	1.2	8.7	
Oil pan drain bolt	30	3.0	22	
Oil filter union bolt	70	7.0	51	
Oil filter	17	1.7	12	
Oil pump	12	1.2	8.7	
Oil pump drive chain guide	10	1.0	7.2	
Oil tank drain bolt	16	1.6	11	See NOTE.
Oil tank and frame (bolt)	10	1.0	7.2	
Oil tank and frame (nut)	19	1.9	14	
Oil gallery bolt	10	1.0	7.2	
Exhaust joint	25	2.5	18	
Muffler band	9	0.9	6.5	
Exhaust pipe	25	2.5	18	
Exhaust sampling bolt	10	1.0	7.2	
Muffler	16	1.6	11	
Exhaust cover	6	0.6	4.3	
Muffler band	20	2.0	14	Apply LOCTITE®
Muffler protector	11	1.1	8.0	
Cylinder head stud bolt	10	1.0	7.2	
Crankcase (M9 × 1.5) (1st)	15	1.5	11	
(2nd)	15+ 45~50°	1.5+ 45~50°	11+ 45~50°	
Crankcase (M6 × 1.0)	12	1.2	8.7	
Countershaft cover	12	1.2	8.7	
A.C. magneto rotor cover	12	1.2	8.7	
Starter clutch	12	1.2	8.7	Apply LOCTITE®
Stator coil	10	1.0	7.2	
Starter motor	27	2.7	20	
Pickup coil	6	0.6	4.3	

TIGHTENING TORQUE**SPEC**

Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Fuel pump	10	1.0	7.2	
Fuel pump stay	10	1.0	7.2	

NOTE:

1. First, tighten the bolt to approximately 15 Nm (1.5 m•kg, 11 ft•lb) with a torque wrench, then loosen the bolt completely.
2. Retighten the bolt to 15 Nm (1.5 m•kg, 11 ft•lb), and tighten another 45 ~ 50° with a angle gauge.



POWER TRAIN

Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Primary sheave (1st)	120	12.0	85	Tighten the bolts in two stages. See NOTE. Left-hand thread. Apply LOCTITE®
(2nd)	60	6.0	43	
Spider and sliding sheave	200	20.0	145	
Primary sheave cap and sliding sheave	14	1.4	10	Apply LOCTITE®
Roller and weight (primary sheave)	6	0.6	4.3	
Secondary sheave	64	6.4	46	
Stopper (secondary sheave)	7	0.7	5.1	
Spring seat (secondary sheave)	23	2.3	17	
Bolt (secondary sheave clearance)	10	1.0	7.2	
Drive sprocket	90	9.0	65	
Locknut chain tensioner	24	2.4	17	
Chain housing and frame	48	4.8	35	
Driven sprocket	48	4.8	35	
Drain bolt (drive chain housing)	16	1.6	12	
Chain housing cover	24	2.4	17	
Shift lever assembly	10	1.0	7.2	
Lever and drive chain housing cover	10	1.0	7.2	
Shaft (reverse drive gear)	10	1.0	7.2	Apply LOCTITE®
Reverse driven gear	48	4.8	35	
Counter gear	10	1.0	7.2	
Spacer set screw	6	0.6	4.3	
Chain housing and brake caliper	48	4.8	35	
Bleed screw (brake caliper)	6	0.6	4.3	
Brake hose union bolt (caliper side)	30	3.0	22	
Brake hose union bolt (brake master cylinder side)	30	3.0	22	
Bearing set screw (Secondary shaft)	8	0.8	5.8	
Parking brake	13	1.3	9.4	
Parking brake assembly and lever (RX10K, RX10RK, RX10RSK)	16	1.6	12	
Shock absorber adjuster assembly and frame	10	1.0	7.2	
Front pivot arm and frame	72	7.2	52	
Front pivot arm and shockabsorber	49	4.9	35	
Front pivot arm and stopper band	4	0.4	2.9	Apply LOCTITE®
Shaft and stopper band	4	0.4	2.9	
Sliding runner and sliding frame	10	1.0	7.2	
Suspension wheel and sliding frame	60	6.0	43	
Front pivot arm and control rod	74	7.4	53	
Front pivot arm bracket and sliding frame	30	3.0	22	
Front pivot arm and bracket	72	7.2	52	
Rear pivot arm and shockabsorber	49	4.9	35	
Rear pivot arm bracket and control rod	72	7.2	52	
Rear pivot arm and frame	74	7.4	53	
Rear pivot arm and rear pivot arm bracket	72	7.2	52	
Rear pivot arm bracket and sliding frame	72	7.2	52	
Rear axle	75	7.5	54	

TIGHTENING TORQUE

SPEC



Parts be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
(RXW10K, RXW10SK)				
Stopper band	4	0.4	2.9	
Hook and front pivot arm	16	1.6	12	(RXW10K, RXW10SK)
Wheel bracket and sliding frame	24	2.4	17	Apply LOCTITE®
Bracket bolt (front)	48	4.8	35	Apply LOCTITE®
Bracket bolt (rear)	30	3.0	22	Apply LOCTITE®
Front pivot arm and front pivot arm bracket	72	7.2	52	
Front pivot arm bracket and sliding frame	72	7.2	52	
Suspension wheel	72	7.2	52	Apply LOCTITE®
Rear axle	75	7.5	54	
Slide rail suspension mounting bolt (M10)	72	7.2	52	
Rear pivot arm and bracket	24	2.4	17	Apply LOCTITE®
Shock absorber and rear pivot arm	49	4.9	35	Apply LOCTITE®
Rear pivot arm and rod	49	4.9	35	
Rear suspension bracket and rod	49	4.9	35	
Shock absorber and rear suspension bracket	49	4.9	35	
Control rod and sliding frame	72	7.2	52	
Shock absorber and front pivot arm	49	4.9	35	Apply LOCTITE®
Shock absorber and front suspension bracket	49	4.9	35	Apply LOCTITE®
Rear pivot arm bracket	72	7.2	52	
Rear bracket and suspension wheel	72	7.2	52	Apply LOCTITE®
Wheel bracket shaft and sliding frame	72	7.2	52	
Set bolt (front axle)	9	0.9	6.5	
(RX10MK, RX10MSK)				
Front pivot arm and frame	72	7.2	52	
Front pivot arm and front shockabsorber	49	4.9	35	
Front pivot arm and stopper band	4	0.4	2.9	
Shaft and stopper band	4	0.4	2.9	
Shaft and sliding frame	60	6.0	43	
Suspension wheel assembly and sliding frame	60	6.0	43	
Front pivot arm and sliding frame	60	6.0	43	
Suspension wheel and sliding frame	60	6.0	43	
Rear pivot arm and sliding frame	72	7.2	52	
Bracket and front shockabsorber	49	4.9	35	
Front pivot arm bracket and bracket	72	7.2	52	
Front pivot arm and bracket	72	7.2	52	
Bracket and rear shockabsorber	49	4.9	35	
Relay rod and rear pivot arm	49	4.9	35	
Rear pivot arm and rear shockabsorber	49	4.9	35	
Rear pivot arm and frame	72	7.2	52	
Suspension wheel and sliding frame	60	6.0	43	
Pivot shaft and sliding frame	72	7.2	52	
Rear axle	75	7.5	54	
Speed sensor	20	2.0	14	
Gear unit (speed sensor)	40	4.0	29	

NOTE:

Tightening steps:

1. Tighten the bolt to a torque at 120 Nm (12.0 m•kg, 85 ft•lb).
2. Loosen the bolt completely.
3. Retighten the bolt to a torque of 60 Nm (6.0 m•kg, 43 ft•lb).

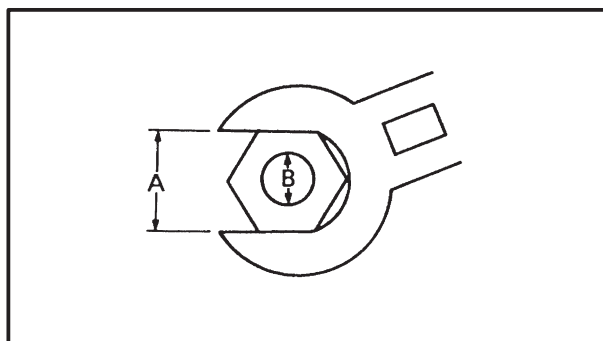
Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Handlebar holder	15	1.5	11	
Steering column				
Upper	23	2.3	17	
Lower	23	2.3	17	
Steering column 2 and steering shaft	35	3.5	25	
Steering shaft and steering column 1	35	3.5	25	
Steering column 1 and relay rod	30	3.0	22	
Relay rod and relay arm	30	3.0	22	
Relay arm and idler arm	35	3.5	25	
Idler arm and tie rod	30	3.0	22	
Tie rod and steering arm	35	3.5	25	
Idler arm	67	6.7	49	
Locknut (relay rod/tie rod)	25	2.5	18	
Ski	48	4.8	35	
Ski runner	19	1.9	14	
Ski column lower bracket	11	1.1	8.0	
Ski and ski handle (front)	11	1.1	8.0	
Ski and ski handle (rear)	17	1.7	12	
Shock absorber (upper)	45	4.5	33	
Shock absorber (lower)	45	4.5	33	
Steering arm locknut	35	3.5	25	
Upper arm and frame	37	3.7	27	
Upper arm and knuckle	40	4.0	29	
Lower arm and frame	37	3.7	27	
Lower arm and knuckle	65	6.5	47	
Stabilizer bar and stabilizer arm	11	1.1	8.0	
Stabilizer arm and connecting rod	34	3.4	25	
Connecting rod and lower arm	34	3.4	25	
Frame cross member (front side)	30	3.0	22	
(rear side)	23	2.3	17	
Master cylinder assembly	10	1.0	7.2	
Brake lever adjuster locknut	6	0.6	4.3	
Rear cover	3	0.3	2.2	
Seat and frame	5	0.5	3.6	
Shroud	3	0.3	2.2	



GENERAL TORQUE SPECIFICATIONS

This chart specifies torque for standard fasteners with standard I.S.O. pitch threads. Torque specifications for special components or assemblies are included in the applicable sections of this book. To avoid warpage, tighten multi-fastener assemblies in a crisscross fashion, in progressive stages, until full torque is reached. Unless otherwise specified, torque specifications call for clean, dry threads. Components should be at room temperature.

A (nut)	B (bolt)	General torque specifications		
		Nm	m•kg	ft•lb
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94

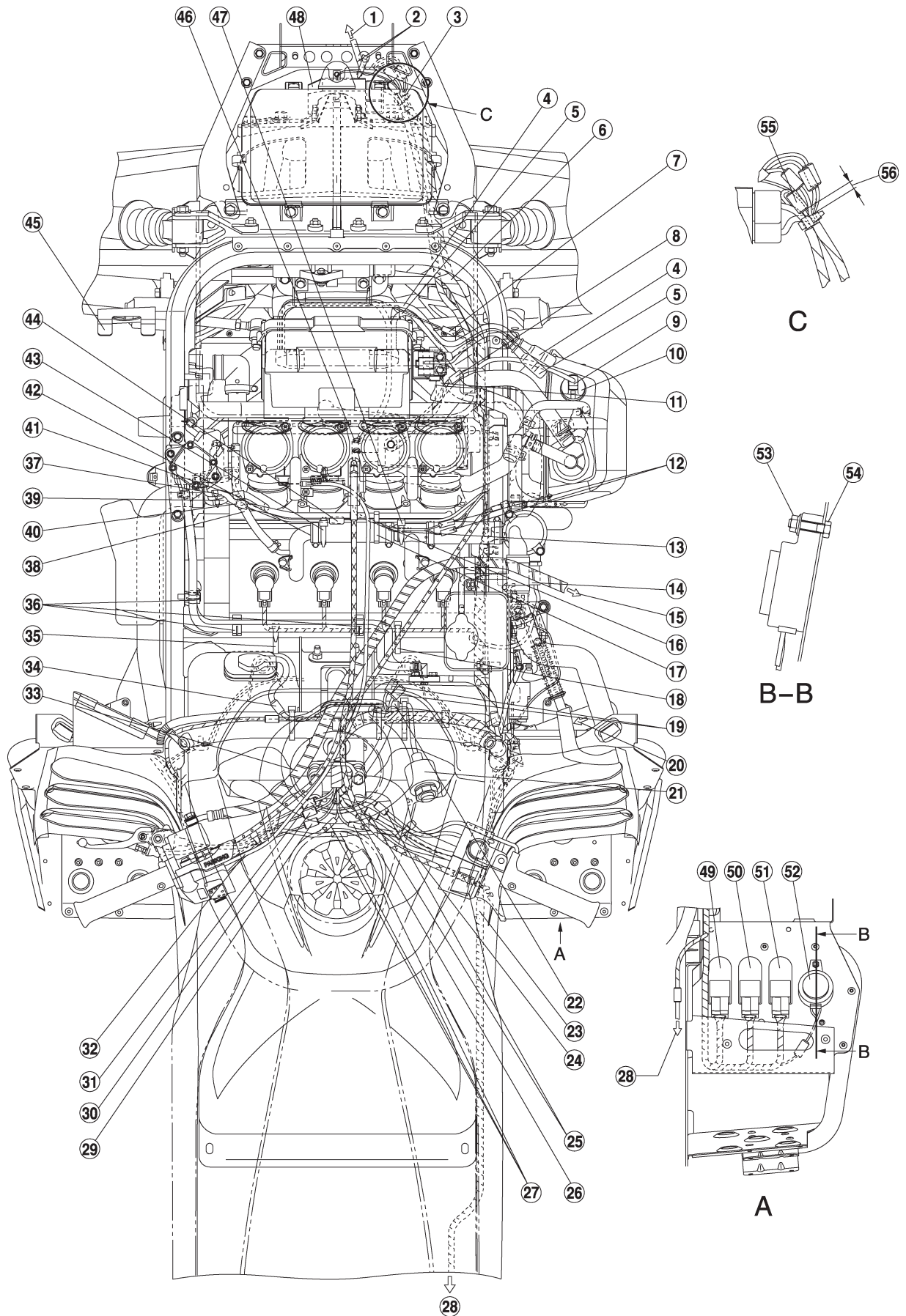


A: Distance across flats

B: Outside thread diameter

DEFINITION OF UNITS

Unit	Read	Definition	Measurement
mm	Millimeter	10^{-3} meter	Length
cm	Centimeter	10^{-2} meter	Length
kg	Kilogram	10^3 gram	Weight
N	Newton	$1 \text{ kg} \times \text{m/sec}^2$	Force
Nm	Newton meter	$\text{N} \times \text{m}$	Torque
m•kg	Meter kilogram	$\text{m} \times \text{kg}$	Torque
Pa	Pascal	N/m^2	Pressure
N/mm	Newtons per millimeter	N/mm	Spring rate
L	Liter	—	Volume or capacity
cm^3	Cubic centimeter	—	Volume or capacity
r/min	Rotations per minute	—	Engine speed

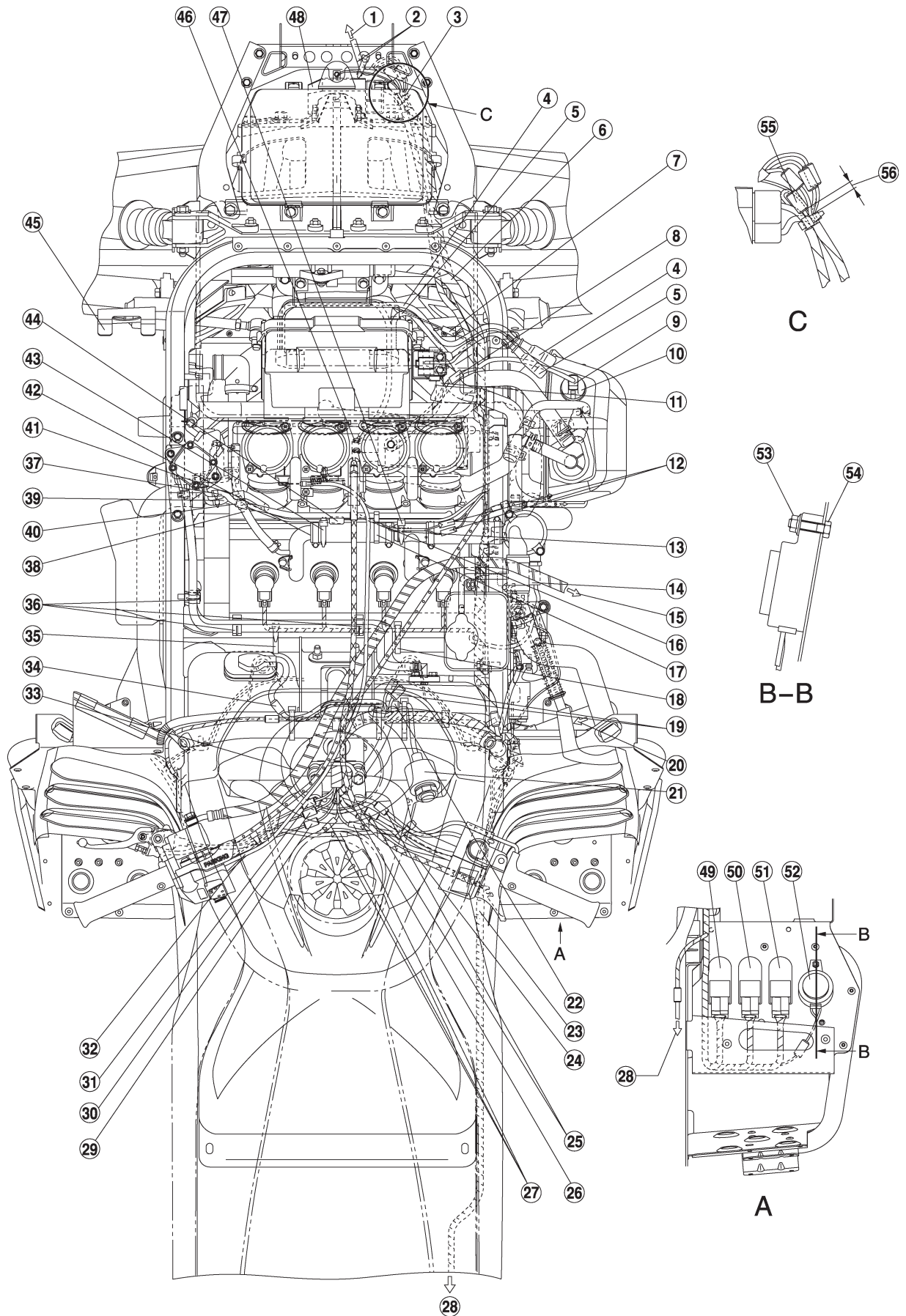




CABLE ROUTING

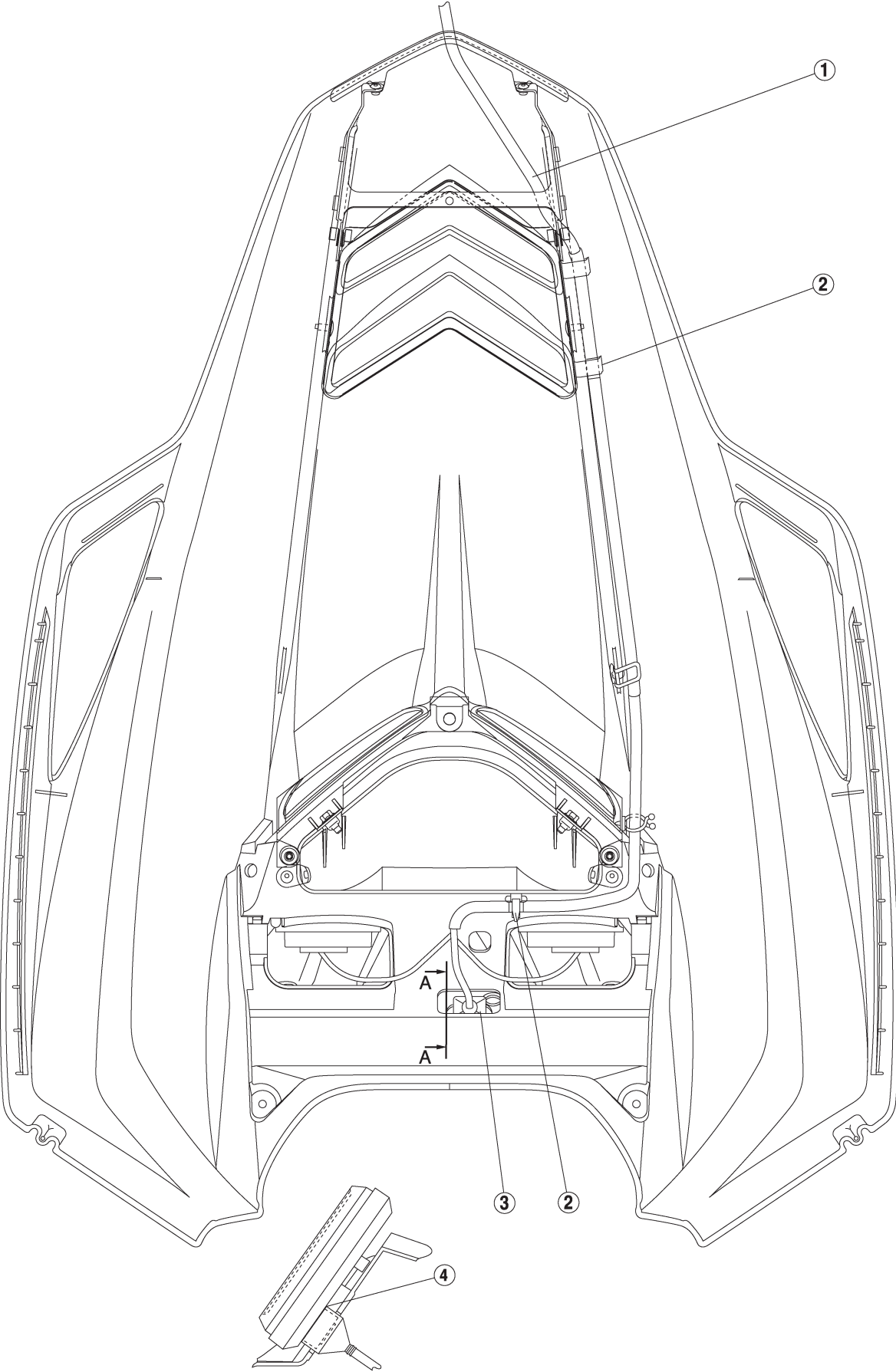
FOR RX10K, RX10MK, RX10MSK

- ① To the headlight and meter assembly
- ② Clamp the lead at the position of white tape.
- ③ Clamp the wire harness and A.C.magneto lead.
- ④ Battery negative lead
- ⑤ Battery positive lead
- ⑥ Main harness
- ⑦ Negative lead connector
- ⑧ Carburetor heater lead coupler
- ⑨ Oil level switch lead coupler
- ⑩ Oil level switch
- ⑪ Starter motor positive lead (under the battery bracket)
- ⑫ Carburetor switch lead connector
- ⑬ Clamp the coated section of the lead.
- ⑭ Coolant temperature sensor lead coupler
- ⑮ To the brake caliper
- ⑯ There should be no slack of leads.
- ⑰ Clamp the vacuum hose 2.
- ⑱ Clamp the ignition coil lead.
- ⑲ Connectors
- ⑳ To the heat exchanger
- ㉑ Main switch
- ㉒ Set the coupler in the rear space of the instrument panel
- ㉓ Tail/brake light lead coupler
- ㉔ Throttle cable
- ㉕ Right handlebar switch lead coupler
- ㉖ Thumb warmer switch lead coupler
- ㉗ Grip warmer switch lead connector
- ㉘ To the tail/brake light
- ㉙ Headlight beam switch lead coupler
- ㉚ Left handlebar switch lead coupler
- ㉛ Brake light switch lead coupler





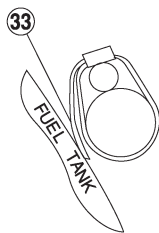
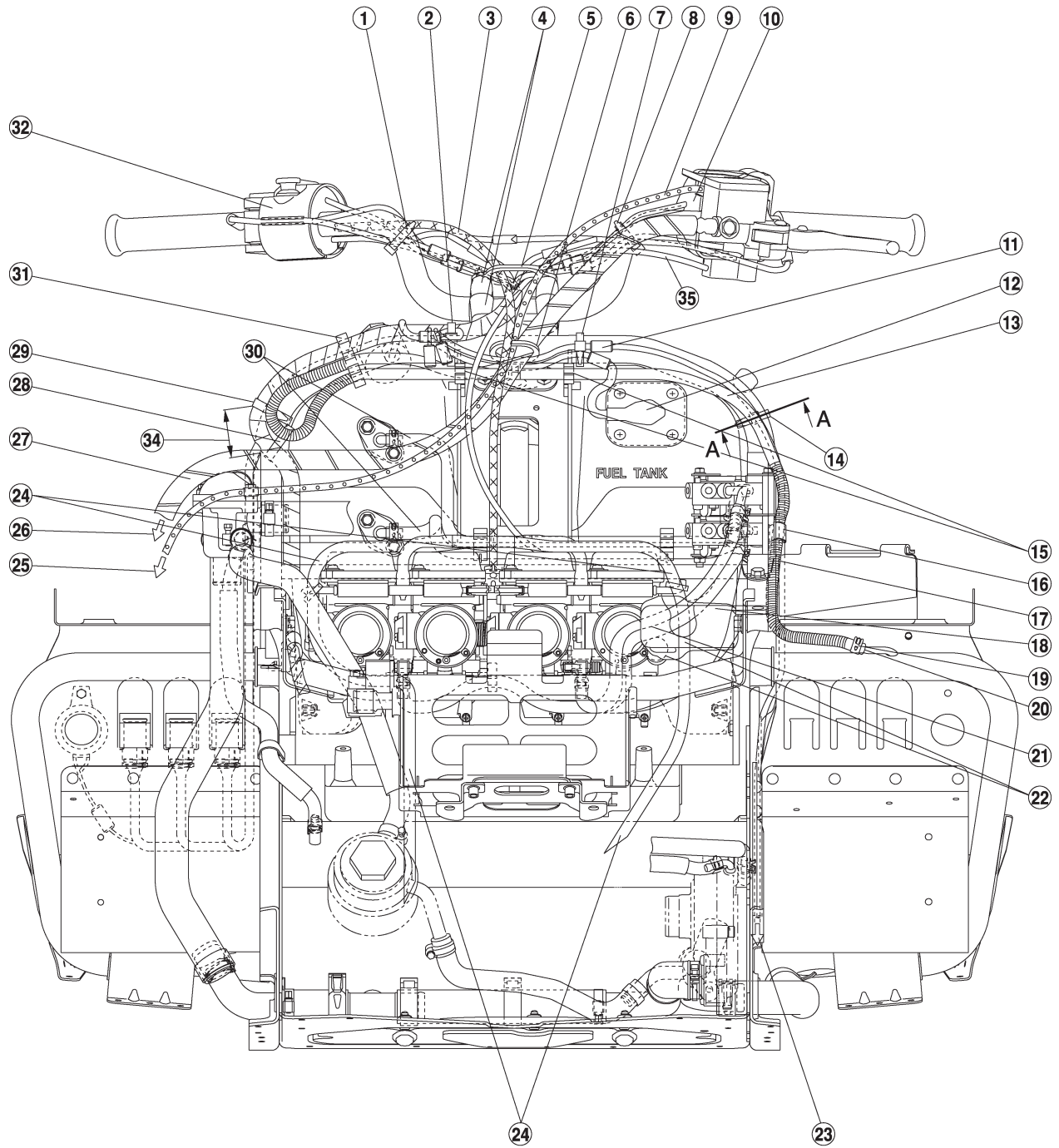
- ③② Route the starter cable above the left handlebar switch lead.
- ③③ Brake hose
- ③④ Fuel sender lead coupler
- ③⑤ Clamp the ignition coil lead under the fuel hose.
- ③⑥ Clamp the fuel hose.
- ③⑦ Route the coolant hose between the upper vacuum hose and lower vacuum hose.
- ③⑧ Route the vacuum hose under the coolant hose.
- ③⑨ Route the vacuum hose over the coolant hose.
- ④⑩ Clamp the coolant hose and vacuum hose.
- ④⑪ Clamp the coolant hose and vacuum hose 2.
- ④⑫ Point the pawl of clip to the upward.
- ④⑬ Clamp the throttle position switch lead.
- ④⑭ Throttle position sensor lead coupler. (under the vacuum hose)
- ④⑮ Drive guard bracket
- ④⑯ Connect the battery negative lead to the starter motor mounting bolt.
- ④⑰ Clamp the throttle position switch lead and carburetor switch lead.
- ④⑱ Voltage regulator
- ④⑲ Carburetor heater relay
- ⑤⑩ Headlight relay
- ⑤⑪ Main relay
- ⑤⑫ Back buzzer (RX10RK, RX10RSK, RXW10K, RXW10SK)
- ⑤⑬ Flange nut
- ⑤⑭ Hexagon bolt
- ⑤⑮ Two pole coupler for A.C.magneto.
- ⑤⑯ Between two pole coupler for A.C.magneto leaf and the clamp is set to 20 mm (0.79 in) or less.



A-A



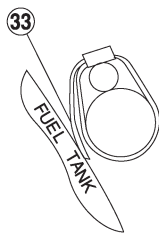
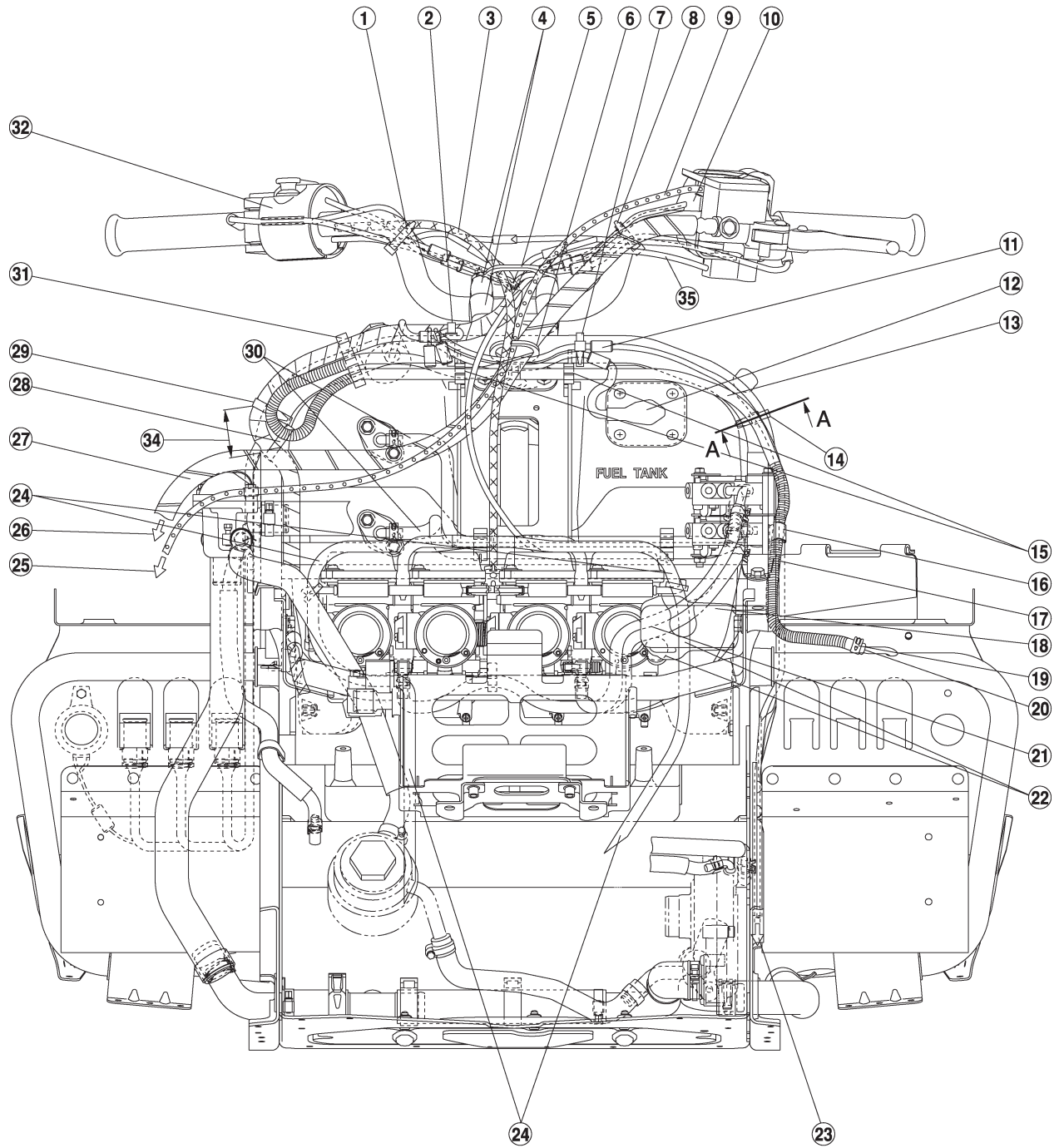
- ① Headlight wire harness
- ② Align it with the positioning tape of the headlight wire harness
- ③ Meter coupler (Securely fit in the rubber cover)
- ④ Put the boots of the meter coupler in the boss root on the side of the meter.



A-A



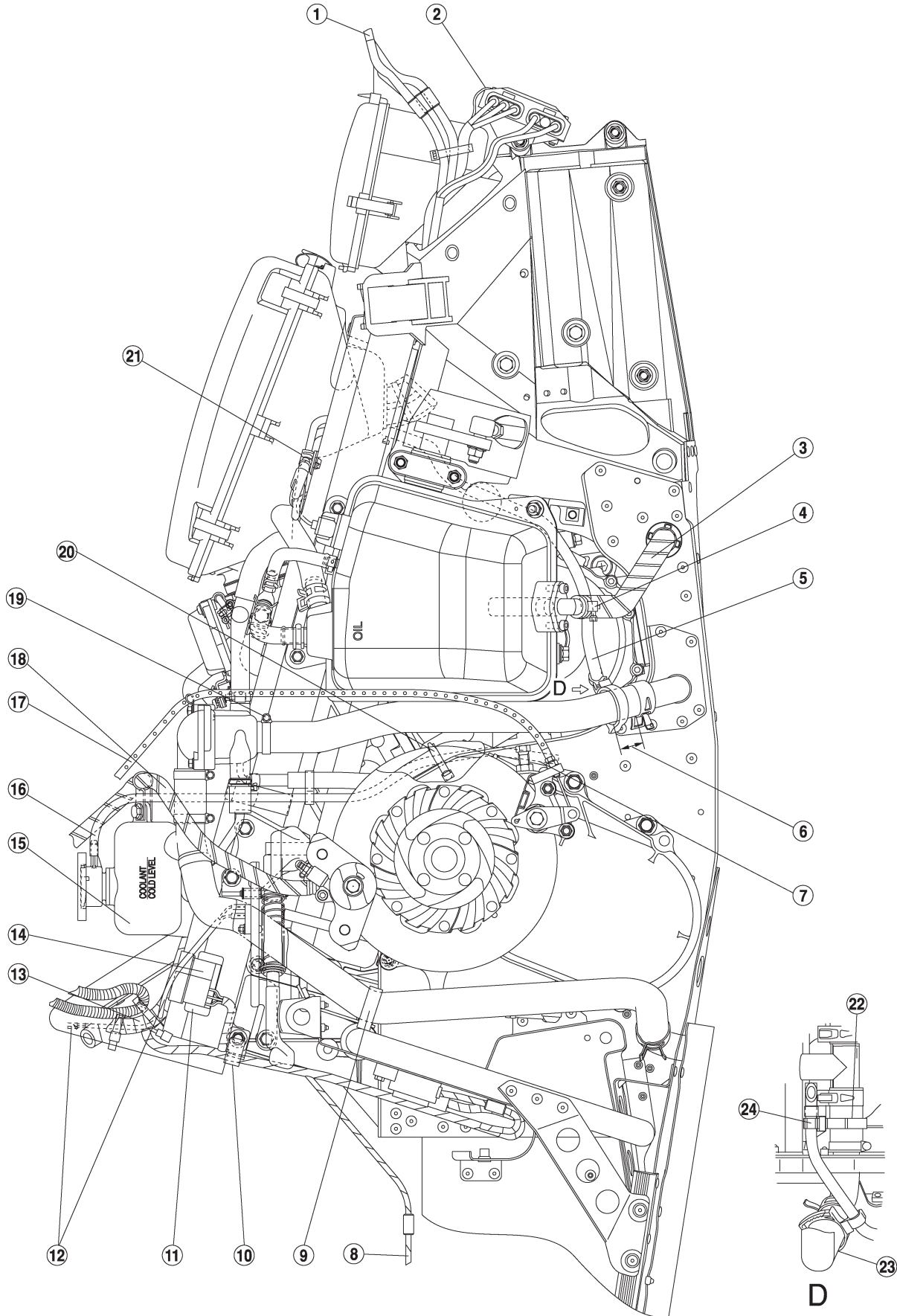
- ① Clamp the grip warmer lead and the right handlebar switch lead.
- ② Clamp the main harness, main switch and harness.
- ③ Throttle cable
- ④ Handlebar holder
- ⑤ Pass all leads and cables through the cable holder. (Except for brake hose and parking brake cable.)
- ⑥ Pass the brake hose and the parking brake cable through the cable holder.
- ⑦ Clamp the fuel sender lead and speed sensor lead.
- ⑧ Clamp the tail/brake light lead, headlight beam switch lead and grip warmer lead.
- ⑨ Parking brake cable
- ⑩ Left handlebar switch
- ⑪ Speed sensor lead coupler
- ⑫ Fuel sender lead cover
- ⑬ Route the fuel tank breather hose along the frame cross member.
- ⑭ Clamp the speed sensor lead only.
- ⑮ Clamp the fuel tank breather hose.
- ⑯ Clamp the compression spring section of the fuel tank breather hose.
- ⑰ Compression spring
- ⑱ Breather tank
- ⑲ Point the clip position to the upward.
- ⑳ Insert the fuel tank breather hose until it contacts the projection.
- ㉑ Pass the fuel hose over the engine oil breather hose.
- ㉒ Pass the carburetor air vent hose outside of the engine oil breather hose.
- ㉓ To the speed sensor.



A-A

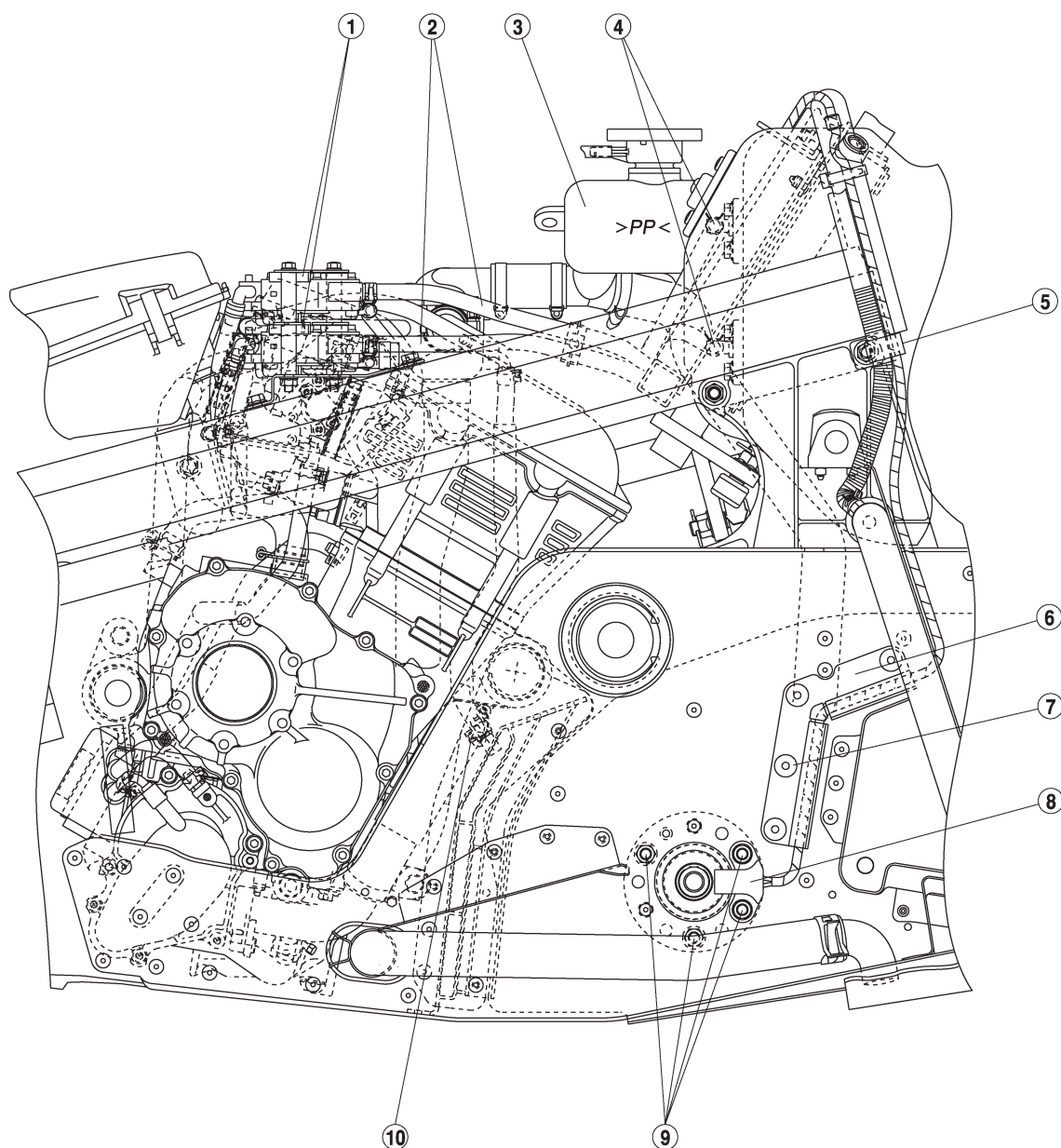


- ②4 Carburetor air vent hose
- ②5 To the parking brake.
- ②6 To the brake caliper
- ②7 Brake hose
- ②8 Clamp the wire harness and fuel tank breather hose from the top.
- ②9 Clamp the wire harness.
- ③0 Fuel hose
- ③1 Clamp the wire harness and fuel tank breather hose from the lower side.
- ③2 Right handlebar switch
- ③3 Push into the end of clamp between frame cross member and fuel tank.
- ③4 Less than 50 mm (2.0 in).
- ③5 Route the starter cable above the left handlebar switch lead.



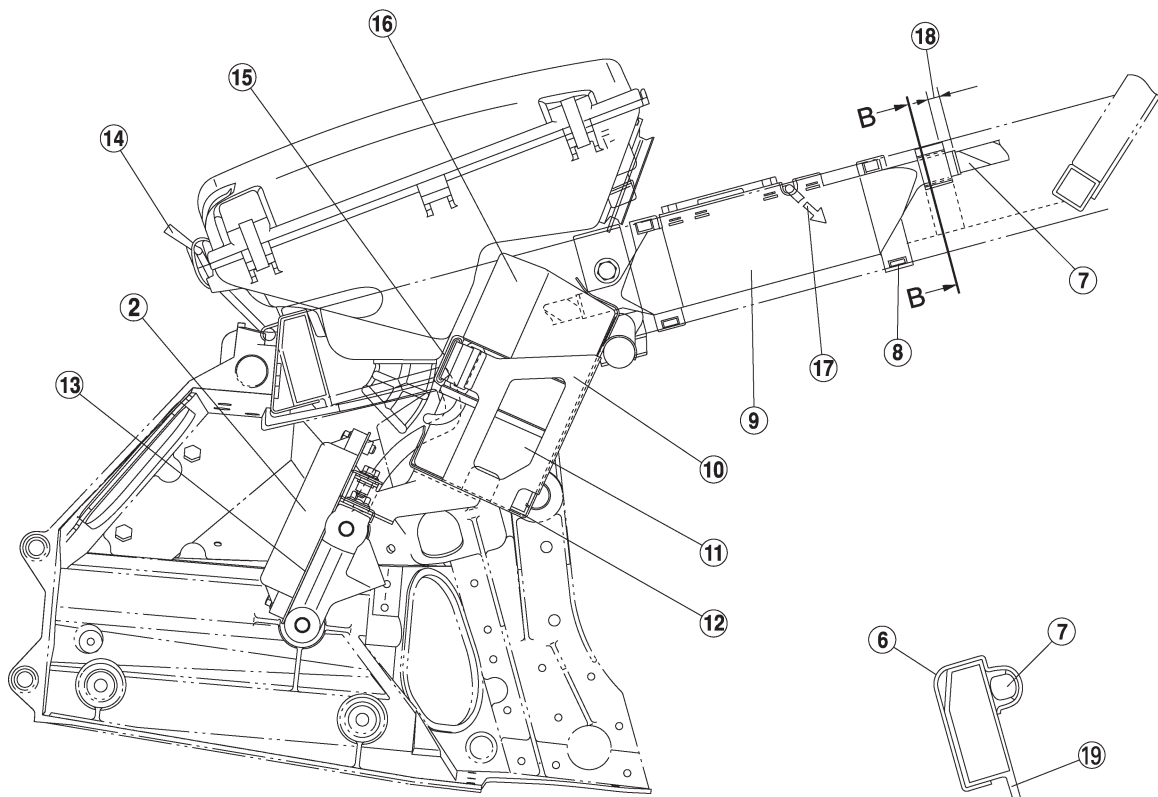
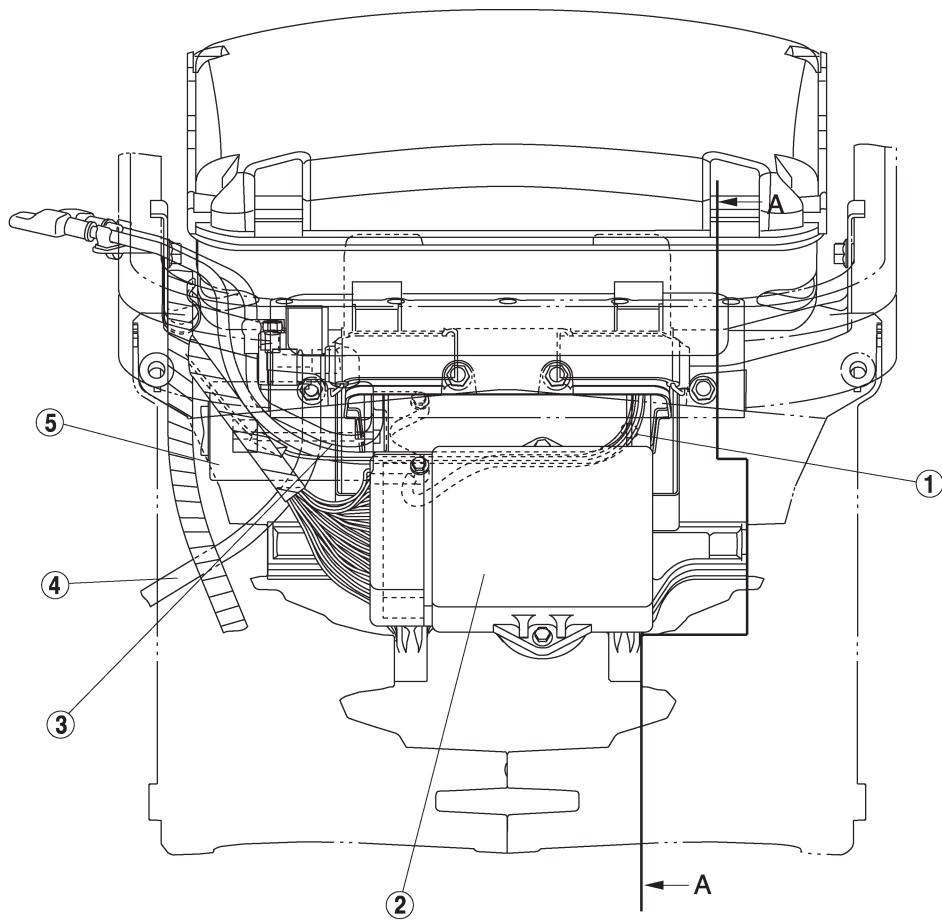


- ① Headlight wire harness
- ② Tighten the frame ground and voltage regulator upper bolt together.
- ③ Engine oil tank hose
- ④ Point the clamp tightening direction to the downward.
- ⑤ Drain hose
- ⑥ Less than 30 mm (1.2 in).
- ⑦ Pass the coolant reservoir tank breather hose through between engine and heat exchanger.
- ⑧ To the tail/brake light.
- ⑨ Clamp the coolant hose. Point the locked section of the clamp to the outside.
- ⑩ Clamp the wire harness. Tighten the frame cross member and frame together.
- ⑪ Bracket
- ⑫ Connect the gear position switch lead. (For model with the reverse) Fold back the gear position switch lead, and clamp it. (For model without reverse)
- ⑬ Wire harness
- ⑭ Fuse box
- ⑮ Coolant reservoir tank
- ⑯ Coolant reservoir tank breather hose
- ⑰ Parking brake cable
- ⑱ Brake hose
- ⑲ Point the clamp position to the front outside.
- ⑳ Clamp the hose at the white paint position. Point the clamp position to the front outside.
- ㉑ Clamp the battery positive lead and negative lead.
- ㉒ Point the clamp position to the downward.
- ㉓ Point the clamp position to the inside.
- ㉔ Clamp the leads before the fixture.





- ① Fuel pump
- ② Fuel hoses
- ③ Coolant reservoir tank
- ④ Point the pawl of clip to the upward.
- ⑤ Clamp the fuel tank breather hose and speed sensor lead.
Tighten the frame cross member and frame.
- ⑥ Wire harness clamp
- ⑦ Rivets
- ⑧ Speed sensor
- ⑨ Nylon nuts
- ⑩ Point the pawl of clip to the downward.

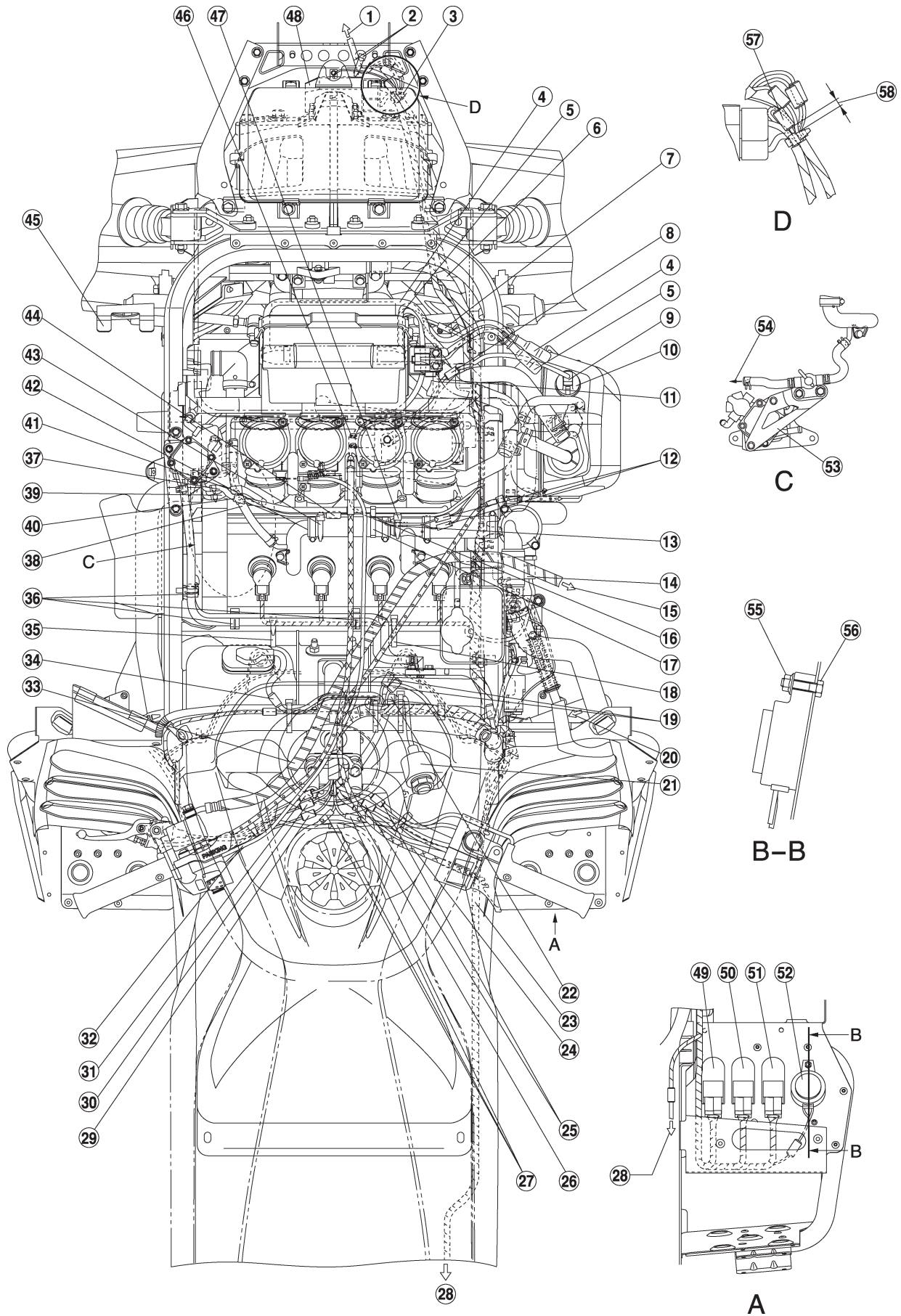


A-A

B-B



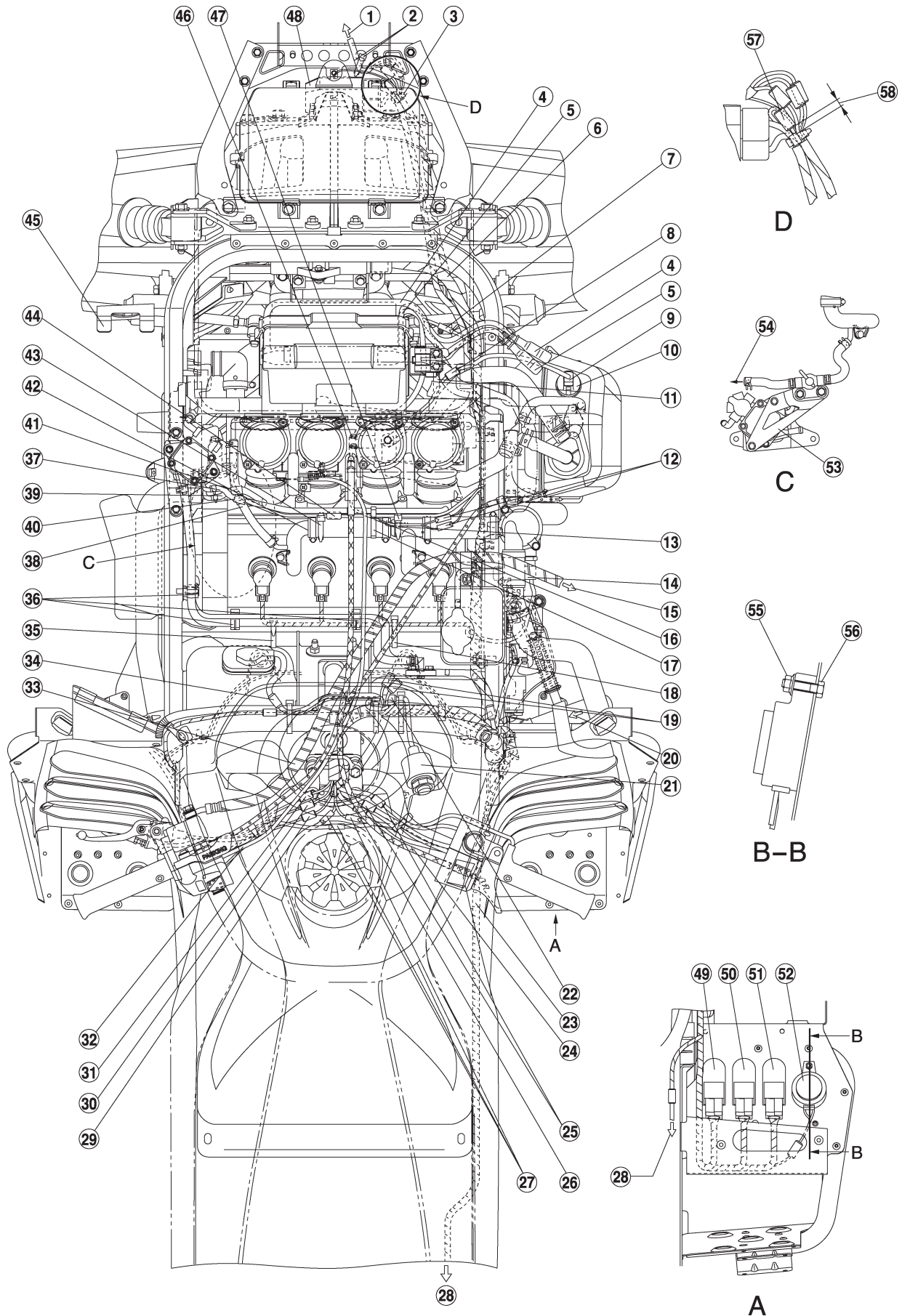
- ① Battery positive lead
- ② CDI unit
- ③ Battery negative lead
- ④ Air box drain hose
- ⑤ Starter motor
- ⑥ Plate cover
- ⑦ Wire harness
- ⑧ Clip it to the frame cross member
- ⑨ Wire harness holder
- ⑩ Battery bracket
- ⑪ Battery
- ⑫ Battery seat
- ⑬ CDI unit bracket
- ⑭ Latch
- ⑮ Battery band
- ⑯ Battery cover
- ⑰ To the carburetor.
- ⑱ 0 ~ 5 mm (0 ~ 0.20 in)
- ⑲ Frame cross member





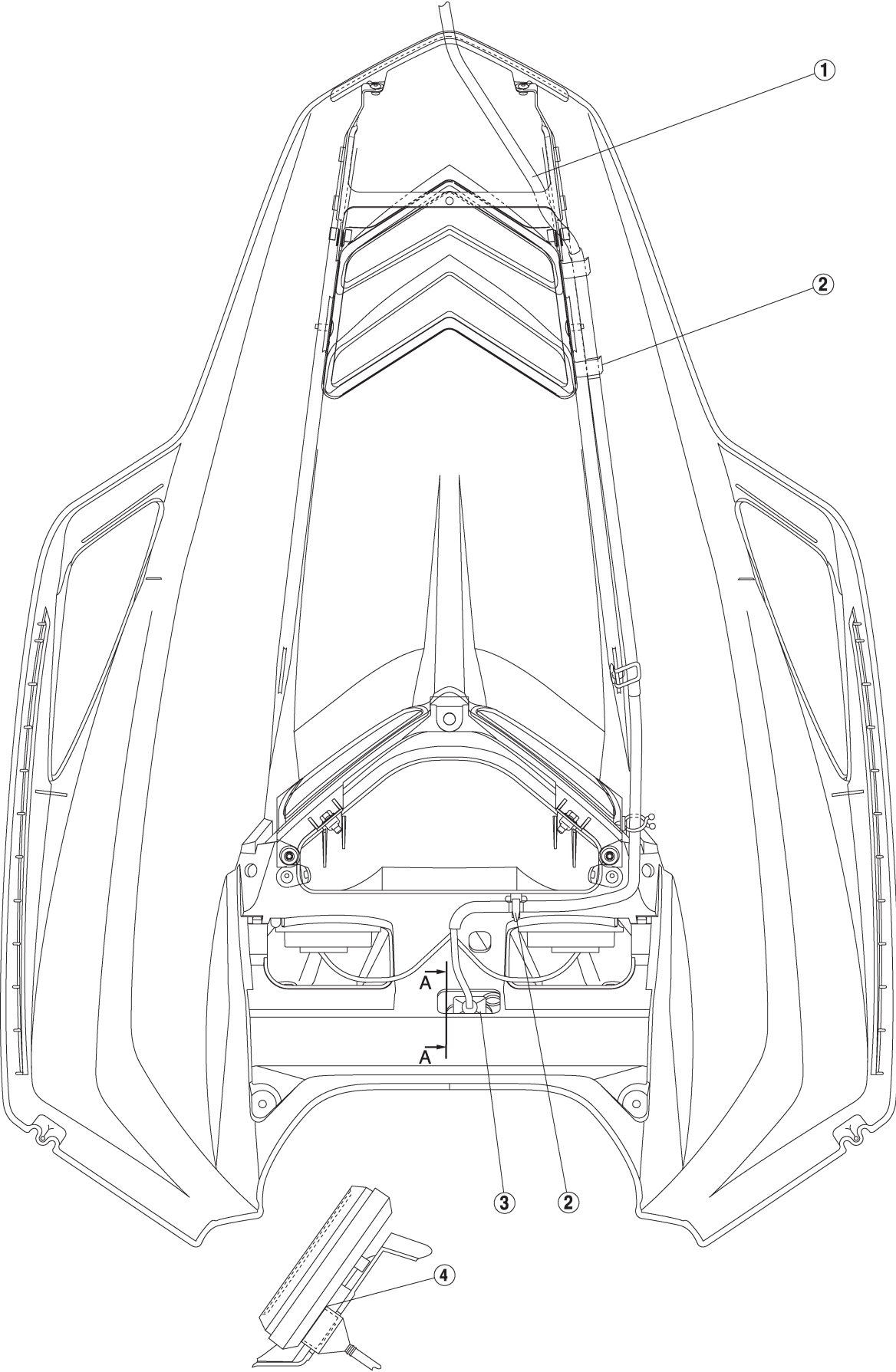
FOR RX10RK, RX10RSK,
RXW10K, RXW10SK

- ① To the headlight and meter assembly
- ② Clamp the lead at the position of white tape.
- ③ Clamp the wire harness and A.C.magneto lead.
- ④ Battery positive lead
- ⑤ Battery negative lead
- ⑥ Main harness
- ⑦ Negative lead connector
- ⑧ Carburetor heater lead coupler
- ⑨ Oil level switch lead coupler
- ⑩ Oil level switch
- ⑪ Starter motor positive lead (under the battery bracket)
- ⑫ Carburetor switch lead connector
- ⑬ Clamp the coated section of the lead.
- ⑭ Coolant temperature sensor lead coupler
- ⑮ To the brake caliper
- ⑯ There should be no slack of leads.
- ⑰ Clamp the vacuum hose 2.
- ⑱ Clamp the ignition coil lead.
- ⑲ Connectors
- ⑳ To the heat exchanger
- ㉑ Main switch
- ㉒ Set the coupler in the rear space of the instrument panel
- ㉓ Tail/brake light lead coupler
- ㉔ Throttle cable
- ㉕ Right handlebar switch lead coupler
- ㉖ Thumb warmer switch lead coupler
- ㉗ Grip warmer switch lead connector
- ㉘ To the tail/brake light
- ㉙ Headlight beam switch lead coupler
- ㉚ Left handlebar switch lead coupler
- ㉛ Brake light switch lead coupler





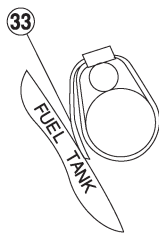
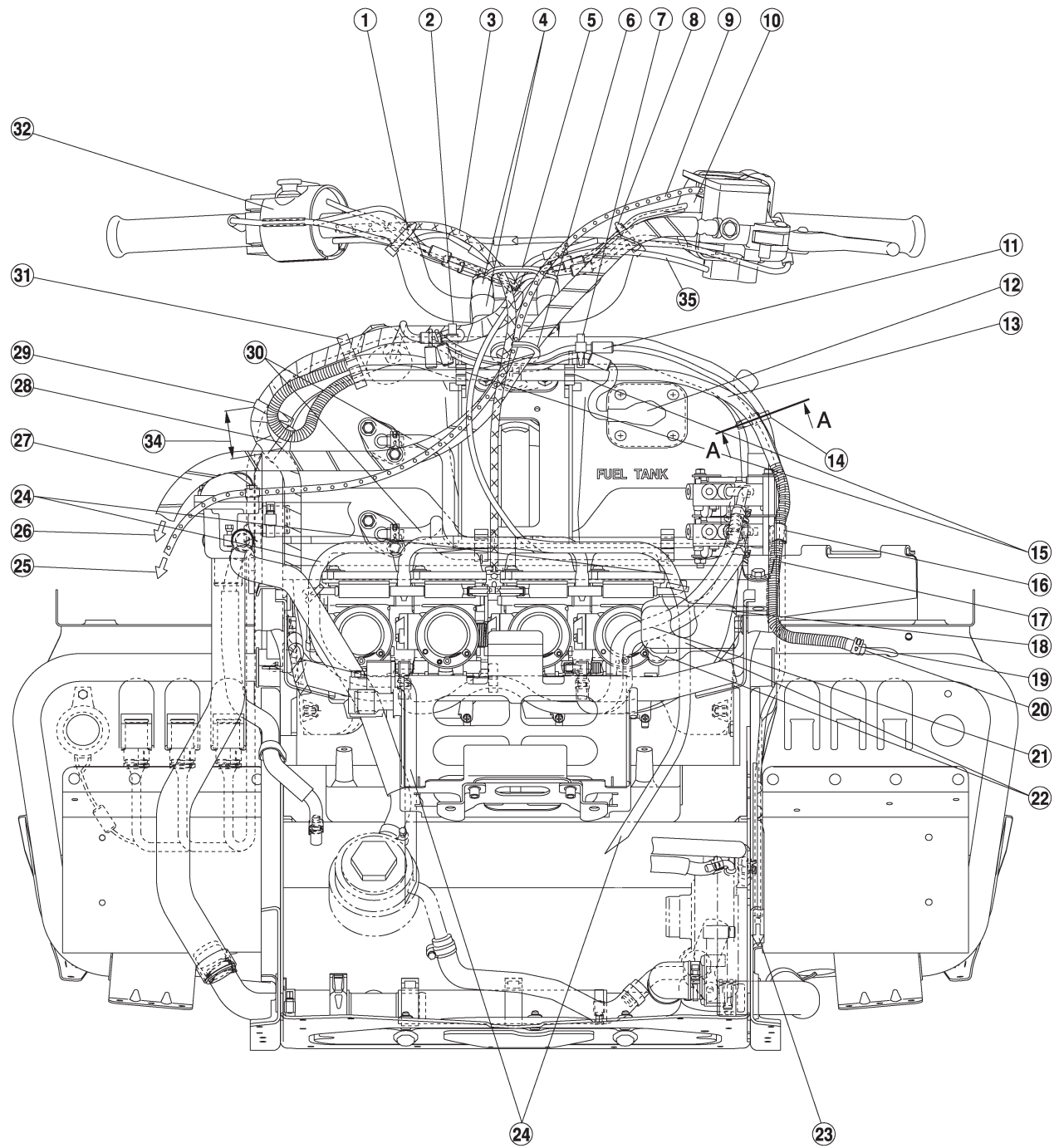
- ③② Route the starter cable above the left handlebar switch lead.
- ③③ Brake hose
- ③④ Fuel sender lead coupler
- ③⑤ Clamp the ignition coil lead under the fuel hose.
- ③⑥ Clamp the fuel hose.
- ③⑦ Route the coolant hose between the upper vacuum hose and lower vacuum hose.
- ③⑧ Route the vacuum hose under the coolant hose.
- ③⑨ Route the vacuum hose over the coolant hose.
- ④⑩ Clamp the coolant hose and vacuum hose.
- ④⑪ Clamp the coolant hose and vacuum hose 2.
- ④⑫ Point the pawl of clip to the upward.
- ④⑬ Clamp the throttle position switch lead.
- ④⑭ Throttle position sensor lead coupler. (under the vacuum hose)
- ④⑮ Drive guard bracket
- ④⑯ Connect the battery negative lead to the starter motor mounting bolt.
- ④⑰ Clamp the throttle position switch lead and carburetor switch lead.
- ④⑱ Voltage regulator
- ④⑲ Carburetor heater relay
- ⑤⑩ Headlight relay
- ⑤⑪ Main relay
- ⑤⑫ Back buzzer (RX10RK, RX10RSK, RXW10K, RXW10SK)
- ⑤⑬ Fuel pump (RX10MK, RX10MSK)
- ⑤⑭ To the carburetor (RX10MK, RX10MSK)
- ⑤⑮ Flange nut
- ⑤⑯ Hexagon bolt
- ⑤⑰ Two pole coupler for A.C.magneto.
- ⑤⑱ Between two pole coupler for A.C.magneto lead and the clamp is set to 20 mm (0.79 in) or less.



