



SERVICE MANUAL

SRX700D
SRX700SD

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.

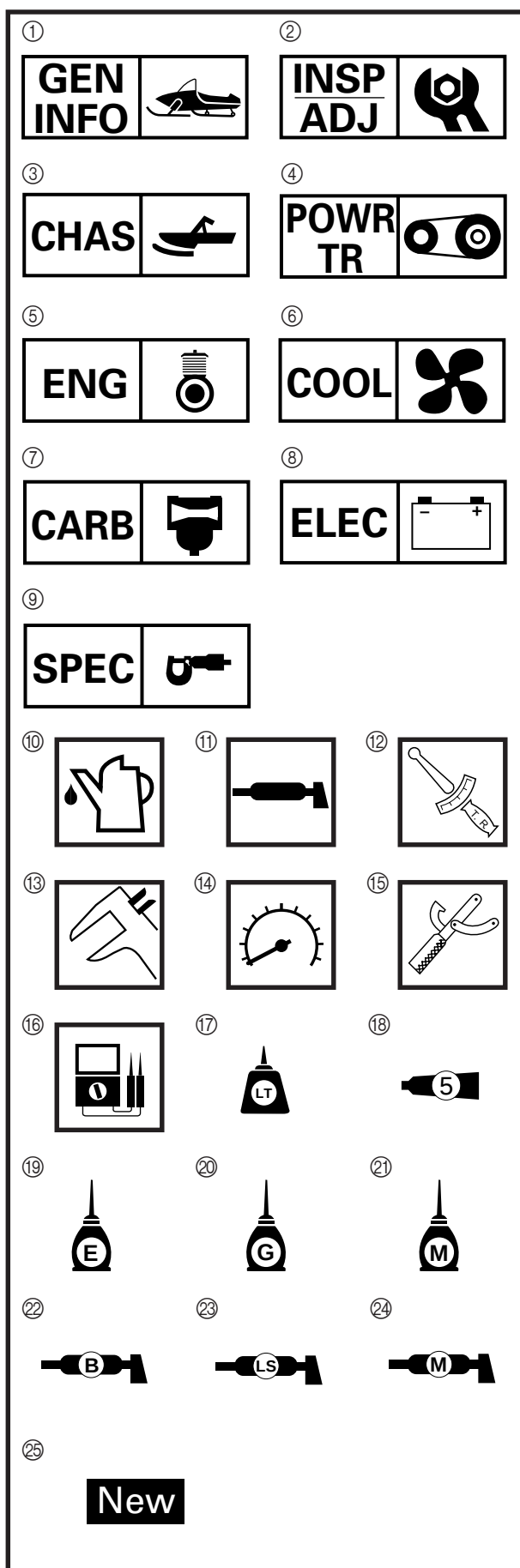
In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required to correct the problem will follow the symbol, e.g.,

- Bearings
Pitting/damage → Replace.

EXPLODED DIAGRAM

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

**SRX700, SRX700S
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 inspection and adjustment
- 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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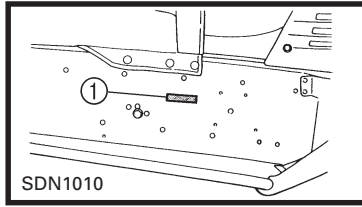
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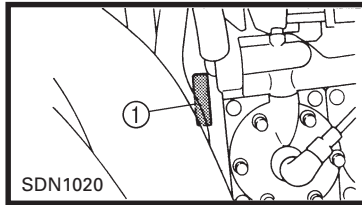


GENERAL INFORMATION

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).

1

ENGINE SERIAL NUMBER

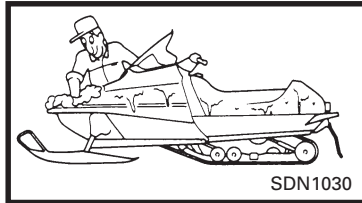
The engine serial number ① is located on the right-hand side of the crankcase.

NOTE:

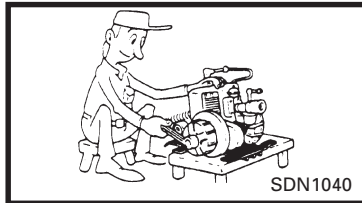
Designs and specifications are subject to change without notice.

IMPORTANT INFORMATION

PREPARATION FOR REMOVAL AND DISASSEMBLY



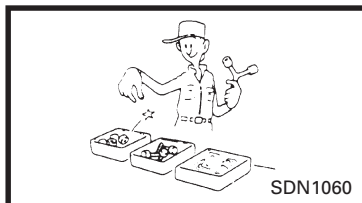
SDN1030



SDN1040



SDN1050



SDN1060

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.

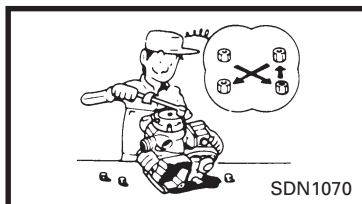
2. Use proper tools and cleaning equipment.

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.

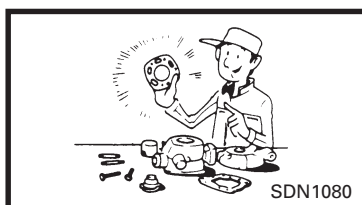


SDN1070

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 crisscross pattern.

ALL REPLACEMENT PARTS

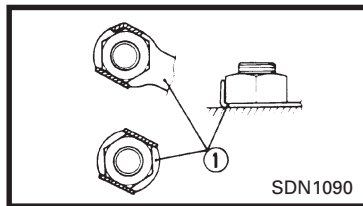
We recommend using genuine Yamaha parts for all replacements. Use oil and grease recommended by Yamaha for assembly and adjustments.



SDN1080

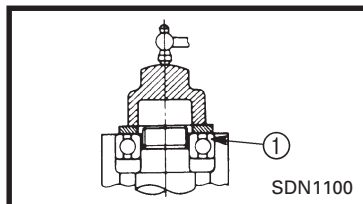
GASKETS, OIL SEALS, AND O-RINGS

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.



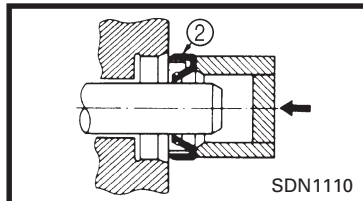
LOCK WASHERS/PLATES AND COTTER PINS

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.



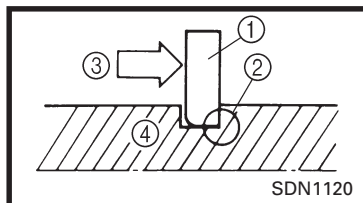
BEARINGS AND OIL SEALS

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®

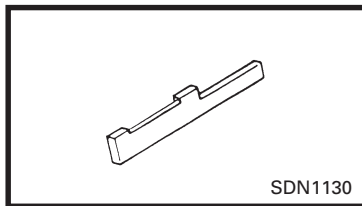
After installing fasteners that have LOCTITE® applied, wait 24 hours before using the machine. This will give the LOCTITE® time to dry properly.

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:

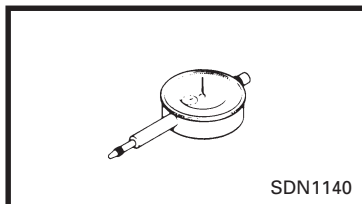
Be sure to use the correct part number when ordering the tool, since the part number may differ according to country.



FOR TUNE UP

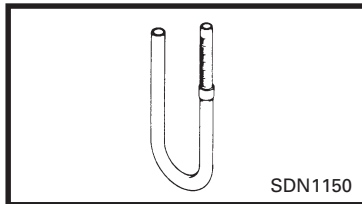
- Sheave gauge
P/N: YS-42421-1 (15 mm offset)

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



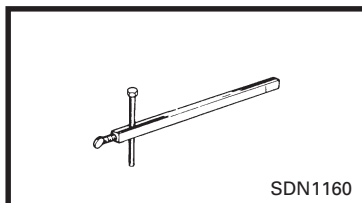
- Dial gauge
P/N: YU-03097 (for U.S.A./Canada)
90890-03097 (for Europe)

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.



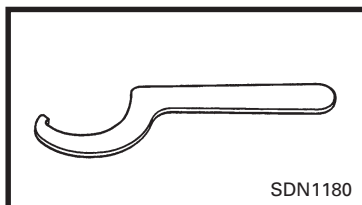
- Distance gauge
P/N: YS-91047-3 (for U.S.A./Canada)
90890-01702 (for Europe)

This gauge is used to measure the distance between the center of the primary sheave and the center of the secondary sheave.



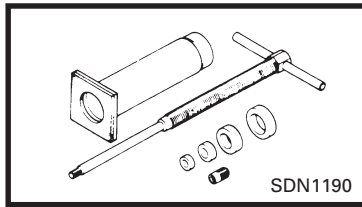
- Adjusting screwdriver (SRX700S)
P/N: 8DE-23703-00

This tool is used to adjust the damping force in the front suspension.



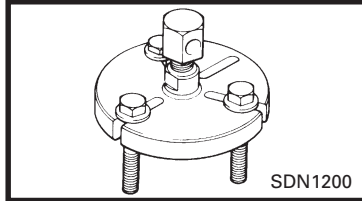
- Special wrench (SRX700S)
P/N: 4PU-28135-00

This tool is used to adjust the spring preload in the front suspension.

**FOR ENGINE SERVICE**

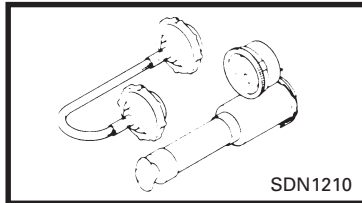
- Piston pin puller
P/N: YU-01304 (for U.S.A./Canada)
90890-01304 (for Europe)

This tool is used to remove the piston pin.



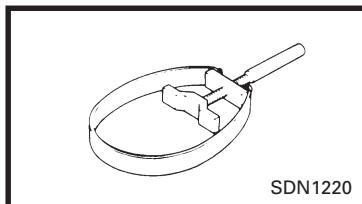
- Rotor holding puller
P/N: YU-33270 (for U.S.A./Canada)
90890-01362 (for Europe)

This tool is used to remove the magneto rotor.



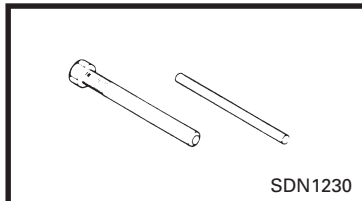
- Cooling system tester
P/N: YU-24460-01 (for U.S.A./Canada)
90890-01325 (for Europe)

This tester is used for checking the cooling system.

**FOR POWER TRAIN SERVICE**

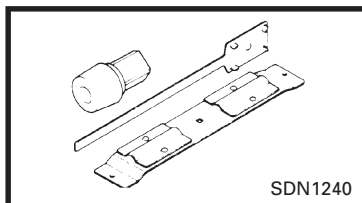
- Primary sheave holder
P/N: YS-01880 (for U.S.A./Canada)
90890-01701 (for Europe)

This tool is used to hold the primary sheave.



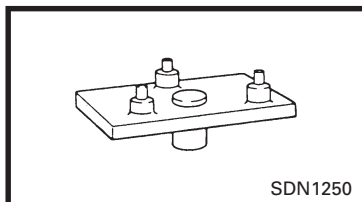
- Primary sheave puller (18 mm)
P/N: YS-39962

This tool is used for removing the primary sheave.



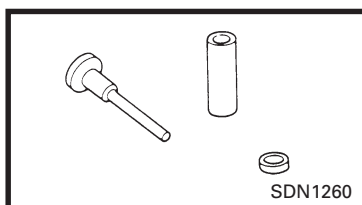
- Clutch spider separator
P/N: YS-28890-B (for U.S.A./Canada)
90890-01711 (for Europe)

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



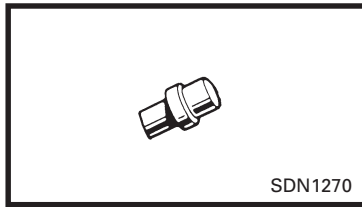
- Clutch separator adapter
P/N: YS-34480 (for U.S.A./Canada)
90890-01740 (for Europe)

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



- YXR clutch bushing jig kit
P/N: YS-39752

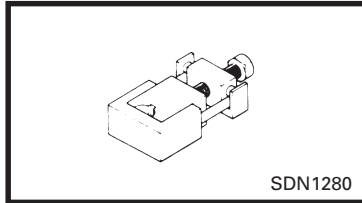
This tool is used for removal and installation of primary clutch weight and roller bushings.



- Clutch bushing press

P/N: YS-42424

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)

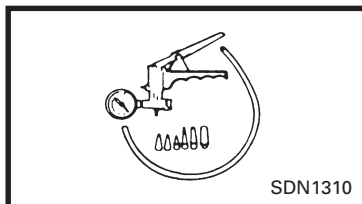
This tool is used for installing the track clip.



- Angle finder

P/N: YS-42422

This tool is used for checking and adjusting the ski spindle camber.



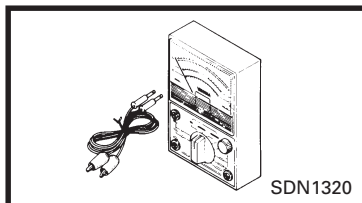
FOR CARBURETION SERVICE

- Mity vac

P/N: YB-35956 (for U.S.A./Canada)

90890-06756 (for Europe)

This tool is used to check the fuel pump.



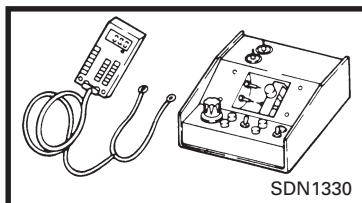
FOR ELECTRICAL SERVICE

- Pocket tester

P/N: YU-03112 (for U.S.A./Canada)

90890-03112 (for Europe)

This instrument is necessary for checking the electrical components.

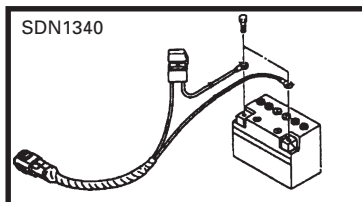


- Electro tester

P/N: YU-33260-A (for U.S.A./Canada)

90890-03021 (for Europe)

This instrument is invaluable for checking the electrical system.



- Yamaha power valve system (Y.P.V.S.) adjustment coupler.

P/N: YS-43092

This tool is used for adjusting the Y.P.V.S.

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	Pre-operation check (daily)	Initial 1 month or first 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.			Every 1,600 km (1,000 mi)
Engine oil	Check oil level.	●		
	Air bleed the oil pump if necessary.			●
Fuel	Check fuel level.	●		
Fuel filter	Check condition. Replace if necessary.			●
Fuel line	Check fuel hose for cracks or damage. Replace if necessary.			●
Oil line	Check oil hose for cracks or damage. Replace if necessary.			●
Engine coolant	Check coolant level.	●		
	Air bleed the cooling system if necessary.			●
Louvers	Check condition. Remove snow if necessary.	●		
Carburetors	Check throttle lever operation.	●		
	Adjust the jets.	Whenever operating condition (elevation/temperature) is changed		
Y.P.V.S.	Check operation. Adjust if necessary.			●
Manual starter	Check operation and rope damage. Replace if necessary.	●		
Engine stop switch	Check operation. Repair if necessary.	●		
Throttle override system	Check operation. Repair if necessary.	●		
Throttle lever	Check operation. Repair if necessary.	●		
Exhaust system	Check for leakage. Retighten or replace gasket if necessary.			●
Decarbonization	More frequently if necessary.			●
Drive V-belt guard	Check for cracks, bends or damage. Replace if necessary.	●		
Drive V-belt	Check for wear and damage. Replace if necessary.	●		
Drive track/idler wheels	Check deflection and for wear and damage. Adjust/replace if necessary.	●		

PERIODIC MAINTENANCE TABLE

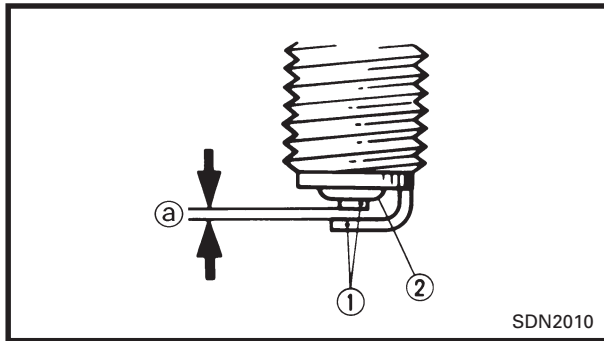


Item	Remarks	Pre-operation check (daily)	Initial 1 month or first 800 km (500 mi) (40 hr)	Every
				Seasonally or 3,200 km (2,000 mi) (160 hr)
Slide runner	Check for wear and damage.	●		
	Replace if necessary.			●
Brake/parking brake	Check operation and fluid leakage.	●		
	Adjust free play and/or replace pads if necessary.			●
	Change brake fluid.	See NOTE.		
Disk 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.		●	
	Change.			●
Drive chain	Check deflection. Adjust if necessary.	After the first 80 km (50 mi) and every 800 km (500 mi) thereafter		
Ski/ski runner	Check for wear and damage.	●		
	Replace if necessary.			●
Steering system	Check operation.	●		
	Adjust toe-out if necessary.			●
Lights	Check operation. Replace bulbs if necessary.	●		
Primary sheave	Check engagement and shift speed.			●
	Adjust if necessary.	Whenever operating elevation is changed		
	Check for wear and damage. Replace if necessary.			●
	Lubricate with specified grease.			●
Secondary sheave	Lubricate with specified grease.			●
	Adjust if necessary.	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 the shroud latches are hooked.	●		
Fittings/fasteners	Check tightness. Repair if necessary.	●		
Service tools/spare parts	Check for proper placement.	●		

NOTE:

Brake fluid replacement:

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



SDN2010

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 ③:
0.7 ~ 0.8 mm (0.028 ~ 0.031 in)

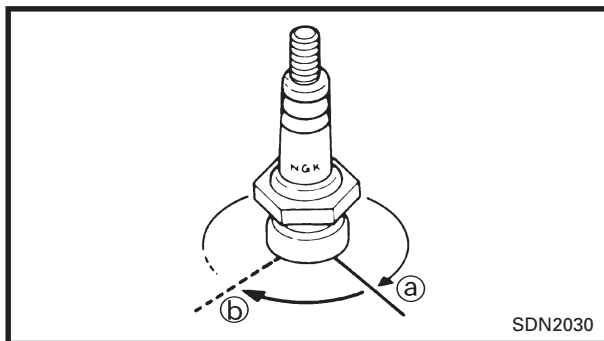


SDN2020

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

Standard spark plug:
BR9ECS (NGK)

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



SDN2030

4. Install:
 - Spark plugs



Spark plug:
20 Nm (2.0 m • kg, 14 ft • lb)

NOTE: _____

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



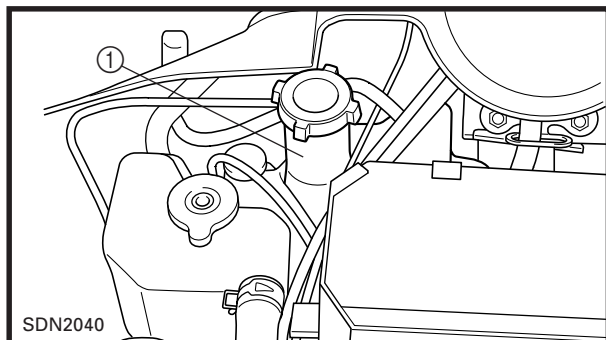
OIL PUMP

Air bleeding

CAUTION:

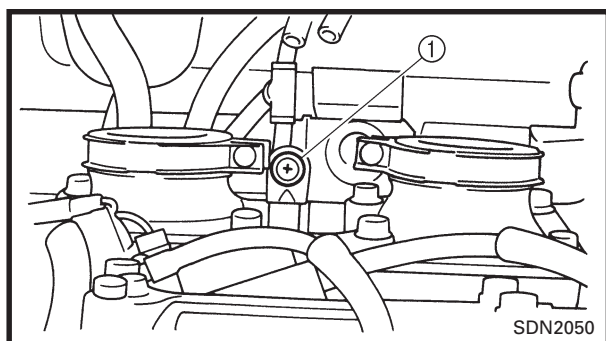
The oil pump and oil delivery line must be bled in the following cases:

- Any portion of the oil system has been disconnected.
- The machine has been turned on its side.
- The oil tank has been run empty.
- As part of the pre-delivery service.



Recommended oil:
YAMALUBE 2-cycle oil
Oil tank capacity:
3.3 L (2.9 Imp qt, 3.5 US qt)

1. Fill:
 - Oil tank ①
2. Remove:
 - Carburetors
Refer to "CARBURETORS" in CHAPTER 7.
3. Place a rag under the oil pump assembly to soak up any spilled oil.
4. Disconnect:
 - Oil hose
5. Drain the oil until no more air bubbles appear in the oil hose.
6. Connect:
 - Oil hose
7. Disconnect:
 - Oil delivery hose
8. Feed the "YAMALUBE 2-cycle oil" into the oil delivery hose using an oil can for complete air bleeding.
9. Connect:
 - Oil delivery hose



10. Remove:
 - Bleed screw ①
 - Gasket (bleed screw)
11. Drain the oil until no more air bubbles appear from the bleed hole.
12. Inspect:
 - Gasket (bleed screw)
Damage/wear → Replace.

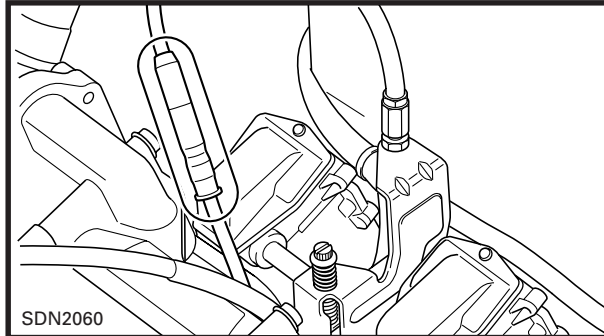
13. Install:

- Gasket (bleed screw)
- Bleed screw

14. Install:

- Carburetors

Refer to "CARBURETORS" in CHAPTER 7.



Cable adjustment

NOTE:

Before adjusting the oil pump cable, the throttle cable distance should be adjusted.

Adjustment steps:

- Slide back the adjuster cover.
- Loosen the locknut ①.
- Turn the adjuster ② in or out until the specified distance is obtained.



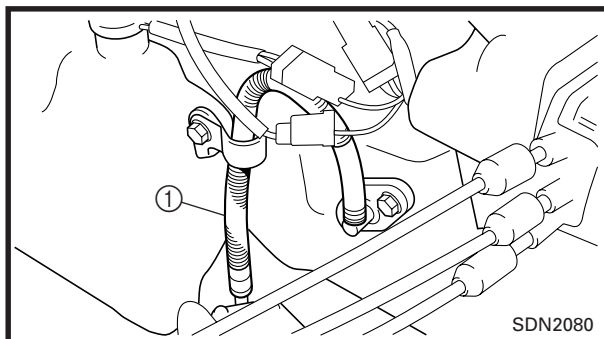
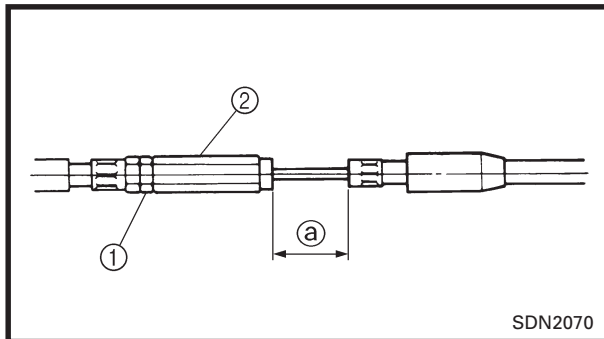
Distance ②:

20 ~ 22 mm (0.79 ~ 0.86 in)

Turning in → Distance ② is increased.

Turning out → Distance ② is decreased.

- Tighten the locknut and push in the adjuster cover.



FUEL LINE INSPECTION

1. Remove:

- Intake silencer

Refer to "FUEL PUMP" in CHAPTER 7.

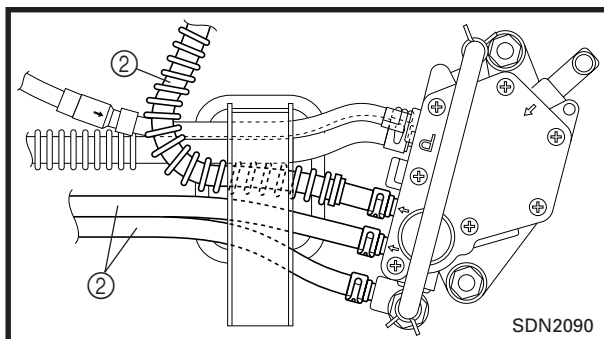
2. Inspect:

- Fuel hose ①
- Fuel delivery hoses ②
Cracks/damage → Replace.

3. Install:

- Intake silencer

Refer to "FUEL PUMP" in CHAPTER 7.



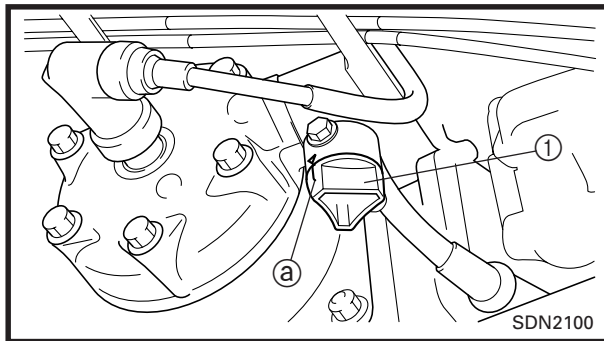
COOLING SYSTEM**Coolant replacement****NOTE:**

The coolant should be changed at least every season.

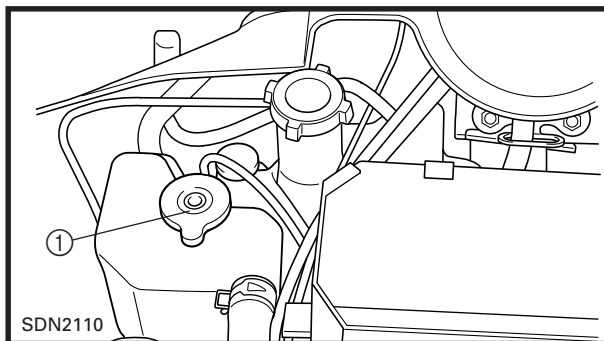
1. Place the machine on a level surface.

2. Remove:

- Exhaust pipe #1 (L), #2, #3 (R)
 - Exhaust pipe joint #1 (L), #2, #3 (R)
- Refer to "EXHAUST ASSEMBLY" in CHAPTER 5.



3. Make sure that the carburetor heating knob ① is turned to "ON" a.

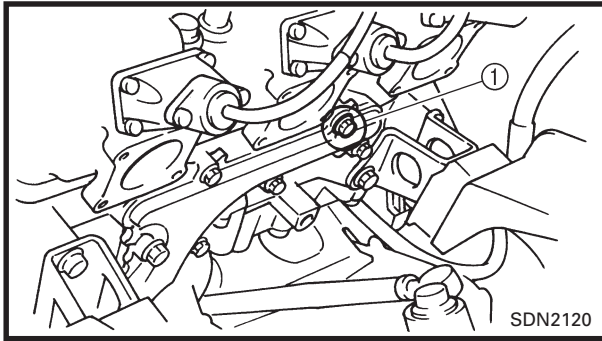


4. Remove:

- Coolant filler cap ①

⚠ WARNING

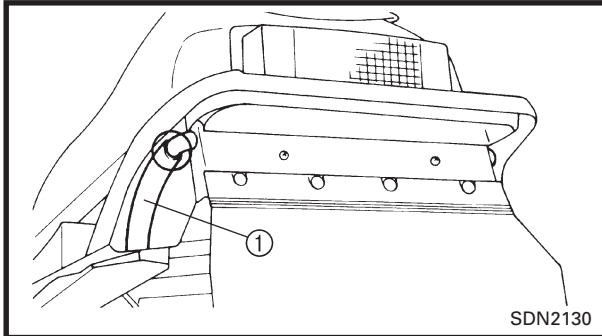
Do not remove the coolant filler cap ① when the engine is hot. Pressurized scalding hot fluid and steam may be blown out, which could cause serious injury. When the engine has cooled, place a thick rag or a towel over the coolant filler cap. Slowly turn the cap counterclockwise until it stop. This allows any residual pressure to escape. When the hissing sound has stopped, press down on the cap while turning it counterclockwise to remove it.



5. Place an open container under the coolant drain bolt ①.
6. Remove:
 - Coolant drain bolt
 - Gasket (coolant drain bolt)
7. Drain the coolant.

NOTE:

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



8. Disconnect:
 - Coolant hose 6 ①
9. Drain the coolant.

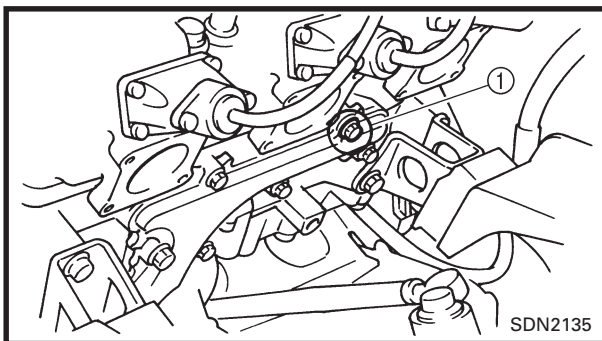
NOTE:

Lift up the tail 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. Inspect:
 - Gasket (coolant drain bolt)
Damage → Replace.
11. Install:
 - Gasket
 - Coolant drain bolt ①



Coolant drain bolt ①:
13 Nm (1.3 m • kg, 9.4 ft • lb)

12. Connect:
 - Coolant hose 6
13. Install:
 - Exhaust pipe joint #1 (L), #2, #3 (R)
 - Exhaust pipe #1 (L), #2, #3 (R)
Refer to "EXHAUST ASSEMBLY" in CHAPTER 5.



Bolt (exhaust joint):
15 Nm (1.5 m • kg, 11 ft • lb)

14.Fill:

- Cooling system



Recommended coolant:
High quality ethylene glycol
antifreeze containing
corrosion inhibitors
Coolant : water mixed ratio:
3 : 2 (60% : 40%)
Total amount:
5.6 L (4.9 Imp qt, 5.9 US qt)

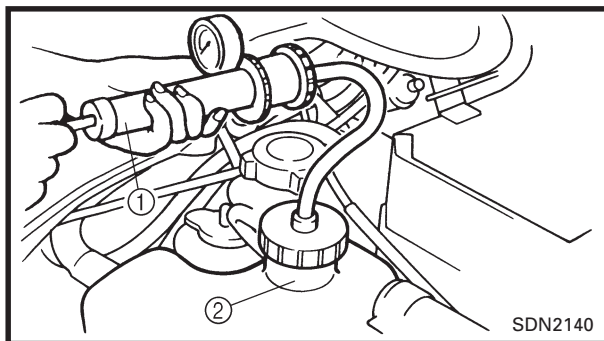
CAUTION:

- 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.



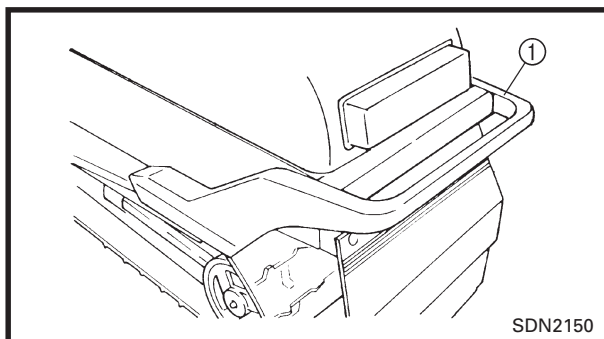
Inspection steps:

- Attach the cooling system tester ① to the coolant filler ②.



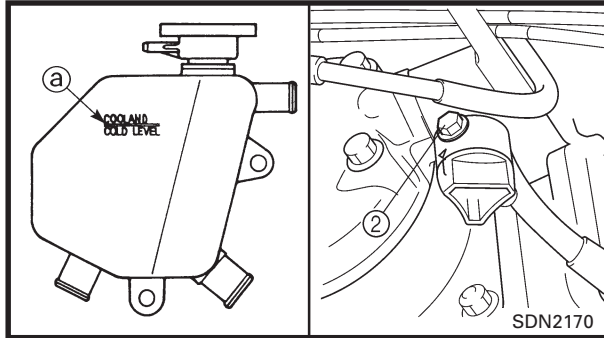
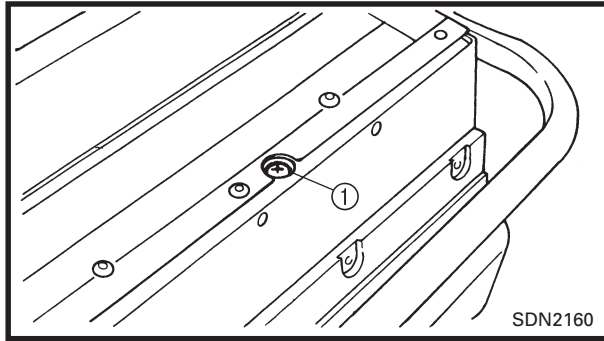
Cooling system tester:
90890-01325, YU-24460-01

- Apply 100 ~ 120 kPa (1.0 ~ 1.2 kg/cm², 14 ~ 17 psi).
- Measure the pressure with the gauge.



Air bleeding

1. Remove:
 - Seat
 - Rear bumper cover ①
2. Bleed air from the cooling system.



Air bleeding steps:

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



Bleed screw ①:

4 Nm (0.4 m • kg, 2.9 ft • lb)

- Add coolant to the coolant cold level (a).
- Loosen the bleed bolt ② on the outlet water jacket joint.
- Drain the coolant until no more air bubbles appear.
- Tighten the bleed bolt.



Bleed bolt ②:

4 Nm (0.4 m • kg, 2.9 ft • lb)

- 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 thermostat opens and 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.

3. Install:

- Rear bumper cover
- Seat

CARBURETOR SYNCHRONIZATION

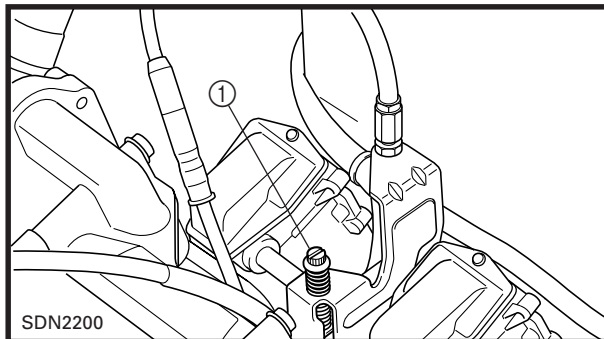
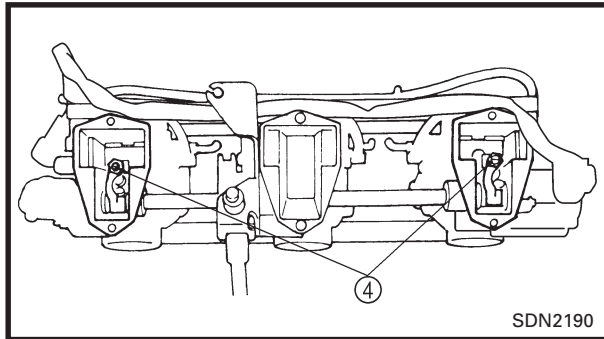
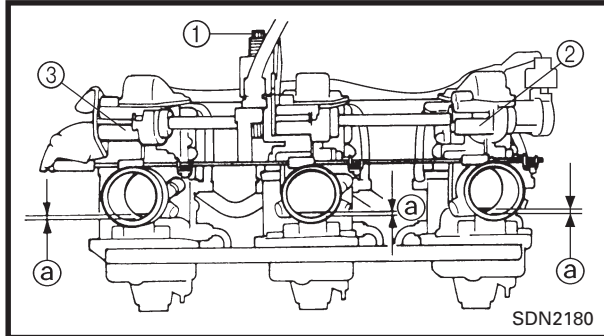
1. Remove:

- Carburetors

Refer to "CARBURETORS" in CHAPTER 7.

2. Adjust:

- Carburetor synchronization



Adjustment steps:

- Turn the throttle stop screw ① of carburetor #2 until the specified throttle valve height ② is obtained.



Throttle valve height ②:
1.2 mm (0.047 in)

- Adjust the throttle valve height ② on carburetor #1 ③ and #3 ④ with the adjusting screw ⑤.
- Move the throttle lever 2 ~ 3 times.
- Make sure that all of the carburetor throttle valves are at the same height.

3. Install:

- Carburetors

Refer to "CARBURETORS" in CHAPTER 7.

ENGINE IDLE SPEED ADJUSTMENT

1. Adjust:

- Engine idle speed

Adjustment steps:

- Start the engine and let it warm up.
- 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.



Engine idle speed:
1,800 ± 100 r/min

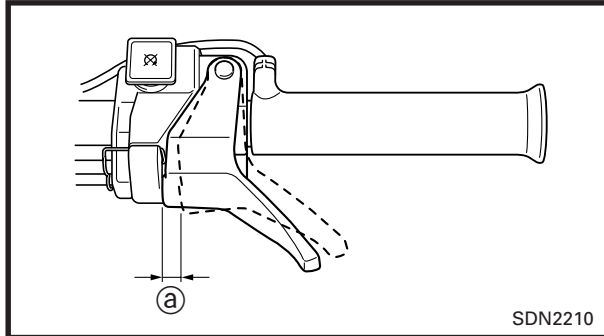
NOTE:

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

THROTTLE CABLE FREEPLAY ADJUSTMENT

NOTE:

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

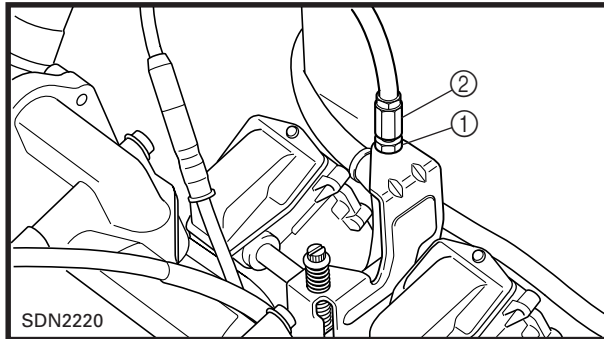


1. Measure:

- Throttle cable freeplay ①
- Out of specification → Adjust.



Throttle cable freeplay ①:
1.0 ~ 2.0 mm (0.04 ~ 0.08 in)



2. Adjust:

- Throttle cable freeplay

Adjustment steps:

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

Turning in → Freeplay is increased.

Turning out → Freeplay is decreased.

- Tighten the locknut.

NOTE:

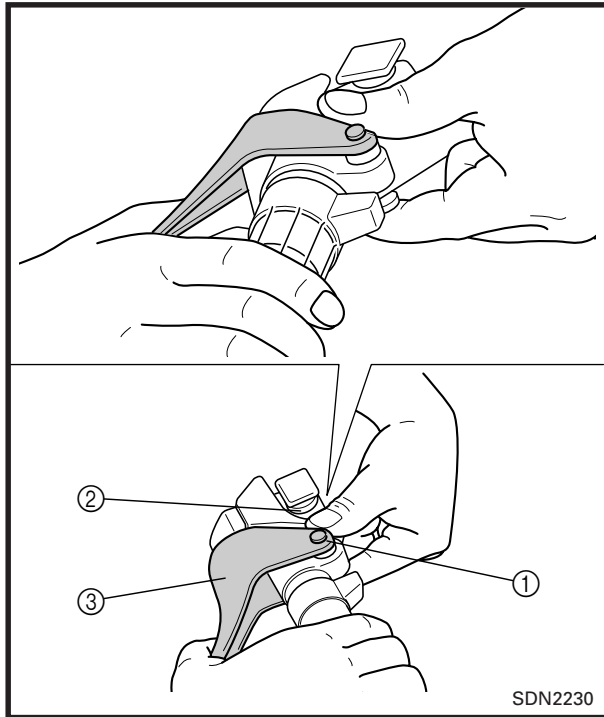
After adjusting the freeplay, turn the handlebar to right and left, and make sure that the engine idling does not run faster.

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.

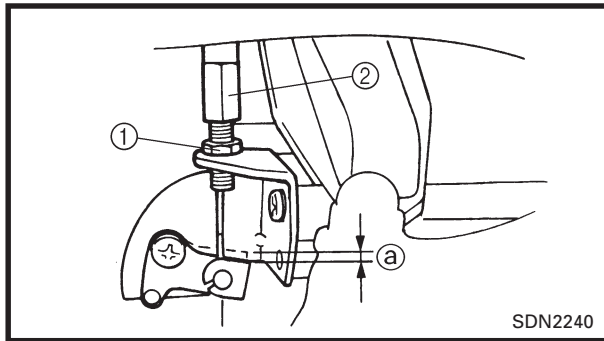
While holding as described above, press the throttle lever ③ gradually.

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.

STARTER (CHOKE) CABLE FREEPLAY ADJUSTMENT/ EXHAUST SYSTEM INSPECTION



STARTER (CHOKE) CABLE FREEPLAY ADJUSTMENT

1. Measure:

- Starter cable freeplay (a)
Out of specification → Adjust.



Starter cable freeplay (a):
0.5 ~ 1.5 mm (0.02 ~ 0.06 in)

2. Adjust:

- Starter cable freeplay

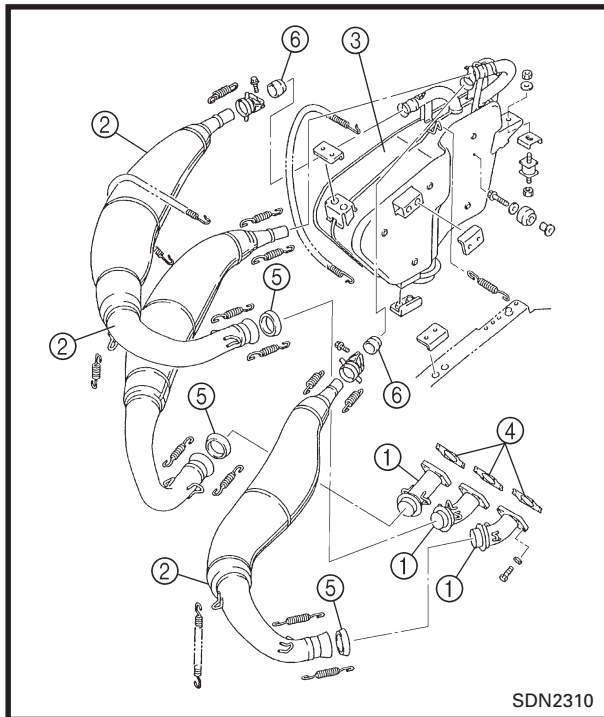
Adjustment steps:

- Loosen the locknut (1).
- Turn the adjusting nut (2) in or out until the specified freeplay is obtained.

Turning in → Freeplay is increased.

Turning out → Freeplay is decreased.

- Tighten the locknut.



EXHAUST SYSTEM INSPECTION

1. Open the shroud.

2. Remove:

- Springs
Refer to "EXHAUST ASSEMBLY" in CHAPTER 5.

3. Inspect:

- Exhaust joints (1)
- Exhaust pipes (2)
- Exhaust silencer (3)
Cracks/damage → Replace.
- Exhaust gaskets (4)
- Exhaust gaskets (5)
- Exhaust gaskets (6)
Exhaust gas leaks → Replace.

4. Check:

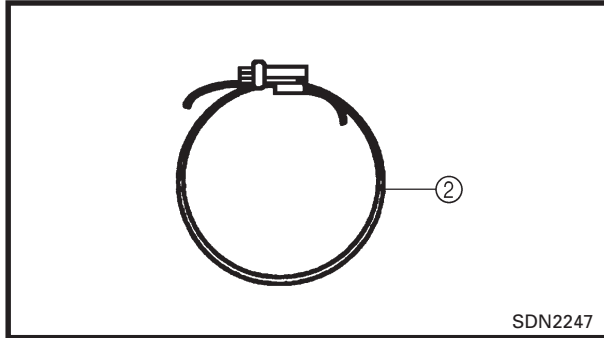
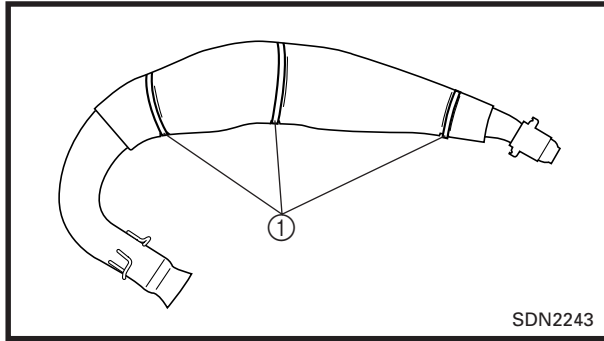
- Tightening torque



Bolt (exhaust silencer joint):
13 Nm (1.3 m • kg, 9.4 ft • lb)
Nut (exhaust silencer):
16 Nm (1.6 m • kg, 11 ft • lb)
Bolt (exhaust pipe joint):
15 Nm (1.5 m • kg, 11 ft • lb)

5. Install:

- Springs
Refer to "EXHAUST ASSEMBLY" in CHAPTER 5.



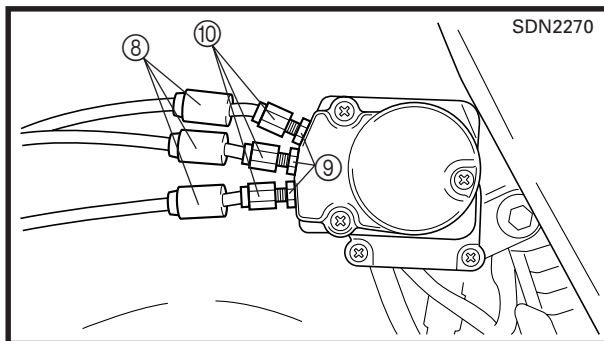
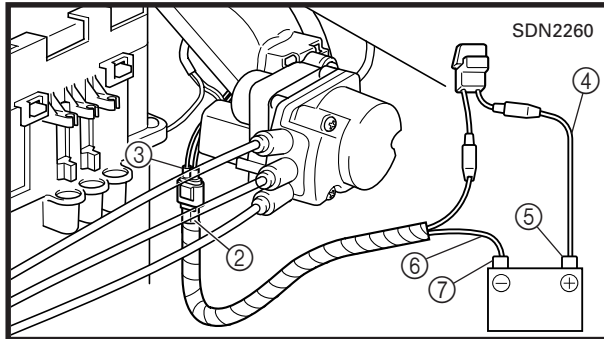
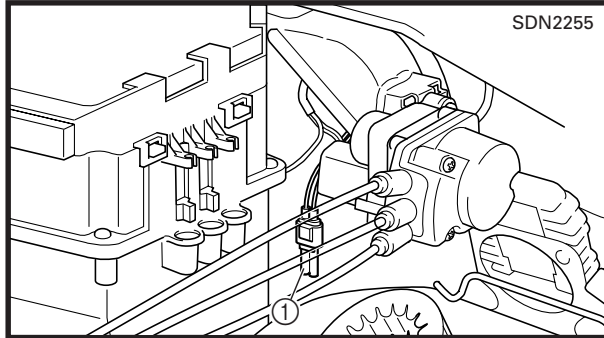
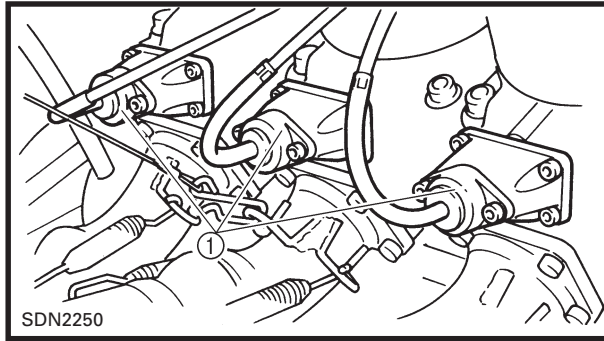
HEAT SHIELD CLAMP REPLACEMENT

Clamps on the exhaust pipe heat shields may become loose and cause a rattling noise, which is due to the deformation of the heat shields. These clamps are not adjustable and must be replaced when they become loose.

When replacing the clamps, use an adjustable clamp from the list below.

- ① Clamps
- ② Adjustable clamp

Part number	Size	Remarks
90450-99031	ø 90-110	For engine side
90450-99043	ø 110-130	For center
90450-60011	ø 50-70	For exhaust si-lencer side



YAMAHA POWER VALVE SYSTEM (Y.P.V.S.) ADJUSTMENT

⚠ WARNING

When adjusting the valve clearance, do not operate the engine.

1. Remove:
 - Y.P.V.S. valve assembly ①
2. Adjust:
 - Y.P.V.S.

Adjustment steps:

- Remove the Y.P.V.S. check coupler cap ①.
- Connect the Y.P.V.S. adjustment coupler ② to the Y.P.V.S. check coupler ③.
- Connect the Y.P.V.S. adjustment coupler leads as follows.

Y.P.V.S. (+) adjustment coupler lead ④ →

Battery (+) terminal ⑤

Y.P.V.S. (-) adjustment coupler lead ⑥ →

Battery (-) terminal ⑦



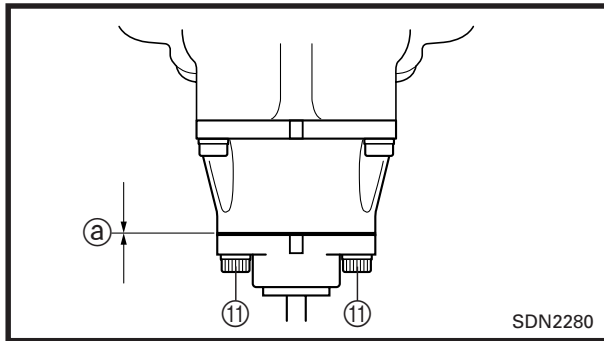
Y.P.V.S. adjustment coupler:
YS-43092

NOTE:

- When battery power is applied, the Y.P.V.S. valve should fully open.
- If the valve does not fully open, check the Servo motor. Refer to "YAMAHA POWER VALVE SYSTEM (Y.P.V.S.)" in CHAPTER 8.

- Slide back the adjuster covers ⑧.
- Loosen the locknuts ⑨.
- Turn the adjusting nuts ⑩ in or out until the specified clearance is obtained.

YAMAHA POWER VALVE SYSTEM (Y.P.V.S.) ADJUSTMENT/ YAMAHA POWER VALVE SYSTEM (Y.P.V.S.) PRE-SEASON CHECKS



- Loosen the bolts ⑪.



Y.P.V.S. valve clearance ①:
2.0 ~ 3.5 mm (0.08 ~ 0.14 in)

Turning in → Clearance ① is increased.

Turning out → Clearance ① is decreased.

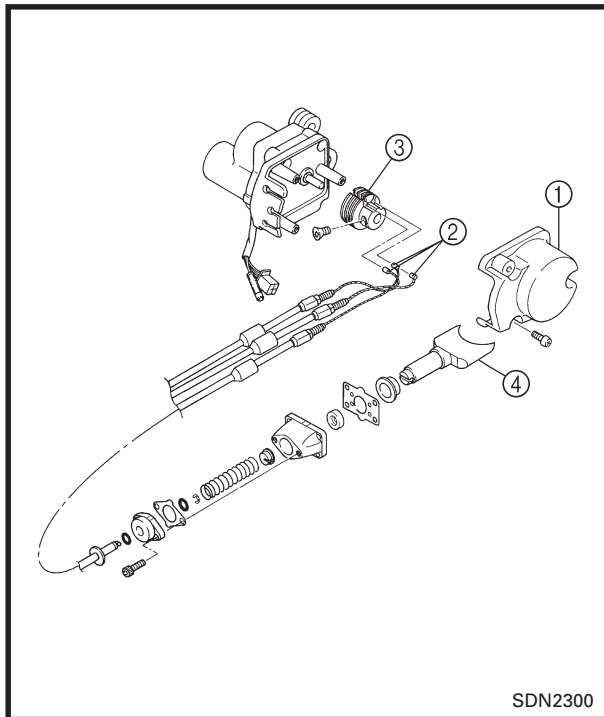
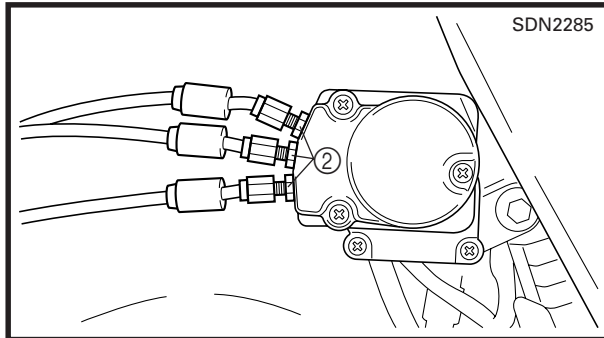
- Tighten the bolts, locknuts ② and push in the adjuster cover.



Y.P.V.S. valve housing bolt:
8 Nm (0.8 m • kg, 5.8 ft • lb)

Locknut ②:
7 Nm (0.7 m • kg, 5.1 ft • lb)

- Disconnect the Y.P.V.S. adjustment coupler from the Y.P.V.S. check coupler.
- Install the Y.P.V.S. check coupler cap.

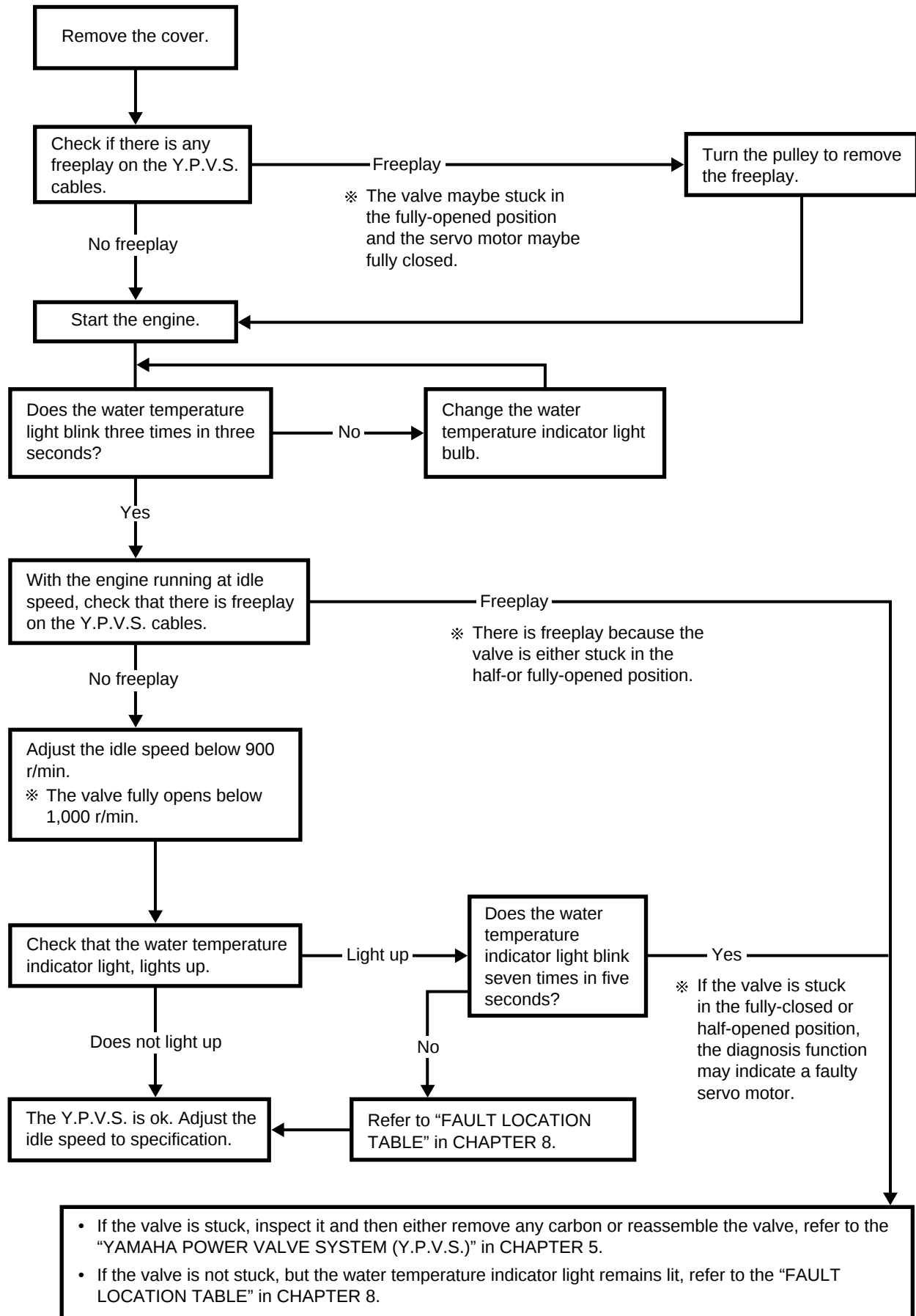


YAMAHA POWER VALVE SYSTEM (Y.P.V.S.) PRE-SEASON CHECKS

There may be excessive amounts of carbon on the Y.P.V.S. valve which will cause the valve to stick to the cylinder. In this case, the valve will not operate. Therefore, be sure to check the Y.P.V.S. as follows.

- ① Cover
- ② Cables
- ③ Puller
- ④ Valve

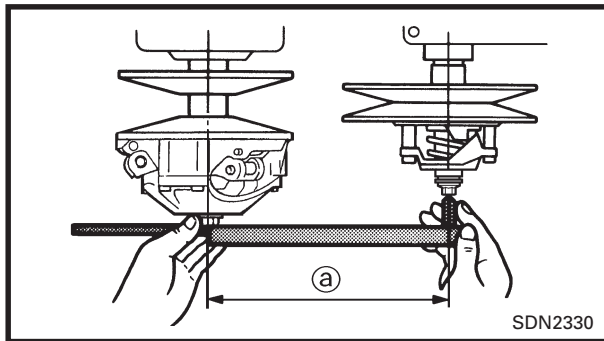
YAMAHA POWER VALVE SYSTEM (Y.P.V.S.) PRE-SEASON CHECKS



POWER TRAIN

SHEAVE DISTANCE AND OFFSET ADJUSTMENT

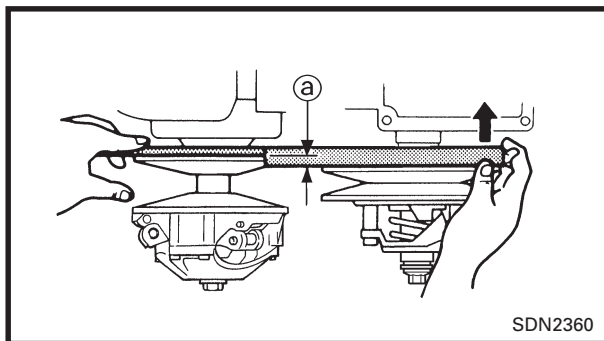
1. Open the shroud
2. Remove:
 - Drive V-belt guard
 - Drive V-belt
3. Remove:
 - Exhaust pipe #1 (L), #2, #3 (R)
Refer to "EXHAUST ASSEMBLY" in CHAPTER 5.
4. Remove:
 - Carburetors
Refer to "CARBURETORS" in CHAPTER 7.



5. Measure:
 - Sheave distance ①
Use the sheave gauge.
Out of specification → Adjust.

	Sheave distance ①: 267 ~ 270 mm (10.52 ~ 10.62 in)
---	--

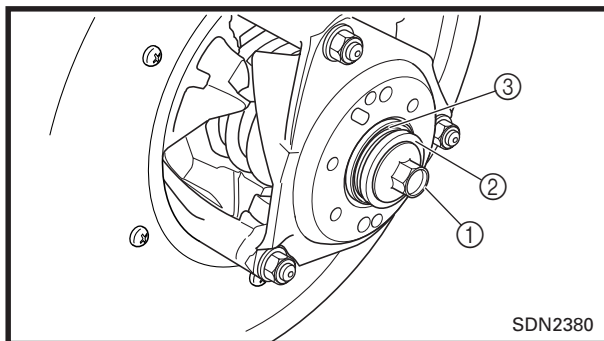
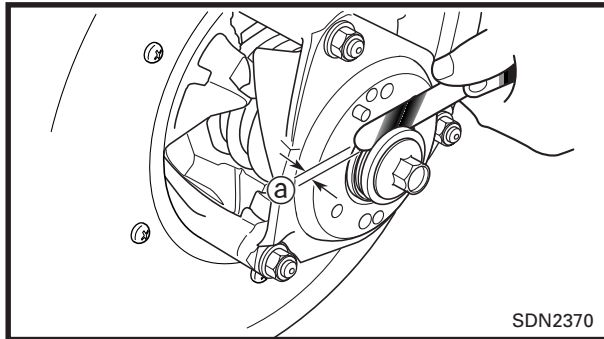
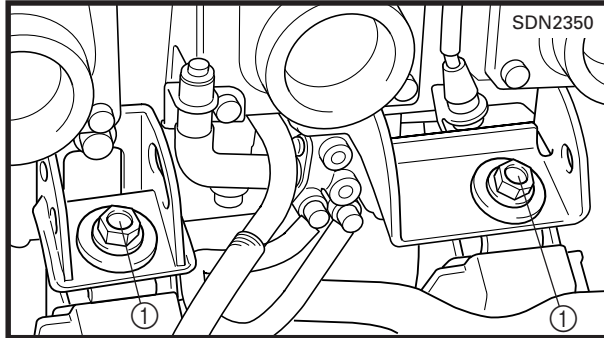
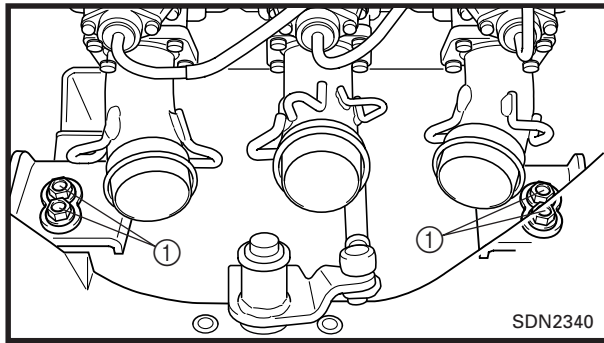
	Distance gauge: 90890-01702, YS-91047-3
---	---



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

	Sheave offset: ① 13.5 ~ 16.5 mm (0.53 ~ 0.64 in)
---	--

	Sheave gauge: YS-42421-1 (15 mm offset)
---	---



7. Adjust:
- Sheave distance

Adjustment steps:

- Loosen the engine mounting bolts.
- Adjust the position of the engine so that the sheave distance is within the specification.
- Tighten the engine mounting bolts.