A-A



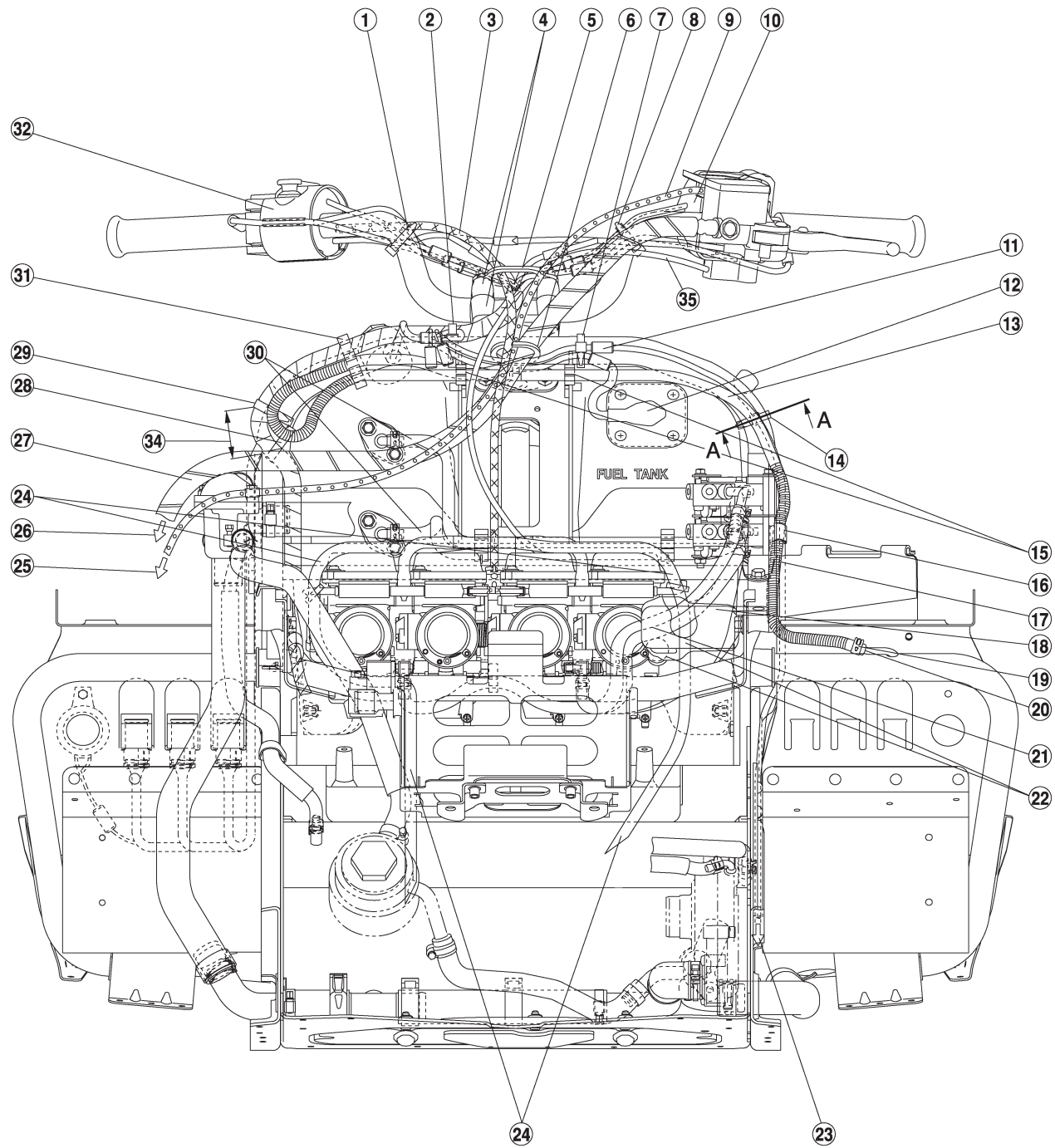
- ① Headlight wire harness
- ② Align it with the positioning tape of the headlight wire harness
- ③ Meter coupler (Securely fit in the rubber cover)
- ④ Put the boots of the meter coupler in the boss root on the side of the meter.



A-A



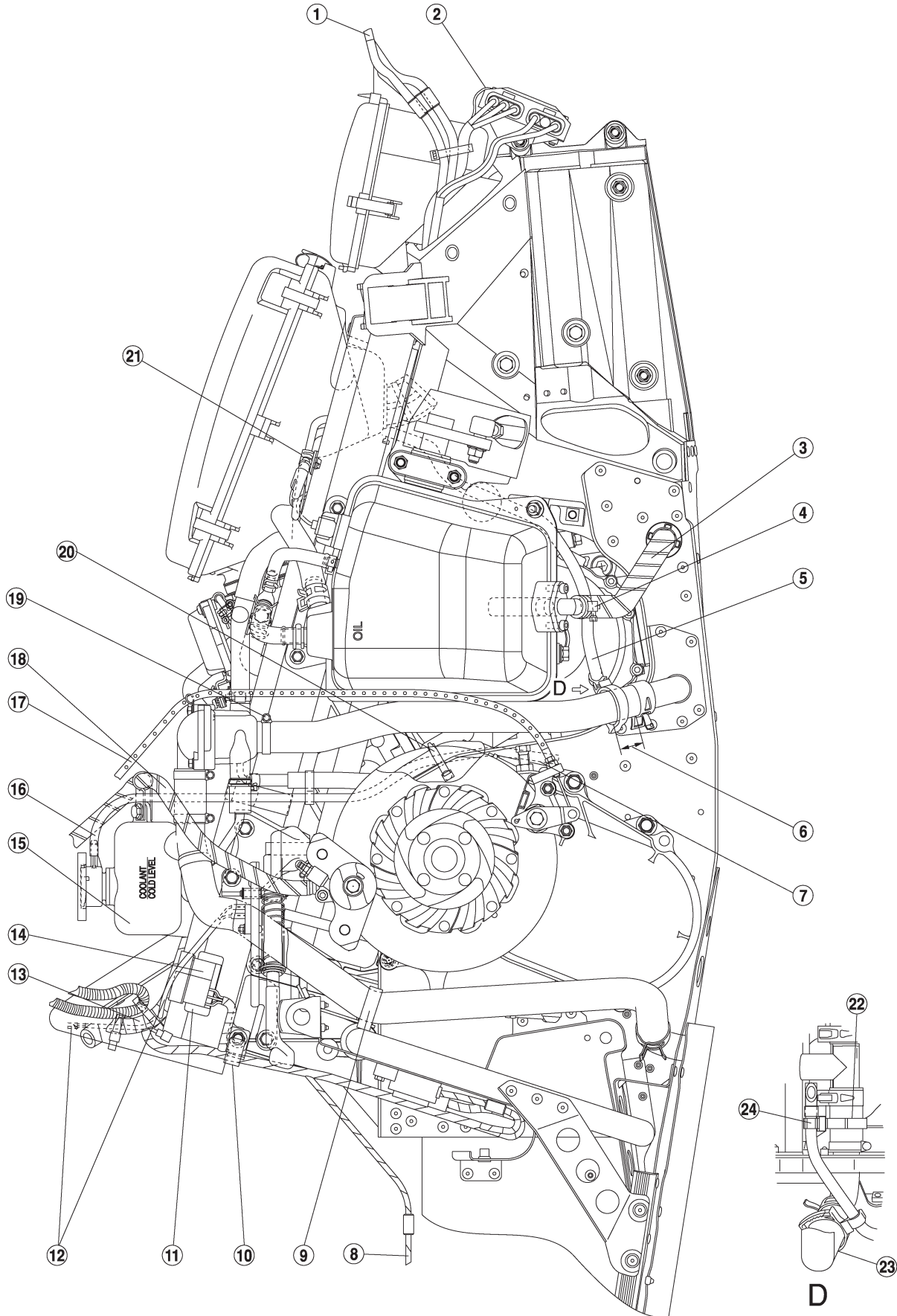
- ① Clamp the grip warmer lead and the right handlebar switch lead.
- ② Clamp the main harness, main switch and harness.
- ③ Throttle cable
- ④ Handlebar holder
- ⑤ Pass all leads and cables through the cable holder. (Except for brake hose and parking brake cable.)
- ⑥ Pass the brake hose and the parking brake cable through the cable holder.
- ⑦ Clamp the fuel sender lead and speed sensor lead.
- ⑧ Clamp the tail/brake light lead, headlight beam switch lead and grip warmer lead.
- ⑨ Parking brake cable
- ⑩ Left handlebar switch
- ⑪ Speed sensor lead coupler
- ⑫ Fuel sender lead cover
- ⑬ Route the fuel tank breather hose along the frame cross member.
- ⑭ Clamp the speed sensor lead only.
- ⑮ Clamp the fuel tank breather hose.
- ⑯ Clamp the compression spring section of the fuel tank breather hose.
- ⑰ Compression spring
- ⑱ Breather tank
- ⑲ Point the clip position to the upward.
- ⑳ Insert the fuel tank breather hose until it contacts the projection.
- ㉑ Pass the fuel hose over the engine oil breather hose.
- ㉒ Pass the carburetor air vent hose outside of the engine oil breather hose.
- ㉓ To the speed sensor.



A-A

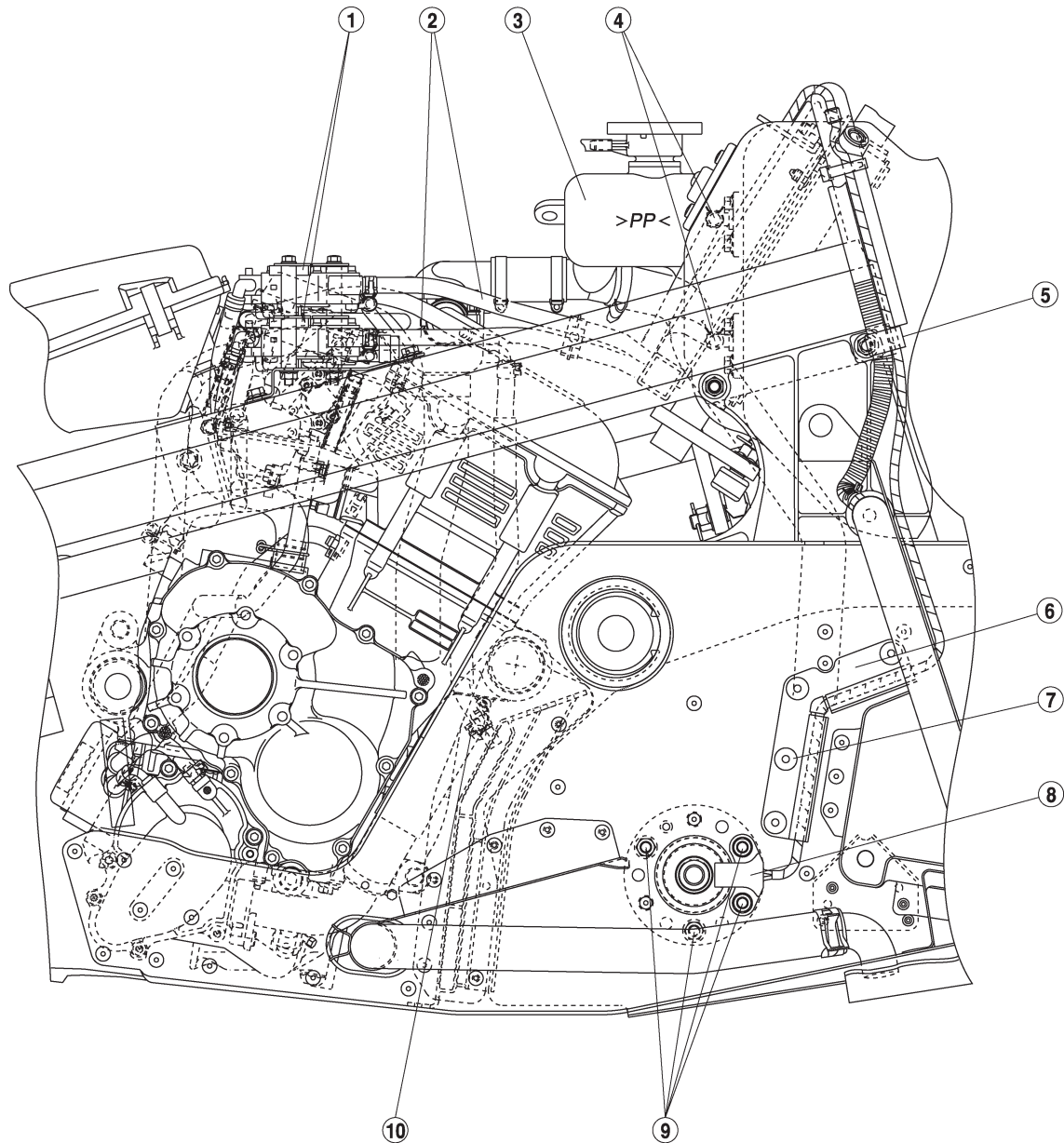


- ②4 Carburetor air vent hose
- ②5 To the parking brake.
- ②6 To the brake caliper
- ②7 Brake hose
- ②8 Clamp the wire harness and fuel tank breather hose from the top.
- ②9 Clamp the wire harness.
- ③0 Fuel hose
- ③1 Clamp the wire harness and fuel tank breather hose from the lower side.
- ③2 Right handlebar switch
- ③3 Push into the end of clamp between frame cross member and fuel tank.
- ③4 Less than 50 mm (2.0 in).
- ③5 Route the starter cable above the left handlebar switch lead.



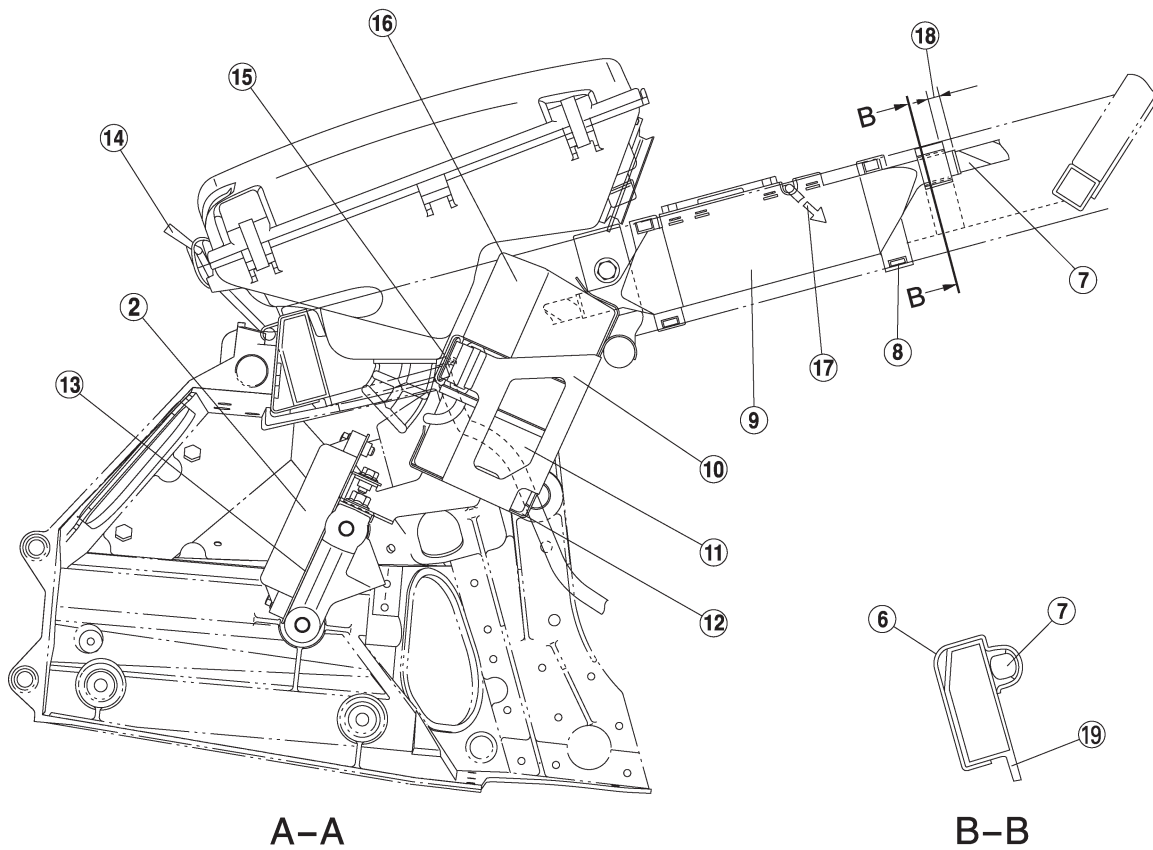
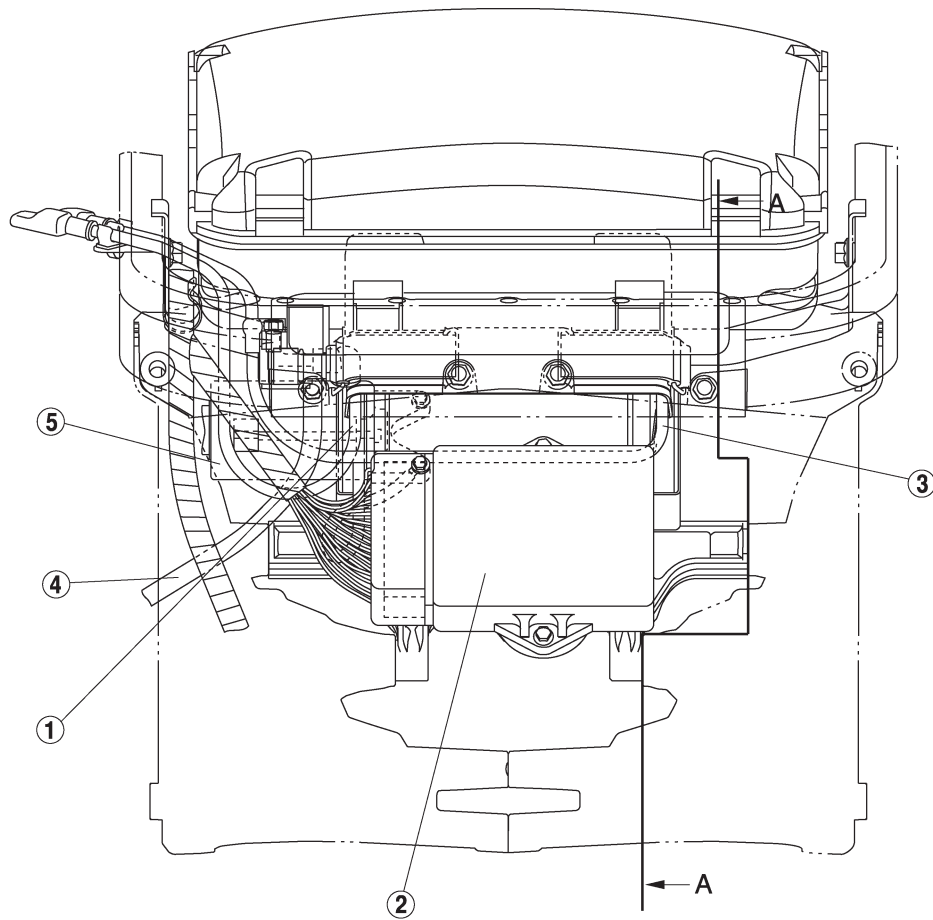


- ① Headlight wire harness
- ② Tighten the frame ground and voltage regulator upper bolt together.
- ③ Engine oil tank hose
- ④ Point the clamp tightening direction to the downward.
- ⑤ Drain hose
- ⑥ Less than 30 mm (1.2 in).
- ⑦ Pass the coolant reservoir tank breather hose through between engine and heat exchanger.
- ⑧ To the tail/brake light.
- ⑨ Clamp the coolant hose. Point the locked section of the clamp to the outside.
- ⑩ Clamp the wire harness. Tighten the frame cross member and frame together.
- ⑪ Bracket
- ⑫ Connect the gear position switch lead. (For model with the reverse) Fold back the gear position switch lead, and clamp it. (For model without reverse)
- ⑬ Wire harness
- ⑭ Fuse box
- ⑮ Coolant reservoir tank
- ⑯ Coolant reservoir tank breather hose
- ⑰ Parking brake cable
- ⑱ Brake hose
- ⑲ Point the clamp position to the front outside.
- ⑳ Clamp the hose at the white paint position. Point the clamp position to the front outside.
- ㉑ Clamp the battery positive lead and negative lead.
- ㉒ Point the clamp position to the downward.
- ㉓ Point the clamp position to the inside.
- ㉔ Clamp the leads before the fixture.





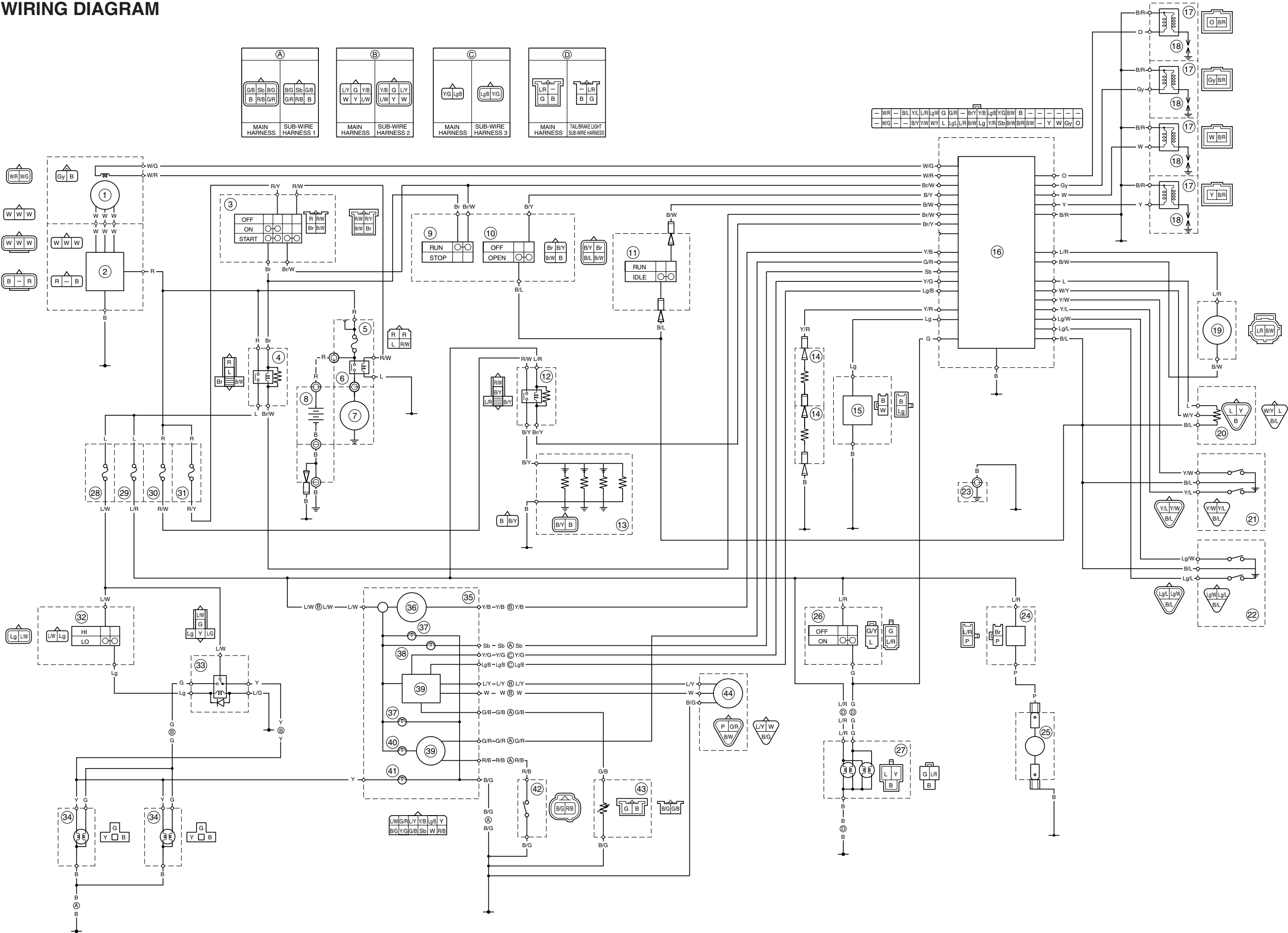
- ① Fuel pump
- ② Fuel hoses
- ③ Coolant reservoir tank
- ④ Point the pawl of clip to the upward.
- ⑤ Clamp the fuel tank breather hose and speed sensor lead.
Tighten the frame cross member and frame.
- ⑥ Wire harness clamp
- ⑦ Rivets
- ⑧ Speed sensor
- ⑨ Nylon nuts
- ⑩ Point the pawl of clip to the downward.





- ① Battery negative lead
- ② CDI unit
- ③ Battery positive lead
- ④ Air box drain hose
- ⑤ Starter motor
- ⑥ Plate cover
- ⑦ Wire harness
- ⑧ Clip it to the frame cross member
- ⑨ Wire harness holder
- ⑩ Battery bracket
- ⑪ Battery
- ⑫ Battery seat
- ⑬ CDI unit bracket
- ⑭ Latch
- ⑮ Battery band
- ⑯ Battery cover
- ⑰ To the carburetor.
- ⑱ 0 ~ 5 mm (0 ~ 0.20 in)
- ⑲ Frame cross member

WIRING DIAGRAM



- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Main relay
- ⑤ Fuse (MAIN)
- ⑥ Starter relay
- ⑦ Starter motor
- ⑧ Battery
- ⑨ Engine stop switch
- ⑩ Throttle switch
- ⑪ Carburetor switch
- ⑫ Carburetor heater relay
- ⑬ Carburetor heater
- ⑭ Grip warmer
- ⑮ Thumb warmer
- ⑯ CDI unit
- ⑰ Ignition coil
- ⑱ Spark plug
- ⑲ Water temperature sensor
- ⑳ Throttle position sensor
- ㉑ Grip warmer switch
- ㉒ Thumb warmer switch
- ㉓ Body ground
- ㉔ Back buzzer (RX10RK, RX10RSK,
RXW10K, RXW10SK)
- ㉕ Gear position switch (RX10RK,
RX10RSK, RXW10K, RXW10SK)
- ㉖ Brake light switch
- ㉗ Tail/brake light
- ㉘ Fuse (HEADLIGHT)
- ㉙ Fuse (SIGNAL)
- ㉚ Fuse (CARBURETOR HEATER)
- ㉛ Fuse (IGNITION)
- ㉜ Headlight beam switch
- ㉝ Headlight relay
- ㉞ Headlight
- ㉟ Meter assembly
- ㊱ Tachometer
- ㊲ Meter light
- ㊳ Water temperature indicator light
- ㊴ Multi-function meter
- ㊵ Warning light
- ㊶ Hi beam indicator light
- ㊷ Oil level switch
- ㊸ Fuel sender
- ㊹ Speed sensor

COLOR CODE

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





SUPPLEMENTARY SERVICE MANUAL

**RX10RTL/RX10RL
RX10RTRL/RX10GTL
RXW10L/RX10ML**

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and new data for the RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML.

For complete information, on service procedures, it is necessary to use this Supplementary Service Manual together with following manual:

RX10H/RX10SH/RX10MH/RX10MSH/
RX10RH/RX10RSH
SERVICE MANUAL:
8FA-28197-10 (981073) (LIT-12618-02-28)
RXW10J/RXW10SJ
SUPPLEMENTARY SERVICE MANUAL:
8FG-28197-10 (981089) (LIT-12618-02-33)
RX10K/RX10RK/RX10RSK
RXW10K/RXW10SK/RX10MK/RX10MSK
SUPPLEMENTARY SERVICE MANUAL:
8FV-28197-10 (981098) (LIT-12618-02-39)

NOTICE

This manual was written by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so it is assumed that persons using this book to perform maintenance and repairs on Yamaha snowmobiles have a basic understanding of the mechanical concepts and procedures inherent in snowmobile repair. Without such knowledge, attempted repairs or service to this model may render it unfit and/or unsafe to use.

Yamaha Motor Company, Ltd. is continually striving to improve all models manufactured by Yamaha.

Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha dealers and will, where applicable, appear in future editions of this manual.

**RX10RTL/RX10RL
RX10RTRL/RX10GTL
RXW10L/RX10ML
SUPPLEMENTARY SERVICE MANUAL
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Corporation, U.S.A.
1st Edition, July 2005
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U.S.A. is expressly prohibited.
Printed in U.S.A.
P/N.LIT-12618-02-44**

HOW TO USE THIS MANUAL

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



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

WARNING

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

CAUTION:

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

NOTE:

A NOTE provides key information that can make procedures easier or clearer.

MANUAL FORMAT

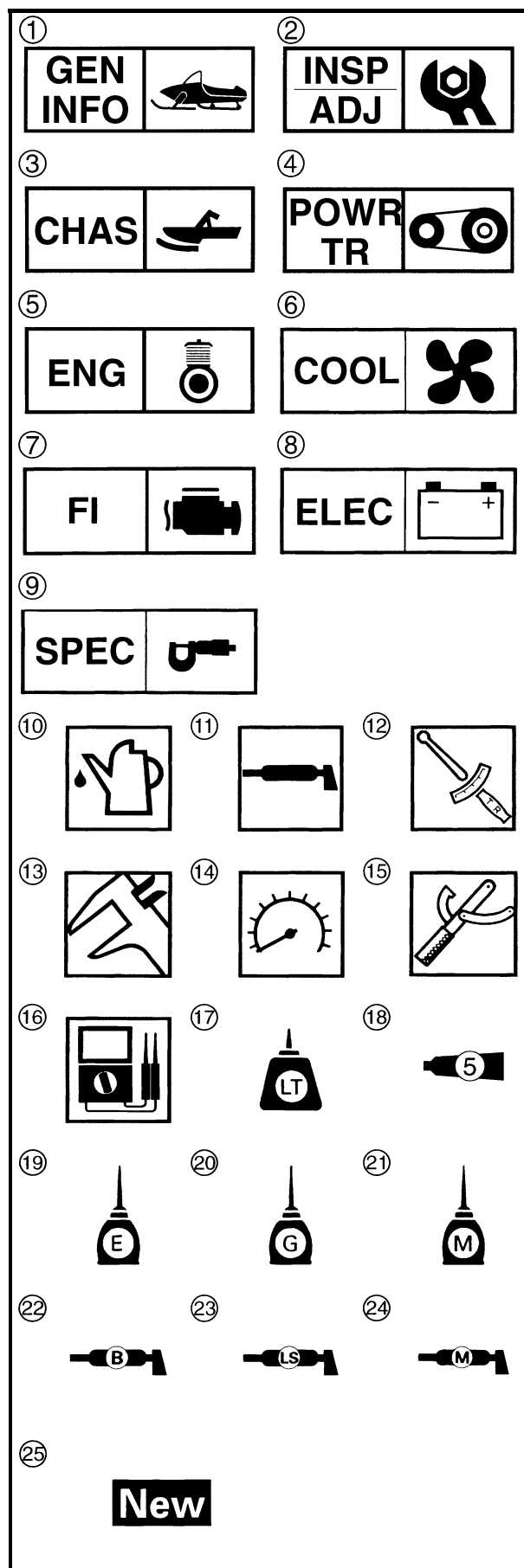
All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all inspection, repair, assembly, and disassembly operations.

In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required to correct the problem will follow the symbol, e.g.,

- Bearings
Pitting/damage → Replace.

EXPLODED DIAGRAM

Each chapter provides exploded diagrams before each disassembly section to facilitate correct disassembly and assembly procedures.



ILLUSTRATED SYMBOLS (Refer to the illustration)

Illustrated symbols ① to ⑨ are designed as thumb tabs to indicate the chapter's number and content.

- ① General information
- ② Periodic inspections and adjustments
- ③ Chassis
- ④ Power train
- ⑤ Engine
- ⑥ Cooling system
- ⑦ Fuel injection system
- ⑧ Electrical
- ⑨ Specifications

Illustrated symbols ⑩ to ⑯ are used to identify the specifications which appear.

- ⑩ Filling fluid
- ⑪ Lubricant
- ⑫ Tightening
- ⑬ Wear limit, clearance
- ⑭ Engine speed
- ⑮ Special tool
- ⑯ Ω , V, A

Illustrated symbols ⑰ to ㉕ in the exploded diagram indicate grade of lubricant and location of lubrication point.

- ⑰ Apply locking agent (LOCTITE®)
- ⑱ Apply Yamabond No.5®
- ⑲ Apply engine oil
- ⑳ Apply gear oil
- ㉑ Apply molybdenum disulfide oil
- ㉒ Apply wheel bearing grease
- ㉓ Apply low-temperature lithium-soap base grease
- ㉔ Apply molybdenum disulfide grease
- ㉕ Use new one

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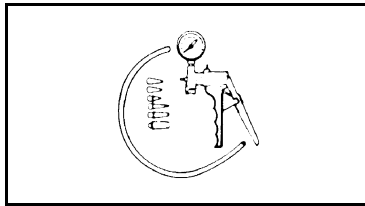
GENERAL INFORMATION

SPECIAL TOOLS

Some special tools are necessary for a completely accurate tune-up and assembly. Using the correct special tool will help prevent damage that can be caused by the use of improper tools or improvised techniques.

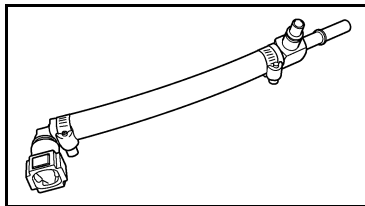
NOTE:

Be sure to use the correct part number when ordering the tool, since the part number may differ according to country.

**FOR FUEL INJECTION SERVICE**

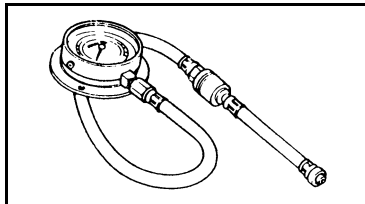
- Vacuum/pressure pump gauge set
P/N: YB-35956 (for U.S.A./Canada)
90890-06756 (for Europe)

This tool is used to measure the vacuum pressure.



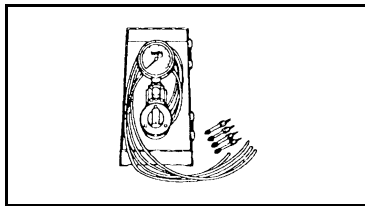
- Fuel pressure adapter
P/N: YM-03176 (for U.S.A./Canada)
90890-03176 (for Europe)

This tool is needed to measure fuel pressure.



- Pressure gauge
P/N: YU-03153 (for U.S.A./Canada)
90890-03153 (for Europe)

This tool is used to measure fuel pressure.



- Vacuum gauge
P/N: YU-08030 (for U.S.A./Canada)
90890-03094 (for Europe)

This guide is used to synchronize the throttle bodies.



PERIODIC INSPECTION AND ADJUSTMENT

INTRODUCTION

This chapter includes all information necessary to perform recommended inspections and adjustments. These preventive maintenance procedures, if followed, will ensure more reliable machine operation and a longer service life. In addition, the need for costly overhaul work will be greatly reduced.

This information applies to machines already in service as well as new machines that are being prepared for sale. All service technicians should be familiar with this entire chapter.

PERIODIC MAINTENANCE CHART FOR THE EMISSION CONTROL SYSTEM

Item	Remarks	Pre-operation check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every
				Seasonally or 4,000 km (2,500 mi) (200 hr)
Spark plugs	Check condition. Adjust gap and clean. Replace if necessary.			●
Valves clearance	Check clearance. Adjust clearance when engine is cold.	Every 40,000 km (25,000 mi)		
Crankcase breather system	Check breather hose for cracks or damage. Replace if necessary.			●
Fuel filter	Check condition. Replace if necessary.			●
Fuel line	Check fuel hose for cracks or damage. Replace if necessary.		●	●
Idle speed	Check and adjust engine idle speed.		●	●
Fuel injection	Adjust synchronization.		●	●
Exhaust system	Check for leakage. Tighten or replace gasket if necessary.			●

GENERAL MAINTENANCE AND LUBRICATION CHART



GENERAL MAINTENANCE AND LUBRICATION CHART

Item	Remarks	Pre-operation check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every
				Seasonally or 4,000 km (2,500 mi) (200 hr)
Engine oil	Check oil level.	●		
	Replace.		●	●
Engine oil filter cartridge	Replace.		●	Every 20,000 km (12,000 mi)
Fuel	Check fuel level.	●		
Engine coolant	Check coolant level.	●		
	Air bleed the cooling system if necessary.			●
Throttle lever (handlebar side)	Check operation. Repair if necessary.	●		
Throttle override system (T.O.R.S.)	Check operation. Repair if necessary.	●		
Engine stop switch	Check operation. Repair if necessary.	●		
Drive guard	Check for cracks, bends or damage. Replace if necessary.	●		
V-belt	Check for wear and damage. Replace if necessary.	●		
Drive track and idler wheels.	Check deflection, and for wear and damage. Adjust/replace if necessary.	●		
Slide runners	Check for wear and damage.	●		
	Replace if necessary.			●
Brake and parking brake	Check operation and fluid leakage.	●		
	Adjust free play and/or replace pads if necessary.			●
	Replace brake fluid.	See NOTE on page 4.		
Disc brake installation	Check for slight free play. Lubricate shaft with specified grease as required.			Every 1,600 km (1,000 mi)
Drive chain oil	Check oil level.		●	
	Replace.			●
Drive chain	Check deflection. Adjust if necessary.	Initial at 500 km (300 mi) and every 800 km (500 mi) thereafter.		
Skis and ski runners	Check for wear and damage.	●		
	Replace if necessary.			●
Steering system	Check operation.	●		
	Adjust toe-out if necessary.			●
Lights	Check operation. Replace bulbs if necessary.	●		
Battery	Check condition. Charge if necessary.			●

GENERAL MAINTENANCE AND LUBRICATION CHART

INSP
ADJ

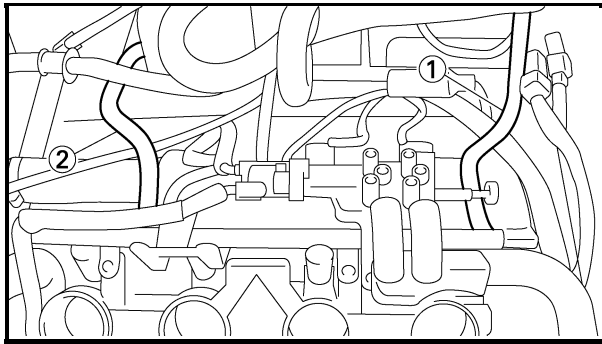


Item	Remarks	Pre-operation check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every
				Seasonally or 4,000 km (2,500 mi) (200 hr)
Primary and secondary clutches	Check engagement and shift speed. Adjust if necessary.			●
		Whenever operating elevation is changed.		
	Inspect sheaves for wear/damage. Inspect weights/rollers and bushings for wear-for primary. Inspect ramp shoes/bushings for wear-for secondary. Replace if necessary.			●
	Lubricate with specified grease.			●
Steering column bearing	Lubricate with specified grease.			●
Ski and front suspension	Lubricate with specified grease.			●
Suspension component	Lubricate with specified grease.			●
Parking brake cable end and lever end/throttle cable end	Lubricate with specified grease.			●
	Check cable damage. Replace if necessary.			●
Shroud latches	Make sure that the shroud latches are hooked.	●		
Fitting and fasteners	Check tightness. Repair if necessary.	●		
Tool kit and recommended equipment	Check for proper placement.	●		

NOTE:

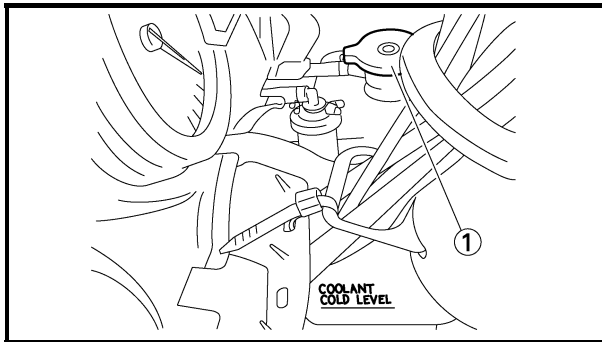
Brake system:

1. After disassembling the master cylinder or caliper cylinder, always change the brake fluid. Regularly check the brake fluid level and add fluid if necessary.
2. Replace the oil seals of the master cylinder and caliper cylinder every two years.
3. Replace the brake hose every four years, or if cracked or damaged.



FUEL LINE INSPECTION

1. Remove:
 - Top cover
Refer to "COWLINGS" in CHAPTER 3.
2. Remove:
 - Intake silencer
Refer to "FUEL INJECTION" in CHAPTER 7.
3. Inspect:
 - Fuel hoses ①
 - Fuel delivery hoses ②
Cracks/damage → Replace.
4. Install:
 - Intake silencer
Refer to "FUEL INJECTION" in CHAPTER 7.
5. Install:
 - Top cover
Refer to "COWLINGS" in CHAPTER 3.



COOLING SYSTEM

Coolant replacement

NOTE:

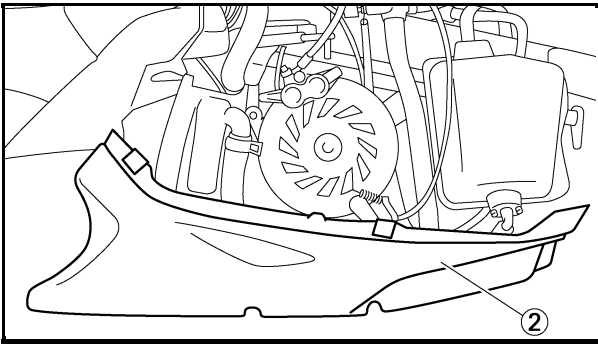
The coolant should be changed at least every season.

1. Place the machine on a level surface.
2. Remove:
 - Top cover
Refer to "COWLINGS" in CHAPTER 3.
3. Remove:
 - Intake silencer
Refer to "FUEL INJECTION" in CHAPTER 7.
4. Remove:
 - Coolant filler cap ①

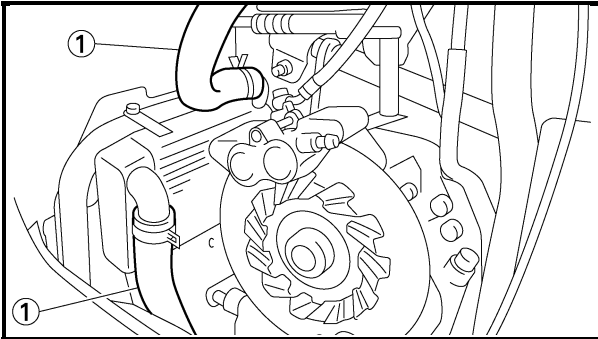
⚠ WARNING

Do not remove the coolant filler cap ① when the engine is hot. Pressurized scalding hot fluid and steam may be blown out, which could cause serious injury. When the engine has cooled, place a thick rag or a towel over the coolant filler cap.

Slowly turn the cap counterclockwise until it stop. This allows any residual pressure to escape. When the hissing sound has stopped, press down on the cap while turning it counterclockwise to remove it.



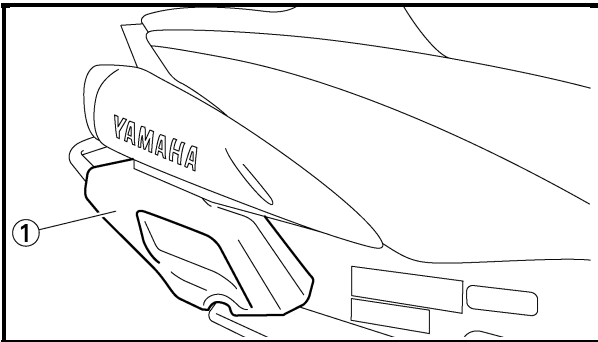
5. Remove:
 - Side cover (right)
 - Side under cover ② (right)
 Refer to “COWLINGS” in CHAPTER 3.



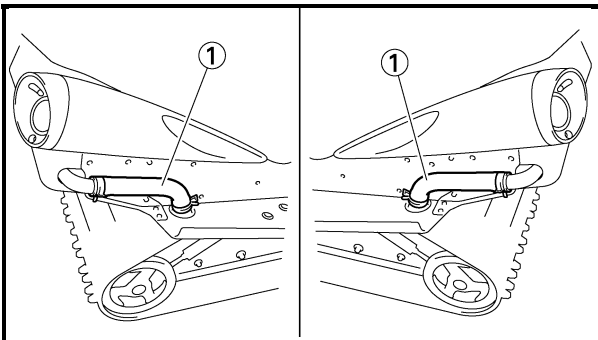
6. Place an open container under the coolant hose.
7. Disconnect:
 - Coolant hose ①
8. Drain the coolant.

NOTE: _____

Lift up the tail of the machine to drain the coolant.



9. Remove:
 - Rear cover ①



10. Disconnect:
 - Coolant hoses ①
11. Drain the coolant.

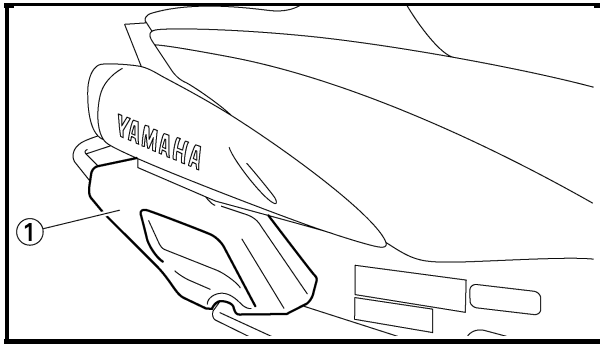
NOTE: _____

Lift up the front of the machine to drain the coolant completely.

⚠ WARNING

Coolant is poisonous. It is harmful or fatal if swallowed.

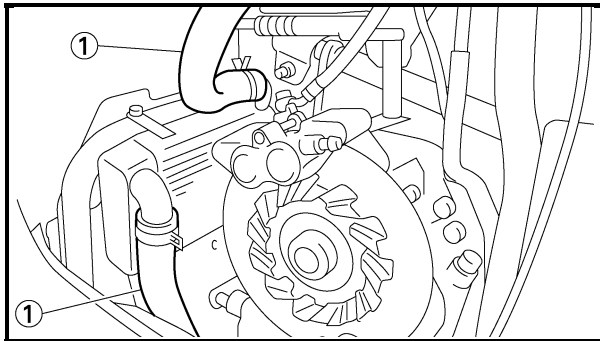
- If coolant is swallowed, induce vomiting immediately and get immediate medical attention.
- If coolant splashes in your eyes, thoroughly wash them with water and consult a doctor.
- If coolant splashes on your skin or clothes, quickly wash it away with soap and water.



12. Connect:
 - Coolant hoses
13. Install:
 - Rear cover ①



Bolt (rear cover):
3 Nm (0.3 m•kg, 2.2 ft•lb)



14. Install:
 - Coolant hose ①
15. Install:
 - Side under cover (right)

Refer to “COWLINGS” in CHAPTER 3.

16. Install:
 - Intake silencer

Refer to “FUEL INJECTION” in CHAPTER 7.
17. Fill:
 - Cooling system



Recommended coolant:
High quality silicate-free
ethylene glycol antifreeze
containing corrosion inhibitors
Coolant mixing ratio
(coolant:water)
3:2 (60%:40%)
Total amount:
For RX10RTL / RX10RL /
RX10RTRL / RXW10L
6.0 L (5.28 Imp qt, 6.34 US qt)
For RX10ML
6.4 L (5.63 Imp qt, 6.76 US qt)

CAUTION:

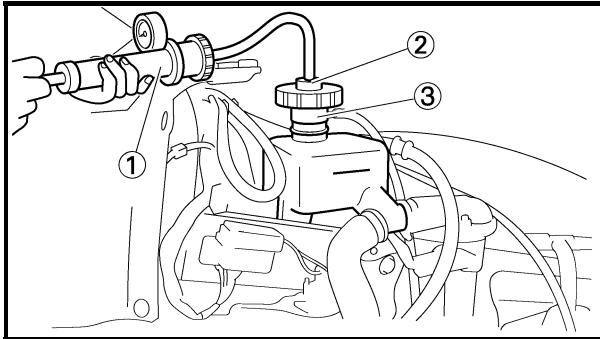
- Hard water or salt water is harmful to engine parts. If soft water is not available, use boiled or distilled water.
- Do not use water containing impurities or oil.



18. Bleed the air from the cooling system.

19. Inspect:

- Cooling system
Decrease of pressure (leaks) → Repair as required.



Inspection steps:

- Attach the cooling system tester (1) and adapter (2) to the coolant filler (3).



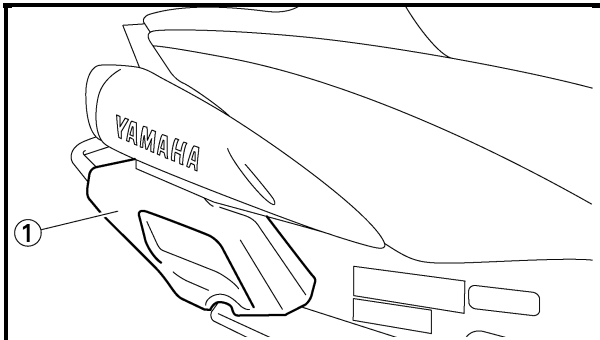
Cooling system tester:

90890-01325, YU-24460-01

Adapter:

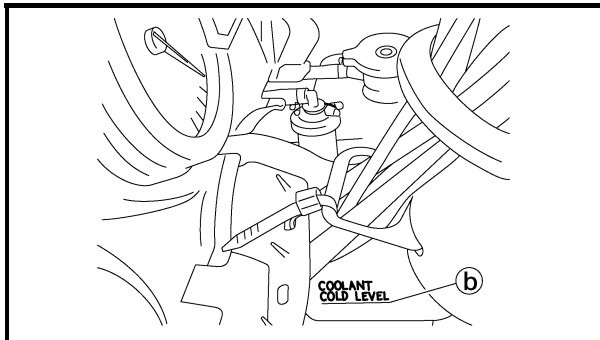
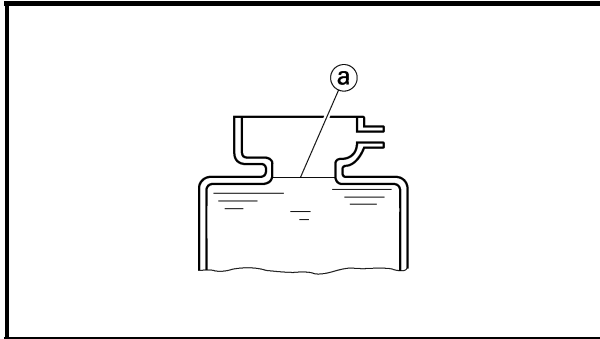
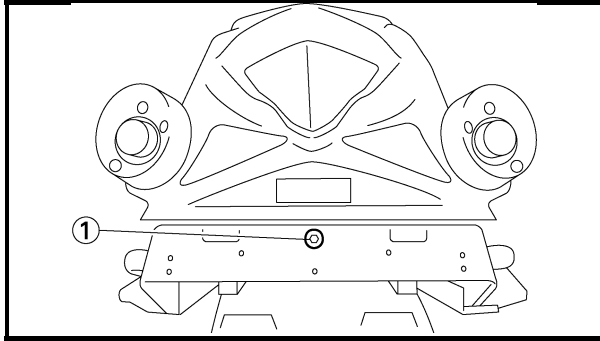
90890-01352, YU-24460-01

- Apply 100 kPa (1.0 kg/cm², 14 psi).
- Measure the pressure with the gauge.



Air bleeding

1. Remove:
 - Rear cover (1)
2. Bleed air from the cooling system.



Air bleeding steps:

- Lift up the tail of the machine.
- Remove the bleed bolt ① on the heat exchanger.
- While slowly adding coolant to the coolant filler, drain the coolant until no more air bubbles appear.
- Tighten the bleed bolt ①.



Bleed bolt:

13 Nm (1.3 m•kg, 9.4 ft•lb)

- Remove the coolant reservoir tank cap and add coolant to the full level ①.
- Install the coolant reservoir tank cap.
- Remove the coolant recovery tank cap and add coolant until it reaches the “COLD LEVEL” mark ②.
- Install the coolant recovery tank cap.
- Apply and lock the parking brake. Start the engine and run it at approximately 2,500 ~ 3,000 r/min until the coolant circulates (approximately 3 ~ 5 minutes). The rear heat exchanger will be warm to the touch.

⚠ WARNING

To avoid severe injury or death:

- Make sure the machine is securely supported with a suitable stand.
- Do not exceed 3,000 r/min. Drive line damage and excessive V-belt wear could occur, or the machine could unexpectedly move forward if the clutch engages.
- Operate the engine only in a well-ventilated area.

- Remove the coolant recovery tank cap and bleed the cooling system again, as described above.
- No air bubbles → OK.

- Remove the coolant recovery tank cap add coolant until it reaches the “COLD LEVEL” mark ②.

- Check for any coolant leakage.

3. Install:

- Rear cover

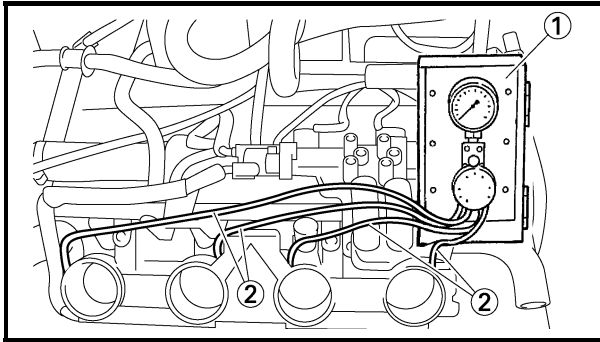


SYNCHRONIZING THE THROTTLE BODIES

NOTE:

Prior to synchronizing the throttle bodies, the valve clearance and the engine idling speed should be properly adjusted and the ignition timing should be checked.

1. Place the machine on a level surface.
2. Remove:
 - shroud
 - hood (left and right)
 - headlight assembly
 - headlight stay
 Refer to “COWLINGS” in CHAPTER 3.



3. Install:
 - vacuum gauge ①
(onto the synchronizing hose ②)



Vacuum gauge
90890-03094, YU-08030

4. Install:
 - headlight stay
 - headlight assembly
 - hood (left and right)
 Refer to “COWLINGS” in CHAPTER 3.
5. Start the engine and let it warm up for several minutes.
6. Measure:
 - engine idling speed
 Out of specification → Adjust.
Refer to “ENGINE IDLE SPEED ADJUSTMENT”.



Engine idling speed
1,500 ± 100 r/min
(1,400 ~ 1,600 r/min)



ENGINE IDLE SPEED ADJUSTMENT

NOTE:

Prior to adjusting the engine idling speed, the carburetor synchronization should be adjusted properly, the air filter should be clean, and the engine should have adequate compression.

1. Start the engine and let it warm up for several minutes.
2. Install:
 - Engine tachometer (near the spark plug)



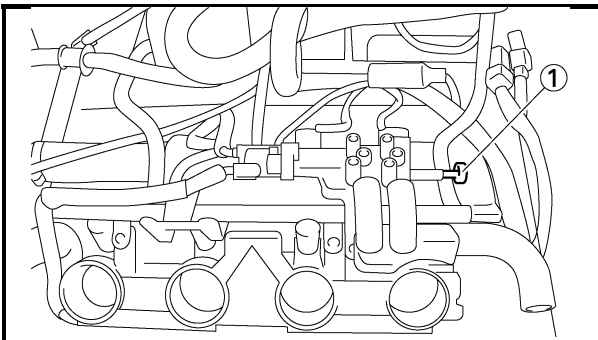
Engine tachometer
90793-80009, YU-8036-B

3. Measure:
 - Engine idle speed
 Out of specification → Adjust.



Engine idle speed:
1,500 ± 100 r/min
(1,400 ~ 1,600 r/min)

4. Adjust:
 - Engine idle speed



- Turn the throttle stop screw ① in or out until the specified engine idle speed is obtained.
- Turning in → Idle speed is increased.**
Turning out → Idle speed is decreased.

NOTE:

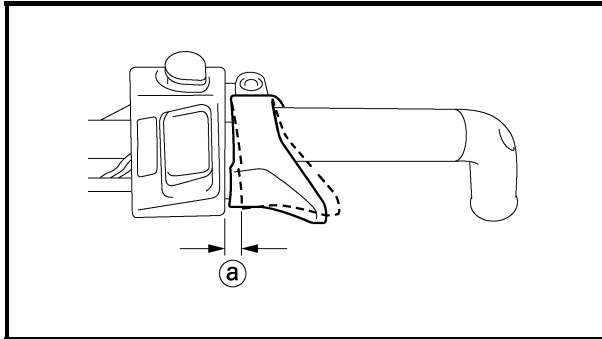
After adjusting the engine idle speed, the throttle cable free play should be adjusted.



THROTTLE CABLE FREE PLAY ADJUSTMENT

NOTE:

- Before adjusting the throttle cable free play, the engine idle speed should be adjusted.
- Adjust the throttle cable free play while the cable is in the cable guide.



1. Measure:

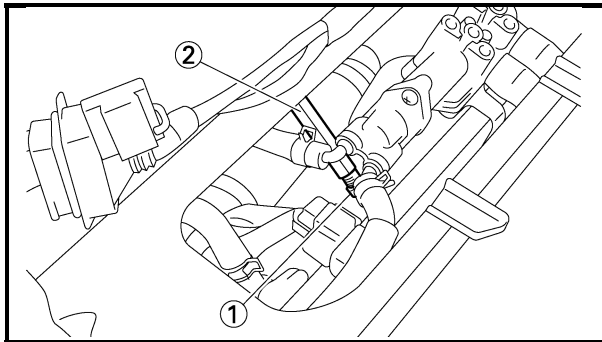
- Throttle cable free play ①
- Out of specification → Adjust.



Throttle cable free play:
2.0 ~ 3.0 mm (0.08 ~ 0.12 in)

2. Adjust:

- Throttle cable free play



Adjustment steps:

- Loosen the locknut ①.
- Turn the adjusting nut ② in or out until the specified free play is obtained.

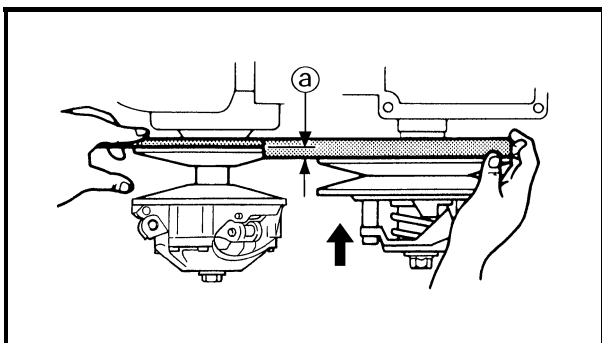
Turning in → Free play is increased.

Turning out → Free play is decreased.

- Tighten the locknut.

NOTE:

After adjusting the free play, turn the handlebar to right and left, and make sure that the engine idling does not run faster.



POWER TRAIN

SHEAVE OFFSET ADJUSTMENT

1. Measure:
 - Sheave offset (a)
 - Use the sheave gauge.
 - Out of specification → Adjust.



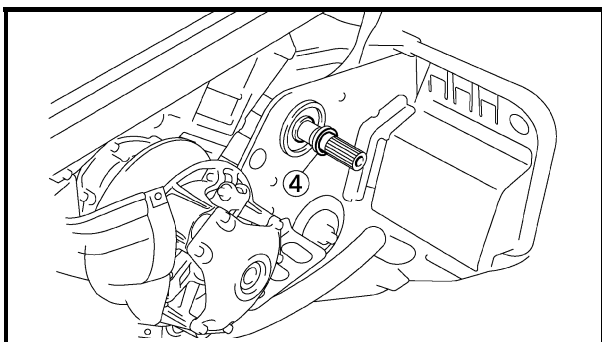
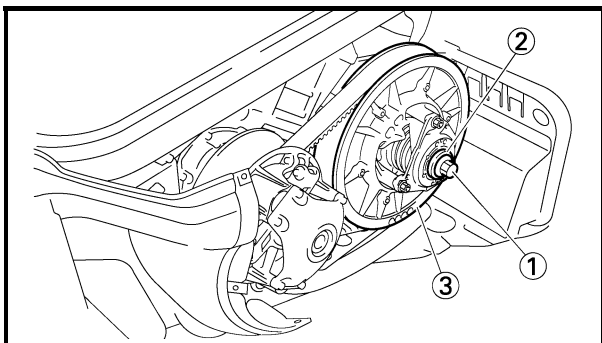
Sheave offset:
13.5 ~ 16.5 mm (0.53 ~ 0.65 in)



Sheave gauge:
YS-42421-1

NOTE:

Push the secondary sheave toward the inside of vehicle frame first and measure the sheave offset.



2. Adjust:
 - Sheave offset

Adjustment steps:

- Apply the brake to lock the secondary sheave.
- Remove the bolt (Secondary sheave) ①, washer ② and secondary sheave ③.
- Adjust the sheave offset by adding or removing shim(s) ④.

Adding shim → Offset is increased.

Removing shim → Offset is decreased.

Shim size	
Part Number	Thickness
90201-252F1	0.5 mm (0.02 in)
90201-25527	1.0 mm (0.04 in)
90201-25289	1.6 mm (0.06 in)
90201-25526	2.0 mm (0.08 in)

- Install the secondary sheave, bolt (secondary sheave) and washer.



Bolt (secondary sheave):
64 Nm (6.4 m•kg, 46 ft•lb)

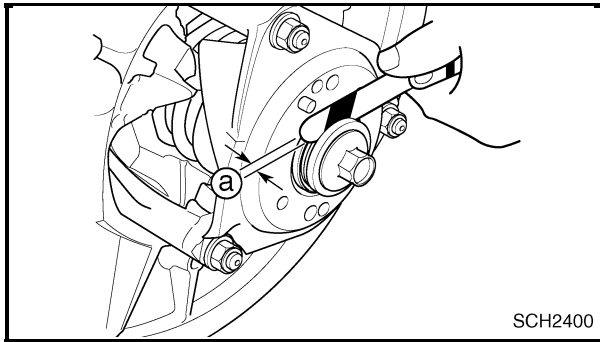
- Recheck the sheave offset. If out of specification, repeat the above steps.

NOTE:

When adjusting the sheave offset, the secondary sheave free play (clearance) should be adjusted.

SHEAVE OFFSET ADJUSTMENT/LUBRICATION

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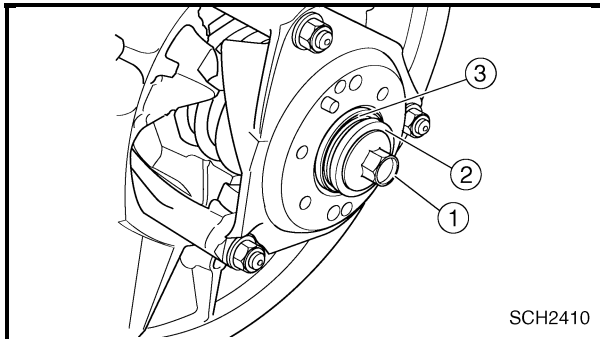
3. Measure:

- Secondary sheave freeplay (clearance) ①
Use a feeler gauge.
Out of specification → Adjust.



Secondary sheave free play (clearance):

1.0 ~ 2.0 mm (0.04 ~ 0.08 in)



4. Adjust:

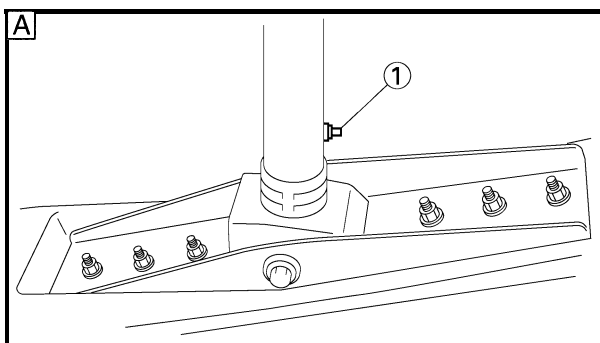
- Secondary sheave freeplay (clearance)

Adjustment steps:

- Apply the brake to lock the secondary sheave.
- Remove the bolt ① and washer ②.
- Adjust the secondary sheave freeplay (clearance) by adding or removing a shim(s) ③.

Shim size

Part number	Thickness
90201-222F0	0.5 mm (0.02 in)
90201-225A4	1.0 mm (0.04 in)

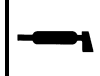


CHASSIS

LUBRICATION

Front and rear suspension

1. Use a grease gun to inject grease into the nipples ① and ② (Both sides).
2. Apply grease ③.

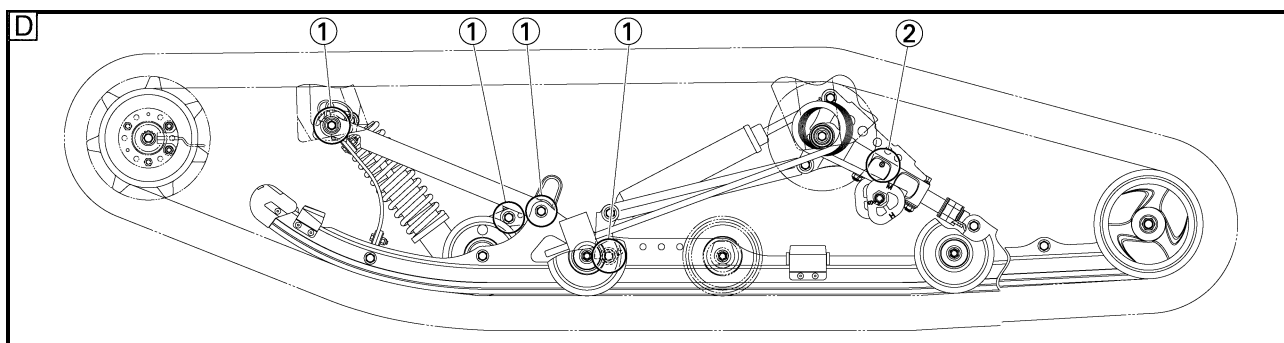
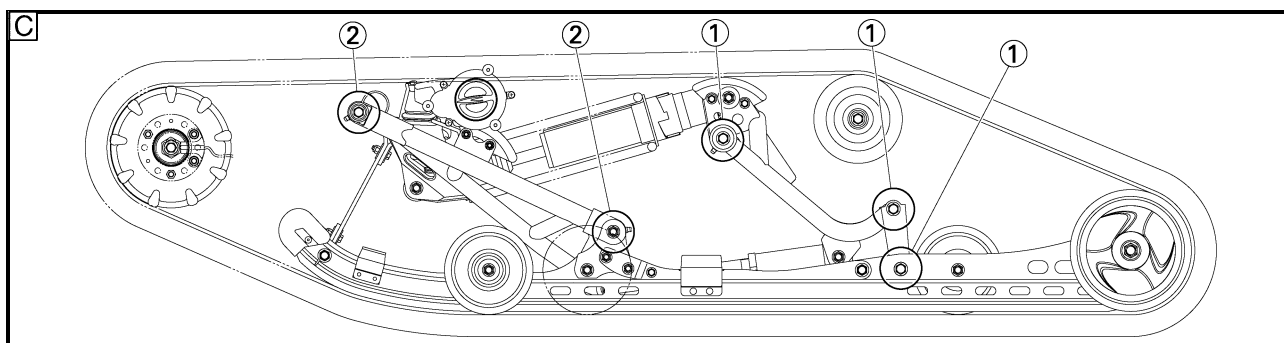
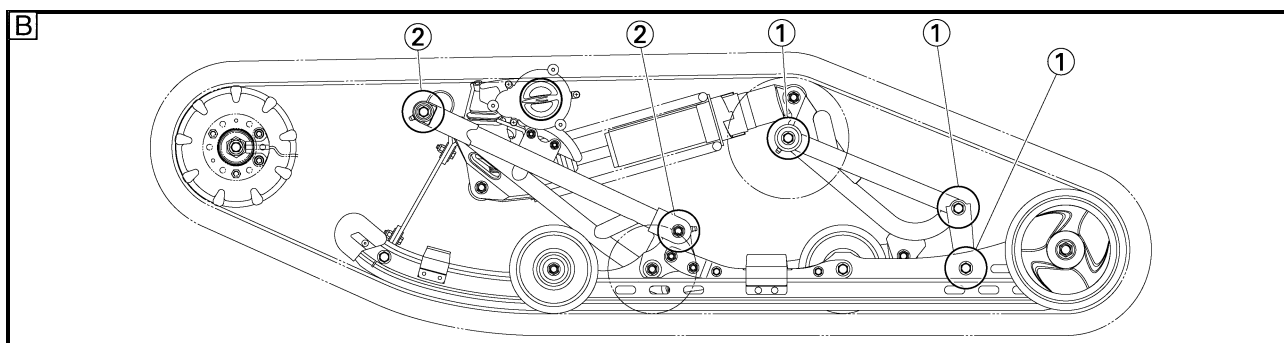
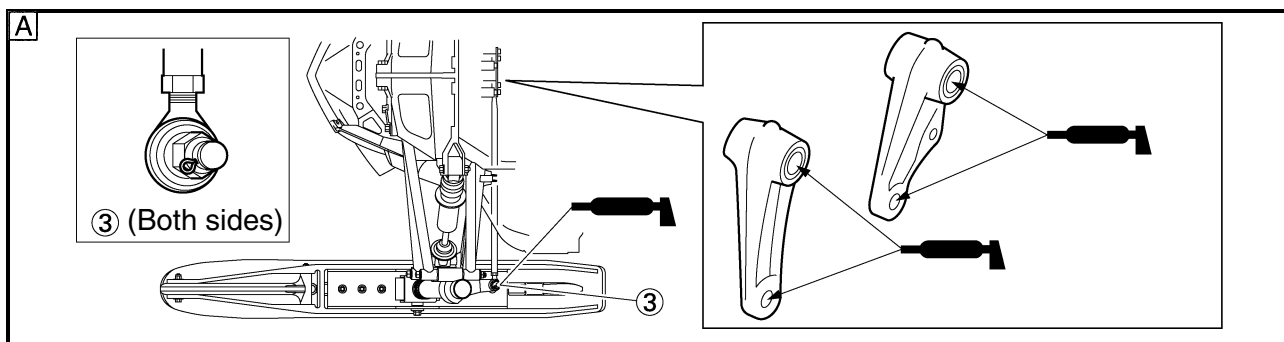


Recommended lubricant:

**Esso Beacon 325 Grease or
Aeroshell Grease #7A**



- ① Apply grease
- ② Apply grease (Both sides)
- ③ Apply grease (Both sides)
- A Front
- B Rear (RX10RTL, RX10RL, RX10RTRL, RX10GTL)
- C Rear (RXW10L)
- D Rear (RX10ML)





CLUTCH

High altitude

L	Blue	P	Pink	S	Silver
W	White	Y	Yellow		

Specifications Model: RX10RTL, RX10RL, RX10RTL, RX10GTL

A	Elevation	– 800 m (– 2,500 ft)	600 ~ 1,400 m (2,000 ~ 4,500 ft)	1,200 ~ 2,000 m (4,000 ~ 6,500 ft)	1,800 ~ 2,600 m (6,000 ~ 8,500 ft)	2,400 ~ 3,000 m (8,000 ~ 10,000 ft)
B	Engine idle speed	1,500 ± 100 r/min	←	←	←	←
C	Engagement r/min	3,500 ± 200 r/min	←	3,600 ± 200 r/min	←	3,700 ± 200 r/min
D	Shift r/min	10,500 ± 250 r/min	←	←	←	←
E	Secondary reduction ratio (number of links)	38/24 (70 L)	←	38/23 (70 L)	38 / 22 (68 L)	←
F	Primary sheave spring	90501-582L1	←	←	←	←
G	Color	Y-S-Y	←	←	←	←
H	Free length	87.4 mm (3.44 in)	←	86.1 mm (3.39 in)	85.1 mm (3.35 in)	←
I	Preload	343 N (35 kg, 77 lb)	←	←	←	←
J	Spring rate	24.5 N/mm (2.50 kg/mm, 140 lb/in)	←	←	←	←
K	Wire diameter	5.8 mm (0.228 in)	←	←	←	←
L	Outside diameter	59.5 mm (2.34 in)	←	←	←	←
M	Weight (ID)	8FP-17605-00 (8FP00)	←	←	←	←
N	Weight rivet	OUT	Steel 17.2	Steel 17.2 with-hole	Steel 13.3 with-hole	Aluminum 13.3 with-hole
		CENTER	Steel 17.2	Steel 17.2 with-hole	Steel 13.3 with-hole	Aluminum 13.3 with-hole
		IN	Steel 17.2	Steel 17.2 with-hole	Steel 13.3	Steel 13.3 with-hole
O	Weight bushing	VESPEL TP-8549	←	←	←	←
P	Roller outer dia.	14.5 mm (0.57 in)	←	←	←	←
Q	Roller bushing	VESPEL TP-8549	←	←	←	←
R	Pri. clutch shim	None	←	←	←	←
S	Secondary sheave spring	90508-60012	←	←	←	←
T	Color	P	←	←	←	←
U	Free length	75 mm (2.95 in)	←	←	←	←
V	Preload rate	80° (2-6) 1211 kg•mm/rad	←	←	←	←
W	Wire diameter	6.0 mm (0.236 in)	←	←	←	←
X	Outside diameter	69.5 mm (2.736 in)	←	←	←	←
Y	Sec. torque cam angle	51 – 43°	←	←	←	←
Z	Sec. clutch shim	1.0 mm (0.04 in)	←	←	←	←



L	Blue	P	Pink	S	Silver
W	White	Y	Yellow		

Specifications Model: RXW10L

[A] Elevation		– 800 m (– 2,500 ft)	600 ~ 1,400 m (2,000 ~ 4,500 ft)	1,200 ~ 2,000 m (4,000 ~ 6,500 ft)	1,800 ~ 2,600 m (6,000 ~ 8,500 ft)	2,400 ~ 3,000 m (8,000 ~ 10,000 ft)
[B] Engine idle speed		1,500 ± 100 r/min	←	←	←	←
[C] Engagement r/min		3,500 ± 200 r/min	←	3,600 ± 200 r/min	←	3,700 ± 200 r/min
[D] Shift r/min		10,500 ± 250 r/min	←	←	←	←
[E] Secondary reduction ratio (number of links)		38/23 (70 L)	←	38/22 (68 L)	38/21 (68 L)	←
[F] Primary sheave spring		90501-582L1	←	←	←	←
[G] Color		Y-S-Y	←	←	←	←
[H] Free length		87.4 mm (3.44 in)	←	←	←	←
[I] Preload		343 N (35 kg, 77 lb)	←	←	←	←
[J] Spring rate		24.5 N/mm (2.50 kg/mm, 140 lb/in)	←	←	←	←
[K] Wire diameter		5.8 mm (0.228 in)	←	←	←	←
[L] Outside diameter		59.5 mm (2.34 in)	←	←	←	←
[M] Weight (ID)		8FP-17605-00 (8FP00)	←	←	←	←
[N] Weight rivet	OUT	Steel 17.2	Steel 17.2 with-hole	Steel 13.3 with-hole	Aluminum 13.3 with-hole	None
	CENTER	Steel 17.2	Steel 17.2 with-hole	Steel 13.3 with-hole	Aluminum 13.3 with-hole	None
	IN	Steel 17.2	Steel 17.2 with-hole	Steel 13.3	Steel 13.3 with-hole	None
[O] Weight bushing		VESPEL TP-8549	←	←	←	←
[P] Roller outer dia.		14.5 mm (0.57 in)	←	←	←	←
[Q] Roller bushing		VESPEL TP-8549	←	←	←	←
[R] Pri. clutch shim		None	←	←	←	←
[S] Secondary sheave spring		90508-60007	←	←	←	←
[T] Color		W	←	←	←	←
[U] Free length		75 mm (2.95 in)	←	←	←	←
[V] Preload rate		60° (3-3) 1290 kg•mm/rad	←	←	←	←
[W] Wire diameter		6.0 mm (0.236 in)	←	←	←	←
[X] Outside diameter		69.5 mm (2.736 in)	←	←	←	←
[Y] Sec. torque cam angle		51 – 43°	←	←	←	←
[Z] Sec. clutch shim		1.0 mm (0.04 in)	←	←	←	←



L	Blue	P	Pink	S	Silver
W	White	Y	Yellow		

Specifications Model: RX10ML

A	Elevation	– 800 m (– 2,500 ft)	600 ~ 1,400 m (2,000 ~ 4,500 ft)	1,200 ~ 2,000 m (4,000 ~ 6,500 ft)	1,800 ~ 2,600 m (6,000 ~ 8,500 ft)	2,400 ~ 3,000 m (8,000 ~ 10,000 ft)
B	Engine idle speed	1,500 ± 100 r/min	←	←	←	←
C	Engagement r/min	3,600 ± 200 r/min	3,400 ± 200 r/min	←	3,500 ± 200 r/min	←
D	Shift r/min	10,500 ± 250 r/min	←	←	←	←
E	Secondary reduction ratio (number of links)	40/22 (70 L)	←	40/21 (70 L)	40/20 (68 L)	←
F	Primary sheave spring	90501-583L4	90501-551L3	←	90501-581L5	←
G	Color	W-S-W	L-P-L	←	Y-P-Y	←
H	Free length	89 mm (3.50 in)	88.4 mm (3.48 in)	←	85.4 mm (3.36 in)	←
I	Preload	343 N (35 kg, 77 lb)	294 N (30 kg, 66 lb)	←	←	←
J	Spring rate	22.1 N/mm (2.25 kg/mm, 126 lb/in)	19.6 N/mm (2.00 kg/mm, 112 lb/in)	←	24.5 N/mm (2.50 kg/mm, 140 lb/in)	←
K	Wire diameter	5.8 mm (0.228 in)	5.5 mm (0.217 in)	←	5.8 mm (0.228 in)	←
L	Outside diameter	59.5 mm (2.34 in)	←	←	←	←
M	Weight (ID)	8FP-17605-00 (8FP00)	8FS-17605-00 (8FS00)	←	←	←
N	Weight rivet	OUT	Steel 17.2	Steel 17.2 with-hole	Steel 13.3	Steel 13.3 with-hole
		CENTER	Steel 17.2	Steel 17.2 with-hole	Steel 13.3	Steel 13.3 with-hole
		IN	Steel 17.2	Steel 17.2	Steel 13.3 with-hole	None
O	Weight bushing	VESPEL TP-8549	←	←	←	←
P	Roller outer dia.	14.5 mm (0.57 in)	15.6 mm (0.61 in)	←	←	←
Q	Roller bushing	VESPEL TP-8549	←	←	←	←
R	Pri. clutch shim	None	←	←	←	←
S	Secondary sheave spring	90508-60007	←	←	←	←
T	Color	W	←	←	←	←
U	Free length	75 mm (2.95 in)	←	←	←	←
V	Preload rate	60° (3-3) 1,290 kg•mm/rad	70° (1-6) 1,290 kg•mm/rad	←	←	←
W	Wire diameter	6 mm (0.236 in)	←	←	←	←
X	Outside diameter	69.5 mm (2.736 in)	←	←	←	←
Y	Sec. torque cam angle	51 – 43°	45°	←	←	←
Z	Sec. clutch shim	1.0 mm (0.04 in)	←	←	←	←

GEAR SELECTION

The reduction ratio of the driven gear to the drive gear must be set according to the snow conditions. If there are many rough surfaces or unfavorable snow conditions, the drive/driven gear ratio should be increased. If the surfaces are fairly smooth or better snow conditions exist, decrease the ratio.

Gear ratio chart

The drive and driven gears and the chains shown in the gear ratio chart are available as options. The figures containing a decimal point represent the drive/driven gear ratios, while the bottom numbers designate the number of links in the chain.



① Chain and sprocket part number

[A] Parts name	[B] Teeth & links	[C] Parts no.	[D] Standard
[E] Drive sprocket	18 teeth	8FA-17682-80	
	19 teeth	8FA-17682-90	
	20 teeth	8FA-17682-00	RX10ML
	21 teeth	8FA-17682-10	
	22 teeth	8FA-17682-20	
	23 teeth	8FA-17682-30	RXW10L
	24 teeth	8FA-17682-40	RX10RTL, RX10RL, RX10RTRL, RX10GTL
[F] Driven sprocket	37 teeth	8DW-47587-71	
	38 teeth	8DW-47587-81	RX10RTL
	38 teeth	8FB-47580-80	RX10RL, RX10RTRL, RX10GTL, RXW10L
	39 teeth	8DW-47587-91	
	39 teeth	8FB-47580-90	
	40 teeth	8DW-47587-01	RX10ML
	40 teeth	8FB-47580-00	
[G] Chain	68 links	94890-09068	RX10ML
	70 links	94890-09070	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L

② Gear ratio

[A] Drive gear \ [B] Driven gear	18 teeth	19 teeth	20 teeth	21 teeth	22 teeth	23 teeth	24 teeth
37 teeth				1.76 68 links	1.68 68 links	1.61 68 links	1.54 70 links
38 teeth			1.90 68 links	1.81 68 links	1.73 68 links	1.65 70 links	1.58 70 links
39 teeth	2.17 68 links	2.05 68 links	1.95 68 links	1.86 68 links	1.77 70 links	1.70 70 links	1.63 70 links
40 teeth	2.22 68 links	2.11 68 links	2.00 68 links	1.91 70 links	1.82 70 links	1.74 70 links	1.67 70 links



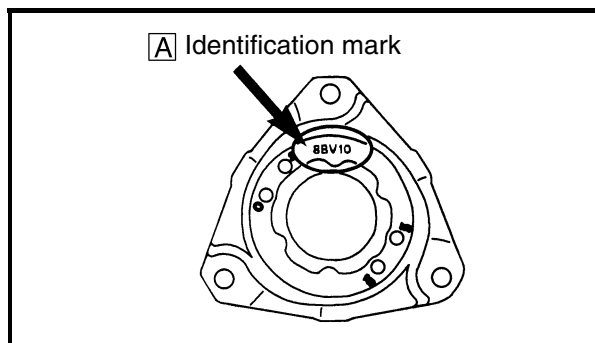
③ Secondary sheave spring

[A] Part no.	[B] Spring rate N•mm/rad (kg•mm/rad)	[C] Preload N/mm (kg/mm) (lb/in)	[D] Color	[E] Wire gauge mm (in)	[F] No. of coils	[G] Free length mm (in)	[H] Outside diameter mm (in)	[I] Standard
90508-500B1	6003 (613)	6.2 (0.63), 35.28	Brown	5.0 (0.196)	5.19	75 (2.95)	69.5 (2.736)	
90508-50746	7071 (721)	8.7 (0.89), 49.65	White	5.0 (0.196)	4.74	93.5 (3.68)	65.0 (2.559)	
90508-536A9	7147 (729)	7.3 (0.74), 41.44	Red	5.3 (0.209)	5.53	75 (2.95)	69.5 (2.736)	
90508-556A2	8314 (848)	8.5 (0.87), 48.72	Green	5.5 (0.217)	5.53	75 (2.95)	69.5 (2.736)	
90508-556A7	9460 (965)	10.21 (1.04), 58.24	Silver	5.5 (0.217)	4.86	75 (2.95)	69.5 (2.736)	
90508-60012	11876 (1211)	12.32 (1.256), 70.34	Pink	6.0 (0.236)	5.53	75 (2.95)	69.5 (2.736)	RX10RTL, RX10RL, RX10RTRL, RX10GTL
90508-60007	12654 (1290)	13.45 (1.372) 76.84	White	6.0 (0.236)	5.19	75 (2.95)	69.5 (2.736)	RXW10L, RX10ML

④ Secondary spring twist angle

[B] Sheave \ [A] Seat	0	3	6	9
1	10°	40°	70°	100°
2	20°	50°	80°	110°
3	30°	60°	90°	120°

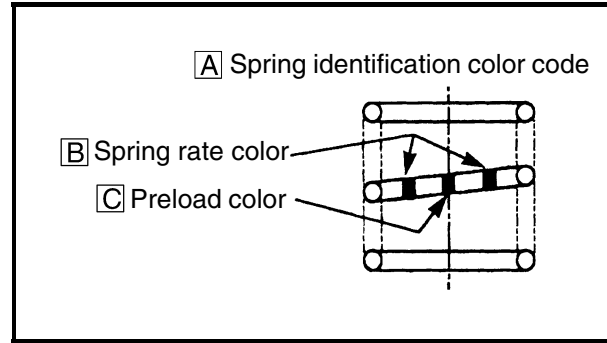
⑤ Torque cam (secondary spring seat)



[B] Effects	[C] Part no.	[D] Cam angle	[E] Identification mark	[F] Standard
[G] Quicker upshifting during acceleration   [H] Quicker backshifting under load	8FA-17604-00	51-43°	8BVFA	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L
	8BV-17604-71	47°	8BV71	
	8BV-17604-51	45°	8BV51	RX10ML
	8BV-17604-31	43°	8BV31	
	8BV-17604-11	41°	8BV11	
	8BV-17604-91	39°	8BV91	



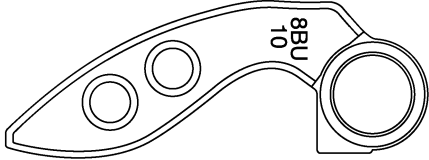
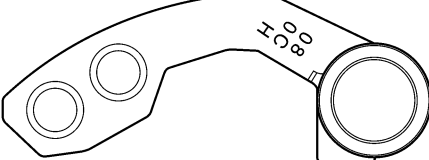
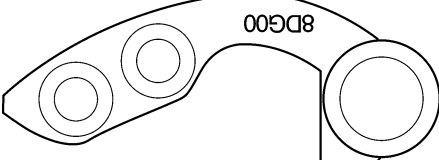
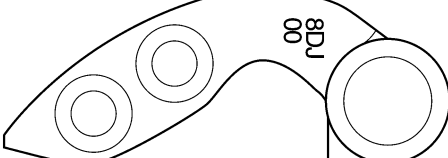
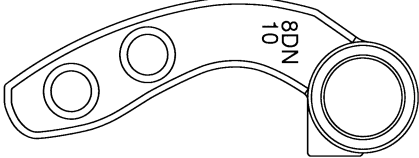
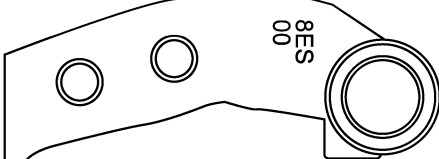
⑥ Primary spring



D Parts No.	E Spring rate N/mm (kg/mm)	F Preload N (kg)	G Color	H Wire gauge mm (in)	I Outside diameter mm (in)	J No. of coils	K Free length mm (in)	L Standard
90501-551L3	19.6 (2.00)	294 (30)	Blue-Pink-Blue	5.5 (0.216)	59.5 (2.34)	4.91	88.4 (3.48)	
90501-551L9	19.6 (2.00)	343 (35)	Blue-Silver-Blue	5.5 (0.216)	59.5 (2.34)	4.91	90.9 (3.58)	
90501-552L5	19.6 (2.00)	392 (40)	Blue-Green-Blue	5.5 (0.216)	59.5 (2.34)	4.91	93.4 (3.68)	
90501-581L5	24.5 (2.50)	294 (30)	Yellow-Pink-Yellow	5.8 (0.228)	59.5 (2.34)	4.92	85.4 (3.36)	RX10ML
90501-581L6	27 (2.75)	294 (30)	Green-Pink-Green	5.8 (0.228)	59.5 (2.34)	4.66	84.3 (3.32)	
90501-582L1	24.5 (2.50)	343 (35)	Yellow-Silver-Yellow	5.8 (0.228)	59.5 (2.34)	4.92	87.4 (3.44)	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L
90501-582L2	27 (2.75)	343 (35)	Green-Silver-Green	5.8 (0.228)	59.5 (2.34)	4.66	86.1 (3.39)	
90501-582L6	22.1 (2.25)	392 (40)	White-Green-White	5.8 (0.228)	59.5 (2.34)	5.25	91.2 (3.59)	
90501-582L7	24.5 (2.50)	392 (40)	Yellow-Green-Yellow	5.8 (0.228)	59.5 (2.34)	4.92	89.4 (3.52)	
90501-583L0	19.6 (2.00)	441 (45)	Blue-White-Blue	5.8 (0.228)	59.5 (2.34)	5.65	95.9 (3.78)	
90501-583L1	22.1 (2.25)	441 (45)	White-White-White	5.8 (0.228)	59.5 (2.34)	5.25	93.4 (3.68)	
90501-583L4	22.1 (2.25)	343 (35)	White-Silver-White	5.8 (0.228)	59.5 (2.34)	5.25	89.0 (3.50)	
90501-583L5	22.1 (2.25)	294 (30)	White-Pink-White	5.8 (0.228)	59.5 (2.34)	5.25	86.7 (3.41)	
90501-601L7	29.4 (3.00)	294 (30)	Pink-Pink-Pink	6.0 (0.236)	59.5 (2.34)	4.82	83.4 (3.28)	
90501-601L8	31.9 (3.25)	294 (30)	Orange-Pink-Orange	6.0 (0.236)	59.5 (2.34)	4.60	82.6 (3.25)	
90501-602L3	29.4 (3.00)	343 (35)	Pink-Silver-Pink	6.0 (0.236)	59.5 (2.34)	4.82	85.1 (3.35)	
90501-602L8	27.0 (2.75)	392 (40)	Green-Green-Green	6.0 (0.236)	59.5 (2.34)	5.08	87.9 (3.46)	
90501-602L9	29.4 (3.00)	392 (40)	Pink-Green-Pink	6.0 (0.236)	59.5 (2.34)	4.82	86.7 (3.41)	
90501-603L2	24.5 (2.50)	441 (45)	Yellow-White-Yellow	6.0 (0.236)	59.5 (2.34)	5.39	91.4 (3.60)	
90501-603L3	27.0 (2.75)	441 (45)	Green-White-Green	6.0 (0.236)	59.5 (2.34)	5.08	89.8 (3.54)	
90501-624L8	31.9 (3.25)	343 (35)	Orange-Silver-Orange	6.2 (0.244)	59.5 (2.34)	5.00	84.2 (3.32)	



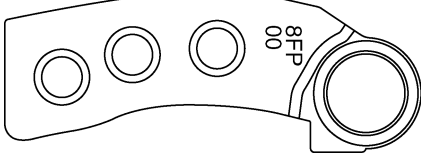
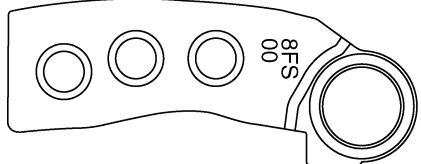
⑦ Clutch weight

A Parts no.	B Weight g (oz) without bush and rivets	C Shape & ID mark	D Standard
8BU-17605-20	45.41 (1.60)		
8CH-17605-10	35.32 (1.247)		
8DG-17605-00	34.26 (1.209)		
8DJ-17605-00	37.77 (1.333)		
8DN-17605-10	39.76 (1.40)		
8ES-17605-00	54.6 (1.93)		
8FA-17605-10	63.8 (2.25)		

GEAR SELECTION

INSP
ADJ



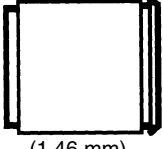
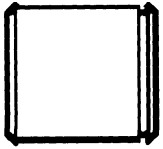
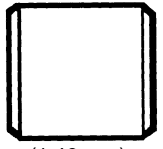
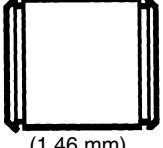
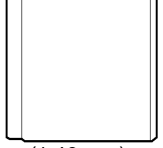
[A] Parts no.	[B] Weight g (oz) without bush and rivets	[C] Shape & ID mark	[D] Standard
8FP-17605-00	67.81 (2.392)		RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L
8FS-17605-00	65.52 (2.311)		RX10ML

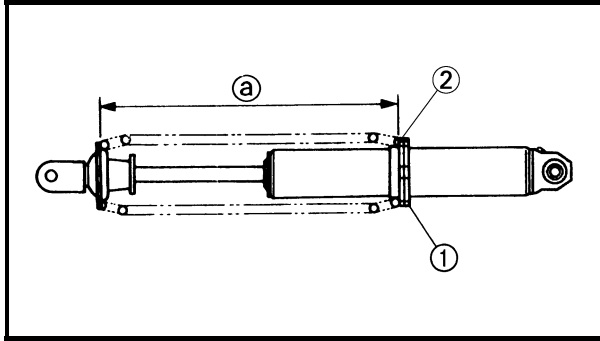
⑧ Weight rivets

[A] Parts No.	[B] Material	[C] Length mm (in)	[D] Weight g (oz)	[E] Standard	[F] Effects
90261-06033	Steel	17.2 (0.677)	4.5 (0.159)	IN: RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L CENTER: RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L OUT: RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L	[G] Increased Force ↑ ↓ [H] Decreased Force
90269-06006	Steel	17.2 (0.677)	3.6 (0.127) with hole		
90261-06019	Steel	13.3 (0.524)	3.1 (0.109)		
90266-06002	Steel	13.3 (0.524)	2.4 (0.085) with hole	CENTER: RX10ML OUT: RX10ML	
90266-06001	Aluminum	13.3 (0.524)	0.8 (0.028) with hole		
None				IN: RX10ML	



⑨ Rollers

I.D. 9 mm (0.354 in)					
A Roller with bushing part number	B Outside diameter mm (in)	C Bushing type (P/N)	D Identification mark (Width)	E Standard	F Effects
8FG-17624-00	14.5 (0.57)	VESPEL TP-8549 90386-09001	G Grooved & Machined  (1.46 mm)	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L	L Increased force  M Decreased force
8FG-17624-10	15.0 (0.59)	VESPEL TP-8549 90386-09001	H Grooved  (1.46 mm)		
8FG-17624-20	15.6 (0.61)	VESPEL TP-8549 90386-09001	I No Mark  (1.46 mm)	RX10ML	
8FG-17624-30	16.0 (0.63)	VESPEL TP-8549 90386-09001	J Grooved & Grooved  (1.46 mm)		
8FG-17624-40	16.5 (0.65)	VESPEL TP-8549 90386-09001	K Machined  (1.46 mm)		



FRONT SUSPENSION

Spring preload

1. Adjust:
 - Spring preload

Adjustment steps:

- Loosen the locknut ①.
- Adjust the spring preload by turning the spring seat ②.

RX10RTL, RX10RL, RX10RTRL, RXW10L

Spring seat distance	Standard		
	Shorter ←		→ Longer
Preload	Harder ←		→ Softer
Length ①	Min.		Max.
	243 mm (9.57 in)	253 mm (9.96 in)	257 mm (10.12 in)

RX10GTL

Spring seat distance	Standard		
	Shorter ←		→ Longer
Preload	Harder ←		→ Softer
Length ①	Min.		Max.
	243 mm (9.57 in)	257 mm (10.12 in)	257 mm (10.12 in)

RX10ML

Spring seat distance	Standard		
	Shorter ←		→ Longer
Preload	Harder ←		→ Softer
Length ①	Min.		Max.
	213 mm (8.39 in)	223 mm (8.78 in)	223 mm (8.78 in)

- Tighten the locknut ①.

CAUTION:

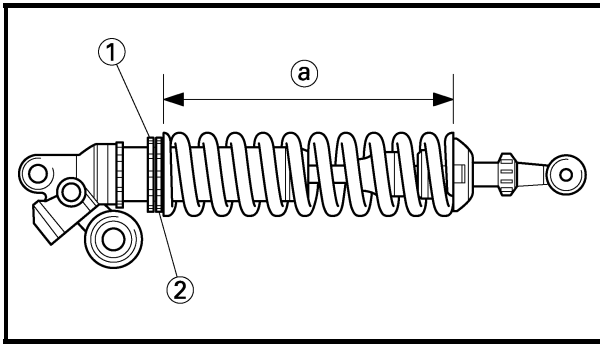
Be sure that the left and right spring preloads are the same.

⚠ WARNING

This shock absorber contains highly pressurized nitrogen gas.

Do not tamper with or attempt to open the shock absorber assembly.

Do not subject the shock absorber assembly to flames or high heat, which could cause it to explode.



REAR SUSPENSION

Spring preload (RX10GTL)

1. Adjust:
 - Spring preload

Adjustment step:

- Loosen the locknut ①.
- Adjust the spring preload by turning the spring seat ②.

Front A

Spring seat distance	Standard		
	Shorter ←		→ Longer
Preload	Harder ←		→ Softer
Length ①	Min.		Max.
	265 mm (10.43 in)	285 mm (11.22 in)	287 mm (11.30 in)

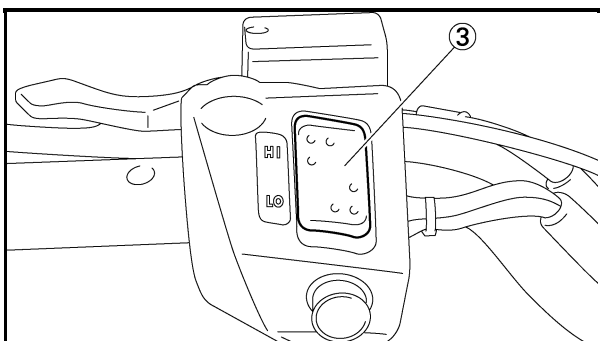
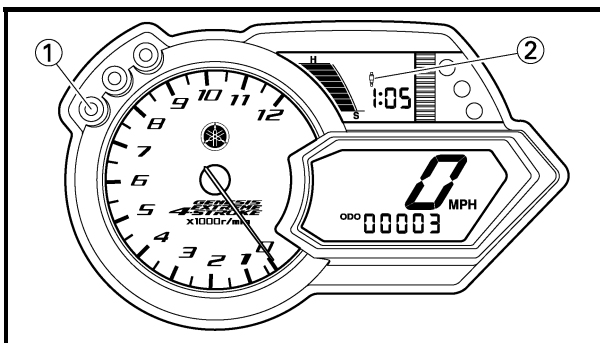
- Tighten the locknut ①.

⚠ WARNING

This shock absorber contains highly pressurized nitrogen gas.

Do not tamper with or attempt to open the shock absorber assembly.

Do not subject the shock absorber assembly to flames or high heat, which could cause it to explode.

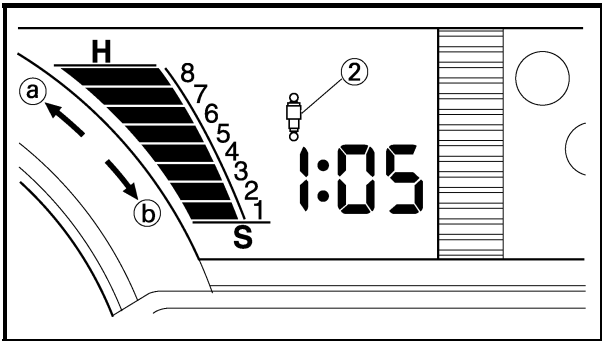
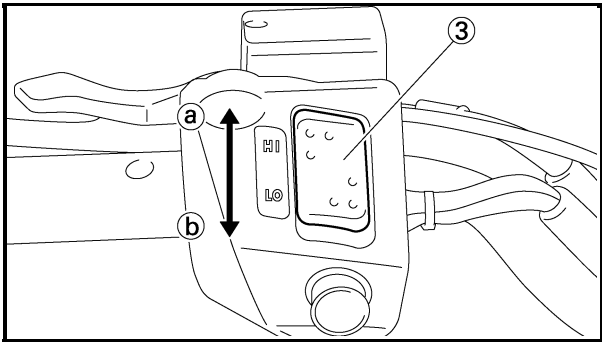


Damping (RX10GTL)

1. Adjust
 - Damping

Adjustment step:

- Press the mode switch ①
- Make sure to switch the multi-function meter to the electric suspension adjustment indicator ②.
- To harden the suspension, push the electric suspension/grip warmer adjustment switch located at the left handlebar switch ③ to the "HI" side, or push it to the "LO" side to soften and adjust.



- Press the electric suspension/grip warmer adjustment switch ③ in direction ① or ②.
(Maximum: 16 push)

Adjustment switch pushed direction	② S								① H							
	Display															
Adjustment switch	1								2							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Damping force	Softer ←								→ Harder							

- This display scale is set in 2-level for one graduation.

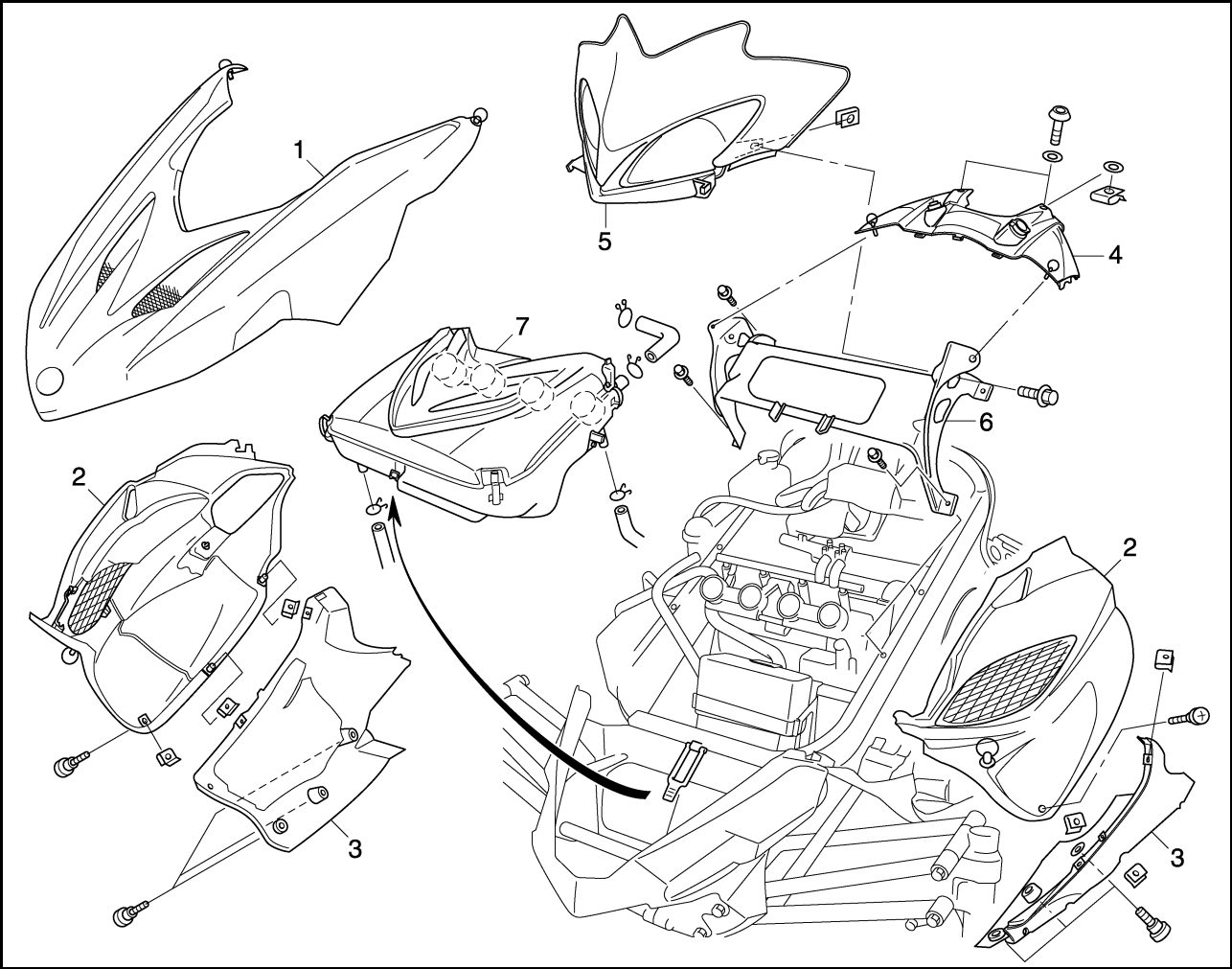
NOTE:

- The electric suspension indicator ② comes on and the display switch to the electric suspension level when the electric suspension/grip warmer adjustment switch is pushed.
- The electric suspension level is displayed for 5 seconds after releasing the electric suspension/grip warmer adjustment switch, then switch to the fuel meter.
- The top segment of the electric suspension level indicator flashes once if the electric suspension/grip warmer adjustment switch is continually pushed at the maximum level. The bottom segment of the electric suspension level indicator flashes once if the electric suspension/grip warmer adjustment switch is continually pushed at the minimum level.
- When the engine is started, the electric suspension level are set to the level saved when the engine was stopped.



CHASSIS

COWLINGS

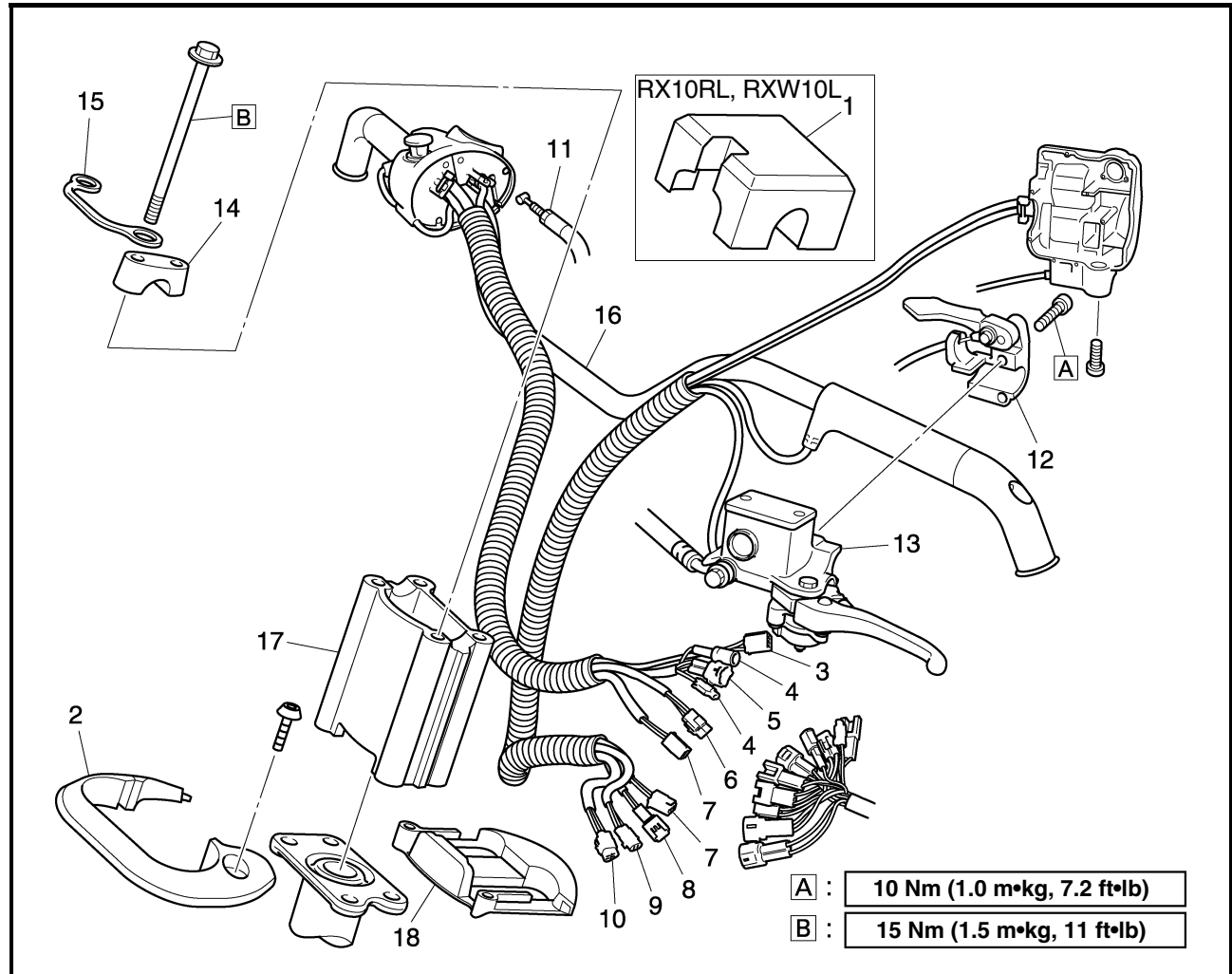


Order	Job/Part	Q'ty	Remarks
	Removing the cowlings		
1	Shroud	1	Remove the parts in the order listed.
2	Side cover (left and right)	2	
3	Side under cover (left and right)	2	
4	Top cover	1	
5	Headlight assembly	1	
6	Headlight stay	1	
7	Intake silencer	1	
			For installation, reverse the removal procedure.