Mounting bolt ①:
50 Nm (5.0 m • kg, 36 ft • lb)

8. Measure:
- Secondary sheave freeplay (clearance) ①
Use a feeler gauge.
Out of specification → Adjust.



Secondary sheave freeplay (clearance) ①:
1.0 ~ 2.0 mm (0.04 ~ 0.08 in)

9. Adjust:
- Secondary sheave freeplay (clearance)

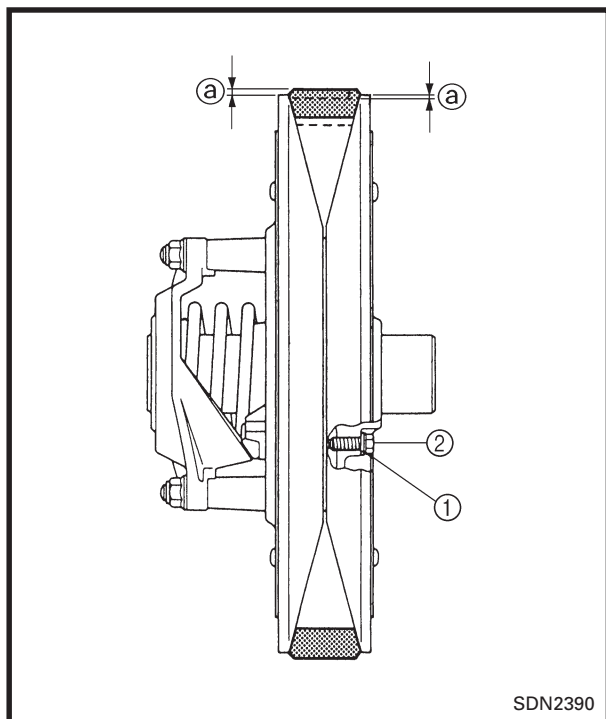
Adjustment steps:

- 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)

10. Install:
- Carburetors
Refer to "CARBURETORS" in CHAPTER 7.
11. Install:
- Exhaust pipe #1 (L), #2, #3 (R)
Refer to "EXHAUST ASSEMBLY" in CHAPTER 5.



SDN2390

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 (-0.020 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.

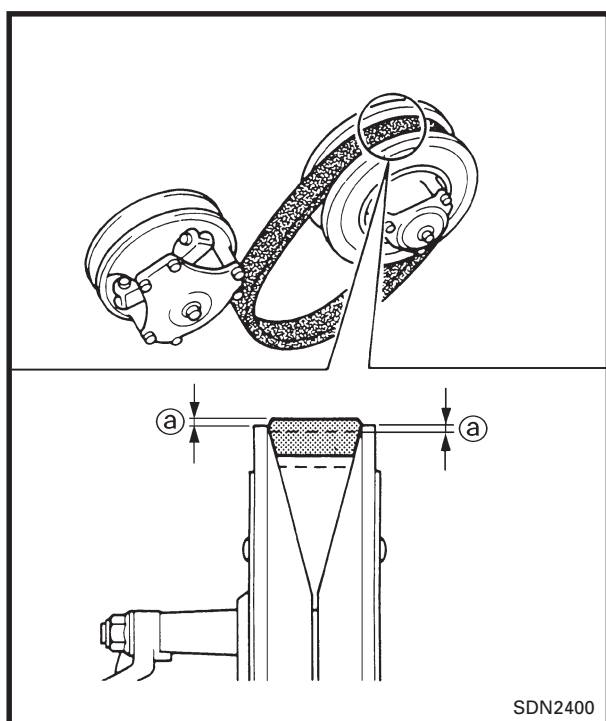
Adjust the V-belt position by removing or adding a spacer ① on each adjusting bolt ②.

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)



SDN2400

1. Measure:

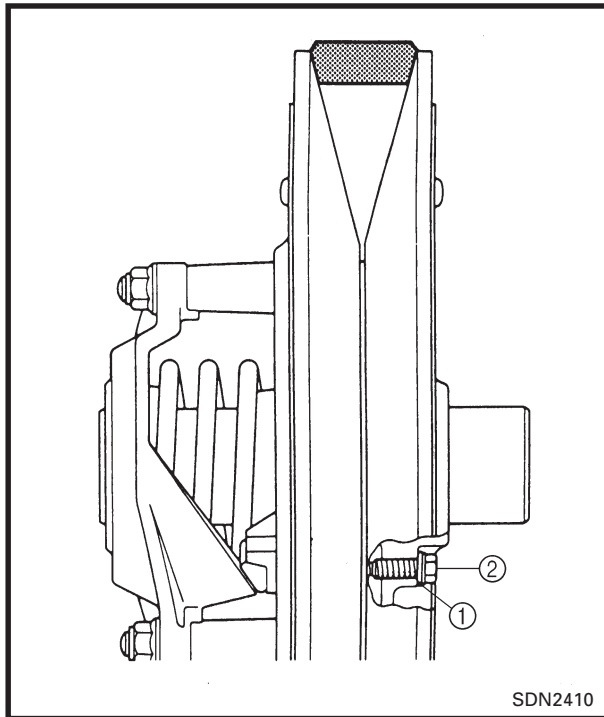
- V-belt position ①

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 ①:
-0.5 ~ 1.5 mm (-0.020 ~ 0.06 in)



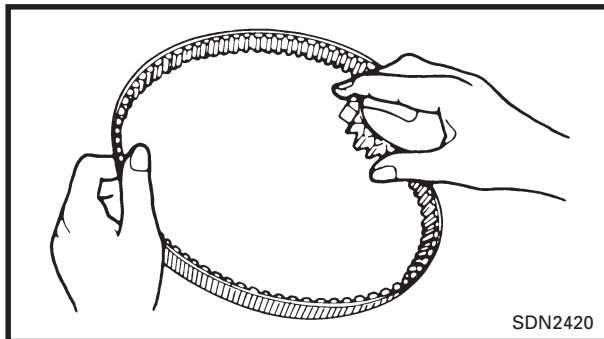
2. Adjust the position of the V-belt by removing or adding a spacer ① on each adjusting bolt ②.

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 (–0.020 in) below the edge	Not necessary (It is correct.)
More than –0.5 mm (–0.020 in) below the edge	Add spacer

3. Tighten:

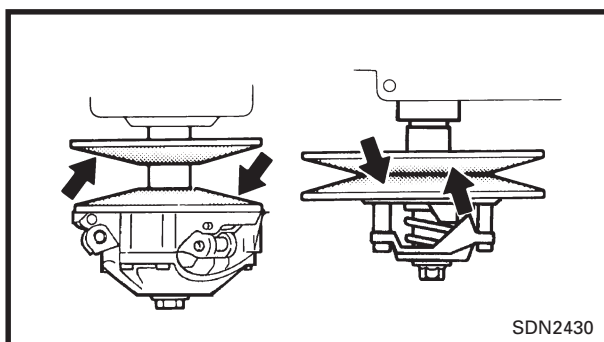
- Adjusting bolt ①

Adjusting bolt ①:
10 Nm (1.0 m • kg, 7.2 ft • lb)



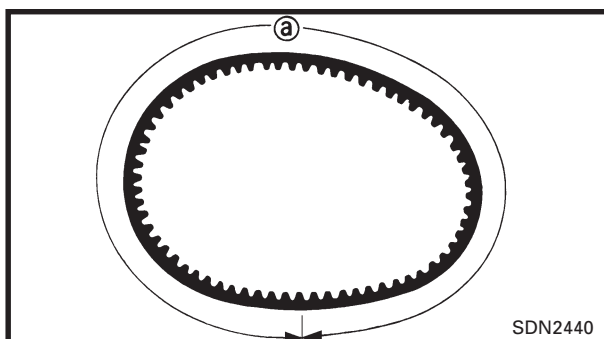
4. Inspect:

- 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 length ②
 Out of specification → Replace.

Drive V-belt length ②:
1,129 ~ 1,137 mm (44.4 ~ 44.7 in)

ENGAGEMENT SPEED CHECK

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

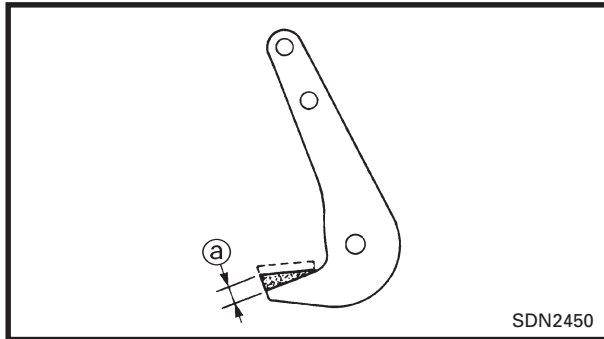
Checking steps:

- 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:
4,000 ± 200 r/min
(3,800 ~ 4,200 r/min)



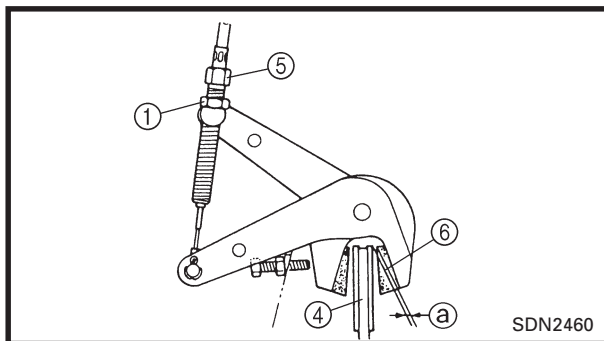
PARKING BRAKE PAD INSPECTION

1. Measure:
 - Parking brake pad thickness ①

Out of specification → Replace as a set.



Wear limit:
6.0 mm (0.24 in)



PARKING BRAKE ADJUSTMENT

1. Measure:
 - Clearance ①

Out of specification → Adjust.

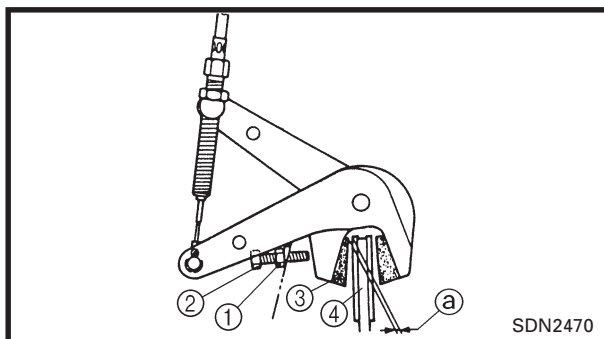


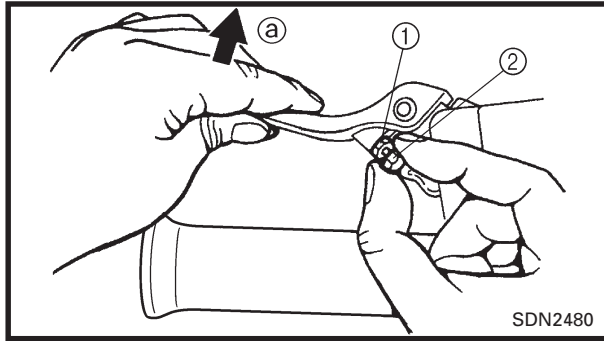
Clearance ①:
1.2 ~ 1.3 mm (0.047 ~ 0.051 in)

2. Adjust:
 - Clearance ①

Adjustment steps:

- Loosen the locknut ①.
- Turn the cable adjuster ⑤ in or out to until the specified clearance between the brake pad ⑥ and disc ④ is obtained.
- Turn the brake pad adjusting bolt ② in or out until the specified clearance between the brake pad ③ and disc ④ is obtained.
- Tighten the locknut.





BRAKE LEVER ADJUSTMENT

1. Adjust:

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

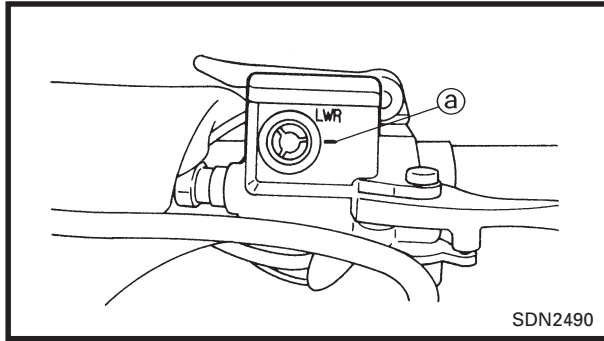
Adjustment steps:

- Loosen the locknut ①.
- While lightly pushing the brake lever in direction ①, 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
① → Fill to the proper level.



**Recommended brake fluid:
DOT 4**

NOTE:

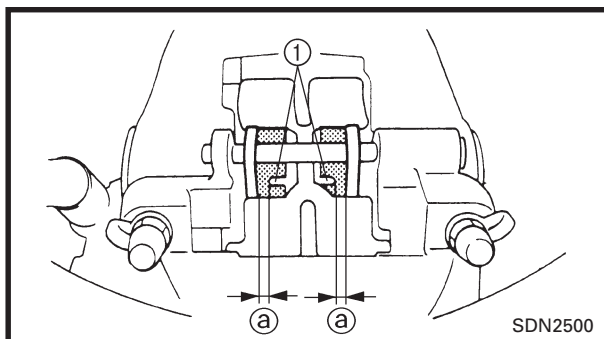
For a correct reading of the brake fluid level, make sure that the top of the handlebar brake master cylinder reservoir is horizontal.

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

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



**Wear limit ①:
4.7 mm (0.19 in)**



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.

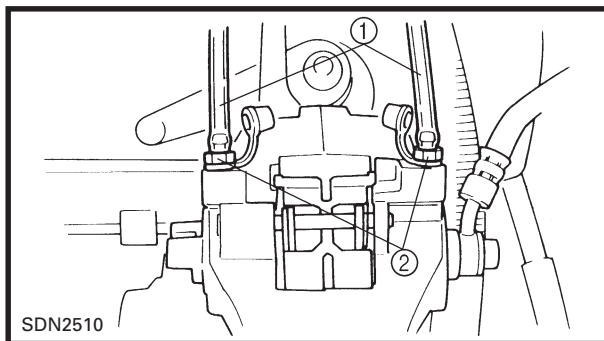
If the brake system is not properly bled a loss of braking performance may occur.

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 a clear plastic hose ① tightly to the brake caliper bleed screw ②.
- Place the other end of the hose 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 screw and allow the brake lever to travel towards its limit.
 - d. Tighten the bleed screw 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 screw.



**Bleed screw ②:
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.

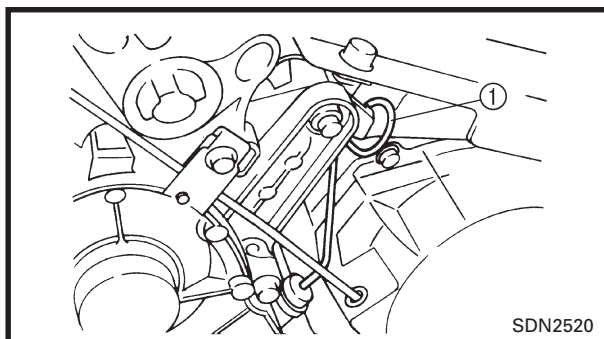
DRIVE CHAIN

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. Remove:
 - Exhaust silencer
Refer to "EXHAUST ASSEMBLY" in CHAPTER 5.
3. Check:
 - Oil level



Checking steps:

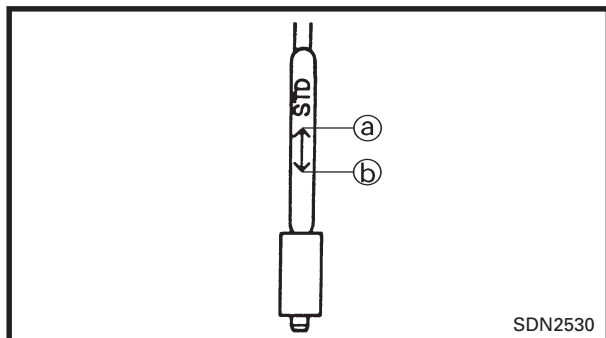
- Remove the dipstick ① and wipe it off with a clean rag.
Reinsert the dipstick.

**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.



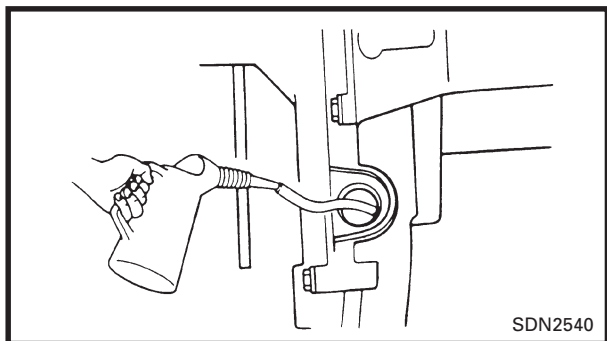
SDN2530



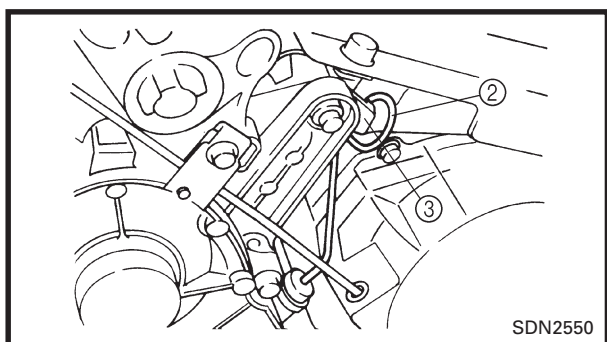
Recommended oil:
Gear oil API "GL-3"
SAE #75 or #80

CAUTION:

Make sure that no foreign material enters the gear case.



SDN2540

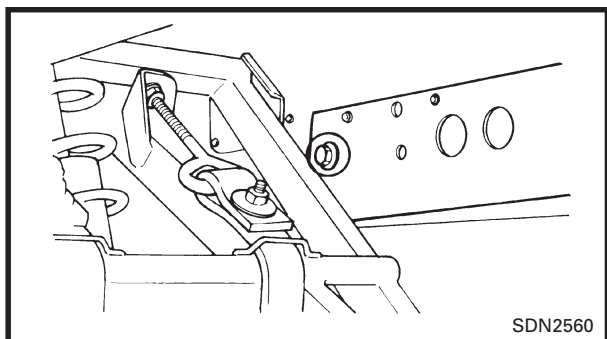


SDN2550

- Reinsert the dipstick and fit the loop ② of the dipstick handle onto the projection ③ of the gear case.

4. Install:

- Exhaust silencer
Refer to "EXHAUST ASSEMBLY" in CHAPTER 5.



SDN2560

Oil replacement**Oil replacement steps:**

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

CAUTION:

Be sure to remove any oil from the heat protector.



- Install the oil drain bolt.



Oil drain bolt:
16 Nm (1.6 m • kg, 11 ft • lb)



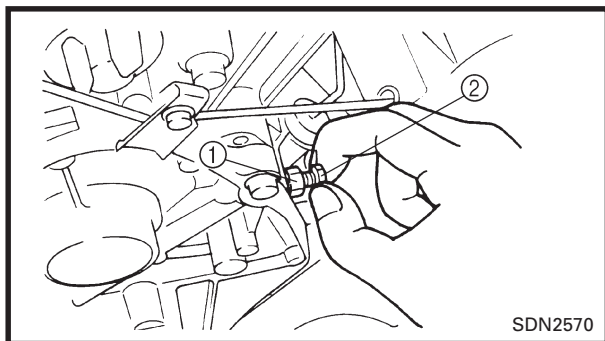
Recommended oil:
Gear oil API "GL-3" SAE #75 or #80
Oil capacity:
0.25 L (8.8 Imp oz, 8.5 US oz)

Chain slack adjustment

1. Remove:
 - Exhaust silencer
Refer to "EXHAUST ASSEMBLY" in CHAPTER 5.
2. Adjust:
 - Drive chain slack

Adjustment steps:

- Loosen the locknut ①.
 - Turn the adjusting bolt ② in until it is finger tight.
 - Tighten the locknut.
3. Install:
 - Exhaust silencer
Refer to "EXHAUST ASSEMBLY" in CHAPTER 5.



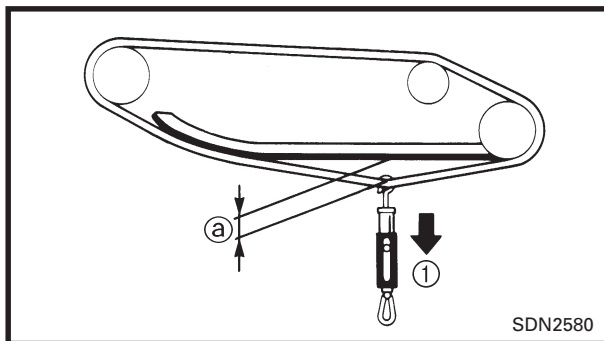
TRACK TENSION ADJUSTMENT

WARNING

A broken track or track fittings, and debris thrown by the track could be dangerous to an operator or bystanders. 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.
- Never install studs (cleats) closer than three inches to the edge of the track.

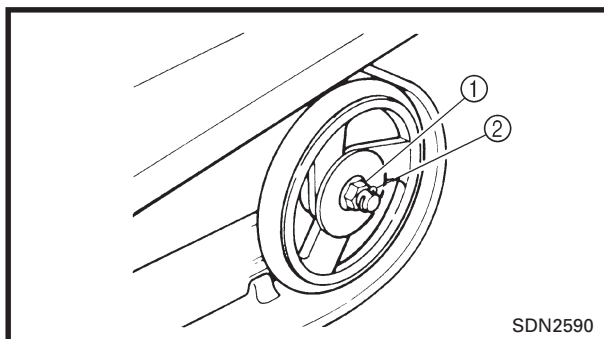
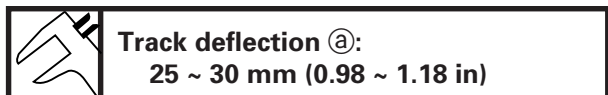
1. Lift the rear of the machine onto a suitable stand to raise the track off the ground.



2. Measure:

- Track deflection ①

Using a spring scale ①, pull down on the center of the track with 10 kg (22 lb) of force. Out of specification → Adjust.



3. Adjust:

- Track deflection

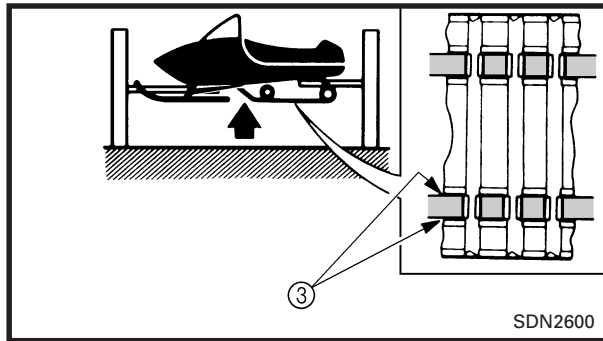
Adjustment steps:

- Place the machine onto a suitable stand to raise the track off of the ground.
- Loosen the rear axle nut ①.

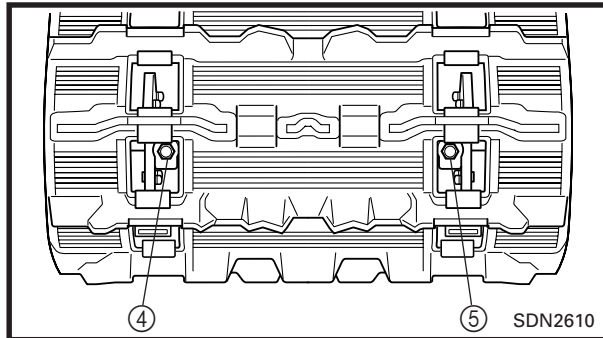
NOTE:

It is not necessary to remove the cotter pin ②.

TRACK TENSION ADJUSTMENT/ SLIDE RUNNER INSPECTION

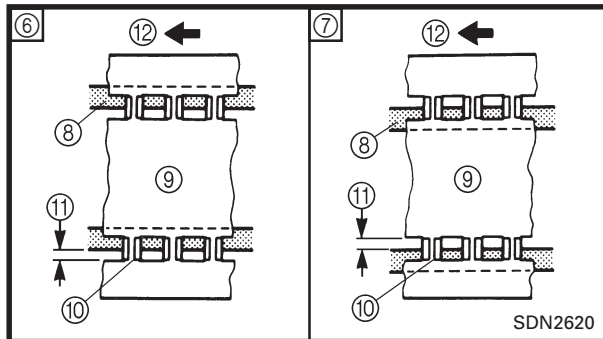


- Start the engine and rotate the track once or twice. Stop the engine.
- Check the track alignment with the slide runner ③.
If the alignment is incorrect, turn the left and right adjusters to adjust.



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



- 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

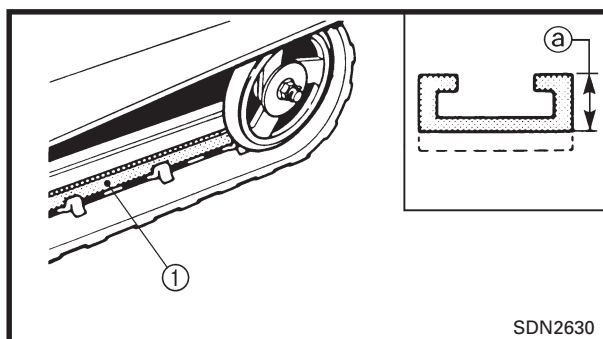
CAUTION:

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)

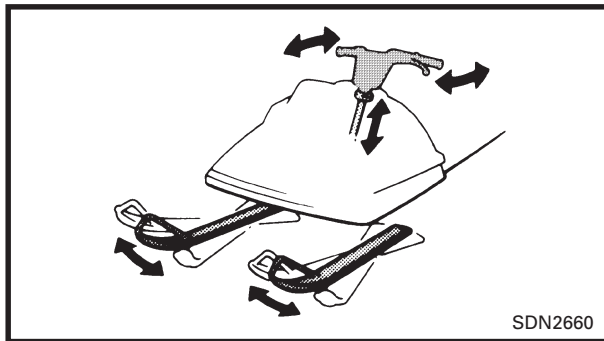
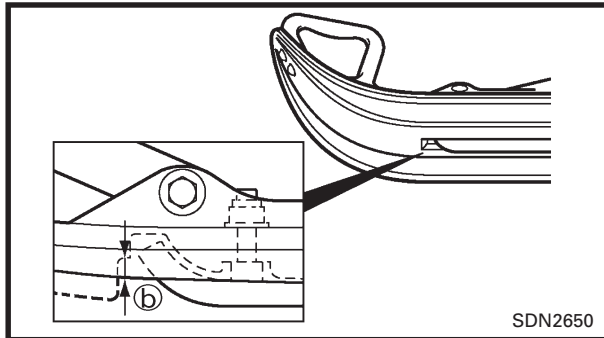
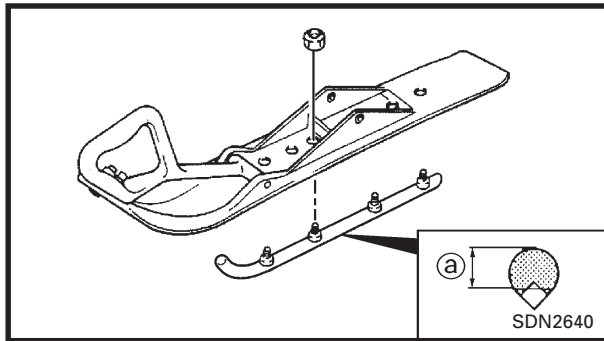


SLIDE RUNNER INSPECTION

- Inspect:
 - Slide runner ①
Cracks/damage/wear → Replace.
- Measure:
 - Slide runner thickness ②
Out of specification → Replace.



Slide runner wear limit:
10 mm (0.39 in)



CHASSIS

SKI/SKI RUNNER

1. Inspect:

- Ski
- Ski runner

Damage/wear → Replace.



Ski runner wear limit (a):
8 mm (0.31 in)
Plastic ski wear limit (b):
8 mm (0.31 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

Freeplay check

1. Check:

- Steering system freeplay
Move the handlebar up and down and back and forth.
Turn the handlebar slightly to the right and left.
Excessive freeplay → Check that the handlebar, tie rod ends and relay rod ends are installed securely in position. If freeplay still exists, check the steering bearing, front suspension links and ski mounting area for wear. Replace if necessary.

Toe-out adjustment

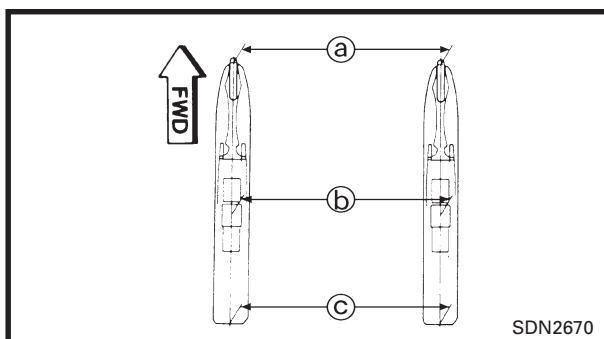
1. Place the machine on a level surface.

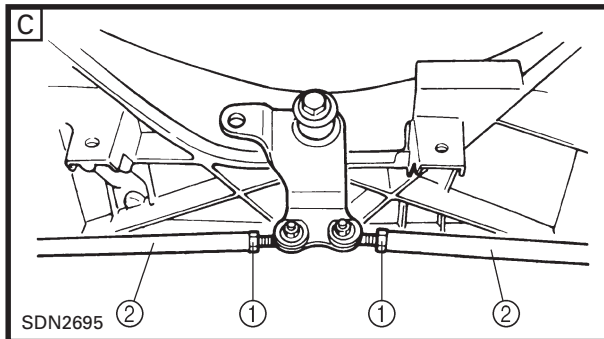
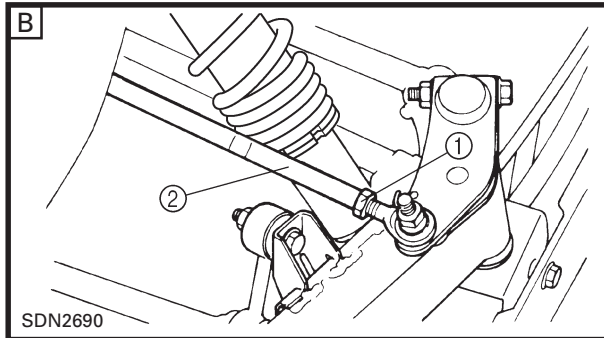
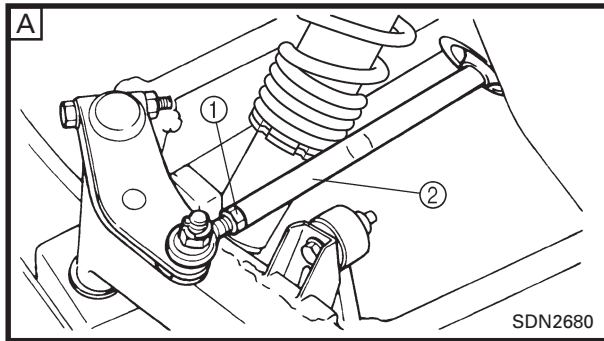
2. Check:

- Ski toe-out
Point the skis forward.
Out of specification → Adjust.



Ski toe-out (a - c):
0 ~ 15 mm (0 ~ 0.59 in)
Ski stance (b) (center to center):
1,040 mm (40.9 in)





3. Adjust:

- Ski toe-out

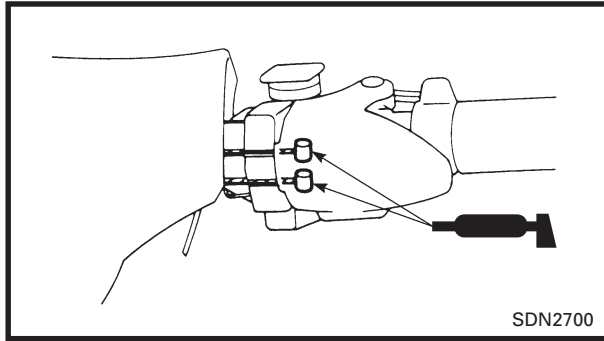
Adjustment steps:

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

**Locknut (rod end) ①:****25 Nm (2.5 m • kg, 18 ft • lb)****LOCTITE®****CAUTION:**

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

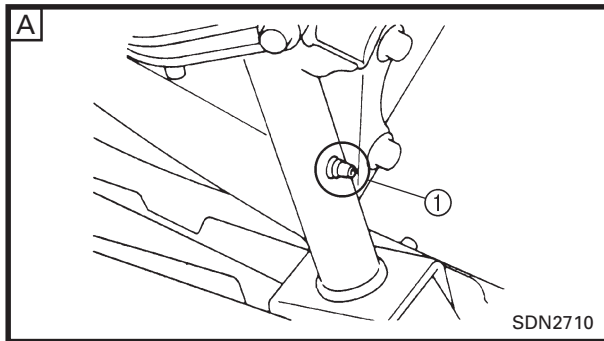


⚠ WARNING

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

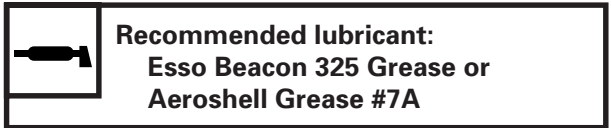
Do not grease the throttle cables.

They could freeze and cause a loss of control.

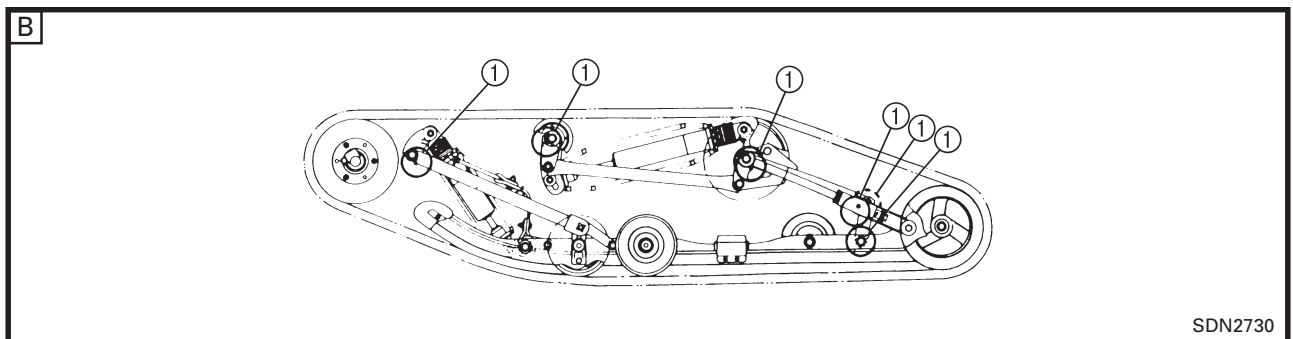
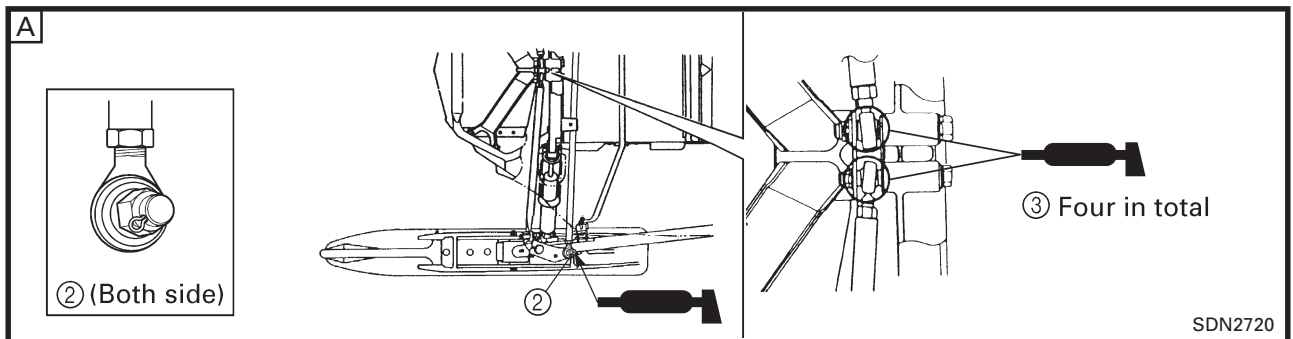


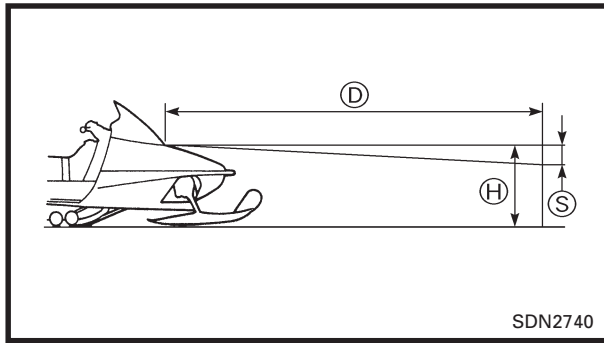
Front and rear suspension

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



- Ⓐ Front
- Ⓑ Rear





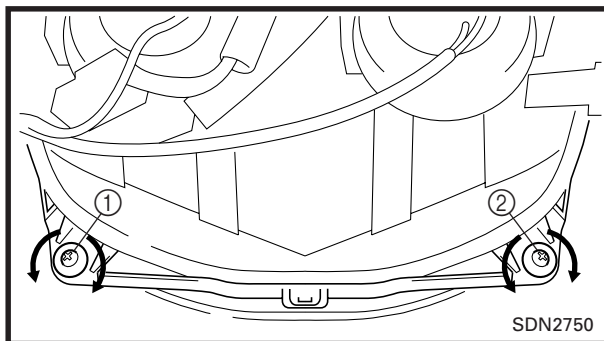
ELECTRICAL

HEADLIGHT BEAM ADJUSTMENT

1. Place the machine on a level surface.
2. Place the machine in front of a wall at the recommended distance ①. Refer to the table below.
3. Measure the distance ② 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° lower (distance ③).

①	3.0 m (10 ft.)	7.6 m (25 ft.)
③	26 mm (1.0 in.)	66 mm (2.6 in.)

①: Distance ③: Set range



6. Adjust:

- Headlight beam (vertically)

Vertical adjustment

- Higher** Turn the adjusting screw ① + ② clockwise.
- Lower** Turn the adjusting screw ① + ② counter clockwise.

7. Adjust:

- Headlight beam (horizontally)

Horizontal adjustment

- To right** Turn the adjusting screw ① clockwise or turn the adjusting screw ② counter clockwise.
- To left** Turn the adjusting screw ② clockwise or turn the adjusting screw ① counter clockwise.

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:

Engine oil is mixed with fuel just before the fuel enters the carburetors. During initial fuel flow to the carburetors, it is not always possible to supply the optimum fuel/oil mixture depending on the throttle opening. Therefore, after the carburetors have been tuned or maintained, or after the float chambers are removed for cleaning or jet replacement, be sure to idle the engine for about three minutes in order to avoid engine trouble.

CAUTION:

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

- Engine idle speed
- Throttle cable freeplay
- Carburetor synchronization
- Starter cable freeplay
- Oil pump cable freeplay

Carburetor tuning data

1. Standard specifications

A Type	TM33
B Manufacturer	MIKUNI
C I.D. Mark	8DN10
D Main jet (M.J.)	#1: 147.5, #2, 3: 146.3
E Pilot jet (P.J.)	#42.5
F Pilot screw (P.S.)	1-1/8 turns out
G Float height	11.3 ~ 15.3 mm (0.44 ~ 0.60 in)
H Idle speed	1,800 ± 100 r/min

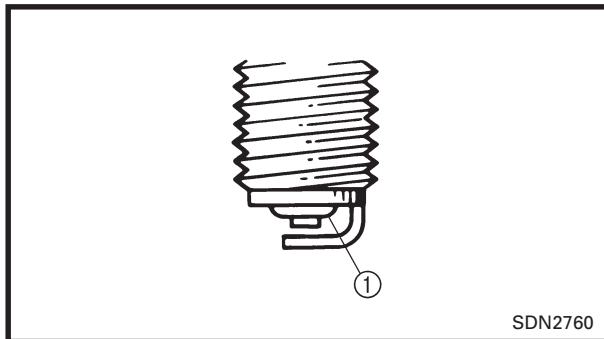
Mid-range and high speed tuning

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:

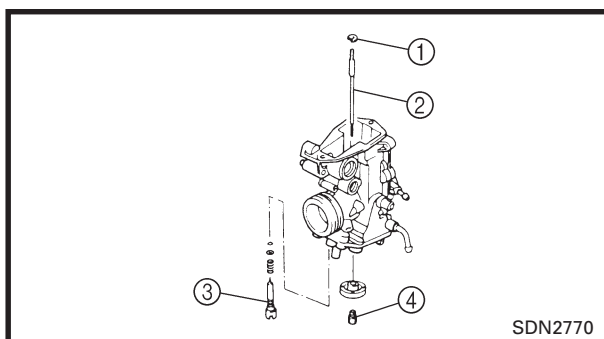
By checking the condition of the spark plugs, it is easy to get some idea of the condition of the engine. This may diagnose potential problems before engine damage occurs.

High altitude tuning

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

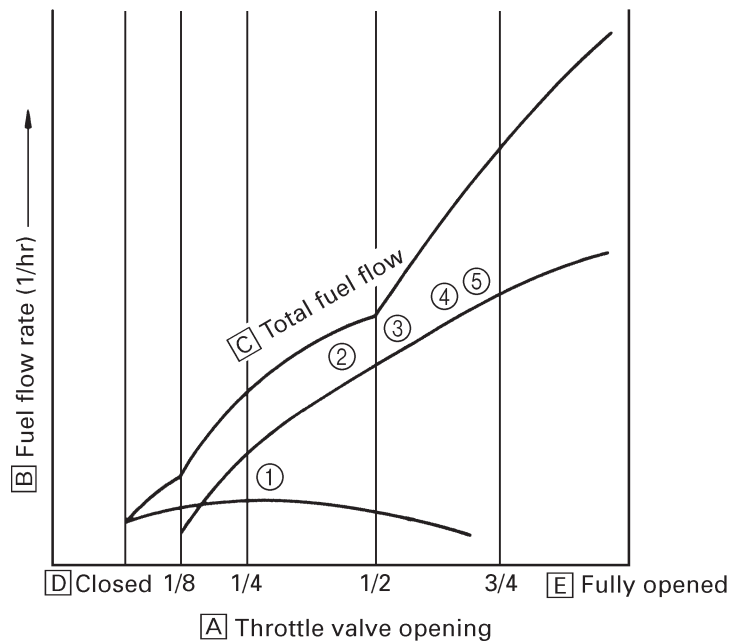
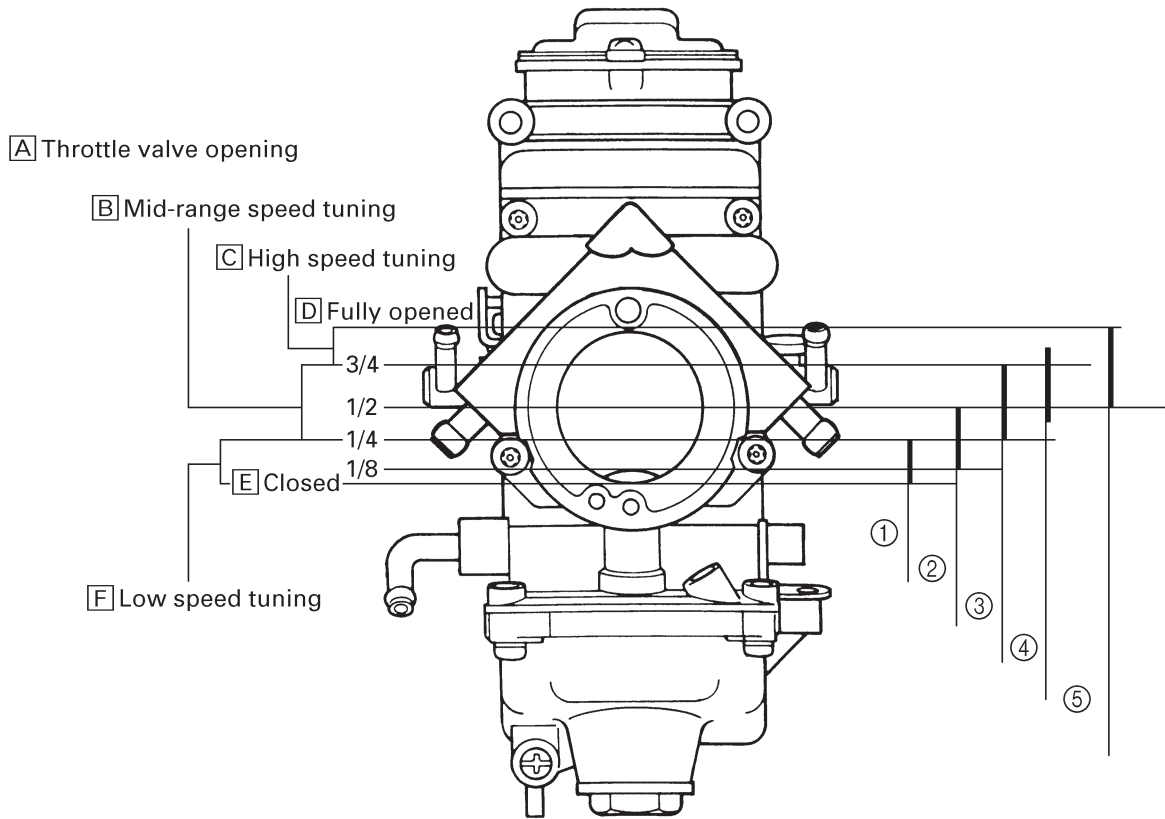
NOTE:

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.

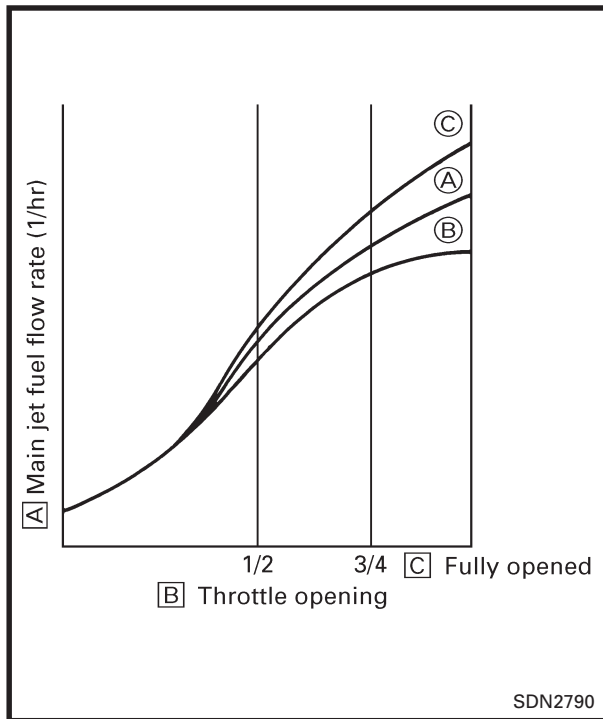


- ① Clip
- ② Jet needle
- ③ Pilot mixture screw
- ④ Main jet

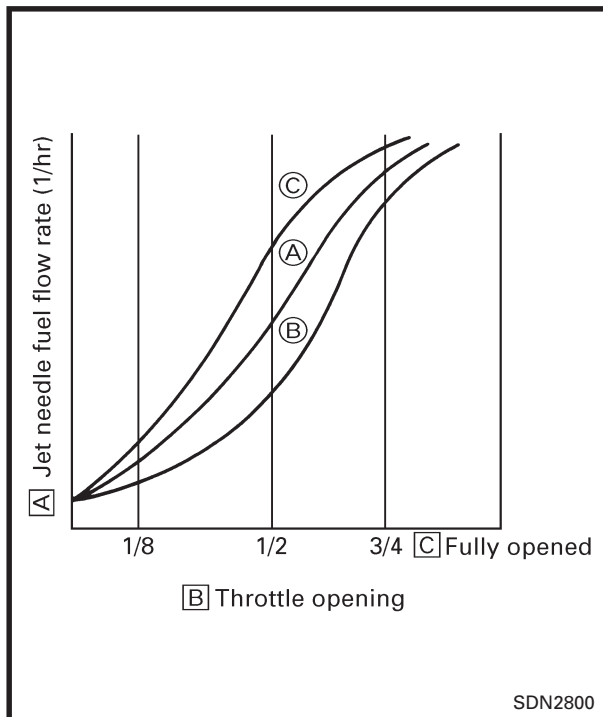
Guide for carburetion



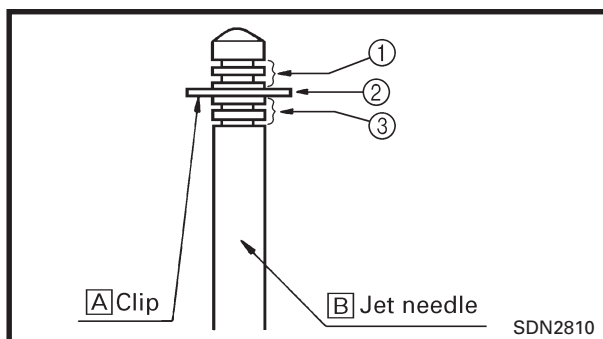
SDN2780



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

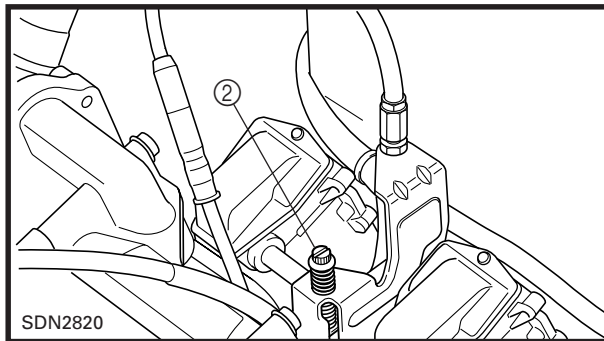
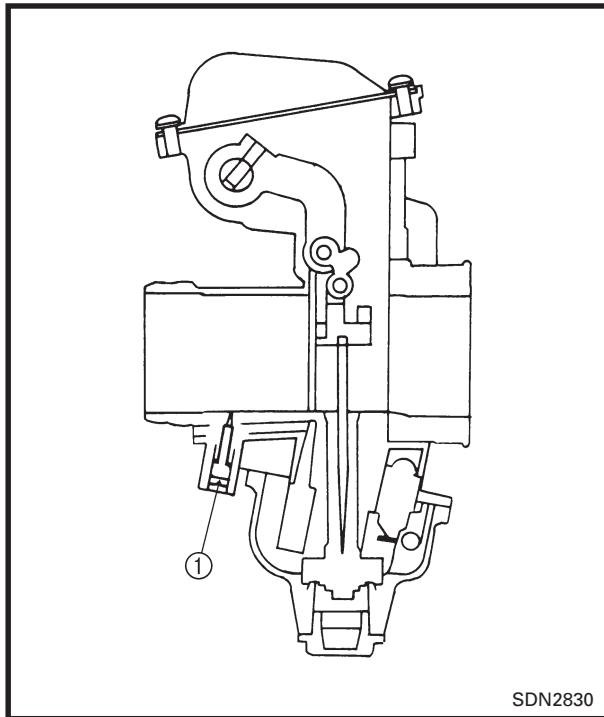


- Ⓐ No. ② position
- Ⓑ No. ① position
- Ⓒ No. ③ position



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 mixture screw ①:
1-1/8 turns out

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 in (to increase engine speed) or out (to decrease engine speed).



Standard idle speed:
1,800 ± 100 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:
#42.5



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.