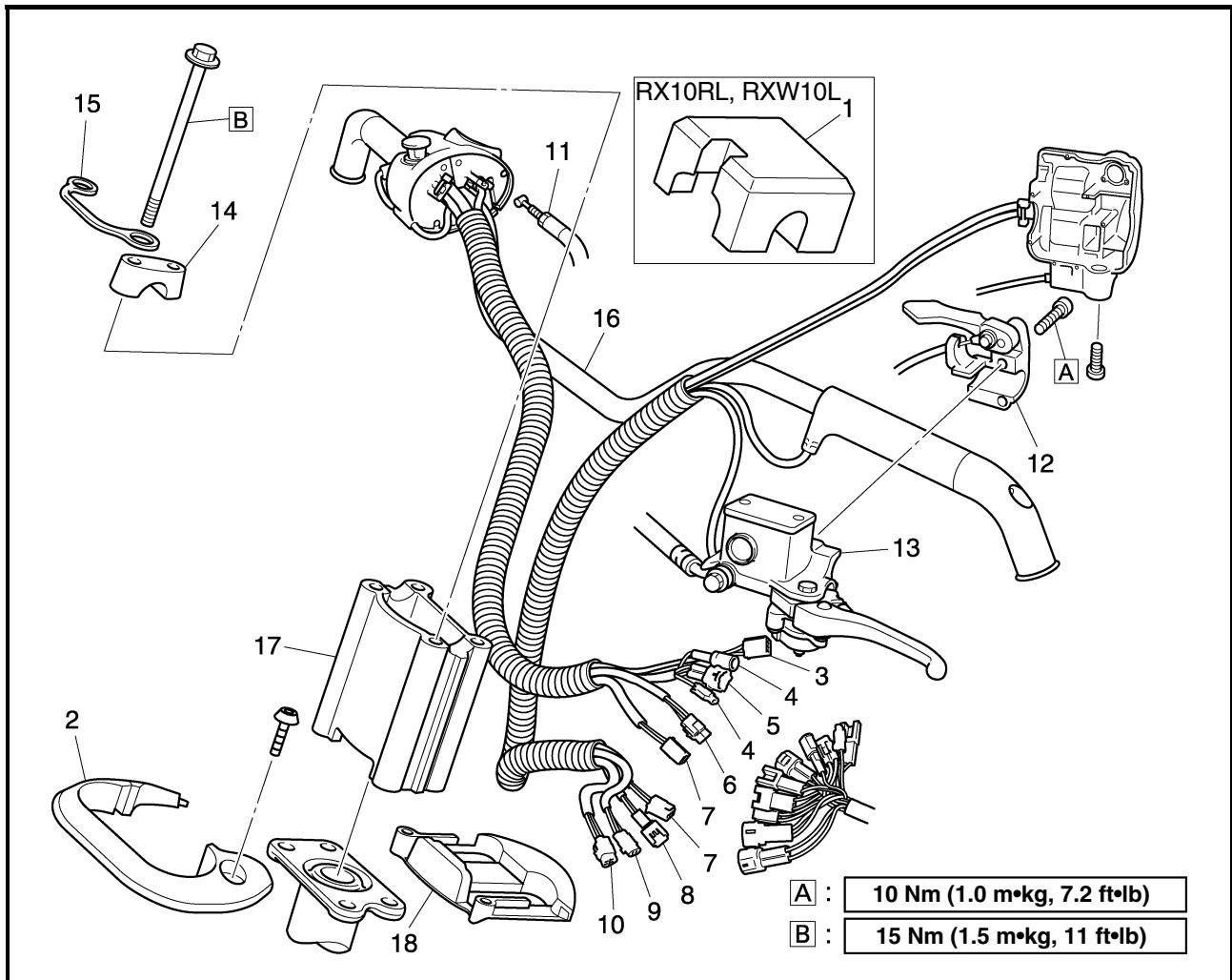


STEERING

RX10RTL, RX10RL, RX10RTRL, RXW10L



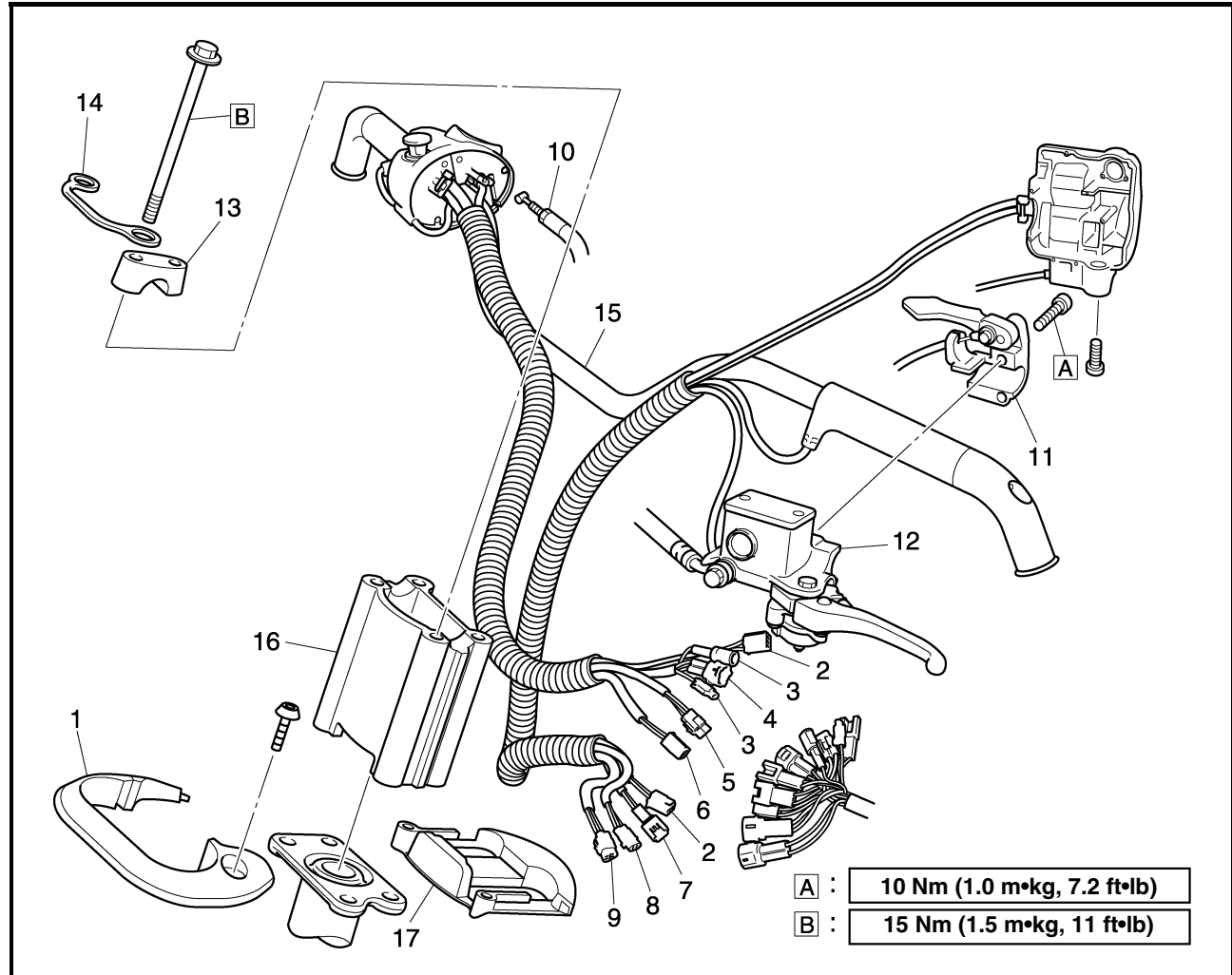
Order	Job/Part	Q'ty	Remarks
	Handlebar removal		Remove the parts in the order listed below. Refer to "COWLINGS".
	Top cover		
1	Handlebar cover	1	
2	Cable guide (front)	1	
3	Grip warmer lead coupler	2	Disconnect.
4	Throttle switch lead coupler	2	Disconnect.
5	Engine stop switch lead coupler	1	Disconnect.
6	Thumb warmer switch lead coupler	1	Disconnect.
7	Thumb warmer lead coupler	1	Disconnect.
8	Brake switch lead coupler	1	Disconnect.
9	Headlight beam switch lead coupler	1	Disconnect.
10	Grip warmer switch lead coupler	1	Disconnect.
11	Throttle cable	1	
12	Brake lever holder	1	



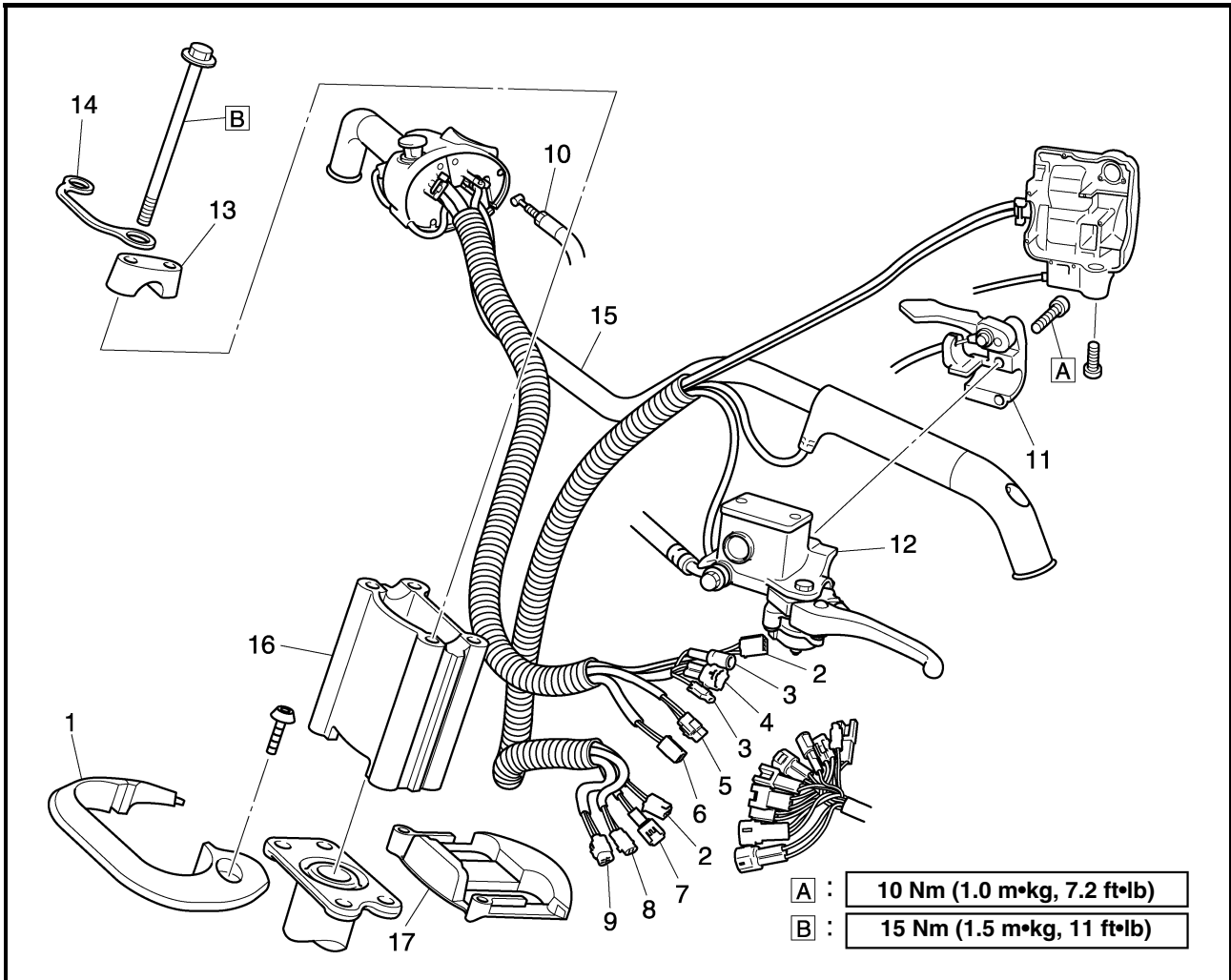
Order	Job/Part	Q'ty	Remarks
13	Master cylinder assembly	1	NOTE: _____ After installing all parts, refer to "CABLE ROUTING" to check the cable, lead and hose routings.
14	Handlebar holder (upper)	2	
15	Cable holder	1	
16	Handlebar	1	
17	Handlebar joint	1	
18	Cable guide (rear)	1	For installation, reverse the removal procedure.



RX10GTL



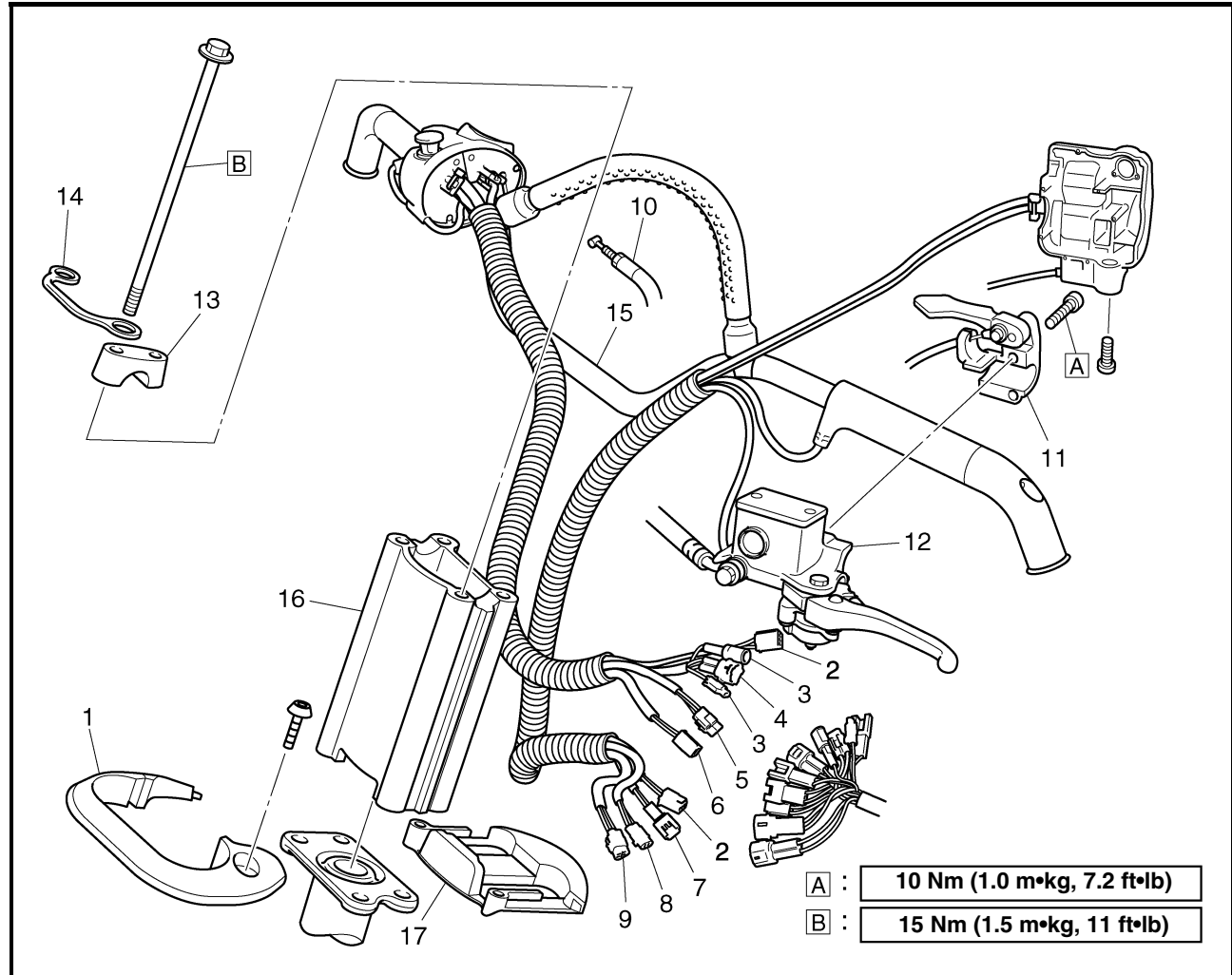
Order	Job/Part	Q'ty	Remarks
	Handlebar removal		Remove the parts in the order listed below. Refer to "COWLINGS".
	Top cover		
1	Cable guide (front)		
2	Grip warmer lead coupler	2	Disconnect.
3	Throttle switch lead coupler	2	Disconnect.
4	Engine stop switch lead coupler	1	Disconnect.
5	Thumb warmer switch lead coupler	1	Disconnect.
6	Thumb warmer lead coupler	1	Disconnect.
7	Brake switch lead coupler	1	Disconnect.
8	Headlight beam switch lead coupler	1	Disconnect.
9	Electric suspension/grip warmer switch lead coupler	1	Disconnect.
10	Throttle cable	1	
11	Brake lever holder	1	



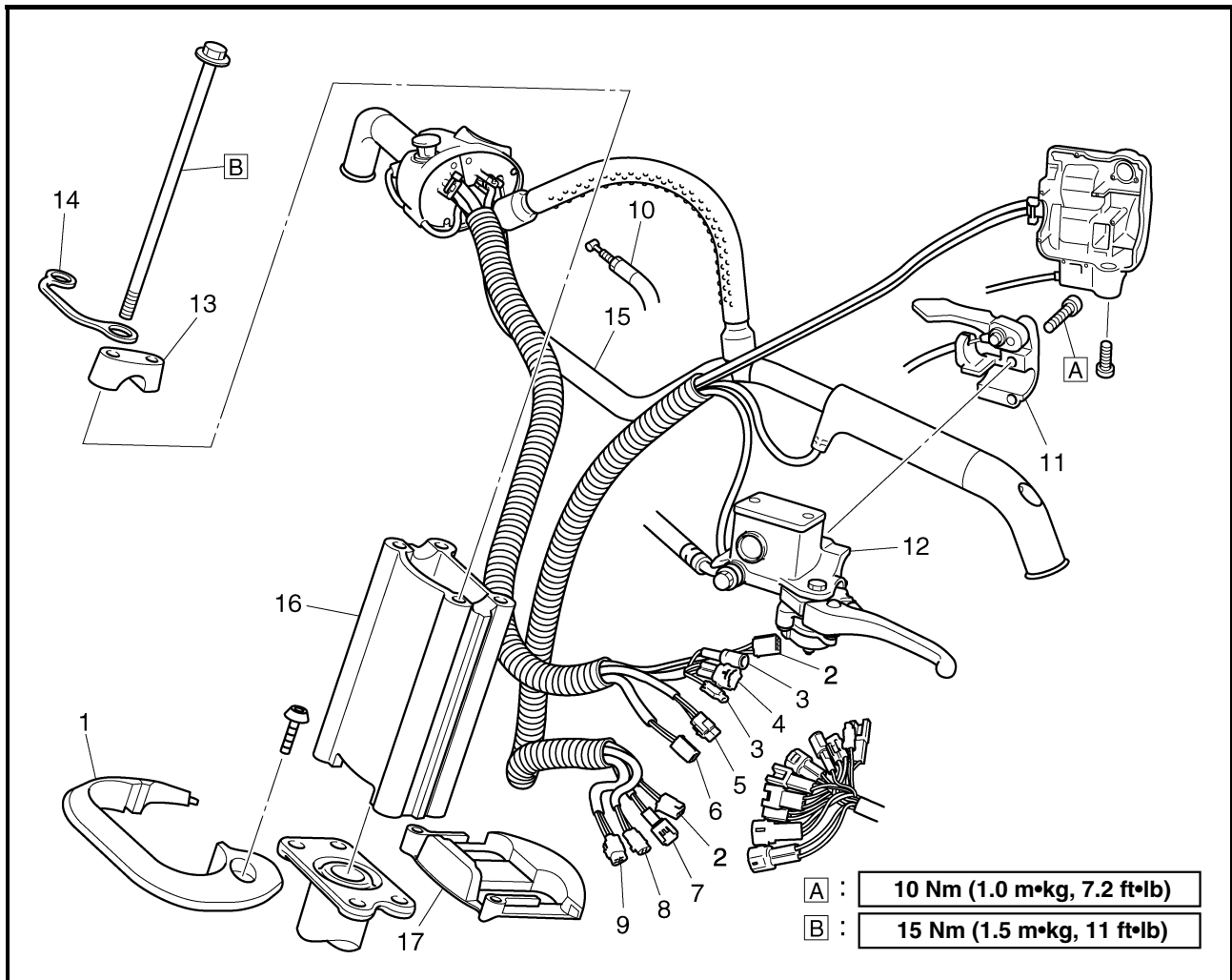
Order	Job/Part	Q'ty	Remarks
12	Master cylinder assembly	1	NOTE: _____ After installing all parts, refer to "CABLE ROUTING" to check the cable, lead and hose routings.
13	Handlebar holder (upper)	2	
14	Cable holder	1	
15	Handlebar	1	
16	Handlebar joint	1	
17	Cable guide (rear)	1	For installation, reverse the removal procedure.



RX10ML



Order	Job/Part	Q'ty	Remarks
	Handlebar removal		Remove the parts in the order listed below. Remove to "COWLINGS".
	Top cover		
1	Cable guide (front)	1	
2	Grip warmer lead coupler	2	Disconnect.
3	Throttle switch lead coupler	2	Disconnect.
4	Engine stop switch lead coupler	1	Disconnect.
5	Thumb warmer switch lead coupler	1	Disconnect.
6	Thumb warmer lead coupler	1	Disconnect.
7	Brake switch lead coupler	1	Disconnect.
8	Headlight beam switch lead coupler	1	Disconnect.
9	Grip warmer switch lead coupler	1	Disconnect.
10	Throttle cable	1	
11	Brake lever holder	1	



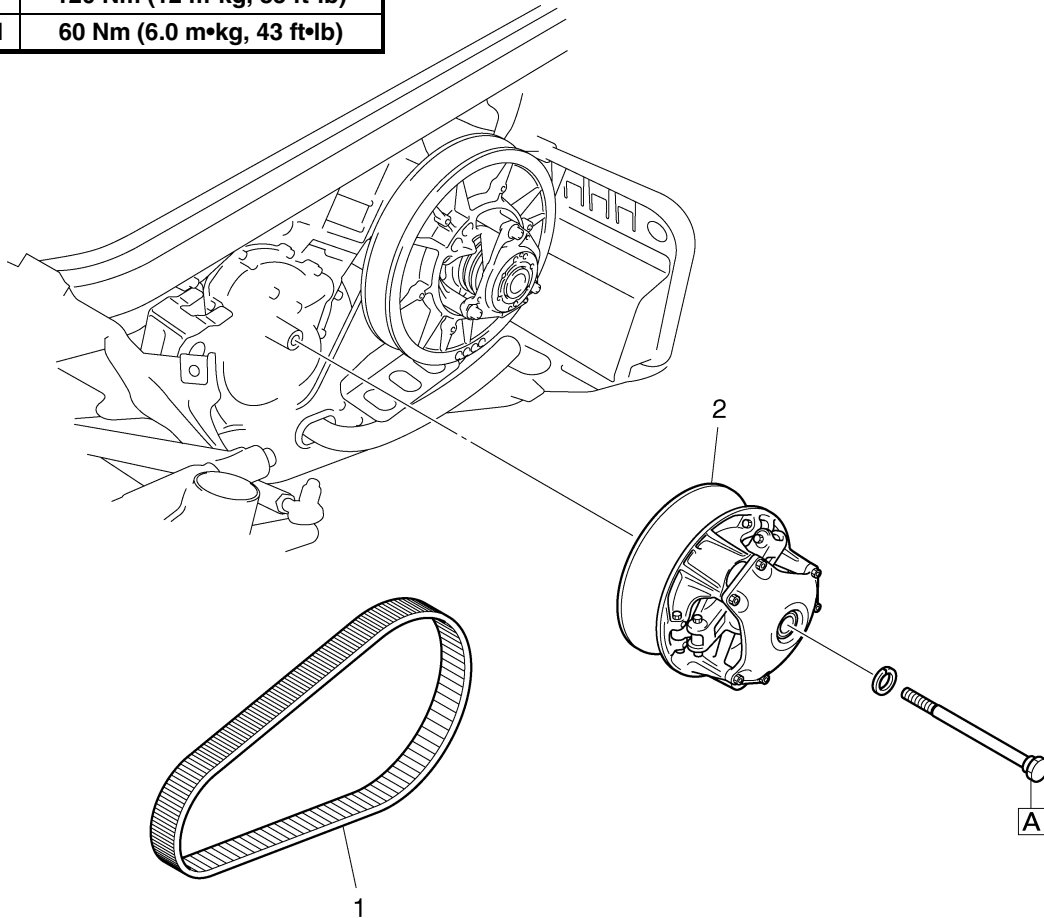
Order	Job/Part	Q'ty	Remarks
12	Master cylinder assembly	1	NOTE: _____ After installing all parts, refer to "CABLE ROUTING" to check the cable, lead and hose routings. _____ For installation, reverse the removal procedure.
13	Handlebar holder (upper)	2	
14	Cable holder	1	
15	Handlebar	1	
16	Handlebar joint	1	
17	Cable guide (rear)	1	

POWER TRAIN

PRIMARY SHEAVE AND DRIVE V-BELT

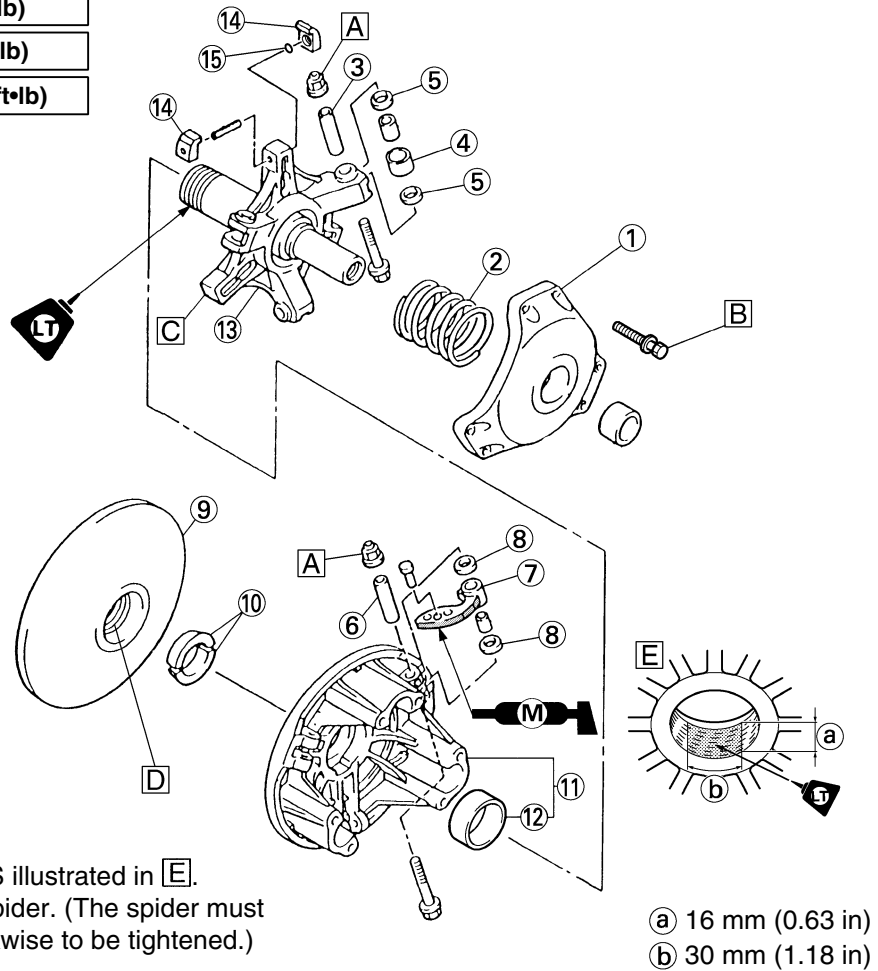
A

1st	120 Nm (12 m•kg, 85 ft•lb)
2nd	60 Nm (6.0 m•kg, 43 ft•lb)



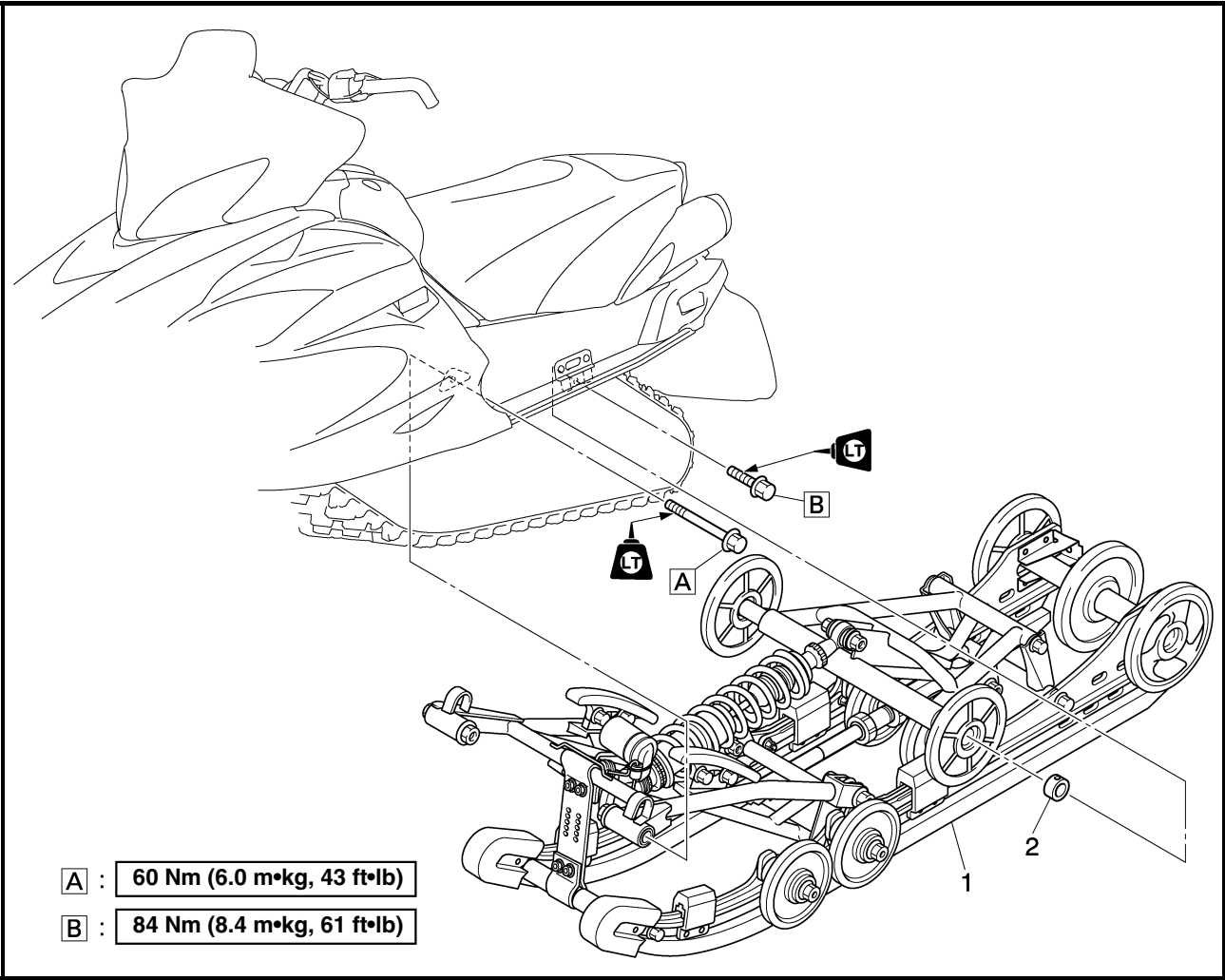
Order	Job/Part	Q'ty	Remarks
	Primary sheave removal		
1	Left side cover	1	Remove the parts in the order listed below. Refer to "COWLINGS" in CHAPTER 3.
2	V-belt	1	
	Primary sheave assembly	1	For installation, reverse the removal procedure.

- A :** 6 Nm (0.6 m•kg, 4.3 ft•lb)
B : 14 Nm (1.4 m•kg, 10 ft•lb)
C : 200 Nm (20.0 m•kg, 145 ft•lb)

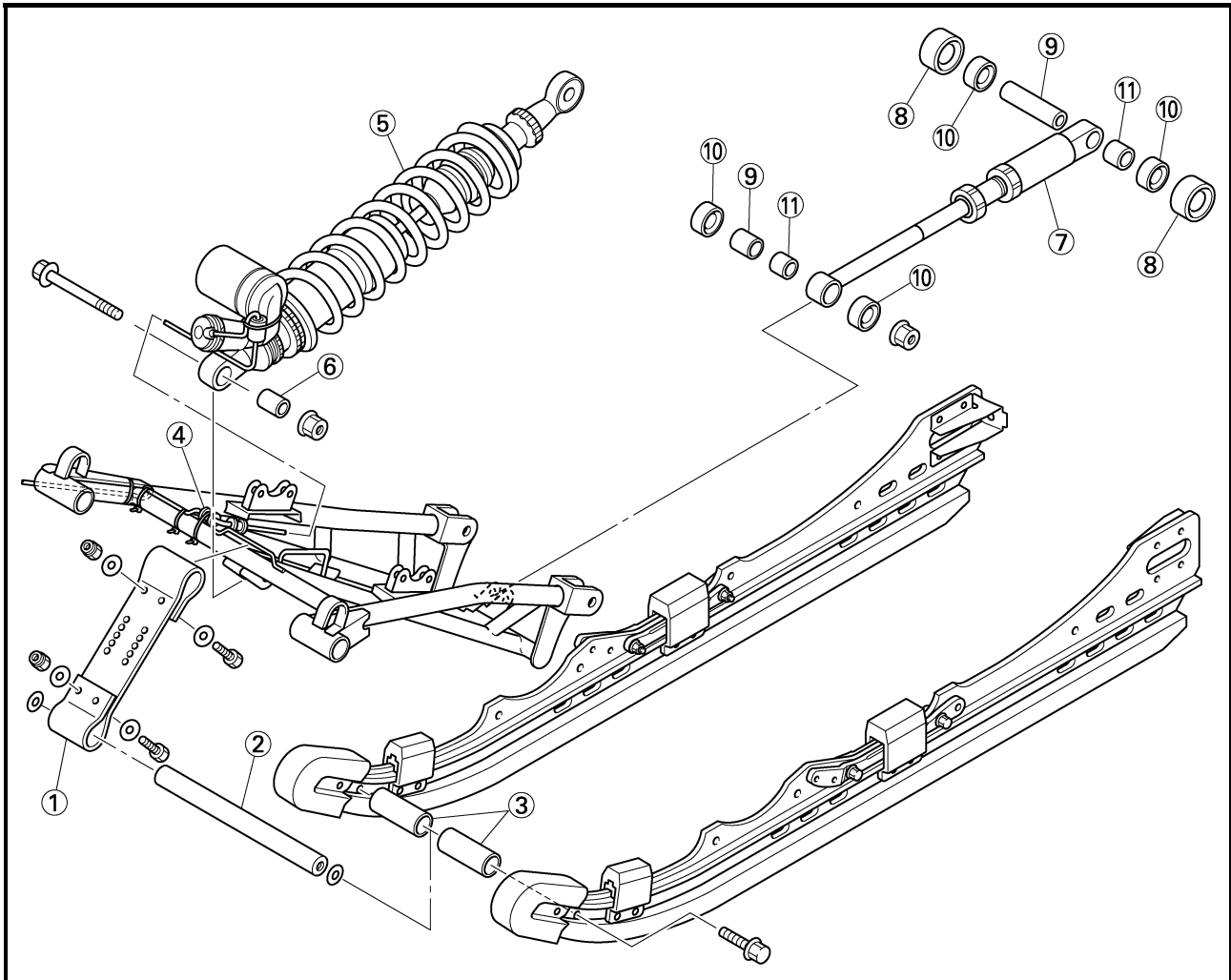


Order	Job/Part	Q'ty	Remarks
	Primary sheave disassembly		Disassemble the parts in the order listed below.
①	Primary sheave cap	1	
②	Primary sheave spring	1	
③	Collar	3	
④	Roller	3	
⑤	Washer	6	
⑥	Collar	3	
⑦	Weight	3	
⑧	Washer	6	
⑨	Fixed sheave	1	
⑩	Stopper	1	
⑪	Sliding sheave	1	
⑫	Bushing	1	
⑬	Spider	1	Left-handed thread.
⑭	Slider	6	
⑮	Damper slider	3	
			For assembly, reverse the disassembly procedure.

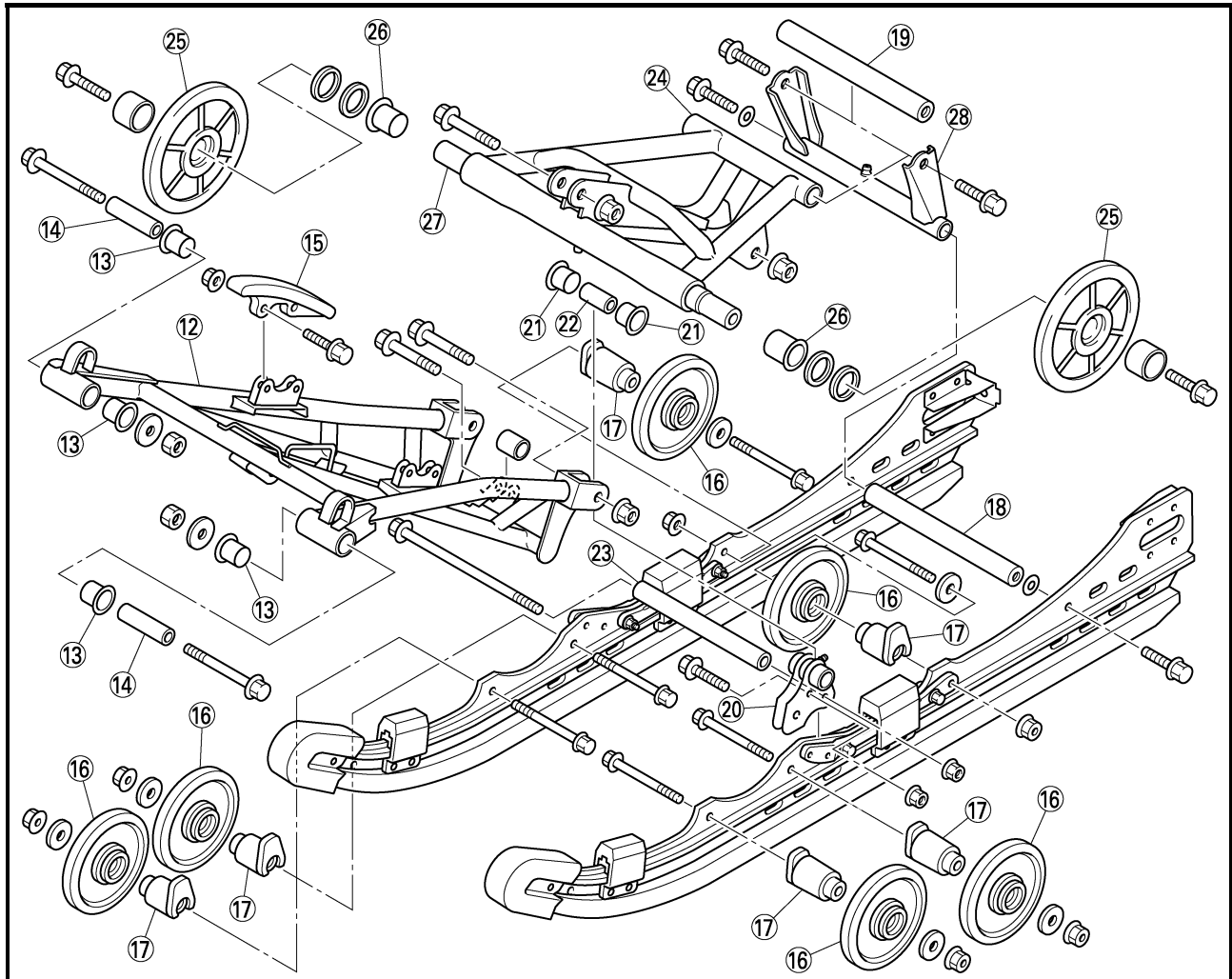
SLIDE RAIL SUSPENSION
RX10GTL



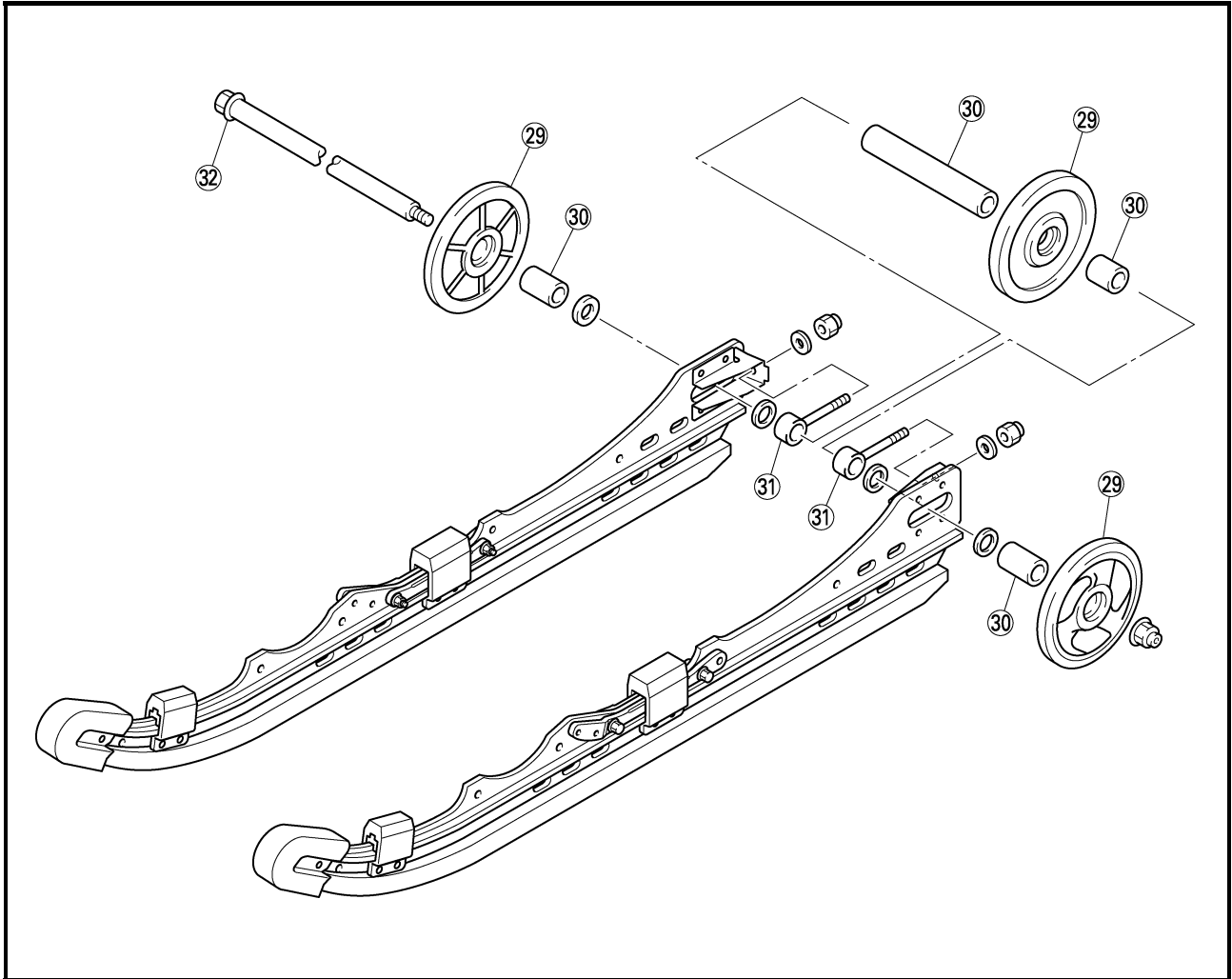
Order	Job/Part	Q'ty	Remarks
	Slide rail suspension removal		
1	Rear axle nut	1	Remove the parts in the order listed below. Loosen.
2	Tension adjuster	1	Loosen.
	Slide rail suspension		
	Collar	2	For installation, reverse the removal procedure.



Order	Job/Part	Q'ty	Remarks
	Slide rail suspension disassembly		Remove the parts in the order listed below.
①	Stopper band	1	
②	Shaft	1	
③	Rubber collar	2	
④	Electric suspension sub-wire lead	1	
⑤	Shock absorber	1	
⑥	Collar	1	
⑦	Control rod assembly	1	
⑧	Spacer	2	
⑨	Collar	2	
⑩	Oil seal	4	
⑪	Bearing	2	

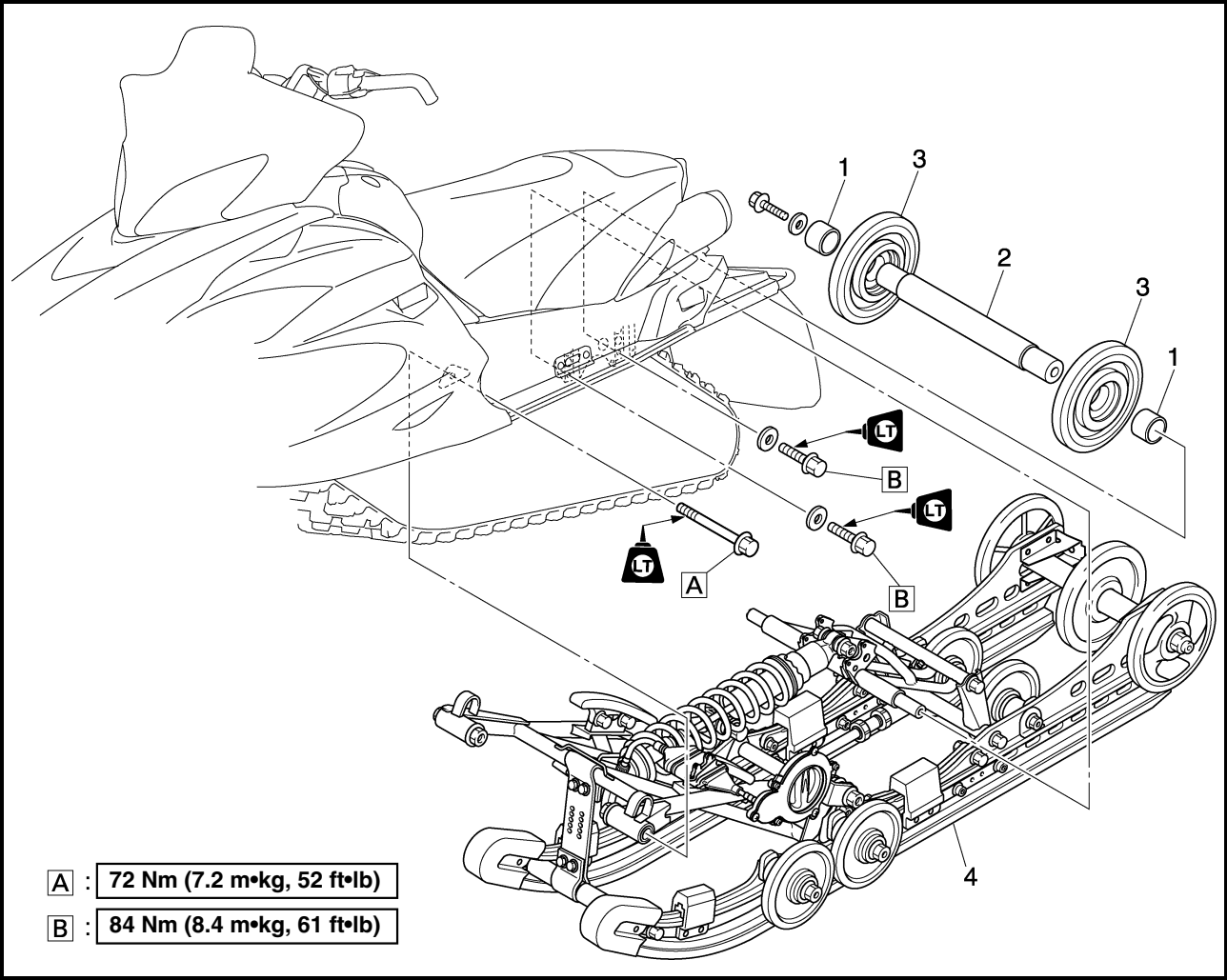


Order	Job/Part	Q'ty	Remarks
12	Front pivot arm	1	
13	Bushing	4	
14	Collar	2	
15	Sliding runner	2	
16	Suspension wheel	6	
17	Suspension wheel bracket	6	
18	Shaft	1	
19	Collar	1	
20	Front pivot arm bracket	2	
21	Bushing	4	
22	Collar	2	
23	Shaft	1	
24	Rear pivot arm	1	
25	Guide wheel	2	
26	Bushing	2	
27	Shaft	1	
28	Rear pivot arm bracket	1	

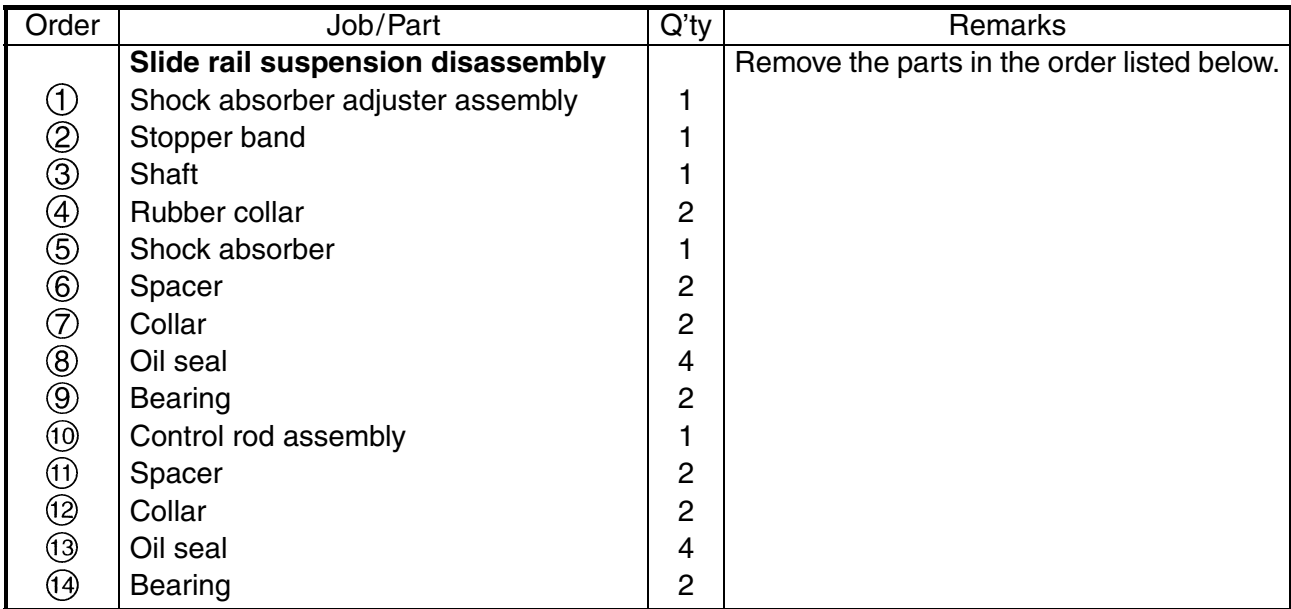


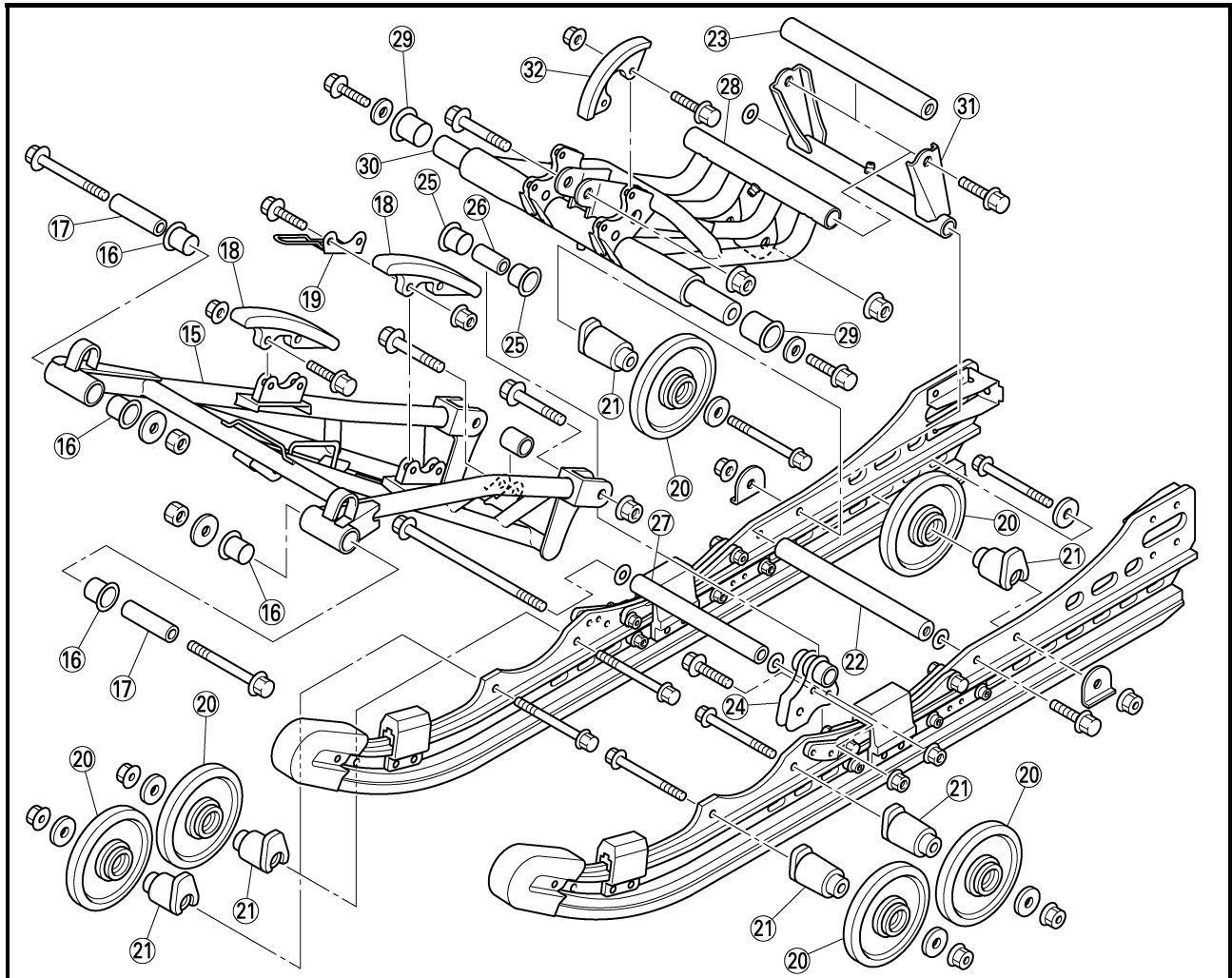
Order	Job/Part	Q'ty	Remarks
②⑨	Guide wheel	3	For assembly, reverse the disassembly procedure.
③①	Collar	4	
③①	Tension adjuster	2	
③②	Rear axle shaft	1	

RXW10L

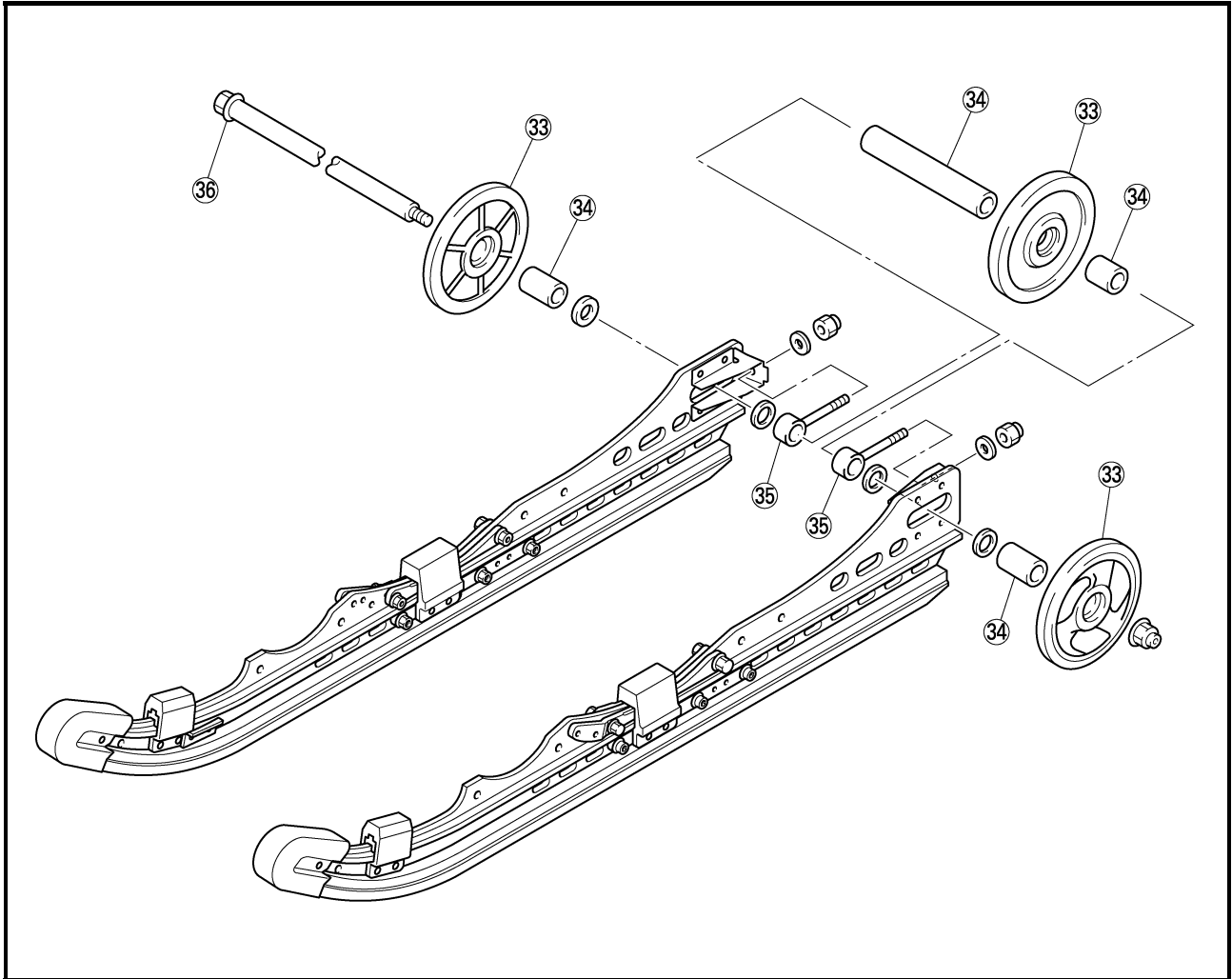


Order	Job/Part	Q'ty	Remarks
	Slide rail suspension removal		
	Rear axle nut		Remove the parts in the order listed below.
	Tension adjuster		Loosen.
1	Collar	2	Loosen.
2	Shaft	1	
3	Guide wheel	2	
4	Slide rail suspension	1	
			For installation, reverse the removal procedure.