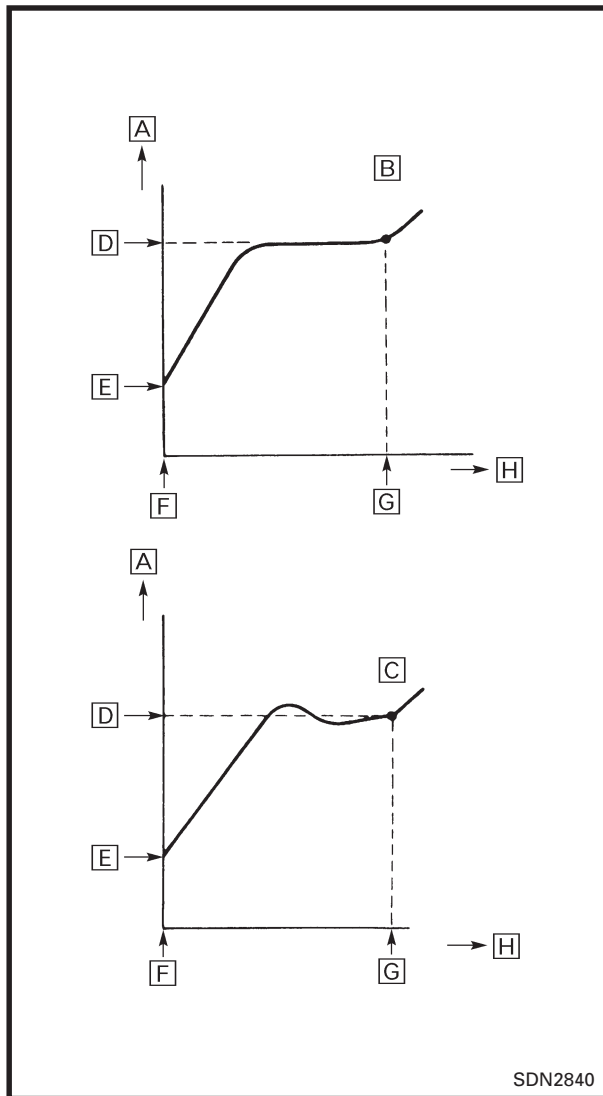
Trouble	Diagnosis	Adjustment
Poor performance at mid-range speeds: • Momentary slow response to the throttle • Poor acceleration	Clogged or loose pilot jet	• Remove the pilot jet, clean it with compressed air, and then install it. • Make sure that the pilot jet is fully tightened.
	Lean mixture	Overhaul 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
W	White
Y	Yellow

Specifications Model: SRX700/SRX700S

[A] Elevation	~ 800 m (~ 2,500 ft)	900 ~ 1,500 m (2,000 ~ 4,500 ft)	1,400 ~ 2,100 m (4,000 ~ 6,500 ft)	2,000 ~ 3,000 m (6,000 ~ 8,500 ft)	2,400 m ~ (8,000 ft ~)
[B] Idle speed	Approx. 1,800 r/min	←	←	←	←
[C] Clutch engagement	Approx. 4,000 r/min	←	Approx. 4,100 r/min	Approx. 4,100 r/min	Approx. 4,200 r/min
[D] Shift speed	Approx. 8,500 r/min	←	←	←	←
[E] Main jet	[C] Refer to the "High-altitude settings" in "MAINTENANCE SPECIFICATIONS".				
[F] Pilot (slow) jet					
[G] Idle mixture screw					
[H] Gearing	23/38 (70 links)	←	22/38 (68 links)	21/38 (68 links)	←
[I] Primary spring	90501-603L2	←	←	90501-602L8	←
[J] Color	Y-W-Y	←	←	G-G-G	←
[K] Length	91.4 mm	←	←	87.9 mm	←
[L] Preload rate	45 kg - 2.5 kg/mm	←	←	40 kg - 2.75 kg/mm	←
[M] Wire diameter	6.0 mm	←	←	←	←
[N] Outside diameter	60.0 mm	←	←	←	←
[O] Weight (ID)	8DN20	←	←	←	←
[P] Weight rivet	Steel 17.2 (OUT) Steel 13.9 (IN)	Steel 10.3 (OUT) Steel 13.9 (IN)	← Steel 10.3 (IN)	Aluminum 10.3 (OUT) ←	NONE (OUT) Aluminum 10.3 (IN)
[Q] Weight bushing	Duralon	←	←	←	←
[R] Roller outer dia.	15.6 mm	←	←	←	←
[S] Roller bushing	Duralon	←	←	←	←
[T] Pri. clutch shim	None	←	←	←	←
[U] Secondary spring	90508-536A9	←	←	←	←
[V] Color	R	←	←	←	←
[W] Length	75 mm	←	←	←	←
[X] Preload rate	80° (2-6) 848 kgmm/rad	←	←	←	←
[Y] Wire diameter	5.3 mm	←	←	←	←
[Z] Outside diameter	69.5 mm	←	←	←	←
[a] Sec. torque cam	47°	←	←	←	←
[b] Sec. clutch shim	1.0 mm	←	←	←	←



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 200 ~ 300 m (650 ~ 1,000 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] Bad condition
- [D] Clutch shifting speed
- [E] Clutch engagement speed
- [F] Starting position
- [G] 200 ~ 300 m (650 ~ 1,000 ft)
- [H] Distance travelled

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] Part name	[B] Teeth & links	[C] Part no.	[D] Standard
[E] Drive sprocket	20 teeth	8DW-17682-00	
	21 teeth	8DW-17682-10	
	22 teeth	8DW-17682-20	
	23 teeth	8DW-17682-30	SRX700/SRX700S
[F] Driven sprocket	37 teeth	8DW-47587-70	
	38 teeth	8DW-47587-80	SRX700/SRX700S
[G] Chain	68 links	94890-09068	
	70 links	94890-09070	SRX700/SRX700S

② Gear ratio

[A] Drive gear \ [B] Driven gear	20 teeth	21 teeth	22 teeth	23 teeth
37 teeth		1.76 68 links	1.68 68 links	1.61 68 links
38 teeth	1.90 68 links	1.81 68 links	1.73 68 links	1.65 70 links

③ Secondary spring

[A] Part no.	[B] Spring rate N•mm/rad (kg•mm/rad)	[C] Preload N/m (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 (612.6)	6.19 (0.631), 34.664	Brown	5.0 (0.196)	5.19	75 (2.95)	69.5 (2.736)	
90508-536A9	7147 (729.3)	7.25 (0.740), 40.6	Red	5.3 (0.208)	5.53	75 (2.95)	69.5 (2.736)	SRX700/SRX700S
90508-556A2	8314 (848.4)	8.49 (0.866), 47.544	Green	5.5 (0.217)	5.53	75 (2.95)	69.5 (2.736)	
90508-556A7	9460 (965.3)	10.18 (1.039), 57.008	Silver	5.5 (0.217)	4.86	75 (2.95)	69.5 (2.736)	

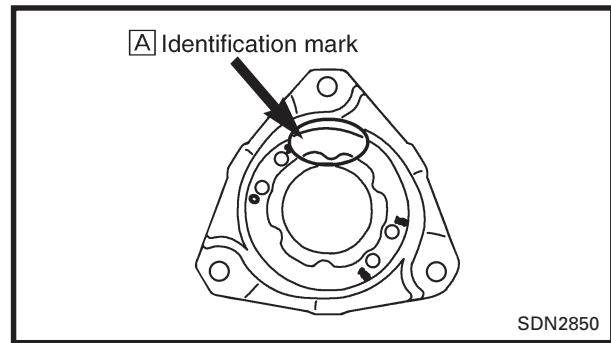
④ Secondary spring twist angle

90508-500B1 (brown) / 90508-536A9 (red) / 90508-556A2 (green) / 90508-556A7 (silver)

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

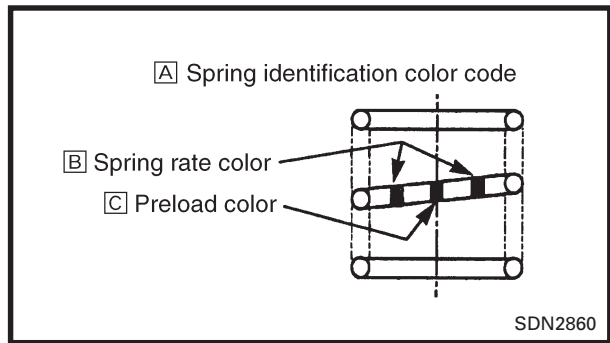


⑤ Torque cam (secondary spring seat)



[B] Effects	[C] Part no.	[D] Cam angle	[E] Identification mark	[F] Standard
[G] Quicker upshifting during acceleration   [H] Quicker backshifting under load	8BV-17604-71	47°	8BV71	SRX700/SRX700S
	8BV-17604-51	45°	8BV51	
	8BV-17604-31	43°	8BV31	
	8BV-17604-11	41°	8BV11	
	8BV-17604-91	39°	8BV91	

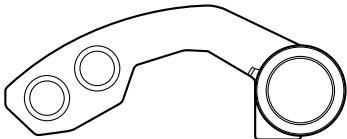
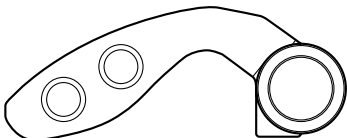
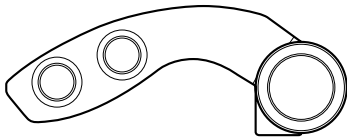
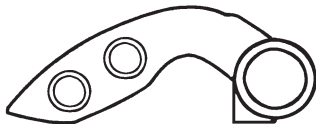
⑥ Primary spring



D Parts No.	E Spring rate N/mm (kg/mm)	F Preload N/mm (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 (2.0)	294 (30)	Blue-Pink-Blue	5.5 (0.216)	60 (2.362)	4.91	88.4 (3.48)	
90501-551L9	19.6 (2.0)	343 (35)	Blue-Silver-Blue	5.5 (0.216)	60 (2.362)	4.91	90.9 (3.578)	
90501-552L5	19.6 (2.0)	392 (40)	Blue-Green-Blue	5.5 (0.216)	60 (2.362)	4.91	93.4 (3.677)	
90501-581L5	24.5 (2.5)	294 (30)	Yellow-Pink-Yellow	5.8 (0.228)	60 (2.362)	4.92	85.4 (3.362)	
90501-581L6	27 (2.75)	294 (30)	Green-Pink-Green	5.8 (0.228)	60 (2.362)	4.66	84.3 (3.318)	
90501-582L1	24.5 (2.5)	343 (35)	Yellow-Gold-Yellow	5.8 (0.228)	60 (2.362)	4.92	87.4 (3.44)	
90501-582L2	27 (2.75)	343 (35)	Green-Silver-Green	5.8 (0.228)	60 (2.362)	4.66	86.1 (3.389)	
90501-582L6	22.1 (2.25)	392 (40)	White-Green-White	5.8 (0.228)	60 (2.362)	5.25	91.2 (3.59)	
90501-582L7	24.5 (2.5)	392 (40)	Yellow-Green-Yellow	5.8 (0.228)	60 (2.362)	4.92	89.4 (3.519)	
90501-583L0	19.6 (2.0)	441 (45)	Blue-White-Blue	5.8 (0.228)	60 (2.362)	5.65	95.9 (3.775)	
90501-583L1	22.1 (2.25)	441 (45)	White-White-White	5.8 (0.228)	60 (2.362)	5.25	93.4 (3.677)	
90501-583L4	22.1 (2.25)	343 (35)	White-Silver-White	5.8 (0.228)	60 (2.362)	5.25	89.0 (3.503)	
90501-583L5	22.1 (2.25)	294 (30)	White-Pink-White	5.8 (0.228)	60 (2.362)	5.25	86.7 (3.413)	
90501-601L7	29.4 (3.0)	294 (30)	Pink-Pink-Pink	6.0 (0.236)	60 (2.362)	4.82	83.4 (3.283)	
90501-601L8	31.9 (3.25)	294 (30)	Orange-Pink-Orange	6.0 (0.236)	60 (2.362)	4.60	82.6 (3.251)	
90501-602L3	29.4 (3.0)	343 (35)	Pink-Silver-Pink	6.0 (0.236)	60 (2.362)	4.82	85.1 (3.35)	
90501-602L8	27.0 (2.75)	392 (40)	Green-Green-Green	6.0 (0.236)	60 (2.362)	5.08	87.9 (3.46)	
90501-602L9	29.4 (3.0)	392 (40)	Pink-Green-Pink	6.0 (0.236)	60 (2.362)	4.82	86.7 (3.413)	
90501-603L2	24.5 (2.5)	441 (45)	Yellow-White-Yellow	6.0 (0.236)	60 (2.362)	5.39	91.4 (3.598)	SRX700/SRX700S
90501-603L3	27.0 (2.75)	441 (45)	Green-White-Green	6.0 (0.236)	60 (2.362)	5.08	89.8 (3.535)	
90501-624L8	31.9 (3.25)	343 (35)	Orange-Silver-Orange	6.2 (0.244)	60 (2.362)	5.00	84.2 (3.314)	

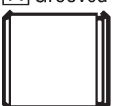
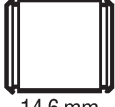


⑦ Clutch weights

		 Standard
8CH-17605-10	35.32 g	
	SDN2900	
8CR-17605-10	38.09 g	
	SDN2890	
8DF-17605-10	37.84 g	
	SDN2910	
8DG-17605-00	39.26 g	
	SDN2940	
8DJ-17605-00	37.77 g	
	SDN2930	SRX700 SRX700S
8DN-17605-20	42.09 g	
	SDN2950	



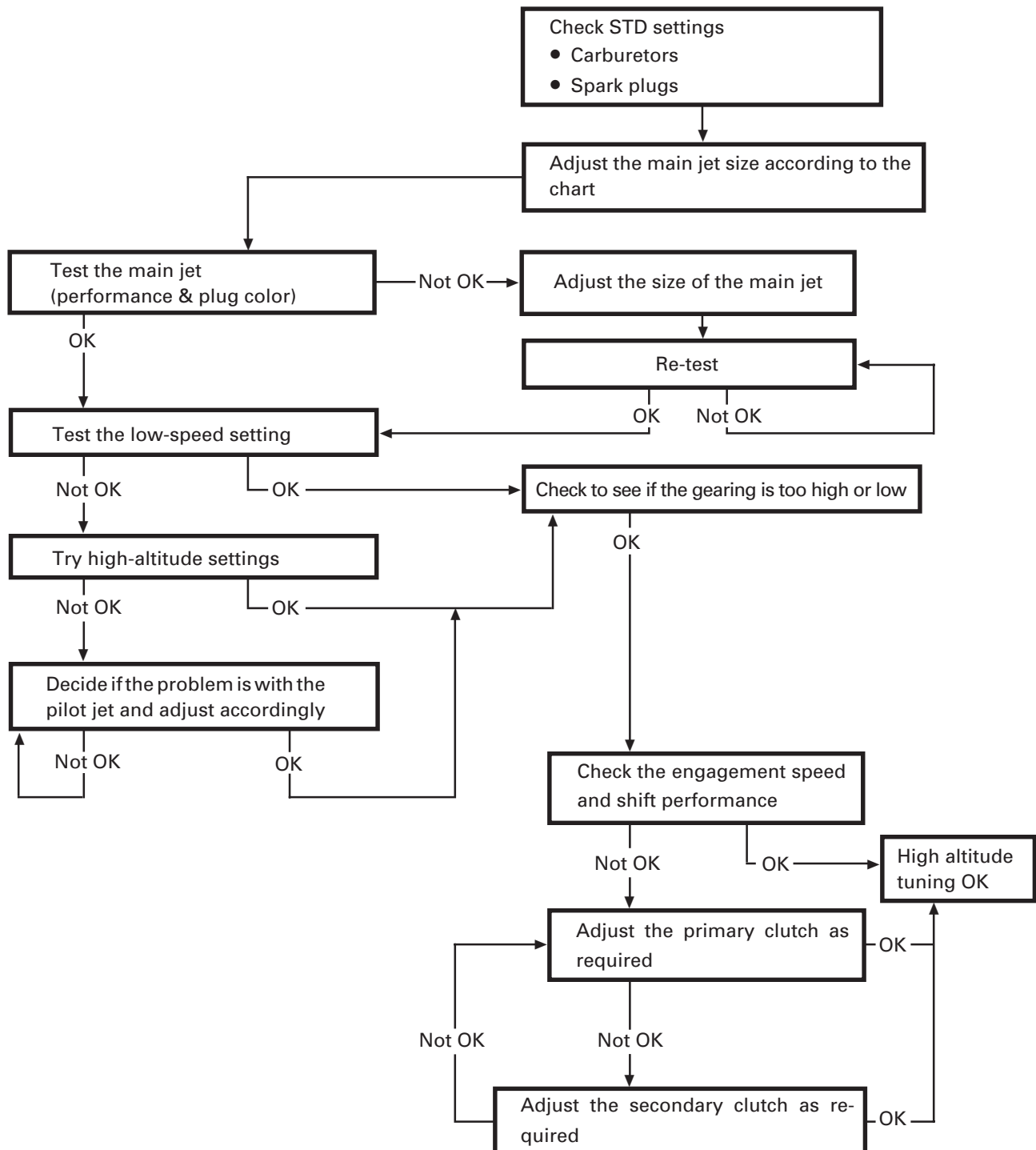
⑧ Rollers

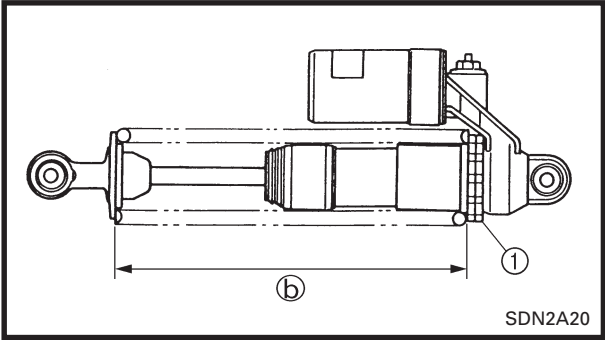
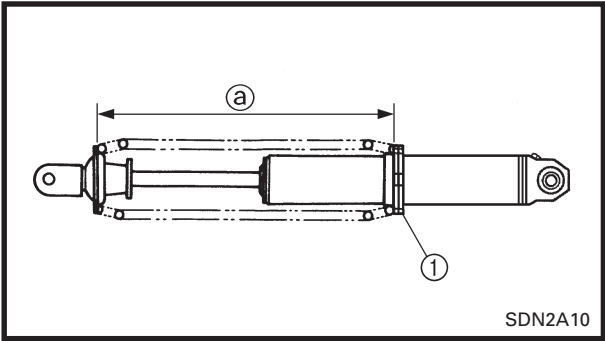
I.D. 9 mm (0.4 in)					
A ROLLER with BUSHING PART NUMBER	B OUTSIDE DIAMETER	C BUSHING TYPE (P/N)	D IDENTIFICATION MARK (Width)	E Standard	F EFFECTS
8CR-17624-00-00	14.5 mm (0.57 in)	Duralon 90380-09245-00	G Grooved & Machined  14.6 mm		K Increased force  L Decreased force
8CR-17624-10-00	15.0 mm (0.59 in)	Duralon 90380-09245-00	H Grooved  14.6 mm		
8CR-17624-20-00	15.6 mm (0.61 in)	Duralon 90380-09245-00	I No Mark  14.6 mm	SRX700/ SRX700S	
8CR-17624-30-00	16.0 mm (0.63 in)	Duralon 90380-09245-00	J Grooved & Grooved  14.6 mm		



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.

Spring seat distance	Standard		
	Shorter ←		→ Longer
Preload	Harder ← → Softer		
① Length (SRX700)	Min.		Max.
	213 mm (8.39 in)	223 mm (8.78 in)	233 mm (9.18 in)
② Length (SRX700S)	Min.		Max.
	196 mm (7.72 in)	213 mm (8.39 in)	219 mm (8.62 in)

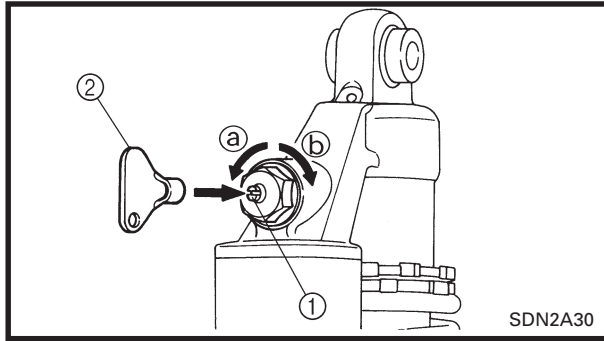
	Special wrench (SRX700S): 4PU-28135-00
---	---

CAUTION:

Be sure that the left and right spring preload is 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.



Damping force (SRX700S)

1. Adjust:
 - Damping force

Adjustment steps:

- Turn the adjusting screw ① in or out with the adjusting screwdriver ②.

Standard	8 Clicks out*
Minimum (hard)	1 Click out* (turns in ②)
Maximum (soft)	16 Clicks out* (turns out ②)

* From the fully turned-in position



Adjusting screwdriver:
8DE-23703-00

CAUTION:

- Never attempt to turn an adjuster beyond the maximum or minimum setting.
- Be sure the left and right damping force is the same.

REAR SUSPENSION

Stopper band

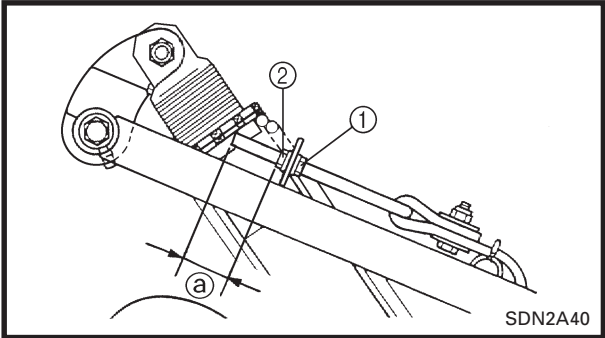
1. Adjust:
- Stopper band tension

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.



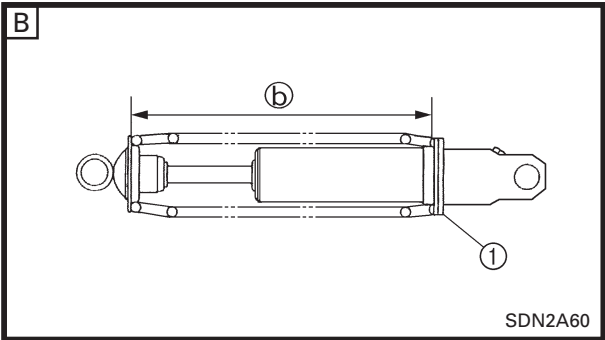
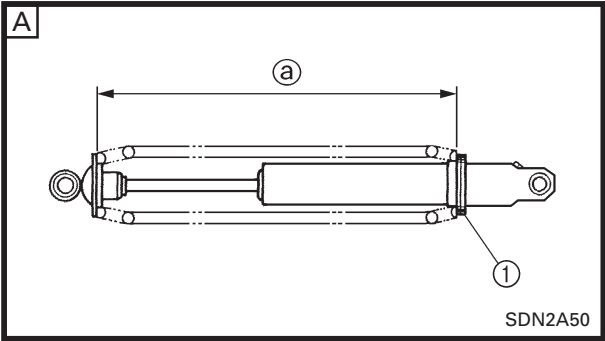
Adjustment steps:

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

Adjuster thread length ②	32 mm (1.26 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, 11 ft • lb)
---	--



Spring preload

1. Adjust:
- Spring preload

Adjustment steps:

- Turn the spring seat ① in or out.

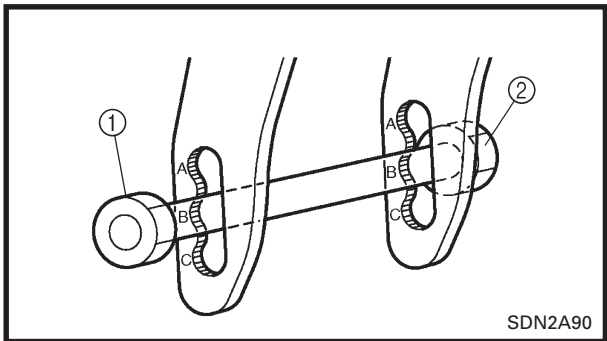
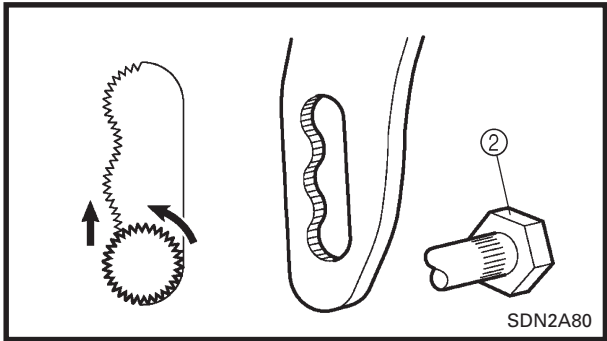
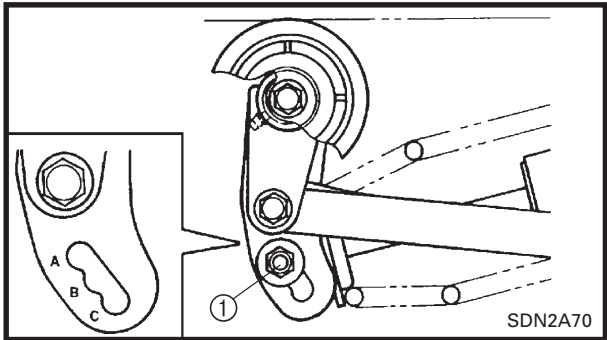
Spring seat distance	Standard		
	Shorter ←		→ Longer
Preload	Harder ← → Softer		
A Length a (front)	Min.		Max.
	180 mm (7.09 in)	190 mm (7.48 in)	200 mm (7.87 in)
B Length b (rear)	Min.		Max.
	296 mm (11.65 in)	306 mm (12.05 in)	316 mm (12.44 in)

⚠ 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.

Rear suspension-full rate

1. 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 (full rate adjuster):
49 Nm (4.9 m • kg, 35.4 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:

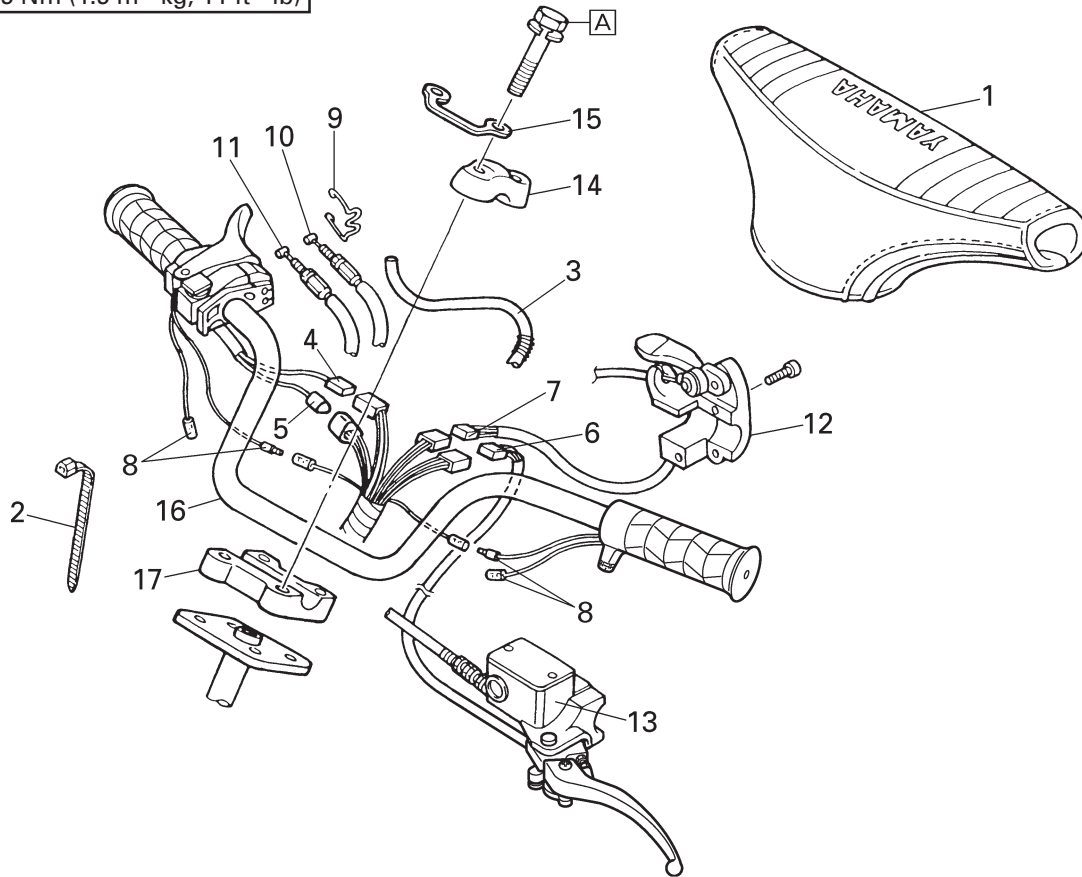
- The nut has to be loosen first, while the bolt is held in place with a wrench.
 - Then the bolt can be turned to adjust the shock position up or down.
 - If the bolt is turned with the nut tight, it is possible to strip the teeth off the bolt.
-



CHASSIS

STEERING

[A]: 15 Nm (1.5 m • kg, 11 ft • lb)



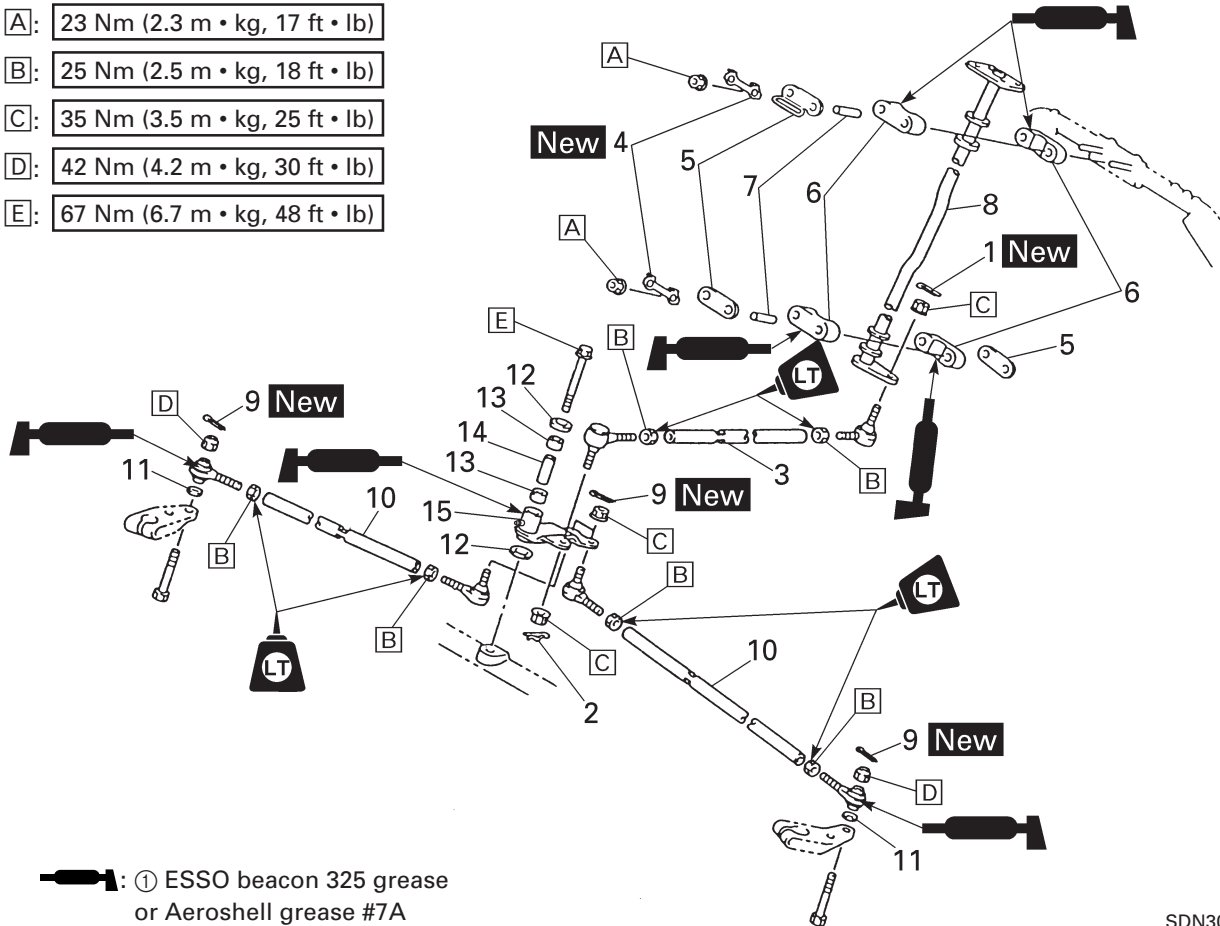
SDN3010

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	Oil tank breather hose	1	
4	Thumb warmer 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	4	Disconnect.
9	Throttle cable holder	1	
10	Throttle cable	1	
11	Oil pump cable	1	
12	Brake lever holder	1	
13	Master cylinder assembly	1	NOTE: _____
14	Handlebar holder (upper)	2	After installing all parts, refer to "CABLE ROUTING" in CHAPTER 9, to check the cable, lead and hose routings.
15	Cable holder	1	
16	Handlebar	1	
17	Handlebar holder (lower)	1	For installation, reverse the removal procedure.

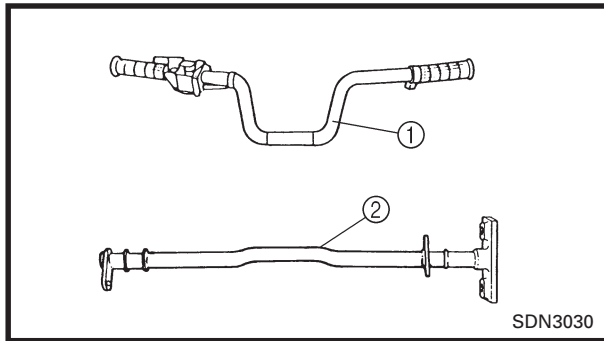


- [A]: 23 Nm (2.3 m • kg, 17 ft • lb)
 [B]: 25 Nm (2.5 m • kg, 18 ft • lb)
 [C]: 35 Nm (3.5 m • kg, 25 ft • lb)
 [D]: 42 Nm (4.2 m • kg, 30 ft • lb)
 [E]: 67 Nm (6.7 m • kg, 48 ft • lb)



SDN3020

Order	Job name/Part name	Q'ty	Remarks
	Steering column and tie rod removal		
	Engine assembly		Remove the parts in the order listed below.
	Handlebar		Refer to "ENGINE ASSEMBLY" in CHAPTER 5.
1	Cotter pin	1	
2	Clip	1	
3	Relay rod	1	
4	Lock washer	2	
5	Bearing holder	3	
6	Bearing	4	
7	Collar	4	
8	Steering column	1	
9	Cotter pin	4	
10	Tie rod	2	
11	Washer	2	
12	Washer	2	
13	Bushing	2	
14	Collar	1	
15	Relay arm	1	
			For installation, reverse the removal procedure.

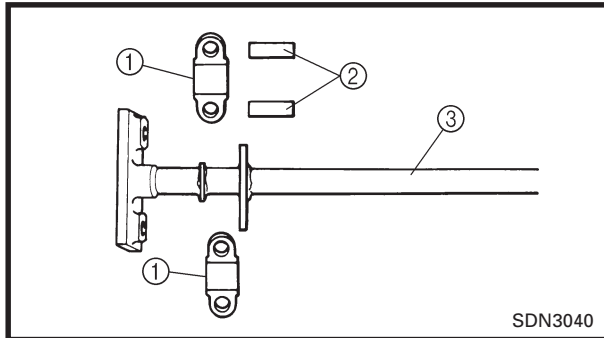
**INSPECTION**

1. Inspect:

- Handlebar ①
 - Steering column ②
- Bends/cracks/damage → Replace.

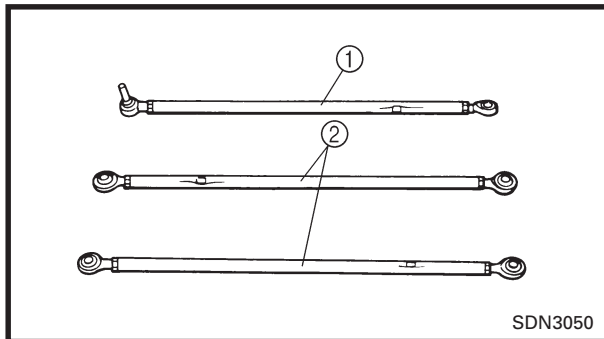
⚠ WARNING

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.

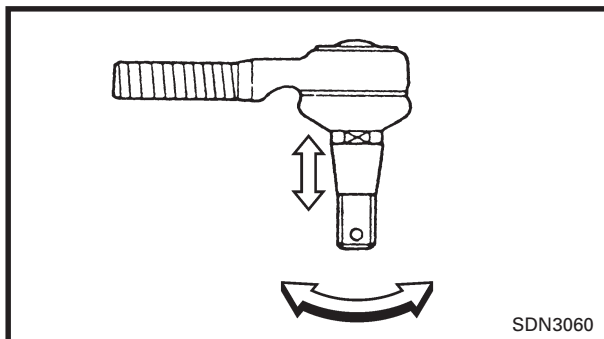


3. Inspect:

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

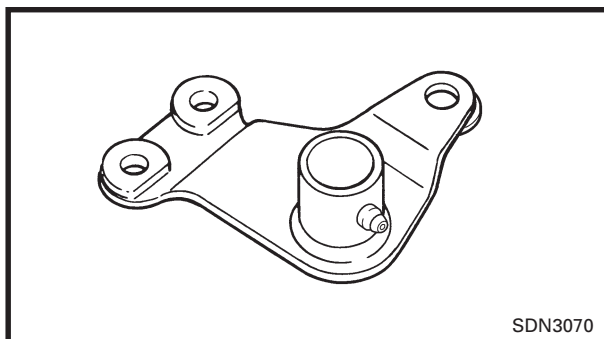
⚠ WARNING

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



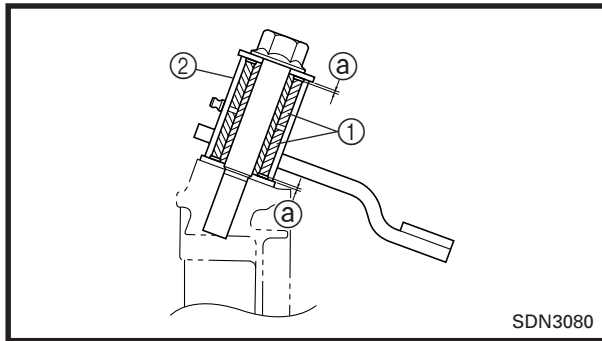
4. Check:

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



5. Inspect:

- Relay arm
- Cracks/damage → Replace.



INSTALLATION

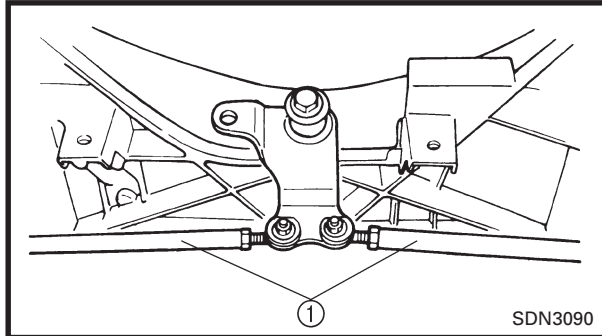
1. Install:

- Bushings ①

NOTE:

Mount the bushing with clearance (a) to the end of the relay arm ②.

(a) Approx. 1 mm (0.04 in)



2. Install:

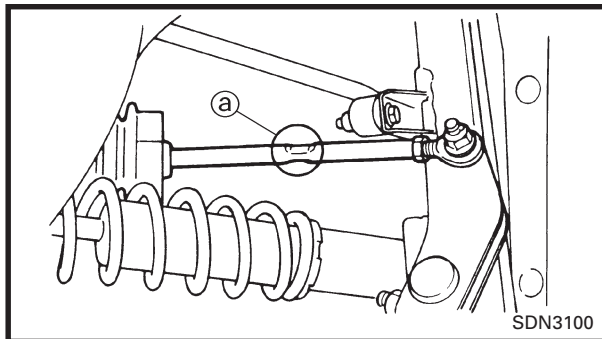
- Tie rods ①

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)

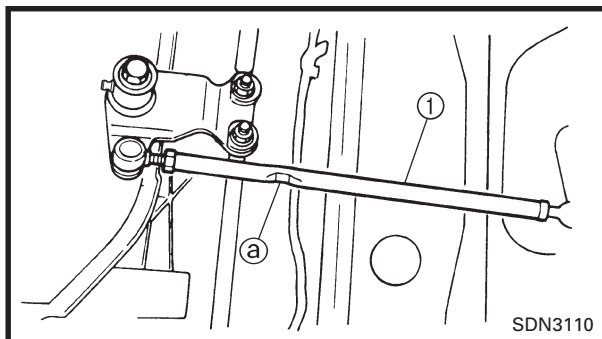
LOCTITE®

Nut (tie-rod-relay arm):

35 Nm (3.5 m • kg, 25 ft • lb)

Nut (tie-rod-steering arm):

42 Nm (4.2 m • kg, 30 ft • lb)



3. Install:

- Relay rod ①

NOTE:

Make sure that the end of the relay rod with the indentation (a) is connected to the relay arm.

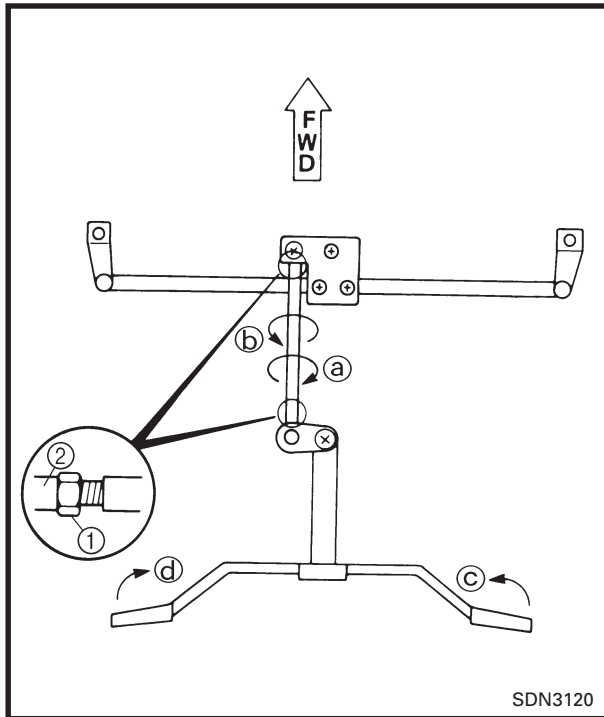
CAUTION:

Always use new cotter pins.



Nut (relay rod):

35 Nm (3.5 m • kg, 25 ft • lb)



SDN3120

4. Adjust:

- Skis

Adjustment steps:

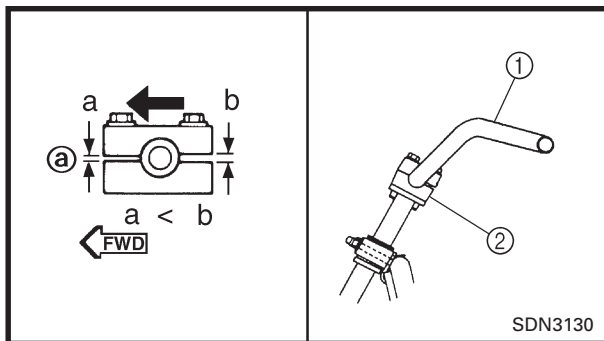
- Temporarily install the handlebar.
- Hold the handlebar straight and check that the skis are at right angles to the handlebar.
- Loosen the locknuts (relay rod) ①.
- Position the skis parallel in the riding direction.
- With the skis in this position, turn the relay rod ② in either direction until the handlebars at right angles with respect to the direction of movement.

Turning the relay rod in direction ②	Turning the handlebar in direction ③
Turning the relay rod in direction ④	Turning the handlebar in direction ④

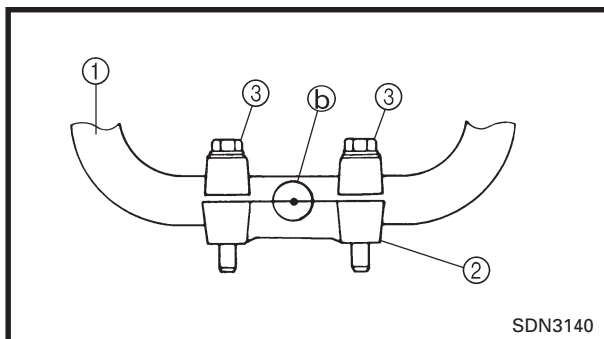
- Tighten the locknuts (relay rod) ①.



Locknut (relay rod) ①:
25 Nm (2.5 m • kg, 18 ft • lb)
LOCTITE®



SDN3130



SDN3140

5. Install:

- Handlebar

CAUTION:

- Be sure the side of the holder with the small gap ① faces forward.
- Center the match mark ② on the handlebar ① between the handlebar holders (lower) ②.



Bolt (handlebar holder) ③:
15 Nm (1.5 m • kg, 11 ft • lb)

CAUTION:

First tighten the bolts on the front side of the handlebar holder, and then tighten the bolts on the rear side.



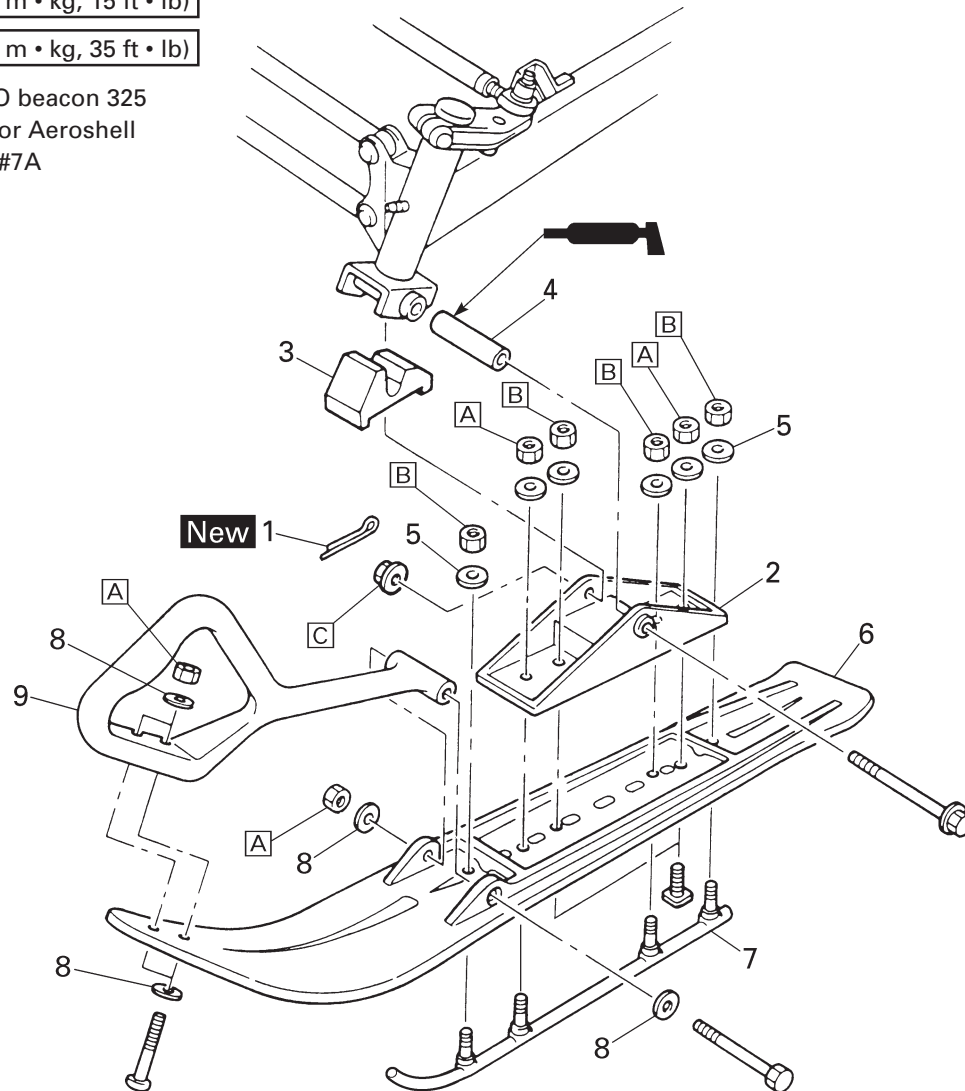
SKI

[A]: 11 Nm (1.1 m • kg, 8.0 ft • lb)

[B]: 21 Nm (2.1 m • kg, 15 ft • lb)

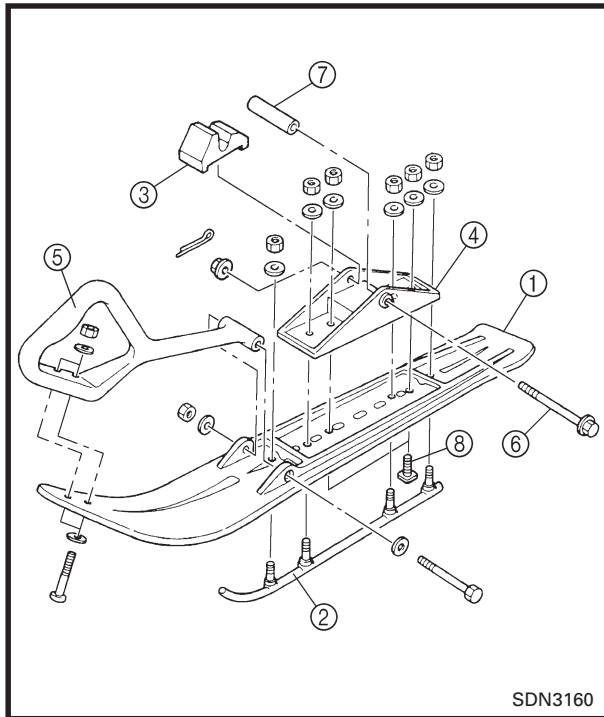
[C]: 48 Nm (4.8 m • kg, 35 ft • lb)

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



SDN3150

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



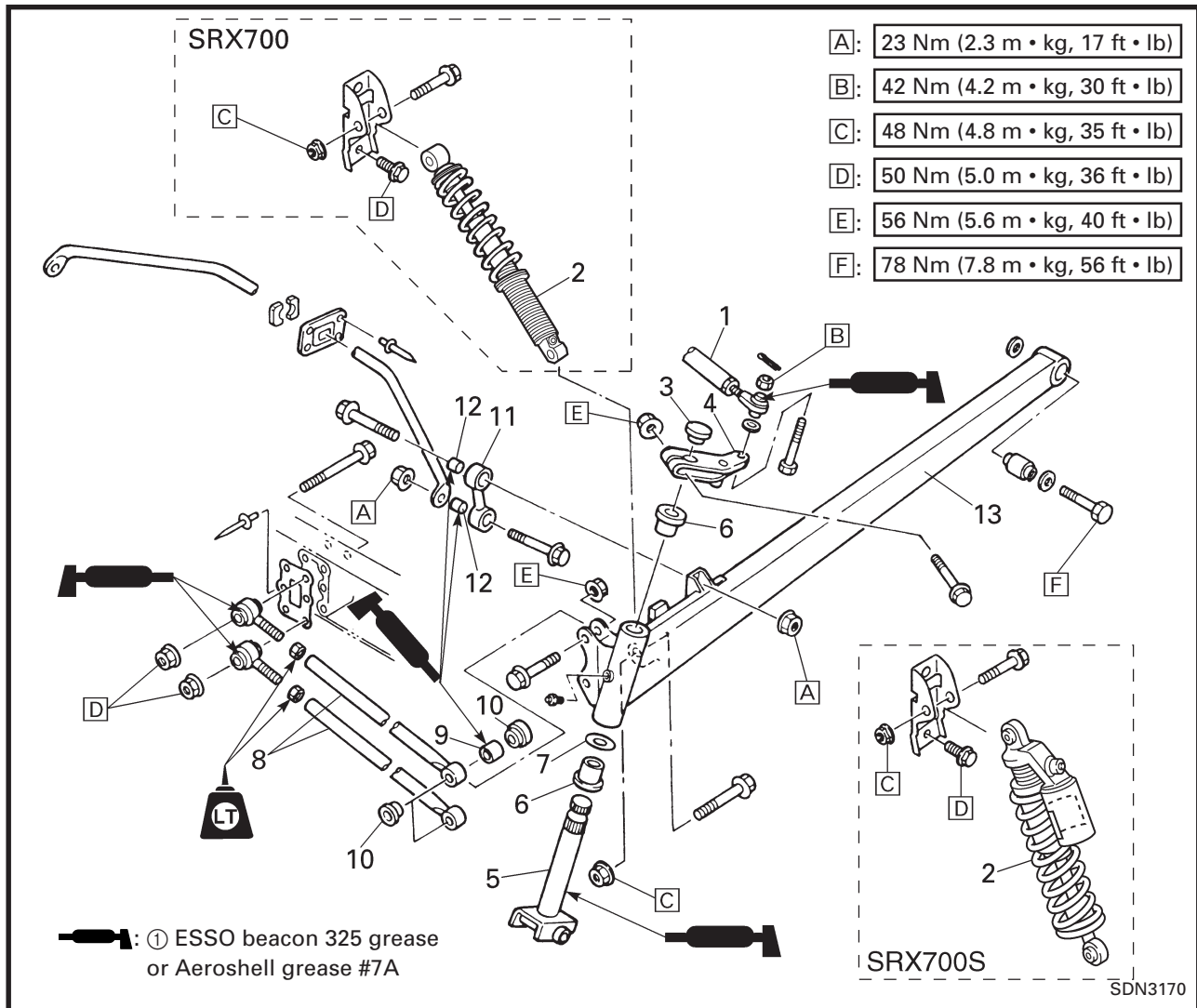
INSPECTION

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
- Wear/damage → Replace.



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	Tie rod	1	
2	Shock absorber	1	
3	Cap	1	
4	Steering arm	1	
5	Ski column	1	
6	Bushing	2	
7	Washer	1	
8	Control rod	2	
9	Collar	2	
10	Bushing	4	
11	Connecting rod	1	
12	Collar	2	
13	Front arm	1	
			For installation, reverse the removal procedure.

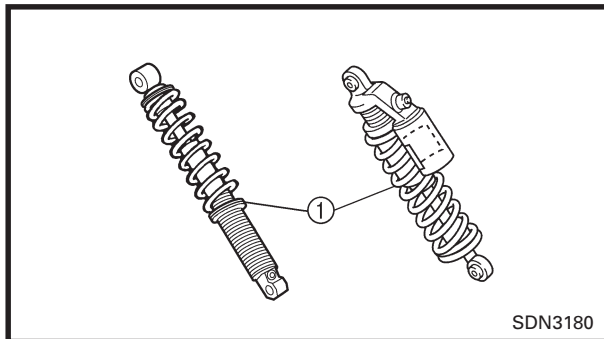


HANDLING NOTES

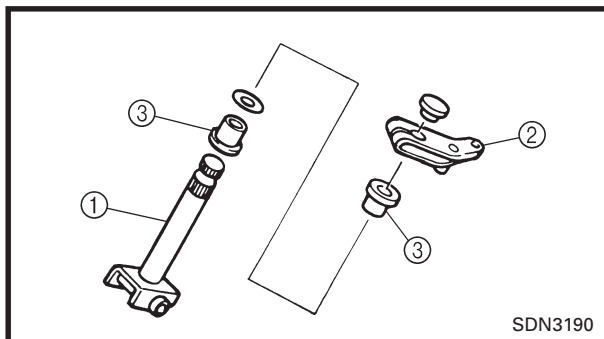
⚠ WARNING

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.

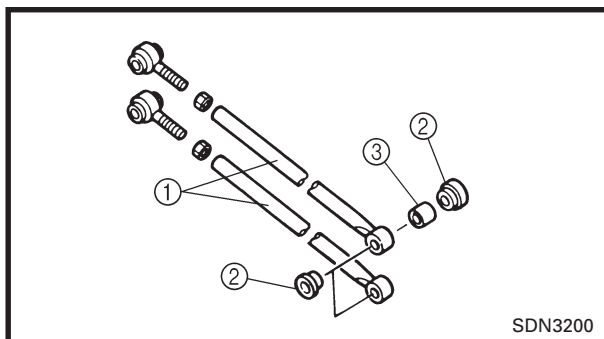
- Do not tamper or attempt to open the gas chamber.
- Do not subject the shock absorber to flames or any other source of high heat. This may cause the unit to explode due to excessive gas pressure.
- Do not deform or damage the gas chamber in any way. Gas chamber damage will result in poor damping performance.



SDN3180



SDN3190



SDN3200

INSPECTION

1. Inspect:

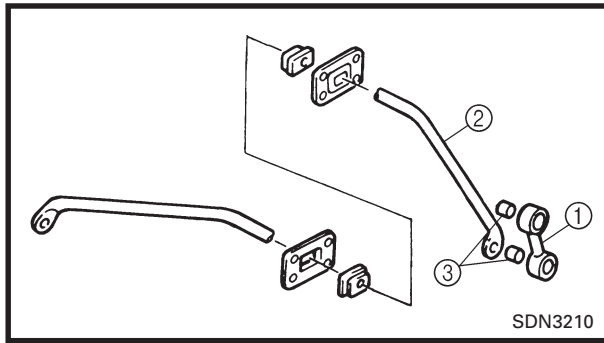
- Shock absorber ①
Oil (gas) leaks/bends/damage → Replace.

2. Inspect:

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

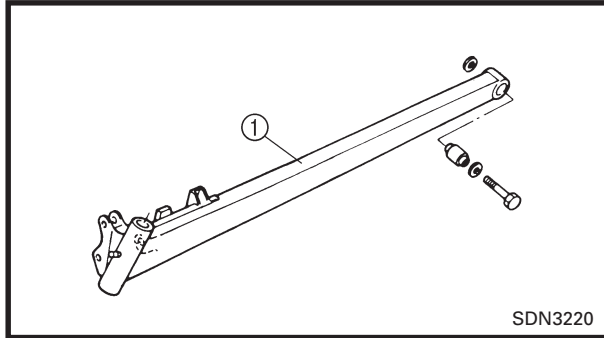
3. Inspect:

- Control rod ①
Cracks/bends/damage → Replace.
- Bushing ②
- Collar ③
Wear/scratches/damage → Replace.



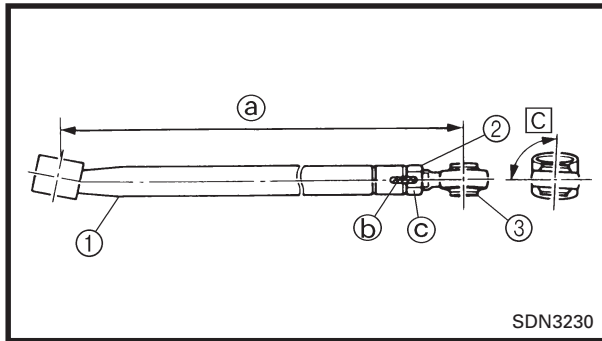
4. Inspect:

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



5. Inspect:

- Front arm ①
Cracks/bends/damage → Replace.



INSTALLATION

1. Install:

- Control rod ①
- Nut ②
- Joint ③

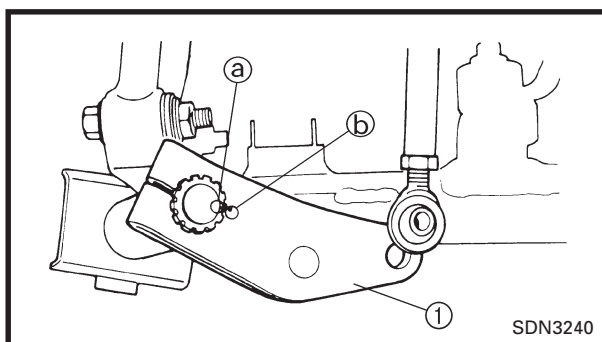
① Set length

	A Left hand		
	B Set length ① (mm)	C Set angle (°)	G color ②
E Upper	460.2 ± 0.5 mm (18.118 ± 0.0197 in)	94 ± 1	Brown
F Lower	458.7 ± 0.5 mm (18.059 ± 0.0197 in)	94 ± 1	

	D Right hand		
	B Set length ① (mm)	C Set angle (°)	G color ②
E Upper	460.2 ± 0.5 mm (18.118 ± 0.0197 in)	86 ± 1	Pink
F Lower	458.7 ± 0.5 mm (18.059 ± 0.0197 in)	86 ± 1	

③ 12 mm = 56 Nm (5.6 m • kg, 40 ft • lb)

14 mm = 73 Nm (7.3 m • kg, 53 ft • lb)



2. Install:

- Steering arm ①

NOTE:

Align the punch mark ① on the ski column with the punch mark ② on the steering arm.



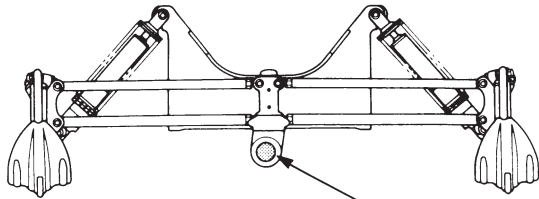
Nut (steering arm):
56 Nm (5.6 m • kg, 40 ft • lb)



Ski spindle camber

Place the unit on a level surface and check the ski spindle camber. DO NOT elevate the front end.

- ① Using an angle finder, be sure that the unit sits parallel with the floor. Place the angle finder up against the flat aluminum part of the belly pan.



[B] ANGLE FINDER

SDN3250

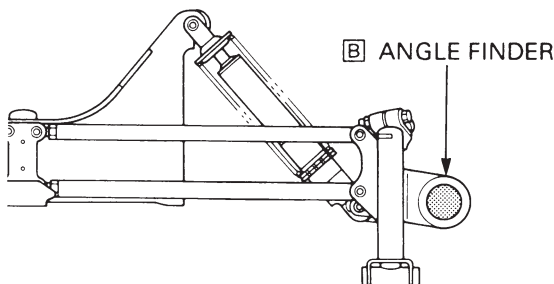
- USE AN ANGLE FINDER TO CHECK THAT THE UNIT IS LEVEL.



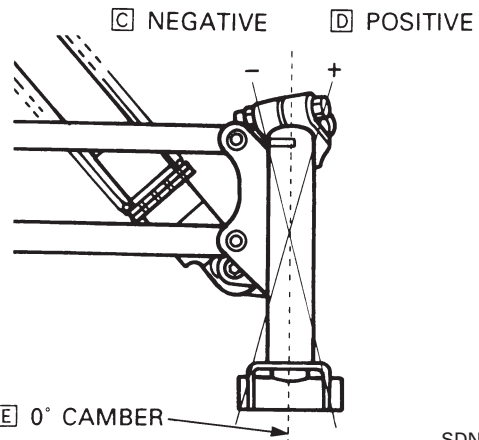
Angle finder:
YS-42422

- ② Place the angle finder up against the vertical flat surface on the trailing arm just behind the spindle weld and check the spindle camber.

Ski spindle camber:
-0.5° to +0.5°



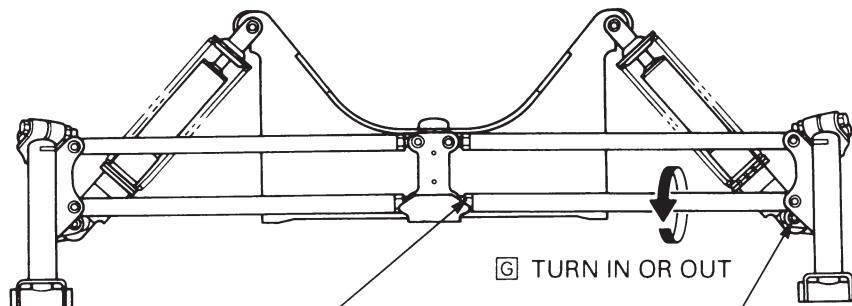
[B] ANGLE FINDER



[E] 0° CAMBER

SDN3260

- ③ To adjust the camber, loosen the lower radius rod ball joint locknut and remove the bolt securing the radius rod to the trailing arm. Turn the rod in or out as necessary until the proper camber angle is obtained.



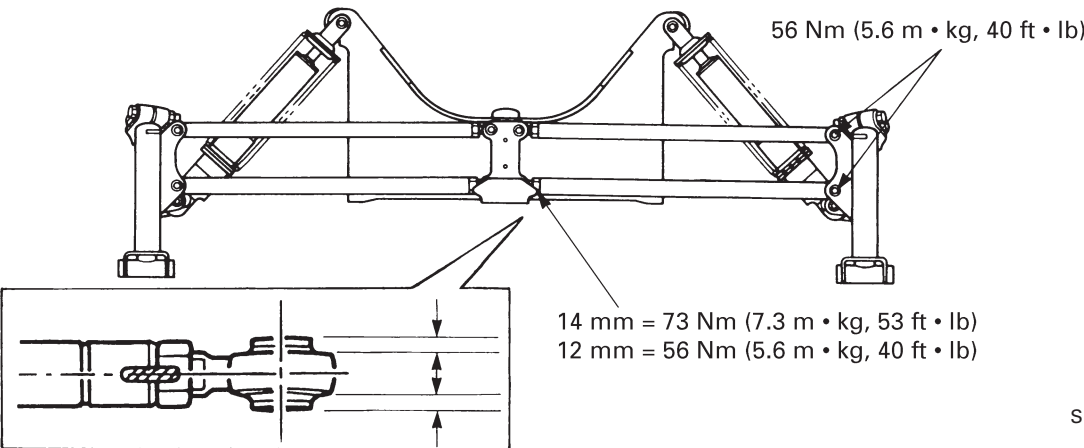
[F] LOOSEN LOCKNUT

[G] TURN IN OR OUT

[H] REMOVE BOLT

SDN3270

- ④ Install the radius rod onto the trailing arm and tighten the bolt. Tighten the ball joint locknut and apply grease to the ball joint. Repeat the procedure for the other side.



CAUTION: _____

When tightening the ball joint locknut, be sure to keep the ball joint outer housing centered with the ball to prevent binding.

Ski alignment

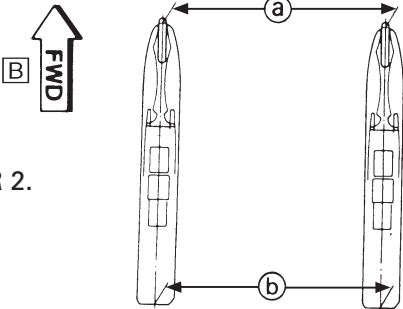
NOTE: _____

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 ~ 5 mm (0 ~ 0.59 in)

a – **b** = Toe out



Refer to "STEERING SYSTEM" in CHAPTER 2.

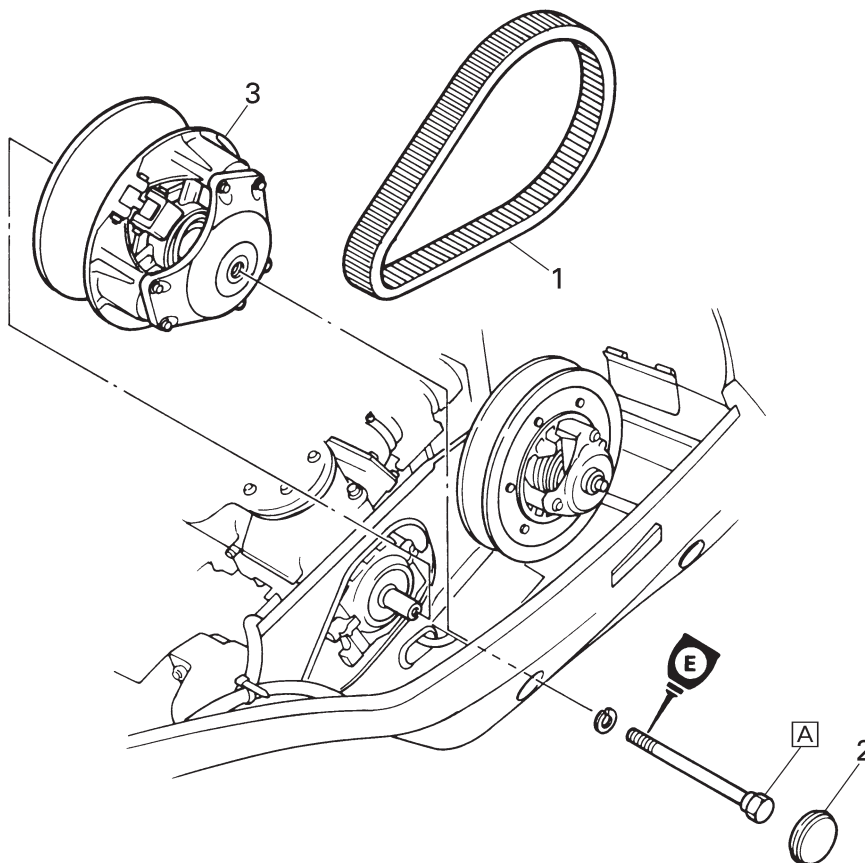
SDN3290



POWER TRAIN

PRIMARY SHEAVE AND DRIVE V-BELT

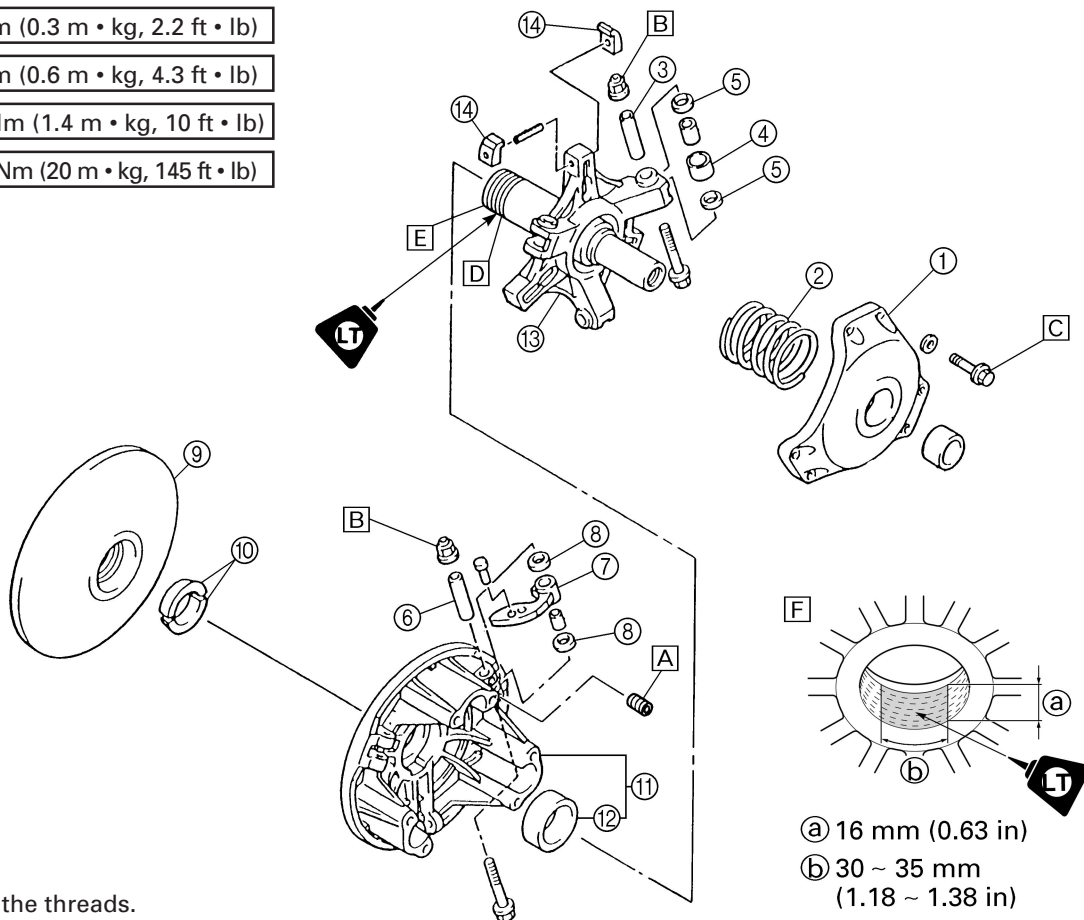
A:	1st	120 Nm (12.0 m • kg, 85 ft • lb)
	2nd	60 Nm (6.0 m • kg, 43 ft • lb)



SDN4010

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

- [A]: 3 Nm (0.3 m • kg, 2.2 ft • lb)
 [B]: 6 Nm (0.6 m • kg, 4.3 ft • lb)
 [C]: 14 Nm (1.4 m • kg, 10 ft • lb)
 [D]: 200 Nm (20 m • kg, 145 ft • lb)



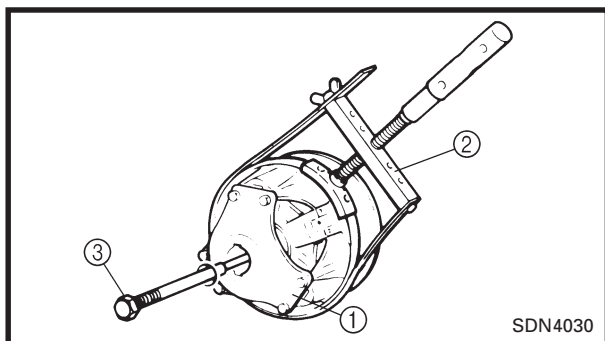
- [E] • Clean the threads.
 • Apply LOCTITE® #648 as illustrated in [F].
 And then tighten the spider. (The spider must be turned counterclockwise to be tightened.)

- [F]
 a 16 mm (0.63 in)
 b 30 ~ 35 mm
 (1.18 ~ 1.38 in)

SDN4020

4

Order	Job name/Part name	Q'ty	Remarks
	Primary sheave disassembly		Remove 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	
⑭	Slider	6	
			For assembly, reverse the disassembly procedure.



REMOVAL

1. Remove:

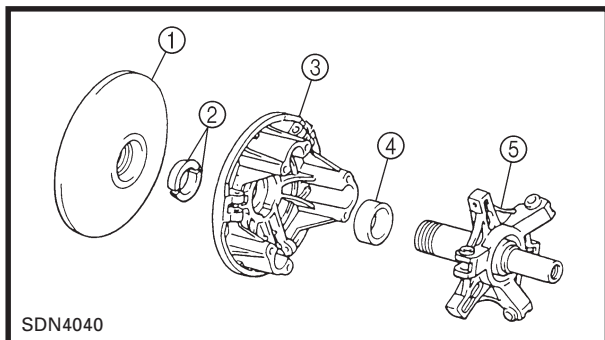
- Primary sheave assembly ①

NOTE:

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



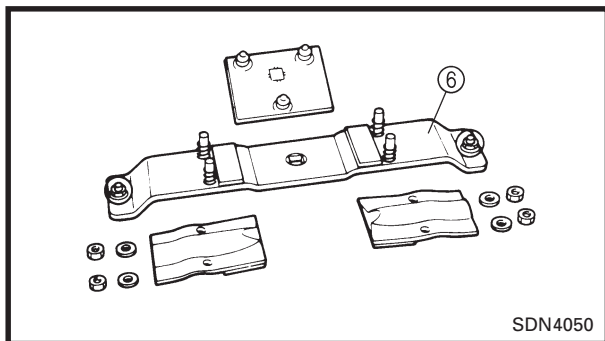
Primary sheave holder:
90890-01701, YS-01880
Primary sheave puller:
YS-01881-1, YS-01882-1



DISASSEMBLY

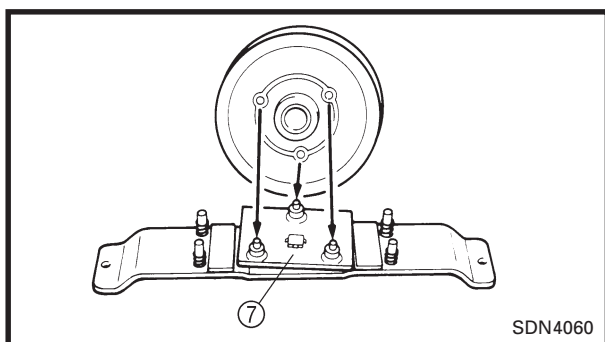
1. Remove:

- 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.

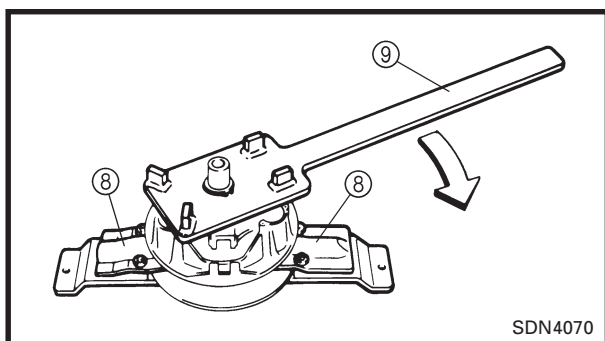


Clutch spider separator:
90890-01711, YS-28890-B
Clutch separator adapter:
90890-01740, YS-34480

- 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.

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:

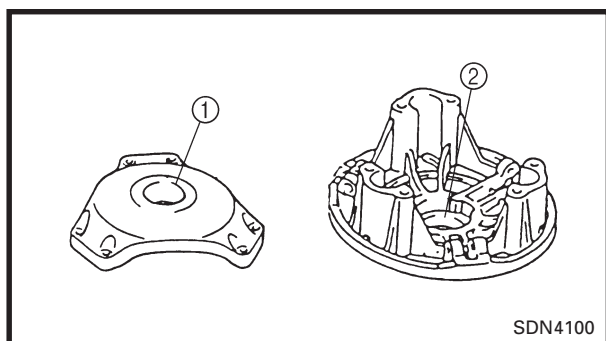
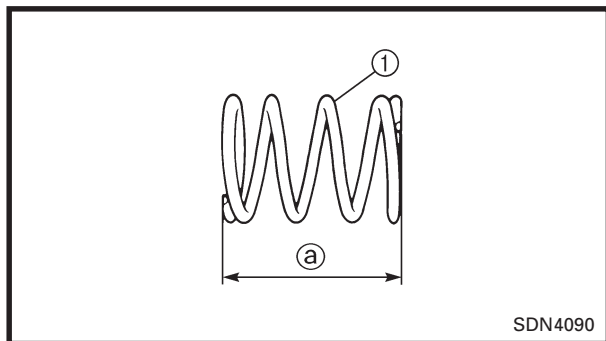
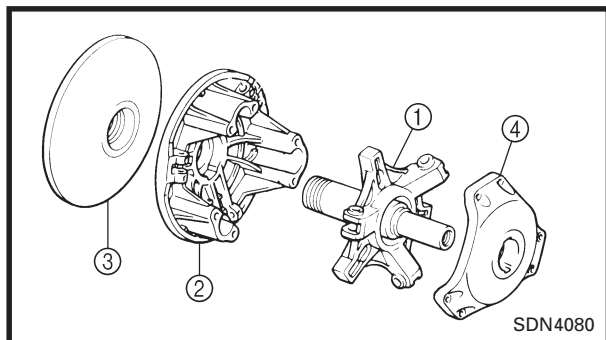
- Primary sheave spring free length ②
- Out of specification → Replace the primary sheave spring.



Primary sheave spring free length ②:
91.4 mm (3.6 in)

NOTE:

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

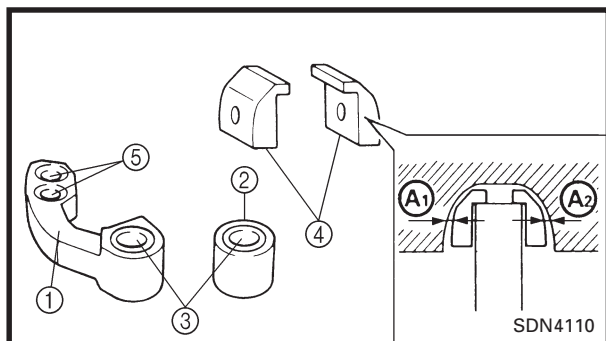


4. Inspect:

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



Clutch bushing press:
YS-42424



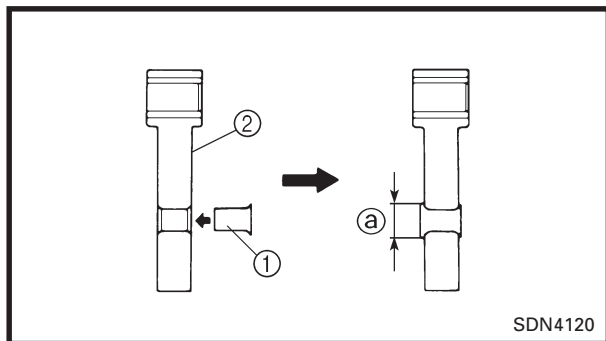
5. Inspect:

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

Wear/scratches/damage → Replace.

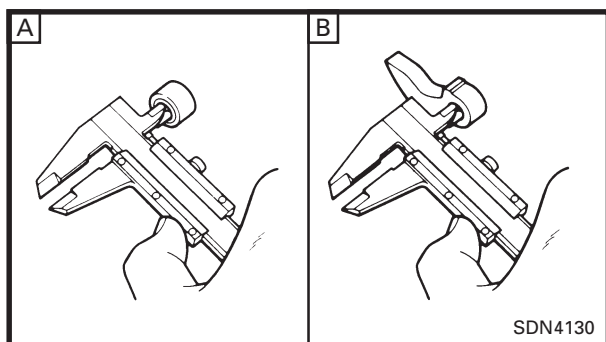


Slider inside clearance $A_1 + A_2$:
Min. 0 mm (0 in)
Max. 0.3 mm (0.0118 in)



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 ③ of the rivet head measures 8.2 mm (0.32 in) or larger.



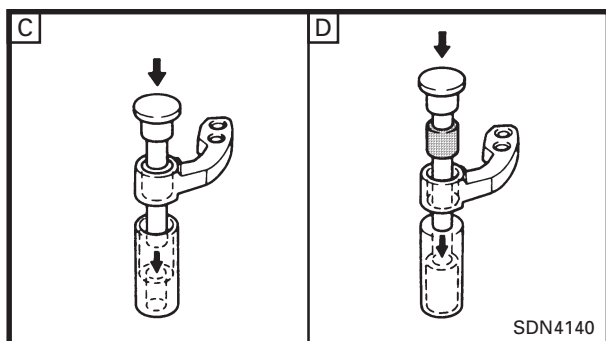
6. Measure:

- 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)



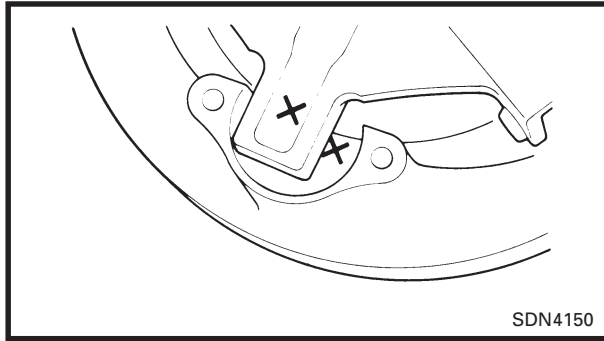
NOTE:

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



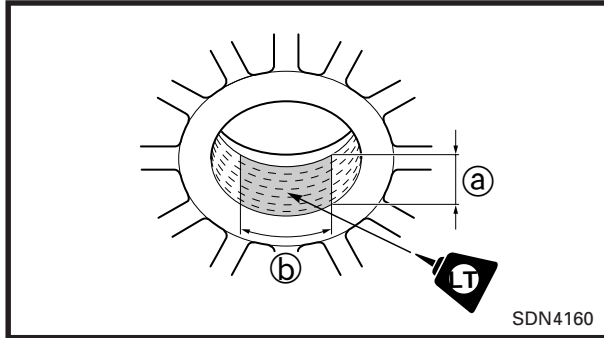
ASSEMBLY

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:

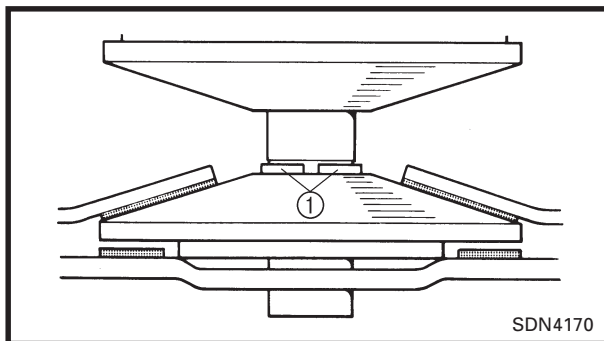
Apply LOCTITE® #648 to the fixed sheave as shown.

CAUTION:

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

① 16 mm (0.63 in)

② 30 ~ 35 mm (1.18 ~ 1.38 in)



3. Install:

- Fixed sheave stoppers ①

NOTE:

Stopper tapered portion should face fixed sheave.

4. Tighten:

- Spider

Tightening steps:

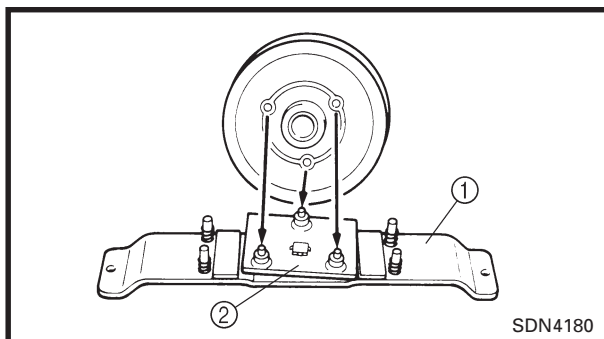
- Finger-tighten the spider until it is stopped by the fixed sheave stopper.
- Hold the fixed sheave with the clutch spider separator ①.



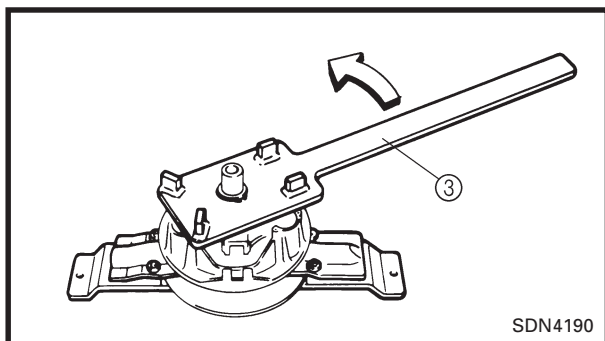
Clutch spider separator:
90890-01711, YS-28890-B

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.



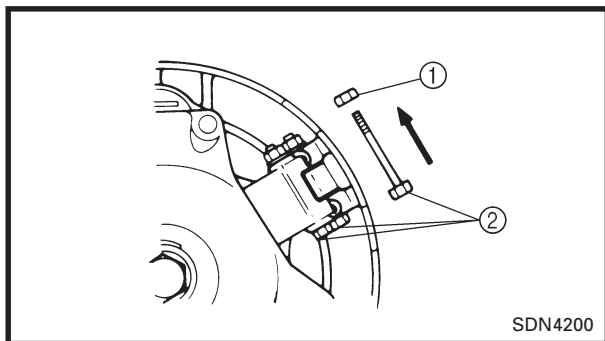
Spider:
200 Nm (20 m • kg, 145 ft • lb)

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:

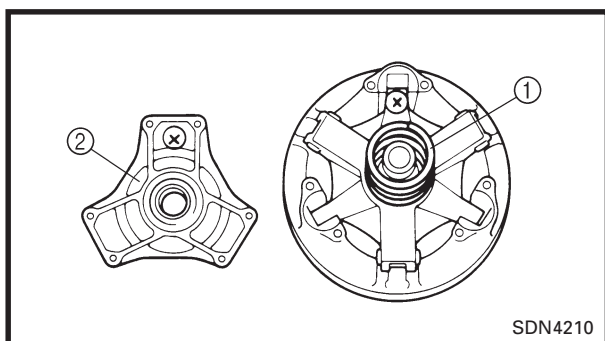
- Weight



Nut ①:
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:

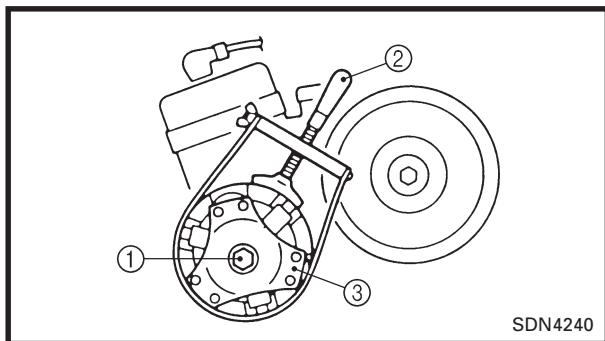
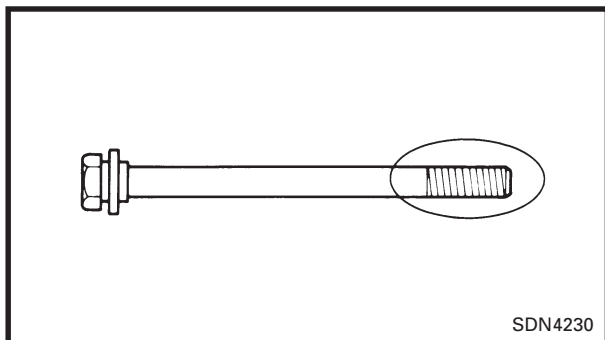
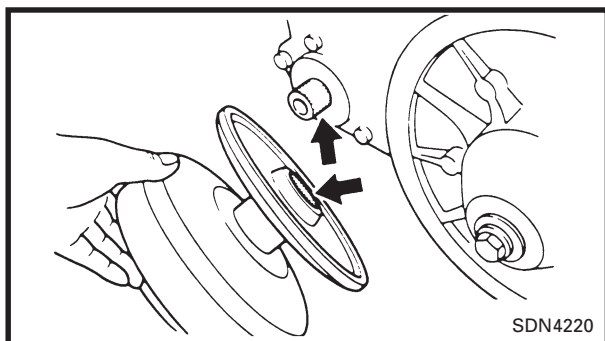
- Primary sheave spring ①
- Primary sheave cap ②

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)



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:

- YAMALUBE 2-cycle 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) ①:
(initial tightening)
120 Nm (12 m • kg, 85 ft • lb)

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



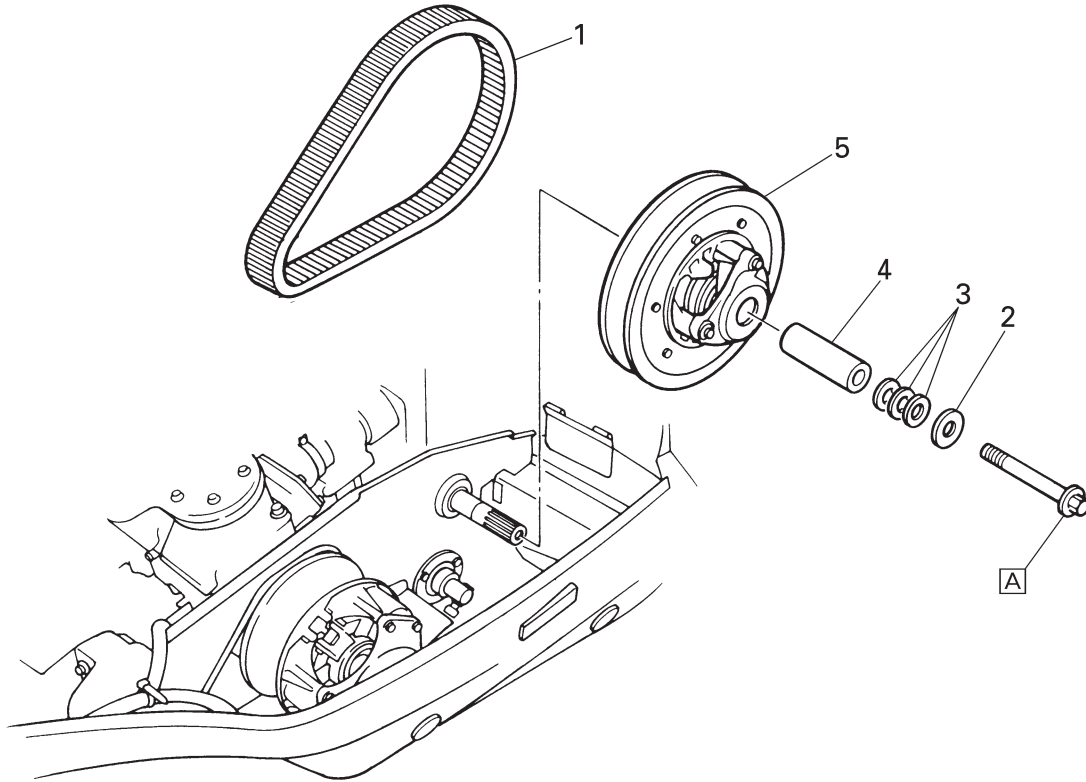
Bolt (primary sheave) ①:
60 Nm (6.0 m • kg, 43 ft • lb)

4. Adjust:

- V-belt position
Refer to "DRIVE V-BELT" in CHAPTER 2.
- Sheave distance
- Sheave offset
- Secondary sheave freeplay (clearance)
Refer to "SHEAVE DISTANCE AND OFFSET ADJUSTMENT" in CHAPTER 2.

SECONDARY SHEAVE

A: 64 Nm (6.4 m • kg, 46 ft • lb)



SDN4250

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

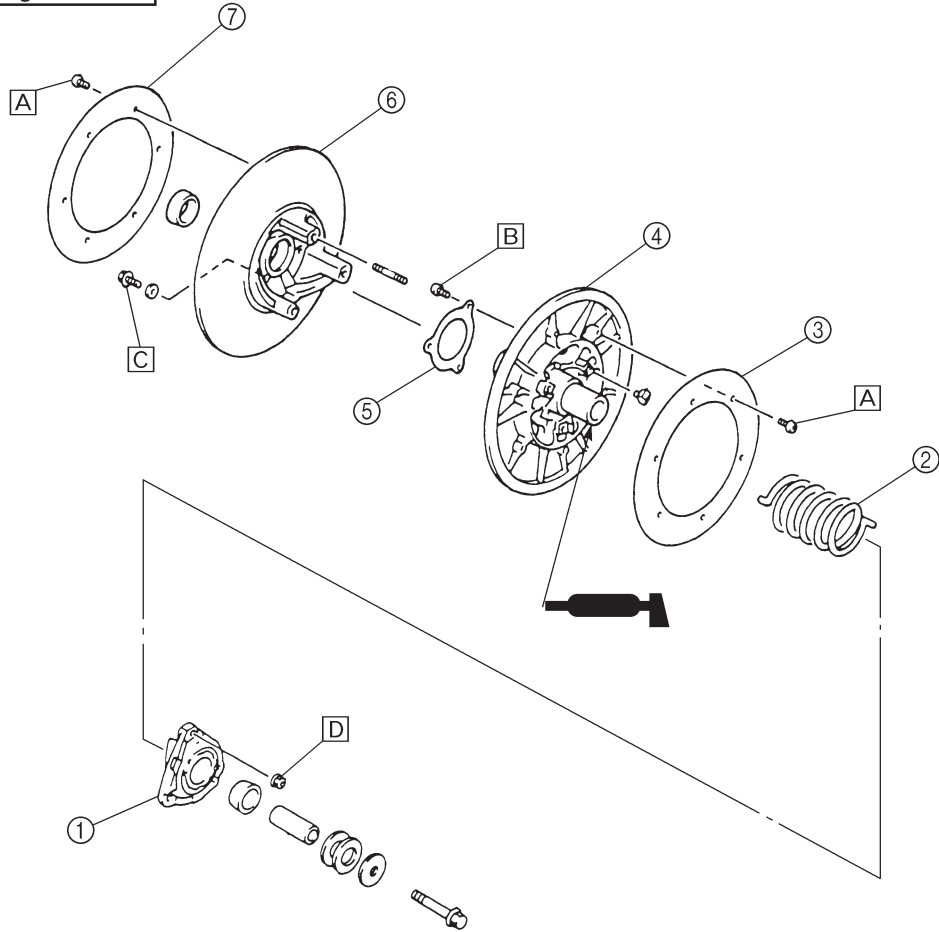
- A:

4 Nm (0.4 m • kg, 2.9 ft • lb)
- B:

6.5 Nm (0.65 m • kg, 4.6 ft • lb)
- C:

10 Nm (1.0 m • kg, 7.2 ft • lb)
- D:

23 Nm (2.3 m • kg, 17 ft • lb)



① ESSO beacon 325 grease
 or Aeroshell grease #7A

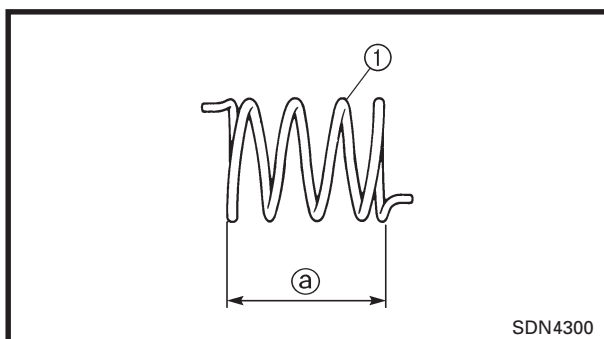
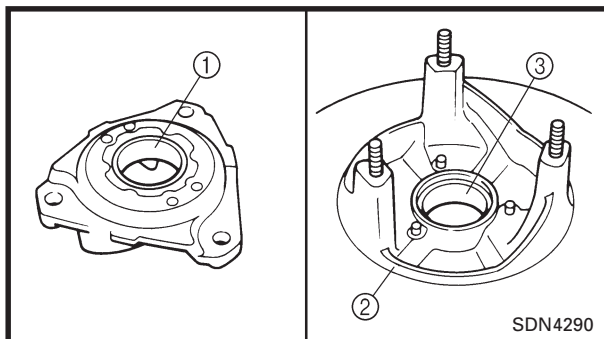
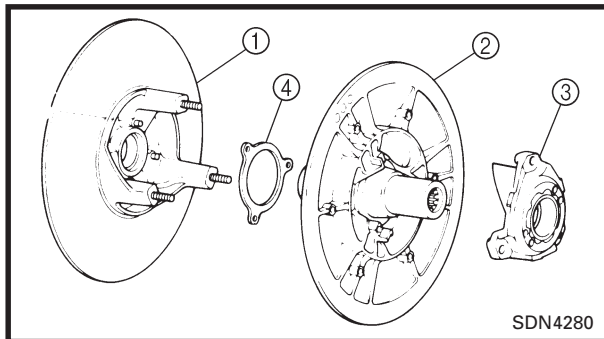
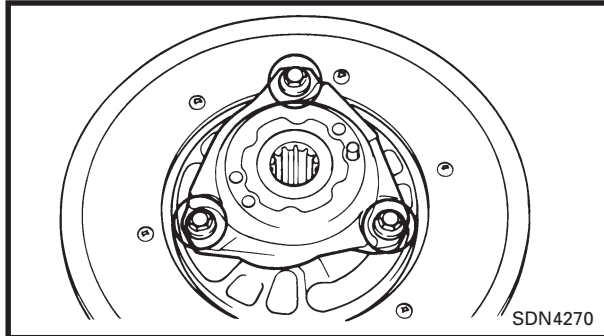
SDN4260

Order	Job name/Part name	Q'ty	Remarks
	Secondary sheave disassembly		
①	Spring seat	1	Remove the parts in the order listed below.
②	Secondary sheave spring	1	
③	Secondary sheave plate 1	1	
④	Fixed sheave	1	
⑤	Stopper	1	
⑥	Sliding sheave	1	
⑦	Secondary sheave plate 2	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.



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:

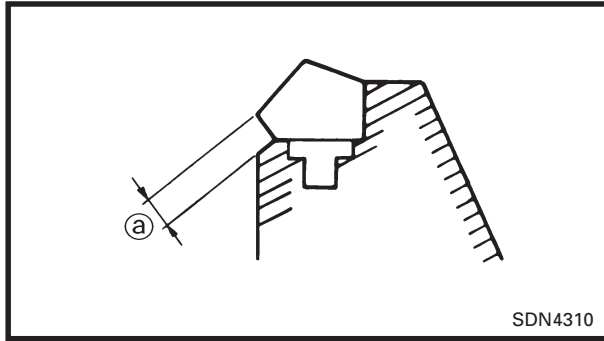
- Secondary sheave spring ①
Cracks/damage → Replace.

4. Measure:

- Secondary sheave spring free length ①
Below specification → Replace the secondary sheave spring.



Free length limit ①:
75 mm (2.95 in)



5. Measure:

- Ramp shoe thickness ②

Out of specification → Replace the ramp shoe.

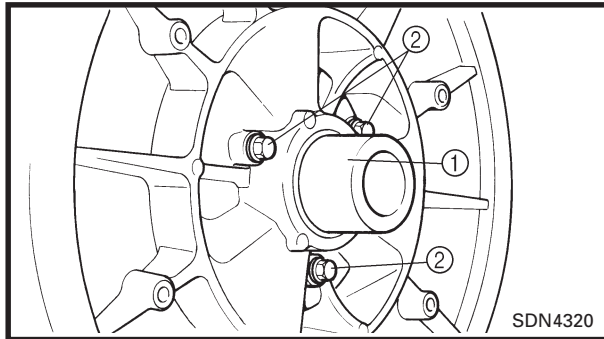
Wear limit ②:
1.0 mm (0.04 in)

ASSEMBLY

1. Install:

- Stopper
- Sliding sheave

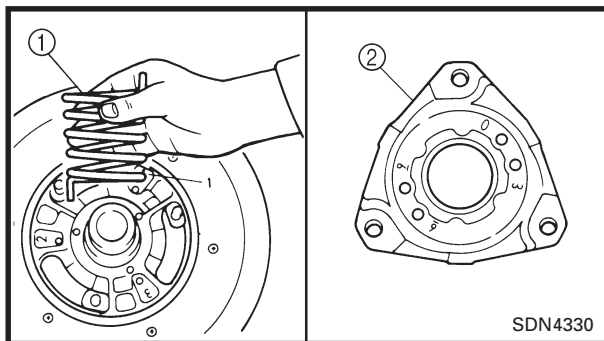
Screw (stopper):
6.5 Nm (0.65 m • kg, 4.6 ft • lb)



2. Install:

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

Bolt:
10 Nm (1.0 m • kg, 7.2 ft • lb)



3. Install:

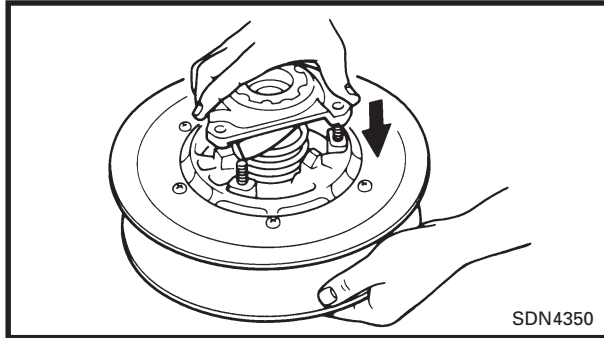
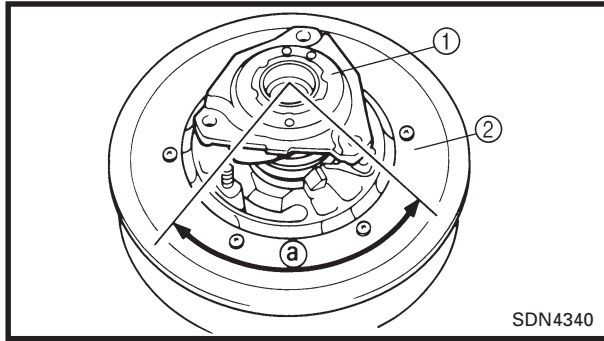
- Secondary sheave spring ①
- Spring seat ②

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:

2-6



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.

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



Standard angle ③:

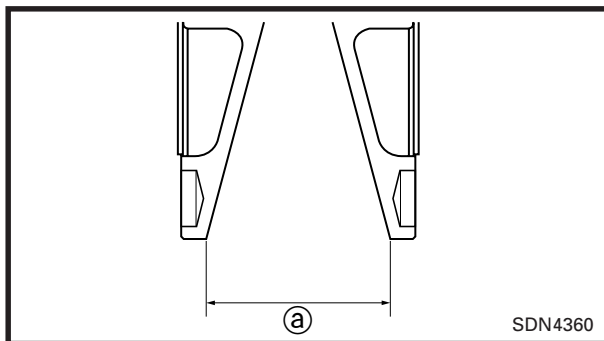
80°

- 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)



4. Measure:

- Secondary sheave clearance ④
- Out of specification → Adjust.



Secondary sheave clearance ④:

35.0 ~ 35.8 mm (1.38 ~ 1.41 in)

5. Calculate:

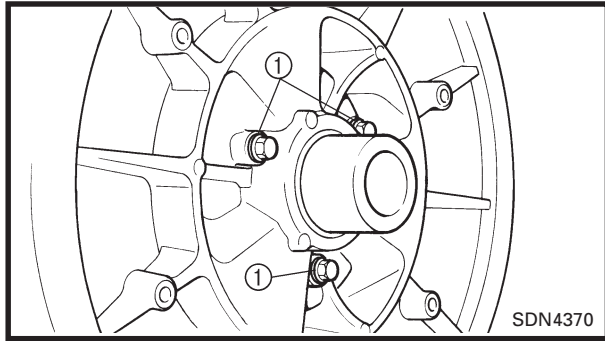
- Shim thickness

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



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:

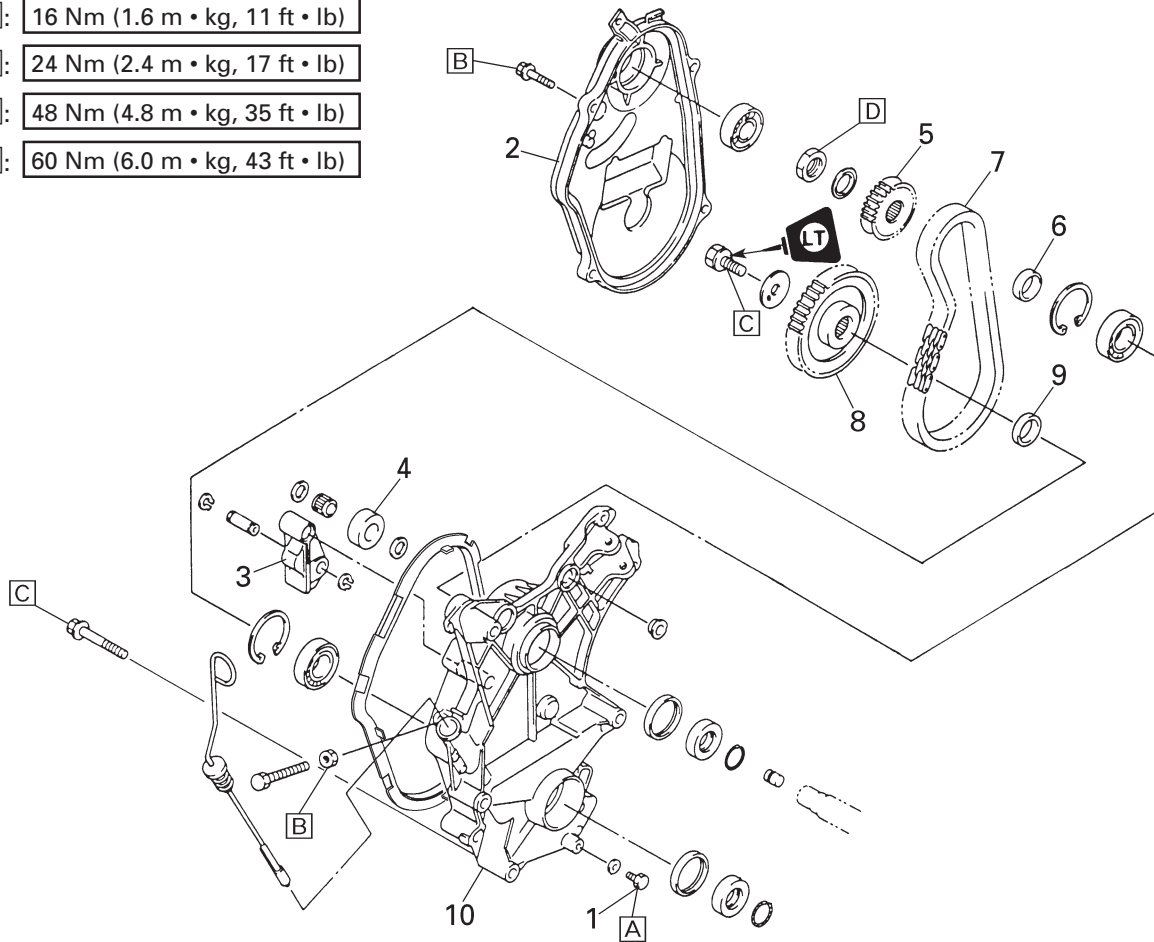
Secondary sheave bolt:
64 Nm (6.4 m • kg, 46 ft • lb)

3. Adjust:

- V-belt position
Refer to "DRIVE V-BELT" in CHAPTER 2.
- Sheave distance
- Sheave offset
- Secondary sheave freeplay (clearance)
Refer to "SHEAVE DISTANCE AND OFFSET ADJUSTMENT" in CHAPTER 2.

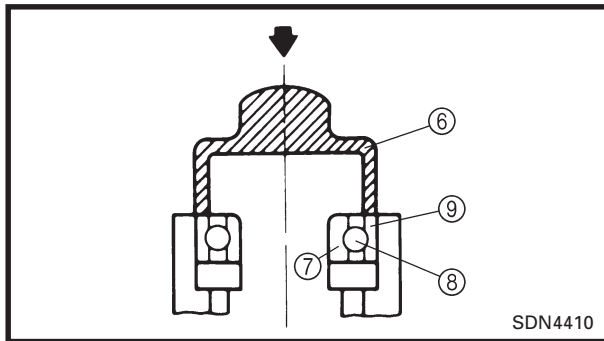
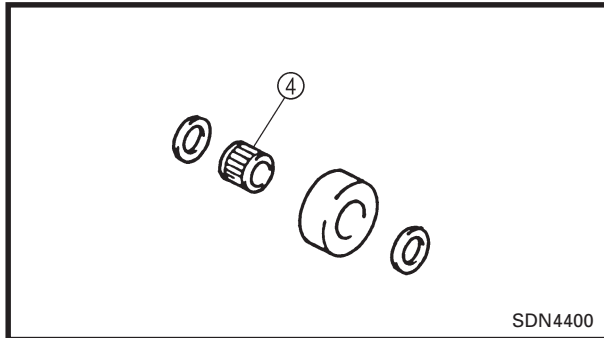
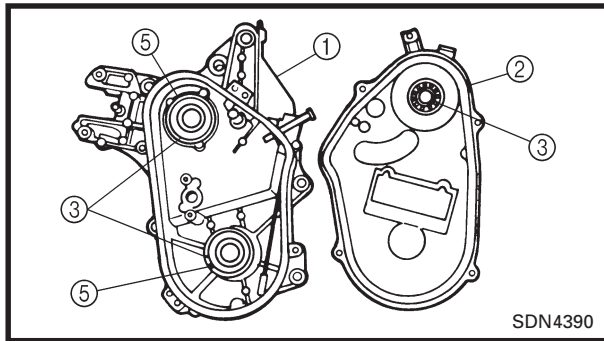
DRIVE CHAIN HOUSING

- [A]: 16 Nm (1.6 m • kg, 11 ft • lb)
 [B]: 24 Nm (2.4 m • kg, 17 ft • lb)
 [C]: 48 Nm (4.8 m • kg, 35 ft • lb)
 [D]: 60 Nm (6.0 m • kg, 43 ft • lb)



SDN4380

Order	Job name/Part name	Q'ty	Remarks
	Drive chain housing removal		
	Brake caliper		Remove the parts in the order listed below. Refer to "BRAKE".
	Parking brake		
	Tension adjuster		Loosen. Refer to "SLIDE RAIL SUSPENSION".
1	Bolt	1	Drain the oil.
2	Drive chain housing cover	1	
3	Chain tensioner	1	
4	Roller	1	
5	Drive sprocket	1	
6	Collar	1	
7	Drive chain	1	
8	Driven sprocket	1	
9	Collar	1	
10	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 race of the bearing race.

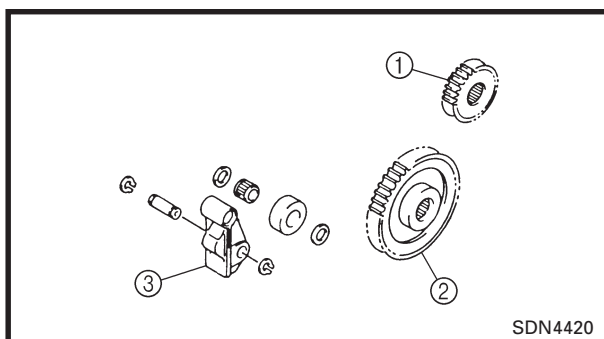
CAUTION:

Do not strike the inner race ⑦ or ball bearings ⑧.
Contact only the outer race ⑨.

- Install a new circlip (drive chain housing).

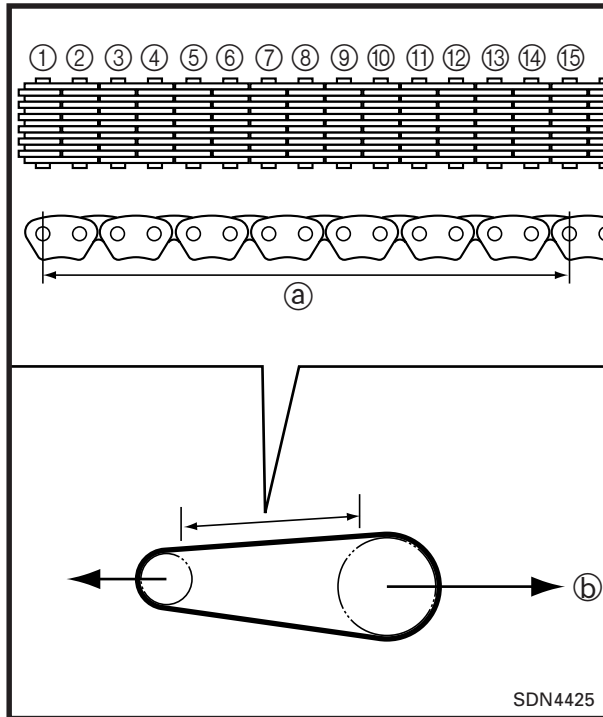
CAUTION:

Always use new circlips.



2. Inspect:

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



3. Measure:

- 14 link section ① of the drive chain
Using a spring scale, pull on the drive chain with 36 kg (80 lbs) of force ②.
Out of specification → Replace the drive chain.

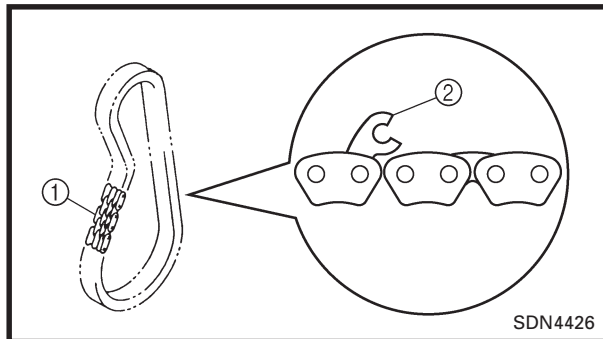


Maximum 14 link drive chain section length:
133.35 mm (5.25 in)
Limit 137.35 mm (5.41 in)

NOTE:

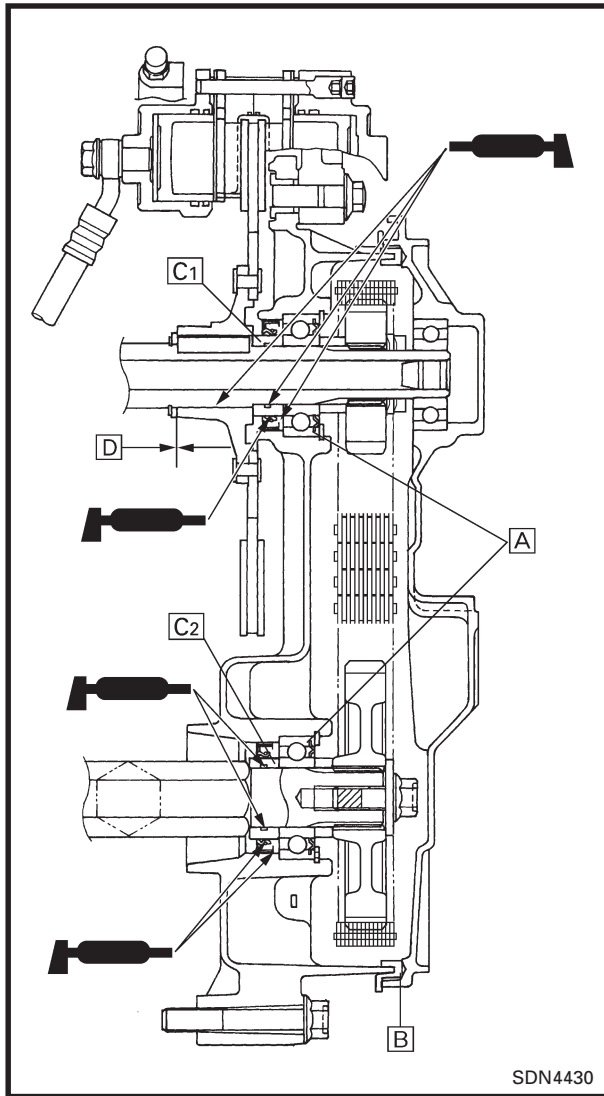
- Measure the length between drive chain pin ① and ⑫ as shown.
- Perform this measurement at two or three different places.

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

[D] 0.1 ~ 0.5 mm (0.004 ~ 0.020 in)

: ESSO beacon 325 grease or Aeroshell grease #7A

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

2. Fill:

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

3. Adjust:

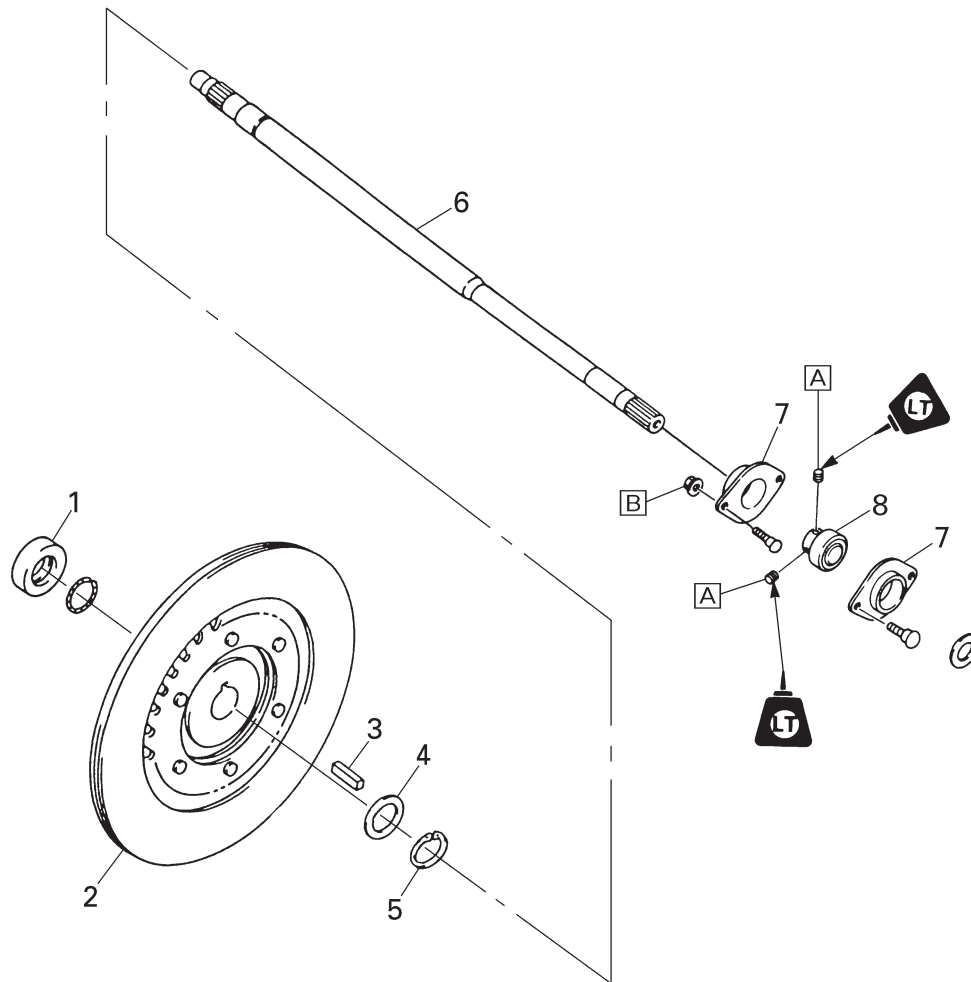
- Drive chain slack
Refer to "DRIVE CHAIN" in CHAPTER 2.



JACKSHAFT

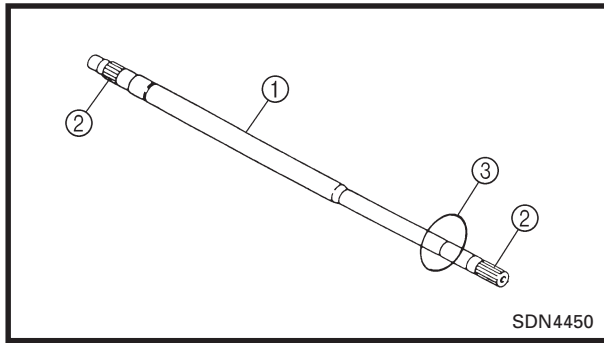
[A]: 8.5 Nm (0.85 m • kg, 6.1 ft • lb)

[B]: 23 Nm (2.3 m • kg, 17 ft • lb)



SDN4440

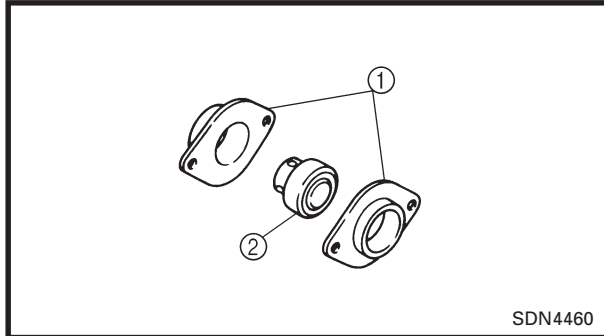
Order	Job name/Part name	Q'ty	Remarks
	Jackshaft removal		
	Secondary sheave		Remove the parts in the order listed below.
	Silencer		Refer to "SECONDARY SHEAVE".
	Drive chain housing		Refer to "FUEL PUMP" in CHAPTER 7.
			Refer to "DRIVE CHAIN HOUSING".
1	Collar	1	
2	Brake disc	1	
3	Key	1	
4	Washer	1	
5	Circlip	1	
6	Jackshaft	1	
7	Bearing holder	2	
8	Bearing	1	
			For installation, reverse the removal procedure.



INSPECTION

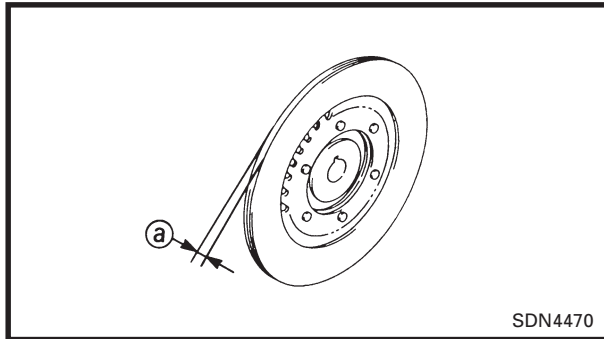
1. Inspect:

- Jackshaft ①
Scratches (excessive)/damage → Replace.
- Splines ②
Wear/damage → Replace the jackshaft.
- Bearing contact surface ③
Scratches/wear/damage → Replace the jackshaft.



2. Inspect:

- Bearing holder ①
Cracks/damage → Replace.
- Bearing ②
Pitting/damage → Replace.

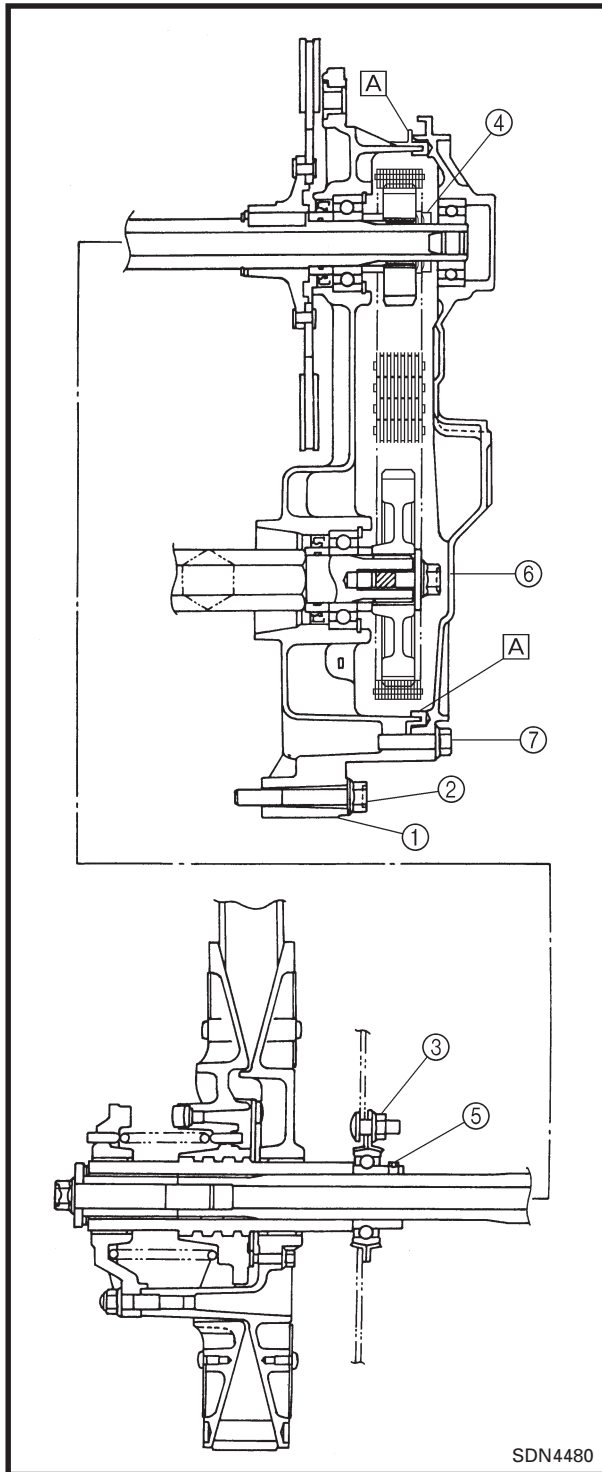


3. Measure:

- Brake disc thickness ①
Out of specification → Replace.

Minimum thickness ①:
10 mm (0.39 in)

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



JACKSHAFT AND DRIVE CHAIN HOUSING INSTALLATION

1. Install:

- Drive chain housing
- Jackshaft

Installation steps:

- Install the drive chain housing ①.
- Tighten the bolts ②.



Bolt (drive chain housing) ②:
48 Nm (4.8 m • kg, 35 ft • lb)

- Temporarily tighten the nuts ③.
- Tighten the nuts ④.



Nut (jackshaft) ④:
60 Nm (6.0 m • kg, 43 ft • lb)

- Retighten the nuts ③.



Nut (bearing holder) ③:
23 Nm (2.3 m • kg, 17 ft • lb)

- Tighten the set screws ⑤.



Set screw (bearing) ⑤:
8.5 Nm (0.85 m • kg, 6.1 ft • lb)

- Install the drive chain housing cover ⑥.

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

- Tighten the bolts ⑦.



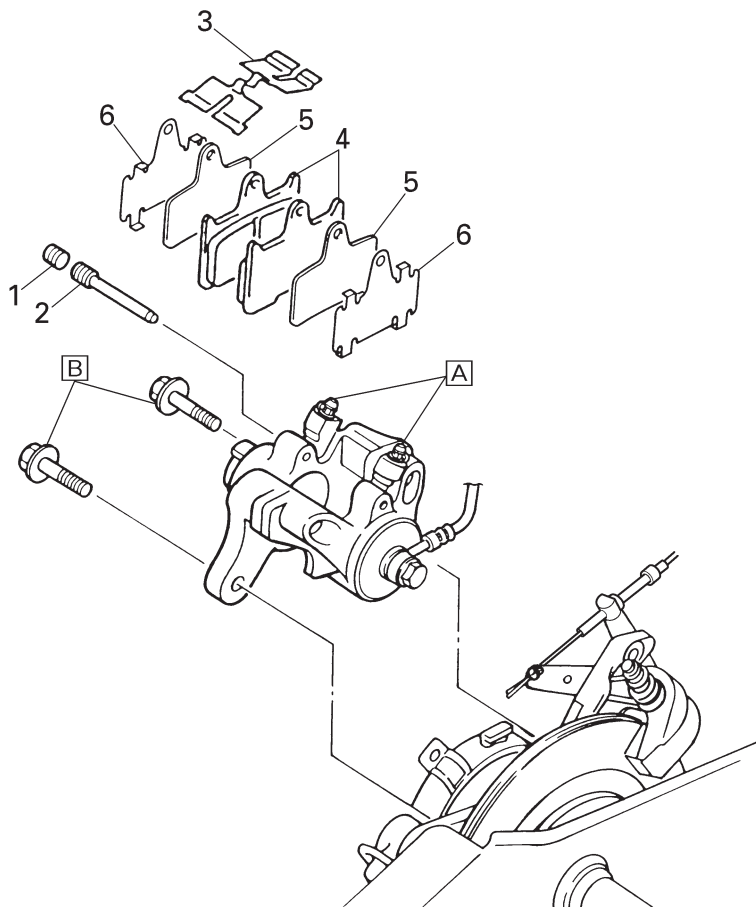
Bolt (drive chain housing cover) ⑦:
24 Nm (2.4 m • kg, 17 ft • lb)



BRAKE

[A]: 6 Nm (0.6 m • kg, 4.3 ft • lb)

[B]: 48 Nm (4.8 m • kg, 35 ft • lb)



SDN4490

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

CAUTION:

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

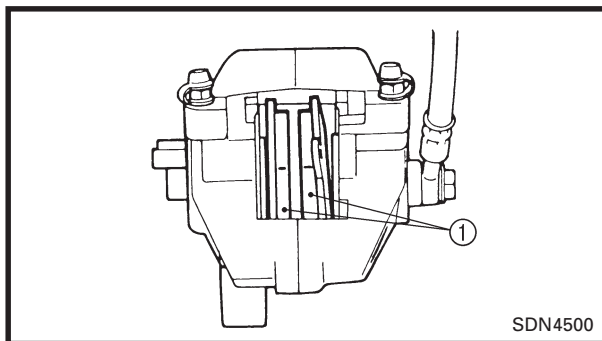
- Do not disassemble components unless absolutely necessary.
- Do not use solvents on internal brake components.
- Do not use contaminated brake fluid for cleaning.

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.