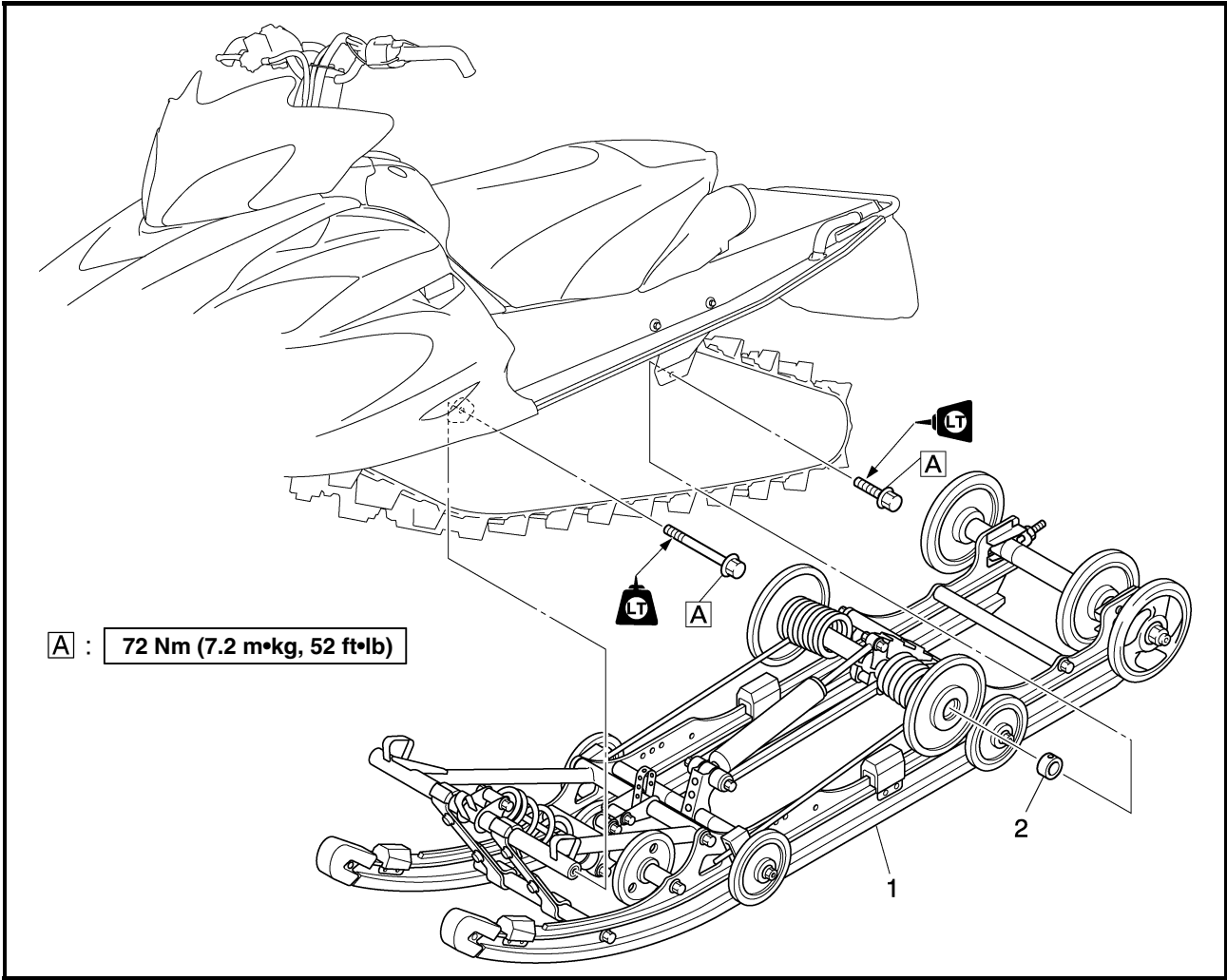


Order	Job/Part	Q'ty	Remarks
15	Front pivot arm	1	
16	Bushing	4	
17	Collar	2	
18	Sliding runner	2	
19	Protector	1	
20	Suspension wheel	6	
21	Suspension wheel bracket	6	
22	Shaft	1	
23	Collar	1	
24	Front pivot arm bracket	2	
25	Bushing	4	
26	Collar	2	
27	Shaft	1	
28	Rear pivot arm	1	
29	Bushing	2	
30	Shaft	1	
31	Rear pivot arm bracket	1	
32	Slider	2	

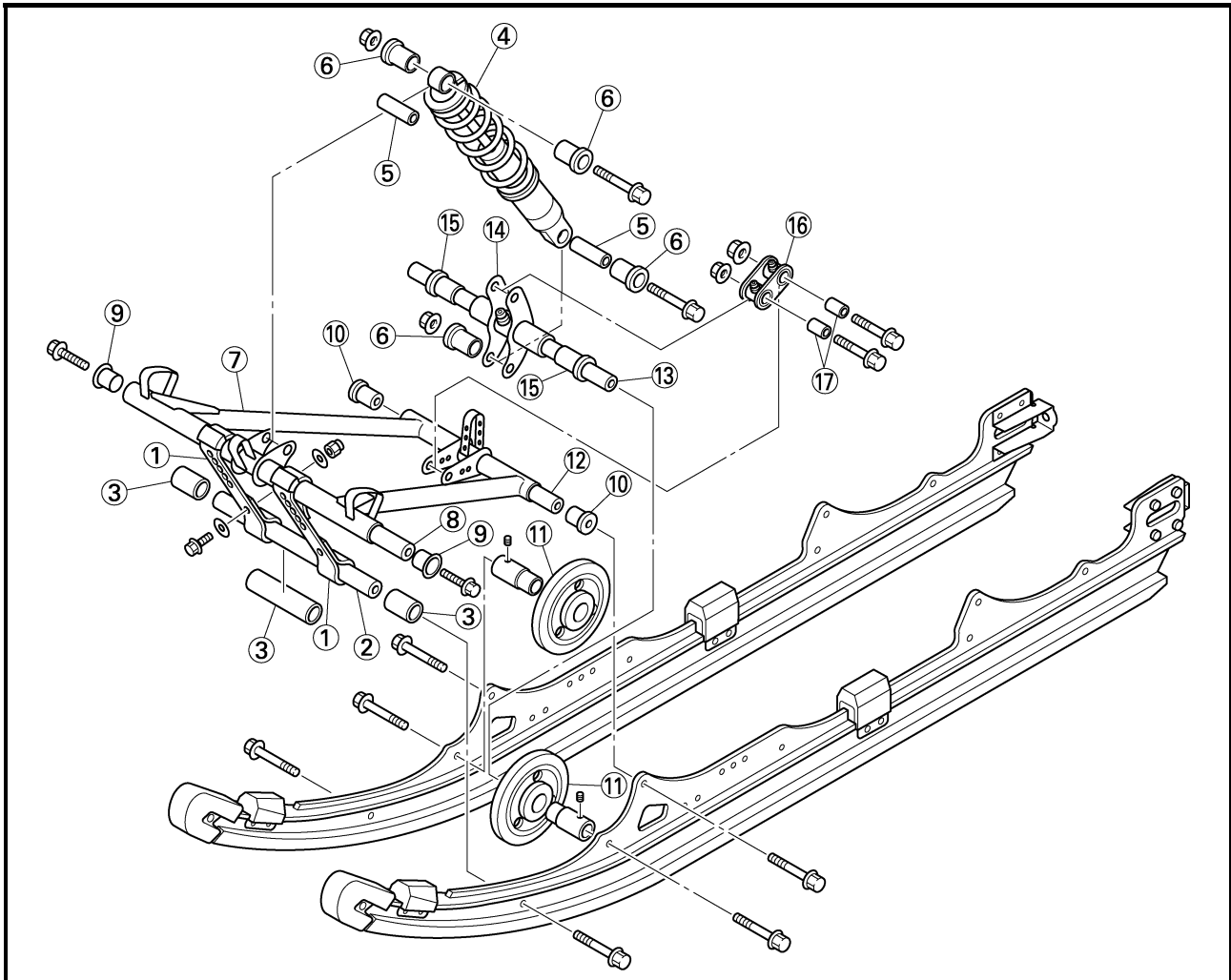


Order	Job/Part	Q'ty	Remarks
③③	Guide wheel	3	For assembly, reverse the disassembly procedure.
③④	Collar	4	
③⑤	Tension adjuster	2	
③⑥	Rear axle shaft	1	

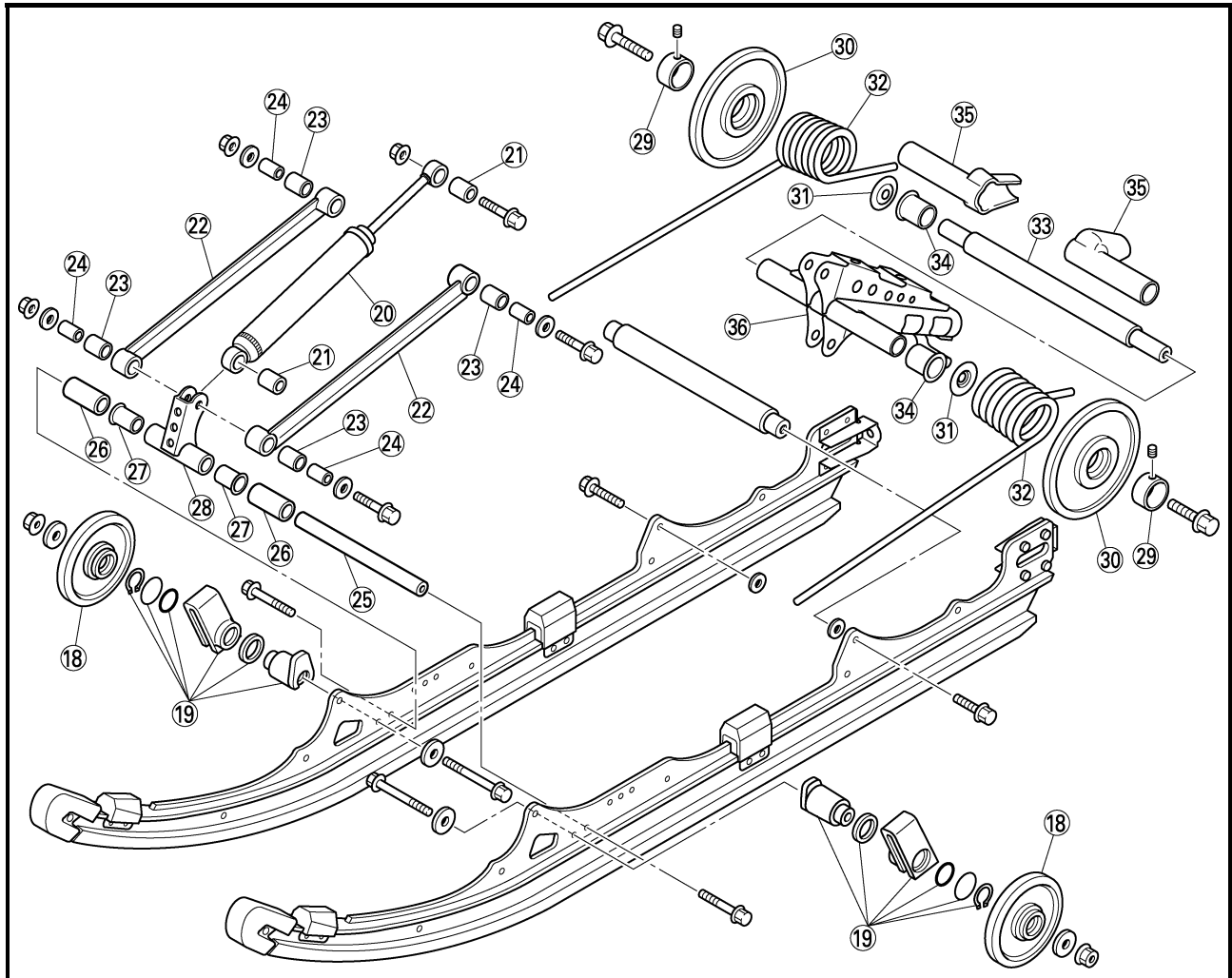
RX10ML



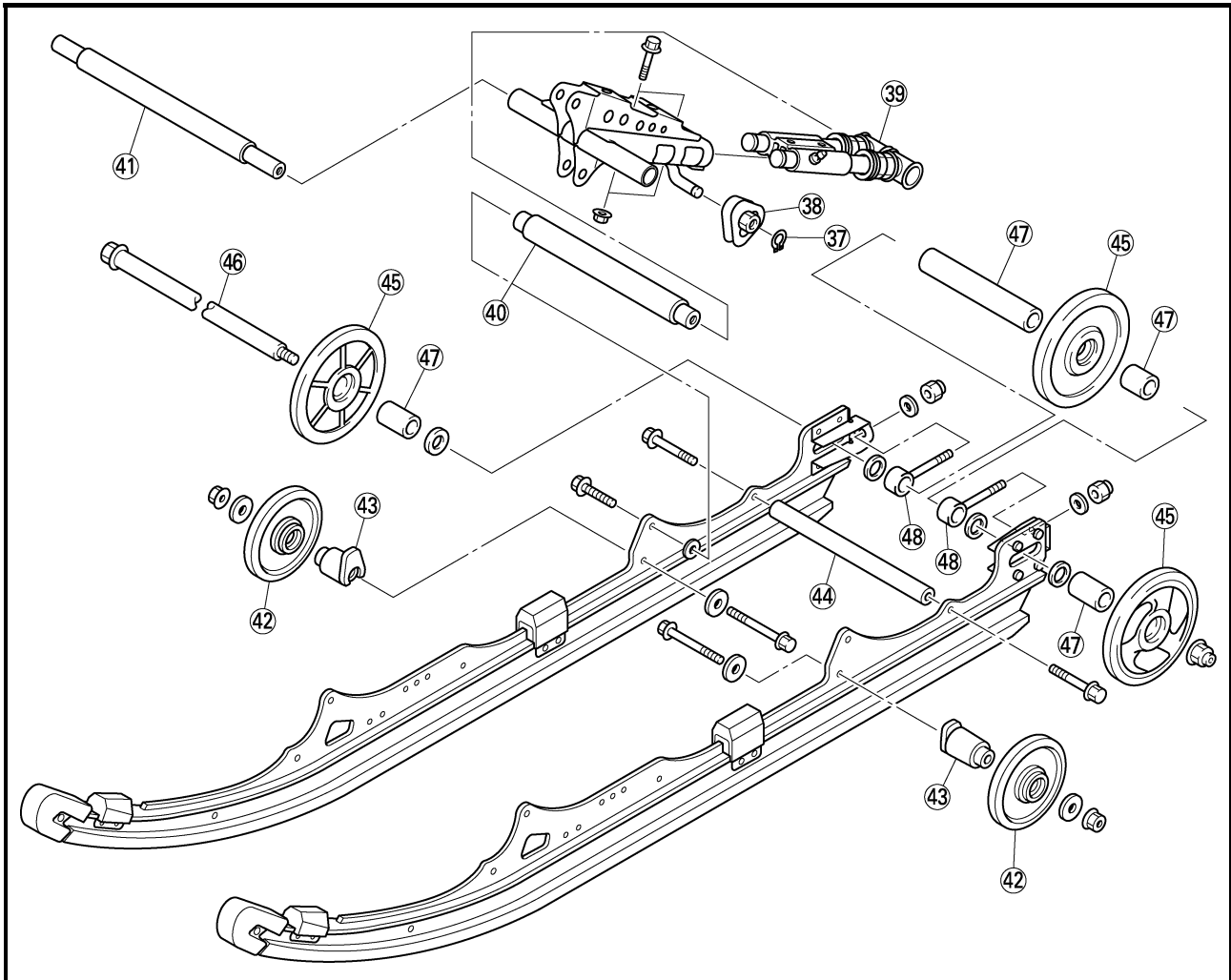
Order	Job/Part	Q'ty	Remarks
	Slide rail suspension removal		
1	Rear axle nut	1	Remove the parts in the order listed below. Loosen.
2	Tension adjuster	2	Loosen.
	Slide rail suspension		
	Collar		For installation, reverse the removal procedure.



Order	Job/Part	Q'ty	Remarks
	Slide rail suspension disassembly		Remove the parts in the order listed below.
①	Stopper band	2	
②	Shaft	1	
③	Rubber collar	3	
④	Front shock absorber	1	
⑤	Collar	2	
⑥	Bushing	4	
⑦	Front pivot arm	1	
⑧	Shaft	1	
⑨	Bushing	2	
⑩	Collar	2	
⑪	Suspension wheel assembly	2	
⑫	Shaft	1	
⑬	Shaft	1	
⑭	Suspension bracket	1	
⑮	Bushing	2	
⑯	Bracket	1	
⑰	Collar	2	

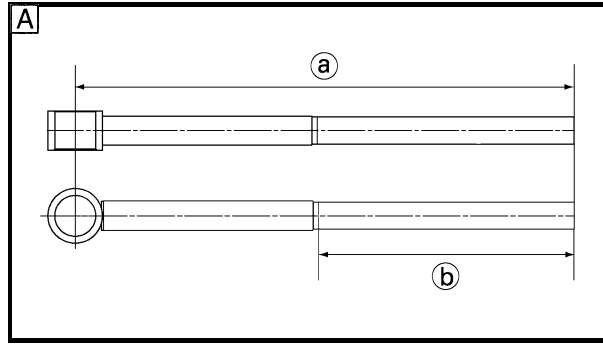


Order	Job/Part	Q'ty	Remarks
⑱	Suspension wheel	2	
⑲	Hook assembly	2	
⑳	Rear shock absorber	1	
㉑	Collar	2	
㉒	Relay rod	2	
㉓	Collar	4	
㉔	Bushing	4	
㉕	Shaft	1	
㉖	Collar	2	
㉗	Bushing	2	
㉘	Bracket	1	
㉙	Collar	2	
㉚	Guide wheel	2	
㉛	Spacer	2	
㉜	Rear spring	2	
㉝	Shaft	1	
㉞	Bushing	2	
㉟	Rear pivot arm protector	2	
㊱	Rear pivot arm	1	

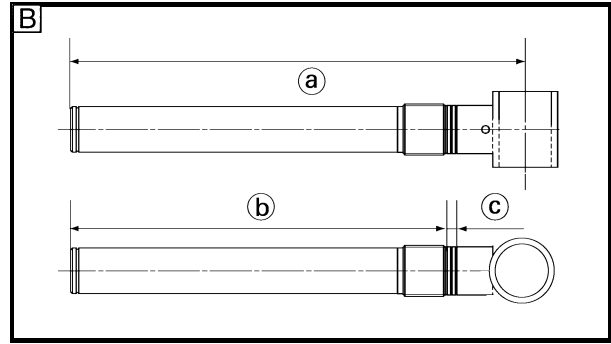


Order	Job/Part	Q'ty	Remarks
(37)	Circlip	2	
(38)	Hook	2	
(39)	Control rod assembly	1	
(40)	Shaft	1	
(41)	Pivot shaft	1	
(42)	Suspension wheel	2	
(43)	Suspension bracket	2	
(44)	Shaft	1	
(45)	Guide wheel	3	
(46)	Rear axle shaft	1	
(47)	Collar	4	
(48)	Tension adjuster	2	
			For assembly, reverse the disassembly procedure.

Control rod parts number



A RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L



B RX10ML

A Control rod 1	B Length a mm (in)	C Length b mm (in)	D Length c mm (in)
RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L	277.3 (10.92)	150.5 (5.93)	—
RX10ML	236.3 (9.30)	200.7 (7.90)	$2.5P \times 2 = 5$ ($0.098P \times 2 = 0.196$)

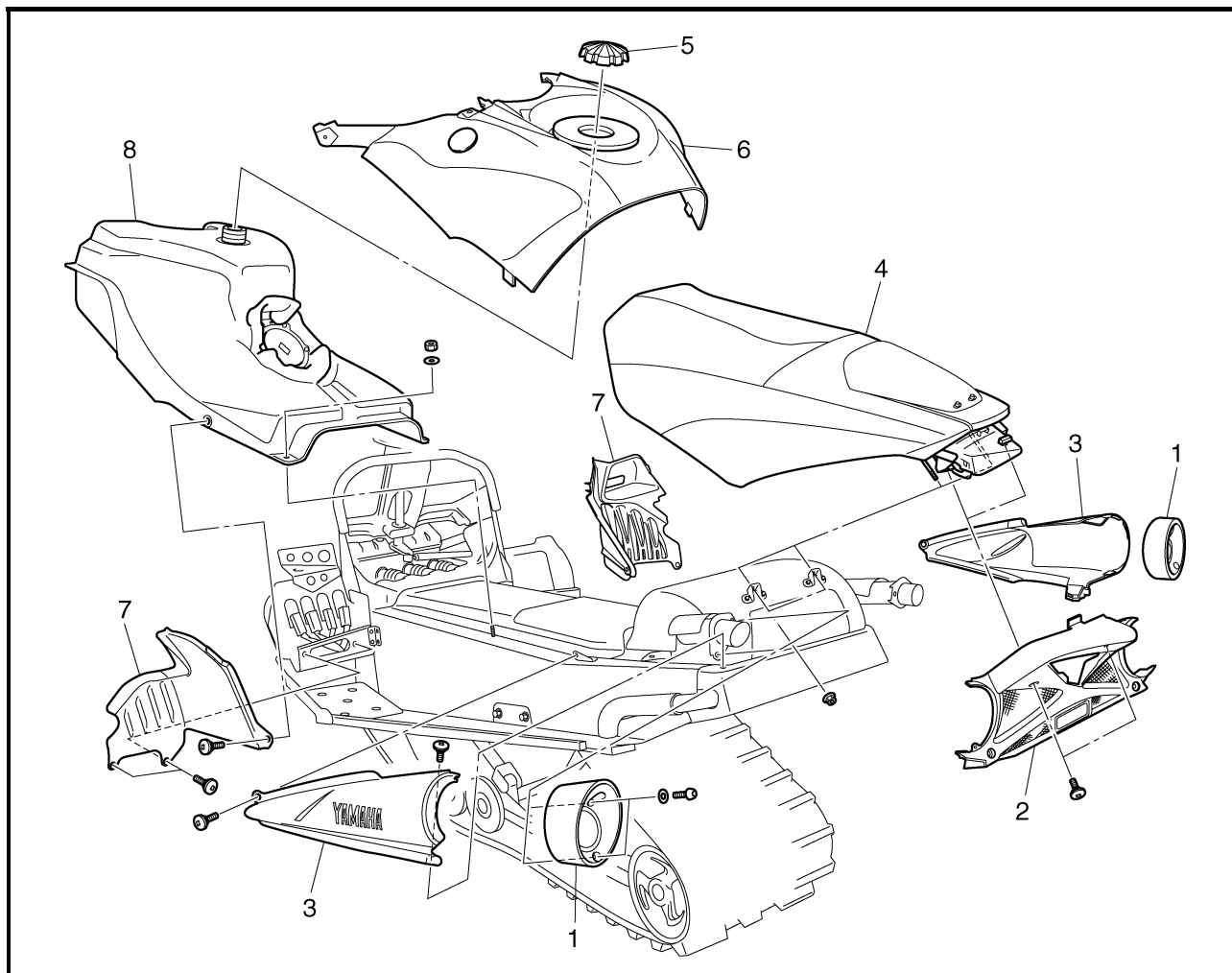
E Control rod 1 parts number	F Control rod 2 parts number	H Washer plate parts number	
		I Washer plate thickness mm (in)	
		J Upper	K Lower
8FR-4745A-00 (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L)	8FU-4745B-00	90202-16229 2.5 (0.098)	8FU-47384-20 10.0 (0.394)

[E] Control rod 1 parts number	[G] Stopper control 1 parts number	[H] Washer plate parts number	
		[I] Washer plate thickness mm (in)	
		[J] Upper	[K] Lower
8FS-4745A-00 (RX10ML)	8ES-4745D-00	90201-24015 2.0 (0.079)	90202-25001 2.0 (0.079)



ENGINE

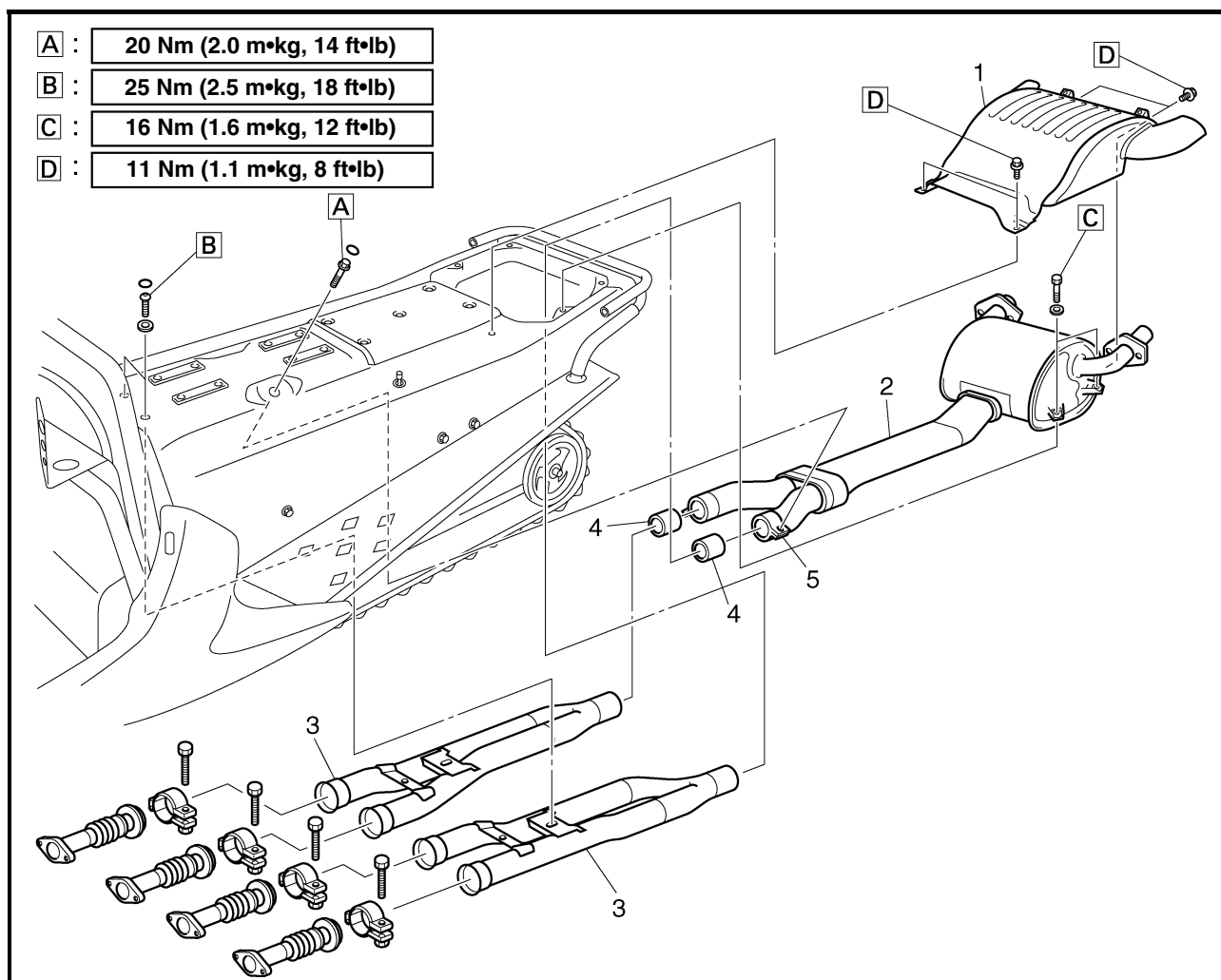
SEAT AND FUEL TANK



Order	Job/Part	Q'ty	Remarks
	Seat and fuel tank removal		Remove the parts in the order listed below.
1	Muffler end pipe	2	
2	Tail/brake light cover	1	
3	Muffler side cover	2	
4	Seat	1	
5	Fuel tank cap	1	
6	Fuel tank cover	1	
7	Side cover	2	
8	Fuel tank	1	
			For installation, reverse the removal procedure.



EXHAUST PIPE AND MUFFLER

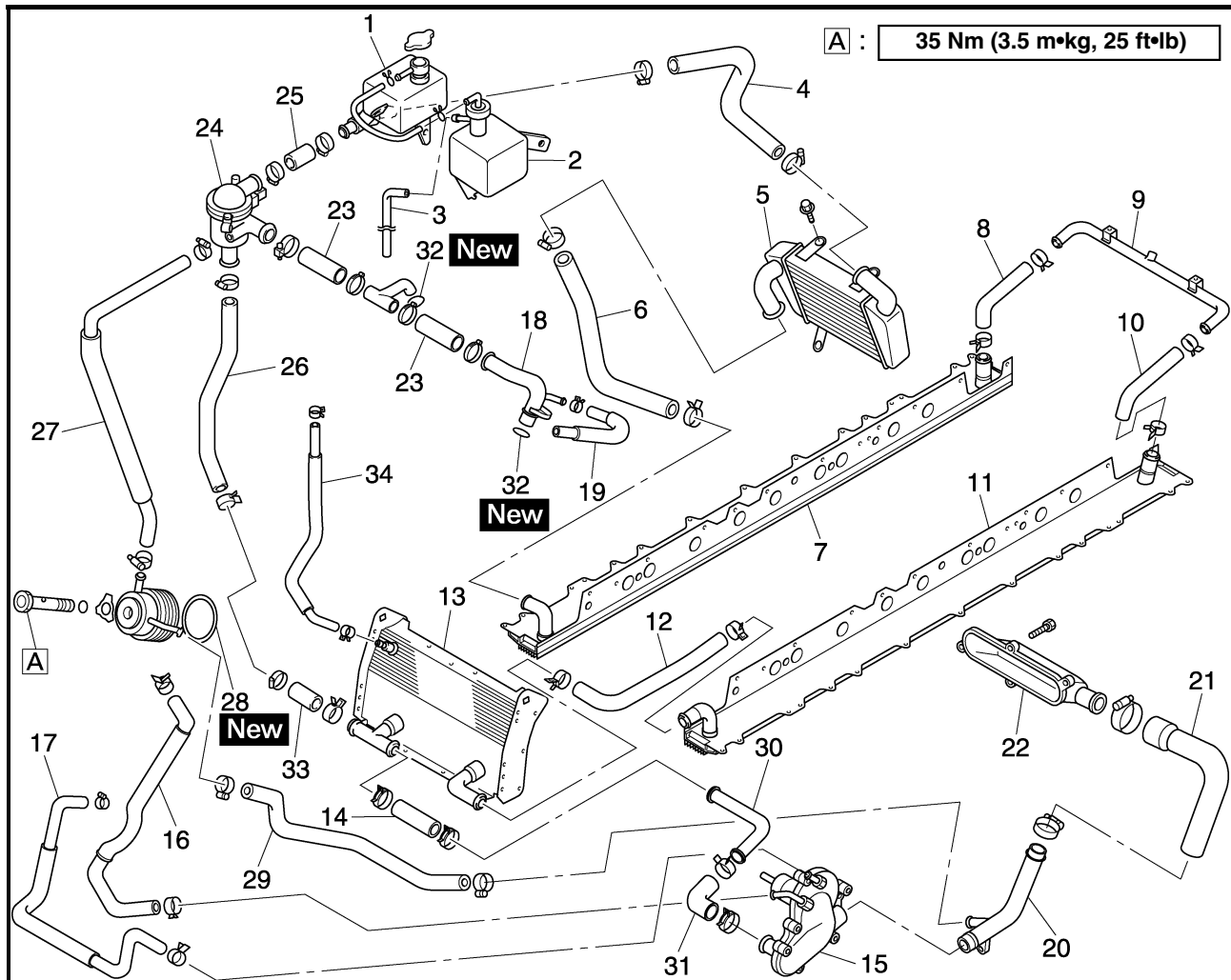


Order	Job/Part	Q'ty	Remarks
	Exhaust pipe and muffler removal		Remove the parts in the order listed below.
	Front axle assembly		Refer to "FRONT AXLE AND TRACK" in
	Track		CHAPTER 4
	Seat and fuel tank		Refer to "SEAT AND FUEL TANK".
1	Protector	1	
2	Muffler	1	
3	Exhaust pipe	2	
4	Gasket	2	
5	Band	2	
			For installation, reverse the removal procedure.

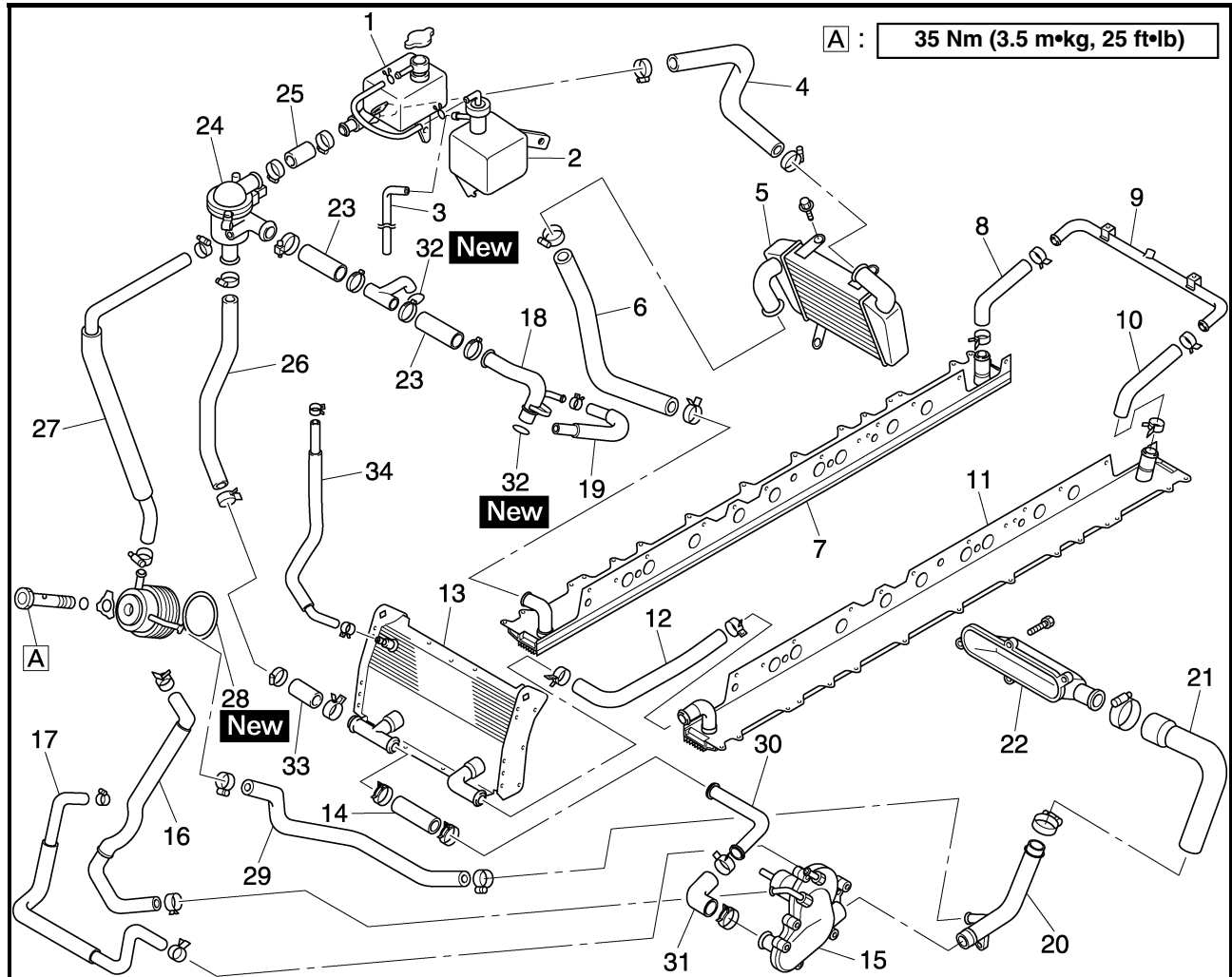


COOLING SYSTEM

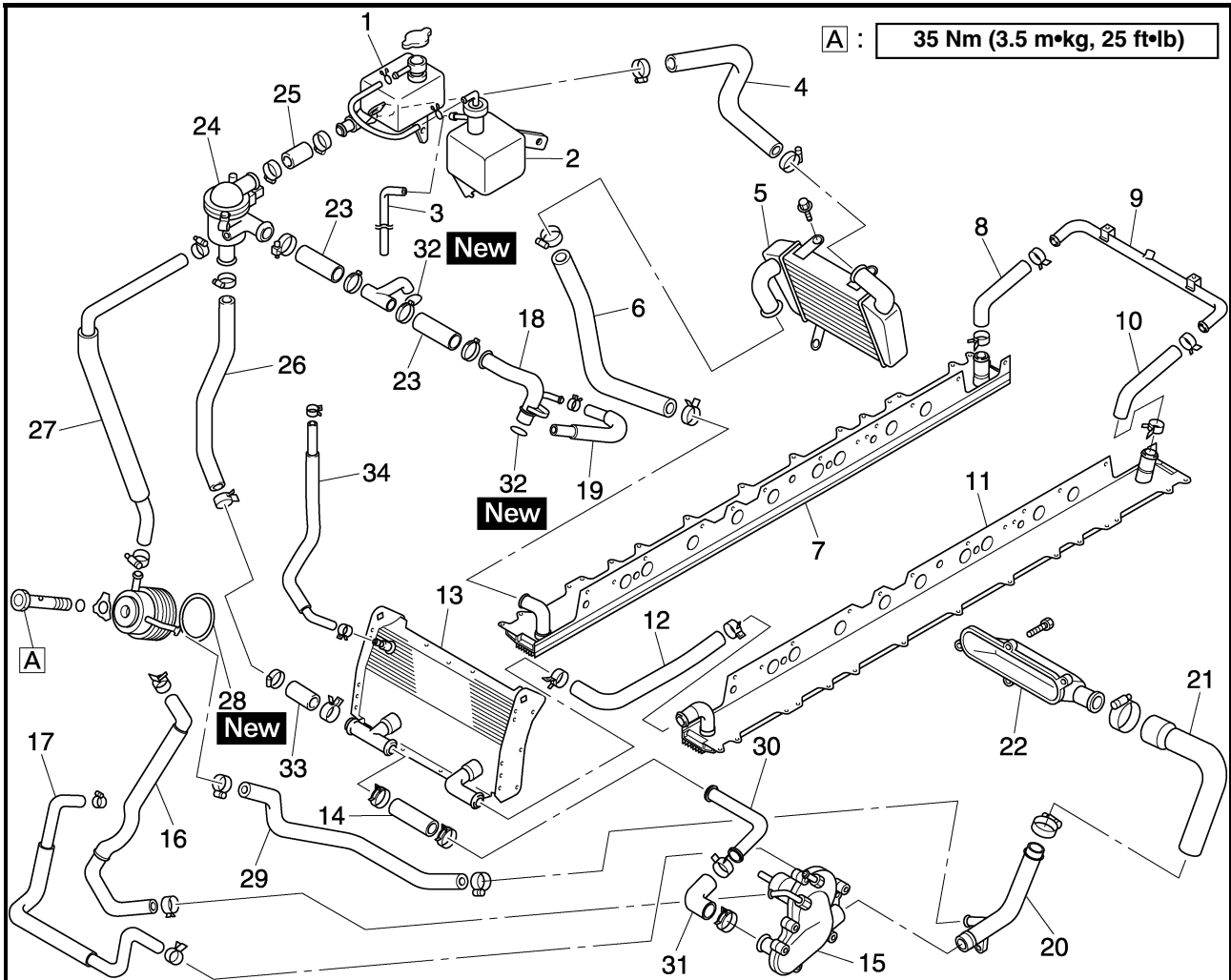
HEAT EXCHANGER



Order	Job/Part	Q'ty	Remarks
	Heat exchanger removal		
	Coolant		Remove the parts in the order listed below. Drain. Refer to "COOLING SYSTEM" in CHAPTER 2.
	Primary sheave assembly		Refer to "PRIMARY SHEAVE AND DRIVE V-VELT" in CHAPTER 4.
1	Coolant reservoir tank	1	
2	Coolant recovery tank	1	
3	Coolant recovery tank drain hose	1	
4	Coolant hose 1	1	
5	Radiator	1	
6	Coolant hose 2	1	
7	Heat exchanger (right)	1	
8	Coolant hose 3	1	
9	Heat exchanger (rear)	1	
10	Coolant hose 4	1	
11	Heat exchanger (left)	1	
12	Coolant hose 5	1	



Order	Job/Part	Q'ty	Remarks
13	Heat exchanger (front)	1	
14	Coolant hose 6	1	
15	Water pump assembly	1	
16	Throttle body heater hose	1	
17	Coolant hose 7	1	
18	Coolant pipe 1	1	
19	Coolant hose 8	1	
20	Coolant pipe 2	1	
21	Coolant hose 9	1	
22	Water jacket joint	1	
23	Coolant hose 10	2	
24	Thermostat assembly	1	
25	Coolant hose 11	1	
26	Coolant hose 12	1	
27	Oil cooler outlet hose	1	
28	Oil cooler	1	
29	Oil cooler inlet hose	1	



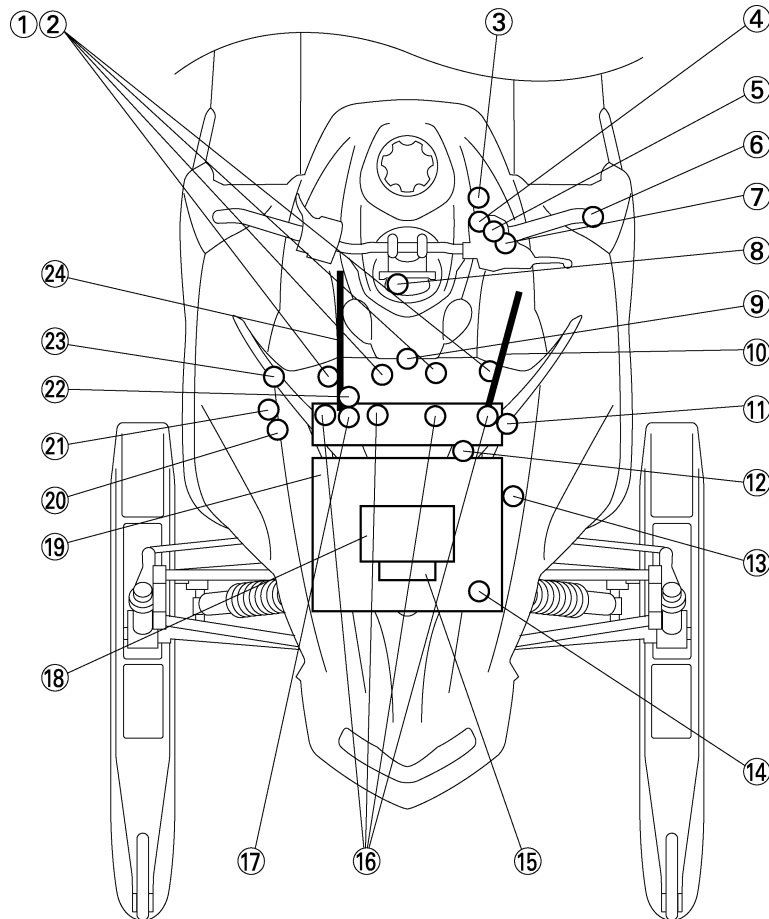
Order	Job/Part	Q'ty	Remarks
30	Pipe 3	1	For installation, reverse the removal procedure.
31	Water pump hose	1	
32	O-ring	1	
33	Coolant hose 13	1	
34	Coolant hose 14	1	



FUEL INJECTION SYSTEM

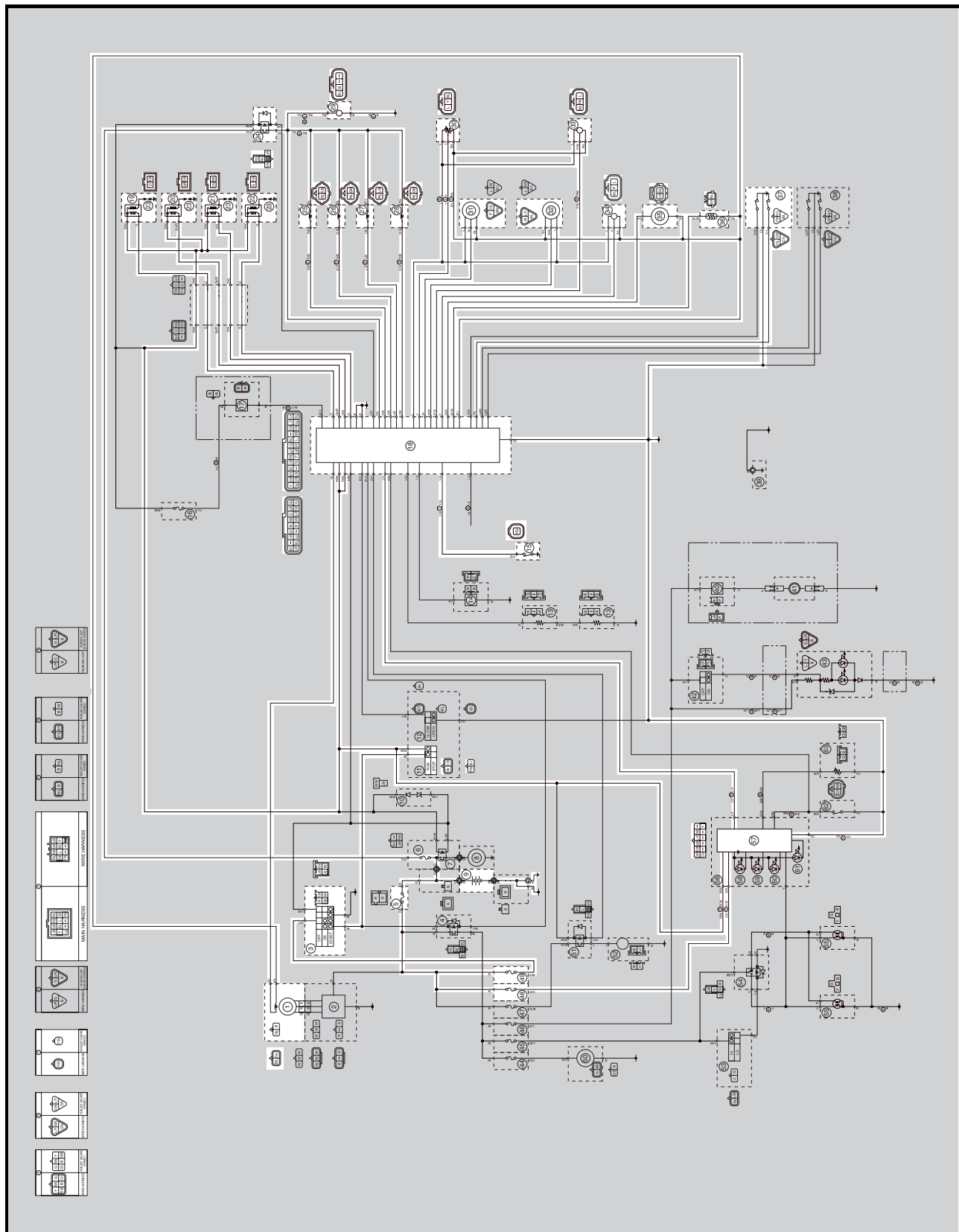
FUEL INJECTION SYSTEM

- | | | | | |
|---|----------------------------------|-------------------------------|------------------------------|------------------------------|
| ① Ignition coil | ⑧ Engine trouble warning light | ⑬ Intake temperature sensor | ⑰ Intake air pressure sensor | ⑲ Intake silencer |
| ② Spark plug | ⑨ Cylinder identification sensor | ⑭ Atmospheric pressure sensor | ⑱ ECU | ⑳ Crankshaft position sensor |
| ③ Fuel tank | ⑩ Fuel delivery hose | ⑮ Fuel injector | ⑳ Oil level switch | ㉑ Pressure regulator |
| ④ Fuel pump | ⑪ Throttle position sensor | ⑯ Intake air pressure sensor | ㉒ Coolant temperature sensor | ㉓ Fuel return hose |
| ⑤ Grip warmer adjustment down side switch | ⑫ Oil pressure switch | ⑰ Battery | | |
| ⑥ Fuel injection system relay | | | | |
| ⑦ Speed sensor | | | | |





WIRING DIAGRAM





- ① Crankshaft position sensor
- ③ Main switch
- ⑤ Fuse (MAIN)
- ⑥ Fuse (FUEL INJECTION SYSTEM)
- ⑨ Battery
- ⑪ Engine stop switch
- ⑫ Oil pressure switch
- ⑮ E.C.U.
- ⑰ Ignition coil #1
- ⑱ Ignition coil #2
- ⑲ Ignition coil #3
- ⑳ Ignition coil #4
- ㉑ Spark plug
- ㉒ Fuel injection system relay
- ㉓ Injector #1
- ㉔ Injector #2
- ㉕ Injector #3
- ㉖ Injector #4
- ㉗ Fuel pump
- ㉘ Throttle position sensor
- ㉙ Speed sensor
- ㉚ Cylinder identification sensor
- ㉛ Intake air pressure sensor
- ㉜ Atmospheric pressure sensor
- ㉝ Water temperature sensor
- ㉞ Intake air temperature sensor
- ㉟ Grip warmer adjustment down side switch
- ㊱ Fuse (BACKUP)
- ㊲ Fuse (IGNITION)
- ㊳ Multi function meter
- ㊴ Oil level switch



EAS00899

ECU'S SELF-DIAGNOSTIC FUNCTION

The ECU is equipped with a self-diagnostic function in order to ensure that the engine control system is operating normally. If this function detects a malfunction in the system, it immediately operates the engine under substitute characteristics and illuminates the engine trouble warning light to alert the rider that a malfunction has occurred in the system. Once a malfunction has been detected, a fault code is stored in the memory of the ECU.

- To inform the rider that the fuel injection system is not functioning, the engine trouble warning light flashes when the start switch is being pushed to start the engine.
- If a malfunction is detected in the system by the self-diagnostic function, this mode provides an appropriate substitute characteristic operation, and alerts the rider of the detected malfunction by flashing an engine trouble warning light.
- The fault code number appears from the lowest value in order of precedence on the LCD meter. Once a fault code has been displayed, it remains stored in the memory of the ECU until it is deleted.

EAS00900

Engine trouble warning light indication and FI system operating condition

Warning light indication	ECU's operation	FI operation	Vehicle operation
Flashing*	Warning provided when unable to start engine	Operation stopped	Unable
Remains ON	Malfunction detected	Operated with substitute characteristics in accordance with the description of the malfunction	Able/Unable depending on the self-diagnostic fault code

* The warning light flashes when any one of the conditions listed below is present and the start switch is pushed.

The period for flashing is 160 ms. (Period during SELF-DIAGNOSTIC is 1000 ms.)

11: Cylinder identification sensor

30: Oil pressure dropped.

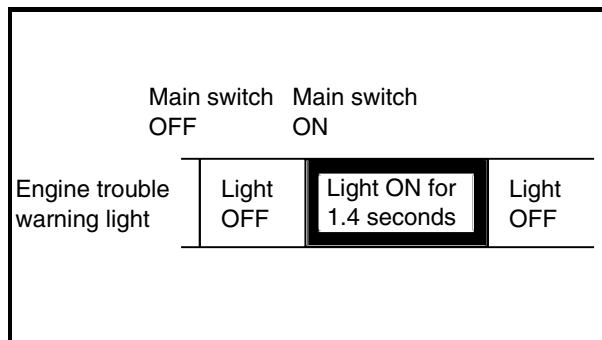
12: Crankshaft position sensor

50: ECU internal malfunction
(memory check error)

EAS00901

Checking for a defective engine trouble warning light bulb

The engine trouble warning light comes on for 1.4 seconds after the main switch has been turned "ON" and when the main switch is being turned. If the warning light does not come on under these conditions, the warning LED may be defective.





SUBSTITUTE CHARACTERISTICS OPERATION CONTROL (FAIL-SAFE ACTION)

If the ECU detects an abnormal signal from a sensor while the vehicle is being driven, the ECU illuminates the engine trouble warning light and provides the engine with alternate operating instructions that are appropriate for the type of malfunction.

When an abnormal signal is received from a sensor, the ECU processes the specified values that are programmed for each sensor in order to provide the engine with alternate operating instructions that enable the engine to continue to operate or stop operating, depending on the conditions.

The ECU takes fail-safe actions in two ways: one in which the sensor output is set to a prescribed value, and the other in which the ECU directly operates an actuator. Details on the fail-safe actions are given in the table below.

FAIL-SAFE ACTIONS TABLE

Fault Code No.	Item	Symptom	Fail-safe action	Able/unable to start	Able/unable to drive
11	Cylinder identification sensor	No normal signals are received from the cylinder identification sensor.	Continues to operate the engine based on the results of the cylinder identification that existed up to that point.	Unable	Able
12	Crankshaft position sensor	No normal signals are received from the crankshaft position sensor.	• Stops the engine (by stopping the injection and ignition).	Unable	Unable
13 14	Intake air pressure sensor (open or short circuit) (pipe system)	Intake air pressure sensor-open or short circuit detected. Faulty intake air pressure sensor system.	• Fixes the intake air pressure to 85.0 kpa.	Able	Able
15 16	Throttle position sensor (open or short circuit) (stuck)	Throttle position sensor-open or short circuit detected.	• Fixes the throttle position sensor to fully open.	Able	Able
20	Intake air pressure Atmospheric pressure	Defective values are detected due to the internal malfunction.	• Fixes the intake air pressure and atmospheric pressure to 85.0 kpa.	Able	Able
21	Coolant temperature sensor	Coolant temperature sensor-open or short circuit detected.	• Fixes the coolant temperature to 60°C. After the engine starts, the radiator fan relay will be turned ON.	Able	Able
22	Intake temperature sensor	Intake temperature sensor-open or short circuit detected.	• Fixes the intake temperature to 0°C.	Able	Able
23	Atmospheric pressure sensor (open or short circuit)	Atmospheric pressure sensor-open or short circuit detected.	• Fixes the atmospheric pressure to 85.0 kpa.	Able	Able
30	Oil pressure dropped	Engine stops when the oil pressure drop is detected.	• Fuel pump and fuel injection are stopped. (Main relay is off.)	Unable	Unable
33 34 35 36	Faulty ignition	Open circuit detected in the primary lead of the ignition coil.	• Cut the injection of other cylinder in the same group with the cylinder that the error is detected. (Example: when the #1 cylinder is defective, cut the injection of #1 and #4 cylinders, when the #2 cylinder is defective, cut the injection of #2 and #3 cylinders). Turn on the power to the air induction solenoid to always cut-off the air.	Able (depending on the number of faulty cylinders)	Able (depending on the number of faulty cylinders)
42	Speed sensor, neutral switch	No normal signals are received from the speed sensor; or, an open or short circuit is detected in the neutral switch.	• Fixes the gear to the top gear.	Able	Able
43	Fuel system voltage (monitor voltage)	The ECU is unable to monitor the battery voltage (an open circuit in the line to the ECU).	• Fixes the battery voltage to 12 V.	Able	Able

FUEL INJECTION SYSTEM

FI



Fault Code No.	Item	Symptom	Fail-safe action	Able/unable to start	Able/unable to drive
44	Error in writing the amount of CO adjustment on EEPROM	An error is detected while reading or writing on EEPROM (CO adjustment value).	—	Able	Able
46	Vehicle system power supply (Monitor voltage)	Power supply to the FI system is not normal.	Grip warmer output is OFF.	Able	Able
50	ECU internal malfunction (memory check error)	Faulty ECU memory. When this malfunction is detected, the code number might not appear on the meter.	—	Unable	Unable
80	Grip warmer switch	Grip warmer switch-short circuit detected.	—	Able	Able
81	Grip warmer	Grip warmer-open or short circuit detected.	—	Able	Able
82	Thumb warmer switch	Thumb warmer switch-short circuit detected.	—	Able	Able
83	Thumb warmer	Thumb warmer-short circuit detected.	—	Able	Able
84	T.O.R.S.	Detecting conditions for T.O.R.S. are satisfied.	—	Able	Unable
85	Oil pressure switch	Oil pressure switch-open circuit detected.	—	Able	Able
—	Start unable warning	Relay is not turned ON even if the crank signal is input while the start switch is turned ON. When the start switch is turned ON while an error is detected with the fault code of No.11, 12, 30 or 50.	Engine trouble warning light flashes when the start switch is turned ON.	Unable	Unable

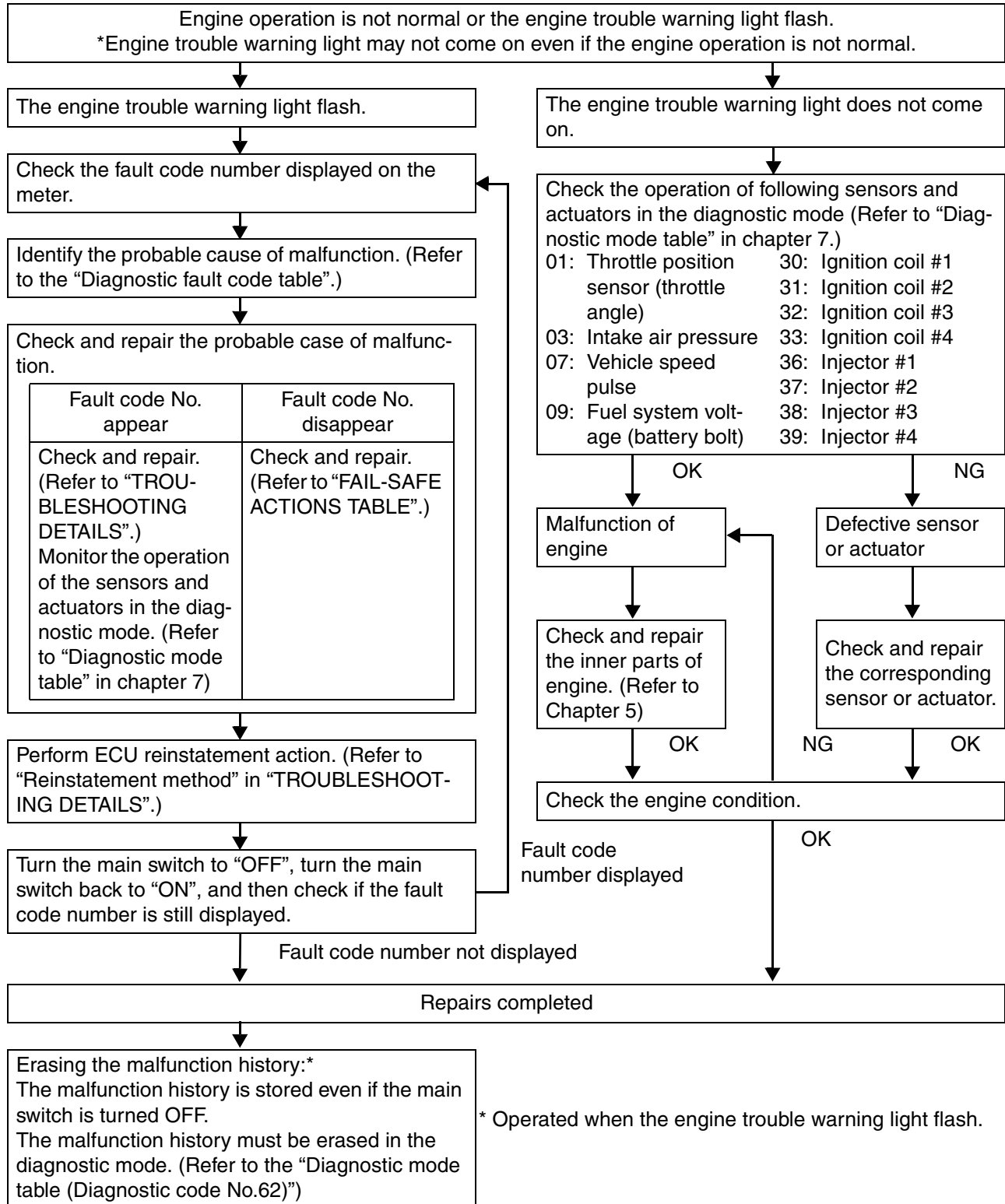
Communication error with the meter

Fault Code No.	Item	Symptom	Fail-safe action	Able/unable to start	Able/unable to drive
Er-1	ECU internal malfunction (output signal error)	No signals are received from the ECU.	—	Unable	Unable
Er-2	ECU internal malfunction (output signal error)	No signals are received from the ECU within the specified duration.	—	Unable	Unable
Er-3	ECU internal malfunction (output signal error)	Data from the ECU cannot be received correctly.	—	Unable	Unable
Er-4	ECU internal malfunction (input signal error)	Non-registered data has been received from the meter.	—	Unable	Unable



EAS00904

TROUBLESHOOTING CHART

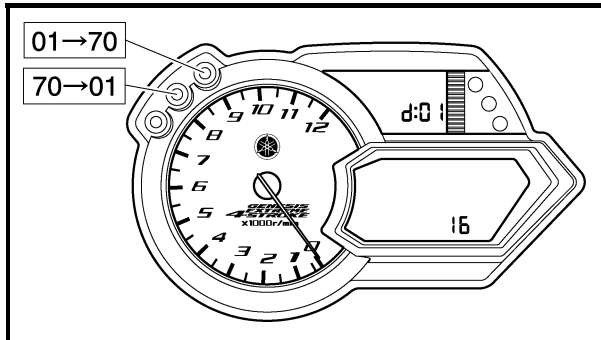
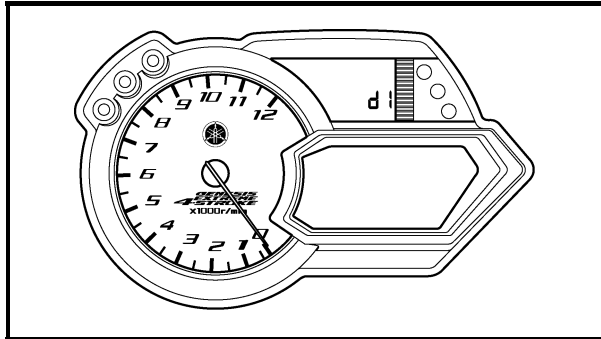




EAS00905

DIAGNOSTIC MODE

It is possible to monitor the sensor output data or check the activation of actuators without connecting the measurement equipment by simply switching the meter indication from the normal mode to the diagnostic monitoring mode.



Setting the diagnostic mode

1. Turn the main switch to "OFF" and set the engine stop switch to "ON".
2. Disconnect the wire harness coupler from the fuel pump.
3. Simultaneously press and hold the "SELECT" and "RESET" buttons, turn the main switch to "ON", and continue to press the buttons for 8 seconds or more.
4. After selecting "d1", simultaneously press the "SELECT" and "RESET" buttons for 2 seconds or more to execute the selection.
5. Select the diagnostic code number that applies to the item that was verified with the fault code number by pressing the "SELECT" and "RESET" buttons.

NOTE:

- The diagnostic code number appears on the LCD meter (01-70).
- To decrease the selected diagnostic code number, press the "RESET" button. Press the "RESET" button for 1 second or longer to automatically decrease the diagnostic code numbers.
- To increase the selected diagnostic code number, press the "SELECT" button. Press the "SELECT" button for 1 second or longer to automatically increase the diagnostic code numbers.



6. Verify the operation of the sensor or actuator.
 - Sensor operation
The data representing the operating conditions of the sensor appears on the trip LCD.
 - Actuator operation
Set the grip warmer adjustment down side switch to “ON” to operate the actuator.
 - * If the grip warmer adjustment down side switch is set to “ON”, set it to “OFF”, and then set it to “ON” again.
7. Turn the main switch to “OFF” to cancel the diagnostic mode.

NOTE: _____

To perform a reliable diagnosis, make sure to turn “OFF” the power supply before every check and then start right from the beginning.