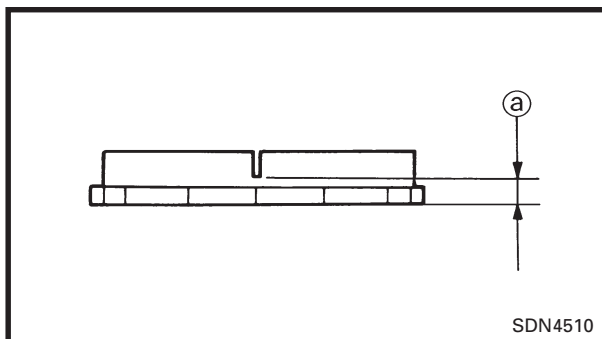


1. Remove:

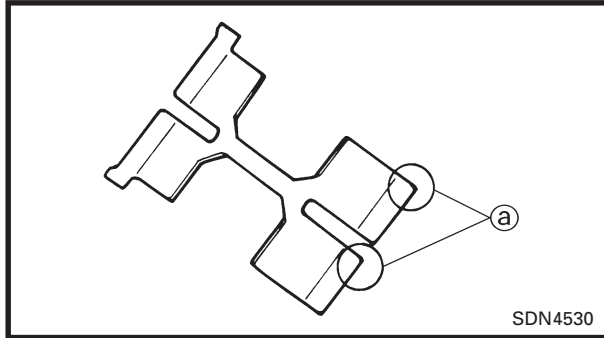
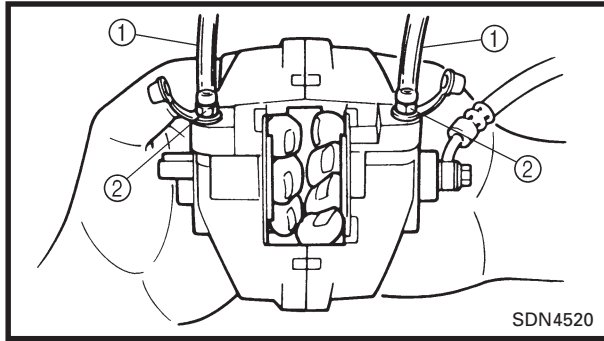
- Brake pads ①

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 ②.



Wear limit ②:
4.7 mm (0.19 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 ②:****6 Nm (0.6 m • kg, 4.3 ft • lb)**

- Install the brake pads and pad spring.

NOTE:

The tangs ② of the pad spring must point in the direction of the disc rotation.

3. Inspect:

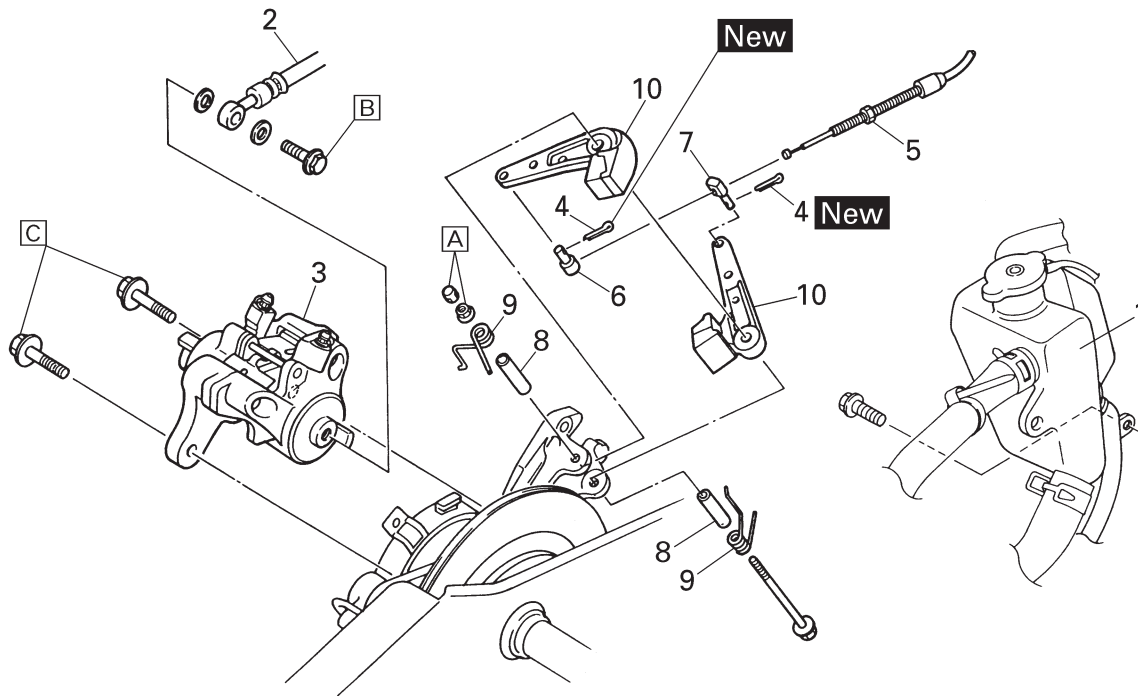
- Brake fluid level
Refer to "BRAKE FLUID LEVEL INSPECTION" in CHAPTER 2.

4. Check:

- Brake lever operation
A soft or spongy feeling → Bleed brake system.
Refer to "AIR BLEEDING (HYDRAULIC BRAKE SYSTEM)" in CHAPTER 2.

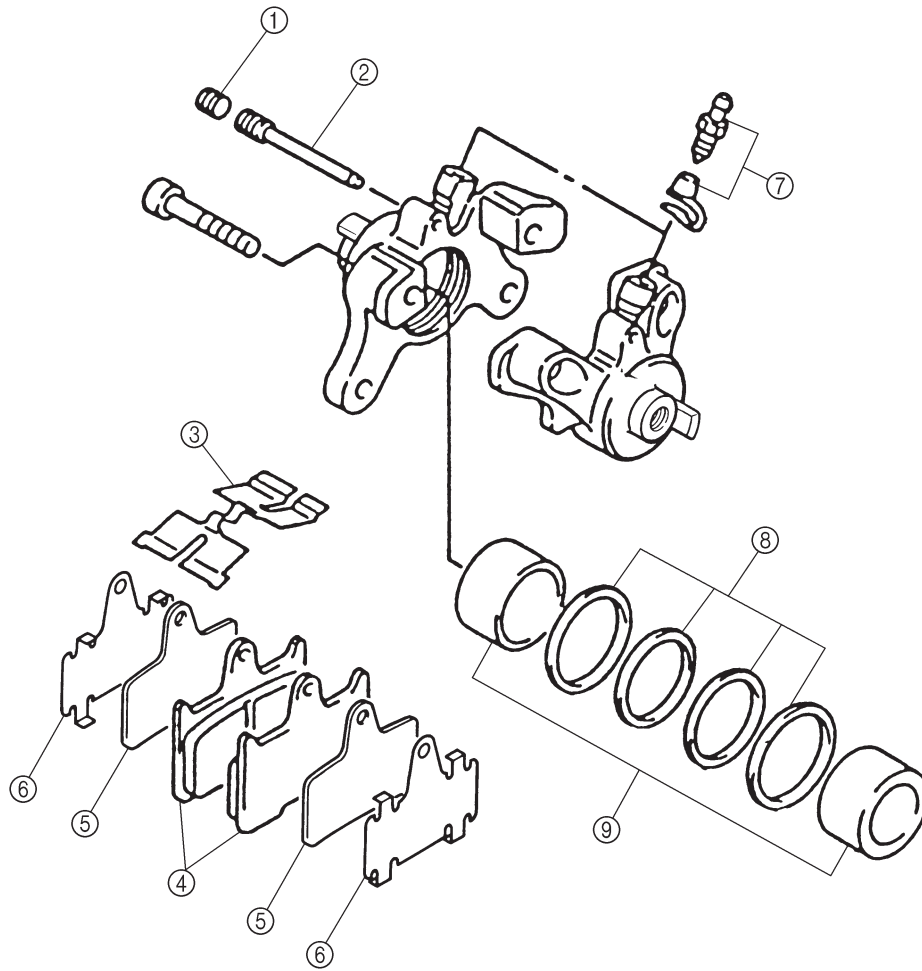


- [A]: 10 Nm (1.0 m • kg, 7.2 ft • lb)
 [B]: 23 Nm (2.3 m • kg, 17 ft • lb)
 [C]: 48 Nm (4.8 m • kg, 35 ft • lb)



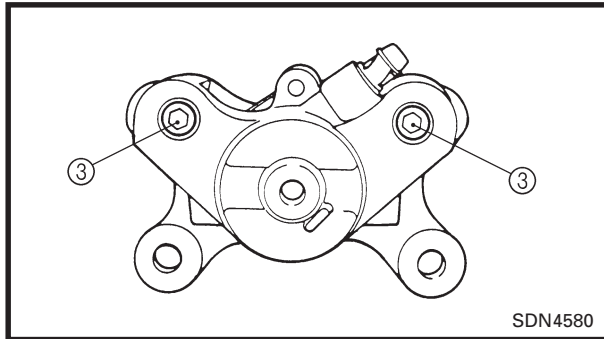
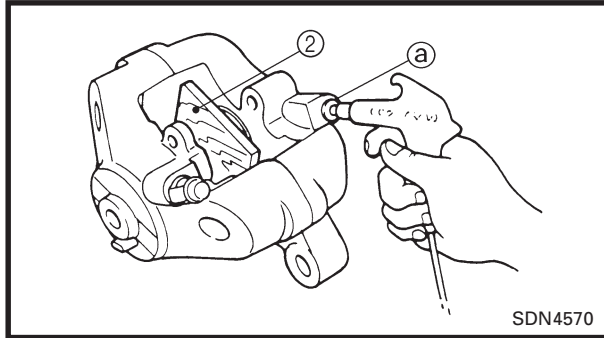
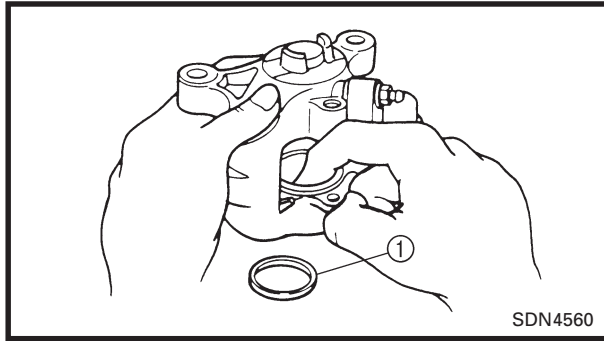
SDN4540

Order	Job name/Part name	Q'ty	Remarks
	Brake caliper and parking brake removal		Remove the parts in the order listed below.
	Air duct		
	Exhaust pipe		
	Muffler		
	Brake fluid		Drain.
1	Coolant reservoir tank	1	
2	Brake hose	1	
3	Brake caliper assembly	1	
4	Cotter pin	2	
5	Parking brake cable	1	
6	Pin	1	
7	Pin	1	
8	Collar	2	
9	Spring	2	
10	Brake shoe	2	
			For installation, reverse the removal procedure.



SDN4550

Order	Job name/Part name	Q'ty	Remarks
	Brake caliper disassembly		Remove the parts in the order listed below.
①	Cap bolt	1	
②	Retaining pin	1	
③	Pad spring	1	
④	Brake pad	2	
⑤	Shim 1	2	
⑥	Shim 2	2	
⑦	Bleed screw	2	
⑧	Oil seal	4	
⑨	Piston	2	
			For assembly, reverse the disassembly 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

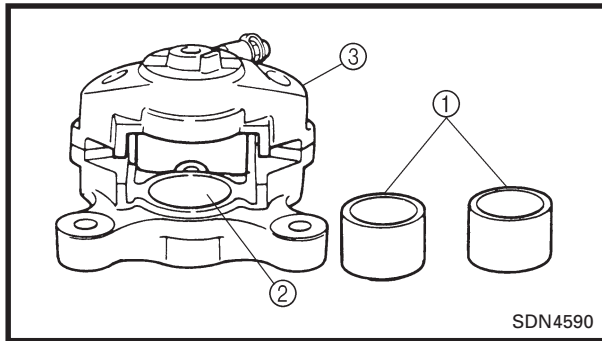
- Never try to pry out the pistons.
- Do not loosen the retaining pin ③.

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

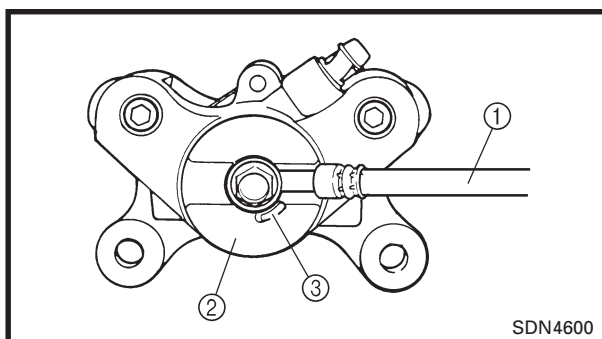
⚠ WARNING

- 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

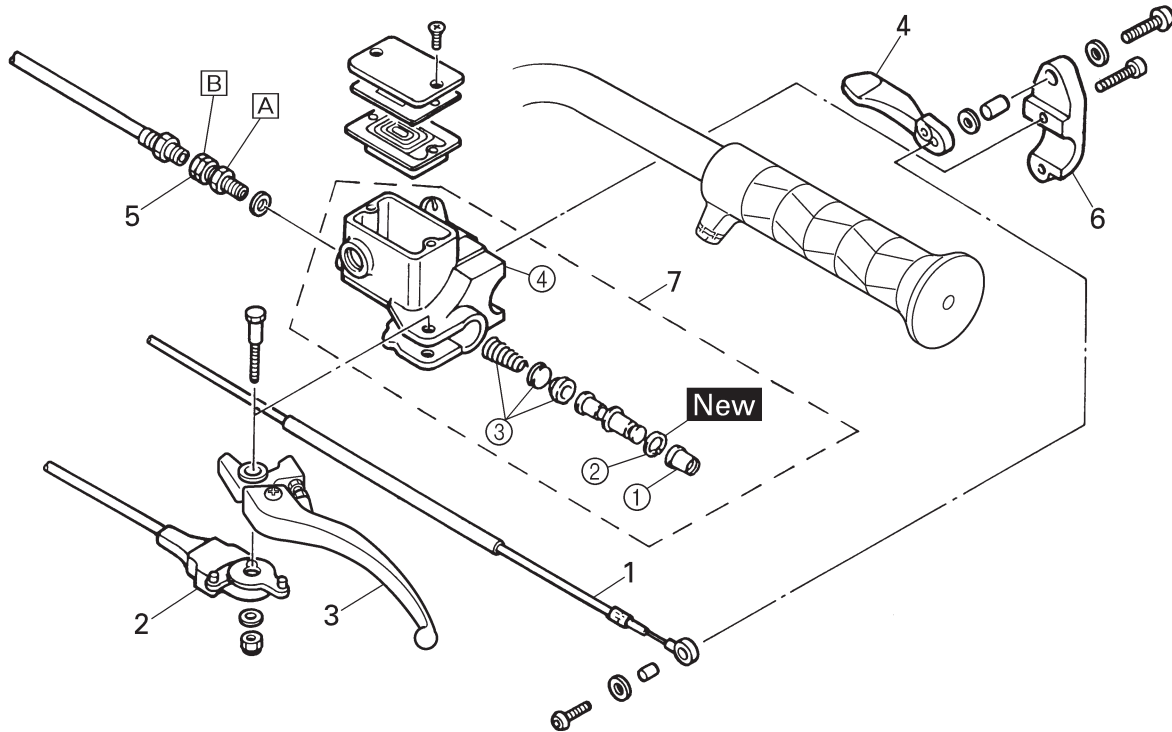
CAUTION:

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.



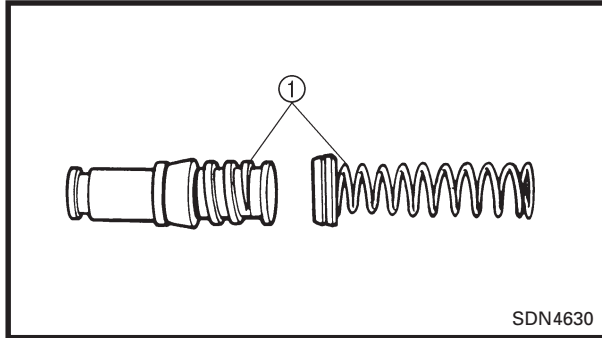
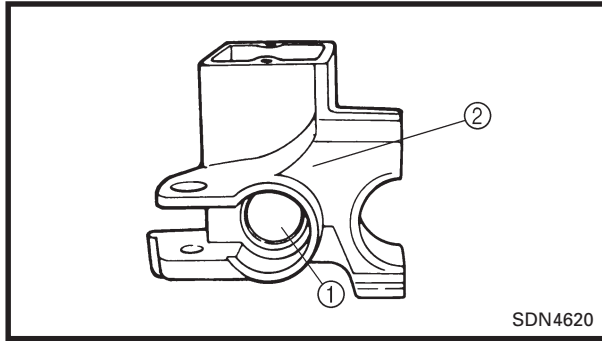
A : 14 Nm (1.4 m • kg, 10 ft • lb)

B : 30 Nm (3.0 m • kg, 22 ft • lb)



SDN4610

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	Brake hose joint	1	
6	Holder	1	
7	Master cylinder assembly	1	For installation, reverse the removal procedure.
	Brake master cylinder disassembly		
①	Boot	1	Remove the parts in the order listed below.
②	Circlip	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.

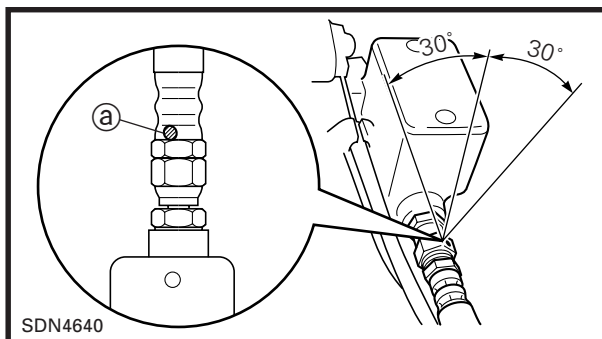
INSTALLATION

1. Connect:

- Brake hose

NOTE:

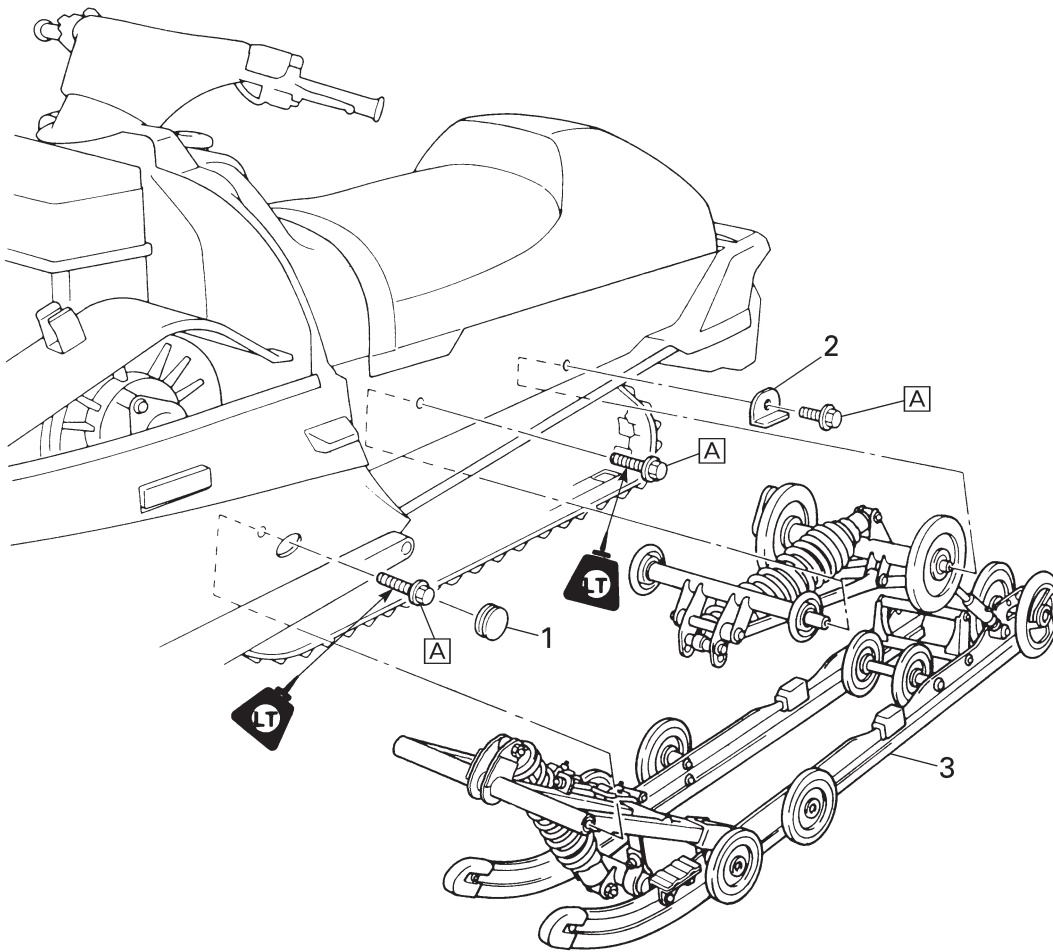
Install the brake hose with the mark @ facing upwards, as shown in the diagram.



Brake hose joint:
Brake master cylinder side
14 Nm (1.4 m • kg, 10 ft • lb)
Brake hose side
30 Nm (3.0 m • kg, 22 ft • lb)

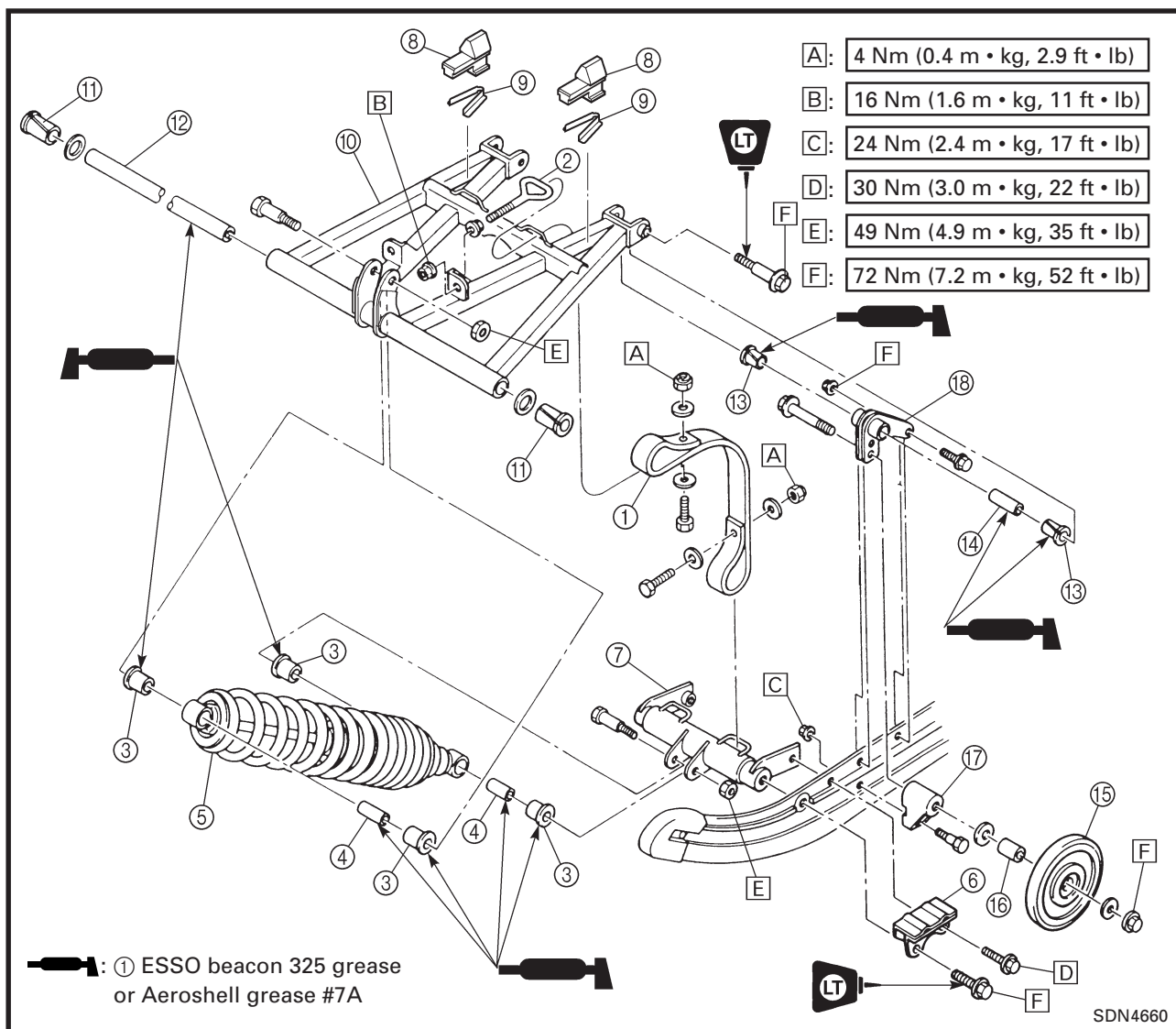
SLIDE RAIL SUSPENSION

[A]: 72 Nm (7.2 m • kg, 52 ft • lb)



SDN4650

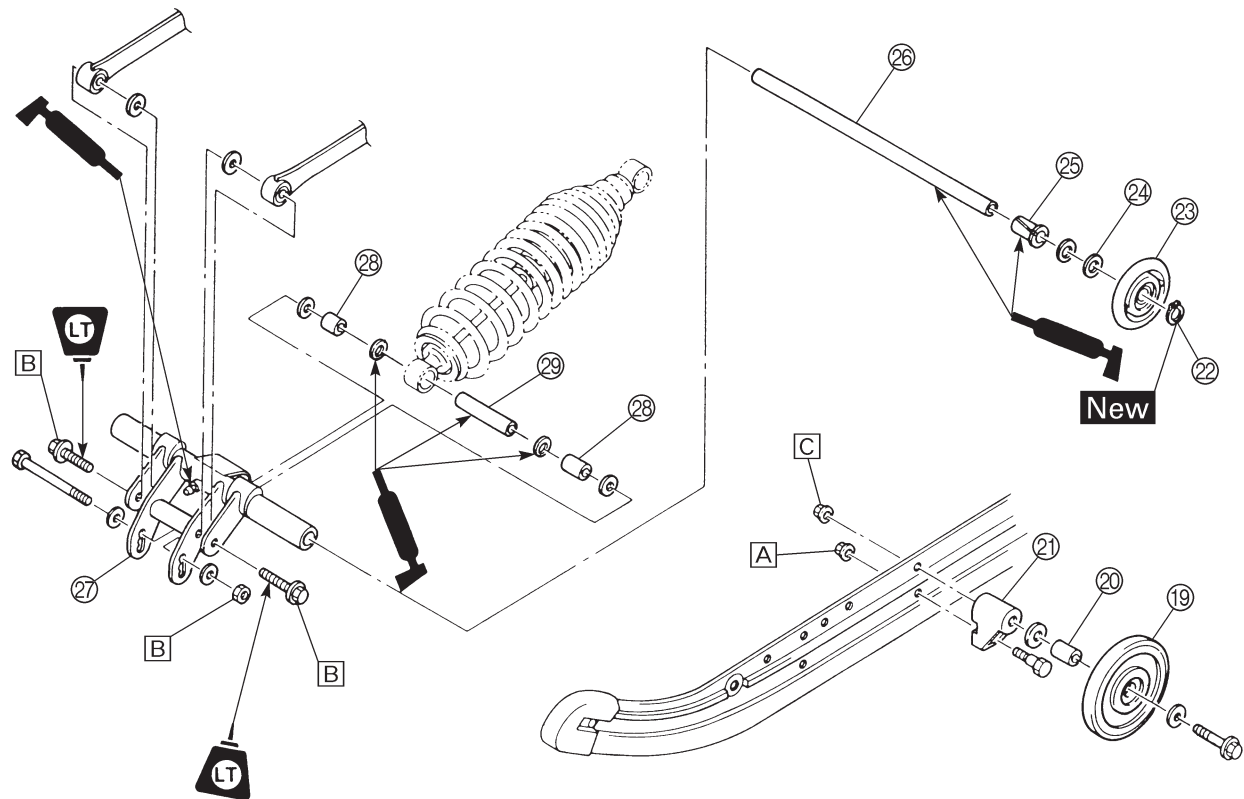
Order	Job name/Part name	Q'ty	Remarks
	Slide rail suspension removal		
	Tension adjuster		Remove the parts in the order listed below. Loosen.
1	Blind cap	2	
2	Suspension rear plate	2	
3	Slide rail suspension	1	For installation, reverse the removal procedure.



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	Clip	2	
⑩	Front pivot arm	1	
⑪	Bushing	2	
⑫	Collar	1	
⑬	Bushing	4	
⑭	Collar	2	
⑮	Suspension wheel	2	
⑯	Collar	2	
⑰	Wheel bracket	2	
⑱	Front pivot arm 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)



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

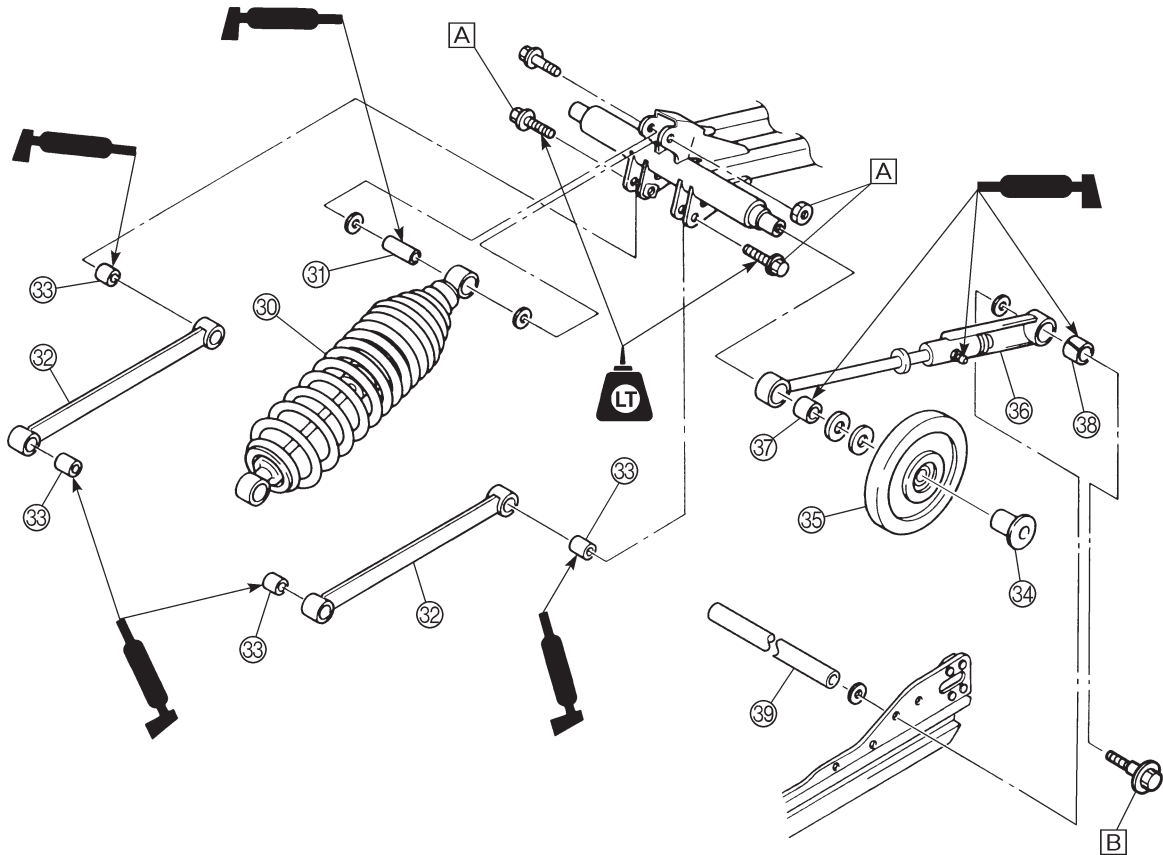
SDN4670

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	Collar	1	
②7	Rear suspension bracket	1	
②8	Spacer	2	
②9	Collar	1	



[A]: 49 Nm (4.9 m • kg, 35 ft • lb)

[B]: 72 Nm (7.2 m • kg, 52 ft • lb)

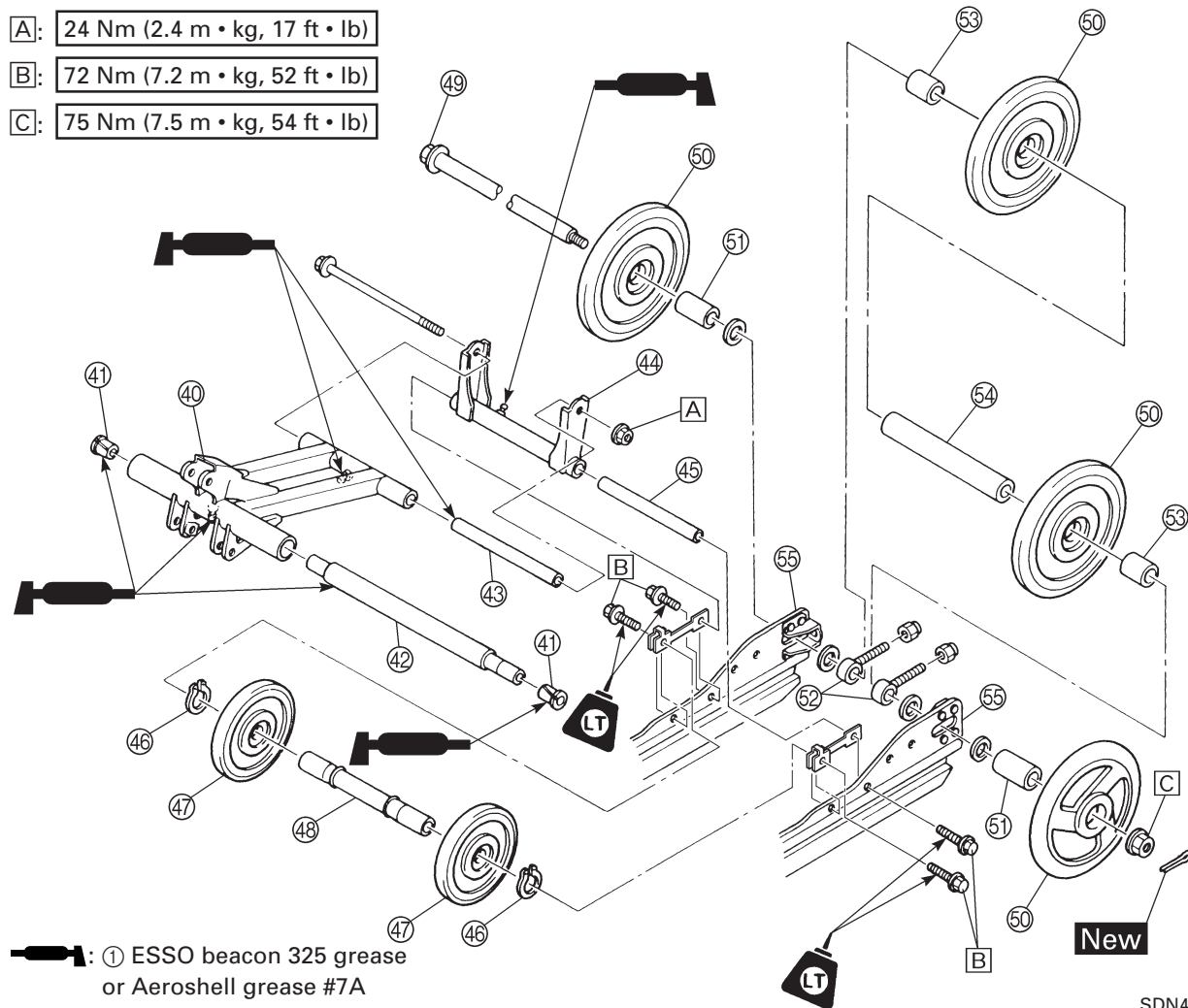


: ① ESSO beacon 325 grease
or Aeroshell grease #7A

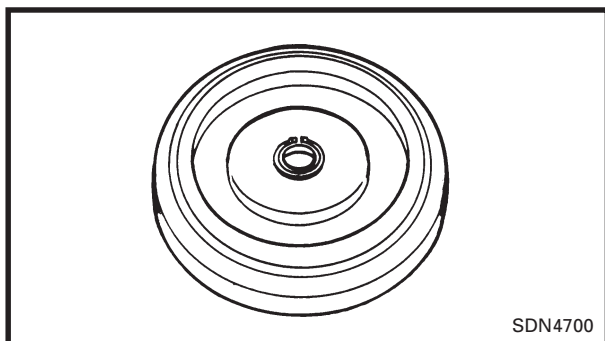
SDN4680

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

- [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
40	Rear pivot arm	1	For assembly, reverse the disassembly procedure.
41	Bushing	2	
42	Collar	1	
43	Collar	1	
44	Rear pivot arm bracket	1	
45	Collar	1	
46	Circlip	2	
47	Suspension wheel	2	
48	Wheel bracket shaft	1	
49	Rear axle	1	
50	Guide wheel	4	
51	Collar	2	
52	Tension adjuster	2	
53	Collar	2	
54	Collar	1	
55	Sliding frame	2	

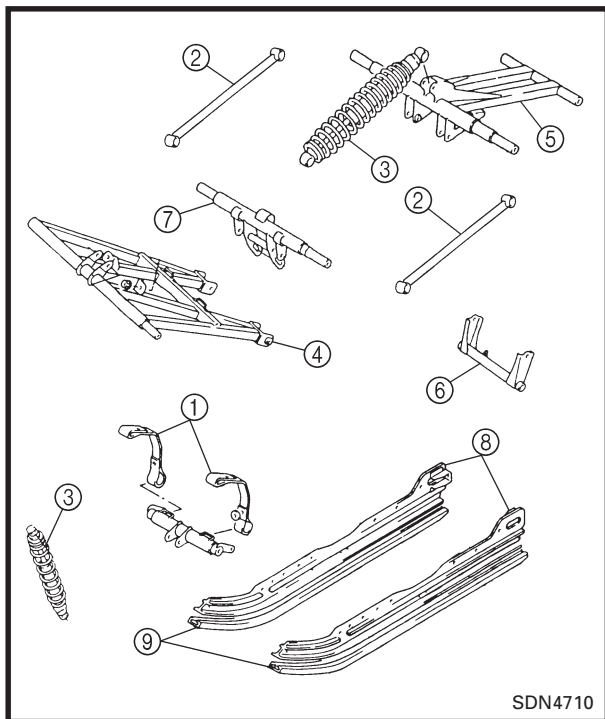
**INSPECTION**

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.

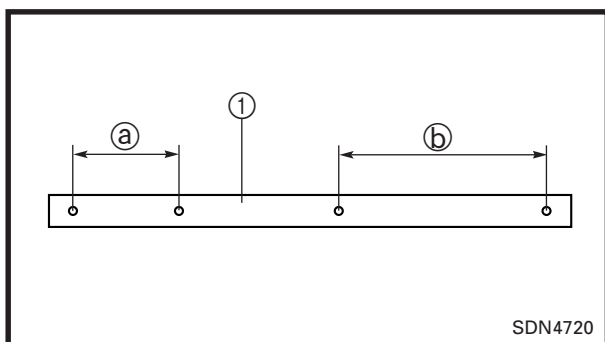
**INSTALLATION**

1. Install:

- Stopper band ①

NOTE:

Install the stopper band with ① toward the hook and ② toward the shaft.

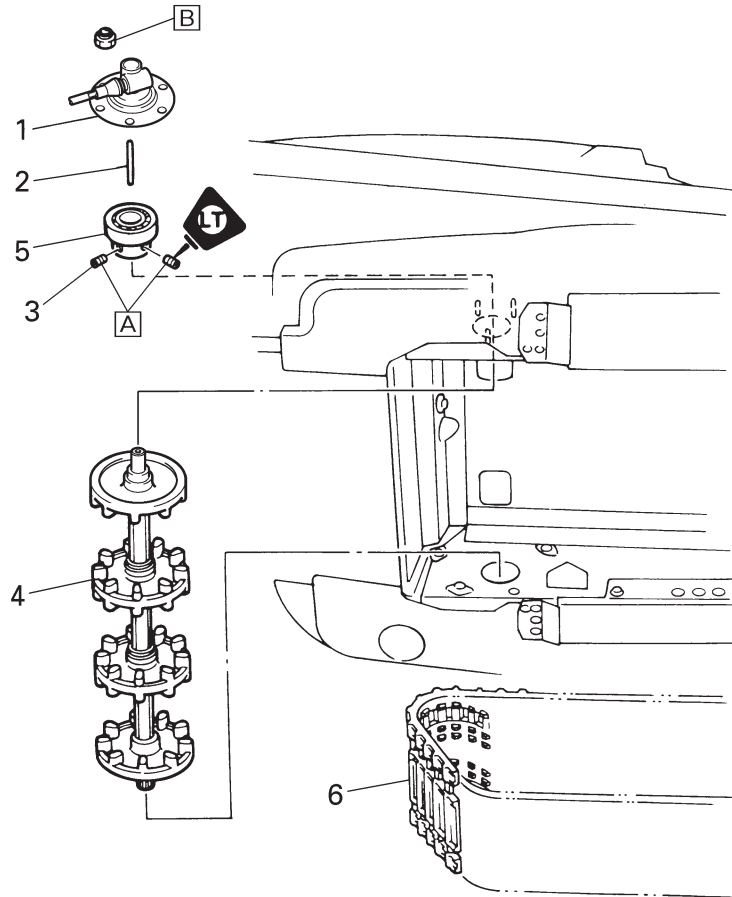


Nut (stopper band):
4 Nm (0.4 m • kg, 2.9 ft • lb)

FRONT AXLE AND TRACK

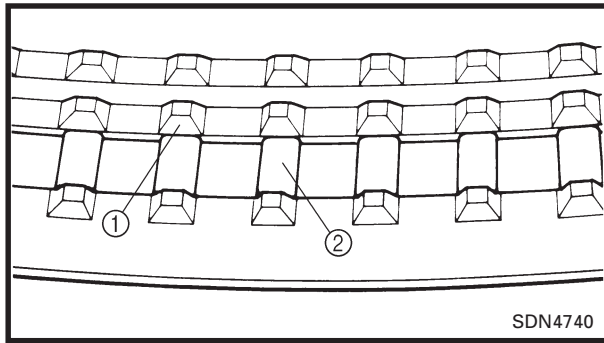
[A]: 8 Nm (0.8 m • kg, 5.8 ft • lb)

[B]: 20 Nm (2.0 m • kg, 14 ft • lb)



SDN4730

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	Speedometer gear assembly	1	Refer to "SECONDARY SHEAVE".
2	Cable joint	1	
3	Set bolt	2	
4	Front axle assembly	1	
5	Bearing	1	
6	Track	1	
			For installation, reverse the removal procedure.



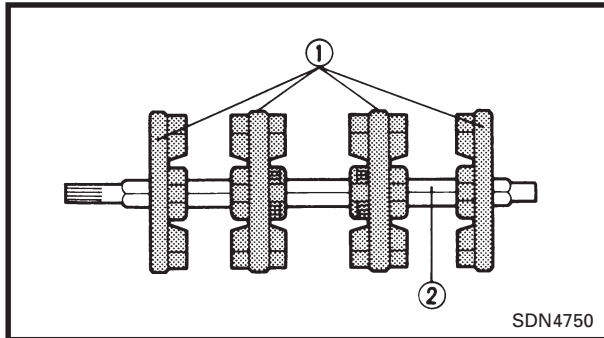
INSPECTION

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.



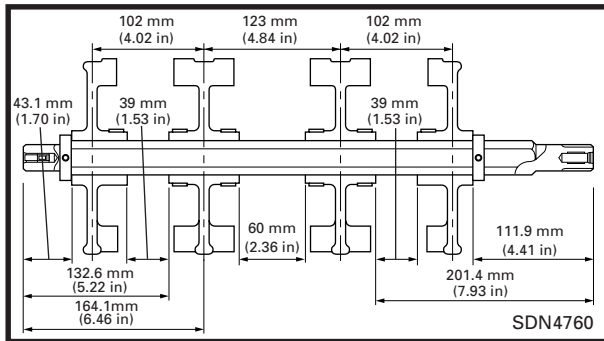
INSTALLATION

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.

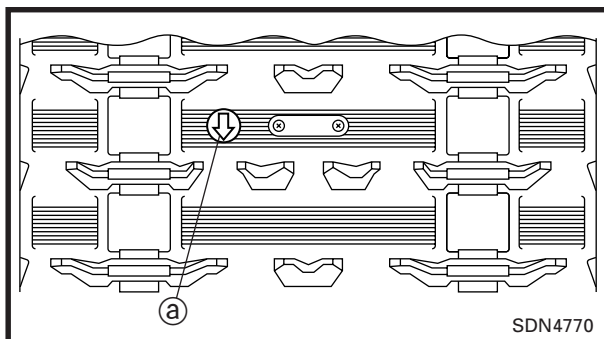


2. Place the track in the chassis.

NOTE:

For tires with a direction of rotation mark Ⓐ:

- Install the track with the mark pointing in the direction of track rotation.





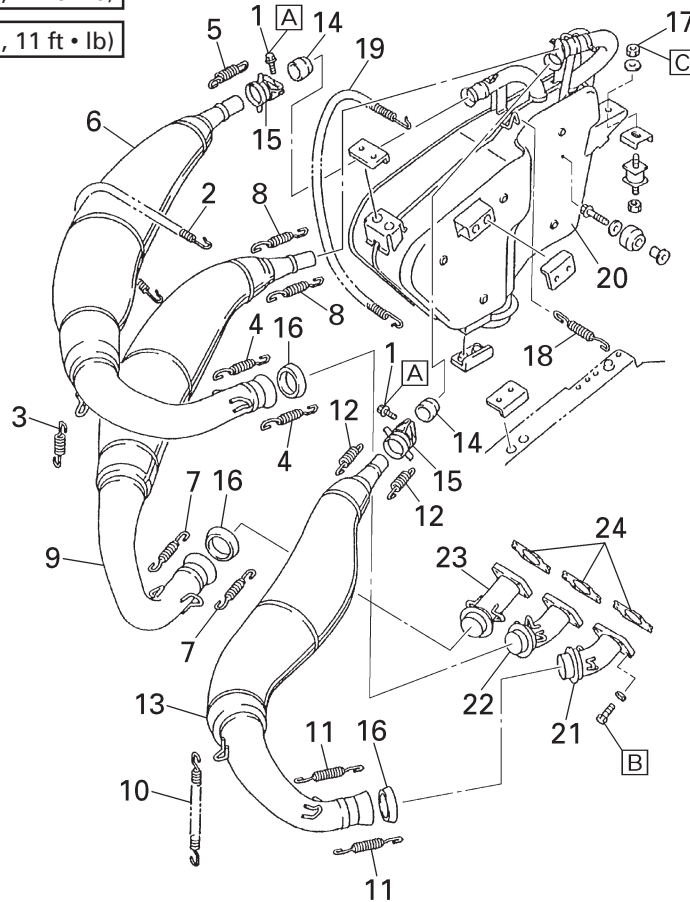
ENGINE

EXHAUST ASSEMBLY

[A]: 13 Nm (1.3 m • kg, 9.4 ft • lb)

[B]: 15 Nm (1.5 m • kg, 11 ft • lb)

[C]: 16 Nm (1.6 m • kg, 11 ft • lb)



SDN5010

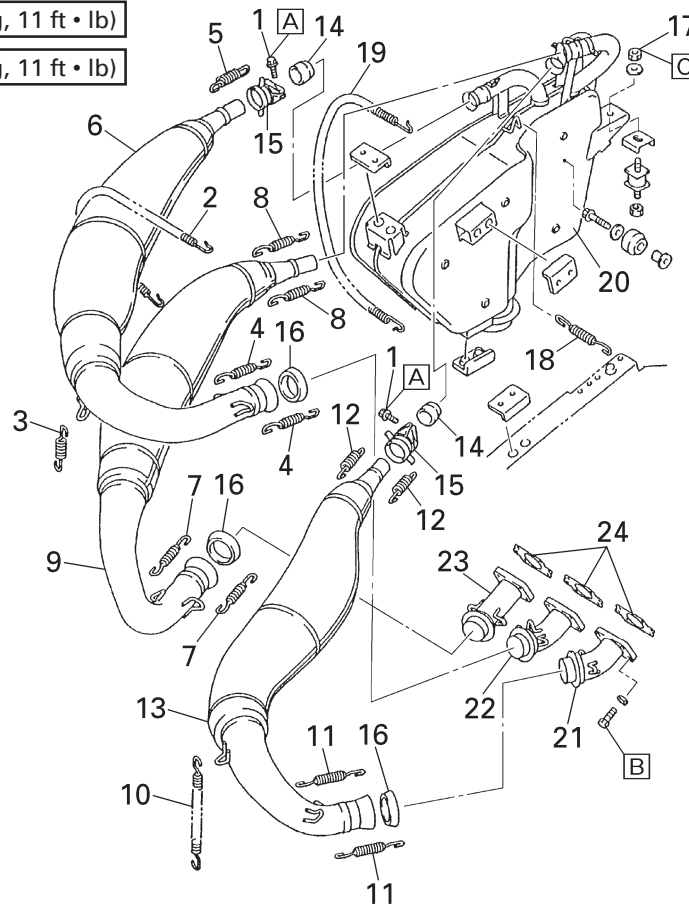
Order	Job name/Part name	Q'ty	Remarks
	Exhaust assembly removal		
	Shroud		Remove the parts in the order listed below. Open.
	Shroud's stopper wire		
1	Exhaust silencer joint bolt	3	Loosen.
2	Spring 1	1	
3	Spring 2	1	CAUTION: _____
4	Spring 3	2	• During removal and installation, do not stretch springs 2 ~ 4, 5, 6, 8, and 9 to a length exceeding 5 mm (0.2 in).
5	Spring 4	2	• When removing and installing the springs, be sure not to bend or damage the Y.P.V.S. cable.
6	Exhaust pipe #2	1	• Replace any stretched springs with new ones.
7	Spring 5	2	
8	Spring 6	2	
9	Exhaust pipe #3	1	
10	Spring 7	1	
11	Spring 8	2	
12	Spring 9	2	
13	Exhaust pipe #1	1	



[A]: 13 Nm (1.3 m • kg, 9.4 ft • lb)

[B]: 15 Nm (1.5 m • kg, 11 ft • lb)

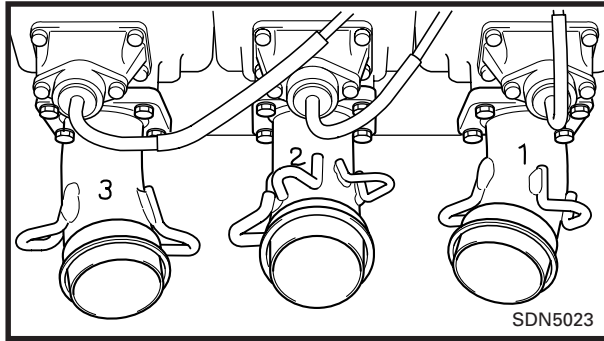
[C]: 16 Nm (1.6 m • kg, 11 ft • lb)



SDN5020

5

Order	Job name/Part name	Q'ty	Remarks
14	Gasket 1	1	NOTE: _____ Position the gasket with the coated (black) side facing the exhaust joint. _____ For installation, reverse the removal procedure.
15	Exhaust silencer joint	3	
16	Gasket 2	3	
17	Exhaust silencer nut	1	
18	Spring 10	1	
19	Spring 11	1	
20	Exhaust silencer	1	
21	Exhaust pipe joint #1 (L)	3	
22	Exhaust pipe joint #2	1	
23	Exhaust pipe joint #3 (R)	1	
24	Gasket 3	3	

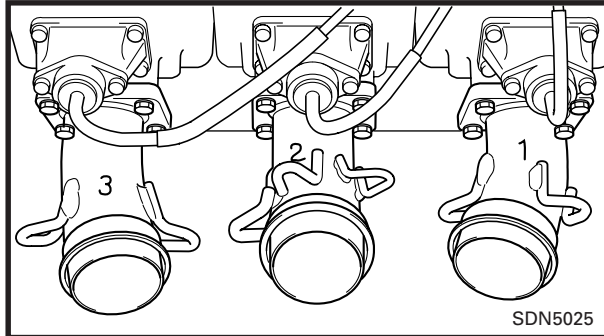
**REMOVAL**

1. Remove:

- Exhaust pipe joint #1 (L)
- Exhaust pipe joint #2
- Exhaust pipe joint #3 (R)

NOTE:

Put identification marks on each exhaust pipe joint for reference during reinstallation.

**INSTALLATION**

1. Install:

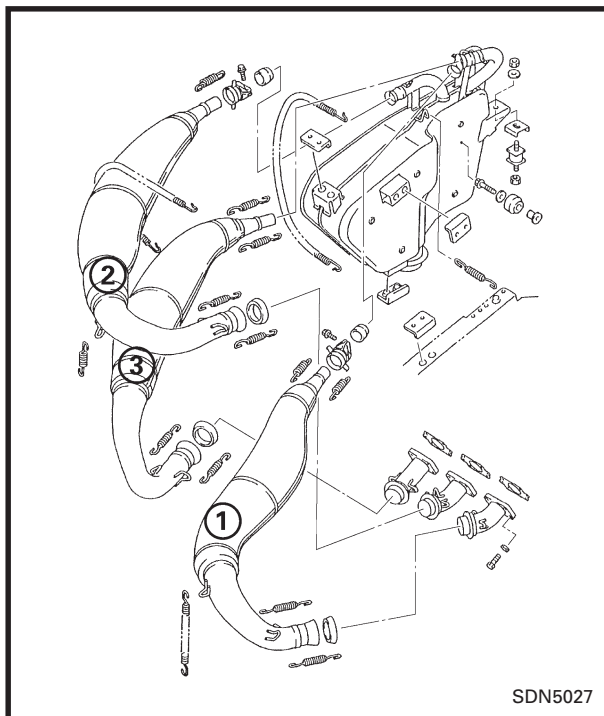
- Exhaust pipe joint #3 (R)
- Exhaust pipe joint #2
- Exhaust pipe joint #1 (L)

NOTE:

Position each exhaust pipe joint very carefully in its original place.



Bolt (exhaust joint):
15 Nm (1.5 m • kg, 11 ft • lb)

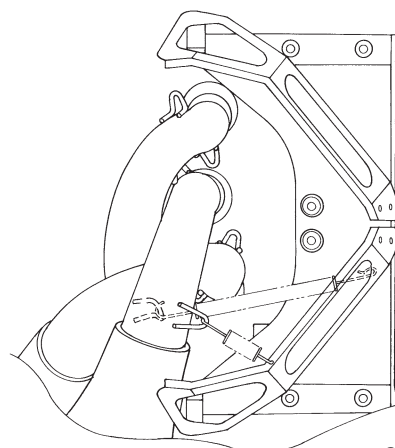
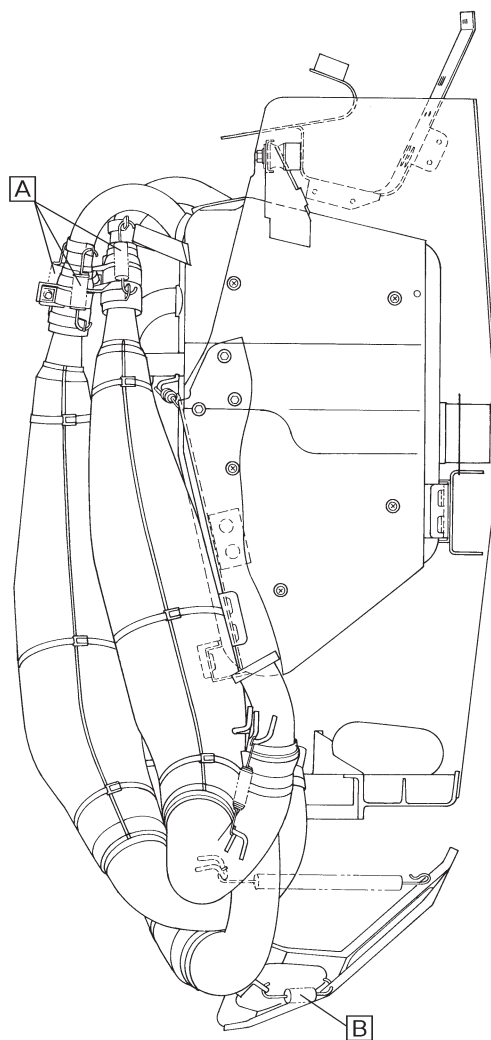
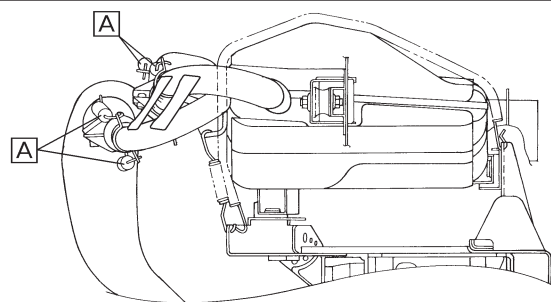
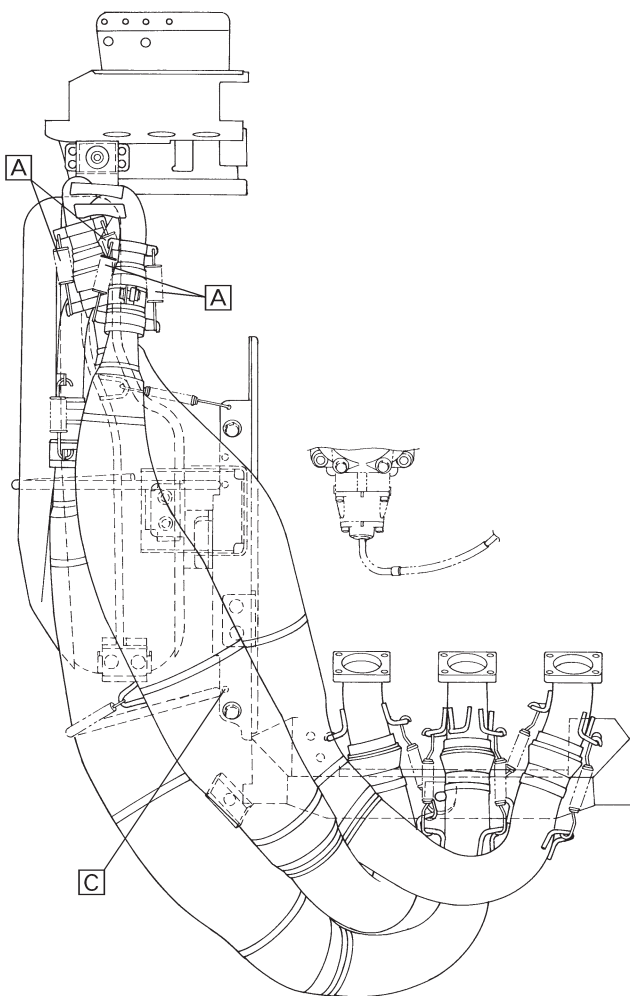


2. Install:

- Exhaust pipe #1
- Exhaust pipe #3
- Exhaust pipe #2

NOTE:

Position each exhaust pipe very carefully in its original place.



- [A] When installing springs 4, 6 and 9, the longer hook should face forward.
- [B] When installing spring 2, the longer hook should face upward.
- [C] Install the spring 1 with the hook pulling from the top.

SDN5030

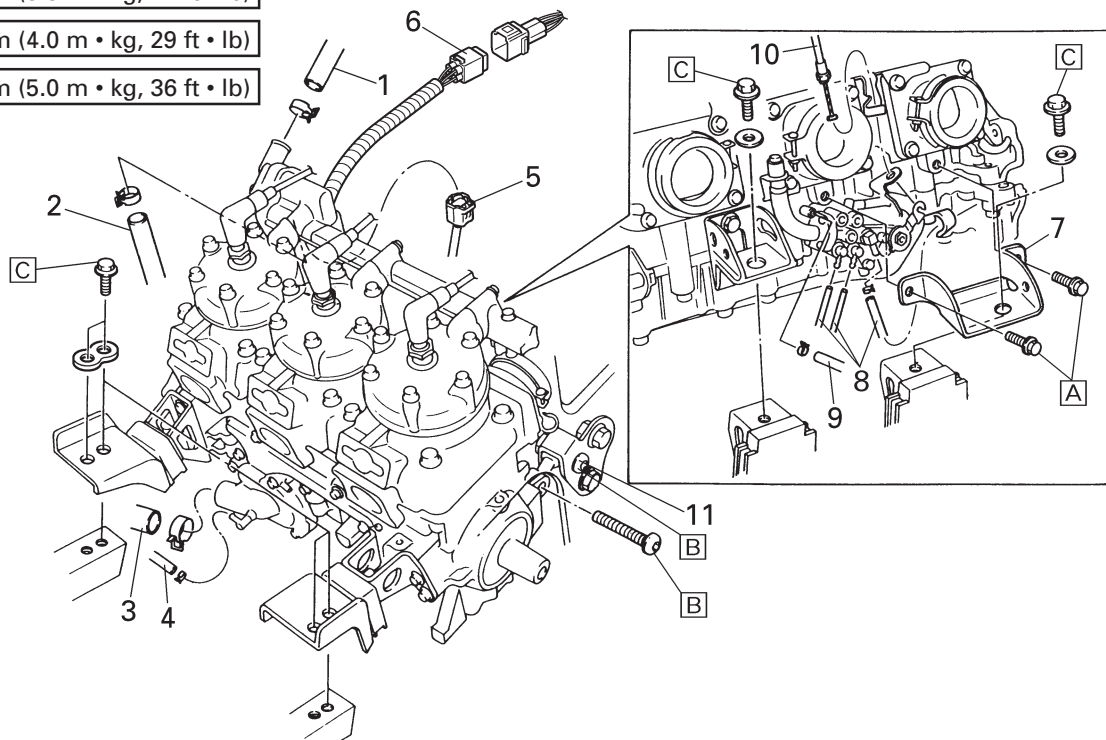


ENGINE ASSEMBLY

[A]: 33 Nm (3.3 m • kg, 24 ft • lb)

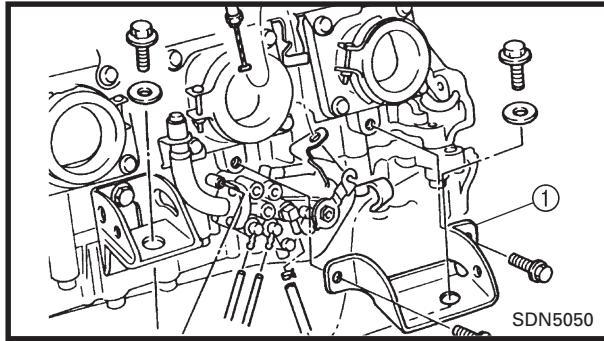
[B]: 40 Nm (4.0 m • kg, 29 ft • lb)

[C]: 50 Nm (5.0 m • kg, 36 ft • lb)



SDN5040

Order	Job name/Part name	Q'ty	Remarks
	Engine removal		Remove the parts in the order listed below.
	Exhaust assembly		Refer to "EXHAUST ASSEMBLY".
	Carburetors		Refer to "CARBURETORS" in CHAPTER 7.
	Y.P.V.S.		Refer to "YAMAHA POWER VALVE SYSTEM (Y.P.V.S.)".
	Recoil starter		Refer to "RECOIL STARTER".
	AC magneto		Refer to "AC MAGNETO".
	Primary sheave		Refer to "PRIMARY SHEAVE AND DRIVE V-BELT" in CHAPTER 4.
	Coolant		Drain. Refer to "COOLANT REPLACEMENT" in CHAPTER 2.
1	Coolant hose 1	1	Disconnect.
2	Coolant hose 2	1	Disconnect.
3	Coolant hose 3	1	Disconnect.
4	Carburetor heating hose	1	
5	Thermo sensor coupler	1	Disconnect.
6	Ignition coil coupler	1	Disconnect.
7	Rear bracket (right)	1	
8	Oil hose	3	Disconnect.
9	Vacuum hose	1	Disconnect.
10	Oil pump cable	1	
11	Mounting bolt	1	Loosen.
			For installation, reverse the removal procedure.