Diagnostic fault code table

Fault Code No.	Symptom	Probable cause of malfunction	Diagnostic code
11	No normal signals are received from the cylinder identification sensor.	• Open or short circuit in wiring sub lead. • Open or short circuit in wiring harness. • Defective cylinder identification sensor. • Malfunction in ECU. • Improperly installed sensor.	—
12	No normal signals are received from the crankshaft position sensor.	• Open or short circuit in wiring harness. • Defective crankshaft position sensor. • Malfunction in pickup rotor. • Malfunction in ECU. • Improperly installed sensor.	—
13	Intake air pressure sensor-open or short circuit detected.	• Open or short circuit in wiring sub lead. • Open or short circuit in wiring harness. • Defective intake air pressure sensor. • Malfunction in ECU.	03
14	Faulty intake air pressure sensor hose system; a hose is detached, causing constant application of the atmospheric pressure to the sensor; or, the hose is clogged.	• Intake air pressure sensor hose is detached, clogged, kinked, or pinched. • Malfunction in ECU.	03
15	Throttle position sensor-open or short circuit detected.	• Open or short circuit in wiring sub lead. • Open or short circuit in wiring harness. • Defective throttle position sensor. • Malfunction in ECU. • Improperly installed throttle position sensor.	01
16	A stuck throttle position sensor is detected.	• Stuck throttle position sensor. • Malfunction in ECU.	01
20	When the main switch is turned to ON, the atmospheric sensor voltage and intake air pressure sensor voltage differ greatly.	• Atmospheric pressure sensor hose is clogged. • Intake air pressure sensor hose is clogged, kinked, or pinched. • Malfunction of the atmospheric pressure sensor in the intermediate electrical potential. • Malfunction of the intake air pressure sensor in the intermediate electrical potential. • Malfunction in ECU.	03 02
21	Coolant temperature sensor-open or short circuit detected.	• Open or short circuit in wiring harness. • Defective coolant temperature sensor. • Malfunction in ECU.	06
22	Intake temperature sensor-open or short circuit detected.	• Open or short circuit in wiring harness. • Defective intake temperature sensor. • Malfunction in ECU.	05
23	Atmospheric pressure sensor-open or short circuit detected.	• Open or short circuit in wiring sub lead. • Defective atmospheric pressure sensor. • Malfunction in ECU.	02
30	Oil pressure dropped.	• Oil pressure dropped.	
33	Open circuit is detected in the primary lead of the ignition coil (#1).	• Open or short circuit in wiring harness. • Malfunction in ignition coil. • Malfunction in ECU. • Malfunction in a component of ignition cut-off circuit system.	30
34	Open circuit is detected in the primary lead of the ignition coil (#2).	• Open or short circuit in wiring harness. • Malfunction in ignition coil. • Malfunction in ECU. • Malfunction in a component of ignition cut-off circuit system.	31
35	Open circuit is detected in the primary lead of the ignition coil (#3).	• Open or short circuit in wiring harness. • Malfunction in ignition coil. • Malfunction in ECU. • Malfunction in a component of ignition cut-off circuit system.	32
36	Open circuit is detected in the primary lead of the ignition coil (#4).	• Open or short circuit in wiring harness. • Malfunction in ignition coil. • Malfunction in ECU. • Malfunction in a component of ignition cut-off circuit system.	33

FUEL INJECTION SYSTEM

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Fault Code No.	Symptom	Probable cause of malfunction	Diagnostic code
42	No normal signals are received from the speed sensor.	• Open or short circuit in wiring harness. • Defective speed sensor. • Malfunction in vehicle speed sensor detected unit. • Malfunction in ECU.	07
43	The ECU is unable to monitor the battery voltage (an open circuit in the monitor line to the ECU).	• Open circuit in wiring harness. • Malfunction in ECU.	09
44	An error is detected while reading or writing on EEPROM.	• Malfunction in ECU. (The CO adjustment value is not properly written on or read from the internal memory).	60
46	Power supply to the FI system is not normal.	• Malfunction in "CHARGING SYSTEM".	—
50	Faulty ECU memory. When this malfunction is detected, the code number might not appear on the meter.	• Malfunction in ECU. (The program and data are not properly written on or read from the internal memory.)	—
80	The grip warmer switch is not normal.	• Short circuit in wiring harness. • Defective grip warmer switch. • Malfunction in ECU.	—
81	The grip warmer is not normal.	• Open or short circuit in wiring harness. • Defective grip warmer. • Malfunction in ECU.	26
82	The thumb warmer switch is not normal.	• Short circuit in wiring harness. • Defective thumb warmer switch. • Malfunction in ECU.	—
83	The thumb warmer is not normal.	• Short circuit in wiring harness. • Defective thumb warmer. • Malfunction in ECU.	27
84	T.O.R.S.	• Detecting conditions for T.O.R.S. are satisfied.	1 24 42
85	The oil pressure switch is not normal.	• Open circuit in wiring harness. • Defective oil pressure switch. • Malfunction in ECU.	—
Er-1	No signal are received from the ECU.	• Open or short circuit in wiring harness. • Malfunction in meter. • Malfunction in ECU. • Defective wire connection of the ECU coupler.	—
Er-2	No signal are received from the ECU within the specified duration.	• Improper connection in wiring harness. • Malfunction in meter. • Malfunction in ECU.	—
Er-3	Data from the ECU can not be received correctly.	• Improper connection in wiring harness. • Malfunction in meter. • Malfunction in ECU.	—
Er-4	Non-registered data has been received from the meter.	• Improper connection in wiring harness. • Malfunction in meter. • Malfunction in ECU.	—



Diagnostic mode table

Switch the meter display from the regular mode to the diagnosis mode. To switch the display, refer to "DIAGNOSTIC MODE".

NOTE:

- Check the intake air temperature and coolant temperature as close as possible to the intake air temperature sensor and the coolant temperature sensor respectively.
- If it is not possible to check it with an atmospheric pressure gauge, judge it by using 101.3 kPa as the standard.
- If it is not possible to check the intake air temperature, use the ambient temperature as reference.

Diagnostic code	Item	Description of action	Data displayed on meter (reference value)
01	Throttle angle	Displays the throttle angle. • Check with throttle fully closed. • Check with throttle fully open.	0 ~ 125 degrees • Fully closed position (15 ~ 18) • Fully open position (95 ~ 100)
02	Atmospheric pressure	Displays the atmospheric pressure. * Use an atmospheric pressure gauge to check the atmospheric pressure.	Compare it to the value displayed on the meter.
03	Intake air pressure	Displays the intake air pressure. Engine stop switch is on. * Generate the pressure difference by cranking the engine with the starter, without actually starting the engine.	• Not cranking-atmospheric pressure • Cranking-intake air pressure It changes at the value which is smaller than in the atmospheric pressure.
05	Intake temperature	Displays the intake air temperature. * Check the temperature in the air cleaner case.	Compare it to the value displayed on the meter. (min-30 [°C])
06	Coolant temperature	Displays the coolant temperature. * Check the temperature of the coolant.	Compare it to the value displayed on the meter. (min-30 [°C])
07	Vehicle speed pulse	Displays the accumulation of the vehicle pulses that are generated when the tire is spun.	(0 ~ 999; resets to 0 after 999) OK if the numbers appear on the meter.
09	Fuel system voltage (battery voltage)	Displays the fuel system voltage (battery voltage). Engine stop switch is on.	0 ~ 18.7 V Normally, approximately 12.0 V
24	Throttle switch	The meter displays the following items: During the throttle switch ON (throttle open): ON During the throttle switch OFF (throttle close): OFF	—
26	Grip warmer drive	Drive the grip warmer when 1 second has passed after the grip warmer down side switch is changed from OFF to ON. However, if the input of grip warmer down side switch (Grip warmer down side switch: from OFF to ON) changed before the operation as mentioned above is finished, stop the driving operation and start the operation newly. Light the engine warning lamp while the grip warmer down side switch is turned ON. When it is moved to other code, the operation as mentioned above should be stopped immediately. The operation mentioned above is repeated every time the grip warmer down side switch is changed from OFF to ON.	—
27	Thumb warmer drive	Drive the grip warmer when 1 second has passed after the grip warmer down side switch is changed from OFF to ON. However, if the input of grip warmer down side switch (Grip warmer down side switch: from OFF to ON) changed before the operation as mentioned above is finished, stop the driving operation and start the operation newly. Light the engine warning lamp while the grip warmer down side switch is turned ON. When it is moved to other code, the operation as mentioned above should be stopped immediately. The operation mentioned above is repeated every time the grip warmer down side switch is changed from OFF to ON.	—

FUEL INJECTION SYSTEM

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Diagnostic code	Item	Description of action	Data displayed on meter (reference value)
29	Suspension for the adjustment of damping force	The following connection judgment result is transmitted to the meter. When the connection judgment is "Connected": H'00 When the connection judgment is "Not connected": H'F0 The following item is performed only when the connection judgment is "Connected". Set ECS to Hard when 1 second has passed after the grip warmer down side switch is changed from OFF to ON. (Pattern 1): Set ECS to Soft when 5000 ms has passed after the power is supplied. (Pattern 2): Turn ECS OFF when 5000 ms has passed after the power is supplied. However, if the switch input (Grip warmer down side switch: from OFF to ON) changed before the operation as mentioned above is finished, stop the driving operation and start the operation newly. Light the engine warning lamp while the condition (Pattern 1) as mentioned above is turned ON. Blink the engine warning lamp while the condition (Pattern 2) as mentioned above is turned ON. (Period: 1 s, Duty: 50%) When it is moved to other code, the operation as mentioned above should be stopped immediately. The operation mentioned above is repeated every time the grip warmer down side switch is changed from OFF to ON.	–
30	Ignition coil #1	After the engine stop switch has been turned from OFF to ON, it actuates ignition coil #1 for five times every second and illuminates the engine trouble warning light. * Connect an ignition checker. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check that spark is generated, 5 times with the engine stop switch ON.
31	Ignition coils #2	After the engine stop switch has been turned from OFF to ON, it actuates ignition coil #2 for five times every second and illuminates the engine trouble warning light. * Connect an ignition checker. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check that spark is generated, 5 times with the engine stop switch ON.
32	Ignition coil #3	After the engine stop switch has been turned from OFF to ON, it actuates ignition coil #3 for five times every second and illuminates the engine trouble warning light. * Connect an ignition checker. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check that spark is generated, 5 times with the engine stop switch ON.
33	Ignition coil #4	After the engine stop switch has been turned from OFF to ON, it actuates ignition coil #4 for five times every second and illuminates the engine trouble warning light. * Connect an ignition checker. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check that spark is generated, 5 times with the engine stop switch ON.
36	Injector #1	After the engine stop switch has been turned from OFF to ON, it actuates the injector #1 five times every second and illuminates the engine trouble warning light. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check the operating sound of the injector five times with engine stop switch ON.
37	Injector #2	After the engine stop switch has been turned from OFF to ON, it actuates the injector #2 five times every second and illuminates the engine trouble warning light. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check the operating sound of the injector five times with engine stop switch ON.
38	Injector #3	After the engine stop switch has been turned from OFF to ON, it actuates the injector #3 five times every second and illuminates the engine trouble warning light. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check the operating sound of the injector five times with engine stop switch ON.
39	Injector #4	After the engine stop switch has been turned from OFF to ON, it actuates the injector #4 five times every second and illuminates the engine trouble warning light. * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check the operating sound of the injector five times with engine stop switch ON.

FUEL INJECTION SYSTEM

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Diagnostic code	Item	Description of action	Data displayed on meter (reference value)
50	Fuel injection system relay	After the engine stop switch has been turned from OFF to ON, it actuates the fuel injection system relay five times every second and illuminates the engine trouble warning light (the light is OFF when the relay is ON, and the light is ON when the relay is OFF). * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check the fuel injection system relay operating sound 5 times with the engine stop switch ON.
51	Radiator fan motor relay	After the engine stop switch has been turned from OFF to ON, it actuates the radiator fan motor relay five times every 5 seconds and illuminates the engine trouble warning light. (ON 2 seconds, OFF 3 seconds) * If the grip warmer adjustment down side switch is ON, turn it OFF once, and then turn it back ON.	Check the radiator fan motor relay operating sound 5 times with the engine stop switch ON. (At that time, the fan motor rotates.)
52	Headlight relay 1	After the engine stop switch has been turned from OFF to ON, it actuates the headlight relay five times every 5 seconds and illuminates the engine trouble warning light. (ON 2 seconds, OFF 3 seconds) * If the engine stop switch is ON, turn it OFF once, and then turn it back ON.	Check the headlight relay operating sound 5 times with the engine stop switch ON. (At that time, the headlight turns ON.)
58	Odometer	Odometer is displayed on the meter.	—
60	EEPROM fault code display	- Transmits the abnormal portion of the data in the E2PROM that has been detected as a self-diagnostic fault code 44. - If multiple malfunctions have been detected, different codes are displayed at 2-second intervals, and this process is repeated.	(01 ~ 04) Displays the cylinder number. (00) Displays when there is no malfunction.
61	Malfunction history code display	- Displays the codes of the history of the self-diagnosis malfunctions (i.e., a code of a malfunction that occurred once and which has been corrected). - If multiple malfunctions have been detected, different codes are displayed at 2-second intervals, and this process is repeated.	11 ~ 85 (00) Displays when there is no malfunction.
62	Malfunction history code erasure	- Displays the total number of codes that are being detected through self diagnosis and the fault codes in the past history. - Erases only the history codes when the engine stop switch is turned from OFF to ON. If the engine stop switch is ON, turn it OFF once, and then turn it back ON.	00 ~ 27 (00) Displays when there is no malfunction.
70	Control number	Displays the program control number.	00 ~ 255



TROUBLESHOOTING DETAILS

This section describes the measures per fault code number displayed on the meter. Carry out check and maintenance on items or components that could be a cause of malfunction in accordance with the order.

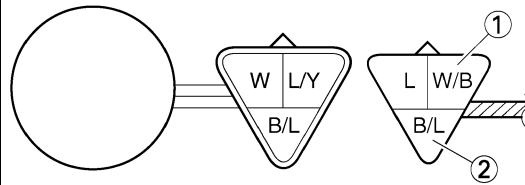
When the check and maintenance of malfunctioned part is completed, restore the meter display according to the "Restore method".

Fault code No.:

Fault code number displayed on the meter when the engine failed to work normally. (Refer to "Diagnostic fault code table".)

Diagnostic code No.:

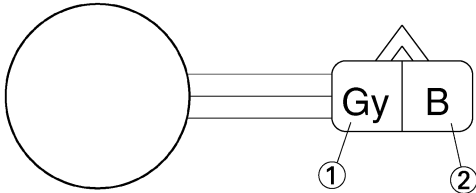
Code number to be used when the diagnostic monitoring mode is operated. (Refer to "DIAGNOSTIC MODE".)

Fault code No.	11	Symptom	No normal signals are received from the cylinder identification sensor.	
Used diagnostic code No. --				
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method	
1	Installed condition of sensor	Check the installed area for looseness or pinching.	Reinstated by starting the engine and operating it at idle.	
2	Connected condition of connector Inspect 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 it securely. Cylinder identification sensor coupler Main wiring harness ECU coupler Sub-wire harness coupler		
3	Open or short circuit in wiring harness and/or sub lead.	Repair or replace if there is an open or short circuit. Between sensor coupler and ECU coupler Blue – Blue White/Black – White/Black Black/Blue – Black/Blue		
4	Defective cylinder identification sensor.	Replace if defective. 1. Connect the pocket tester (DC 20 V) to the cylinder identification sensor coupler terminal as shown. Tester positive probe → white/black ① Tester negative probe → black/blue ②  2. Set the main switch to "ON". 3. Measure the cylinder identification sensor output voltage.  Cylinder identification sensor output voltage When sensor is on 4.8 V or more When sensor is off 0.8 V or less 4. Is the cylinder identification sensor OK?		

FUEL INJECTION SYSTEM

FI

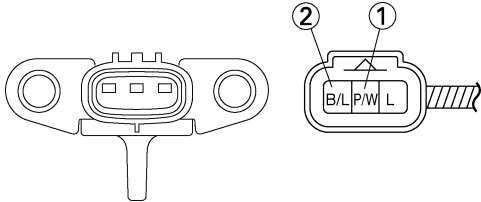


Fault code No.	12	Symptom	No normal signals are received from the crankshaft position sensor.	
Used diagnostic code No. --				
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method	
1	Installed condition of sensor	Check the installed area for looseness or pinching.	Reinstated by cranking the engine.	
2	Connected condition of connector Inspect 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 it securely. Crankshaft position sensor coupler Main wiring harness ECU coupler		
3	Open or short circuit in wiring harness.	Repair or replace if there is an open or short circuit between the main wiring harnesses. Between sensor coupler and ECU coupler Gray – Gray Black/Blue – Black/Blue		
4	Defective crankshaft position sensor.	Replace if defective. 1. Disconnect the crankshaft position sensor coupler from the wire harness. 2. Connect the pocket tester ($\Omega \times 100$) to the crankshaft position sensor coupler as shown. Tester positive probe → gray ① Tester negative probe → black ②  3. Measure the crankshaft position sensor resistance.  Crankshaft position sensor resistance 445 ~ 545 Ω at 20°C (68°F) (between gray and black) 4. Is the crankshaft position sensor OK?		

FUEL INJECTION SYSTEM

FI



Fault code No.	13	Symptom	Intake air pressure sensor – open or short circuit detected.	
Used diagnostic code No. 03 (intake air pressure sensor)				
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method	
1	Connected condition of connector Inspect 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 it securely. Intake air pressure sensor coupler Main wiring harness ECU coupler Sub-wire harness coupler	Reinstated by turning the main switch ON.	
2	Open or short circuit in wiring harness and/or sub lead.	Repair or replace if there is an open or short circuit. Between sensor coupler and ECU coupler Black/Blue – Black/Blue Pink/White – Pink/White Blue – Blue		
3	Defective intake air pressure sensor	Execute the diagnostic monitoring mode (Code No.03). Replace if defective. 1. Connect the pocket tester (DC 20 V) to the intake air pressure sensor coupler terminal as shown. Tester positive probe → pink/white ① Tester negative probe → black/blue ②  2. Set the main switch to “ON”. 3. Measure the intake air pressure sensor output voltage.  Intake air pressure sensor output voltage 4.75 ~ 5.25 V 4. Is the intake air pressure sensor OK?		

FUEL INJECTION SYSTEM

FI



Fault code No.	14	Symptom	Intake air pressure sensor – hose system malfunction (clogged or detached hose).	
Used diagnostic code No. 03 (intake air pressure sensor)				
Order	Inspection operation item and probable cause		Operation item and countermeasure	Reinstatement method
1	Intake air pressure sensor hose detached, clogged, kinked, or pinched. Intake air pressure sensor malfunction at intermediate electrical potential.		Repair or replace the sensor hose. Inspect and repair the connection.	Reinstated by starting the engine and operating it at idle.
2	Connected condition of connector Intake air pressure sensor coupler Main wiring harness ECU coupler		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 it securely.	
3	Defective intake air pressure sensor.		Execute the diagnostic mode (Code No.03). Replace if defective. Refer to “Fault code No. 13”.	

Fault code No.	15	Symptom	Throttle position sensor – open or short circuit detected.		
Used diagnostic code No. 01 (throttle position sensor)					
Order	Inspection operation item and probable cause		Operation item and countermeasure		Reinstatement method
1	Installed condition of throttle position sensor.		Check the installed area for looseness or pinching. Check that it is installed in the specified position. Refer to “THROTTLE BODIES” section.		Reinstated by turning the main switch ON.
2	Connected condition of connector Inspect 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 it securely. Throttle position sensor coupler Main wiring harness ECU coupler Sub-wire harness coupler		
3	Open or short circuit in wiring harness and/or sub lead.		Repair or replace if there is an open or short circuit. Between sensor coupler and ECU coupler Black/Blue – Black/Blue Yellow – Yellow Blue – Blue		
4	Throttle position sensor lead wire open circuit output voltage check.		Check for open circuit and replace the throttle position sensor. Black/Blue – Yellow		
			Open circuit item	Output voltage	
			Ground wire open circuit	5 V	
			Output wire open circuit	0 V	
			Power supply wire open circuit	0 V	
5	Defective throttle position sensor.		Execute the diagnostic mode (Code No.01). Replace if defective. Refer to “THROTTLE BODIES” section.		

FUEL INJECTION SYSTEM

FI

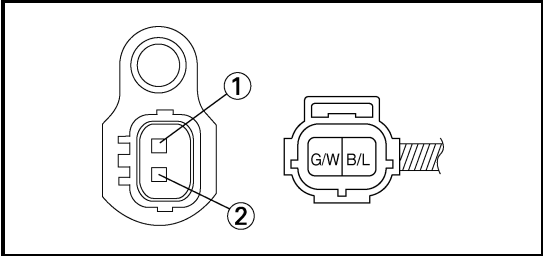


Fault code No.	16	Symptom	Stuck throttle position sensor detected.	
Used diagnostic code No. 01 (throttle position sensor)				
Order	Inspection operation item and probable cause		Operation item and countermeasure	Reinstatement method
1	When detecting fault code No.15.		Refer to “Fault code No.15”.	Reinstated by starting the engine, operating it at idle, and then racing it.
2	Installed condition of throttle position sensor.		Check the installed area for looseness or pinching. Check that it is installed in the specified position. Refer to “THROTTLE BODIES” section.	
3	Defective throttle position sensor		Execute the diagnostic mode (Code No.01). Replace if defective. Refer to “THROTTLE BODIES” section.	

Fault code No.	20	Symptom	Defective values are detected due to the internal malfunction of the intake air pressure sensor or the atmospheric pressure sensor.	
Used diagnostic code No. 02 (atmospheric pressure sensor) → 1 03 (intake air pressure sensor) → 2				
Order	Inspection operation item and probable cause		Operation item and countermeasure	Reinstatement method
1	Defective atmospheric pressure sensor		Execute the diagnostic mode (Code No.02). Replace if defective. Refer to “Fault code No.23”.	Reinstated by turning the main switch ON.
2	Defective intake air pressure sensor		Execute the diagnostic mode (Code No.03). Replace if defective. Refer to “Fault code No.13”.	

Fault code No.	21	Symptom	Open or short circuit is detected from the coolant temperature sensor.	
Used diagnostic code No. 06 (coolant temperature sensor)				
Order	Inspection operation item and probable cause		Operation item and countermeasure	Reinstatement method
1	Connected condition of connector Inspect 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 it securely. Coolant temperature sensor coupler Main wiring harness ECU coupler Sub-wire harness coupler	Reinstated by turning the main switch ON.
2	Open or short circuit in wiring harness and/or sub lead.		Repair or replace if there is an open or short circuit. Between sensor coupler and ECU coupler Black/Blue – Black/Blue Green/White – Green/White	
3	Defective coolant temperature sensor.		Execute the diagnostic mode (Code No.06). Replace if defective. Refer to “COOLING SYSTEM” in CHAPTER 8.	

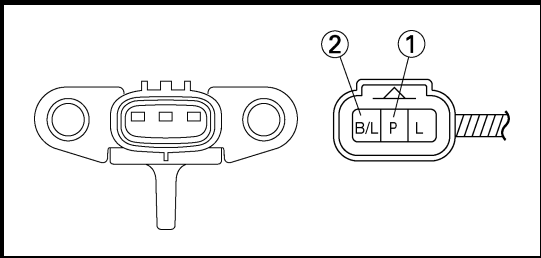


Fault code No.	22	Symptom	Open or short circuit detected from the intake temperature sensor.	
Used diagnostic code No. 05 (intake temperature sensor)				
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method	
1	Connected condition of connector Inspect 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 it securely. Intake temperature sensor coupler Main wiring harness ECU coupler Sub-wire harness coupler	Reinstated by turning the main switch ON.	
2	Open or short circuit in wiring harness and/or sub lead.	Repair or replace if there is an open or short circuit. Between sensor coupler and ECU coupler Black/Blue – Black/Blue Green/White – Green/White		
3	Defective intake temperature sensor.	Execute the diagnostic mode (Code No.05). Replace if defective. 1. Remove the intake air temperature sensor from the air filter case. 2. Connect the pocket tester ($\Omega \times 100$) to the intake air temperature sensor terminal as shown. Tester positive probe → green/white ① Tester negative probe → black/blue ②  3. Measure the intake air temperature sensor resistance.  Intake air temperature sensor resistance 2.21 ~ 2.69 kΩ at 20°C (68°F) ⚠ WARNING • Handle the intake air temperature sensor with special care. • Never subject the intake air temperature sensor to strong shocks. If the intake air temperature sensor is dropped, replace it. 4. Is the intake air temperature sensor OK?		

FUEL INJECTION SYSTEM

FI



Fault code No.	23	Symptom	Open or short circuit detected from the atmospheric pressure sensor.	
Used diagnostic code No. 02 (atmospheric pressure sensor)				
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method	
1	Connected condition of connector Inspect 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 it securely. Atmospheric pressure sensor coupler Main wiring harness ECU coupler	Reinstated by turning the main switch ON.	
2	Open or short circuit in wiring harness.	Repair or replace if there is an open or short circuit. Between sensor coupler and ECU coupler Blue – Blue Black/Blue – Black/Blue Pink – Pink		
3	Defective atmospheric pressure sensor.	Execute the diagnostic mode (Code No.02). Replace if defective. 1. Connect the pocket tester (DC 20 V) to the atmospheric pressure sensor coupler terminal as shown. Tester positive probe → pink ① Tester negative probe → black/blue ②  2. Set the main switch to “ON”. 3. Measure the atmospheric pressure sensor output voltage.  Atmospheric pressure sensor output voltage 4.75 ~ 5.25 V 4. Is the atmospheric pressure sensor OK?		

FUEL INJECTION SYSTEM

FI



Fault code No.	30	Symptom	Oil pressure dropped.
Used diagnostic code No. – –			
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method
1	Oil pressure dropped	Keep the snow mobile horizontal and then measure the oil pressure after the sufficient warm-up, and check that the value is 25 kpa or more.	
2	Oil pressure switch lead-short circuit detected.	It measures between engine earths from the oil pressure switch connector (Yellow/Green) with the circuit tester. NOTE: _____ Disconnect is ECU coupler.	
3	Defective oil pressure switch	After 1 minute has passed since the engine start, measure the resistance between the oil pressure switch and switch body with a circuit tester, and it will be OK if the result showed ∞ .	

Fault code No.	33	Symptom	Malfunction detected in the primary lead of the ignition coil (#1).
Used diagnostic code No. 30 (ignition coil #1)			
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method
1	Connected condition of connector Inspect 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 it securely. Ignition coil primary side coupler – Orange Main wiring harness ECU coupler	Reinstated by starting the engine and operating it at idle.
2	Open or short circuit in lead.	Repair or replace if there is an open or short circuit. Between ignition coil coupler (#1) and ECU coupler/main harness Orange – Orange Red/White – Red/White	
3	Detective ignition coil (test the primary and secondary coils for continuity).	Execute the diagnostic mode (Code No.30). Replace if defective. Refer to “IGNITION SYSTEM” in CHAPTER 8.	

Fault code No.	34	Symptom	Malfunction detected in the primary lead of the ignition coil (#2).
Used diagnostic code No. 31 (ignition coil #2)			
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method
1	Connected condition of connector Inspect 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 it securely. Ignition coil primary side coupler – Gray/Red Main wiring harness ECU coupler	Reinstated by starting the engine and operating it at idle.
2	Open or short circuit in lead wire.	Repair or replace if there is an open or short circuit. Between ignition coil coupler (#2) and ECU coupler/main harness Gray/Red – Gray/Red Red/White – Red/White	
3	Defective ignition coil (test the primary and secondary coils for continuity).	Execute the diagnostic mode (Code No.31). Replace if defective. Refer to “IGNITION SYSTEM” in CHAPTER 8.	

FUEL INJECTION SYSTEM

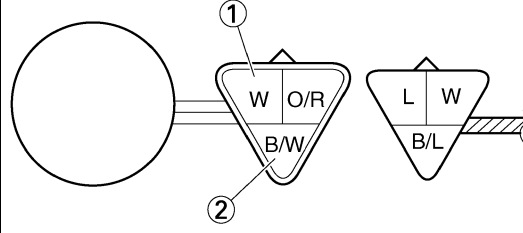
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Fault code No.	35	Symptom	Malfunction detected in the primary lead of the ignition coil (#3).	
Used diagnostic code No. 32 (ignition coil #3)				
Order	Inspection operation item and probable cause	Operation item and countermeasure		Reinstatement method
1	Connected condition of connector Inspect 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 it securely. Ignition coil primary side coupler – Orange/ Green Main wiring harness ECU coupler		Reinstated by starting the engine and operating it at idle.
2	Open or short circuit in lead wire.	Repair or replace if there is an open or short circuit. Between ignition coil coupler (#3) and ECU coupler/main harness Orange/Green – Orange/Green Red/White – Red/White		
3	Defective ignition coil (test the primary and secondary coils for continuity).	Execute the diagnostic mode (Code No.32). Replace if defective. Refer to "IGNITION SYSTEM" in CHAPTER 8.		

Fault code No.	36	Symptom	Malfunction detected in the primary lead of the ignition coil (#4).	
Used diagnostic code No. 33 (ignition coil #4)				
Order	Inspection operation item and probable cause		Operation item and countermeasure	Reinstatement method
1	Connected state of connector Inspect 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 it securely. Ignition coil primary side coupler – Green Main wiring harness ECU coupler	Reinstated by starting the engine and operating it at idle.
2	Open or short circuit in lead wire.		Repair or replace if there is an open or short circuit. Between ignition coil coupler (#4) and ECU coupler/main harness Green – Green Red/White – Red/White	
3	Defective ignition coil (test the primary and secondary coils for continuity).		Execute the diagnostic mode (Code No.33). Replace if defective. Refer to “IGNITION SYSTEM” in CHAPTER 8.	

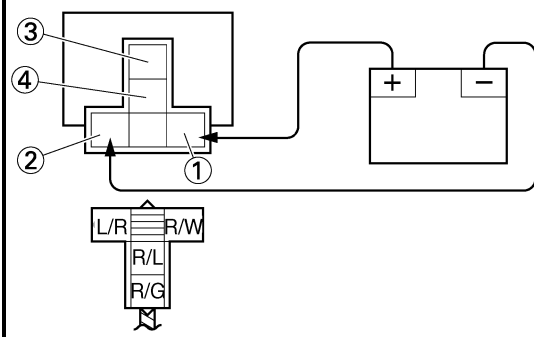


Fault code No.	42	Symptom	1 No normal signals are received from the speed sensor.	
Used diagnostic code No. 07 (speed sensor) → A1 ~ A4				
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method	
A1	Connected condition of speed sensor connector Inspect 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 it securely. Speed sensor coupler Main wiring harness ECU coupler	Reinstated by starting the engine, and inputting the vehicle speed signals by operating the snowmobile at a low speed of 20 to 30 km/h.	
A2	Open or short circuit in speed sensor lead.	Repair or replace if there is an open or short circuit. Between sensor coupler and ECU coupler. Blue – Blue White – White Black/Blue – Black/Blue		
A3	Defective speed sensor	Execute the diagnostic mode (Code No.07). Replace if defective. 1. Measure the speed sensor output voltage. 2. Connect the pocket tester (DC 20 V) to the speed sensor coupler terminal as shown.		
		Tester positive probe → pink ① Tester negative probe → black/white ②   Speed sensor output voltage When sensor is on DC 4.8 V or more When sensor is off DC 0.6 V or less 4. Is the speed sensor OK?		
A4	Gear for detecting vehicle speed has broken.	Replace if defective. Refer to “FRONT AXLE AND TRACK” in CHAPTER 4.		

FUEL INJECTION SYSTEM

FI



Fault code No.	43	Symptom	The ECU is unable to monitor the battery voltage.	
Used diagnostic code No. 09 (fuel system voltage)				
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method	
1	Connected condition of connector Inspect 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 it securely. Starting circuit cut-off relay coupler (fuel injection system relay) ECU coupler	Reinstated by starting the engine and operating it at idle.	
2	Malfunction in ECU	Fuel injection system relay is on.		
3	Open or short circuit in the wiring harness.	Repair or replace if there is an open or short circuit. Between battery terminal and ECU coupler Red/white – Red/white Red – Blue/Red (Main switch and engine stop switch are on.) Red – Red/Blue (Fuel injection system relay is on.)		
4	Malfunction or open circuit in fuel injection system relay	Execute the diagnostic mode (Code No.09). Replace if defective. NOTE: When the leads are disconnected, the voltage check by the code No.09 is impossible. 1. Disconnect the fuel injection system relay from the wire harness. 2. Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the fuel injection system relay terminals as shown. Battery positive terminal → red/white ① Battery positive terminal → blue/red ② Tester positive probe → red/green ③ Tester negative probe → red/blue ④  3. Does the fuel injection system relay have continuity between blue/white and black?		

FUEL INJECTION SYSTEM

FI



Fault code No.	44	Symptom	Error is detected while reading or writing on EEPROM (CO adjustment value).
Used diagnostic code No. 60 (EEP-ROM improper cylinder indication)			
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method
1	Malfunction in ECU	Execute diagnostic code 60 1. Check the faulty cylinder. (If there are multiple cylinders, the number of the faulty cylinders appear alternately at 2-second intervals.) 2. Readjust the CO of the displayed cylinder. Replace ECU if defective.	Reinstated by turning the main switch ON.

Fault code No.	46	Symptom	Power supply to the Fuel injection system relay is not normal.
Used diagnostic code No. --			
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method
1	Connected condition of connector Inspect 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 it securely. ECU coupler.	Reinstated by starting the engine and operating it at idle.
2	Faulty battery	Replace or change the battery Refer to "BATTERY INSPECTION" in chapter 2.	
3	The malfunction of the rectifier/regulator.	Replace if defective. Refer to "CHARGING SYSTEM" in chapter 8.	
4	Open or short circuit in wiring harness.	Repair or replace if there is an open or short circuit. • Between battery and fuse (ignition) Red – Red • Between fuse (ignition) and main switch Red/Yellow – Red/Yellow • Between main switch and load relay Brown – Brown • Between load relay and ECU Brown/Blue – Brown/Blue	

Fault code No.	50	Symptom	Faulty ECU memory. (When this malfunction is detected in the ECU, the fault code number might not appear on the meter.)
Used diagnostic code No. --			
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method
1	Malfunction in ECU	Replace the ECU.	Reinstated by turning the main switch ON.

Fault code No.	80	Symptom	Grip warmer switch-short circuit detected.
Used diagnostic code No. --			
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method
1	Short circuit in wiring harness.	Repair or replace if there is an short circuit. Between switch coupler and switch coupler Orange/White – Chocolate Orange/Blue – Chocolate	Reinstated by turning the main switch ON.

FUEL INJECTION SYSTEM

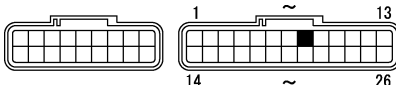
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Fault code No.	81	Symptom	Grip warmer-short circuit detected.	
Used diagnostic code No. 26				
Order	Inspection operation item and probable cause		Operation item and countermeasure	Reinstatement method
1	Short circuit in wiring harness.		Repair or replace if there is an short circuit. Between switch coupler and ECU coupler Orange/White – Orange/White Orange/Blue – Orange/Blue	Reinstated by turning the main switch ON.

Fault code No.	82	Symptom	Thumb warmer switch-short circuit detected.	
Used diagnostic code No. --				
Order	Inspection operation item and probable cause		Operation item and countermeasure	Reinstatement method
1	Short circuit in wiring harness.		Repair or replace if there is an short circuit. Between switch coupler and switch coupler Light green/White – Chocolate Light green/Black – Chocolate	Reinstated by turning the main switch ON.

Fault code No.	83	Symptom	Thumb warmer-short circuit detected.	
Used diagnostic code No. 27				
Order	Inspection operation item and probable cause		Operation item and countermeasure	Reinstatement method
1	Short circuit in wiring harness.		Repair or replace if there is an short circuit. Between switch coupler and ECU coupler Light green/White – Light green/White Light green/Black – Light green/Black	Reinstated by turning the main switch ON.

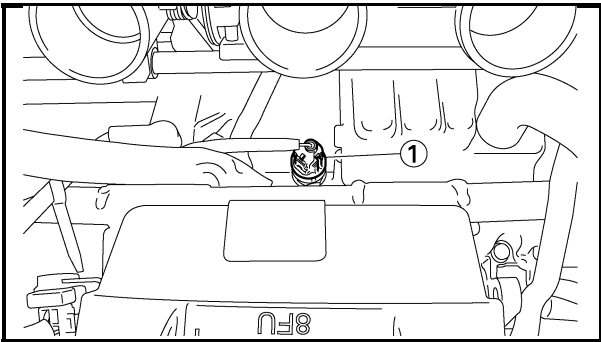
Fault code No.	85	Symptom	Oil pressure switch detected.	
Used diagnostic code No. --				
Order	Inspection operation item and probable cause	Operation item and countermeasure	Reinstatement method	
1	Check the connector and coupler for the pin coming-off from the coupler and locking of the coupler.	If the malfunction is found, repair or connect it.	Reinstated by starting the engine and operating it at idle.	
2	Check the wire harness for its disconnection.	Repair or replace if there is an open circuit. Between wire harness (Yellow/Green) and ECU coupler (No.8 pin) Yellow/Green – Yellow/Green 		
3	Defective oil pressure switch	Without loading the oil pressure, there should be continuity between the oil pressure switch terminals and oil pressure switch body metal components.		

FUEL INJECTION SYSTEM

FI

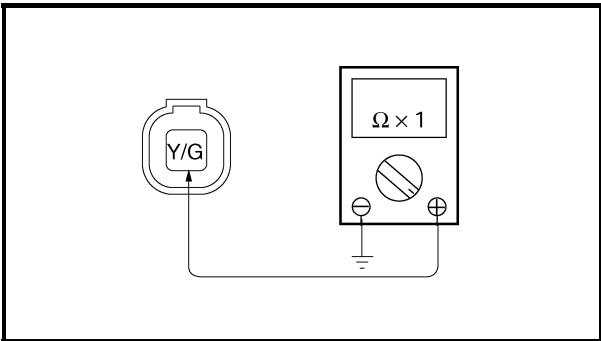


Fault code No.	Er-1	Symptom	No signal are received from the ECU.	
	Er-2	Symptom	No signal are received from the ECU within the specified duration.	
	Er-3	Symptom	Data from the ECU cannot be received correctly.	
	Er-4	Symptom	Non-registered data has been received from the meter.	
Used diagnostic code No. --				
Order	Inspection operation item and probable cause		Operation item and countermeasure	Reinstatement method
1	Connected condition of connector Inspect 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 it securely. Cylinder identification sensor coupler Main wiring harness ECU coupler Sub-wire harness coupler	Reinstated by turning the main switch ON.
2	Open or short circuit in wiring harness and/or sub lead.		Repair or replace if there is an open or short circuit. Between sensor coupler and ECU coupler Yellow/Blue – Yellow/Blue Black/White – Black/White	
3	Malfunction in meter		Replace the meter.	
4	Malfunction in ECU		Replace the ECU.	



OIL PRESSURE SWITCH

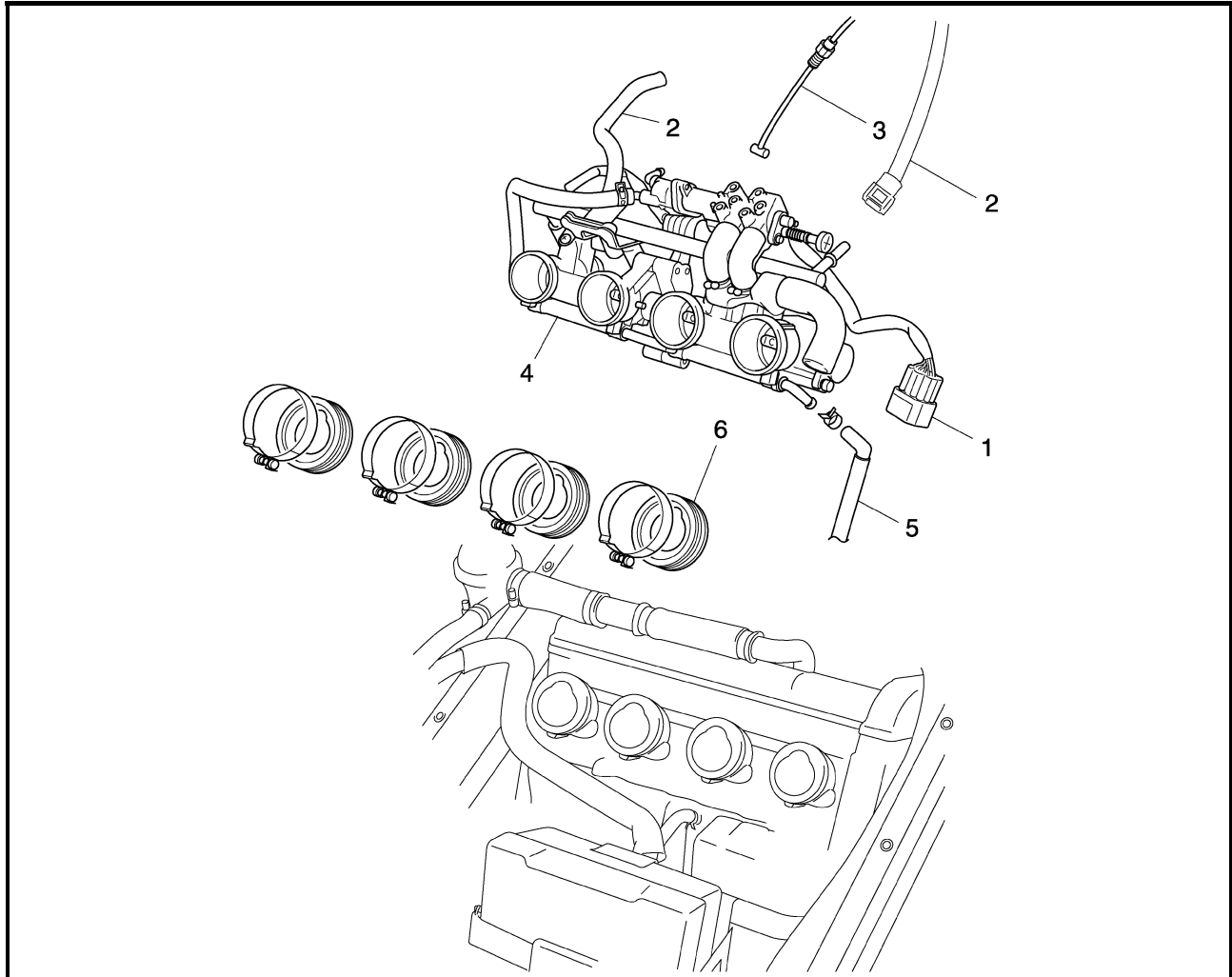
1. Disconnect:
 - Oil pressure switch coupler ①
2. Connect:
 - Pocket tester (to the switch coupler)
3. Inspect:
 - Oil pressure switch continuitySwitch is operated.
Faulty → Replace the oil pressure switch.



Main switch position	Continuity
OFF	Yes



THROTTLE BODIES

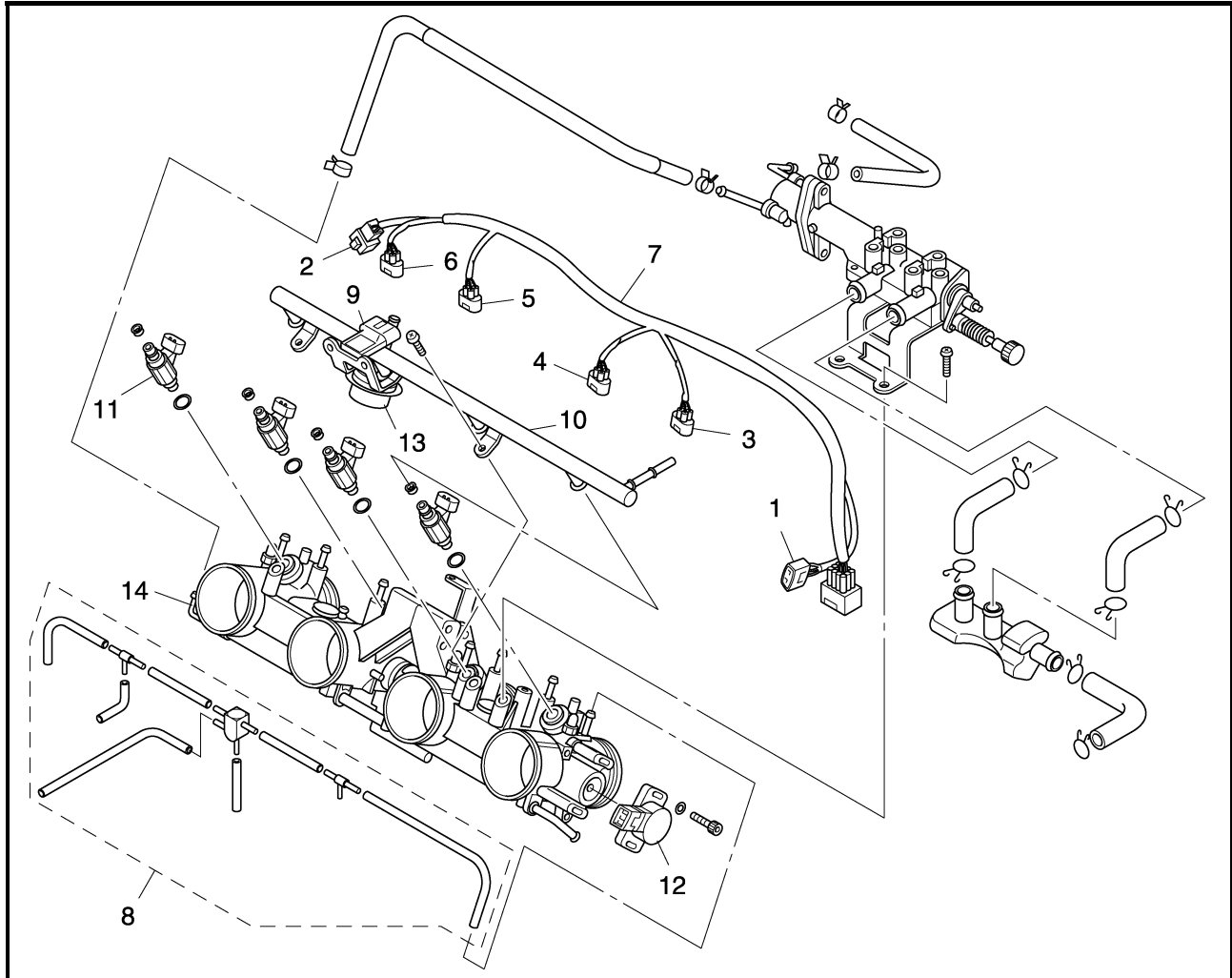


Order	Job/Part	Q'ty	Remarks
	Removing the throttle bodies		Remove the parts in the order listed below.
	Intake silencer		Refer to "COWLINGS" in CHAPTER 3.
	Headlight stay		Refer to "COWLINGS" in CHAPTER 3.
1	Sub wire harness coupler	1	Disconnect.
2	Fuel hose	2	
3	Throttle cable	1	
4	Throttle bodies	1	
5	Throttle body heater hose	1	
6	Throttle body joint	4	
			For installation, reverse the removal procedure.



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INJECTORS



Order	Job/Part	Q'ty	Remarks
	Removing the injectors		Remove the parts in the order listed.
1	Throttle position sensor coupler	1	Disconnect.
2	Intake air pressure sensor coupler	1	Disconnect.
3	Cylinder #4-injector coupler	1	
4	Cylinder #3-injector coupler	1	
5	Cylinder #2-injector coupler	1	
6	Cylinder #1-injector coupler	1	
7	Sub wire harness	1	
8	Negative pressure hose	1	
9	Intake air pressure sensor	1	
10	Fuel distributor	1	
11	Injector	4	
12	Throttle position sensor	1	
13	Fuel pressure regulator	1	
14	Throttle body assembly	1	
			For installation, reverse the removal procedure.



- f. While slowly opening the throttle, check that the throttle position sensor resistance is within the specified range.

The resistance does not change or it changes abruptly → Replace the throttle position sensor.

The slot is worn or broken → Replace the throttle position sensor.

NOTE:

Check mainly that the resistance changes gradually when turning the throttle, since the readings (from closed to wide-open throttle) may differ slightly from those specified.



Throttle position sensor resistance

0 ~ 5 ± 1.5 kΩ at 20°C (68°F)
(yellow – black/blue)



2. Adjust:
- throttle position sensor angle



- Connect the throttle position sensor coupler to the wire harness.
- Connect the digital circuit tester to the throttle position sensor.

Tester positive probe → yellow terminal ①
Tester negative probe → blue terminal ②



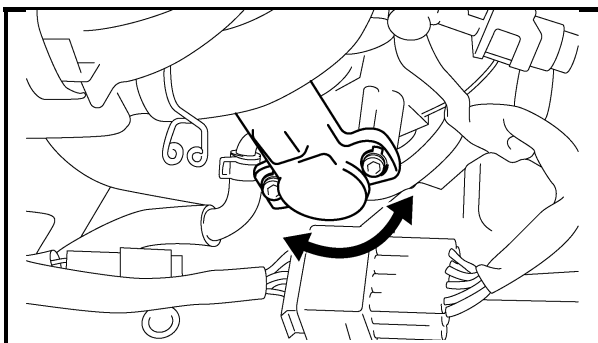
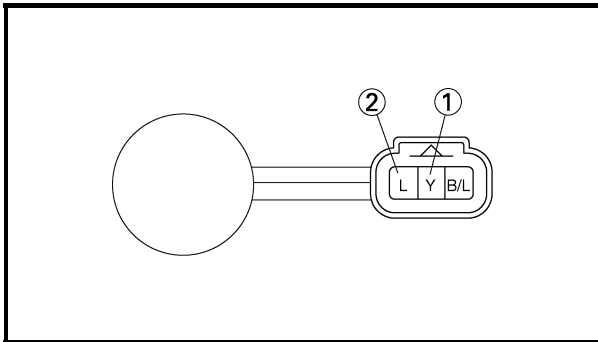
Digital circuit tester 90890-03174

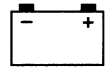
- Measure the throttle position sensor voltage.
- Adjust the throttle position sensor angle so the measured voltage is within the specified range.



Throttle position sensor voltage 0.63 ~ 0.73 V (yellow – black/blue)

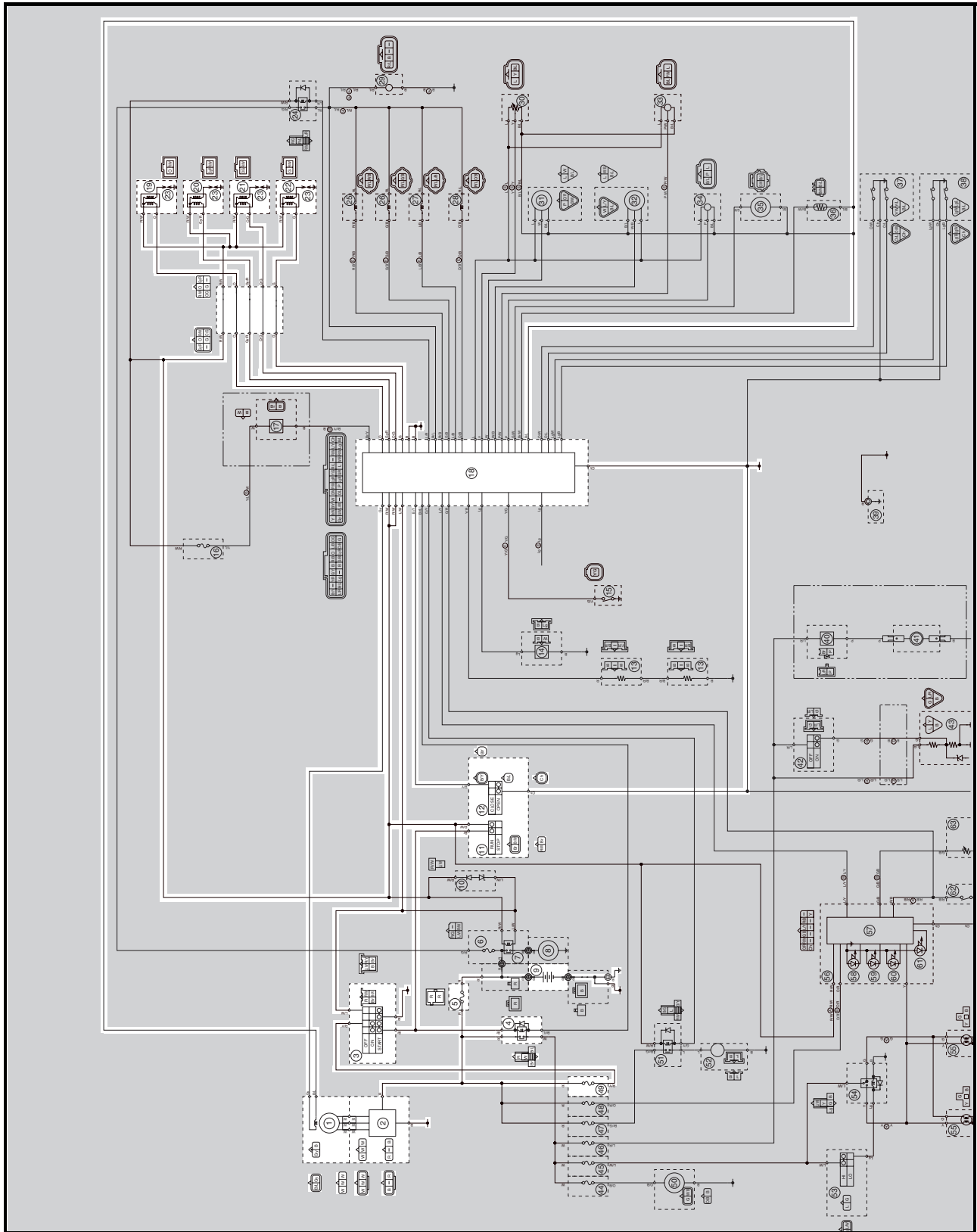
- After adjusting the throttle position sensor angle, tighten the throttle position sensor screws.

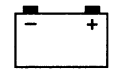




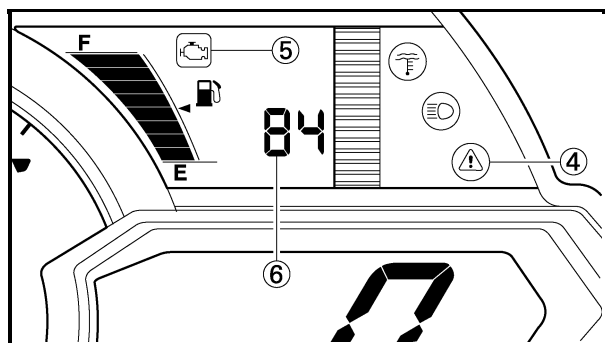
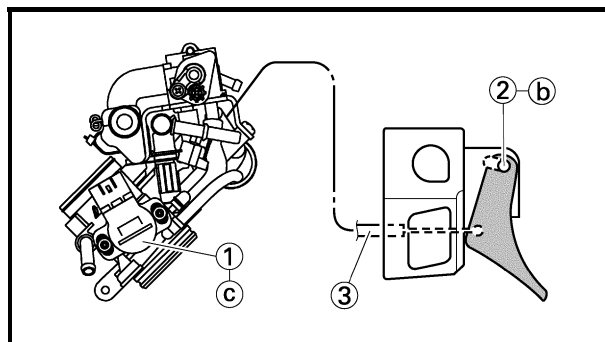
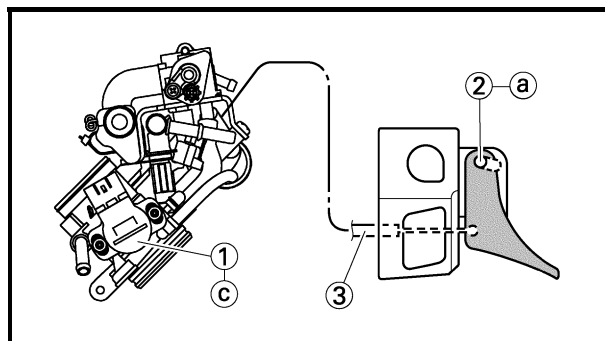
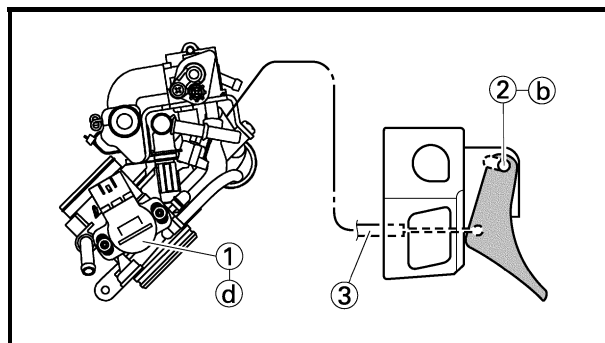
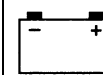
ELECTRICAL

IGNITION SYSTEM CIRCUIT DIAGRAM





- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Load relay
- ⑤ Fuse (MAIN)
- ⑨ Battery
- ⑪ Engine stop switch
- ⑫ Throttle switch
- ⑲ Ignition coil #1
- ⑳ Ignition coil #2
- ㉑ Ignition coil #3
- ㉒ Ignition coil #4
- ㉓ Spark plug
- ㉔ Fuse (IGNITION)



THROTTLE OVERRIDE SYSTEM (T.O.R.S.)

If the carburetor or throttle cable should malfunction during operation, T.O.R.S. will operate when the throttle lever is released.

T.O.R.S. is designed to interrupt the fuel injection and keep the engine revolutions between 2,800 and 3,000 r/min if the throttle body fails to return to idle when the lever is released.

⚠ WARNING

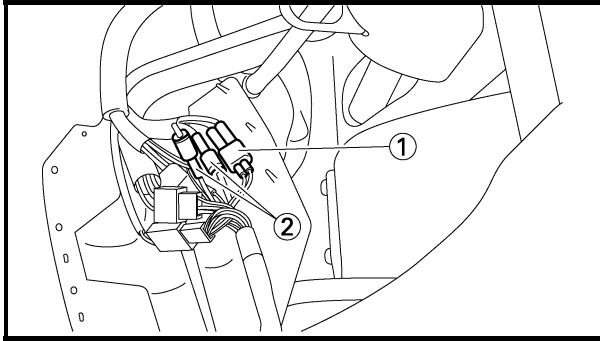
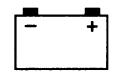
- If the T.O.R.S. is activated, make sure that the cause of the malfunction has been corrected and that the engine can be operated without a problem before restarting the engine.
- Be sure to use the specified spark plug and spark plug cap. Other wise, the T.O.R.S. will not work properly.

Status	A Idling or starting	B Running	C Trouble
Switch			
Throttle switch	OFF	ON	OFF
Throttle position sensor	CLOSED	OPEN	OPEN
Engine	Running	Running	T.O.R.S. will operate

- ① Throttle position sensor (throttle valve position)
- ② Throttle switch
- ③ Throttle cable
- a ON
- b OFF
- c Open
- d Closed

NOTE:

- When the T.O.R.S. is activated, the warning light ④ and self-diagnosis warning indicator ⑤ will flash and the two-digit code "84" ⑥ will flash in the clock display.
- The T.O.R.S. monitors the condition of the throttle position sensor, speedometer assembly, and speed sensor, and will operate if any on the monitored items is disconnected or malfunctioning.



HANDLEBAR SWITCH (RIGHT)

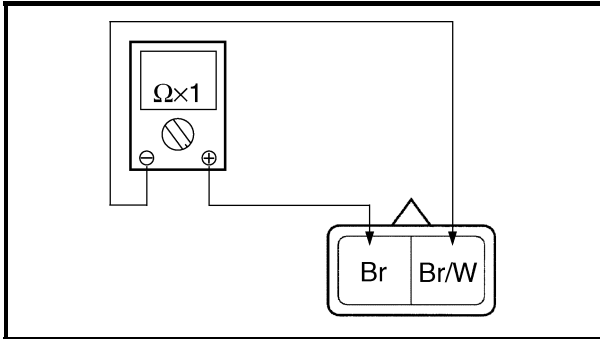
Engine stop switch and throttle switch

1. Disconnect:

- Engine stop switch coupler ①
- Throttle switch coupler ②

2. Connect:

- Pocket tester

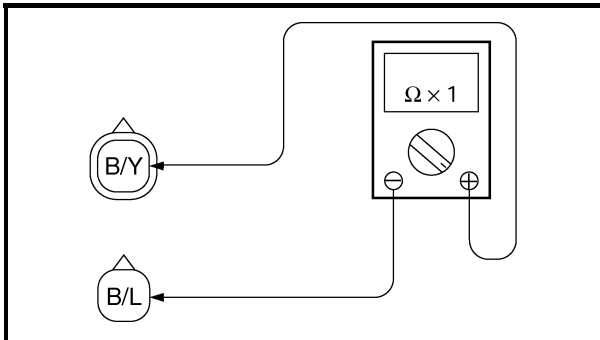


3. Inspect:

- Engine stop switch continuity

Faulty → Replace the handlebar switch (right).

Switch position	Continuity
RUN (pulled out)	Yes
OFF (pushed in)	No

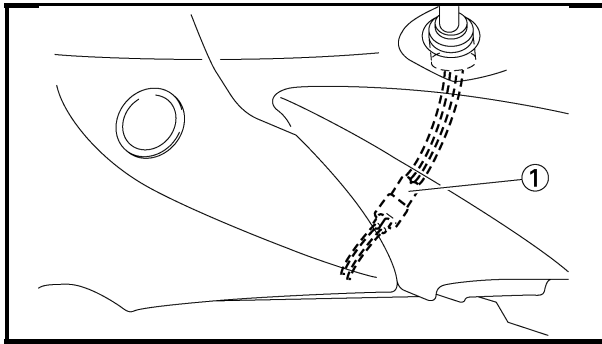
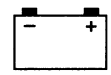


4. Inspect:

- Throttle switch continuity

Faulty → Replace the handlebar switch (right).

Throttle switch position	Continuity
Throttle lever is operated.	Yes
Throttle lever is not operated.	No



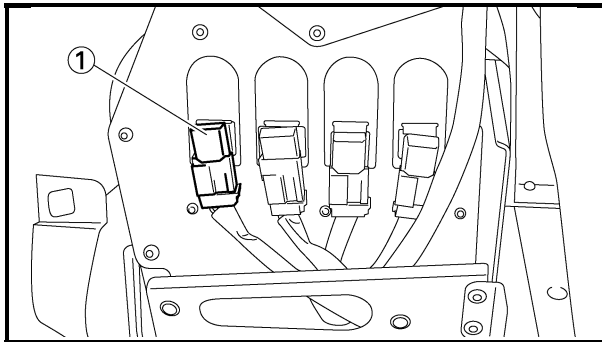
MAIN SWITCH

1. Disconnect:
 - Main switch coupler ①
2. Connect:
 - Pocket tester
3. Inspect:
 - Main switch continuity
 Faulty → Replace.

Switch position	Continuity
OFF	Yes
ON	No

Switch position	Color code			
	R	Br	R/W	Br/W
OFF				
ON	○	○		
START	○	○	○	○

○—○ Continuity



LOAD RELAY

1. Inspect:
 - Load relay ①

Inspection steps:

- Disconnect the load relay from the coupler.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the load relay terminals as shown.

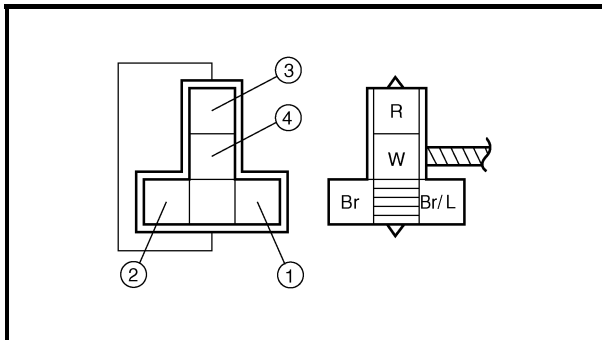
Positive battery terminal → Brown ①

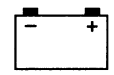
Negative battery terminal → Brown/Blue ②

Positive tester probe → Red ③

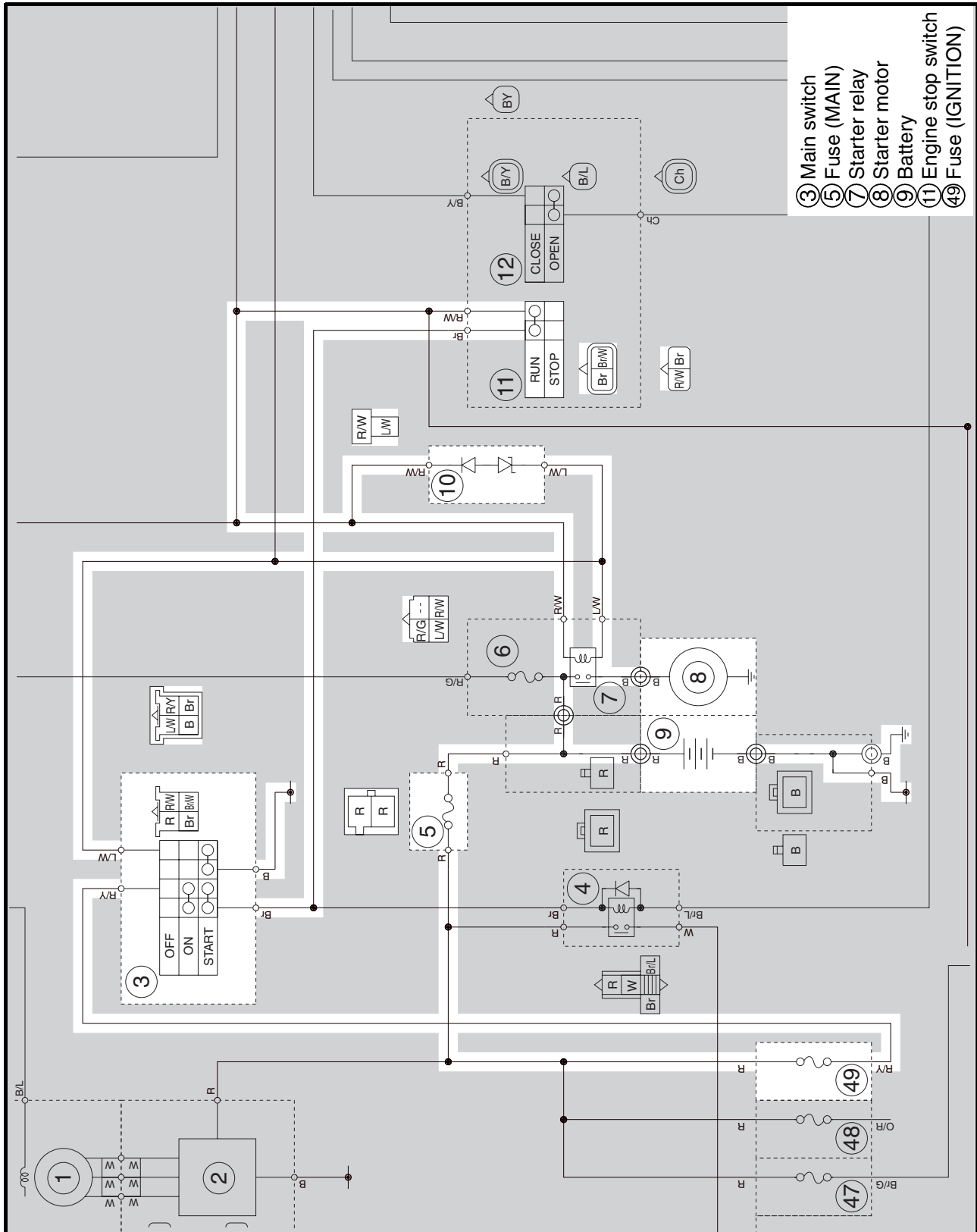
Negative tester probe → White ④

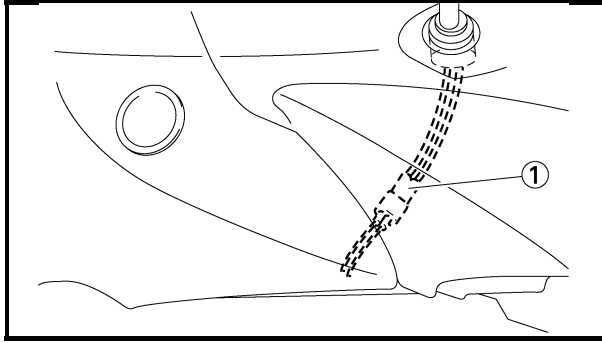
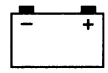
- If load relay does not have continuity between the red and blue terminals, replace it.





ELECTRICAL STARTING SYSTEM CIRCUIT DIAGRAM



**MAIN SWITCH**

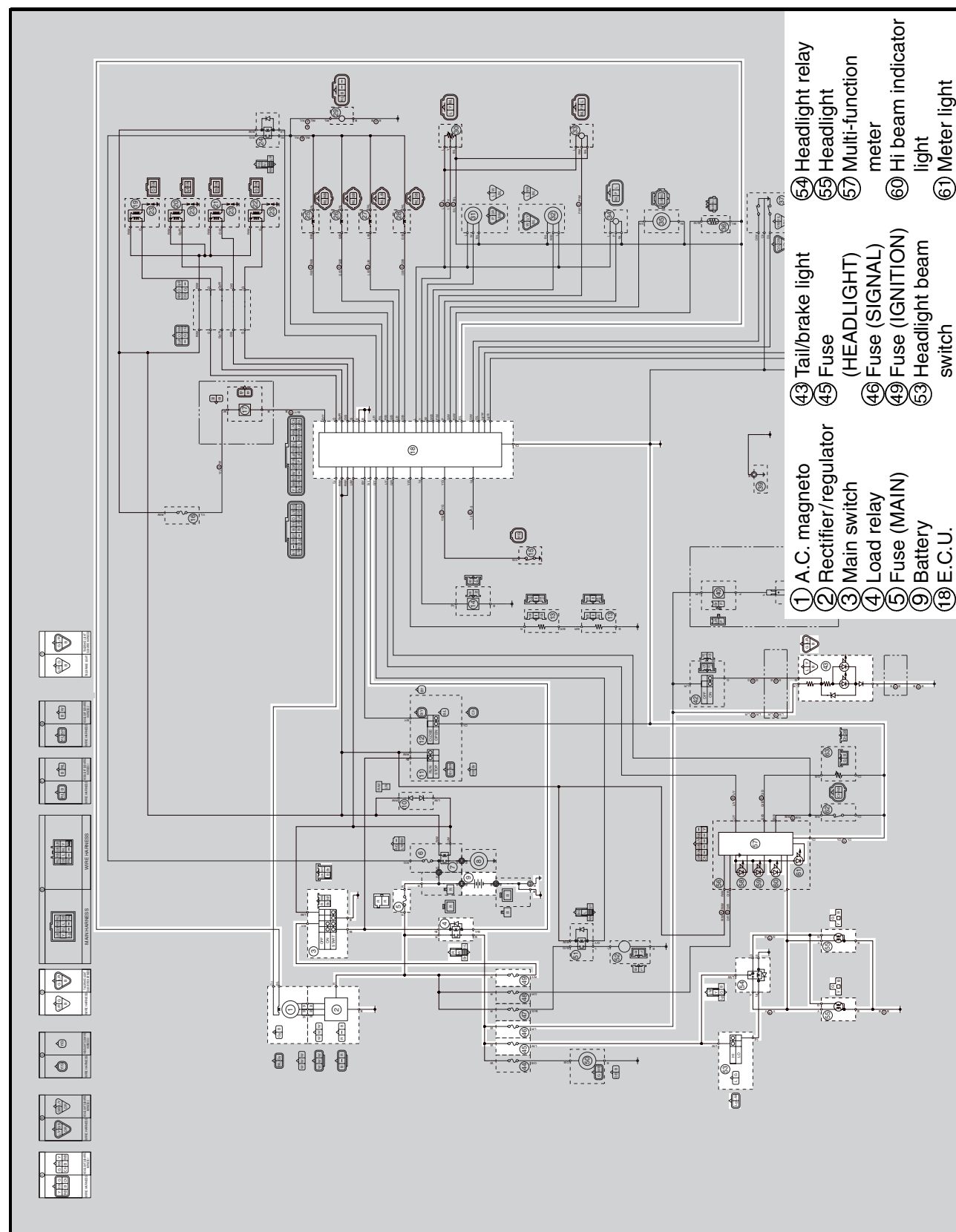
1. Disconnect:
 - Main switch coupler ①
2. Connect:
 - Pocket tester
3. Inspect:
 - Main switch continuity
 Faulty → Replace.

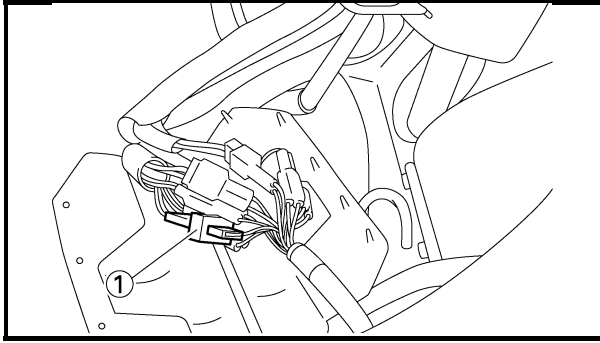
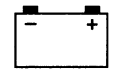
Switch position	Continuity
OFF	Yes
ON	No

Switch position	Color code			
	R	Br	R/W	Br/W
OFF				
ON	○—○	○—○		
START	○—○	○—○	○—○	○—○

○—○ Continuity

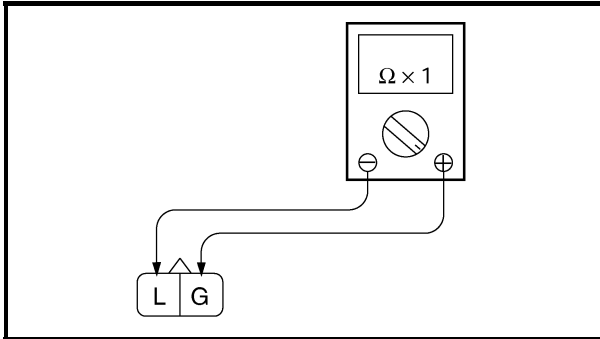
LIGHTING SYSTEM CIRCUIT DIAGRAM





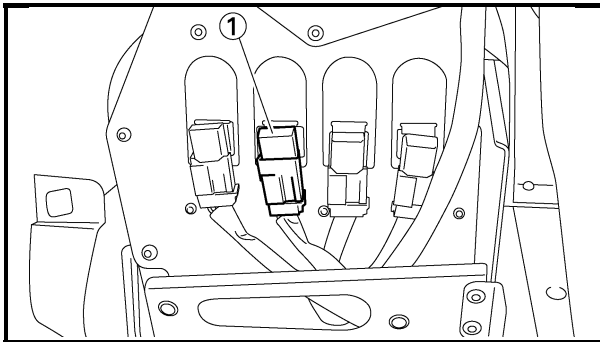
HEADLIGHT BEAM SWITCH

1. Disconnect:
 - Headlight beam switch coupler ①
2. Connect:
 - Pocket tester (to the headlight beam switch coupler)



3. Inspect:
 - Headlight beam switch continuity
Faulty → Replace.

Switch position	Continuity
HI	Yes
LO	No

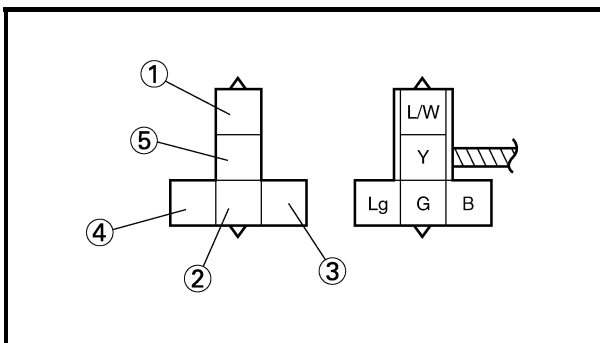


HEADLIGHT RELAY

1. Inspect:
 - Headlight relay (black coupler) ①

Inspection steps:

- Disconnect the headlight relay from the coupler.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the headlight relay terminals as shown.



Low beam

Positive tester probe → Blue/White ①

Negative tester probe → Green ②

High beam

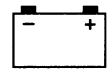
Positive battery terminal → Black ③

Negative battery terminal → Blue/green ④

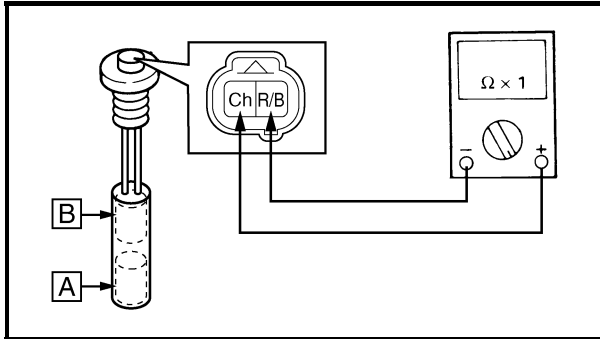
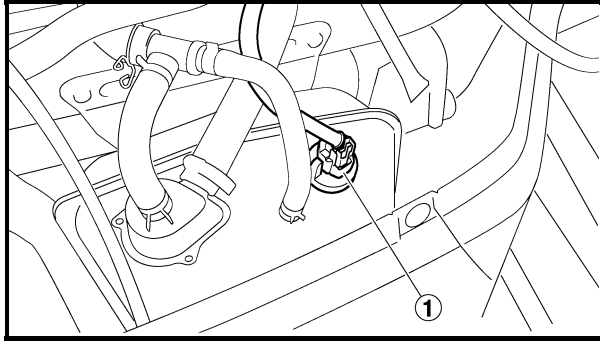
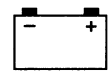
Positive tester probe → Blue/White ①

Negative tester probe → Yellow ⑤

- If headlight relay does not have continuity between the blue/white and yellow terminals, replace it.



- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Load relay
- ⑤ Fuse (MAIN)
- ⑨ Battery
- ⑬ E.C.U.
- ⑰ Speed sensor
- ⑳ Water temperature sensor
- ㉑ Back buzzer
- ㉒ Gear position switch
- ㉓ Brake light switch
- ㉔ Tail/brake light
- ㉕ Fuse (SIGNAL)
- ㉖ Fuse (IGNITION)
- ㉗ Multi-function meter
- ㉘ Warning light
- ㉙ Water temperature indicator light
- ㉚ Oil level switch
- ㉛ Fuel sender



ENGINE OIL LEVEL SWITCH

1. Remove:

- Oil level gauge ①

2. Connect:

- Pocket tester (to the oil level switch coupler)

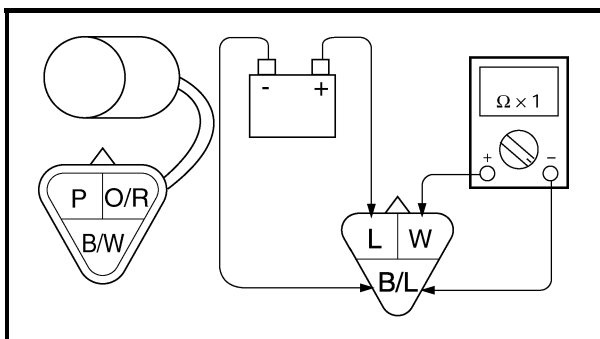
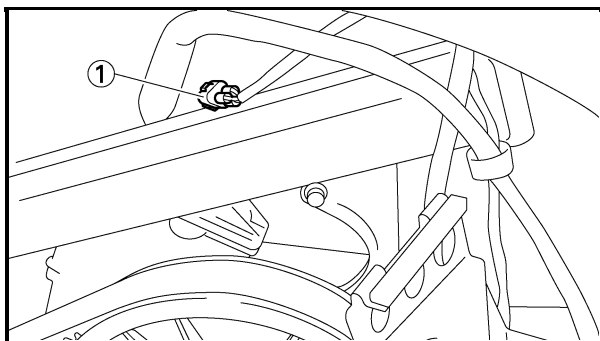
3. Inspect:

- Oil level switch continuity
- Faulty → Replace.

Switch position		Good condition	Bad condition		
A	Down position	○	×	×	○
B	Up position	×	○	×	○

○ : Continuity

×: No continuity



SPEED SENSOR

1. Inspect:

- Speed sensor

Inspection steps:

- Connect the pocket tester (DC 20 V) to the speed sensor coupler ① (wire harness side) as shown.

Positive tester probe → White

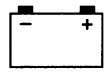
Negative tester probe → Black/Blue

Positive battery terminal → Blue

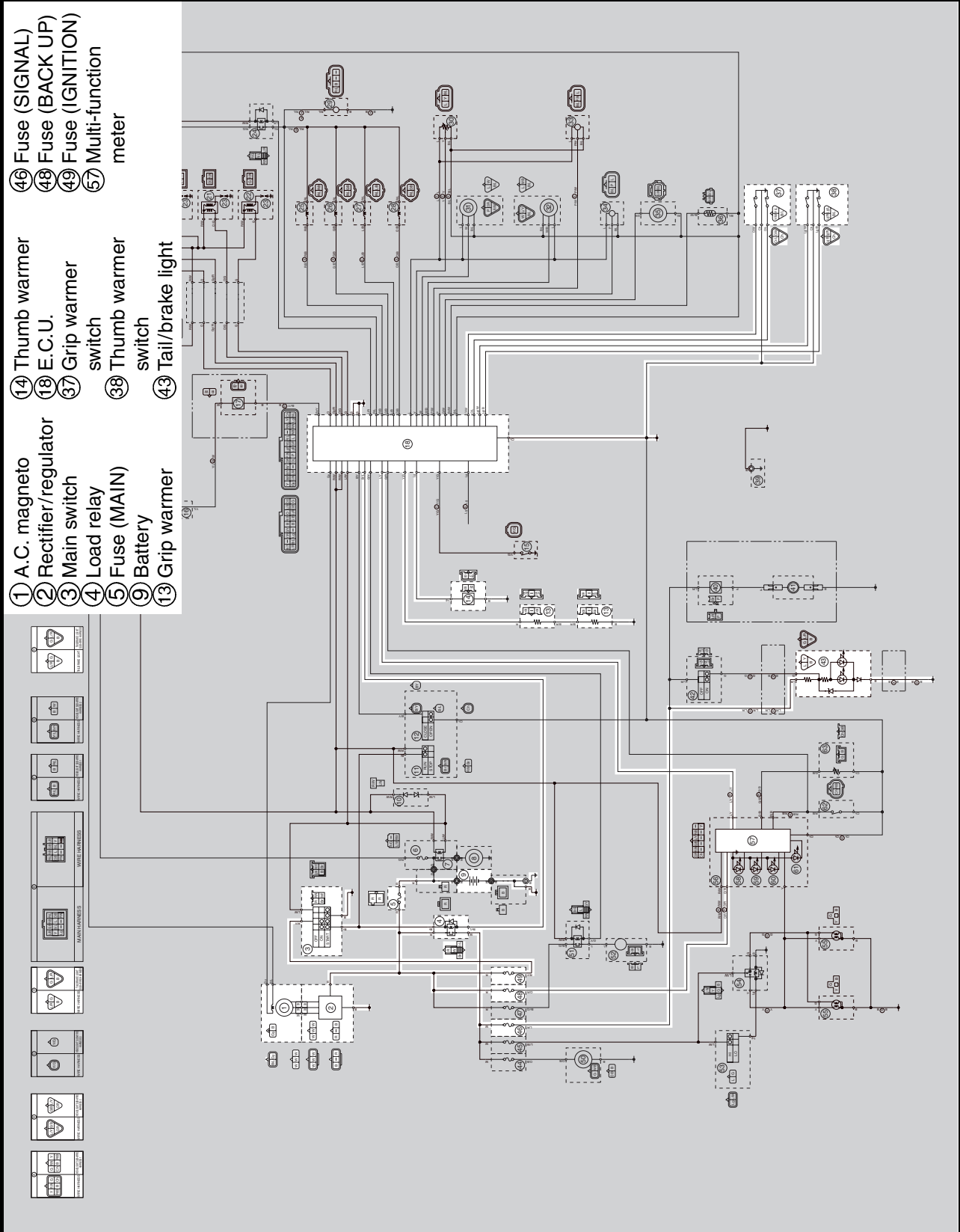
Negative battery terminal → Black/Blue

- Elevate the track and slowly rotate it.
- Measure the voltage (DC 5 V) of white and black/green. With each full rotation of the track the voltage reading should cycle from 0.6 V to 4.8 V to 0.6 V to 4.8 V.

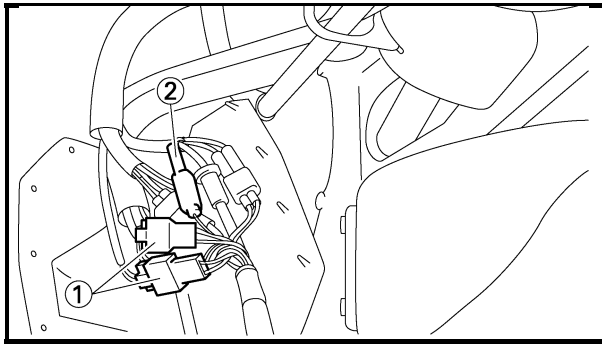
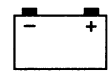
Out of specification → Replace.



GRIP WARMER SYSTEM CIRCUIT DIAGRAM



- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Load relay
- ⑤ Fuse (MAIN)
- ⑨ Battery
- ⑬ Grip warmer
- ⑭ Thumb warmer
- ⑰ E.C.U.
- ⑳ Grip warmer switch
- ㉑ Thumb warmer switch
- ㉒ Tail/brake light
- ④⑥ Fuse (SIGNAL)
- ④⑧ Fuse (BACK UP)
- ④⑨ Fuse (IGNITION)
- ⑤⑦ Multi-function meter



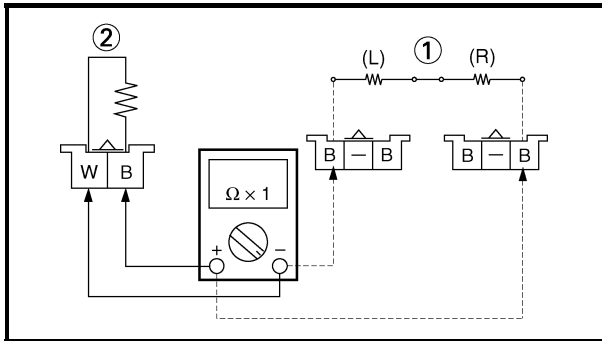
GRIP AND THUMB WARMER COIL

1. Disconnect:

- Grip warmer leads ①
- Thumb warmer coupler ②

2. Connect:

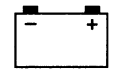
- Pocket tester
(to the grip warmer coil leads and/or thumb warmer coil leads)



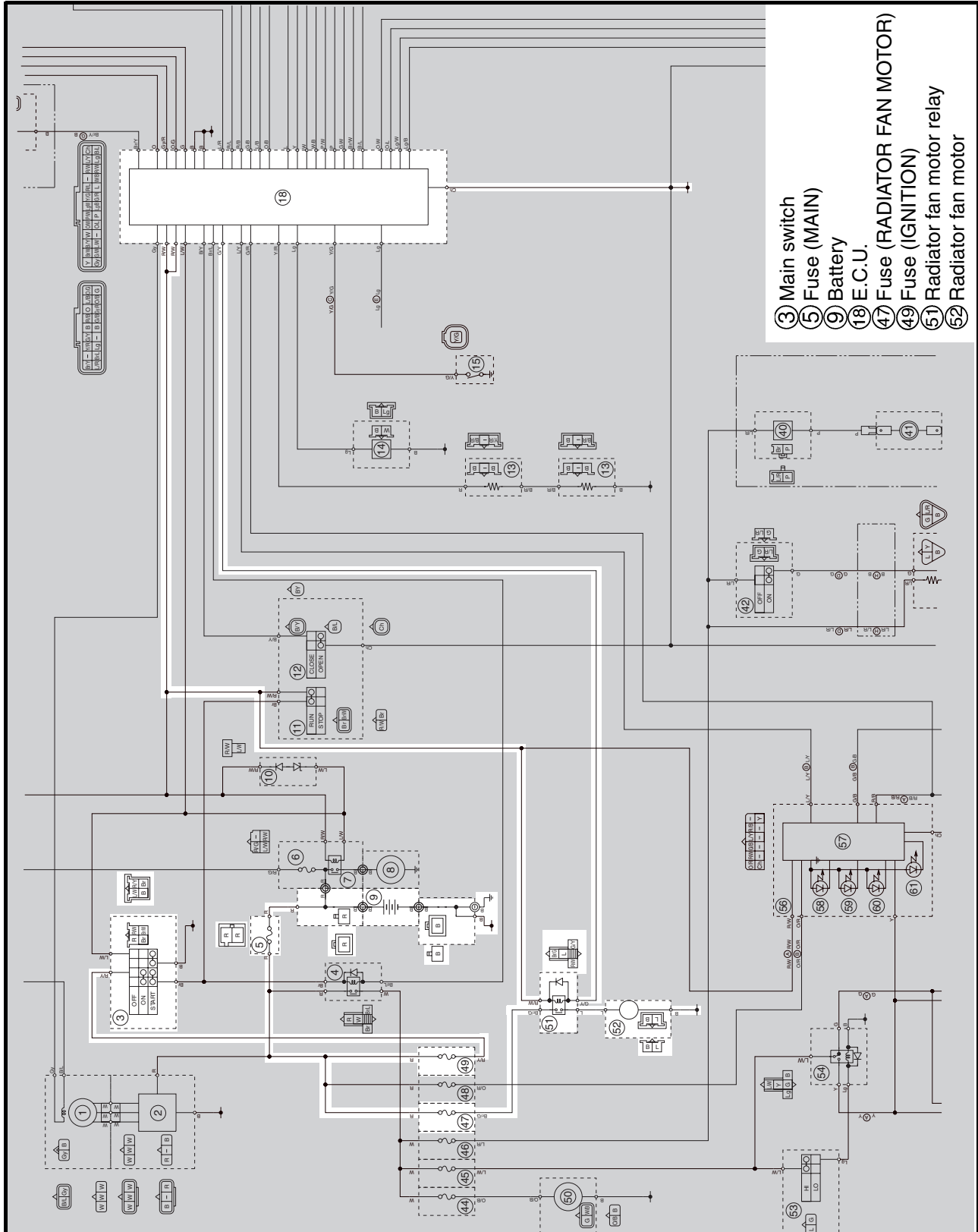
3. Inspect:

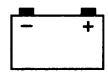
- Grip warmer ① continuity
- Thumb warmer ② continuity

No continuity → Replace both grips together or separately and/or the handle-bar switch.



COOLING SYSTEM CIRCUIT DIAGRAM





TROUBLESHOOTING

RADIATOR FAN MOTOR AND RADIATOR FAN MOTOR RELAY

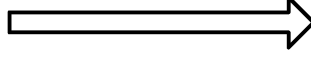
Check the main fuse and radiator fan motor fuse.

Refer to "FUSE INSPECTION" in CHAPTER 2.



OK

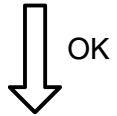
FAULTY



Replace the main fuse and/or radiator fan motor fuse.

Check the battery.

Refer to "BATTERY INSPECTION" in CHAPTER 2.



OK

OUT OF SPECIFICATION



Replace and/or charge the battery.
Refer to "BATTERY INSPECTION" in CHAPTER 2.

Check the stator coil and pickup coil.



OK

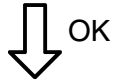
OUT OF SPECIFICATION



Replace the stator coil and pickup coil assembly.

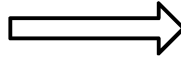
Check the main switch.

Refer to "IGNITION SYSTEM".



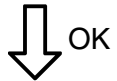
OK

NO CONTINUITY



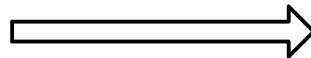
Replace the main switch.

Check the radiator fan motor.



OK

FAULTY



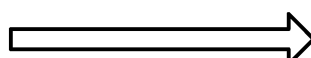
Replace the radiator fan motor.

Check the radiator fan motor relay.



OK

FAULTY



Replace the radiator fan motor relay.

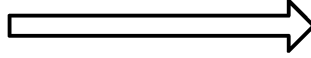
Check the load relay.

Refer to "IGNITION SYSTEM".



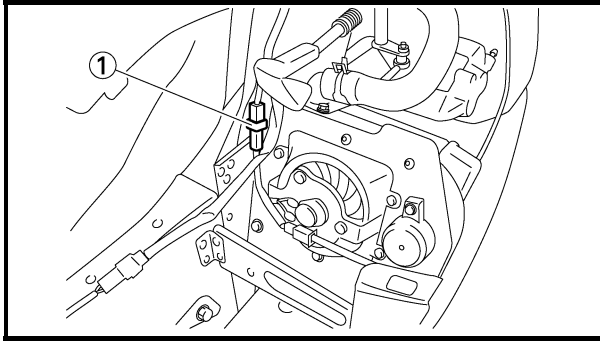
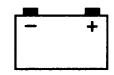
OK

FAULTY



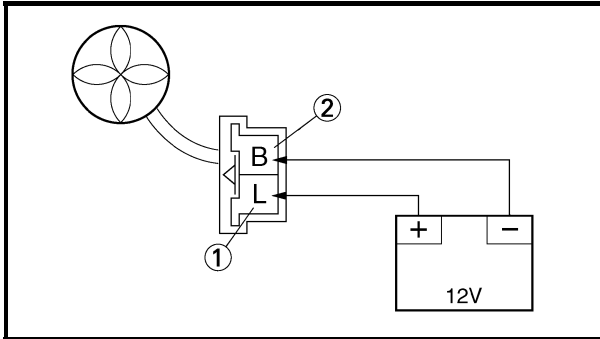
Replace the main switch.

Correct the connection and/or
replace the rectifier/regulator
and/or the E.C.U. unit.



RADIATOR FAN MOTOR

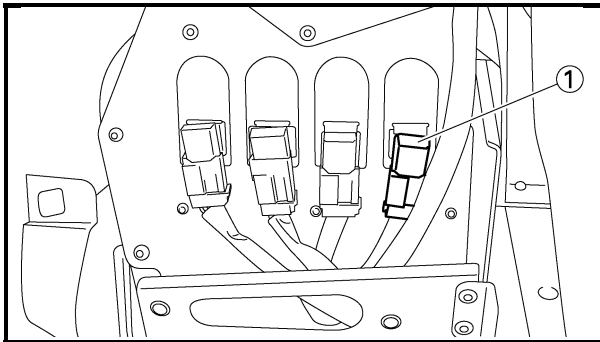
1. Disconnect:
 - Radiator fan motor coupler ①
2. Connect:
 - Battery



3. Inspect:
 - Radiator fan motor

Positive battery terminal → Blue ①
Negative battery terminal → Black ②

Does not move → Replace the radiator fan motor.

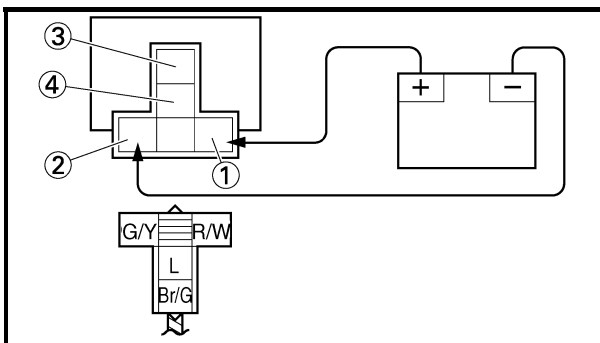


RADIATOR FAN MOTOR RELAY

1. Disconnect:
 - Radiator fan motor relay coupler ①

Inspection steps:

- Disconnect the headlight relay from the coupler.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the headlight relay terminals as shown.



Positive battery terminal → Red/White ①
Negative battery terminal → Green/Yellow ②

Positive tester probe → Brown/Green ③
Negative tester probe → Blue ④

- If radiator fan motor relay does not have continuity between the brown/white and blue terminals, replace it.



SPECIFICATIONS

GENERAL SPECIFICATIONS

Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Model code number:	8FP1 (RX10RTL for U.S.A/Canada) 8FR1 (RX10RL for U.S.A/Canada) 8FR3 (RX10RTRL for U.S.A/Canada) 8GD1 (RX10GTL for U.S.A/Canada) 8FT1 (RXW10L for U.S.A/Canada) 8FS1 (RX10ML for U.S.A/Canada)
Dimensions:	
Overall length	2,805 mm (110.4 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL) 3,000 mm (118.1 in) (RXW10L)
Overall width	3,330 mm (131.1 in) (RX10ML) 1,225 mm (48.2 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L)
Overall height	1,165 mm (45.9 in) (RX10ML) 1,070 mm (42.1 in) (RX10RTL, RX10RTRL, RX10GTL) 1,160 mm (45.7 in) (RX10RL, RXW10L) 1,240 mm (48.8 in) (RX10ML)
Weight:	
Dry weight	247 kg (545 lb) (RX10RTL) 263 kg (580 lb) (RX10RL) 254 kg (560 lb) (RX10RTRL) 262 kg (578 lb) (RX10GTL) 264 kg (582 lb) (RXW10L) 280 kg (617 lb) (RX10ML)
Minimum turning radius:	
Clockwise	4.1 m (13.1 ft) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 4.0 m (13.5 ft) (RX10ML)
Counterclockwise	4.1 m (13.1 ft) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 4.0 m (13.5 ft) (RX10ML)
Engine:	
Engine type	Liquid-cooled, 4-stroke, DOHC
Cylinder type	Backward-inclined parallel 4-cylinder
Displacement	998 cm ³ (60.9 cu.in)
Bore × stroke	74 × 58 mm (2.91 × 2.28 in)
Compression ratio	11.8
Maximum hose power	r/min 10,500 r/min
Maximum torque	r/min 9,000 r/min
Standard compression pressure (at sea level)	1,450 kPa (14.5 kg/cm ² , 206 psi) at 400 r/min
Starting system	Electric starter
Lubrication system:	Dry sump

GENERAL SPECIFICATIONS

SPEC



Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Engine oil: Type Oil capacity Periodic oil change With oil filter replacement Total amount	API SE, SF, SG or higher SAE0W-30 2.8 L (2.5 Imp qt, 3.0 US qt) 3.0 L (2.6 Imp qt, 3.2 US qt) 3.8 L (3.3 Imp qt, 4.0 US qt)
Oil filter: Oil filter type	Cartridge (paper)
Drive chain housing oil: Type Capacity	Gear oil API "GL-3" SAE#75 or #80 0.25 L (8.8 Imp oz, 8.5 US oz)
Coolant: Capacity	6.0 L (5.29 Imp qt, 6.34 US qt) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 6.4 L (5.64 Imp qt, 6.76 US qt) (RX10ML)
Fuel: Type Tank capacity	Regular unleaded gasoline (Pump Octane $\frac{R+M}{2}$; 88 or higher) 38.3 L (8.4 Imp gal, 10.1 US gal)
Carburetors: Type/Quantity Manufacture	39EIDW × 2 MIKUNI
Spark plug: Type Manufacture Gap	NGK R CR9EB NGK 0.7 ~ 0.8 mm (0.028 ~ 0.031 in)
Primary reduction: Primary reduction system Primary reduction ratio (driven/drive gear)	Spur gear 1.23 (37/30)
Transmission: Primary reduction system Primary reduction ratio Clutch type Secondary reduction system Secondary reduction ratio Reverse system	V-Belt 3.8 : 1 ~ 1 : 1 Automatic centrifugal engagement Chain 1.58 (38/24) (RX10RTL, RX10RL, RX10RTRL, RX10GTL) 1.65 (38/23) (RXW10L) 2.00 (40/20) (RX10ML) No (RX10RTL, RX10ML) Yes (RX10RL, RX10RTRL, RX10GTL, RXW10L)
Chassis: Frame type Caster angle Ski stance (center to center)	Monocoque 23° 1,068 mm (42.0 in) (RX10RTL, RX10RL, RX10RTRL, RXW10L) 1,086 mm (42.7 in) (RX10GTL) 980 mm (38.6 in) (RX10ML)



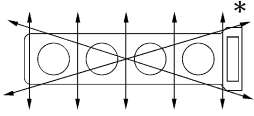
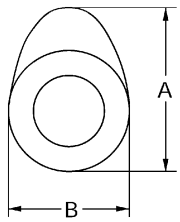
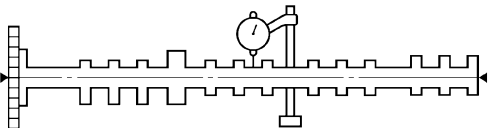
Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Suspension: Front suspension type Rear suspension type	Independent double wishbone suspension Slide rail suspension
Track: Track type Track width Length on ground Track deflection at 100 N (10 kg, 22 lb)	Internal drive type 381 mm (15.0 in) 768 mm (30.2 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL) 959 mm (37.8 in) (RXW10L) 1,201 mm (47.3 in) (RX10ML) 30 ~ 35 mm (1.18 ~ 1.38 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RX10ML) 25 ~ 30 mm (0.98 ~ 1.18 in) (RXW10L)
Brake: Brake type Operation method	Caliper type disc brake Handlebar, left hand operated
Electrical: Ignition system Generator system	DC-T.C.I./MITSUBISHI A.C. magneto
Bulb wattage × Quantity: Headlight Tail/Brake light Meter light High beam indicator light Information indicator light Low coolant temperature light	12 V, 60 W/55 W × 2 LED LED LED LED LED LED



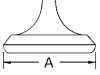
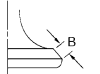
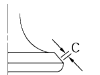
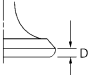
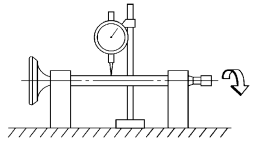


MAINTENANCE SPECIFICATIONS

ENGINE

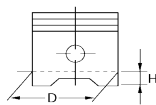
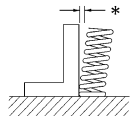
Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Cylinder head: Volume (with spark plug) <Warpage limit> 	13.45 ~ 14.05 cm³ (0.82 ~ 0.86 cu. in) 0.1 mm (0.04 in) * Lines indicate straight edge measurement.
Cylinder: Material Bore size <Taper limit> <Out of round> <Wear limit>	Aluminum alloy with dispersion coating 74.000 ~ 74.010 mm (2.9134 ~ 2.9138 in) 0.05 mm (0.002 in) 0.05 mm (0.002 in) 74.06 mm (2.9157 in)
Camshaft: Drive system Camshaft cap inside diameter Camshaft journal diameter Camshaft-journal-to-camshaft-cap clearance Camshaft dimensions Intake "A" <Limit> "B" <Limit> Exhaust "A" <Limit> "B" <Limit>  Camshaft runout 	Chain drive (left) 24.500 ~ 24.521 mm (0.9646 ~ 0.9654 in) 24.459 ~ 24.472 mm (0.9630 ~ 0.9635 in) 0.028 ~ 0.062 mm (0.0011 ~ 0.0024 in) 32.95 ~ 33.05 mm (1.2972 ~ 1.3012 in) 32.85 mm (1.2933 in) 24.96 ~ 25.06 mm (0.9827 ~ 0.9866 in) 24.86 mm (0.9787 in) 33.60 ~ 33.70 mm (1.3228 ~ 1.3268 in) 33.50 mm (1.3189 in) 24.96 ~ 25.06 mm (0.9827 ~ 0.9866 in) 24.86 mm (0.9787 in) 0.03 mm (0.0012 in)
Timing chain: Model/number of links Tensioning system	RH2015/130 Automatic
Valves, valve seats, valve guides: Valve clearance (cold) Intake Exhaust	0.11 ~ 0.20 mm (0.0043 ~ 0.0079 in) 0.21 ~ 0.25 mm (0.0083 ~ 0.0098 in)



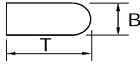
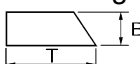
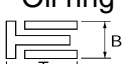
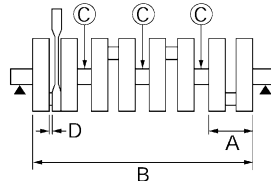
Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Valve dimensions: Valve head diameter A Intake Exhaust  Head Diameter Valve face width B Intake Exhaust  Face Width Valve seat width C Intake Exhaust  Seat Width Valve margin thickness D Intake Exhaust  Margine Thickness Valve stem diameter Intake <Limit> Exhaust <Limit> Valve guide inside diameter Intake <Limit> Exhaust <Limit> Valve-stem-to-valve-guide clearance Intake <Limit> Exhaust <Limit> Valve stem runout limit  Valve seat width Intake Exhaust	22.9 ~ 23.1 mm (0.9016 ~ 0.9094 in) 24.4 ~ 24.6 mm (0.9606 ~ 0.9685 in) 1.76 ~ 2.90 mm (0.0693 ~ 0.1142 in) 1.76 ~ 2.90 mm (0.0693 ~ 0.1142 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in) 0.5 ~ 0.9 mm (0.020 ~ 0.035 in) 0.5 ~ 0.9 mm (0.020 ~ 0.035 in) 3.975 ~ 3.990 mm (0.1565 ~ 0.1571 in) 3.945 mm (0.1553 in) 4.465 ~ 4.480 mm (0.1758 ~ 0.1764 in) 4.43 mm (0.1744 in) 4.000 ~ 4.012 mm (0.1575 ~ 0.1580 in) 4.05 mm (0.1594 in) 4.500 ~ 4.512 mm (0.1772 ~ 0.1776 in) 4.55 mm (0.1791 in) 0.010 ~ 0.037 mm (0.0004 ~ 0.0015 in) 0.08 mm (0.0031 in) 0.020 ~ 0.047 mm (0.0008 ~ 0.0019 in) 0.10 mm (0.0039 in) 0.01 mm (0.0004 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in)



Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Valve spring: Free length Intake Exhaust Installed length (valve closed) Intake Exhaust Compressed spring force (installed) Intake Exhaust Spring tilt Intake Exhaust Winding direction (top view) Intake Exhaust	43.59 mm (1.72 in) 40.62 mm (1.60 in) 34.50 mm (1.36 in) 35.00 mm (1.38 in) 126 ~ 146 N (12.8 ~ 14.9 kg, 28.3 ~ 32.8 lb) 111 ~ 127 N (11.3 ~ 12.9 kg, 24.9 ~ 28.5 lb) 2.5°/1.9 mm (0.075 in) 2.5°/1.8 mm (0.071 in) Clockwise Clockwise
Valve lifter: Valve lifter outside diameter Intake <Limit> Exhaust <Limit> Valve lifter hole inside diameter Intake <Limit> Exhaust <Limit>	19.982 ~ 19.988 mm (0.7867 ~ 0.7869 in) 19.957 mm (0.7857 in) 22.482 ~ 22.488 mm (0.8851 ~ 0.8854 in) 22.457 mm (0.8841 in) 20.000 ~ 20.018 mm (0.7874 ~ 0.7881 in) 20.048 mm (0.7893 in) 22.500 ~ 22.518 mm (0.8858 ~ 0.8865 in) 22.548 mm (0.8877 in)
Piston: Piston size (D) Measuring point (H) Piston to-cylinder clearance <Limit> Piston pin bore off set Off-set direction Piston pin bore inside diameter	73.955 ~ 73.970 mm (2.9116 ~ 2.9122 in) 5 mm (0.20 in) 0.030 ~ 0.055 mm (0.0012 ~ 0.0022 in) 0.12 mm (0.0047 in) 0.5 mm (0.0197 in) Intake side 17.002 ~ 17.013 mm (0.6694 ~ 0.6698 in)
Piston pin: Piston pin outside diameter Piston pin length Piston pin to piston pin bore clearance <Limit>	16.991 ~ 17.000 mm (0.6689 ~ 0.6693 in) 51.4 ~ 51.5 mm (2.0236 ~ 2.0276 in) 0.002 ~ 0.022 mm (0.00008 ~ 0.0009 in) 0.072 mm (0.0028 in)

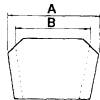




Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Piston ring: Sectional sketch Top ring  Ring type Dimensions (B × T) 2nd ring  Ring type Dimensions (B × T) Oil ring  Dimensions (B × T) End gap (installed) Top ring 2nd ring Oil ring Side clearance (installed) Top ring 2nd ring	Barrel 0.90 × 2.75 mm (0.035 × 0.108 in) Taper 0.8 × 2.8 mm (0.031 × 0.110 in) 1.5 × 2.5 mm (0.059 × 0.098 in) 0.32 ~ 0.44 mm (0.010 ~ 0.020 in) 0.43 ~ 0.58 mm (0.017 ~ 0.023 in) 0.10 ~ 0.35 mm (0.004 ~ 0.0014 in) 0.030 ~ 0.065 mm (0.0012 ~ 0.0026 in) 0.020 ~ 0.055 mm (0.0008 ~ 0.0022 in)
Connecting rod: Crankshaft-pin-to-big-end-bearing clearance Bearing color code	0.031 ~ 0.055 mm (0.0012 ~ 0.0022 in) -1 = Violet 0 = White 1 = Blue 2 = Black 3 = Brown
Crankshaft:  Width A Width B Crankshaft runout C Big end side clearance D Crankshaft-journal-to-crankshaft-journal-bearing clearance Bearing color code	52.40 ~ 57.25 mm (2.063 ~ 2.254 in) 300.75 ~ 302.65 mm (11.84 ~ 11.92 in) 0.03 mm (0.0012 in) 0.160 ~ 0.262 mm (0.006 ~ 0.010 in) 0.031 ~ 0.055 mm (0.0012 ~ 0.0022 in) -1 = Violet 0 = White 1 = Blue 2 = Black 3 = Brown
Carburetor: Type/Quantity Manufacturer I.D. mark Throttle valve Engine idle speed	39EIDW X 2 MIKUNI 8FP1 00 #100 1,500 ± 100 r/min (1,400 ~ 1,600 r/min)
Fuel pump: Type Manufacturer	Electrical 8FP (DENSO)
Oil filter: Oil filter type Bypass valve opening pressure	Cartridge (paper) 78 ~ 118 kPa (0.78 ~ 1.18 kg/cm ² , 11.1 ~ 16.8 psi)



Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Oil pump: Oil pump type Inner-rotor-to-outer-rotor-tip clearance Outer-rotor-to-oil-pump-housing clearance Max. impeller shaft tilt <Limit> Relief valve operating pressure Oil pressure (hot)	Trochoidal 0.00 ~ 0.12 mm (0.000 ~ 0.005 in) 0.09 ~ 0.15 mm (0.004 ~ 0.006 in) 0.15 mm (0.0059 in) 0.072 mm (0.0028 in) 430 ~ 550 kPa (4.3 ~ 5.5 kg/cm ² , 61.2 ~ 78.2 psi) 50 kPa (0.5 kg/cm ² , 7.1 psi) at 1,450 r/min
Cooling system: Radiator capacity Radiator core Width Height Depth Filler cap opening pressure Water pump type Reduction ratio Coolant type Coolant mixing ratio (coolant: water) Capacity	0.3 L (0.26 Imp qt, 0.32 US qt) 130.2 mm (5.13 in) 140.0 mm (5.51 in) 28.0 mm (1.10 in) 95 ~ 125 kPa (0.95 ~ 1.25 kg/cm ² , 14 ~ 18 psi) Single-suction centrifugal pump (Impeller type) 37/31 × 23/18 (1.525) High quality silicate-free ethylene glycol antifreeze containing corrosion inhibitors 3 : 2 (60% : 40%) 6.0 L (5.29 Imp qt, 6.34 US qt) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 6.4 L (5.64 Imp qt, 6.76 US qt) (RX10ML)
Transmission: Type Range of ratio Engagement speed Shift Sheave distance Sheave offset	V-belt automatic 3.8 ~ 1.0 : 1 3,500 ± 200 r/min (3,300 ~ 3,700 r/min) 10,500 ± 250 r/min (10,250 ~ 10,750 r/min) 268.5 mm (10.57 in) (267 ~ 270 mm (10.51 ~ 10.63 in)) 13.5 ~ 16.5 mm (0.53 ~ 0.65 in)
V-belt: Part number/Manufacturer Circumference Width "A" Wear limit "B"	8DN-17641-00/MITSUBOSHI 1,129 ~ 1,137 mm (44.4 ~ 44.8 in) 34.5 mm (1.36 in) 32.5 mm (1.28 in)





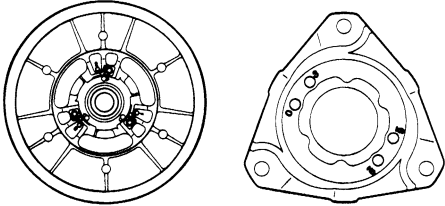
POWER TRAIN

Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Primary sheave spring:	
Part number	90501-582L1 (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 90501-581L5 (RX10ML)
Color code	Yellow – Silver – Yellow (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) Yellow – Pink – Yellow (RX10ML)
Diameter	59.5 mm (2.34 in)
Wire diameter	5.8 mm (0.228 in)
Preload	343 N (35 kg, 77 lb) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 294 N (30 kg, 66 lb) (RX10ML)
Spring rate	24.5 N/mm (2.50 kg/mm, 140 lb/in)
Number of coils	4.92
Free length	87.4 mm (3.44 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 85.4 mm (3.36 in) (RX10ML)
Set length	73.4 mm (2.89 in)
Primary sheave weight arm:	
Part number (with bush)	8FP-17605-00 (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 8FS-17605-00 (RX10ML)
Weight (without bush and rivets)	67.81 g (2.392 oz) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 65.52 g (2.311 oz) (RX10ML)



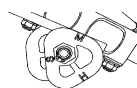
Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Rivet:	
Outer	
Part number	90261-06033 (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 90266-06002 (RX10ML)
Material	Steel
Size	17.2 mm (0.677 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 13.3 mm (0.524 in) with hole (RX10ML)
Quantity	3
Hole quantity	3
Center	
Part number	90261-06033 (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 90266-06002 (RX10ML)
Material	Steel
Size	17.2 mm (0.677 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 13.3 mm (0.524 in) with hole (RX10ML)
Quantity	3
Hole quantity	3
Inner	
Part number	90261-06033 (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) None (RX10ML)
Material	Steel
Size	17.2 mm (0.677 in)
Quantity	3
Hole quantity	3



Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Secondary sheave spring: Part number Color code Outside diameter Wire diameter Hole position Sheave side-spring side (twist angle)  Spring rate Number of coils Free length Torque cam angle	90508-60012 (RX10RTL, RX10RL, RX10RTRL, RX10GTL) 90508-60007 (RXW10L, RX10ML) PINK (RX10RTL, RX10RL, RX10RTRL, RX10GTL) White (RXW10L, RX10ML) 69.5 mm (2.736 in) 6 mm (0.236 in) 2-6 (80°) (RX10RTL, RX10RL, RX10RTRL, RX10GTL) 3-3 (60°) (RXW10L, RX10ML) 11.88 N/mm (1.211 kg/mm, 67.80 lb/in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 12.66 N/mm (1.290 kg/mm, 72.25 lb/in) (RXW10L, RX10ML) 5.53 (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 5.19 (RX10ML) 75 mm (2.95 in) 51° – 43 (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 45° (RX10ML)
Drive chain: Type Number of links Secondary reduction ratio	Borg Warner Automotive 23RH303-70ASM 70 L 38/24 (1.58) (RX10RTL, RX10RL, RX10RTRL, RX10GTL) 38/23 (1.65) (RXW10L) 40/20 (2.00) (RX10ML)



Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Track: Part number Width Length Pitch Number of links Thickness "A" Height "B" Track deflection at 100 N (10 kg, 22 lb)	8FA-47110-00 (RX10RTL, RX10RL, RX10RTRL, RX10GTL) 8FG-47110-00 (RXW10L) 8FS-47110-00 (RX10ML) 381 mm (15.0 in) 3,072 mm (120.9 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL) 3,456 mm (136.1 in) (RXW10L) 4,115 mm (162.0 in) (RX10ML) 64 mm (2.52 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 76.2 mm (3.00 in) (RX10ML) 48 (RX10RTL, RX10RL, RX10RTRL, RX10GTL) 54 (RXW10L, RX10ML) 5.1 mm (0.20 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 5.5 mm (0.23 in) (RX10ML) 36.9 mm (1.45 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 57.2 mm (2.25 in) (RX10ML) 30 ~ 35 mm (1.18 ~ 1.38 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RX10ML) 25 ~ 30 mm (0.98 ~ 1.18 in) (RXW10L)
Slide rail suspension (Rear suspension): Front travel Rear travel Suspension spring rate Front Rear Spring wire diameter Front Rear	256 mm (10.08 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 183 mm (7.20 in) (RX10ML) 295 mm (11.61 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL) 297 mm (11.69 in) (RXW10L) 356 mm (14.02 in) (RX10ML) 29.4 N/mm (3.0 kg/mm, 168 lb/in) (RX10ML) 58.8 N/mm (6.0 kg/mm, 336 lb/in) (RX10RTL, RX10RL, RX10RTRL) 58.0 N/mm (5.9 kg/mm, 331 lb/in) (RX10GTL) 53.9 N/mm (5.5 kg/mm, 308 lb/in) (RXW10L) 1,500 Nmm/deg (152.85 kg/mm, 8,561 lb/in) (RX10ML) 12.2 mm (0.480 in) (RX10RTL, RX10RL, RX10RTRL) 11.8 mm (0.465 in) (RX10GTL) 12.0 mm (0.472 in) (RXW10L) 8.0 mm (0.315 in) (RX10ML) 10.0 mm (0.394 in) (RX10ML)
Suspension setting position: Full rate adjusting position	M (RX10ML)





Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Shock absorber: Damping force	
Extension	1,950 N/0.3 m/s (198.71 kg/0.3 m/s, 438 lb/0.3 m/s) (RX10RTL, RX10RL, RX10RTRL)
	1,069 ~ 1,167 N/0.3 m/s (108.93 ~ 118.92 kg/0.3 m/s, 240 ~ 262 lb/0.3 m/s) (RX10GTL)
Compression	1,830 N/0.3 m/s (186.48 kg/0.3 m/s, 411 lb/0.3 m/s) (RXW10L)
	1,130 N/0.3 m/s (115.15 kg/0.3 m/s, 254 lb/0.3 m/s) (RX10RTL, RX10RL, RX10RTRL)
	857 ~ 1,185 N/0.3 m/s (87.33 ~ 120.75 kg/0.3 m/s, 193 ~ 266 lb/0.3 m/s) (RX10GTL)
	1,270 N/0.3 m/s (129.41 kg/0.3 m/s, 285 lb/0.3 m/s) (RXW10L)
Front	
Extension	620 N/0.3 m/s (63.18 kg/0.3 m/s, 139 lb/0.3 m/s) (RX10ML)
Compression	990 N/0.3 m/s (100.88 kg/0.3 m/s, 222 lb/0.3 m/s) (RX10ML)
Rear	
Extension	790 N/0.3 m/s (80.50 kg/0.3 m/s, 178 lb/0.3 m/s) (RX10ML)
Compression	460 N/0.3 m/s (46.87 kg/0.3 m/s, 103 lb/0.3 m/s) (RX10ML)
Slide runner:	
Thickness	17.8 mm (0.70 in)
Wear limit	10 mm (0.39 in)
Track sprocket wheel:	
Material	High molecular weight polyethylene
Number of teeth	9 T (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L)
	7 T (RX10ML)
Rear guide wheel:	
Material	High molecular weight polyethylene with rubber
Outside diameter	178 mm (7.01 in)
Brake:	
Pad thickness	10.2 mm (0.40 in)
Pad wear limit	7.5 mm (0.30 in)
Pad to disk clearance	0.025 ~ 0.115 mm (0.001 ~ 0.005 in)
Disc outside diameter	200 mm (7.87 in)
Disc minimum thickness	3.5 mm (0.14 in)



CHASSIS

Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Frame: Frame material Seat height Luggage box location	Aluminum 765 mm (30.1 in) (RX10RTL, RX10RL, RX10RTRL, RXW10L, RX10ML) 770 mm (30.3 in) (RX10GTL) Rear
Steering: Lock-to-lock angle (left) (right) Ski alignment Toe-out size Caster angle	29.0° (R ski) 34.5° (L ski) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 30.1° (R ski) 35.0° (L ski) (RX10ML) 34.5° (R ski) 29.0° (L ski) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 35.0° (R ski) 30.1° (L ski) (RX10ML) Toe-out 0 ~ 15 mm (0 ~ 0.59 in) 23°
Ski: Ski material Length Width	Plastic 1,021 mm (40.2 in) 132.0 mm (5.20 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 182.0 mm (7.17 in) (RX10ML)
Ski suspension (Front suspension): Type Travel Spring type Spring rate Wire diameter	Double wishbone system 219 mm (8.62 in) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) 175 mm (6.89 in) (RX10ML) Coil spring 29.5 N/mm (3.0 kg/mm, 168lb/in) (RX10RTL, RX10RL, RX10RTRL, RXW10L) 26.5 N/mm (2.7 kg/mm, 151 lb/in) (RX10GTL, RX10ML) 8.5 mm (0.335 in) (RX10ML) 8.8 mm (0.346 in) (RX10GTL) 9.0 mm (0.354 in) (RX10RTL, RX10RL, RX10RTRL, RXW10L)
Shock absorber: damping force Extension Compression	870 N/0.3 m/s (89 kg/0.3 m/s, 195 lb/0.3 m/s) (RX10RTL, RX10RL, RX10RTRL, RXW10L) 1,120 N/0.3 m/s (114 kg/0.3 m/s, 252 lb/0.3 m/s) (RX10GTL) 1,420 N/0.3 m/s (145 kg/0.3 m/s, 319 lb/0.3 m/s) (RX10ML) 520 N/0.3 m/s (53 kg/0.3 m/s, 117 lb/0.3 m/s) (RX10RTL, RX10RL, RX10RTRL, RXW10L) 885 N/0.3 m/s (90 kg/0.3 m/s, 199 lb/0.3 m/s) (RX10GTL) 500 N/0.3 m/s (51 kg/0.3 m/s, 112 lb/0.3 m/s) (RX10ML)