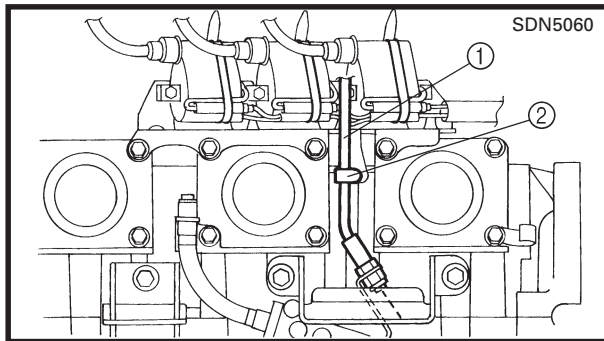
**INSPECTION**

1. Inspect:

- Rear bracket (right) ①
Cracks/damage → Replace.

INSTALLATION**NOTE:**

After installing all parts, refer to "CABLE ROUTING" in CHAPTER 9, to check the cable, lead and hose routings.



1. Be sure to fasten the oil pump cable ① with the cable holder ② on the ignition coil bracket.

2. Bleed:

- Oil system
Refer to "OIL PUMP" in CHAPTER 2.
- Cooling system
Refer to "COOLING SYSTEM" in CHAPTER 2.

3. Adjust:

- Oil pump cable distance
Refer to "OIL PUMP" in CHAPTER 2.

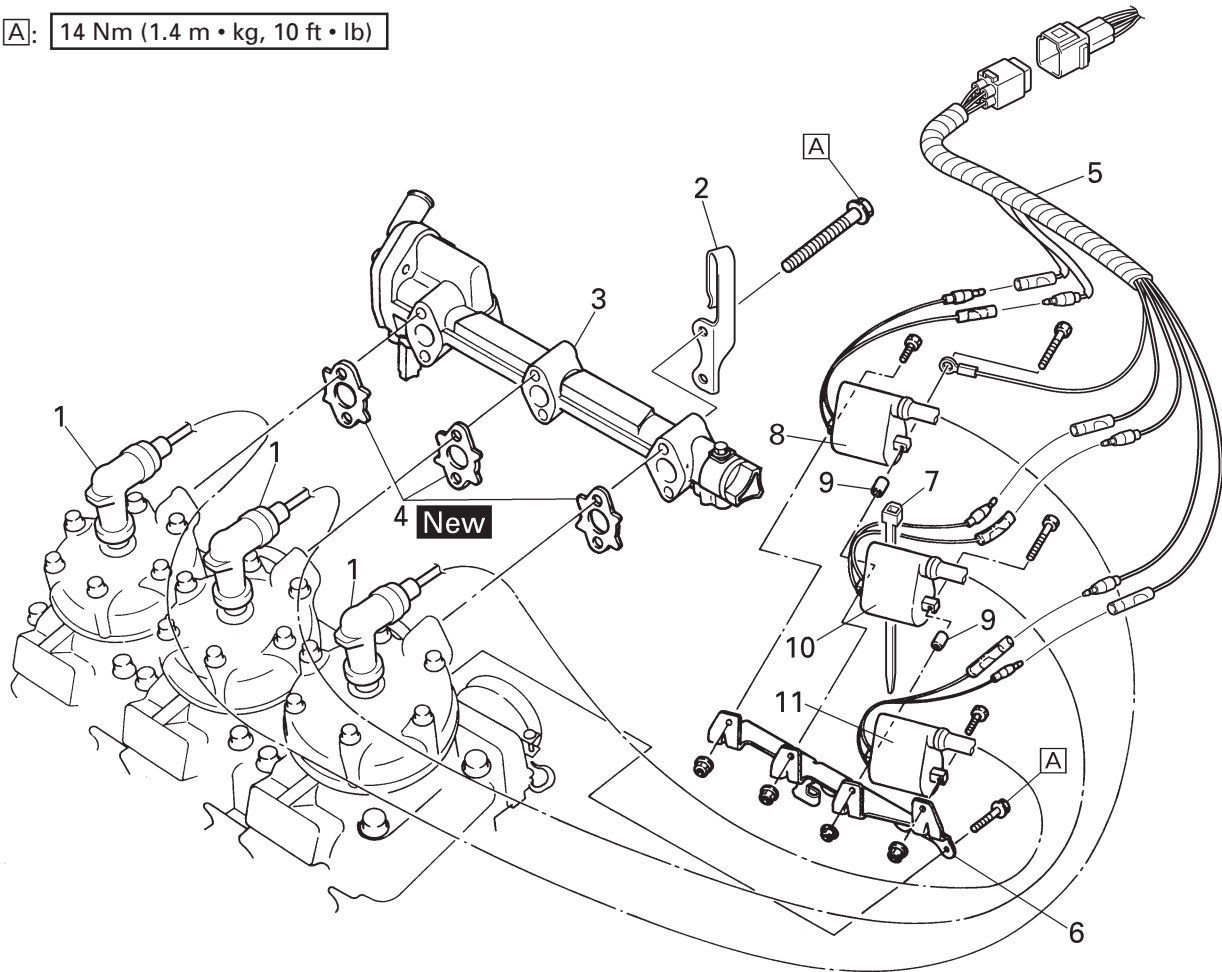
**Distance:**

20 ~ 22 mm (0.79 ~ 0.86 in)



CYLINDER HEAD AND CYLINDER

A: 14 Nm (1.4 m • kg, 10 ft • lb)



SDN5070

Order	Job name/Part name	Q'ty	Remarks
	Cylinder head and cylinder removal		Remove the parts in the order listed below.
1	Spark plug cap	3	NOTE: _____ The printed side of the gasket should face the cylinder head. _____
2	Cable holder	1	
3	Outlet water jacket joint	1	
4	Gasket	3	
5	Sub-wire harness	1	
6	Bracket	1	
7	Plastic band	3	
8	Ignition coil #3	3	
9	Spacer	2	
10	Ignition coil #2	1	
11	Ignition coil #1	1	

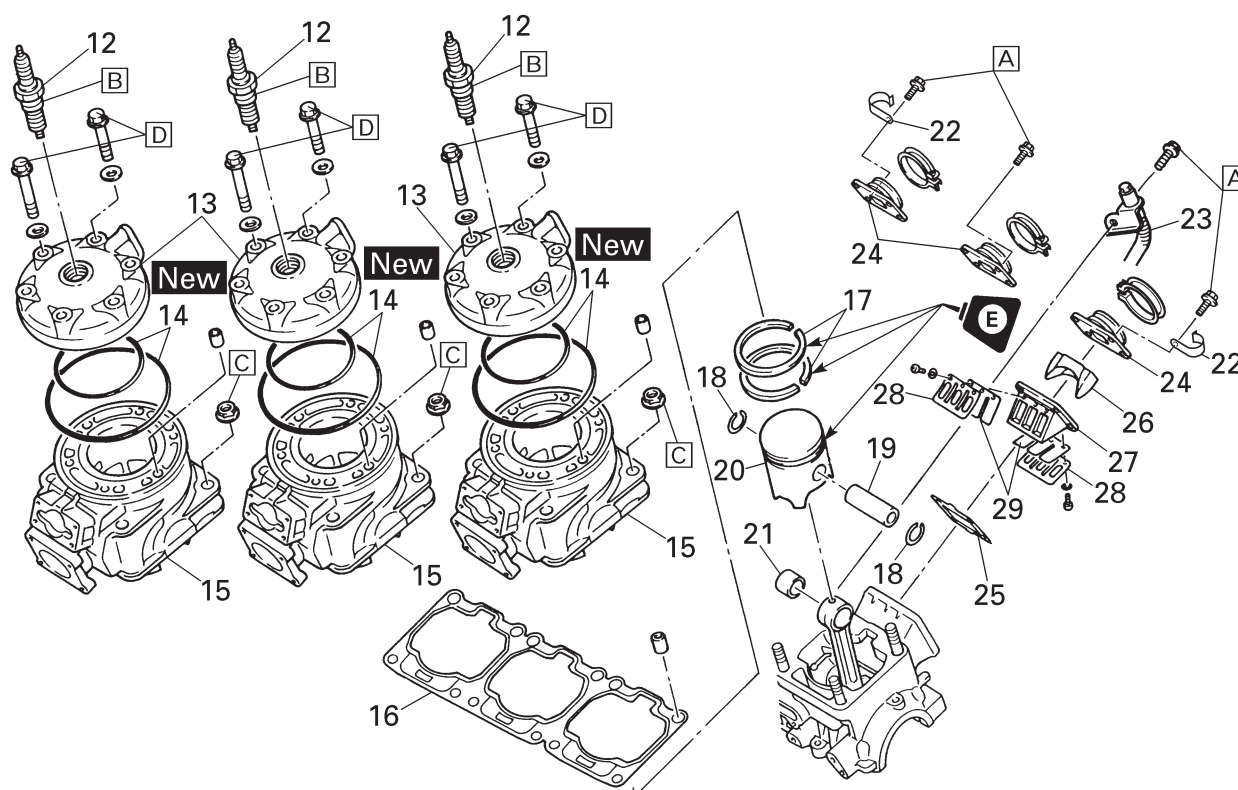


[A]: 14 Nm (1.4 m • kg, 10 ft • lb)

[C]: 33 Nm (3.3 m • kg, 24 ft • lb)

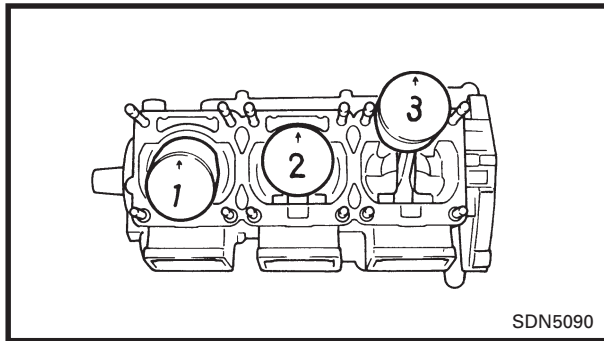
[B]: 20 Nm (2.0 m • kg, 14 ft • lb)

[D]: 1st 13 Nm (1.3 m • kg, 9.4 ft • lb)
2nd 28 Nm (2.8 m • kg, 20 ft • lb)



SDN5080

Order	Job name/Part name	Q'ty	Remarks
12	Spark plug	3	
13	Cylinder head	3	
14	O-ring	6	
15	Cylinder	3	
16	Gasket	1	
17	Piston ring	6	
18	Piston pin clip	6	
19	Piston pin	3	
20	Piston	3	
21	Bearing	3	
22	Clamp	2	
23	Oil pump breather hose	1	
24	Intake manifold	3	
25	Gasket	3	
26	Spacer	3	
27	Reed valve seat	3	
28	Reed valve stopper	6	
29	Reed valve	6	
For installation, reverse the removal procedure.			

**REMOVAL**

1. Remove:

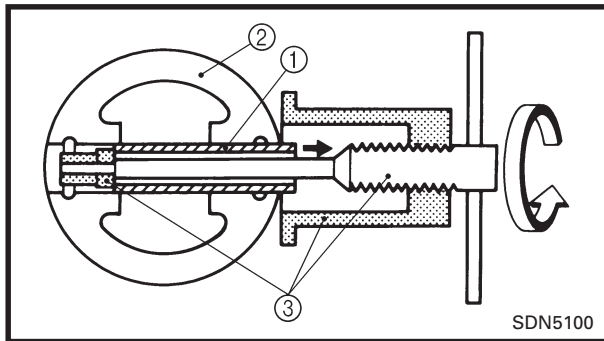
- Piston pin clip
- Piston pin
- Piston
- Small end bearing

NOTE:

- Before removing the piston pin clip, cover the crankcase with a clean rag so that you will not accidentally drop the clip into the crankcase.
- Before removing the piston pin, deburr the clip groove and pin hole area. If the piston pin groove is deburred and the piston pin is still difficult to remove, use the piston pin puller.
- Put identification marks on each piston head for reference during reinstallation.

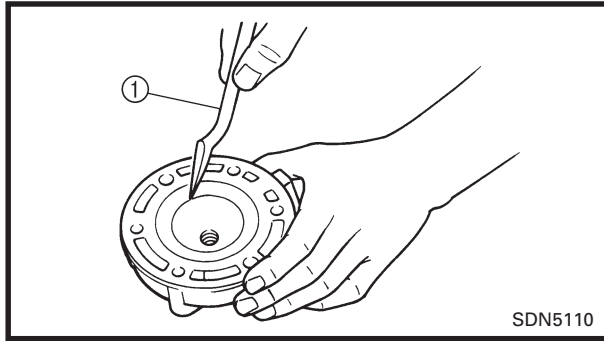


Piston pin puller:
90890-01304, YU-01304

**CAUTION:**

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

- ① Piston pin
- ② Piston
- ③ Piston pin puller

**INSPECTION**

1. Eliminate:

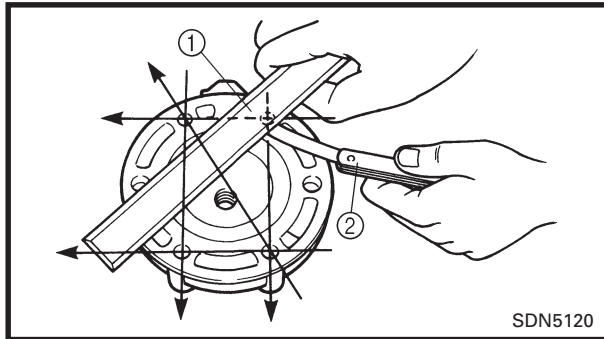
- Carbon deposits
(from the combustion chamber)
- Use the rounded scraper ①.

CAUTION:

Do not use a sharp instrument. Avoid damaging or scratching the surface.

2. Inspect:

- Cylinder head water jacket
Crust of minerals/rust → Clean.



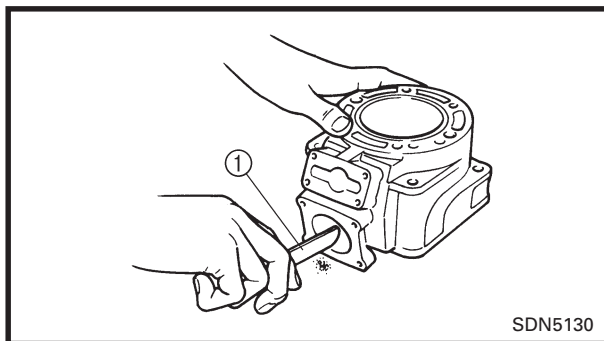
3. Measure:

- Cylinder head warpage
Out of specification → Resurface.



Warpage limit:
0.03 mm (0.0012 in)

- Straight edge ①
- Thickness gauge ②

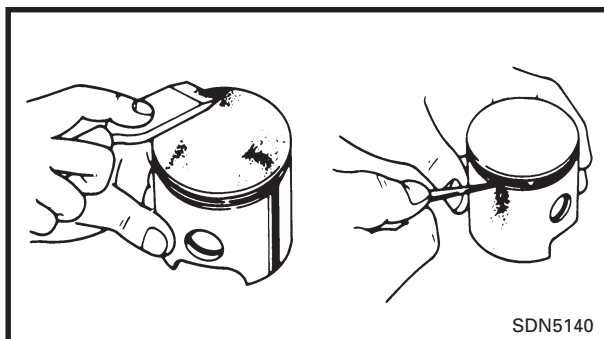


4. Eliminate:

- Carbon deposits
(from the cylinders)
- Use the rounded scraper ①.

CAUTION:

Do not use a sharp instrument. Avoid damaging or scratching the surface.



5. Eliminate:

- Carbon deposits
(from the piston crown and ring grooves)

6. Inspect:

- Piston crown
Burrs/nicks/damage → Replace.

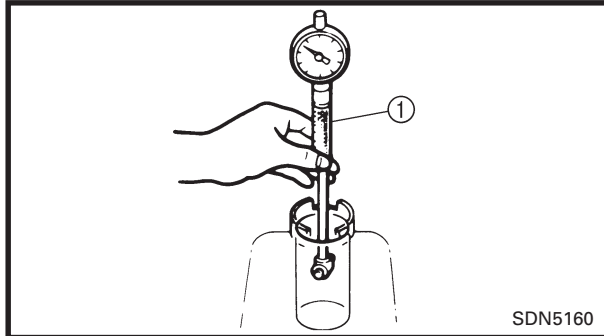


7. Eliminate:

- Score marks and lacquer deposits (from the piston wall)
Use 600 ~ 800 grit wet sandpaper.

NOTE:

Sand in a crisscross pattern. Do not sand excessively.



8. Measure:

- Piston-to-cylinder clearance

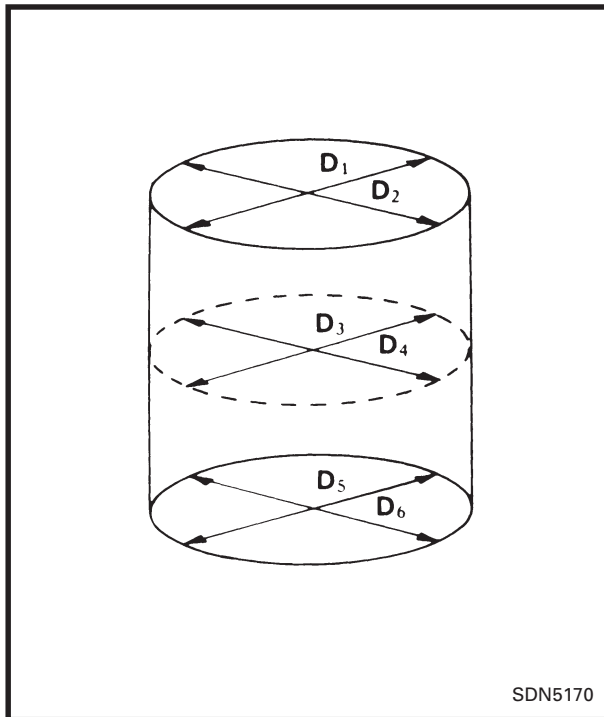
Measurement steps:

1st step:

- Measure the cylinder bore (C) with a cylinder bore gauge ①.

NOTE:

Measure the cylinder bore (C) parallel to and at right angles to the crankshaft. Then find the average of the measurements.



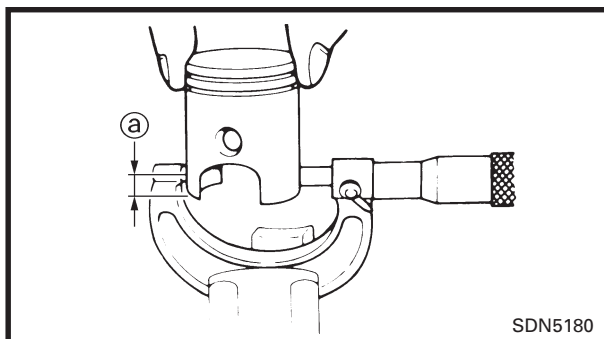
	Standard	Wear limit
Cylinder bore (C)	69.000 ~ 69.014 mm (2.7165 ~ 2.7171 in)	69.100 mm (2.7205 in)
Taper (T)	—	0.05 mm (0.002 in)
Out of round (R)	—	0.01 mm (0.0004 in)
C = Maximum D T = (Maximum of D₁ or D₂) – (Maximum of D₅ or D₆) R = (Maximum of D₁, D₃ or D₅) – (Minimum of D₂, D₄ or D₆)		

- If out of specification, replace cylinder, and replace piston and piston rings as a set.

2nd step:

- Measure the piston skirt diameter (P) with a micrometer.

① 10 mm (0.39 in) from the bottom edge of the piston





Piston size (standard) (P):
 68.944 ~ 68.947 mm
 (2.7143 ~ 2.7144 in)

- If out of specification, replace the piston and piston rings as a set.

3rd step:

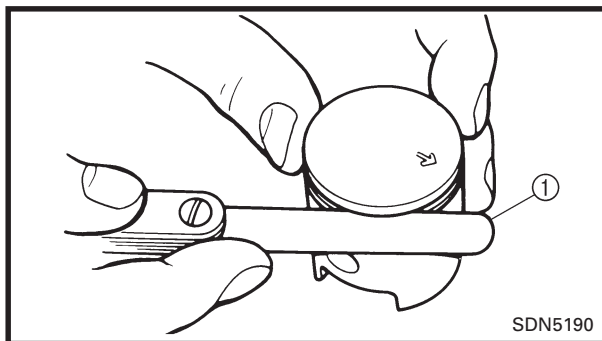
- Calculate the piston-to-cylinder clearance with the following formula:

Piston-to-cylinder clearance =
Cylinder bore (C) – Piston skirt diameter (P)

- If out of specification, rebore or replace cylinder, and replace piston and piston rings as a set.



Piston-to-cylinder clearance:
 0.065 ~ 0.070 mm
 (0.0026 ~ 0.0028 in)
 Limit 0.1 mm (0.004 in)



9. Measure:

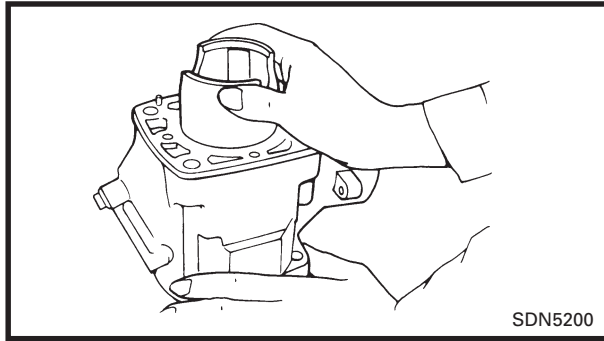
- Side clearance (piston rings)
 Use the feeler gauge ①.
 Out of specification → Replace the piston and/or rings.

NOTE:

Eliminate the carbon deposits from the piston ring grooves and rings before measuring the side clearance.



Side clearance (top):
 0.02 ~ 0.06 mm
 (0.0008 ~ 0.0024 in)
Side clearance (2nd):
 0.02 ~ 0.06 mm
 (0.0008 ~ 0.0024 in)

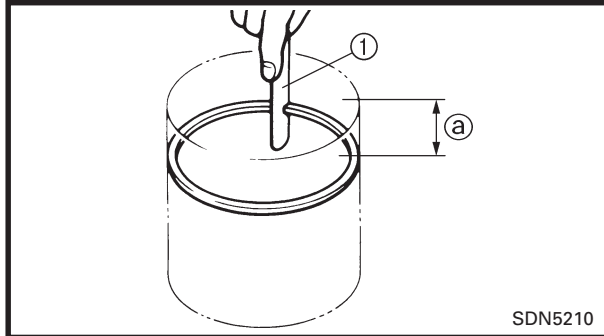


10. Install:

- Piston ring
(into the cylinder)
Push in the ring with the piston crown.

NOTE:

Insert the ring into the cylinder, and push it approximately 20 mm (0.8 in) into the cylinder. Push in the ring with the piston crown so that the ring is at right angles to the cylinder bore.



11. Measure:

- End gap (piston rings)
Use the feeler gauge ①.
Out of specification → Replace the rings as a set.

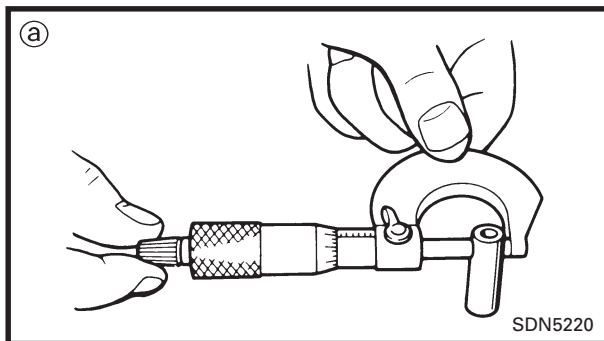
**End gap (top):**

0.35 ~ 0.55 mm
(0.014 ~ 0.022 in)

End gap (2nd):

0.35 ~ 0.55 mm
(0.014 ~ 0.022 in)

① 20 mm (0.8 in)

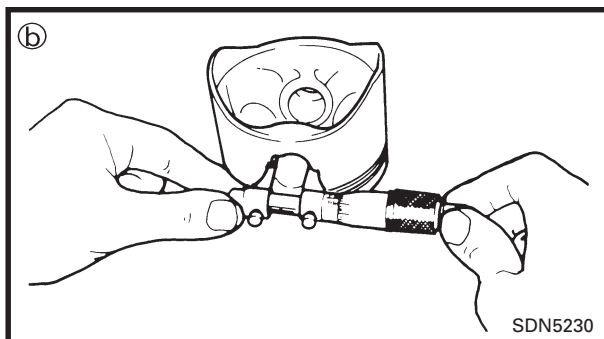


12. Measure:

- Outside diameter (piston pin) ①
Out of specification → Replace the piston pin.

**Outside diameter (piston pin) ①:**

19.995 ~ 20.000 mm
(0.7872 ~ 0.7874 in)



13. Measure:

- Piston pin-to-piston clearance
Out of specification → Replace the piston.

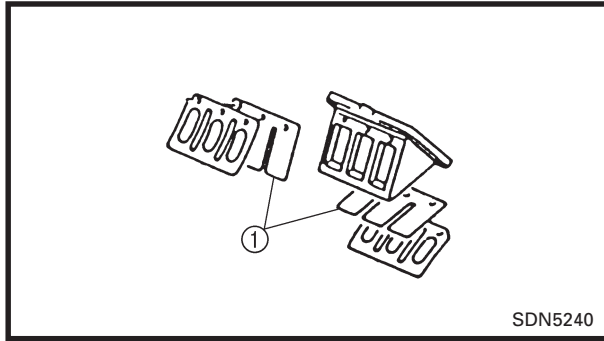
Piston pin-to-piston clearance =

Bore size (piston pin) ② –

Outside diameter (piston pin) ①

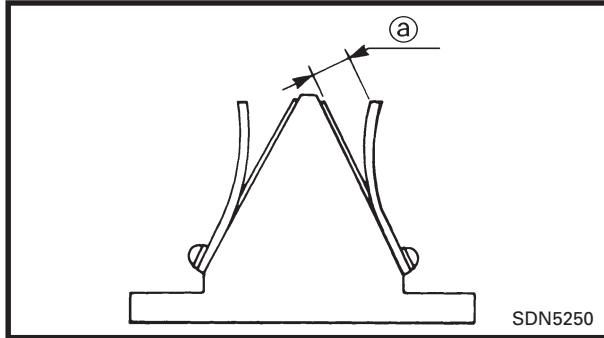
**Piston pin-to-piston clearance =**

0.009 ~ 0.015 mm
(0.000354 ~ 0.000591 in)



14. Inspect:

- Reed valves ①
Bends/cracks/damage → Replace.

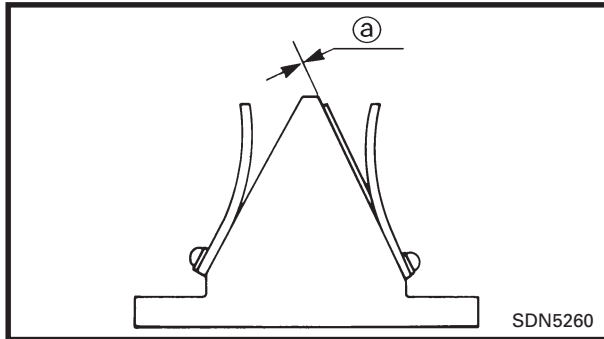


15. Measure:

- Valve stopper height ①
Out of specification → Replace the valve stopper.



Valve stopper height ①:
10.3 ~ 10.7 mm (0.41 ~ 0.42 in)

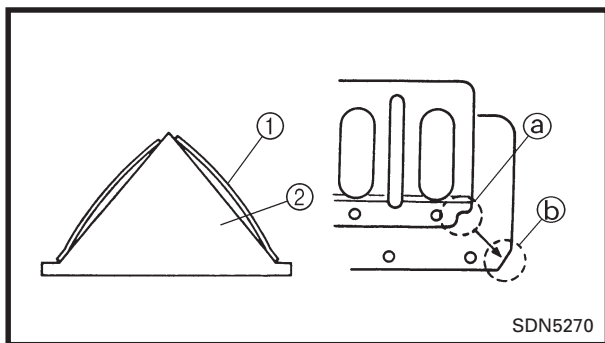


16. Measure:

- Reed valve bending limit ①
Out of specification → Replace the reed valve.



Reed valve bending limit ①:
less than 1.5 mm (0.059 in)

**INSTALLATION**

1. Install:

- Reed valves
- Reed valve stoppers

NOTE:

- Place the reed valve ① with its concave surface facing toward the reed valve seat ②.
- Fit the reed valve stopper cut ③ into the corresponding cut ④ on the reed valve.

2. Tighten:

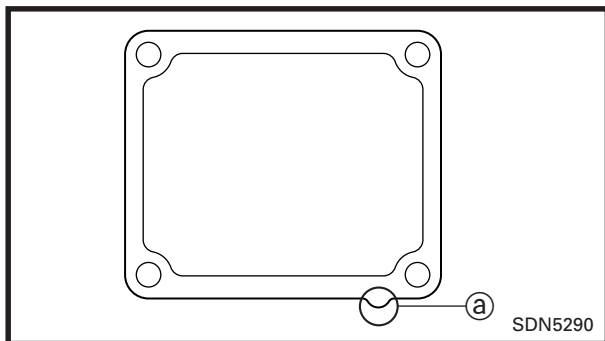
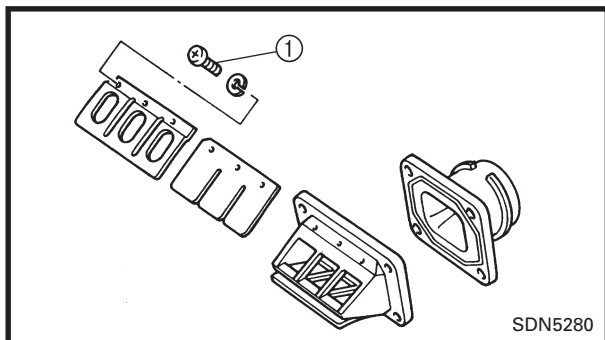
- Screws (reed valve) ①

**Screws (reed valve) ①:**

1 Nm (0.1 m • kg, 0.7 ft • lb)
LOCTITE®

NOTE:

Tighten each screw gradually to avoid warping.

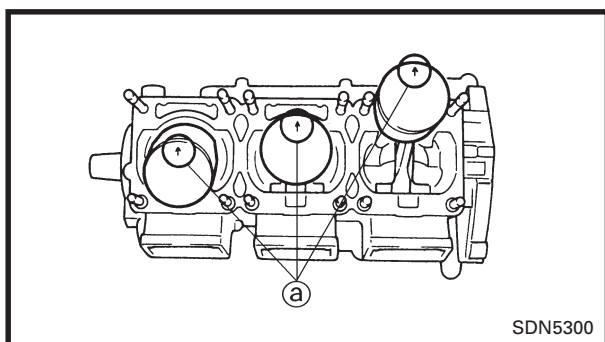


3. Install:

- Gasket (read valve)

NOTE:

Install the gasket so that the projection ③ is positioned as seen from the intake side in the illustration.



4. Install:

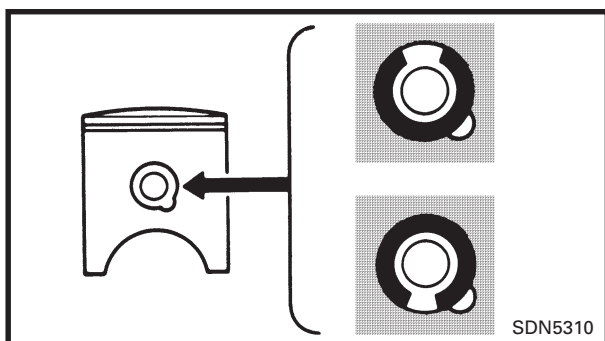
- Small end bearing
- Piston
- Piston pin
- Piston pin clip
- Piston rings

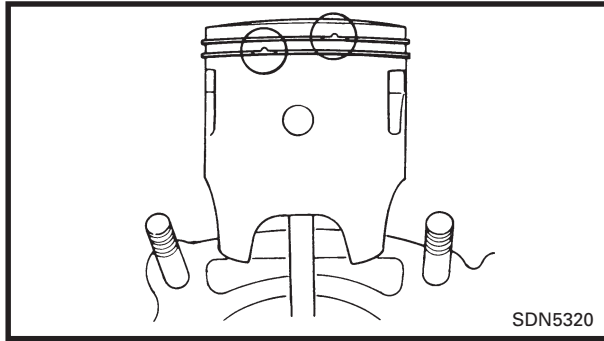
NOTE:

- The arrow ③ on the piston must point toward to the front of the engine.
- Before installing the piston pin clip, cover the crankcase with a clean rag so that you do not accidentally drop the pin clip and other material into the crankcase.
- Position each piston very carefully in its original place.

CAUTION:

- Always use new piston pin clips.
- Do not allow the clip gap to align with the piston pin slot.

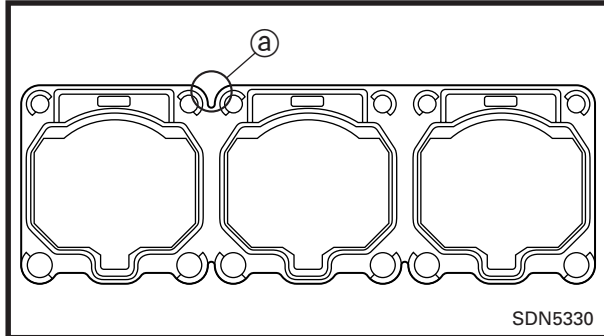




5. Check:
- Piston ring position

CAUTION:

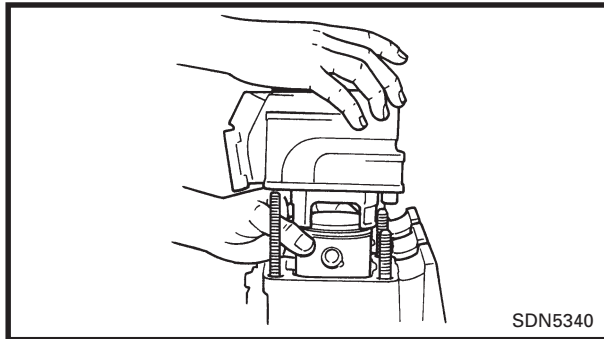
- Make sure that the ring ends are properly fitted around the ring locating pins in the piston grooves.
- Be sure to check that the manufacturer's marks or numbers stamped on the rings face upward.



6. Install:
- Gasket (cylinder)

NOTE:

- Install the gasket so that the side with elevations faces upward.
- The edge with the notch (a) should be between cylinders #1 and #2.



7. Install:
- Cylinder

NOTE:

Install the cylinder with one hand while compressing the piston rings with the other hand.

8. Tighten:
- Nuts (cylinder head)

Tightening steps:

- Temporarily tighten the cylinder head nuts ① ~ ⑥ as follows.

1st step:

- Tighten the nuts ① ~ ⑥



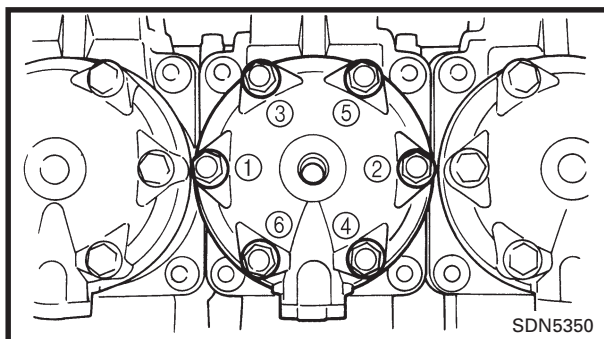
Nut (cylinder head) ① ~ ⑥:
13 Nm (1.3 m • kg, 9.4 ft • lb)

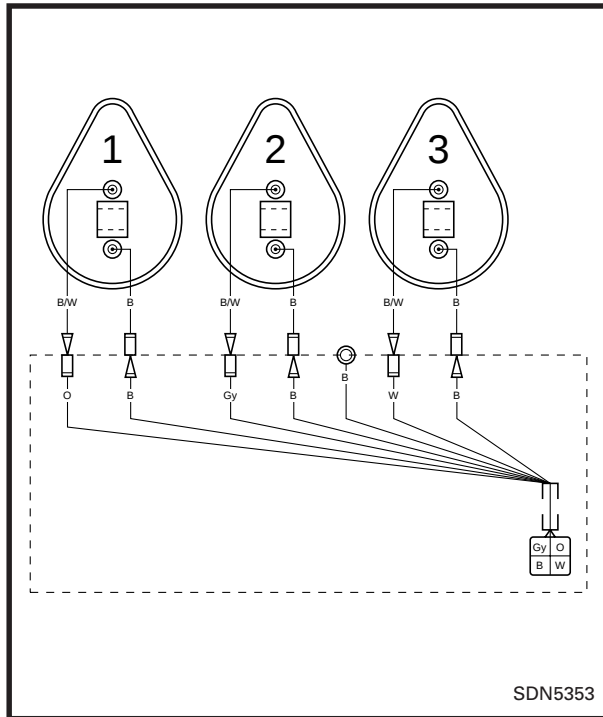
2nd step:

- Retighten the nuts ① ~ ⑥



Nut (cylinder head) ① ~ ⑥:
28 Nm (2.8 m • kg, 20 ft • lb)



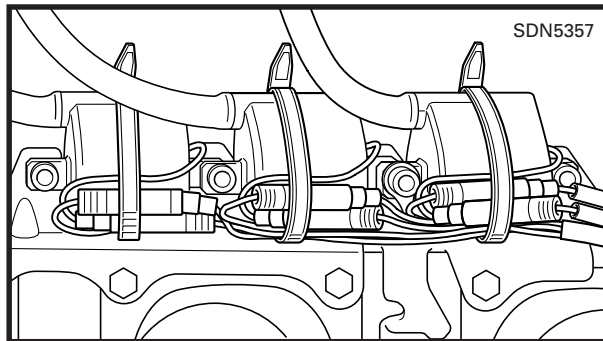


9. Connect:

- Ignition coil leads
 - Ignition coil #1 Black/White lead → Sub-wire harness Orange lead
 - Ignition coil #2 Black/White lead → Sub-wire harness Gray lead
 - Ignition coil #3 Black/White lead → Sub-wire harness White lead
 - Ignition coil #1, #2, #3 Black lead → Sub-wire harness Black lead

NOTE:

Connect the black leads of the sub-wire harness to the ignition coils as follows: the longest lead to ignition coil #1, the medium-size lead to ignition coil #2, and the shortest lead to ignition coil #3.



10. Install:

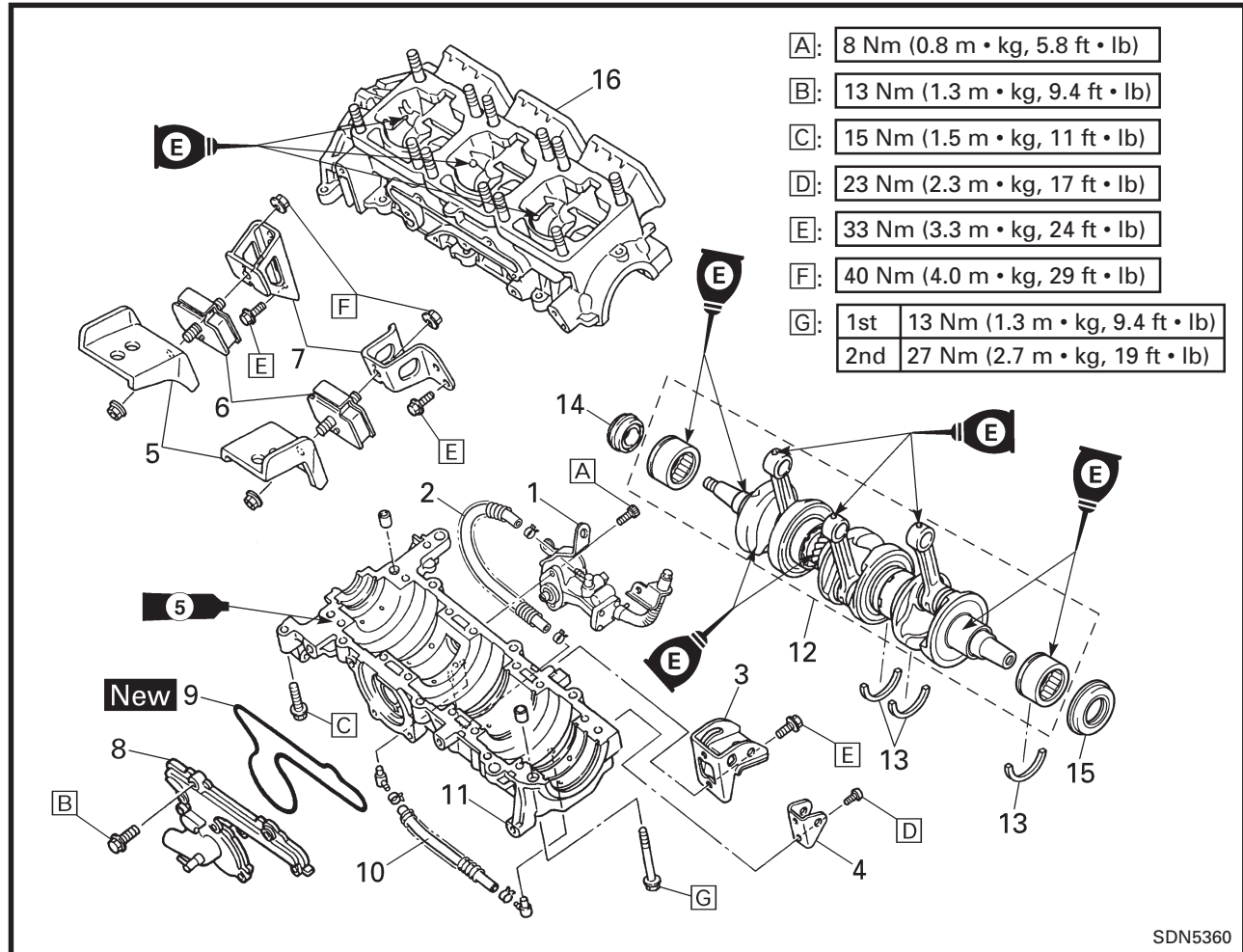
- Plastic band

NOTE:

Pass the ignition coil leads as shown in the illustration.

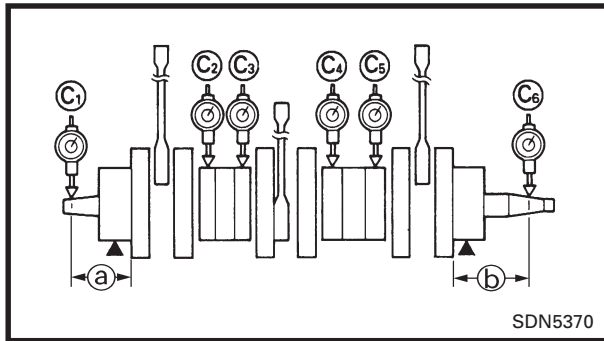


OIL PUMP, CRANKCASE AND CRANKSHAFT



SDN5360

Order	Job name/Part name	Q'ty	Remarks
	Oil pump, crankcase and crankshaft removal		Remove the parts in the order listed below.
1	Oil pump	1	
2	Oil hose 1	1	
3	Rear bracket (center)	1	
4	Rear bracket (left)	1	
5	Front lower bracket	2	
6	Damper	2	
7	Front upper bracket	2	
8	Water pump cover	1	
9	Gasket	1	
10	Oil hose 2	1	
11	Lower crankcase	1	
12	Crankshaft assembly	1	
13	Stopper ring	3	
14	Oil seal	1	
15	Oil seal	1	
16	Upper crankcase	1	
			For installation, reverse the removal procedure.



INSPECTION

1. Measure:

- Runout

Use the V-blocks and a dial gauge.

Out of specification → Replace or repair the crankshaft.

**Dial gauge:**

90890-03097, YU-03097

**Runout limit:**

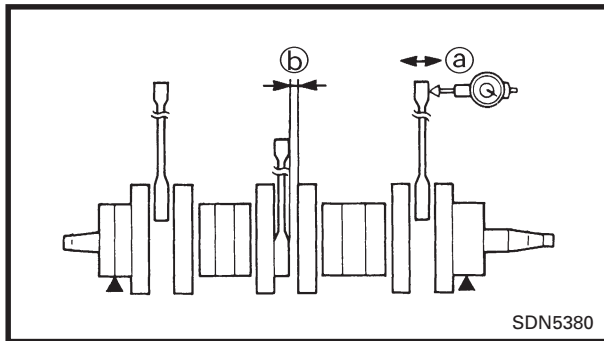
C₁ : 0.03 mm (0.0012 in)

C₂ ~ C₅: 0.04 mm (0.0016 in)

C₆ : 0.03 mm (0.0012 in)

Ⓐ 89.5 mm (3.52 in)

Ⓑ 84.5 mm (3.33 in)



2. Measure:

- Small end freeplay Ⓐ

Use the dial gauge.

Out of specification → Replace the defective parts.

**Small end freeplay Ⓐ:**

0.8 ~ 1.0 mm (0.03 ~ 0.04 in)

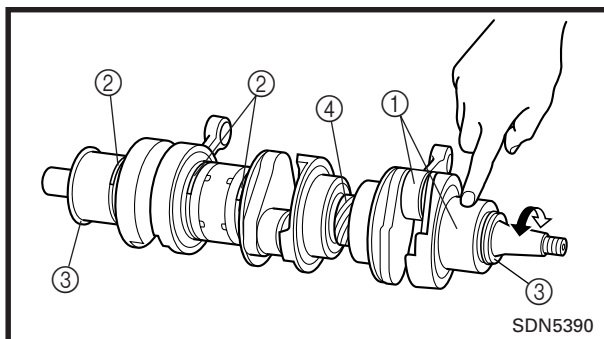
- Big end side clearance Ⓑ

Use the feeler gauge.

Out of specification → Replace the defective parts.

**Big end side clearance Ⓑ:**

0.25 ~ 0.75 mm (0.01 ~ 0.03 in)

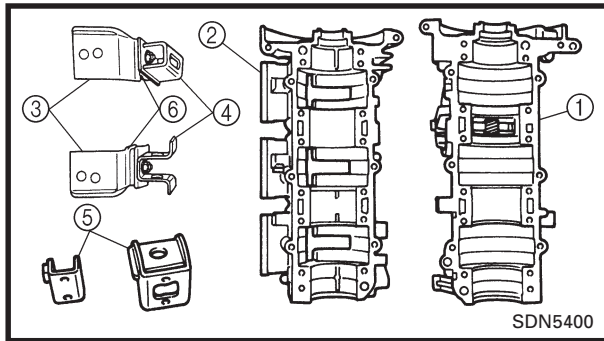


3. Inspect:

- Crankshaft bearings ①
Pitting/damage → Replace.
- Stopper rings ②
Bends/damage → Replace.
- Crankshaft oil seals ③
- Impeller drive gear teeth ④
Wear/damage → Replace.

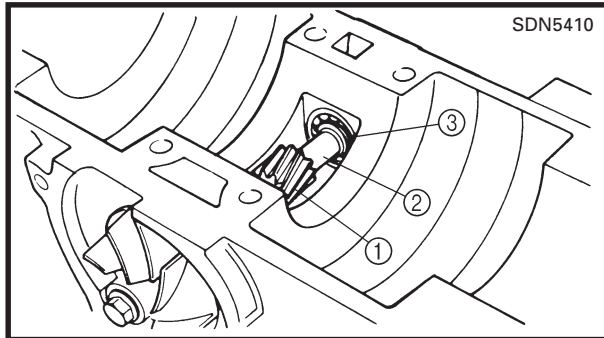
CAUTION:

Lubricate the bearings immediately after examining them in order to prevent rust.



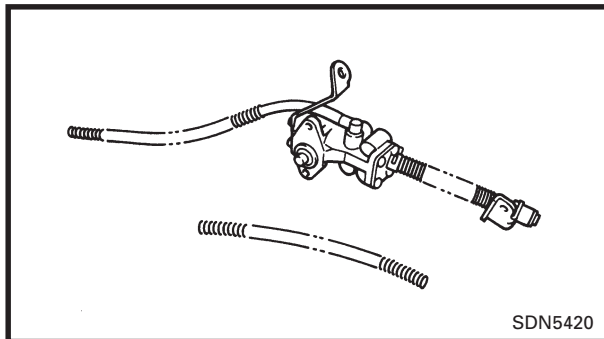
4. Inspect:

- Lower crankcase ①
 - Upper crankcase ②
 - Front lower brackets ③
 - Front upper brackets ④
 - Rear bracket ⑤
 - Dampers ⑥
- Cracks/damage → Replace.



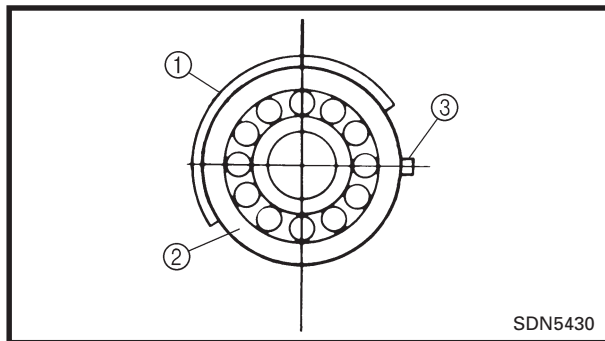
5. Inspect:

- Impeller driven gear teeth ①
Wear/damage → Replace the impeller shaft.
- Impeller shaft ②
- Bearing ③
Pitting/damage → Replace.



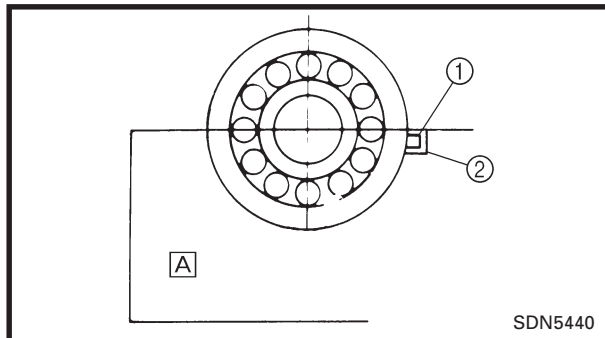
6. Inspect:

- Oil pump
Cracks/damage → Replace.
- Oil hoses
Clogs/damage → Replace.

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

- Stopper rings ①
(onto the lower crankcase bearing ② as shown)

③ Knock pin

**2. Install:**

- Crankshaft assembly
(onto the upper crankcase [A])

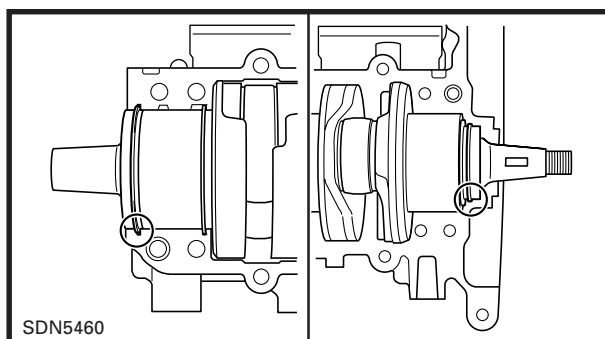
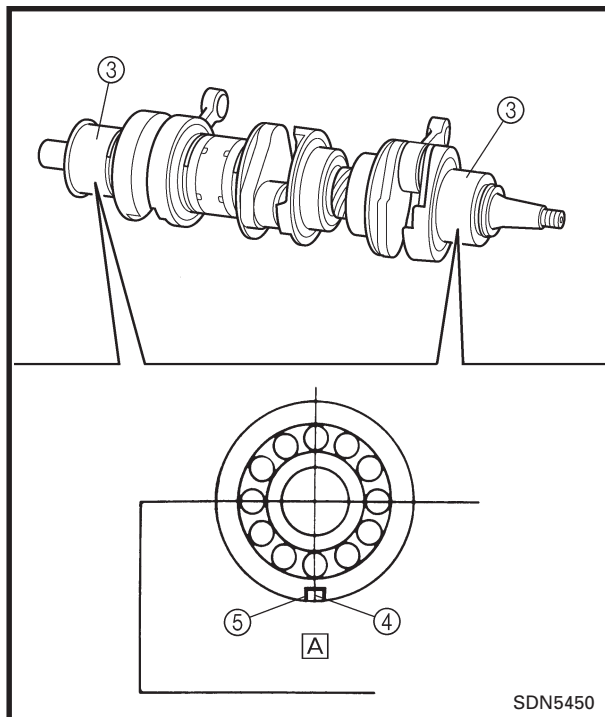
NOTE:

Turn the bearings and labyrinth seal to set the knock pins ① on the bearings and labyrinth seal into the pin holes ② in the upper crankcase [A].

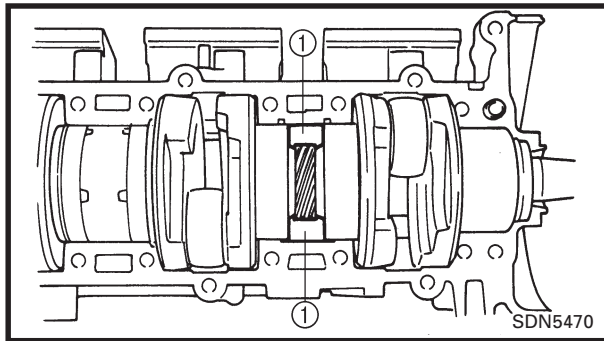
③ Bearing

NOTE:

Turn bearing ③ to set the knock pin ④ on the upper crankcase [A] into the pin hole ⑤ in the bearing.

**CAUTION:**

The oil seal lip must fit into the crankcase groove.



3. Fill:

- Gear room ①

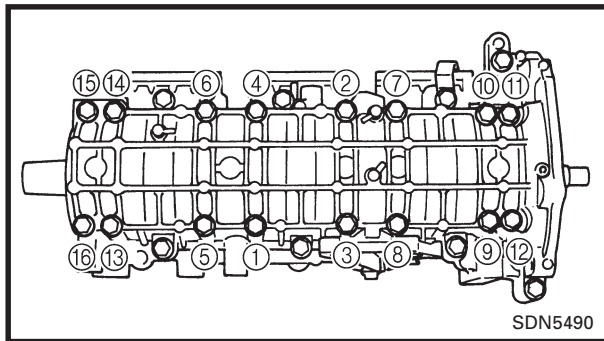
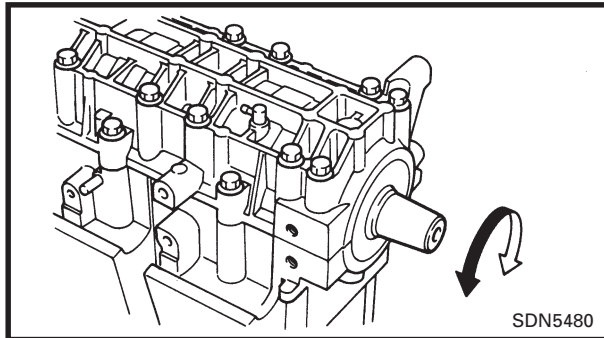


Recommended oil:
YAMALUBE 2-cycle

Gear room capacity:
25 cm³ (0.81 Imp oz, 0.77 US oz)

CAUTION:

Before installing and torquing the crankcase bolts, be sure to check that the crankshaft turns smoothly.



4. Tighten:

- Crankcase bolts ① ~ ⑯ (M8 × 80)

NOTE:

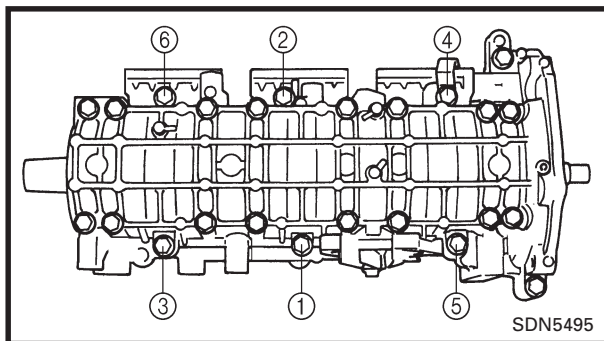
Tighten the bolts in order, starting with the lowest number, and torque the bolts in two stages.

**Bolt (crankcase):****First:**

13 Nm (1.3 m • kg, 9.4 ft • lb)

Final:

27 Nm (2.7 m • kg, 19 ft • lb)



5. Tighten:

- Crankcase bolts ① ~ ⑥ (M8 × 35)

NOTE:

- Tighten the bolts in order, starting with the lowest number.
- Install the hose holder with bolt ④.

**Bolt (crankcase):**

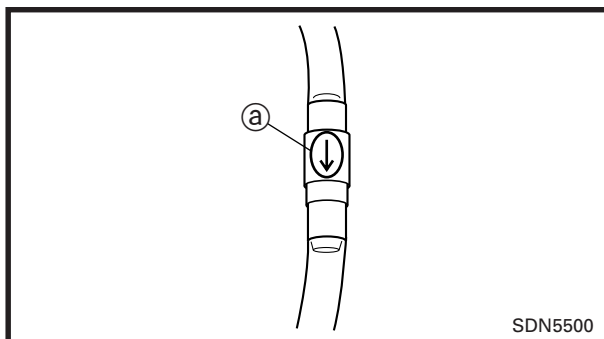
15 Nm (1.5 m • kg, 11 ft • lb)

6. Install:

- Oil hose 1

NOTE:

Install so that the mark @ on the check valve faces the crankcase.

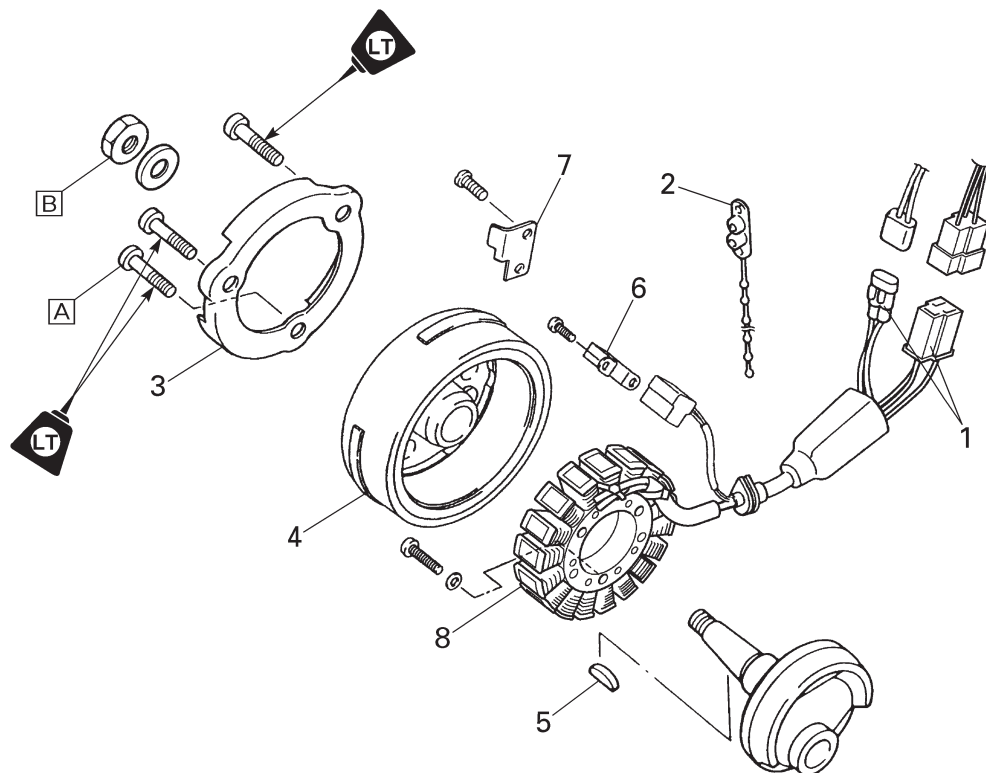




AC MAGNETO

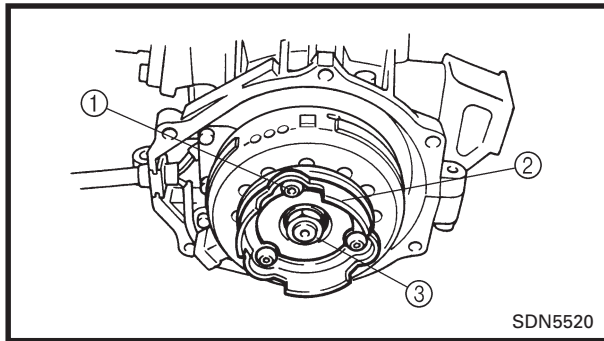
[A]: 23 Nm (2.3 m • kg, 17 ft • lb)

[B]: 110 Nm (11.0 m • kg, 80 ft • lb)



SDN5510

Order	Job name/Part name	Q'ty	Remarks
	AC magneto removal		
	Recoil starter		Remove the parts in the order listed below. Refer to "RECOIL STARTER".
1	AC magneto coupler	2	
2	Plastic clamp	1	
3	Starter pulley	1	
4	Magneto rotor	1	
5	Woodruff key	1	
6	Holder	1	
7	Plate	1	
8	Stator coil	1	
			For installation, reverse the removal procedure.