ELECTRICAL

Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Voltage	12 V
Ignition system: Ignition timing (B.T.D.C.) Advanced type	5° at 1,500 r/min Digital type
Ignition coil: Model/Manufacturer Primary coil resistance Secondary coil resistance	F6T567/MITSUBISHI 1.19 ~ 1.61 Ω at 20°C (68°F) 8.5 ~ 11.5 k Ω at 20°C (68°F)
Charging system: Type Normal output	AC magneto 14 V/35 A at 5,000 r/min
DC-T.C.I.: Magneto model/Manufacturer Standard Pickup coil resistance (color code) Stator coil resistance (color code) T.C.I unit model/Manufacturer	F4T47971/MITSUBISHI 14 V 35 A, 490 W at 5,000 r/min 446 ~ 545 Ω at 20°C (68°F) (White/Red – White/Green) 0.19 ~ 0.24 Ω at 20°C (68°F) (White – White) F8T83171/MITSUBISHI (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) F8T83172/MITSUBISHI (RX10ML)
Rectifier/regulator: Type Model/Manufacturer No load regulated voltage (DC) Capacity (DC) Withstand voltage	Short circuit type FH001/SHINDENGEN 14.1 ~ 14.9 V 35 A 40 V
Battery: Specific gravity Manufacture Type Ten hour rate amperage	1.32 YUASA YTX14-BS 12V-12Ah 12 A
Electric starter system: Type	Constant mesh type
Starter motor: Model/Manufacturer Output Armature coil resistance Continuity check Insulation check Brush Overall length Wear limit Spring pressure Commutator diameter Wear limit Mica undercut	8FP1/MORIC 12 V - 0.95 kW 0.008 ~ 0.010 Ω at 20°C (68°C) More than 100 k Ω at 20°C (68°F) 9.8 mm (0.39 in) 5 mm (0.20 in) 7.36 ~ 11.04 N (736 ~ 1,104 g, 26.0 ~ 38.9 oz) 28.5 mm (1.12 in) 27.5 mm (1.08 in) 1.5 mm (0.059 in)



Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML	
Starter relay: Model/Manufacturer Amperage rating Coil resistance	2768081-A/JIDECO 180 A 4.2 ~ 4.6 Ω at 20°C (68°F)	
T.P.S. (throttle position sensor): Model/Manufacturer Resistance	TS62/146/MIKUNI 4 ~ 6 k Ω at 20°C (68°F) (Blue – Black/Blue)	
Oil level switch: Model/Manufacturer	8FA/ASTI	
Fuel sender: Model/Manufacturer Sender resistance	Full	8FP/NIPPON SEIKI 10 ~ 12 Ω at 20°C (68°F)
	Empty	179 ~ 185 Ω at 20°C (68°F)
Headlight relay: Model/Manufacturer Coil resistance	5DM/OMRON 95 ~ 116 Ω at 20°C (68°F)	
Grip warmer: Heater resistance	(left)	1.83 ~ 2.24 Ω at 20°C (68°F)
	(right)	1.83 ~ 2.24 Ω at 20°C (68°F)
Thumb warmer: Heater resistance	37.0 ~ 45.2 Ω at 20°C (68°F)	
Cylinder identification sensor: Model/Manufacture	5VY/NIPPON SEIKI	
Crankshaft position sensor: Model/Manufacture Resistance	8FP/MITSUBISHI 445 ~ 545 Ω at 20°C (68°F) (between Gray and Black)	
Intake air pressure sensor: Model/Manufacture	5PS/DENSO	
Intake air temperature sensor: Model/Manufacture Resistance	8FP/MITSUBISHI 2.21 ~ 2.69 k Ω at 20°C (68°F)	
Atmospheric pressure sensor: Model/Manufacture	5PS/DENSO	
Throttle position sensor: Model/Manufacture Resistance	TS62 146/MITSUBISHI 0 ~ 5 $\pm$ 1.5 k Ω at 20°C (68°F) (Yellow – Black/Blue)	
Water temperature sensor: Model/Manufacturer Resistance	8CC/MITSUBISHI 5.2 ~ 6.4 k Ω at 0°C (34°F) 0.300 ~ 0.364 k Ω at 80°C (176°F) 0.170 ~ 0.208 k Ω at 100°C (212°F)	
Indicator light	(ON)	90 ~ 110°C (194 ~ 230°F)
	(OFF)	85 ~ 105°C (185 ~ 221°F)
Speed sensor: Mode/Manufacture	8EK/NIPPON SEIKI	



Model	RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML
Circuit breaker:	
Type	Fuse
Amperage for individual circuit	
Main fuse	40 A × 1
Fuel injection system fuse	10 A × 1
Headlight fuse	20 A × 1
Signal fuse	10 A × 1
Ignition fuse	20 A × 1
Electronic control suspension fuse	10 A × 1 (RX10GTL)
Radiator fan motor fuse	4 A × 1
Backup fuse	3 A × 1
Auxiliary DC jack fuse	3 A × 1
Reserve fuse	20 A, 10 A, 4 A, 3 A × 1



TIGHTENING TORQUE

ENGINE

Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Spark plug	13	1.3	9.4	Left-hand thread.
Cylinder head nut (M10 × 1.25) × 2	20 + 121°	2.0 + 121°	14 + 121°	
Cylinder head nut (M10 × 1.25) × 6	20 + 105°	2.0 + 105°	14 + 105°	
Cylinder head nut x 2	20 + 140°	2.0 + 140°	14 + 140°	
Cylinder head bolt	12	1.2	8.7	
Camshaft cap and cylinder head	10	1.0	7.2	
Cylinder head cover	12	1.2	8.7	
Connecting rod and cap	20 + 120°	2.0 + 120°	14 + 120°	
A.C. magneto rotor	130	13.0	94	
Crankshaft and drive gear	75	7.5	54	
Primary reduction gear bearing housing	12	1.2	8.7	
Timing chain tensioner	10	1.0	7.2	
Thermostat housing	10	1.0	7.2	
Water temperature sensor	23	2.3	17	
Timing chain tensioner cap	6	0.6	4.3	
Camshaft and camshaft sprocket	24	2.4	17	
Hose band	2	0.2	1.4	
Water pump	12	1.2	8.7	
Coolant reservoir tank	10	1.0	7.2	
Coolant recovery tank	10	1.0	7.2	
Radiator	10	1.0	7.2	
Pipe	10	1.0	7.2	
Oil cooler	35	3.5	25	
Oil pan	10	1.0	7.2	
Engine mounting adjust bolt	9	0.9	6.5	
Engine mounting nut	65	6.5	47	
Countershaft cover	12	1.2	8.7	
Oil pan drain bolt	30	3.0	22	
Oil hose and suction pipe	2	0.2	1.4	
Oil filter union bolt	30	3.0	22	
Oil filter	17	1.7	12	
Oil pump	12	1.2	8.7	
Oil pump drive chain guide	10	1.0	7.2	
Oil tank drain bolt	16	1.6	11	
Oil tank and frame (bolt)	10	1.0	7.2	
Oil tank and frame (nut)	19	1.9	14	
Oil gallery bolt	10	1.0	7.2	
Cylinder head and carburetor joint	3	0.3	2.2	
Carburetor joint and throttle bodies	3	0.3	2.2	
Throttle bodies and silencer	3	0.3	2.2	
Exhaust joint	25	2.5	18	
Muffler band	9	0.9	6.5	
Exhaust pipe	25	2.5	18	
Muffler	16	1.6	11	
Exhaust cover	6	0.6	4.3	
Muffler band	20	2.0	14	
Muffler protector	11	1.1	8.0	
Cylinder head stud bolt	10	1.0	7.2	

TIGHTENING TORQUE

SPEC



Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Crankcase (M9 × 1.5) (1st)	15	1.5	11	See NOTE.
(2nd)	15 + 65 ~ 70°	1.5 + 65 ~ 70°	11 + 65 ~ 70°	
Crankcase (M6 × 1.0)	12	1.2	8.7	Apply LOCTITE®
Countershaft cover	12	1.2	8.7	
A.C. magneto rotor cover	12	1.2	8.7	
Starter clutch	12	1.2	8.7	
Stator coil	10	1.0	7.2	
Starter motor	27	2.7	20	
Pickup coil	6	0.6	4.3	
Pickup coil plate	10	1.0	7.2	
Fuel pump	7	0.7	5.1	
Oil pressure switch	15	1.5	11	
Cylinder identification sensor	8	0.8	5.8	
Ignition coil	10	1.0	7.2	

NOTE:

1. First, tighten the bolt to approximately 15 Nm (1.5 m•kg, 11 ft•lb) with a torque wrench, then loosen the bolt completely.
2. Retighten the bolt to 15 Nm (1.5 m•kg, 11 ft•lb), and tighten another 65 ~ 70° with a angle gauge.



POWER TRAIN

Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Primary sheave (1st)	120	12.0	85	Tighten the bolts in two stages. See NOTE. Left-hand thread. Apply LOCTITE®
(2nd)	60	6.0	43	
Spider and sliding sheave	200	20.0	145	
Primary sheave cap and sliding sheave	14	1.4	10	(RX10RTL, RX10ML) Apply LOCTITE®
Roller and weight (primary sheave)	6	0.6	4.3	
Secondary sheave	64	6.4	46	
Stopper (secondary sheave)	8	0.7	5.1	
Spring seat (secondary sheave)	23	2.3	17	
Bolt (secondary sheave clearance)	10	1.0	7.2	
Drive sprocket	90	9.0	65	
Locknut chain tensioner	25	2.5	18	
Chain housing and frame	48	4.8	35	
Driven sprocket	48	4.8	35	
Drain bolt (drive chain housing)	16	1.6	12	
Chain housing cover	24	2.4	17	
Shift lever assembly	23	2.3	17	
Lever and drive chain housing cover	10	1.0	7.2	(RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) (RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) Apply LOCTITE®
Shaft (reverse drive gear)	10	1.0	7.2	(RX10RL, RX10RTRL, RX10GTL, RXW10L) Apply LOCTITE®
Reverse driven gear	55	5.5	40	(RX10RL, RX10RTRL, RX10GTL, RXW10L) Apply LOCTITE®
Counter gear	10	1.0	7.2	(RX10RL, RX10RTRL, RX10GTL, RXW10L) Apply LOCTITE®
Spacer set screw	6	0.6	4.3	Apply LOCTITE®
Chain housing and brake caliper	48	4.8	35	
Bleed screw (brake caliper)	6	0.6	4.3	
Brake hose union bolt (caliper side)	30	3.0	22	
Brake hose union bolt (brake master cylinder side)	30	3.0	22	
Bearing nut (secondary shaft)	55	5.5	40	
Parking brake	10	1.0	7.2	
Parking brake assembly and lever	23	2.3	17	

TIGHTENING TORQUE

SPEC



Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
(RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L) Shockabsorber adjuster assembly and frame	9	0.9	6.5	(RX10RTL, RX10RL, RX10RTRL, RXW10L)
Front pivot arm and frame	60	6.0	43	
Front pivot arm and shockabsorber	49	4.9	35	
Front pivot arm and stopper band	4	0.4	2.9	
Shaft and stopper band	4	0.4	2.9	
Sliding runner and sliding frame	10	1.0	7.2	
Suspension wheel and sliding frame	60	6.0	43	
Front pivot arm and control rod	74	7.4	53	
Front pivot arm bracket and sliding frame	30	3.0	22	
Front pivot arm and bracket	72	7.2	52	
Rear pivot arm and shockabsorber	49	4.9	35	
Rear pivot arm bracket and control rod	74	7.4	53	
Rear pivot arm and frame	84	8.4	61	
Shaft and frame	84	8.4	61	
Rear pivot arm and rear pivot arm bracket	72	7.2	52	Apply LOCTITE® Apply LOCTITE® (RXW10L) Apply LOCTITE® Apply LOCTITE®
Rear pivot arm bracket and sliding frame	72	7.2	52	
Rear axle	75	7.5	54	
(RX10ML) Front pivot arm and frame	72	7.2	52	
Front pivot arm and front shockabsorber	49	4.9	35	
Front pivot arm and stopper band	4	0.4	2.9	
Shaft and stopper band	4	0.4	2.9	
Shaft and sliding frame	60	6.0	43	
Suspension wheel assembly and sliding frame	60	6.0	43	
Front pivot arm and sliding frame	60	6.0	43	
Suspension wheel and sliding frame	60	6.0	43	
Rear pivot arm and sliding frame	72	7.2	52	
Bracket and front shockabsorber	49	4.9	35	
Front pivot arm bracket and bracket	72	7.2	52	
Front pivot arm and bracket	72	7.2	52	
Bracket and rear shockabsorber	49	4.9	35	
Relay rod and rear pivot arm	49	4.9	35	
Rear pivot arm and rear shockabsorber	49	4.9	35	
Rear pivot arm and frame	72	7.2	52	
Suspension wheel and sliding frame	60	6.0	43	
Pivot shaft and sliding frame	72	7.2	52	
Rear axle	75	7.5	54	
Speed sensor	20	2.0	14	
Gear unit (speed sensor)	40	4.0	29	

NOTE:

Tightening steps:

1. Tighten the bolt to a torque at 120 Nm (12.0 m•kg, 85 ft•lb).
2. Loosen the bolt completely.
3. Retighten the bolt to a torque of 60 Nm (6.0 m•kg, 43 ft•lb).



CHASSIS

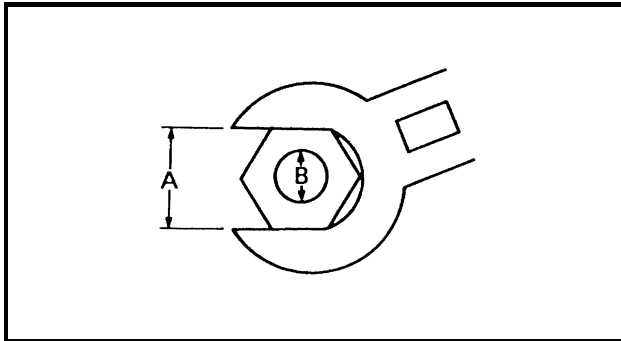
Parts to be tightened	Tightening torque			Remarks
	Nm	m•kg	ft•lb	
Handlebar holder	15	1.5	11	
Steering joint cover	3	0.3	2.2	
Steering column				
Upper	23	2.3	17	
Lower	23	2.3	17	
Steering column 2 and steering shaft	35	3.5	25	
Steering shaft and steering column 1	35	3.5	25	
Steering column 1 and relay rod	35	3.5	25	
Relay rod and relay arm	30	3.0	22	
Relay arm and idler arm	35	3.5	25	
Idler arm and tie rod	30	3.0	22	
Tie rod and steering arm	35	3.5	25	
Idler arm	67	6.7	49	
Locknut (relay rod/tie rod)	25	2.5	18	
Ski	48	4.8	35	
Ski runner	19	1.9	14	
Ski and ski handle (front)	12	1.2	8.7	
Ski and ski handle (rear)	17	1.7	12	
Shock absorber (upper)	45	4.5	33	
Shock absorber (lower)	45	4.5	33	
Steering arm locknut	35	3.5	25	
Upper arm and frame	37	3.7	27	
Upper arm and knuckle	40	4.0	29	
Lower arm and frame	37	3.7	27	
Lower arm and knuckle	65	6.5	47	
Stabilizer bar and stabilizer arm	11	1.1	8.0	
Stabilizer arm and connecting rod	34	3.4	25	
Connecting rod and lower arm	34	3.4	25	
Frame cross member	23	2.3	17	
Frame cross member and steering bracket	47	4.7	34	
Master cylinder assembly	10	1.0	7.2	
Brake lever adjuster locknut	6	0.6	4.3	
Rear cover	4	0.4	2.9	
Seat and frame	7	0.7	5.1	
Headlight stay	7	0.7	5.1	



GENERAL TORQUE SPECIFICATIONS

This chart specifies torque for standard fasteners with standard I.S.O. pitch threads. Torque specifications for special components or assemblies are included in the applicable sections of this book. To avoid warpage, tighten multi-fastener assemblies in a crisscross fashion, in progressive stages, until full torque is reached. Unless otherwise specified, torque specifications call for clean, dry threads. Components should be at room temperature.

A (nut)	B (bolt)	General torque specifications		
		Nm	m•kg	ft•lb
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94

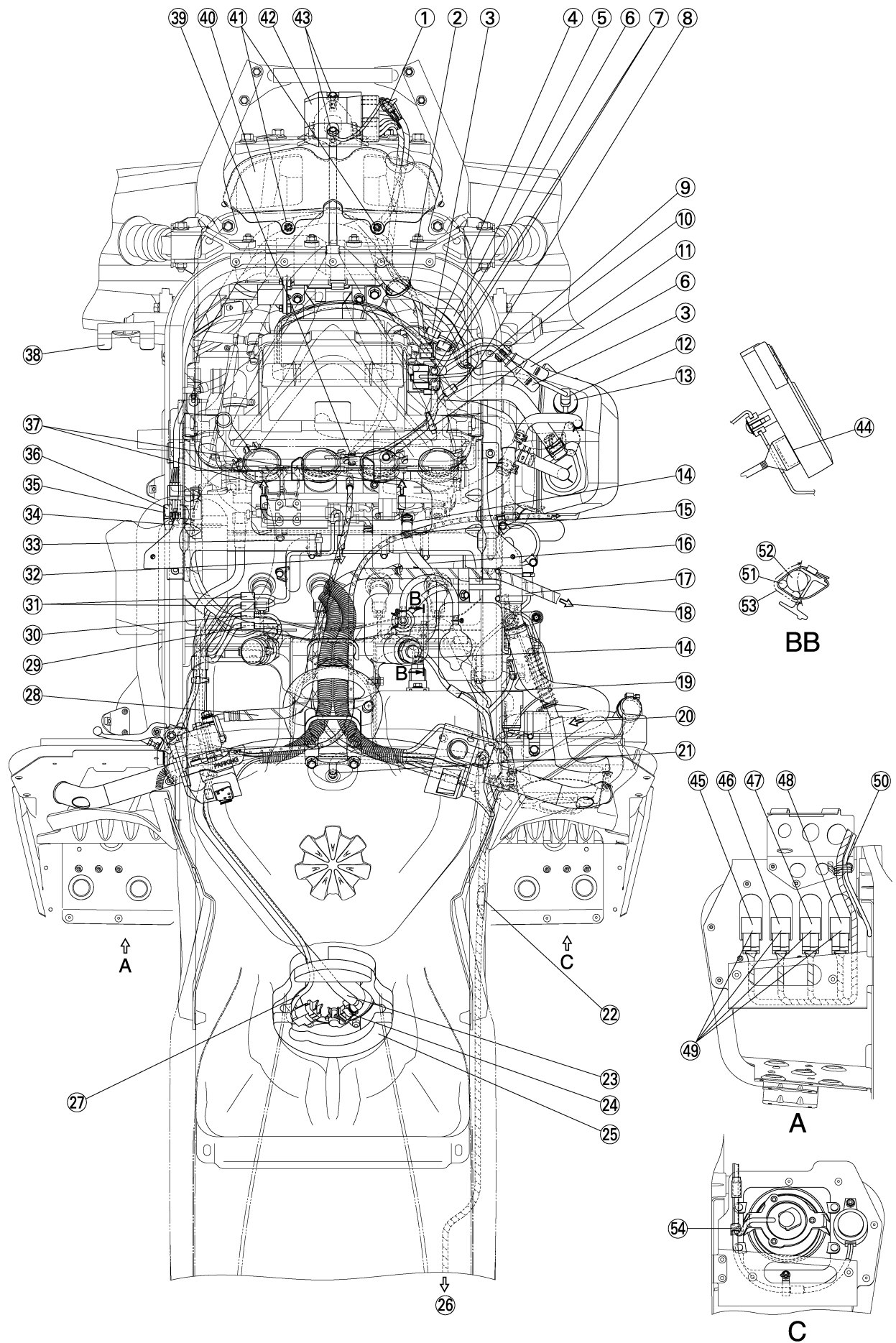


A: Distance across flats

B: Outside thread diameter

DEFINITION OF UNITS

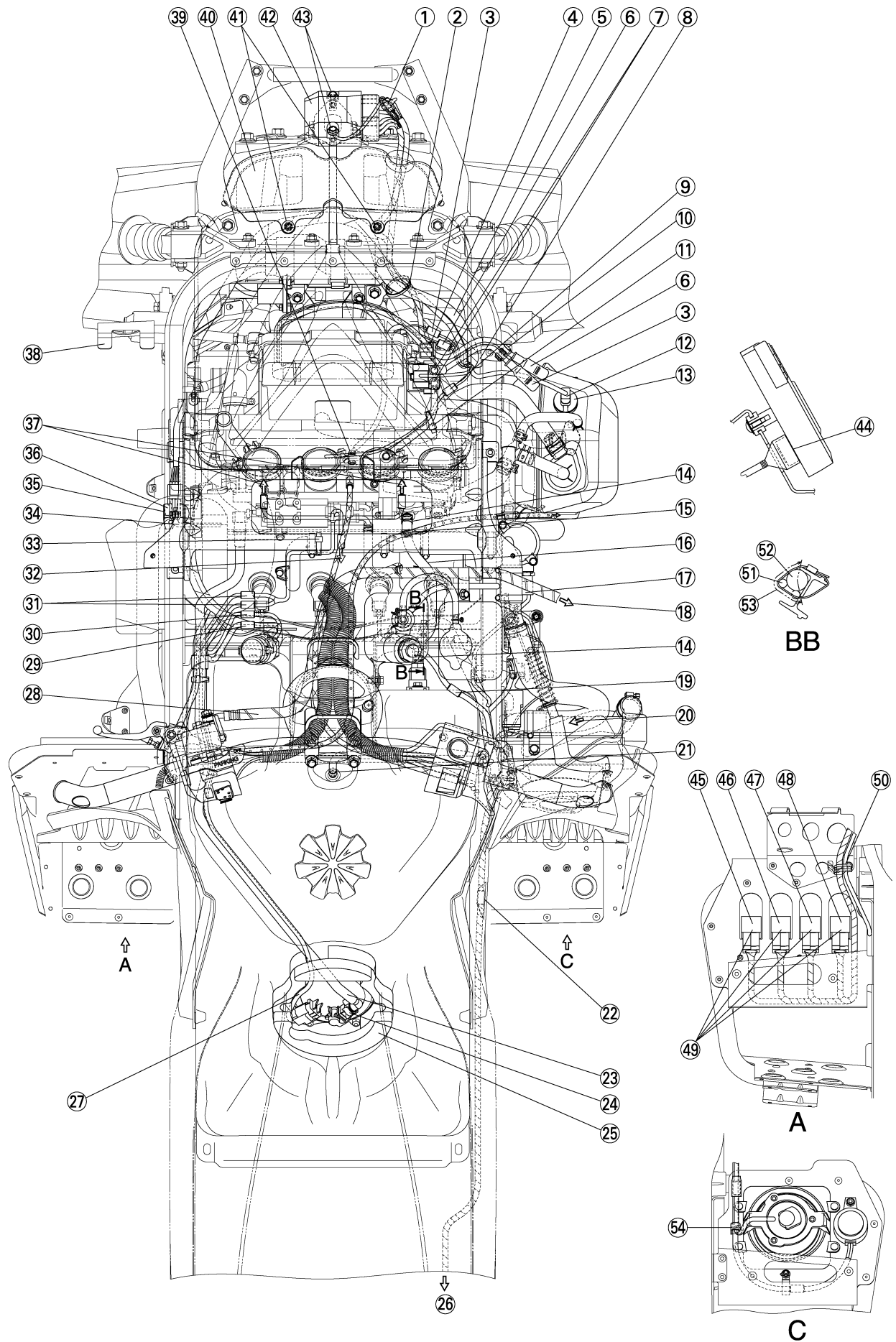
Unit	Read	Definition	Measurement
mm	Millimeter	10^{-3} meter	Length
cm	Centimeter	10^{-2} meter	Length
kg	Kilogram	10^3 gram	Weight
N	Newton	$1 \text{ kg} \times \text{m}/\text{sec}^2$	Force
Nm	Newton meter	$\text{N} \times \text{m}$	Torque
m•kg	Meter kilogram	$\text{m} \times \text{kg}$	Torque
Pa	Pascal	N/m^2	Pressure
N/mm	Newtons per millimeter	N/mm	Spring rate
L	Liter	—	Volume or capacity
cm^3	Cubic centimeter	—	Volume or capacity
r/min	Rotations per minute	—	Engine speed





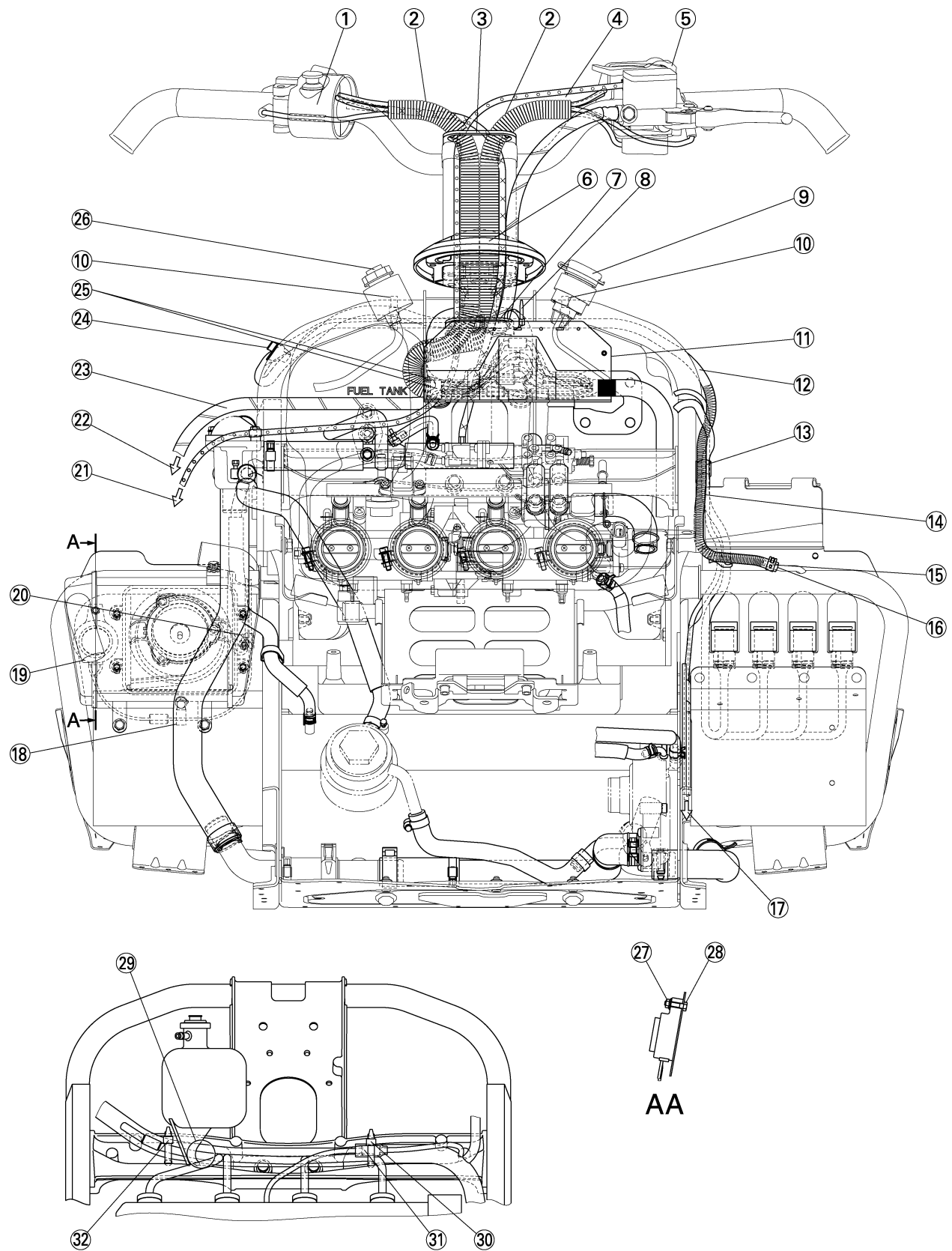
CABLE ROUTING

- ① Clamp the A.C. magneto lead and wire harness ground lead.
- ② Clamp the wire harness and A.C. magnet lead to the raised portion of the battery bracket.
- ③ Battery positive lead
- ④ Main fuse
- ⑤ Main harness
- ⑥ Battery negative lead
- ⑦ Flange bolt
- ⑧ Clamp the wire harness to the steering gate clamp.
Make sure to place the wire harness junction at the rear end behind the clamp.
- ⑨ Fit it to the sub-lead wire 3.
- ⑩ Clamp
- ⑪ Route the sub-lead wire 3 and cell motor positive lead over the battery bracket and clamp them to the battery bracket.
- ⑫ Oil level switch lead coupler
- ⑬ Oil level switch
- ⑭ Point both clips at two points upward.
- ⑮ Clip
- ⑯ Pipe 2
- ⑰ Coolant temperature sensor lead coupler
- ⑱ To the brake caliper.
- ⑲ Main switch lead coupler
- ⑳ To the heat exchanger
- ㉑ Clip
- ㉒ Route the tail/brake light leads over the raised portion.
- ㉓ Fuel pipe
- ㉔ Clamp



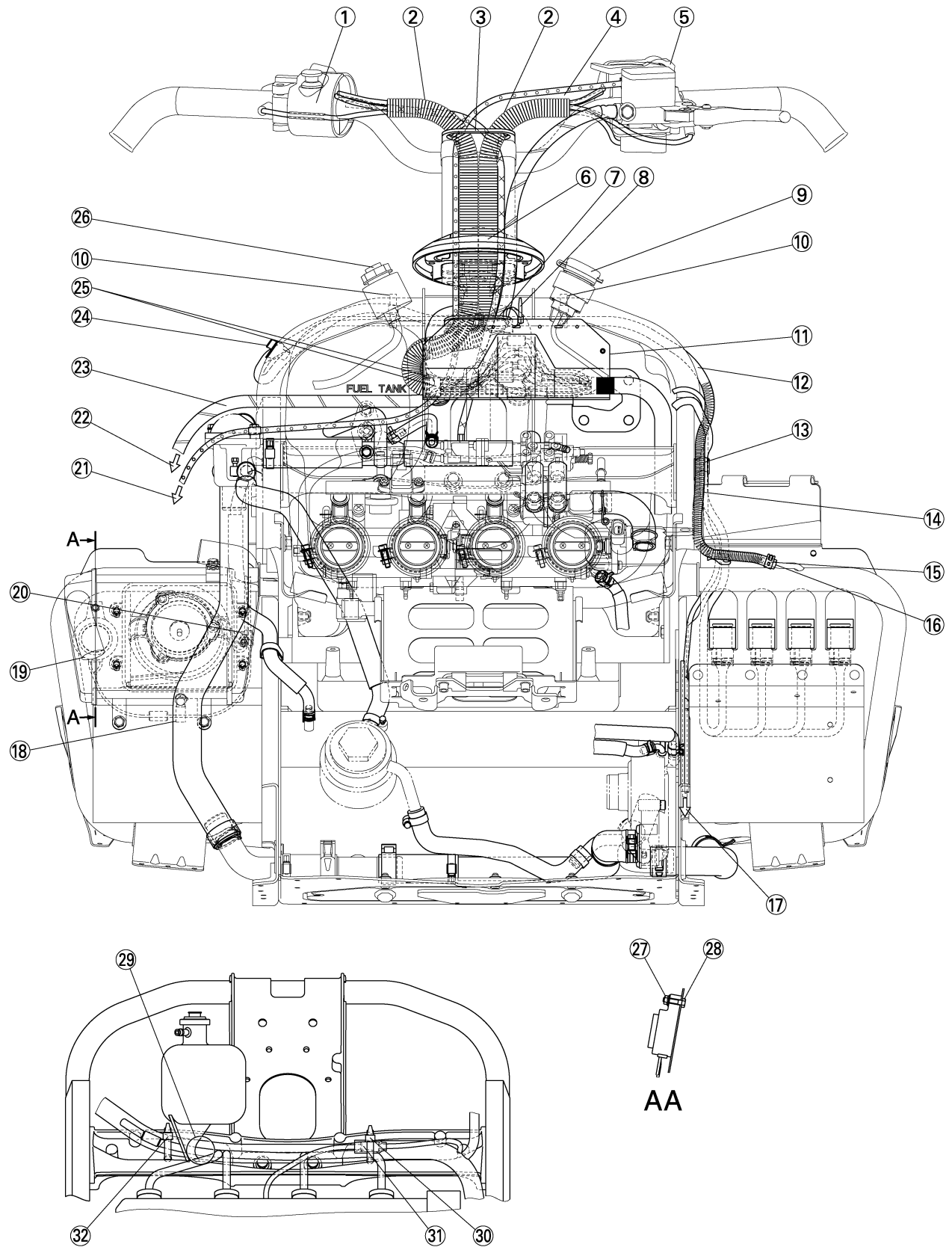


- ②5 Place the damper locating between the fuel tank and sheet.
- ②6 To the tail/brake light.
- ②7 Sub-wire harness
- ②8 Brake hose
- ②9 Fuel sender lead cover
- ③0 Auxiliary DC jack coupler
- ③1 Headlight lead coupler
- ③2 To the meter assembly.
- ③3 Clamp the headlight lead.
- ③4 Rout the headlight stay.
- ③5 Align the hole of dia. 3 mm (0.12 in) of the steering gate with the white tape position of the harness and secure them.
Install the 12 pin connector to the top surface.
- ③6 Fit it to the extension wire harness.
- ③7 To the headlight.
- ③8 Drive guard bracket
- ③9 Attach the battery negative lead to the cell motor fixing bolt.
- ④0 Front cover
- ④1 Screw
- ④2 Rectifier/regulator
- ④3 Flange bolt
- ④4 Put the boots of the meter coupler in the boss root on the side of the meter.
- ④5 Fuel injection system relay
- ④6 Headlight relay
- ④7 Load relay
- ④8 Radiator fan motor relay
- ④9 Installation position of each relay can be selected freely.
- ⑤0 Clamp the wire harness and speed sensor lead.
(Be sure to fold so that the harnesses cannot be disconnected.)
- ⑤1 Sub-wire lead (ignition coil lead)
- ⑤2 Wire harness
- ⑤3 Clamp the ignition coil lead so that it can be set within this range. (It should not be caught between the wire harness and steering gate.)
- ⑤4 Clamp the leads of the radiator fan motor and back buzzer and then fold the clamp by 90 degrees.



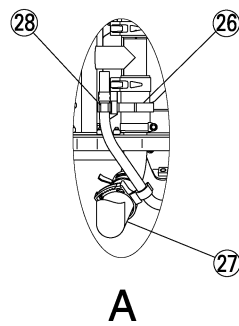
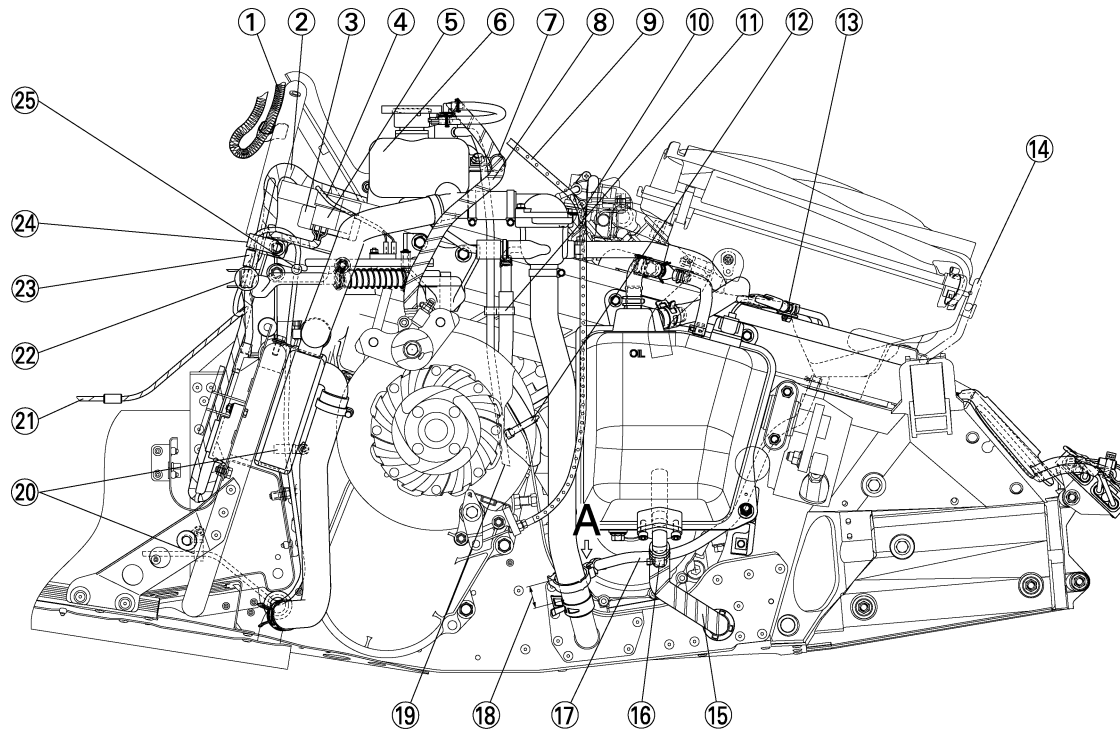


- ① Right handlebar switch
- ② Tube lead
- ③ Handlebar holder (Route the wire harness, parking brake cable, throttle cable.)
- ④ Parking brake cable
- ⑤ Left handlebar switch
- ⑥ Pass all the wire harness, brake hose, brake cable and throttle cable through it.
Arrange the line of cables and hoses as shown in the illustration and they should not lap over each other.
- ⑦ Pass all the wire harness, brake hose, brake cable and throttle cable through it.
- ⑧ Clamp the cover and bearing holder.
- ⑨ Auxiliary DC jack
- ⑩ Clamp the steering gate and fuel tank breather hose.
- ⑪ After fitting, bundle the couplers of the brake light switch, lever holder 1, lever holder 3, thumb warmer, head light beam switch, lever holder 2, grip warmer × 2, grip warmer switch handle and thumb warmer switch handle with the cover, and then close at two points of bosses.
Fit the wire harness from the handle with the wire harness of the white tape.



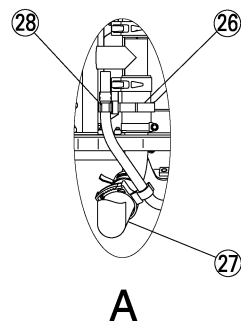
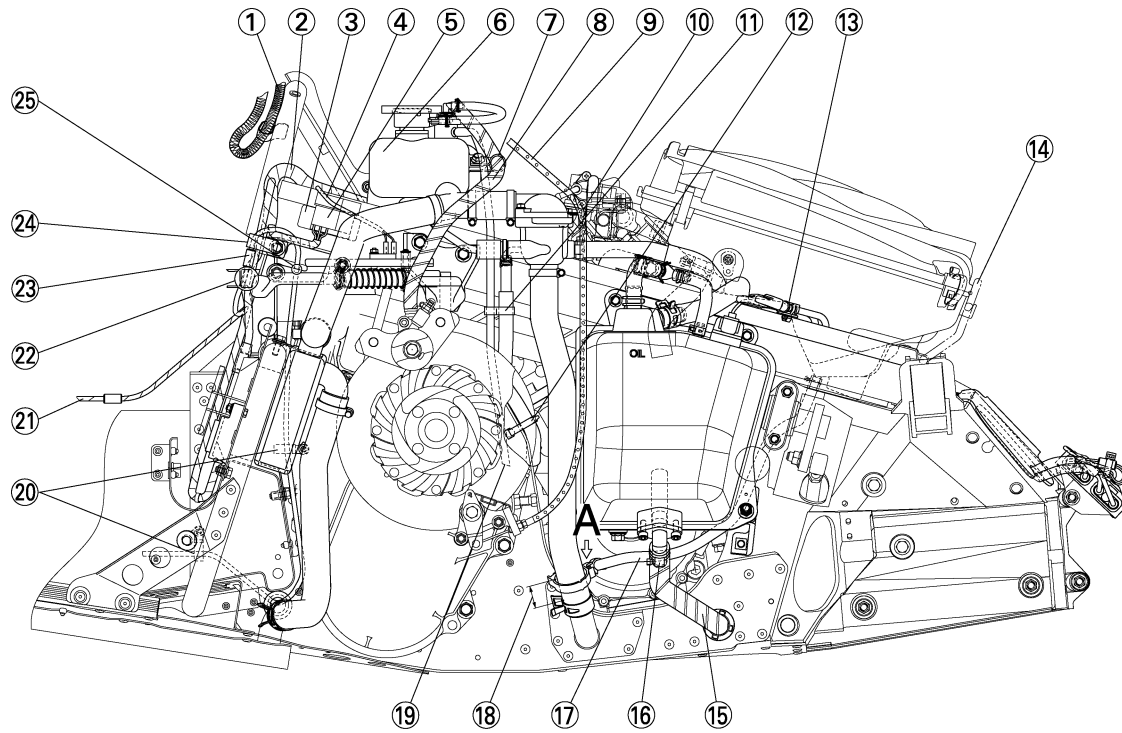


- ⑫ Route the fuel tank breather hose along the steering gate.
- ⑬ Clamp the compression spring section of the fuel tank breather hose.
- ⑭ Compression spring
- ⑮ Point the clip position to the upward.
- ⑯ Insert the fuel tank breather hose until it contacts the projection.
To insert the hose, it is allowed to apply oils.
- ⑰ To the speed sensor.
- ⑱ Clamp the back buzzer lead.
- ⑲ Back buzzer
(RX10RL, RX10RTRL, RX10GTL, RXW10L)
- ⑳ Clamp the radiator fan motor lead and back buzzer lead.
- ㉑ To the parking brake.
- ㉒ To the brake caliper.
- ㉓ Brake hose
- ㉔ Clamp the fuel tank breather hose.
- ㉕ Bind the two tube leads on the steering column side at one point by wrapping the tape (black) 3 to 5 turns.
The end section of tape should not be peeled.
- ㉖ Main switch
- ㉗ Flange nut
- ㉘ Hexagon bolt
- ㉙ Route the lead by the inside of the wire harness and sub-wire lead (ignition coil lead).
- ㉚ Clamp the wire harness, cylinder identification sensor (together with the connector cover) and sub-lead wire (ignition coil lead).
- ㉛ Cylinder identification sensor
- ㉜ Clamp the wire harness and sub-wire lead (ignition coil lead).



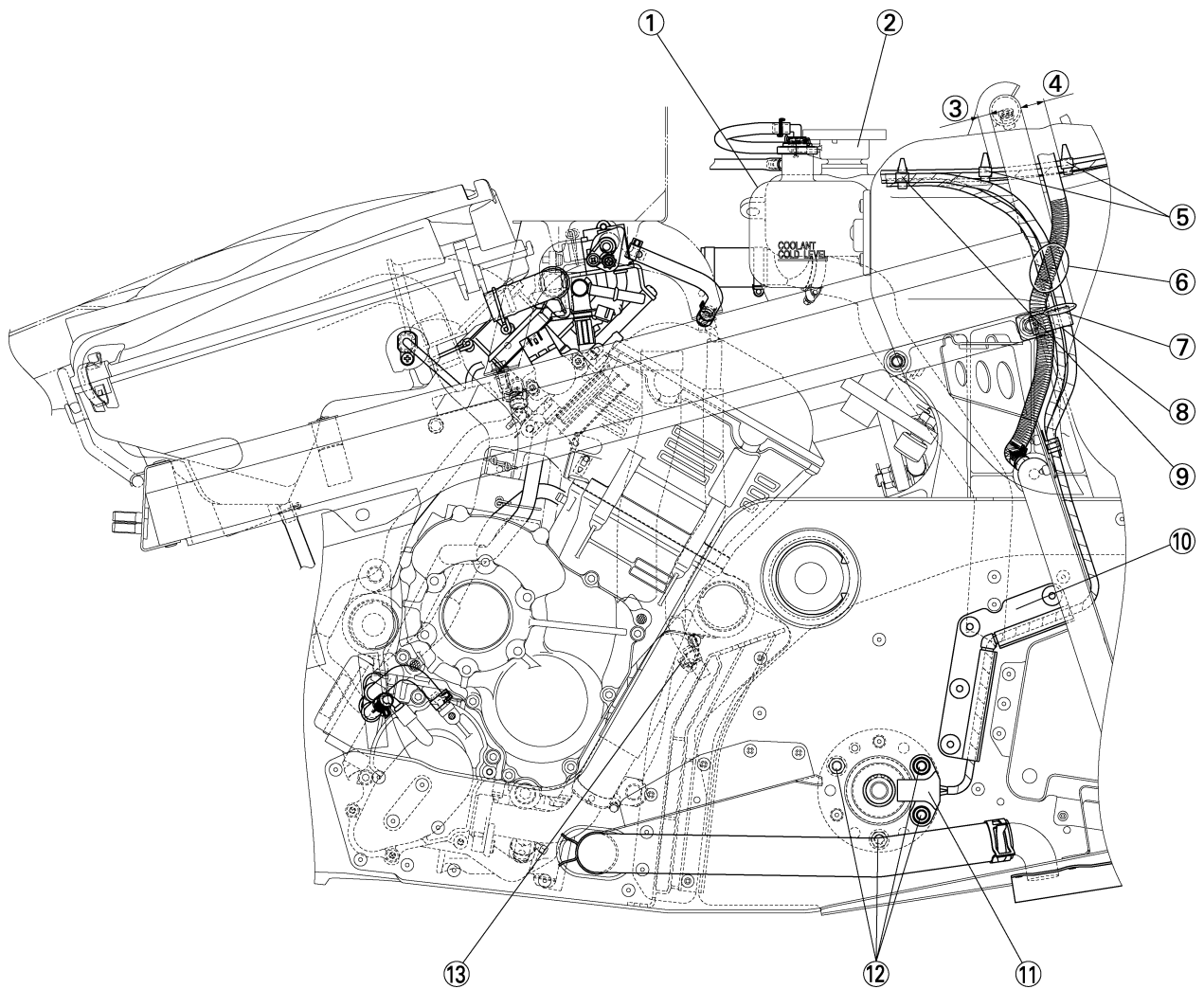


- ① Route the fuel tank breather hose behind the steering gate.
- ② Wire harness
- ③ Bracket
- ④ When the gear position switch lead is equipped with reverse, route it to the reverse gear.
If it is not equipped with reverse, insert it to the inner side.
- ⑤ Fuse box
- ⑥ Coolant reservoir tank
- ⑦ Clamp
- ⑧ Brake hose
- ⑨ Parking brake cable
- ⑩ After clamping, bend it 90° downward.
- ⑪ Clamp
- ⑫ Clamp the hose at the white paint position.
Point the clamp position to the front outside.
- ⑬ Clamp the battery positive lead and battery negative lead.
- ⑭ Latch
- ⑮ Engine oil tank hose
- ⑯ Point the clamp tightening direction to the downward.
- ⑰ Drain hose
- ⑱ Less than 30 mm (1.2 in).
- ⑲ Pass the coolant reservoir tank breather hose through between engine and heat exchanger.
- ⑳ Clamp the rear suspension sub-lead. (RX10GTL)
- ㉑ To the tail/brake light.
- ㉒ Pass the wire harness and unused lead for the electronic rear suspension between the ribs of side cover 2 and frame.



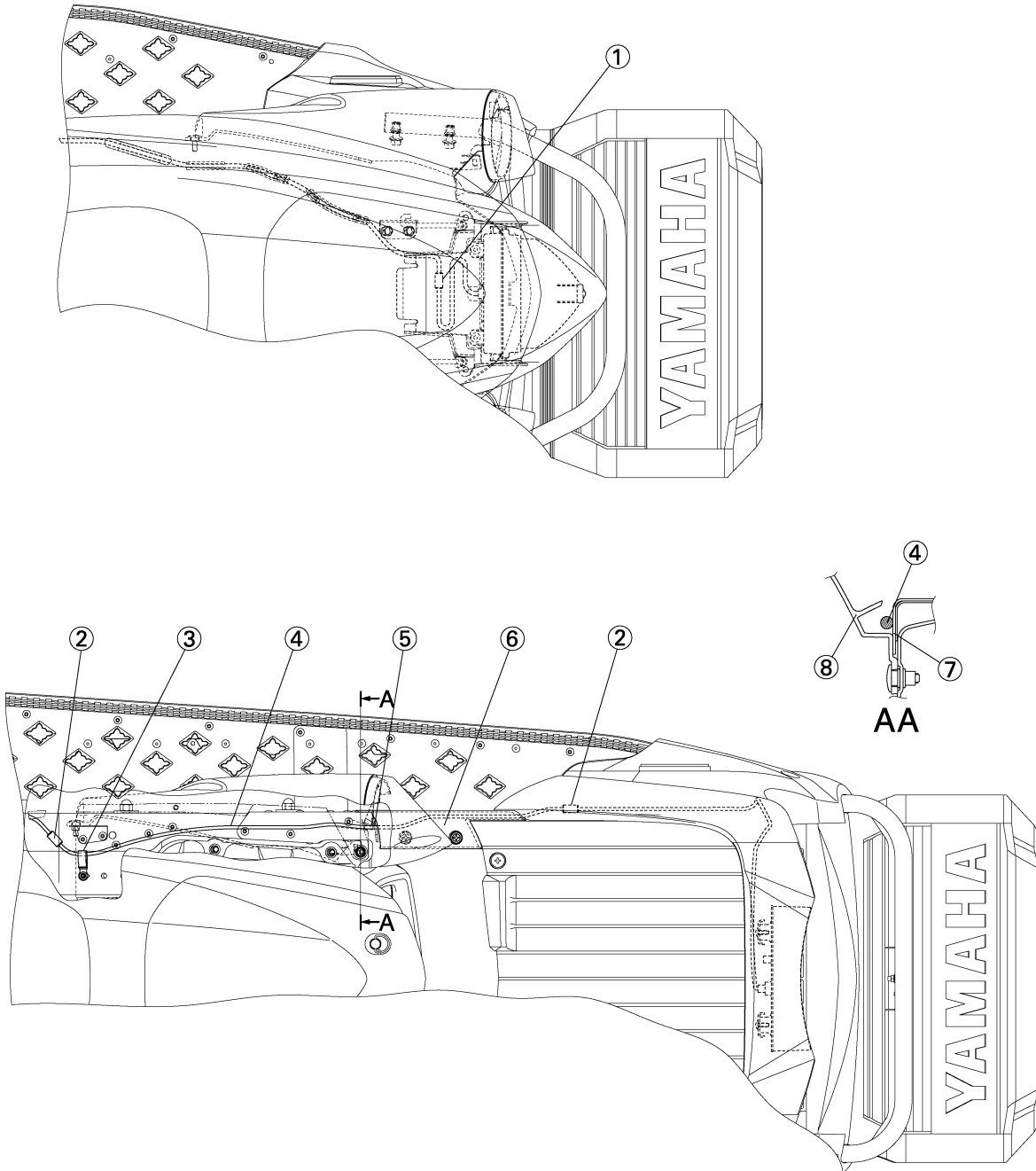


- ②③ Fit it to the rear suspension lead. (Other types are attached with plugs.) (RX10GTL)
- ②④ Clamp the wire harness and radiator fan motor lead. (RX10RTL, RX10RL, RX10RTRL, RXW10L, RX10ML)
Clamp the wire harness, radiator fan motor lead and electronic rear suspension lead. (RX10GTL)
Tighten the frame cross member and frame together.
- ②⑤ Pass the electronic rear suspension sub-lead between the guide plate for the reverse lever and the frame.
- ②⑥ Point the clamp position to the downward.
- ②⑦ Point the clamp position to the inside.
- ②⑧ Clamp the leads before the fixture.





- ① Coolant recovery tank
- ② Coolant reservoir tank
- ③ 10 ~ 30 mm (0.4 ~ 1.2 in)
- ④ 20 ~ 40 mm (0.8 ~ 1.6 in)
- ⑤ Clamp the fuel pipe and sub-wire lead.
- ⑥ Pass the fuel tank breather hose between the relay harness and the speed sensor harness.
- ⑦ Two harness untis should not contact the pipe end.
- ⑧ Clamp the fuel tank breather hose and two wire harness.
Tighten the frame cross member and frame.
- ⑨ Clamp the fuel pipe, sub-wire lead, speed sensor lead and relay harness.
- ⑩ Wire harness clamp
- ⑪ Speed sensor
- ⑫ Nylon nuts
- ⑬ Point the pawl of clip to the downward.

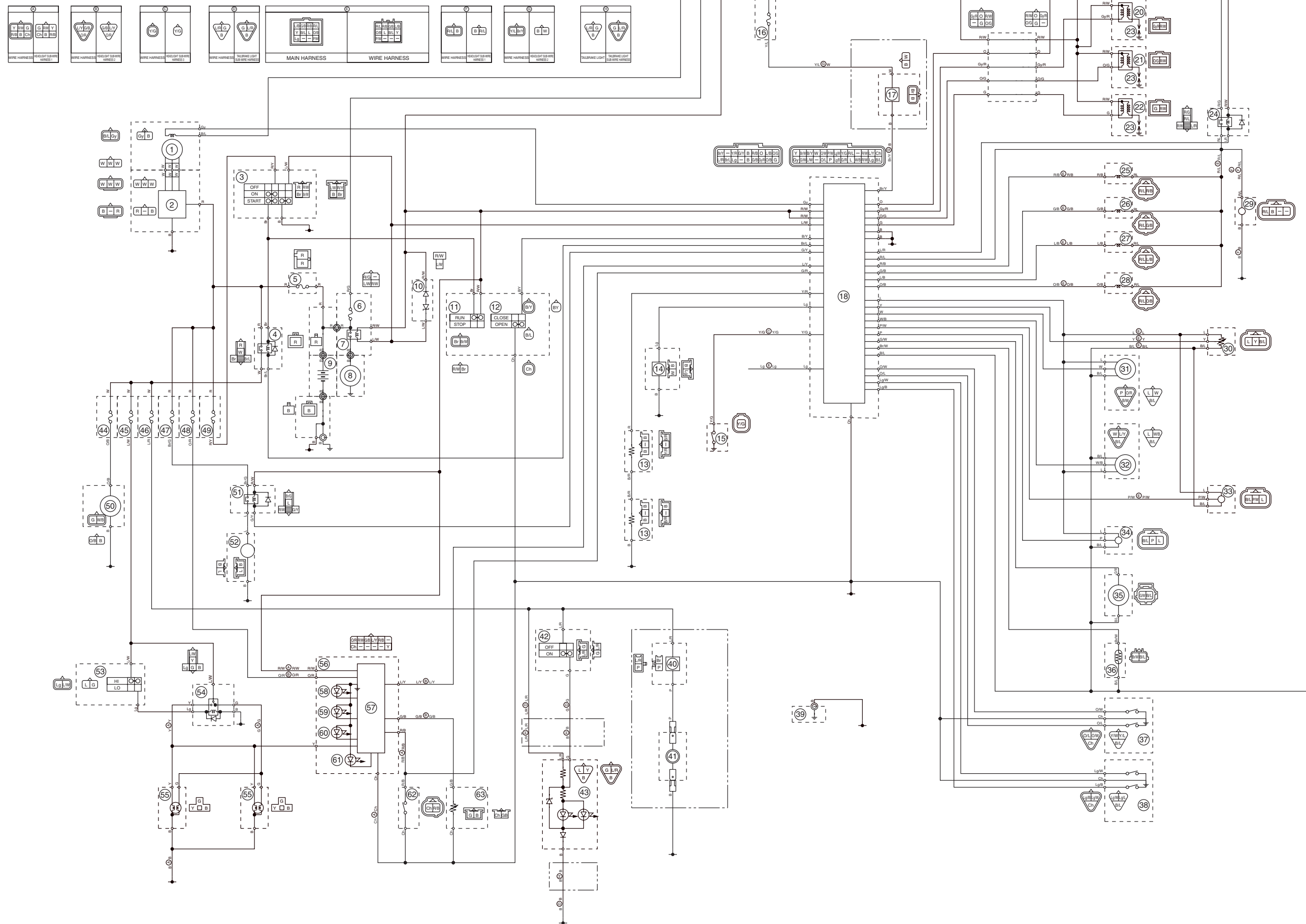




- ① Tail/brake light lead coupler
(Place the tail/brake light lead coupler leads so that they are not caught between the seat bottom and tail light bracket.)
- ② Tail/brake light lead coupler (RX10ML)
- ③ Clamp (RX10ML)
- ④ Tail/brake light lead (RX10ML)
- ⑤ Tail/brake light lead cover (RX10ML)
- ⑥ Cover plate (RX10ML)
- ⑦ Rear frame (RX10ML)
- ⑧ Protector (RX10ML)

WIRING DIAGRAM

2006 RX10RTL, RX10RL, RX10RTRL, RX10GTL, RXW10L, RX10ML (8FP-0F001-00)



- ① A.C. magneto
- ② Rectifier/regulator
- ③ Main switch
- ④ Load relay
- ⑤ Fuse (MAIN)
- ⑥ Fuse (FUEL INJECTION SYSTEM)
- ⑦ Starter relay
- ⑧ Starter motor
- ⑨ Battery
- ⑩ Diode
- ⑪ Engine stop switch
- ⑫ Throttle switch
- ⑬ Grip warmer
- ⑭ Thumb warmer
- ⑮ Oil presser switch
- ⑯ Fuse (ELECTRONIC CONTROL SUSPENSION) (RX10GTL)
- ⑰ Electronic control suspension solenoid (RX10GTL)
- ⑱ E.C.U.
- ⑲ Ignition coil #1
- ⑳ Ignition coil #2
- ㉑ Ignition coil #3
- ㉒ Ignition coil #4
- ㉓ Spark plug
- ㉔ Fuel injection relay
- ㉕ Injector #1
- ㉖ Injector #2
- ㉗ Injector #3
- ㉘ Injector #4
- ㉙ Fuel pump
- ㉚ Throttle position sensor
- ㉛ Speed sensor
- ㉜ Cylinder identification sensor
- ㉝ Intake air pressure sensor
- ㉞ Atmospheric pressure sensor
- ㉟ Water temperature sensor
- ㊱ Intake air temperature sensor
- ㊲ Grip warmer switch
- ㊳ Thumb warmer switch
- ㊴ Body ground
- ㊵ Back buzzer (RX10RL, RX10RTRL, RX10GTL, RXW10L)
- ㊶ Gear position switch (RX10RL, RX10RTRL, RX10GTL, RXW10L)
- ㊷ Brake light switch
- ㊸ Tail/brake light
- ㊹ Fuse (AUXILIARY DC JACK)
- ㊺ Fuse (HEADLIGHT)
- ㊻ Fuse (SIGNAL)
- ㊼ Fuse (RADIATOR FAN MOTOR)
- ㊽ Fuse (BACK UP)
- ㊾ Fuse (IGNITION)
- ㊿ Auxiliary DC jack
- 1 Radiator fan motor relay
- 2 Radiator fan motor
- 3 Headlight beam switch
- 4 Headlight relay
- 5 Headlight
- 6 Meter assembly
- 7 Multi-function meter
- 8 Warning light
- 9 Water temperature indicator light
- 0 Hi beam indicator light
- 1 Meter light
- 2 Oil level switch
- 3 Fuel sender

COLOR CODE

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