**REMOVAL**

1. Remove:

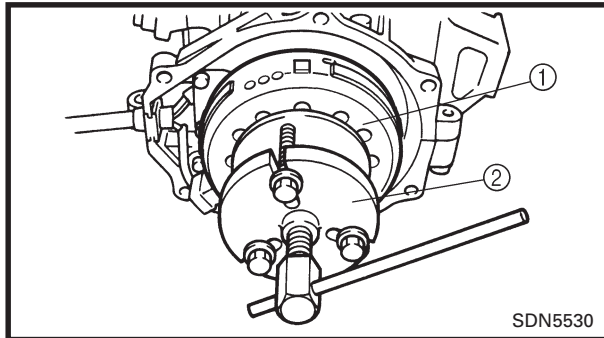
- Bolts ①
- Starter pulley ②
- Nut ③

NOTE:

Attach the primary sheave holder to hold the primary sheave.



Primary sheave holder:
90890-01701, YS-01880



2. Remove:

- Magneto rotor ①

NOTE:

- Remove the magneto rotor using the rotor puller ②.
- Fully tighten the tool holding bolts, making sure the tool body is parallel with the magneto rotor. If necessary, one screw may be backed out slightly to level the tool body.



Rotor holding puller:
90890-01362, YU-33270



INSTALLATION

NOTE:

After installing all parts, refer to "CABLE ROUTING" in CHAPTER 9, to check the cable, lead and hose routings.

1. Install:

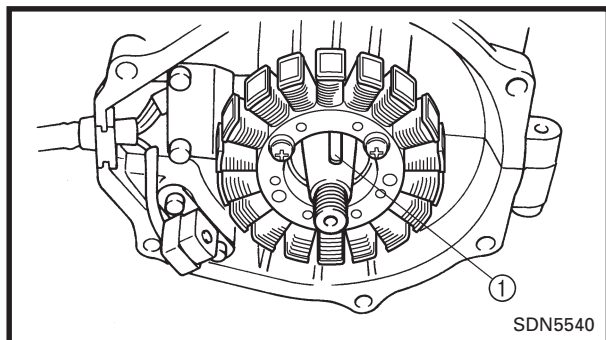
- Woodruff key ①

CAUTION:

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

NOTE:

Pass the magneto leads through the hole and install the grommet in the crankcase.



2. Install:

- Magneto rotor
- Washer
- Nut (magneto rotor)

CAUTION:

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

NOTE:

When installing the magneto rotor, make sure the woodruff key is properly seated in the keyway of the crankshaft.

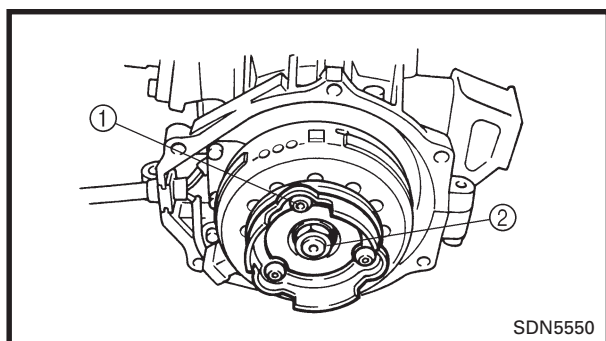
3. Tighten:



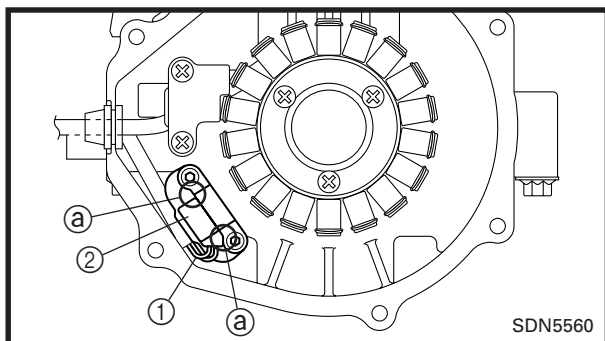
Starter pulley bolt ①:
23 Nm (2.3 m • kg, 17 ft • lb)
Magneto rotor nut ②:
110 Nm (11 m • kg, 80 ft • lb)

NOTE:

Attach the primary sheave holder to hold the primary sheave.



Primary sheave holder:
90890-01701, YS-01880



4. Install:

- Stator coil

NOTE:

- Pass the pickup coil lead ① under the pickup coil ② as shown.
- Install the holder so that the side with notches ③ faces outward.

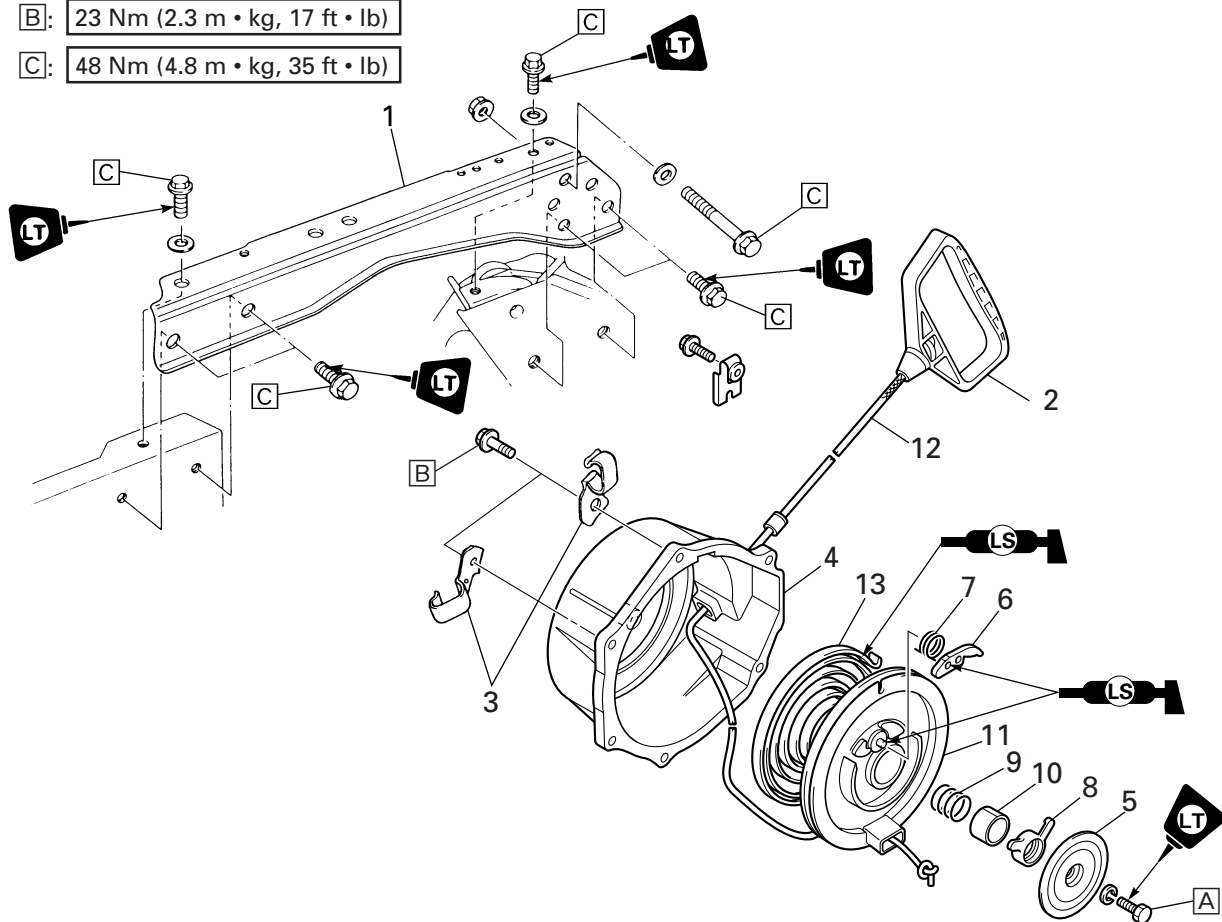


RECOIL STARTER

A: 18 Nm (1.8 m • kg, 13 ft • lb)

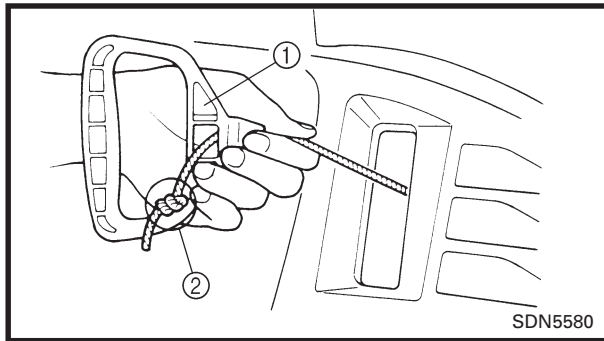
B: 23 Nm (2.3 m • kg, 17 ft • lb)

C: 48 Nm (4.8 m • kg, 35 ft • lb)



SDN5570

Order	Job name/Part name	Q'ty	Remarks
	Recoil starter removal		Remove the parts in the order listed below. Refer to "EXHAUST ASSEMBLY".
1	Exhaust silencer	1	
2	Frame cross member	1	
3	Starter handle	1	
4	Clamp	2	
5	Recoil starter case	1	
6	Drive plate	1	
7	Drive pawl	1	
8	Return spring	1	
9	Cam guide	1	
10	Drive plate spring	1	
11	Collar	1	
12	Sheave drum	1	
13	Starter rope	1	
14	Starter spring	1	
			For installation, reverse the removal procedure.



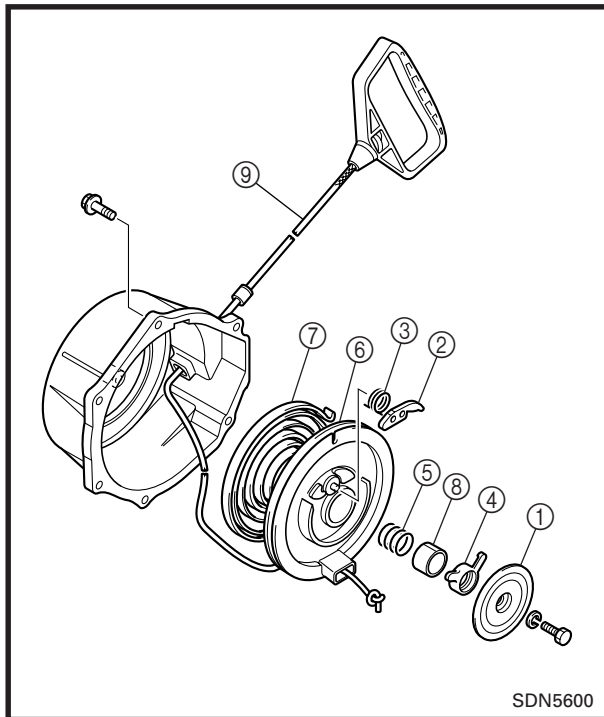
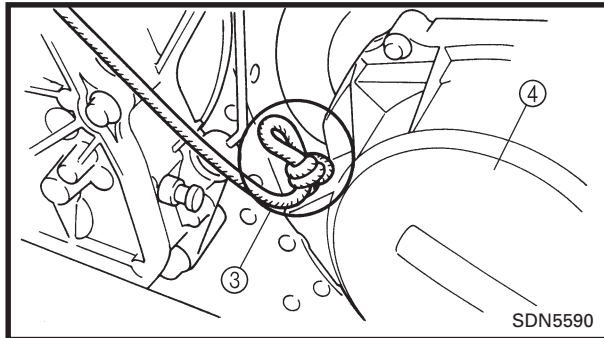
REMOVAL

1. Remove:

- Starter handle ①

NOTE:

To remove the starter handle, untie the knot ② in the starter rope and then re-tie a knot ③ in the rope end so that it is not pulled into the recoil starter case ④.



INSPECTION

1. Inspect:

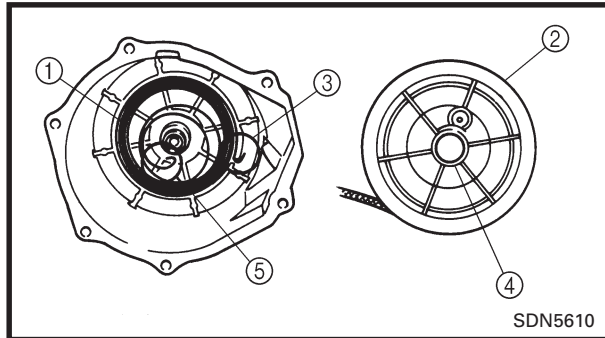
- Drive plate ①
Cracks/bends/damage → Replace.
- Drive pawl ②
- Return spring ③
- Cam guide ④
Wear/cracks/damage → Replace.
- Drive plate spring ⑤
Wear/damage → Replace.
- Sheave drum ⑥
Cracks/damage → Replace.
- Starter spring ⑦
Cracks/bends/damage → Replace.
- Collar ⑧
- Starter rope ⑨
Wear/breaks/damage → Replace.



INSTALLATION

1. Wind:

- Starter rope (2 1/2 times counterclockwise) (in the sheave drum)

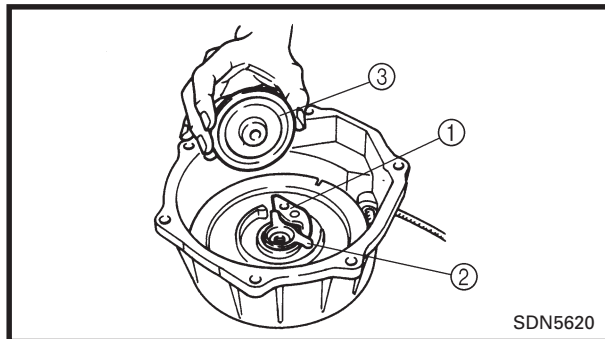


2. Install:

- Starter spring ①
- Sheave drum assembly ②

NOTE:

- Mesh the spring hook ③ with the case slit, then wind the spring counterclockwise into the case from a larger to a smaller diameter.
- Mesh the sheave drum hook ④ with the spring hook ⑤.

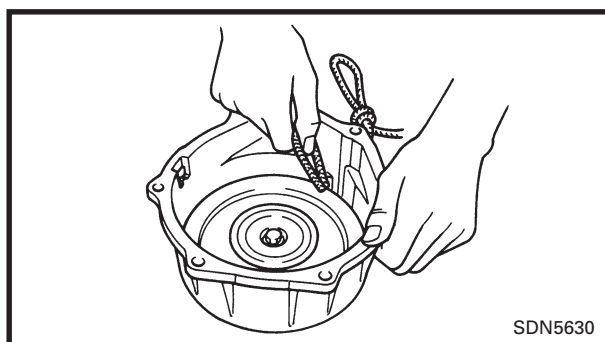


3. Install:

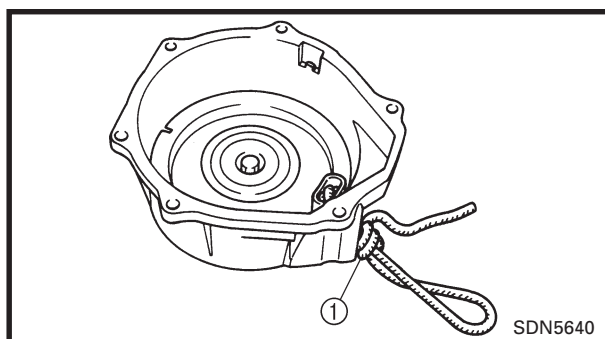
- Drive pawl ①
- Cam guide ②
- Drive plate ③

NOTE:

The cam guide ② should not be on top of the drive pawl ①.



- Pull about four inches of starter rope out of the cutout portion in the sheave drum and rotate the sheave drum 4 1/2 times counterclockwise to preload the starter spring.



NOTE:

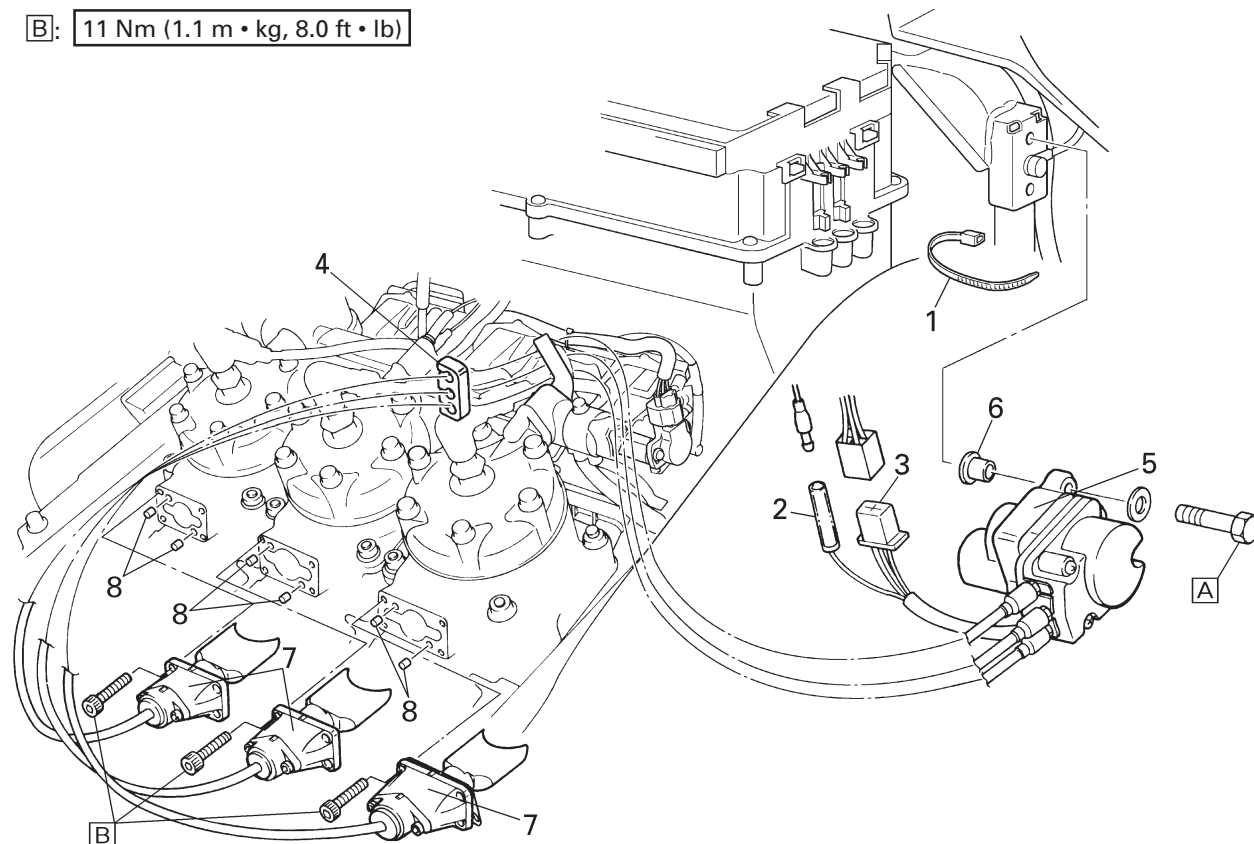
Pass the rope through the case hole and make a knot ① in the rope so that the rope is not pulled into the case.



YAMAHA POWER VALVE SYSTEM (Y.P.V.S.)

[A]: 6.5 Nm (0.65 m • kg, 4.7 ft • lb)

[B]: 11 Nm (1.1 m • kg, 8.0 ft • lb)



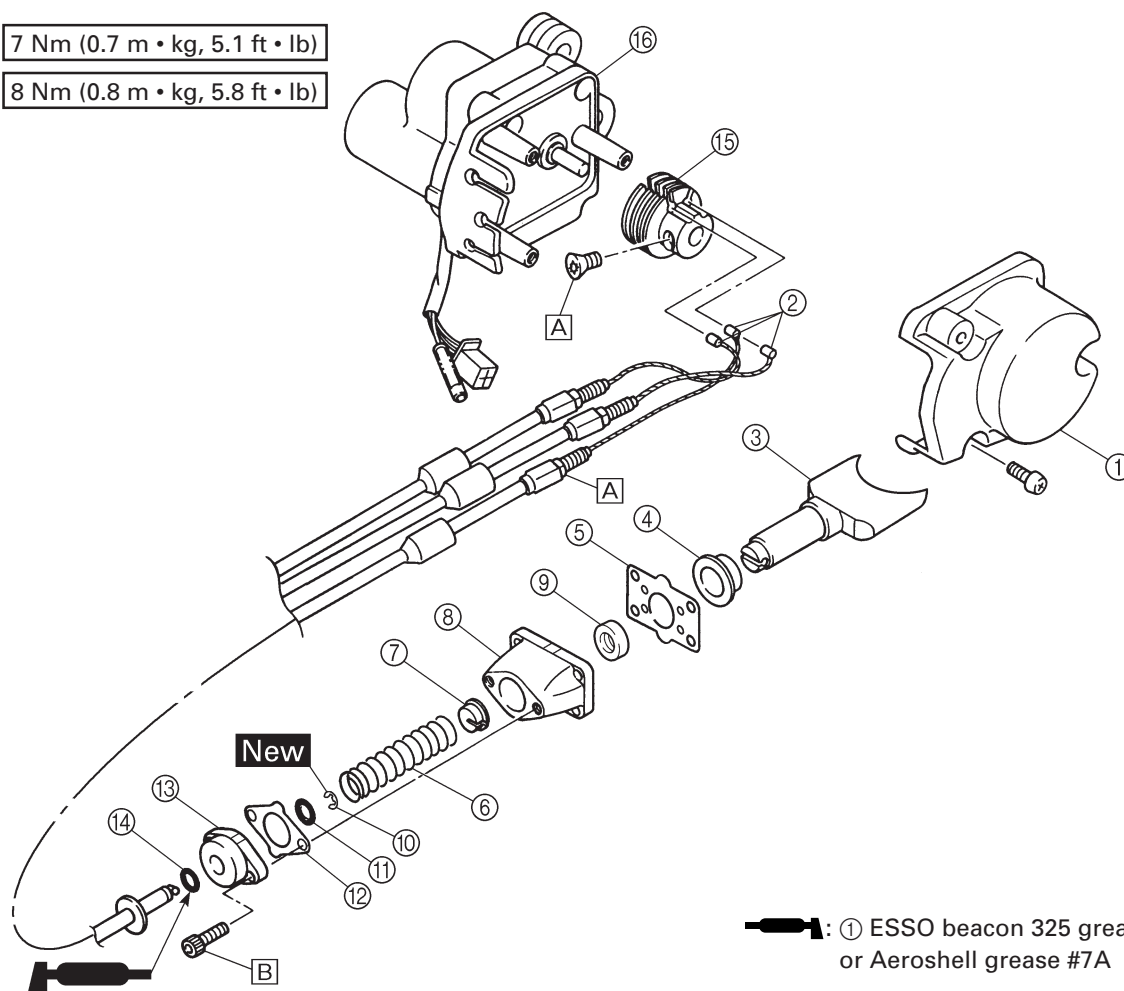
SDN5650

Order	Job name/Part name	Q'ty	Remarks
	YAMAHA POWER VALVE SYSTEM (Y.P.V.S.) removal		Remove the parts in the order listed below.
1	Plastic band	1	
2	Y.P.V.S. lead	1	Disconnect.
3	Y.P.V.S. coupler	1	Disconnect.
4	Cable holder	1	
5	Servo motor assembly	1	
6	Collar	2	
7	Y.P.V.S. valve housing	3	
8	Dowel pin	6	
			For installation, reverse the removal procedure.



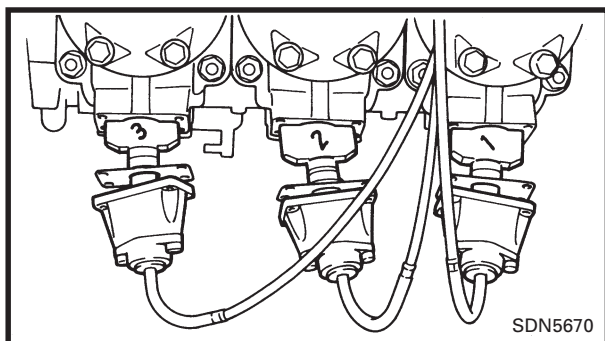
A: 7 Nm (0.7 m • kg, 5.1 ft • lb)

B: 8 Nm (0.8 m • kg, 5.8 ft • lb)



SDN5660

Order	Job name/Part name	Q'ty	Remarks
	Y.P.V.S. disassembly		Remove the parts in the order listed below.
①	Cover	1	
②	Y.P.V.S. cable (servo motor side)	3	
③	Valve	3	
④	Holder	3	
⑤	Gasket	3	
⑥	Spring	3	
⑦	Spring seat	3	
⑧	Valve housing 1	3	
⑨	Oil seal	3	
⑩	Circrip	3	
⑪	Washer	3	
⑫	Gasket	3	
⑬	Valve housing 2	3	
⑭	O-ring	3	
⑮	Puller	1	
⑯	Servo motor assembly	1	
			For assembly, reverse the disassembly procedure.

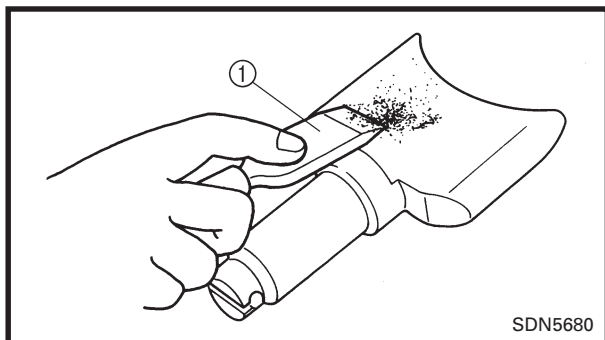
**REMOVAL**

1. Remove:

- Y.P.V.S. valve assembly

NOTE:

Put identification marks on each valve for reference during reinstallation.

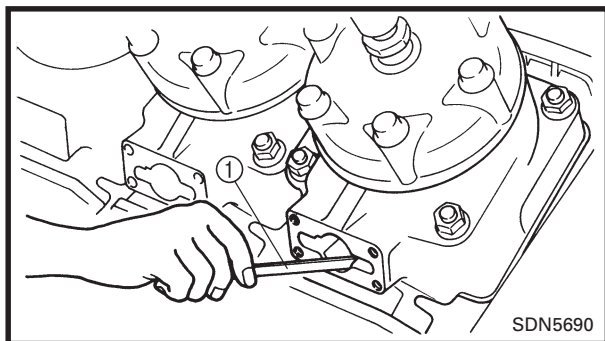
**INSPECTION**

1. Eliminate:

- Carbon deposit (from the valve)
- Use the rounded scraper ①.

CAUTION:

Do not use a sharp instrument. Avoid damaging or scratching the surface.

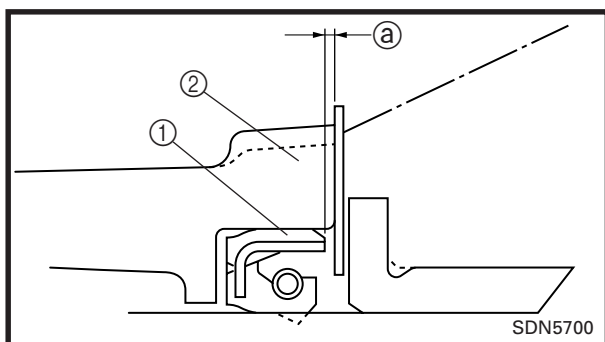


2. Eliminate:

- Carbon deposit (from the cylinder)
- Use the rounded scraper ①.

CAUTION:

Do not use a sharp instrument. Avoid damaging or scratching the surface.

**ASSEMBLY**

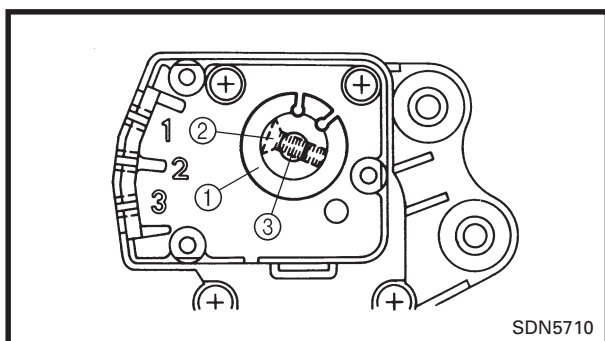
1. Install:

- Oil seal ①

NOTE:

Install the oil seal so that there is a distance ① between its end and the end of valve housing 1 ②.

① 0 ~ 0.5 mm (0 ~ 0.02 in)



2. Install:

- Y.P.V.S. cable pulley ①

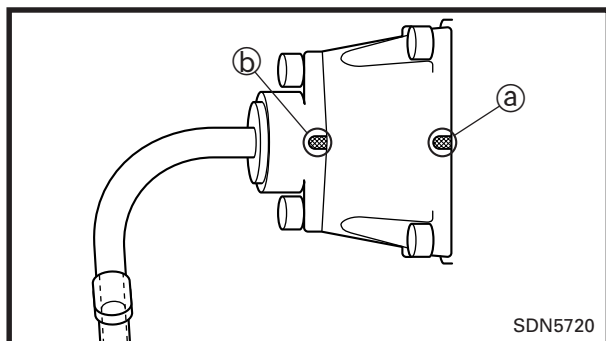
NOTE:

Install the screw ② through the rounded side of the shaft ③ as shown.



Screw:

7 Nm (0.7 m • kg, 5.1 ft • lb)



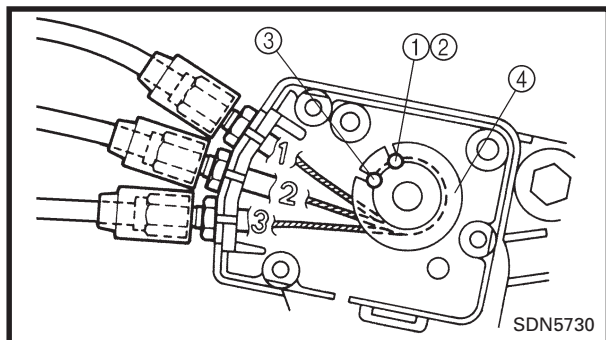
SDN5720

3. Install:

- Valve housing 1

NOTE:

Align the projection (a) on valve housing 1 with the projection (b) on valve housing 2.



SDN5730

4. Install:

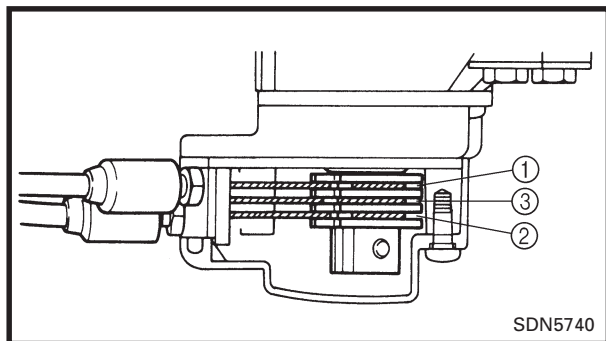
- Y.P.V.S. cables

Refer to the illustrations.

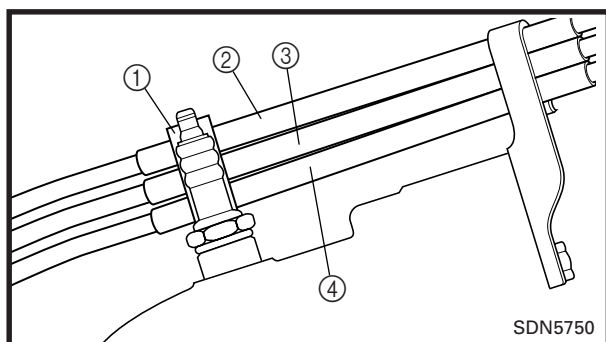
Cable	Installation Position
#1 Cable	Lower notch ①
#2 Cable	Upper notch ②
#3 Cable	Center notch ③

NOTE:

- Before installing the Y.P.V.S. cable onto the Y.P.V.S. cable pulley, check that the Y.P.V.S. cable moves smoothly.
- After installing the cables, turn the Y.P.V.S. cable pulley ④ counterclockwise to remove any freeplay.



SDN5740



SDN5750

INSTALLATION**NOTE:**

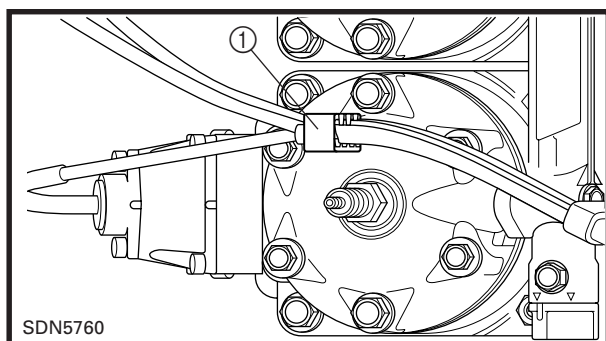
After installing all parts, refer to "CABLE ROUTING" in CHAPTER 9, to check the cable, lead and hose routings.

1. Install:

- Cable holder ①

NOTE:

- Make sure that the cables are properly positioned in the holder as shown.
- The opened-side of the cable holder should face in.
- Position the cable holder as close to the spark plug as possible.

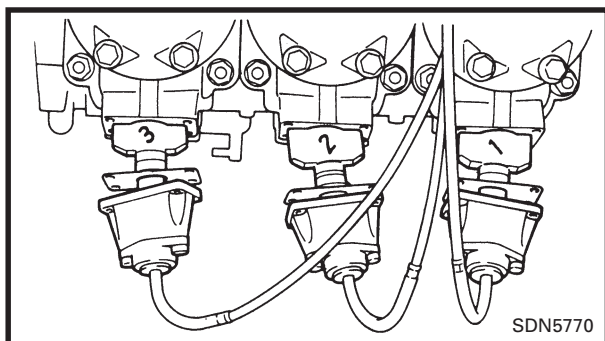


SDN5760

② #1 Cable

③ #2 Cable

④ #3 Cable

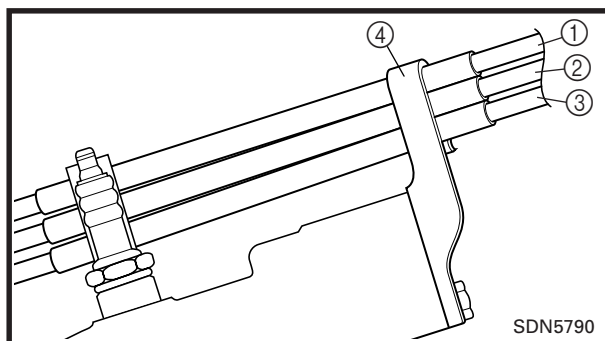
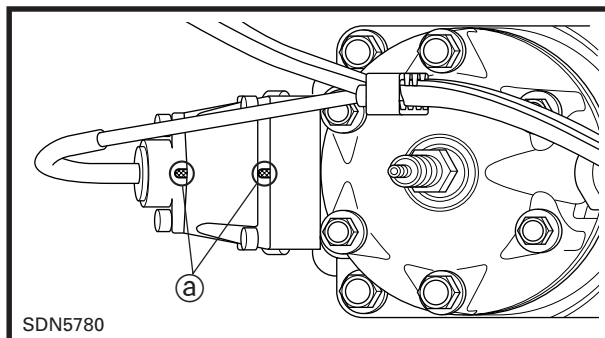


2. Install:

- Y.P.V.S. valve assembly

NOTE:

- Position each valve very carefully in its original place.
- The projection (a) on the Y.P.V.S. valve assembly should face upward.
- Refer to page 2-15 ~ 2-16 for proper Y.P.V.S. adjusting procedure.



3. Install:

- #1 Cable (1)
- #2 Cable (2)
- #3 Cable (3)

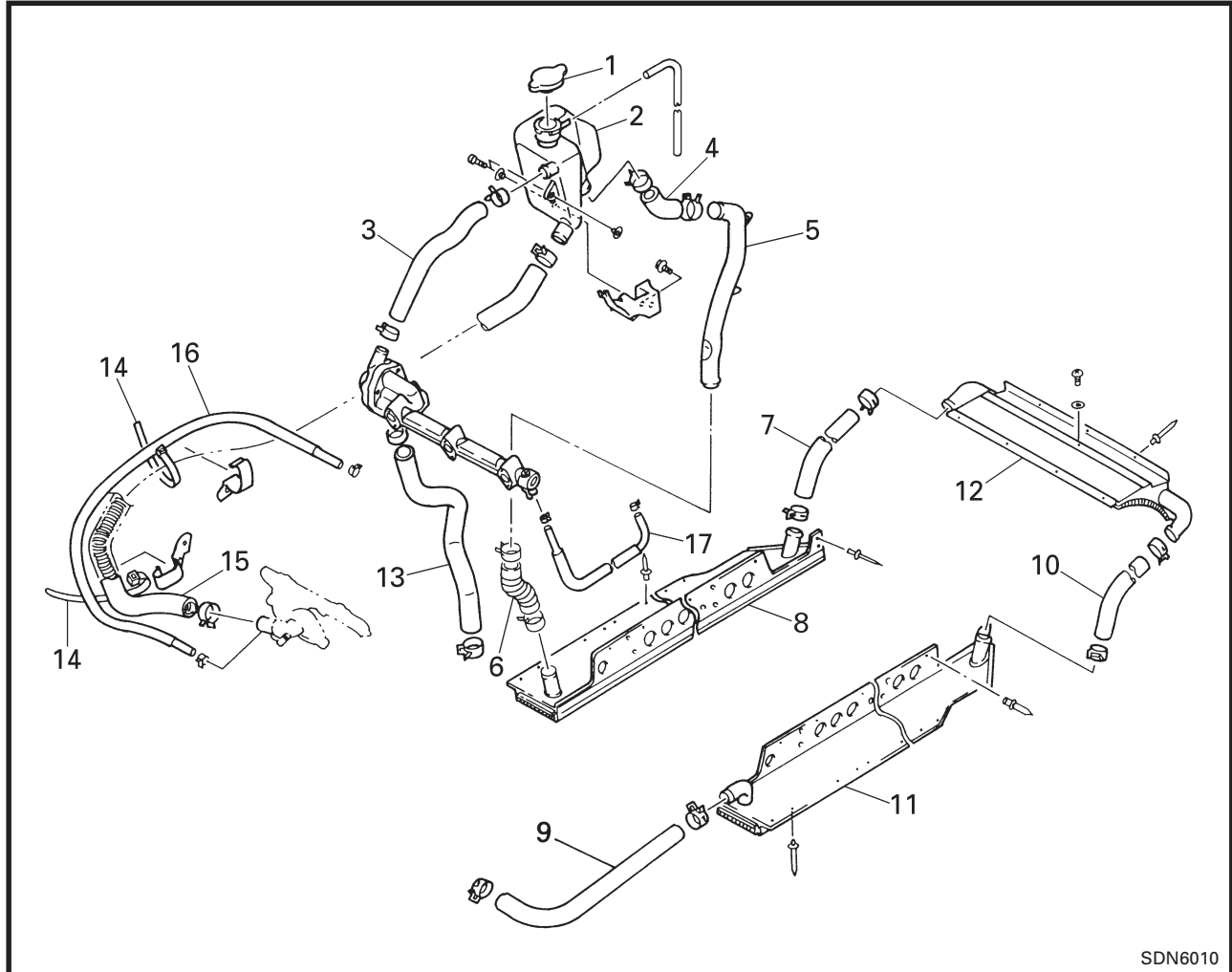
NOTE:

After installing the servo motor assembly, pass the Y.P.V.S. cable through the cable holder (4).



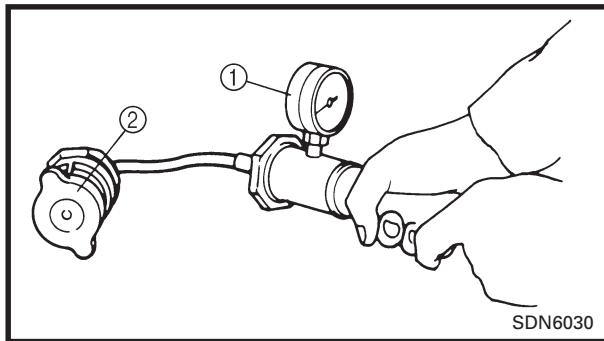
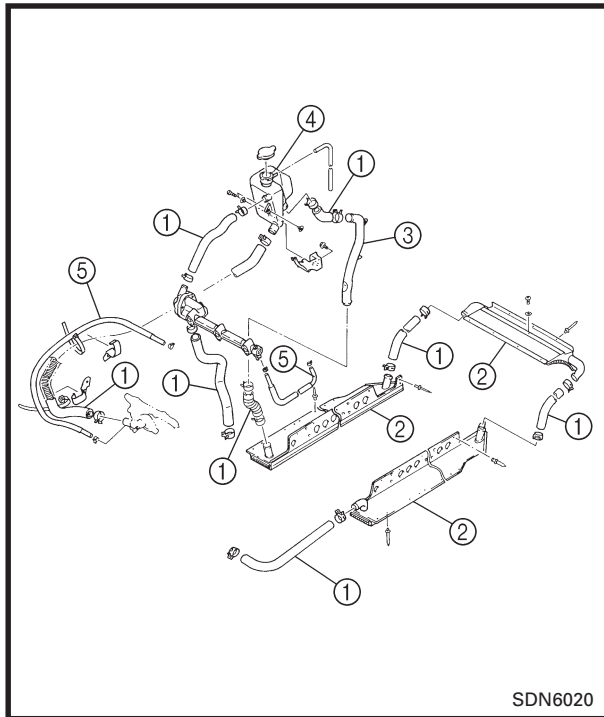
COOLING SYSTEM

HEAT EXCHANGER



SDN6010

Order	Job name/Part name	Q'ty	Remarks
	Heat exchanger removal		
	Coolant		Remove the parts in the order listed below. Drain. Refer to "COOLING SYSTEM" in CHAPTER 2.
1	Coolant filler cap	1	
2	Coolant reservoir tank	2	
3	Coolant hose 1	1	
4	Coolant hose 2	1	
5	Joint pipe	1	
6	Coolant hose 3	1	
7	Coolant hose 4	1	
8	Heat exchanger (right)	1	
9	Coolant hose 5	1	
10	Coolant hose 6	1	
11	Heat exchanger (left)	1	
12	Heat exchanger (rear)	1	
13	Coolant hose 7	1	
14	Band	2	
15	Coolant hose 8	1	
16	Carburetor heating hose 1	1	
17	Carburetor heating hose 2	1	
			For installation, reverse the removal procedure.



INSPECTION

1. Inspect:

- Coolant hoses ①
 - Heat exchangers ②
 - Joint pipe ③
 - Coolant reservoir tank ④
 - Carburetor heating hoses ⑤
- Cracks/damage → Replace.

2. Measure:

- Filler cap opening pressure
Cap opens with a pressure below the specified pressure → Replace.

Cap opening pressure:

100 ~ 120 kPa
(1.0 ~ 1.2 kg/cm², 14 ~ 17 psi)

Measurement steps:

- Attach the cooling system tester ① to the coolant filler cap ②.



Cooling system tester:
90890-01325, YU-24460-01

- Apply the specified pressure for 10 seconds and make sure there is no pressure drop.

INSTALLATION

1. Install:

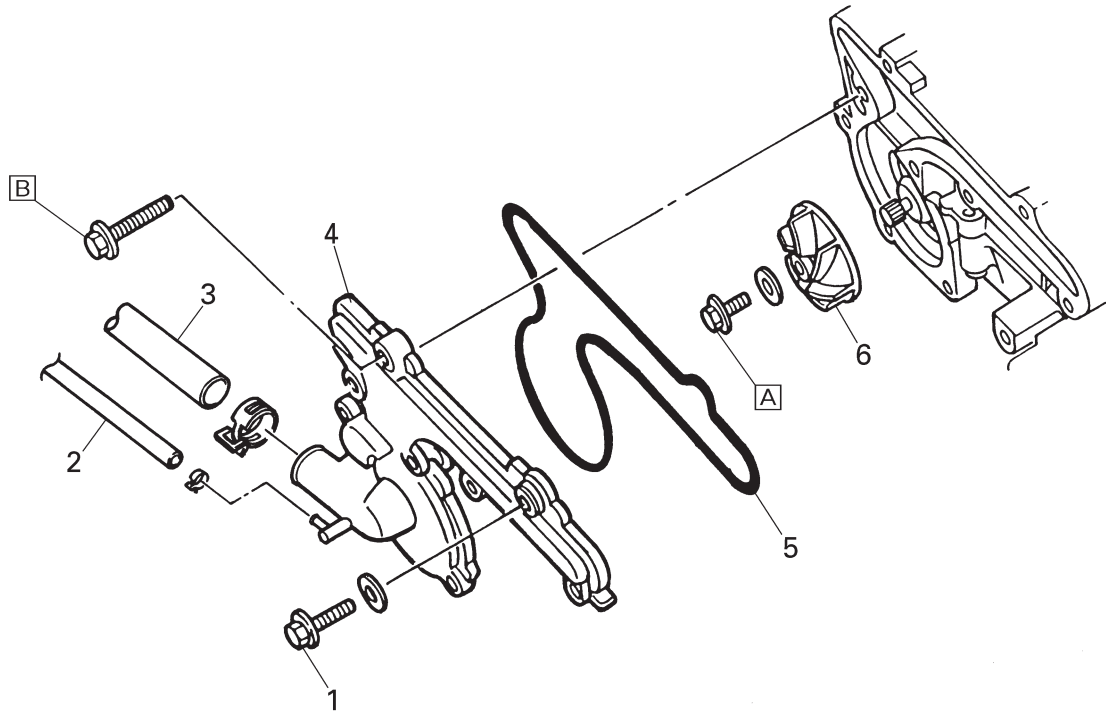
- Heat exchangers
Use the rivet gun.



WATER PUMP

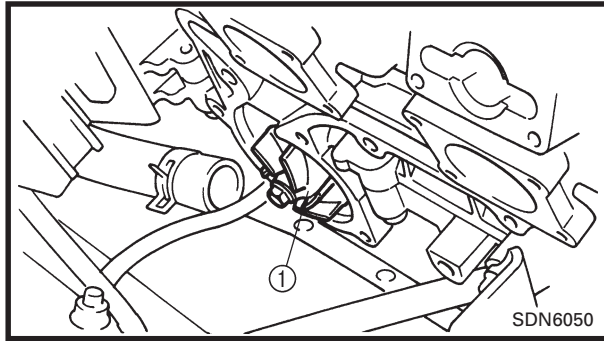
[A]: 10 Nm (1.0 m • kg, 7.2 ft • lb)

[B]: 13 Nm (1.3 m • kg, 9.4 ft • lb)



SDN6040

Order	Job name/Part name	Q'ty	Remarks
	Water pump removal		
	Exhaust pipe		Remove the parts in the order listed below. Refer to "EXHAUST ASSEMBLY" in CHAPTER5.
1	Drain bolt	1	Drain the coolant. Refer to "COOLING SYSTEM" in CHAPTER 2.
2	Carburetor heating hose	1	
3	Coolant hose	1	
4	Water pump cover	1	
5	Gasket	1	
6	Impeller	1	
			For installation, reverse the removal procedure.



REMOVAL

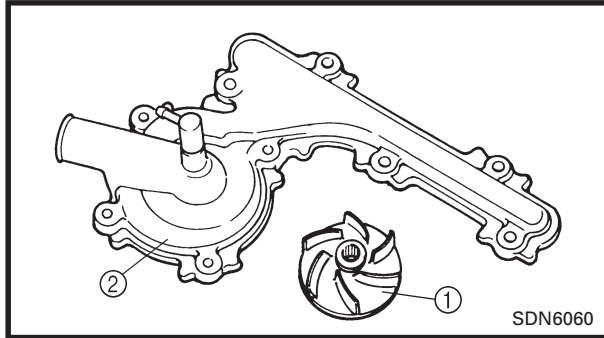
1. Remove:
 - Impeller ①

NOTE:

Attach the primary sheave holder to hold the primary sheave.



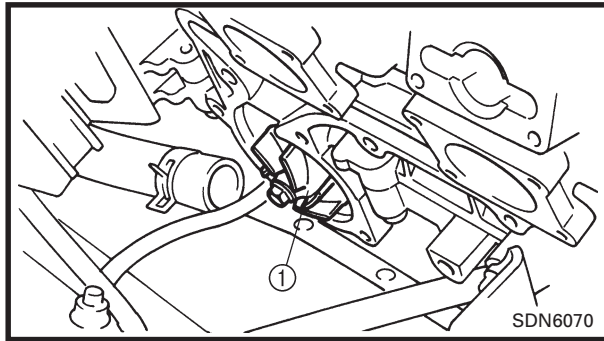
Primary sheave holder:
90890-01701, YS-01880



INSPECTION

1. Inspect:
 - Impeller ①
 - Water pump cover ②

Cracks/damage → Replace.



INSTALLATION

1. Install:
 - Impeller ①

NOTE:

Attach the primary sheave holder to hold the primary sheave.



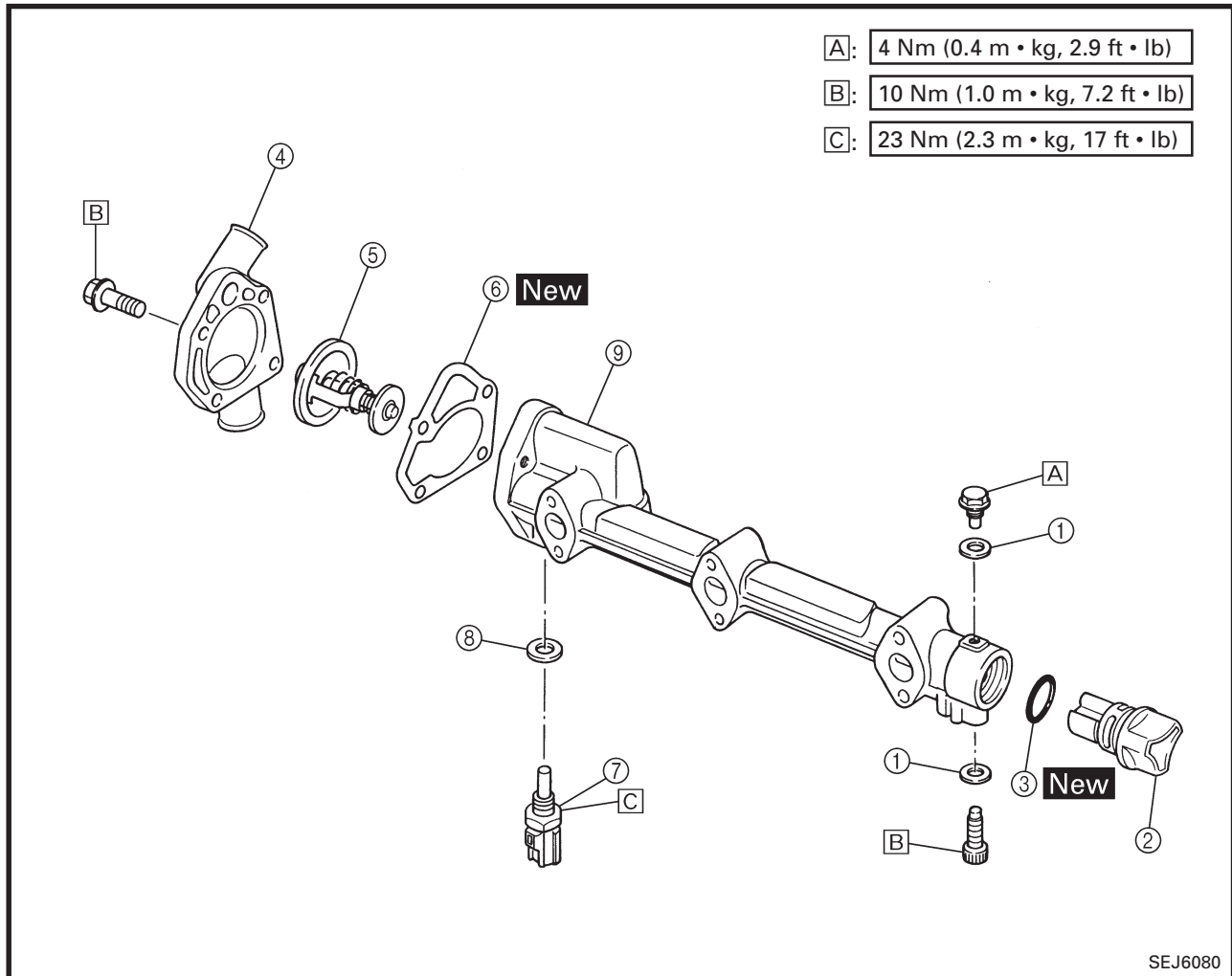
Primary sheave holder:
90890-01701, YS-01880



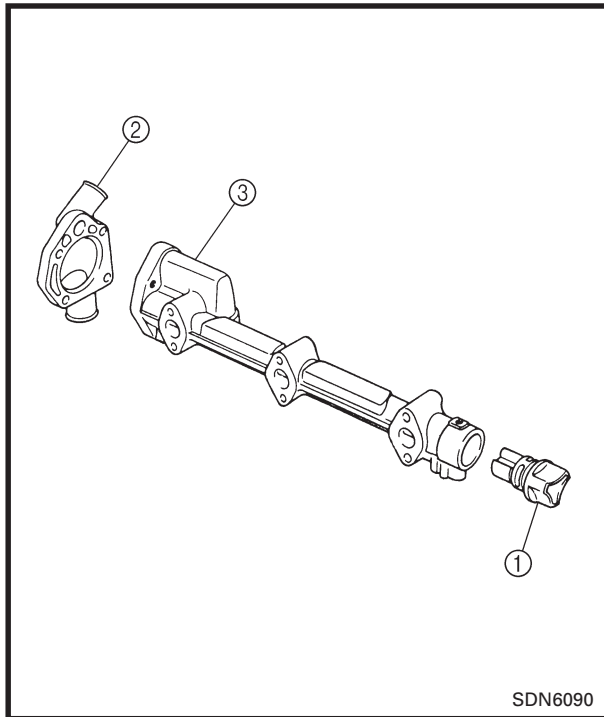
Bolt (impeller):
10 Nm (1.0 m • kg, 7.2 ft • lb)



OUTLET WATER JACKET JOINT



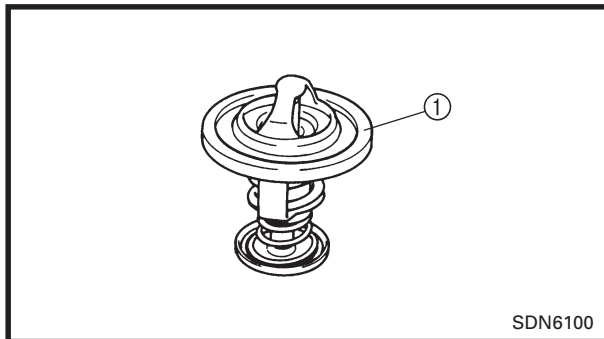
Order	Job name/Part name	Q'ty	Remarks
	Outlet water jacket joint disassembly		
	Outlet water jacket joint		Remove the parts in the order listed below. Refer to "CYLINDER HEAD AND CYLINDER" in CHAPTER 5.
①	Washer	2	
②	Carburetor heating knob	1	
③	O-ring	1	
④	Thermostat cover	1	
⑤	Thermostatic valve	1	
⑥	Gasket	1	
⑦	Water temperature sensor	1	
⑧	Washer	1	
⑨	Outlet water jacket joint	1	
			For assembly, reverse the disassembly procedure.



INSPECTION

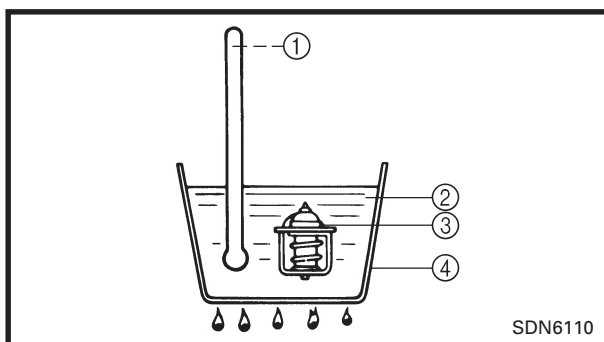
1. Inspect:

- Carburetor heating knob ①
 - Thermostat cover ②
 - Outlet water jacket joint ③
- Cracks/damage → Replace.



2. Inspect:

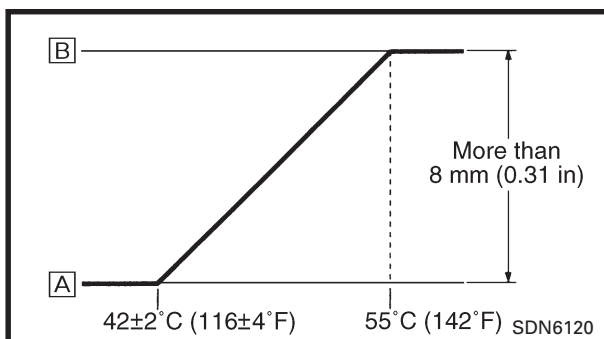
- Thermostatic valve ①
- Valve does not open at 40 ~ 44°C (112 ~ 120°F) → Replace.



Inspection steps:

- Suspend thermostatic valve in a vessel.
- Place reliable thermometer in a water.
- Observe thermometer, while stirring water continually.

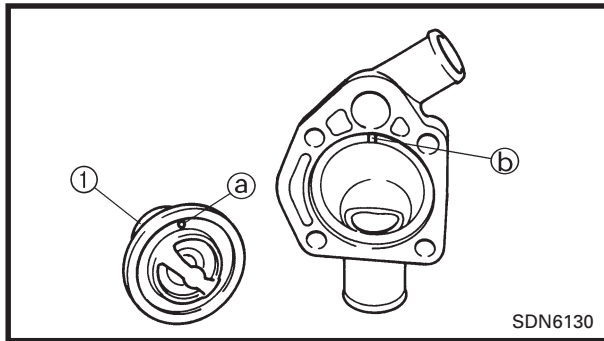
- ① Thermometer
- ② Water
- ③ Thermostatic valve
- ④ Vessel



- A CLOSE
- B OPEN

NOTE:

Thermostatic valve is sealed and its setting is specialized work. If its accuracy is in doubt, replace it. A faulty unit could cause serious over-heating or over-cooling.



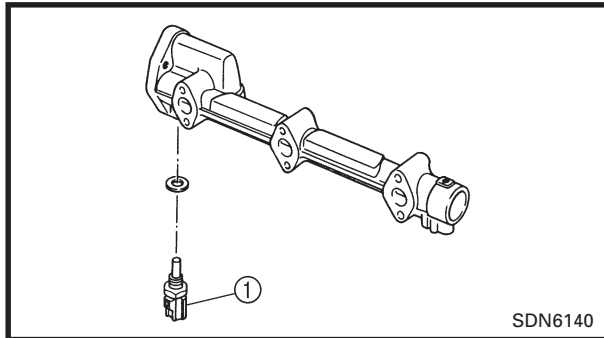
INSTALLATION

1. Install:

- Thermostat ①

NOTE:

Align the hole (a) in the thermostat with to notch (b) in the thermostat cover.



2. Install:

- Thermo sensor ①



Water temperature sensor ①:
23 Nm (2.3 m • kg, 17 ft • lb)

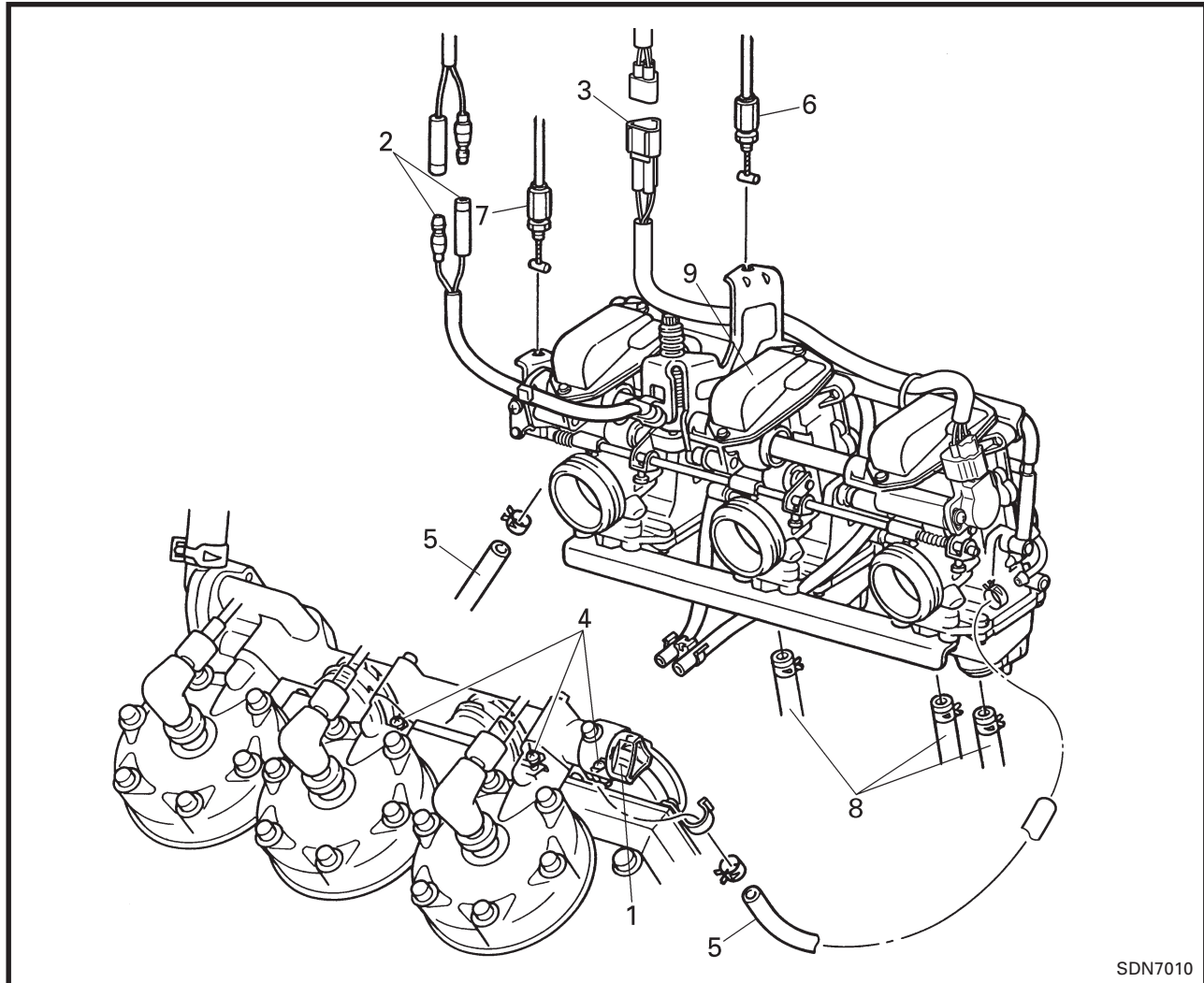
CAUTION:

Be very careful when handling the water temperature sensor and thermo unit. Replace parts that were subjected to impacts or were dropped.



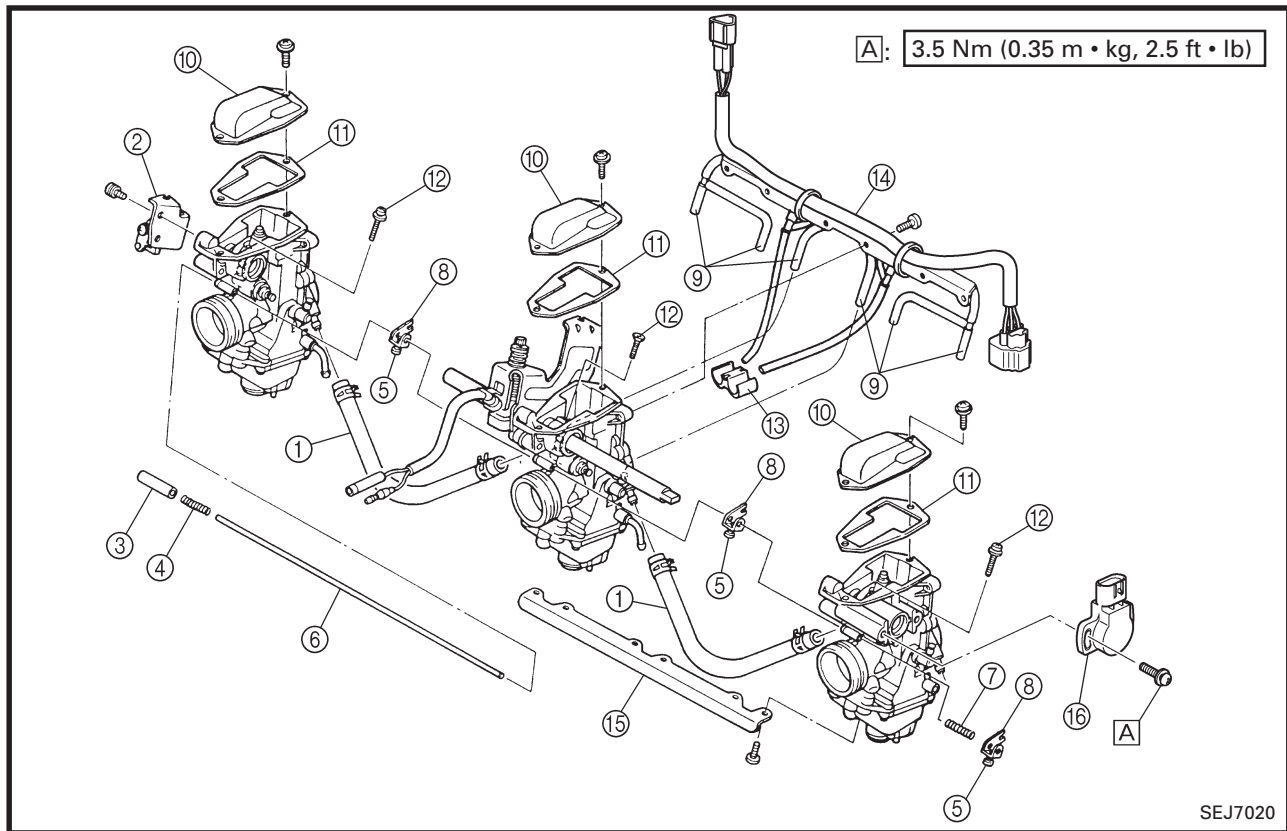
CARBURETION

CARBURETORS



SDN7010

Order	Job name/Part name	Q'ty	Remarks
	Carburetors removal		
	Servomotor assembly		Remove the parts in the order listed below. Refer to "YAMAHA POWER VALVE SYSTEM (Y.P.V.S.)" in CHAPTER 5.
1	Intake silencer	1	Refer to "FUEL PUMP".
	Carburetor heating knob	1	Before removing the carburetors, make sure that the carburetor heating knob is turned to "OFF".
2	Carburetor switch (T.O.R.S.) lead	2	
3	Throttle position sensor coupler	1	Disconnect.
4	Clamp screw	6	Loosen.
5	Carburetor heating hose	2	
6	Throttle cable	1	
7	Starter cable	1	
8	Fuel hose	3	Disconnect.
9	Carburetor	3	
			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 heating hose	2	
②	Starter cable holder	1	
③	Collar	1	
④	Spring	1	
⑤	Screw	3	Loosen.
⑥	Starter rod	1	
⑦	Spring	1	
⑧	Starter lever	3	
⑨	Breather hose	6	
⑩	Top cover	3	
⑪	Gasket	3	
⑫	Throttle shaft connecting screw	3	
⑬	Clamp	1	
⑭	Connecting plate (upper)	1	
⑮	Connecting plate (lower)	1	
⑯	Throttle position sensor	1	NOTE: • Since the oil seal remains on the carburetor body when the TPS is removed, fit it back on the TPS when reinstalling it. • Measure the resistance and adjust the position of the TPS as needed, then securely install it.
			For assembly, reverse the separation procedure.

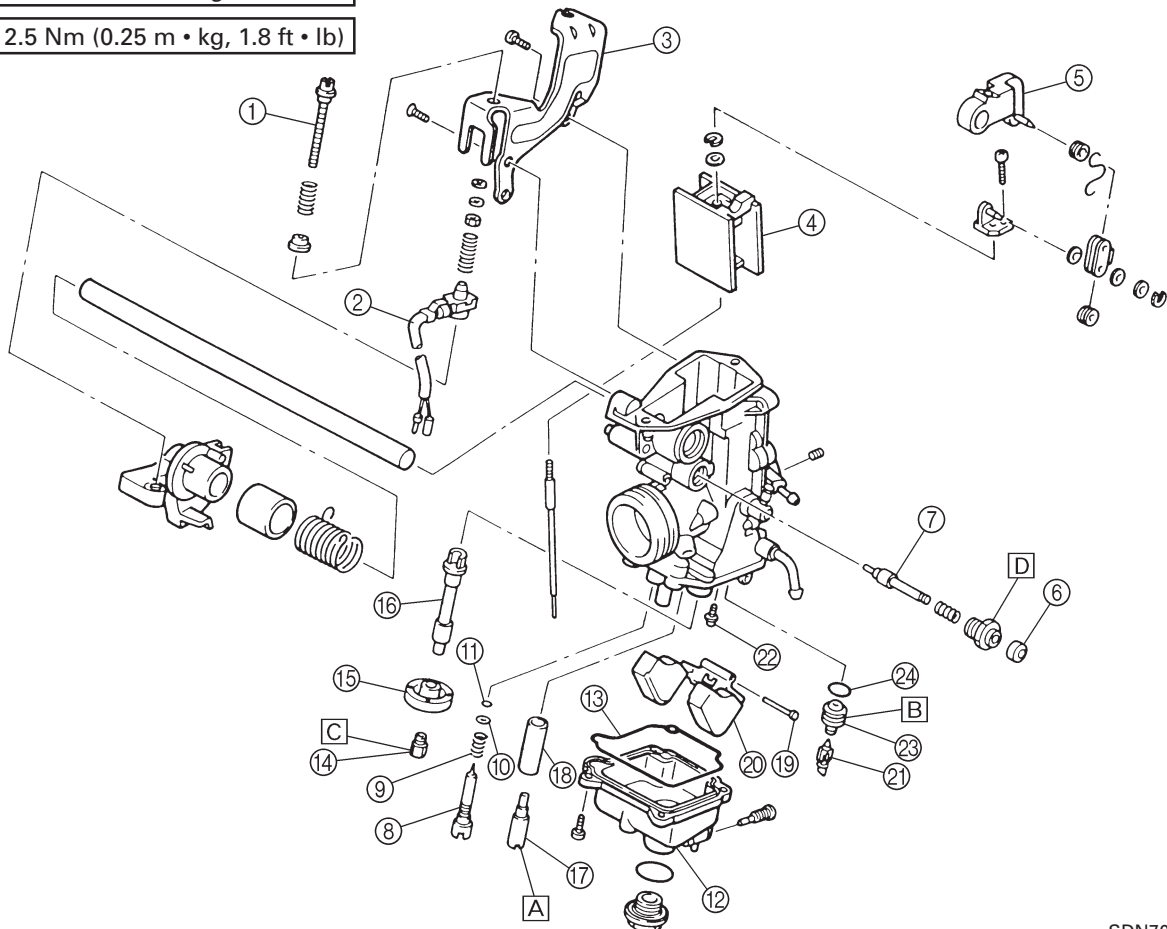


[A]: 0.7 Nm (0.07 m • kg, 0.51 ft • lb)

[B]: 1 Nm (0.1 m • kg, 0.7 ft • lb)

[C]: 1.8 Nm (0.18 m • kg, 1.3 ft • lb)

[D]: 2.5 Nm (0.25 m • kg, 1.8 ft • lb)



SDN7030

Order	Job name/Part name	Q'ty	Remarks
	Carburetor disassembly		Remove the parts in the order listed below. Turn clockwise.
①	Throttle stop screw	1	
②	Carburetor switch (T.O.R.S.)	1	
③	Throttle cable holder	1	
④	Throttle valve assembly	1	
⑤	Inner throttle lever assembly	1	
⑥	Boot	1	
⑦	Starter plunger assembly	1	
⑧	Pilot mixture screw	1	
⑨	Spring	1	
⑩	Washer	1	
⑪	O-ring	1	
⑫	Float chamber	1	

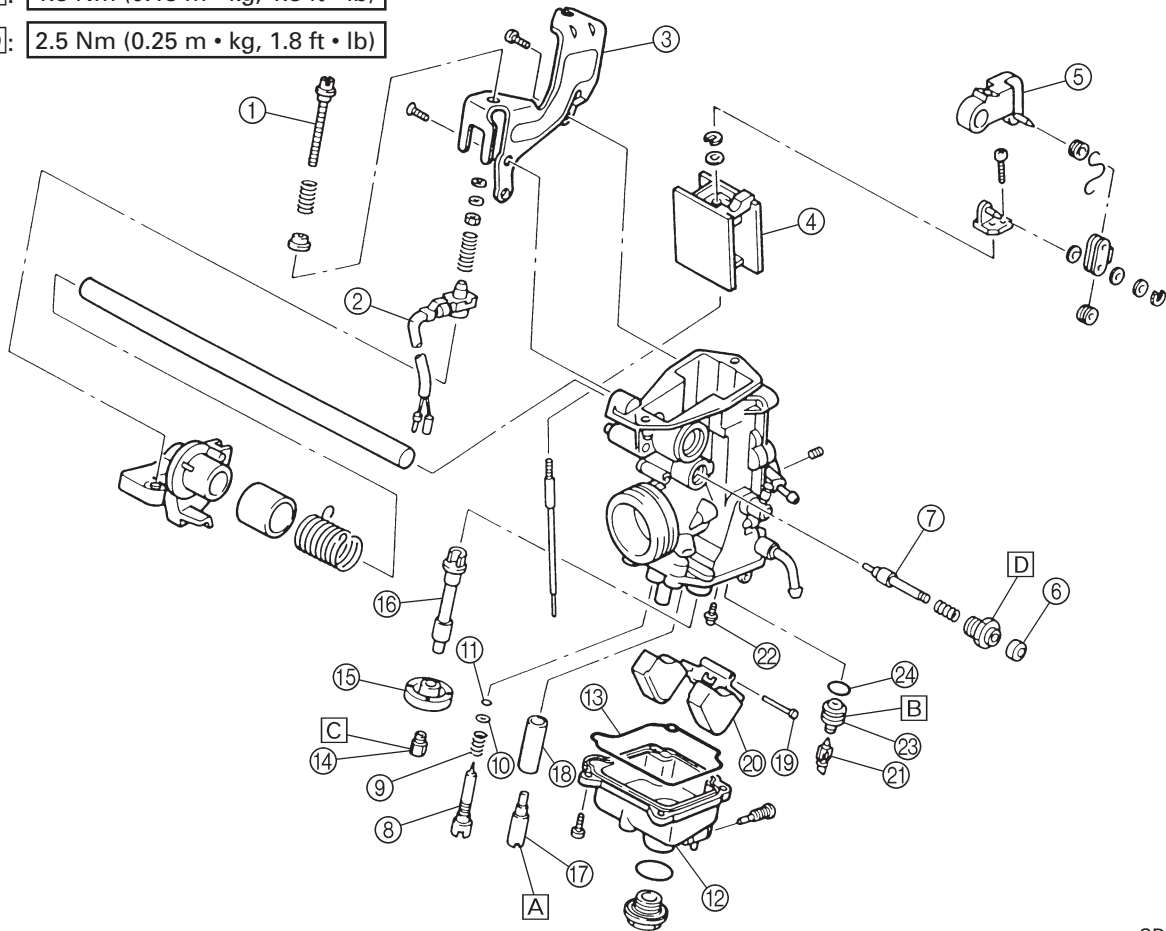


[A]: 0.7 Nm (0.07 m • kg, 0.5 ft • lb)

[B]: 1 Nm (0.1 m • kg, 0.7 ft • lb)

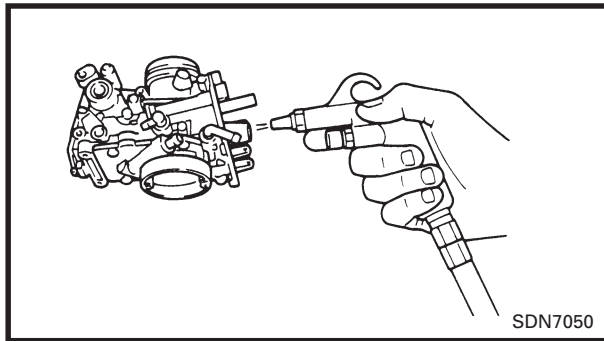
[C]: 1.8 Nm (0.18 m • kg, 1.3 ft • lb)

[D]: 2.5 Nm (0.25 m • kg, 1.8 ft • lb)



SDN7040

Order	Job name/Part name	Q'ty	Remarks
⑬	Gasket	1	For assembly, reverse the disassembly procedure.
⑭	Main jet	1	
⑮	Main jet ring	1	
⑯	Main nozzle	1	
⑰	Pilot jet	1	
⑱	Pilot jet sleeve	1	
⑲	Float pin	1	
⑳	Float	1	
㉑	Needle valve	1	
㉒	Screw (valve seat)	1	
㉓	Valve seat assembly	1	
㉔	O-ring	1	



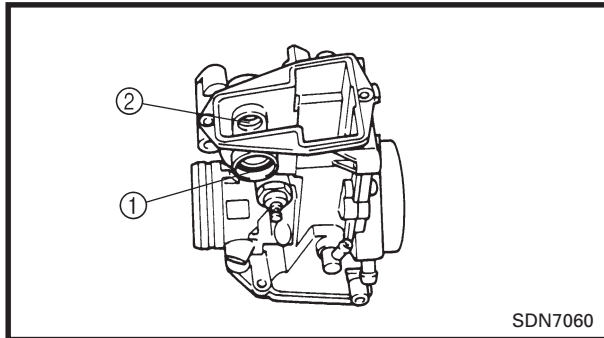
INSPECTION

1. Inspect:

- Carburetor body
 - Fuel passage
- Contamination → Clean.

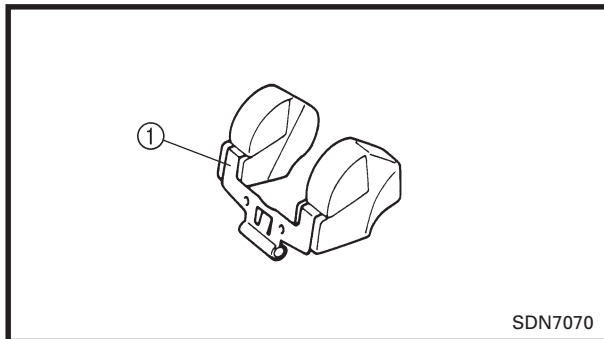
NOTE:

- Use a petroleum based solvent for cleaning.
- Blow out all passages and jets with compressed air.



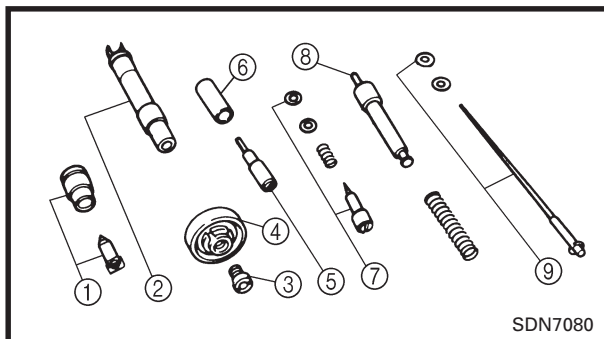
2. Inspect:

- Rubber seals ①
 - Bearing ②
- Wear/damage → Replace.



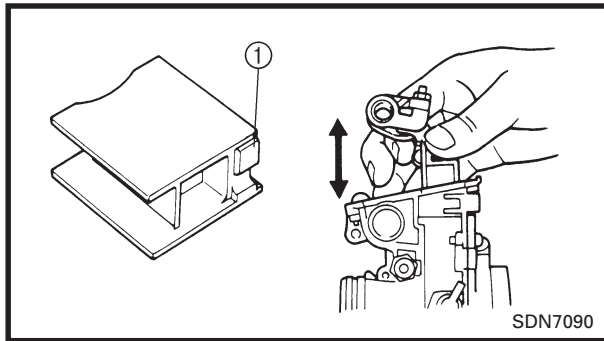
3. Inspect:

- Float ①
- Damage → Replace.



4. Inspect:

- Valve seat assembly ①
 - Main nozzle ②
 - Main jet ③
 - Main jet ring ④
 - Pilot jet ⑤
 - Pilot jet sleeve ⑥
 - Pilot mixture screw assembly ⑦
 - Starter plunger assembly ⑧
 - Jet needle ⑨
- Bends/wear/damage → Replace.
Blockage → Blow out the jets with compressed air.



5. Inspect:

- Throttle valve ①
Wear/damage → Replace.

6. Check:

- Throttle valve movement
Sticks → Replace carburetor body assembly.

ASSEMBLY

NOTE:

- Before reassembling, wash all parts in clean gasoline.
- Always use new gaskets and O-rings.

1. Tighten:

- Inner parts



Pilot air jet:

0.7 Nm (0.07 m • kg, 0.51 ft • lb)

Screw (valve seat):

1 Nm (0.1 m • kg, 0.7 ft • lb)

Pilot jet:

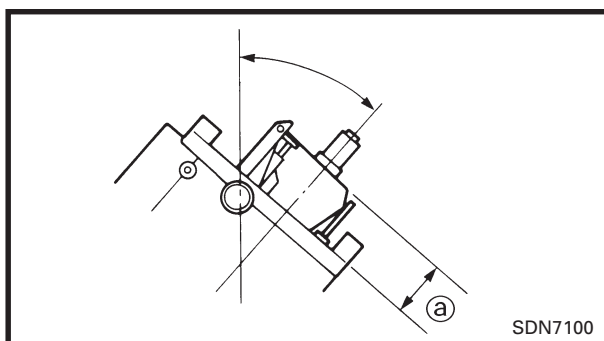
0.7 Nm (0.07 m • kg, 0.51 ft • lb)

Main jet:

1.8 Nm (0.18 m • kg, 1.3 ft • lb)

Starter plunger assembly:

2.5 Nm (0.25 m • kg, 1.8 ft • lb)



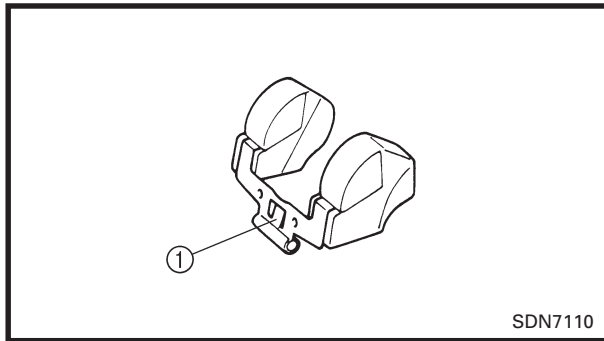
2. Measure:

- Float height ②
Out of specification → Adjust.



Float height ②:

11.3 ~ 15.3 mm (0.44 ~ 0.60 in)

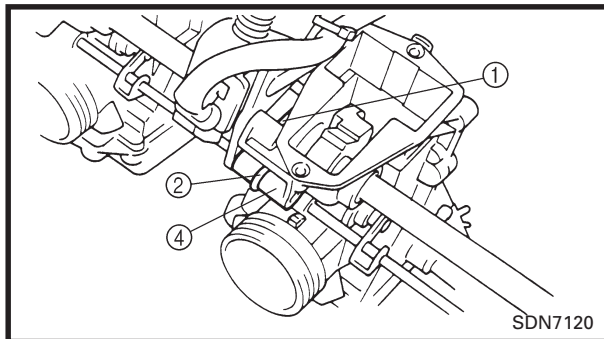
**Measurement and adjustment steps:**

- 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.

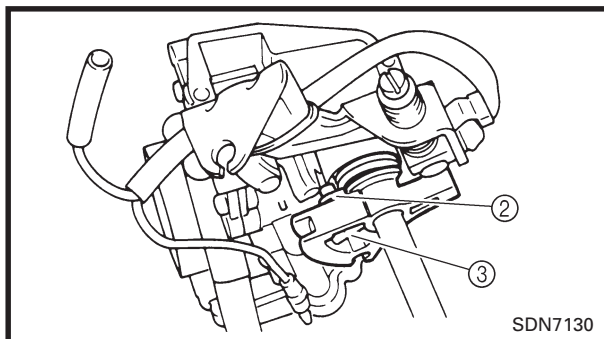
- If the float height is not within specification, inspect the valve seat and needle valve.
- If either is worn, replace them both.
- If both are fine, adjust the float height by bending the float arm tang ① on the float.
- Recheck the float height.

**3. Install:**

- Return springs ①
- Carburetors (No.1, No.3)

NOTE:

Hook the spring hooks ② to the projections on the connecting lever ③ and carburetor body ④ while twisting the spring clockwise approximately 315 degrees.





FUEL LEVEL ADJUSTMENT

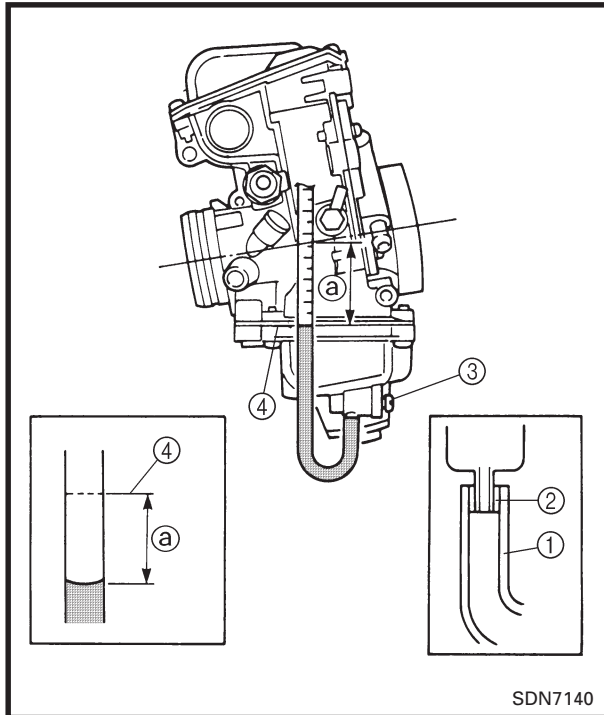
1. Measure:

- Fuel level

Out of specification → Adjust.



Fuel level (from the bore center) ①:
36 ~ 38 mm (1.42 ~ 1.50 in)



Measurement and adjustment steps:

- Place the machine on a level surface.
- Attach the fuel level gauge ① to the float chamber nozzle.

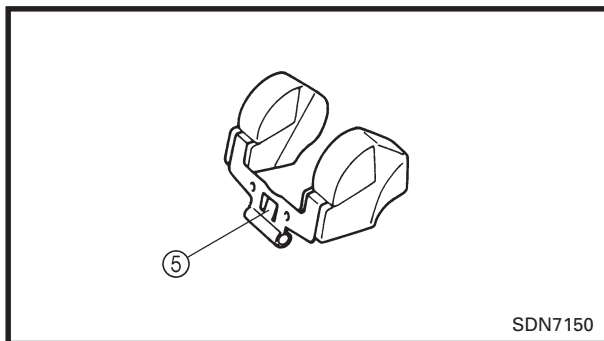


Fuel level gauge:
90890-01312, YM-01312-A

NOTE:

Use the adapter (outside diameter $\phi 6$ hose) ② when attaching the fuel level gauge.

- Loosen the drain screw ③ and start the engine.
- Place the tube along the seam line ④ of the carburetor body.
- Measure the fuel level ① with the gauge.
- If the fuel level is incorrect, adjust the fuel level.
- Remove the carburetor.
- 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 tang ⑤ on the float.
- Recheck the fuel level.

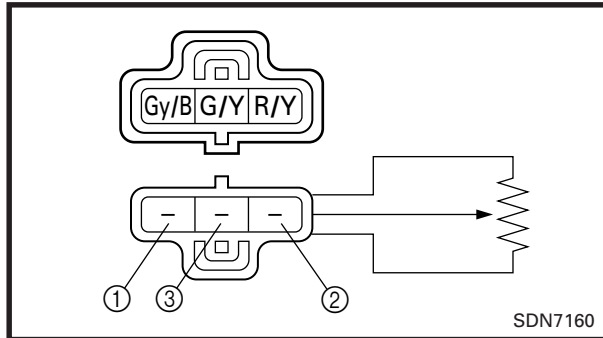




THROTTLE POSITION SENSOR (TPS) INSPECTION AND ADJUSTMENT

NOTE:

Before adjusting the TPS, properly adjust the idle speed.



1. Inspect:

- TPS

Inspection steps:

- Disconnect TPS coupler.
- Connect the pocket taster ($\Omega \times 1k$) to the TPS coupler.

Tester (-) lead → **Gray/Black terminal ①**

Tester (+) lead → **Red/Yellow terminal ②**

- Check the TPS resistance.



TPS resistance "R₁":

4 ~ 6 k Ω at 20°C (68°F)

(Gray/Black - Red/Yellow)

Out of specification → Replace the TPS.

- Connect the pocket taster ($\Omega \times 1k$) to the TPS coupler.

Tester (-) lead → **Gray/Black terminal ①**

Tester (+) lead → **Green/Yellow terminal ③**

- While slowly pushing the throttle check the TPS resistance.



TPS resistance "R₂":

0 ~ 5 k Ω at 20°C (68°F)

(Gray/Black - Green/Yellow)

Out of specification → Replace the TPS.



2.Adjust:

- TPS position

Adjustment steps:

- Disconnect the TPS coupler.
- Connect the test coupler to the TPS.
- 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 → ②

- Measure the voltage ①.

NOTE:

When measuring the voltage ① be sure that the test coupler is connected to the TPS.

- Calculate the voltage ②.

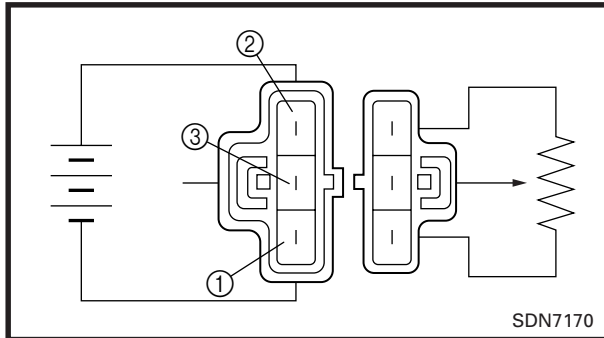
Voltage ② = Voltage ① × (0.136)

- Loosen the TPS bolts ④.
- Connect the digital multimeter to the test coupler.

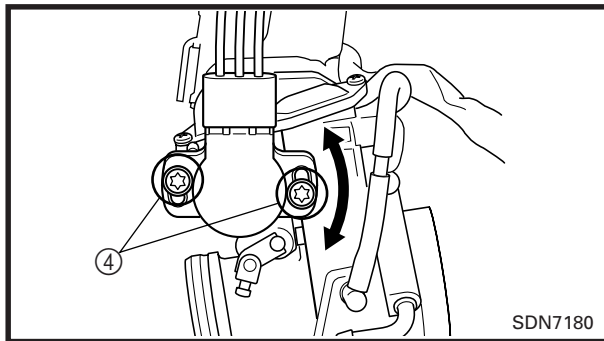
Digital multimeter (-) lead → ①

Digital multimeter (+) lead → ③

- Adjust the TPS position to obtain the specified voltage ②.
- Tighten the TPS bolts ④.
- Disconnect the test coupler and connect the TPS coupler.



SDN7170



SDN7180



INSTALLATION

NOTE:

After installing all parts, refer to "CABLE ROUTING" in chapter 9, to check the cable, lead and hose routings.

1. Adjust:

- Starter cable freeplay

Refer to "STARTER (CHOKE) CABLE ADJUSTMENT" in CHAPTER 2.

2. Bleed:

- Cooling system

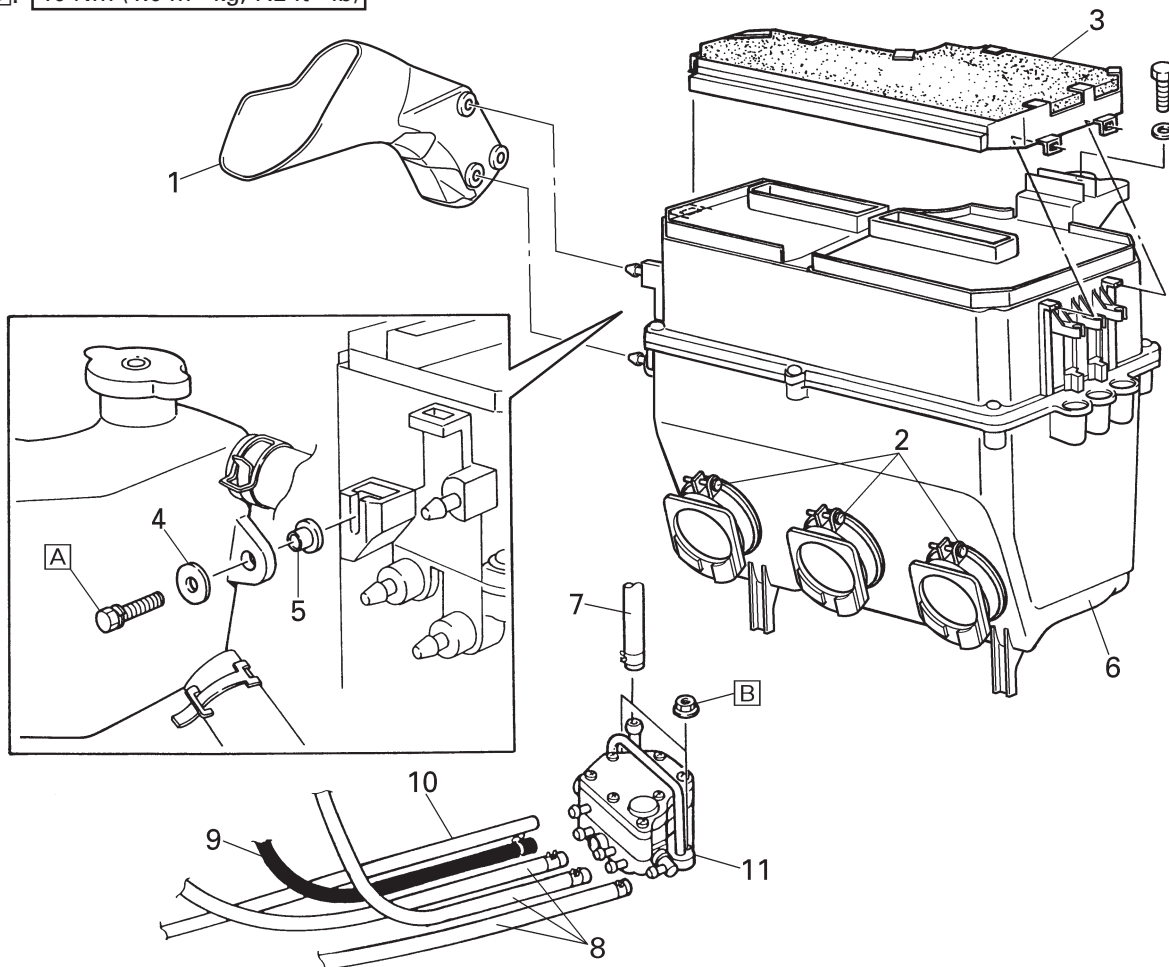
Refer to "COOLING SYSTEM" in CHAPTER 2.



FUEL PUMP

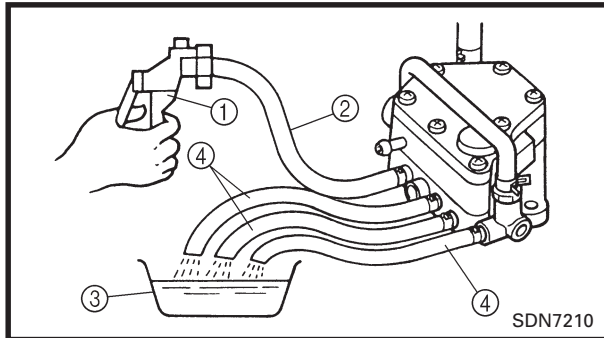
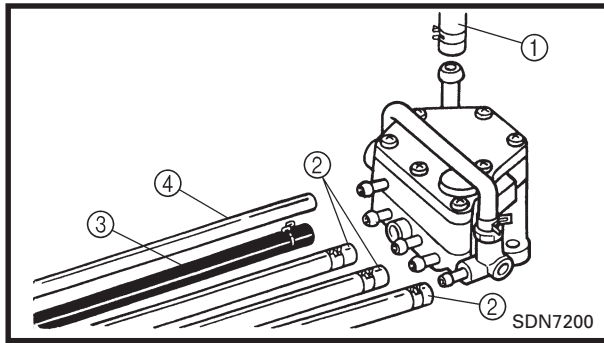
[A]: 7 Nm (0.7 m • kg, 5.1 ft • lb)

[B]: 10 Nm (1.0 m • kg, 7.2 ft • lb)



SDN7190

Order	Job name/Part name	Q'ty	Remarks
	Fuel pump removal		
1	Air duct	1	Remove the parts in the order listed below.
2	Screw	3	Loosen.
3	Air filter element	1	
4	Washer	1	
5	Collar	1	
6	Intake silencer	1	
7	Fuel hose	1	
8	Fuel delivery hose	3	
9	Vacuum hose	1	
10	Oil hose	1	
11	Fuel pump assembly	1	
			For installation, reverse the removal procedure.



INSPECTION

1. Inspect:

- Fuel hose ①
 - Fuel delivery hoses ②
 - Vacuum hose ③
 - Oil delivery hose ④
- Clogs/damage → Replace.

2. Check:

- Fuel pump operation

Checking steps:

- Connect the Mity vac ① to the pulser hose ②.



Mity vac:
90890-06756, YB-35956

- Place a container ③ under the end of the fuel delivery hoses ④.
- Operate the Mity vac ① while checking that fuel flows from the fuel delivery hoses ④.
- If fuel does not flow out, replace the fuel pump.

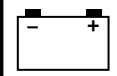
INSTALLATION

NOTE:

After installing all parts, refer to "CABLE ROUTING" in chapter 9, to check the cable, lead and hose routings.

1. Bleed:

- Oil system
- Refer to "OIL PUMP" in CHAPTER 2.



ELECTRICAL

SWITCH INSPECTION

SWITCH INSPECTION

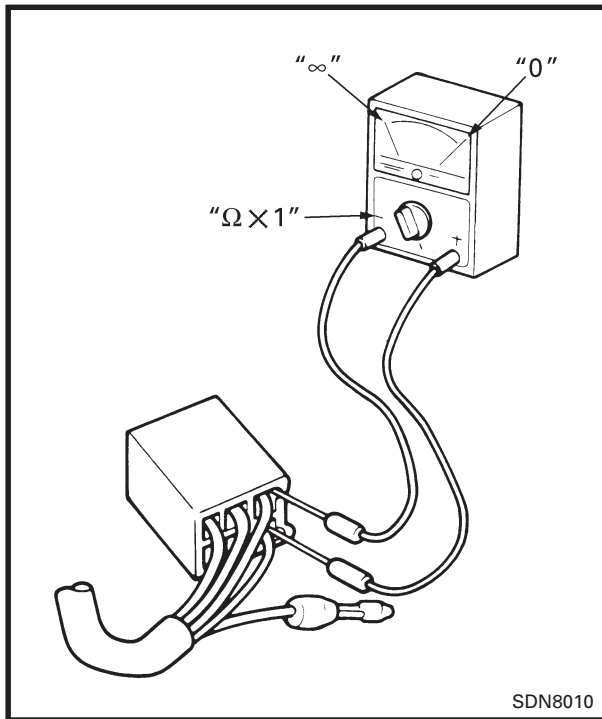
Use a pocket tester to check the terminals for continuity. If the continuity is faulty at any point, replace the switch.



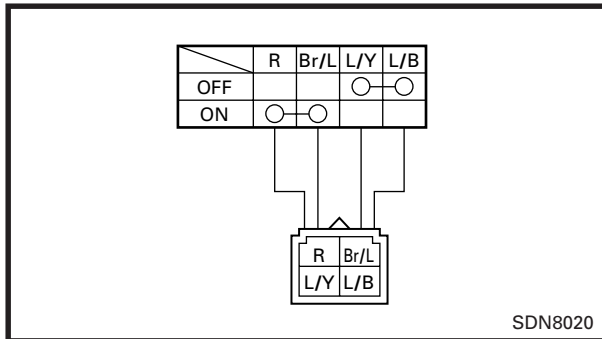
Pocket tester:
90890-03112, YU-03112

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 " $\times 1$ " Ω range.
- When checking the switch turn it on and off a few times.



SDN8010



SDN8020

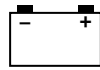
INSPECTING A SWITCH SHOWN IN THE MANUAL

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.

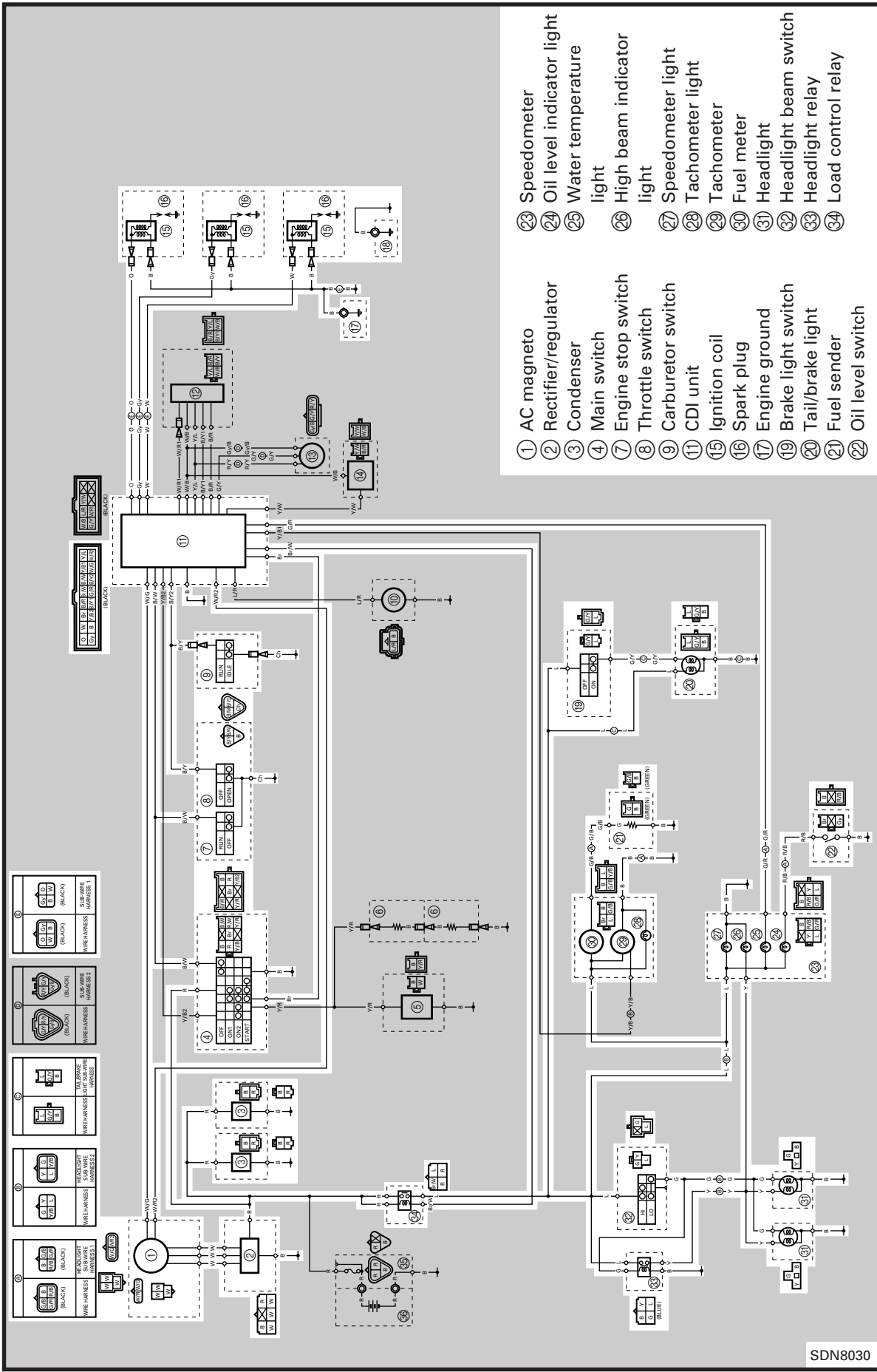
This chart shows the switch positions in the column and the switch lead colors in the top row. For each switch position, "○—○" indicates the terminals with continuity.

The example chart shows that:

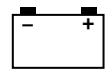
- ① There is continuity between the "Blue/Yellow and Blue/Black" leads when the switch is set to "OFF".
- ② There is continuity between the "Red and Brown/Blue" leads when the switch is set to "ON".



IGNITION SYSTEM
CIRCUIT DIAGRAM



SDN8030



TROUBLESHOOTING

NO SPARK OR WEAK SPARK.

Check the spark plug gap.



OK

OUT OF SPECIFICATION



Repair or replace the spark plug.

Check the spark plug cap resistance.



OK

OUT OF SPECIFICATION



Replace the spark plug cap.

Check the ignition coil resistance.



OK

OUT OF SPECIFICATION



Replace the ignition coil.

Check the stator coil and pickup coil.



OK

FAULTY



Replace the AC magneto.

Check for voltage on the condenser coupler.



OK

OUT OF SPECIFICATION



Correct connection and/or replace the DC regulator.

Check the condenser.



OK

OUT OF SPECIFICATION



Replace the condenser.

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 lighting, signal and
meter system. Refer to "LIGHTING
SYSTEM" and "SIGNAL SYSTEM".



OK

FAULTY

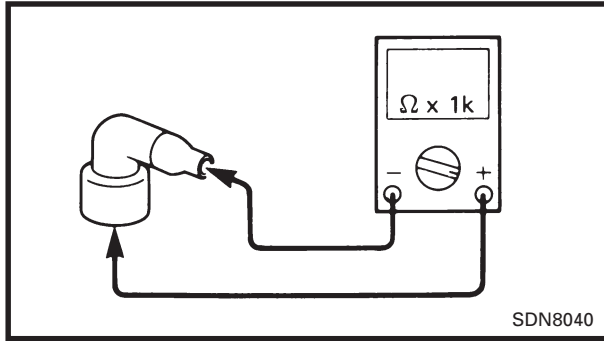
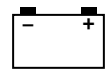


Repair the lighting system and/or signal system and/or meter system.

Correct connection and/or replace
CDI unit and/or Rectifier/regulator.

NOTE:

If a short circuit occurred in the lighting system, the signal system, or the meter system, the engine can be started and the vehicle ridden in an emergency by cutting off the load control relay.



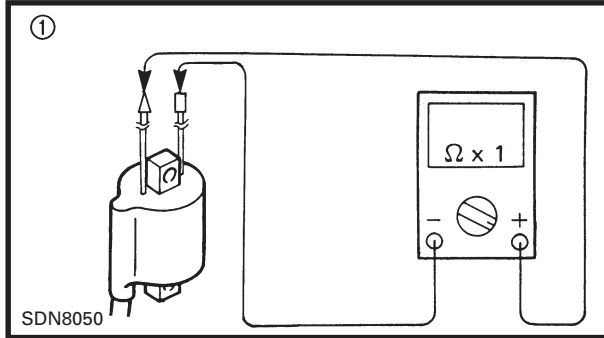
SPARK PLUG CAP

1. Remove:
 - Spark plug cap
2. Connect:
 - Pocket tester
(to the spark plug cap)
3. Measure:
 - Spark plug cap resistance

Out of specification → Replace.



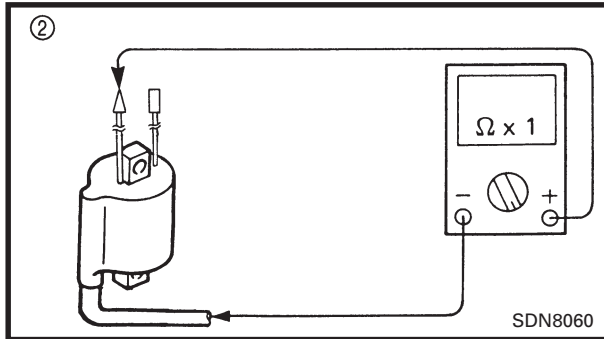
Spark plug cap resistance:
5 kΩ at 20°C (68°F)



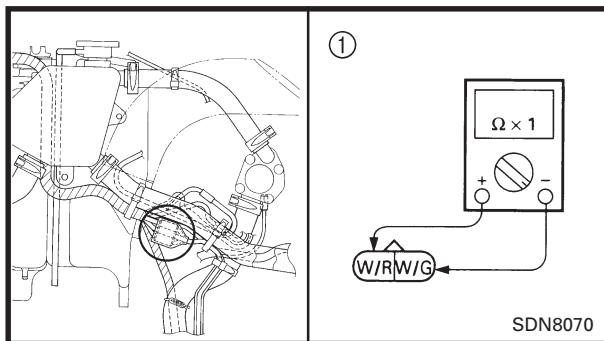
IGNITION COIL

1. Disconnect:
 - Ignition coil lead
 - Spark plug lead
2. Connect:
 - Pocket tester
(to the ignition coil and spark plug lead)
3. Measure:
 - Primary coil resistance ①
 - Secondary coil resistance ②

Out of specification → Replace.



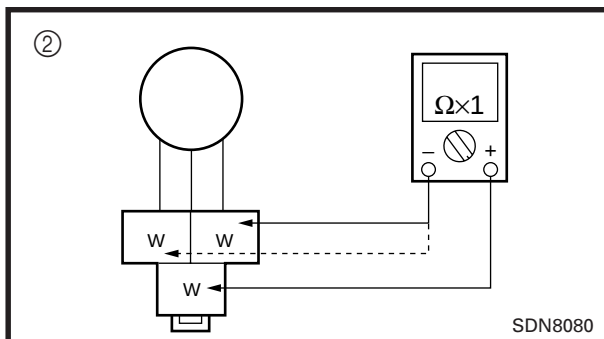
Primary coil resistance ①:
0.38 ~ 0.46 Ω at 20°C (68°F)
Secondary coil resistance ②:
5.8 ~ 7.0 kΩ at 20°C (68°F)



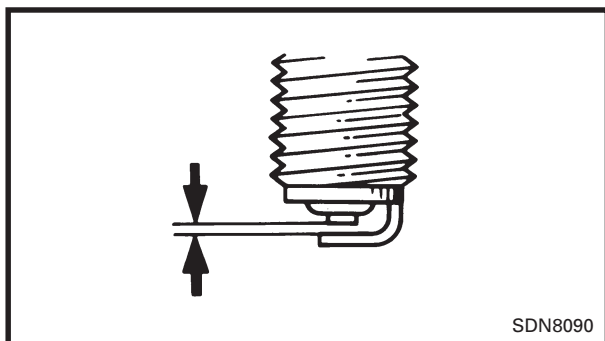
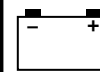
AC MAGNETO

1. Disconnect:
 - AC magneto coupler
2. Connect:
 - Pocket tester
(to the AC magneto coupler)
3. Measure:
 - Charge coil/pickup coil resistances

Out of specification → Replace.



Pickup coil resistance ①:
(White/Red – White/Green)
189 ~ 231 Ω at 20°C (68°F)
Charge coil resistance ②:
(White – White)
0.36 ~ 0.44 Ω at 20°C (68°F)



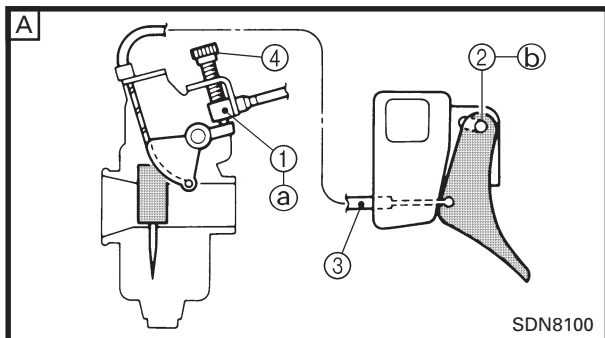
SPARK PLUG

1. Remove:
 - Spark plugs
2. Measure:
 - Spark plug gap

Standard spark plug:
BR9ECS (NGK)



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



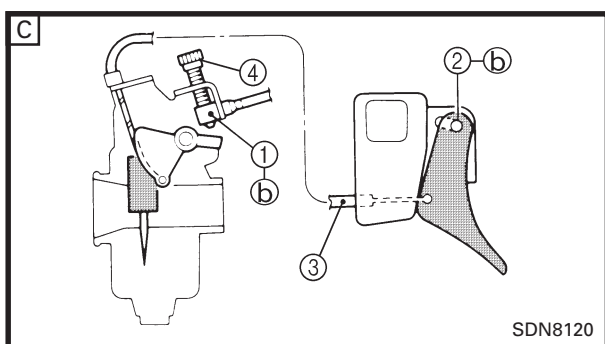
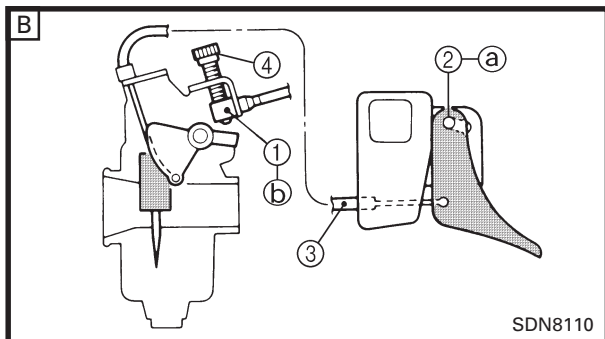
THROTTLE OVERRIDE SYSTEM (T.O.R.S.)

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.

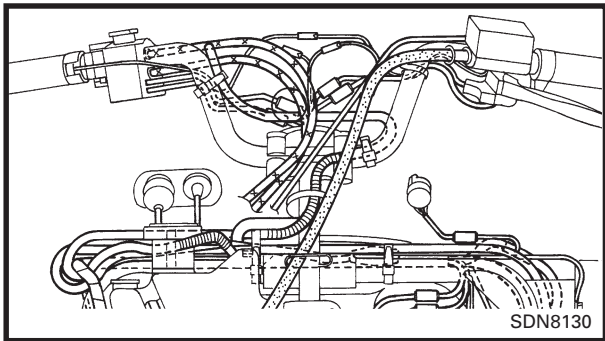
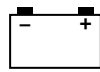
⚠ WARNING

- 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
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
- Ⓐ ON
- Ⓑ OFF



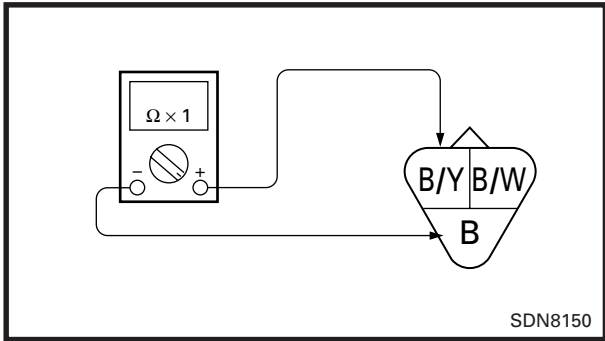
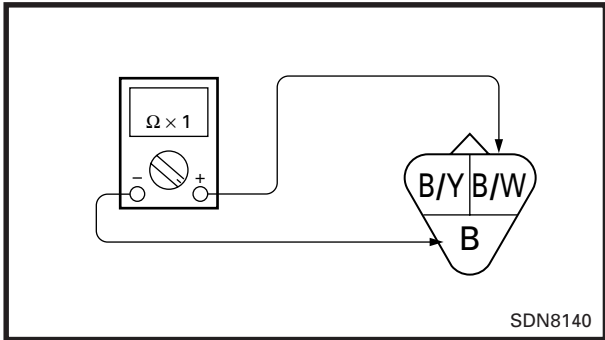
HANDLEBAR SWITCH (RIGHT)

Engine stop switch and throttle switch

1. Disconnect:
 - Handlebar switch (right) coupler
2. Connect:
 - Pocket tester

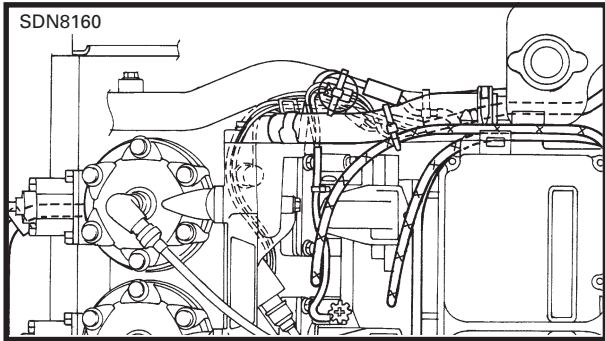
3. Check:
 - Engine stop switch continuity
Faulty → Replace the handlebar switch (right).

Switch position	Continuity
RUN (pulled out)	Yes
OFF (pushed in)	No



4. Check:
 - Throttle switch continuity
Faulty → Replace the handlebar switch (right).

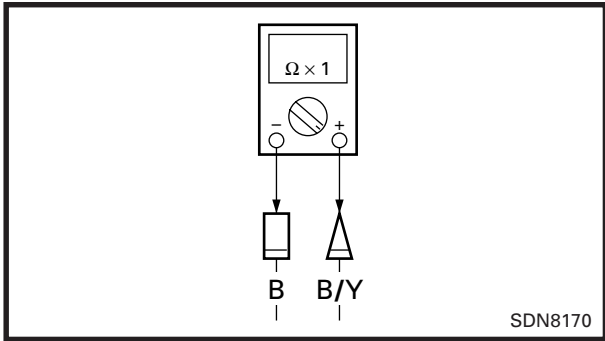
Throttle switch position	Continuity
Throttle lever is operated.	Yes
Throttle lever is not operated.	No

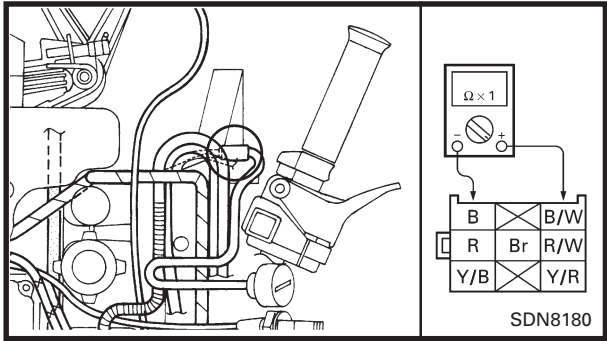
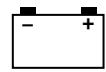


CARBURETOR SWITCH

1. Disconnect:
 - Carburetor switch lead
2. Connect:
 - Pocket tester
3. Check:
 - Carburetor switch continuity
Faulty → Replace.

Carburetor switch position	Continuity
Throttle lever is operated.	No
Throttle lever is not operated.	Yes





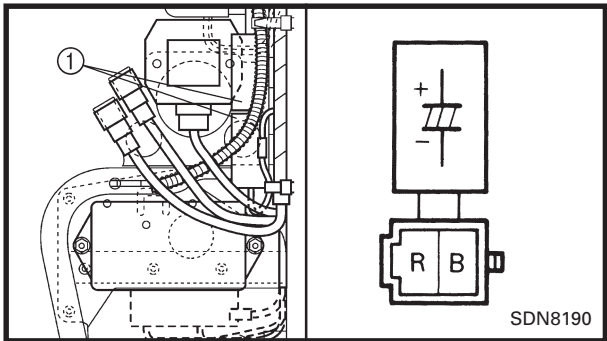
MAIN SWITCH

1. Disconnect:
 - Main switch coupler
2. Connect:
 - Pocket tester
3. Check:
 - Main switch continuityFaulty → Replace.

Switch position	Continuity
OFF	Yes
ON	No

Switch position	Color code						
	Y/B	Y/R	Br	R	R/W	B	B/W
OFF						○	○
ON1			○	○			
ON2	○	○	○	○			
START			○	○	○		

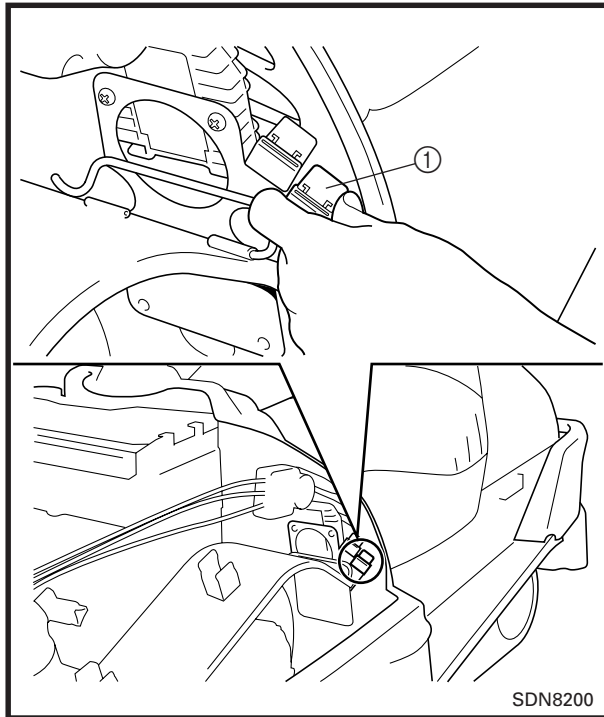
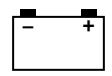
○—○ Continuity



CONDENSER

1. Disconnect:
 - Condenser ①
2. Connect:
 - Condenser(to the LCR meter)
3. Measure:
 - Condenser capacityOut of specification → Replace.

	Condenser capacity: 4,700 μ F at 20°C (68°F)
--	--

**EMERGENCY ENGINE STARTING**

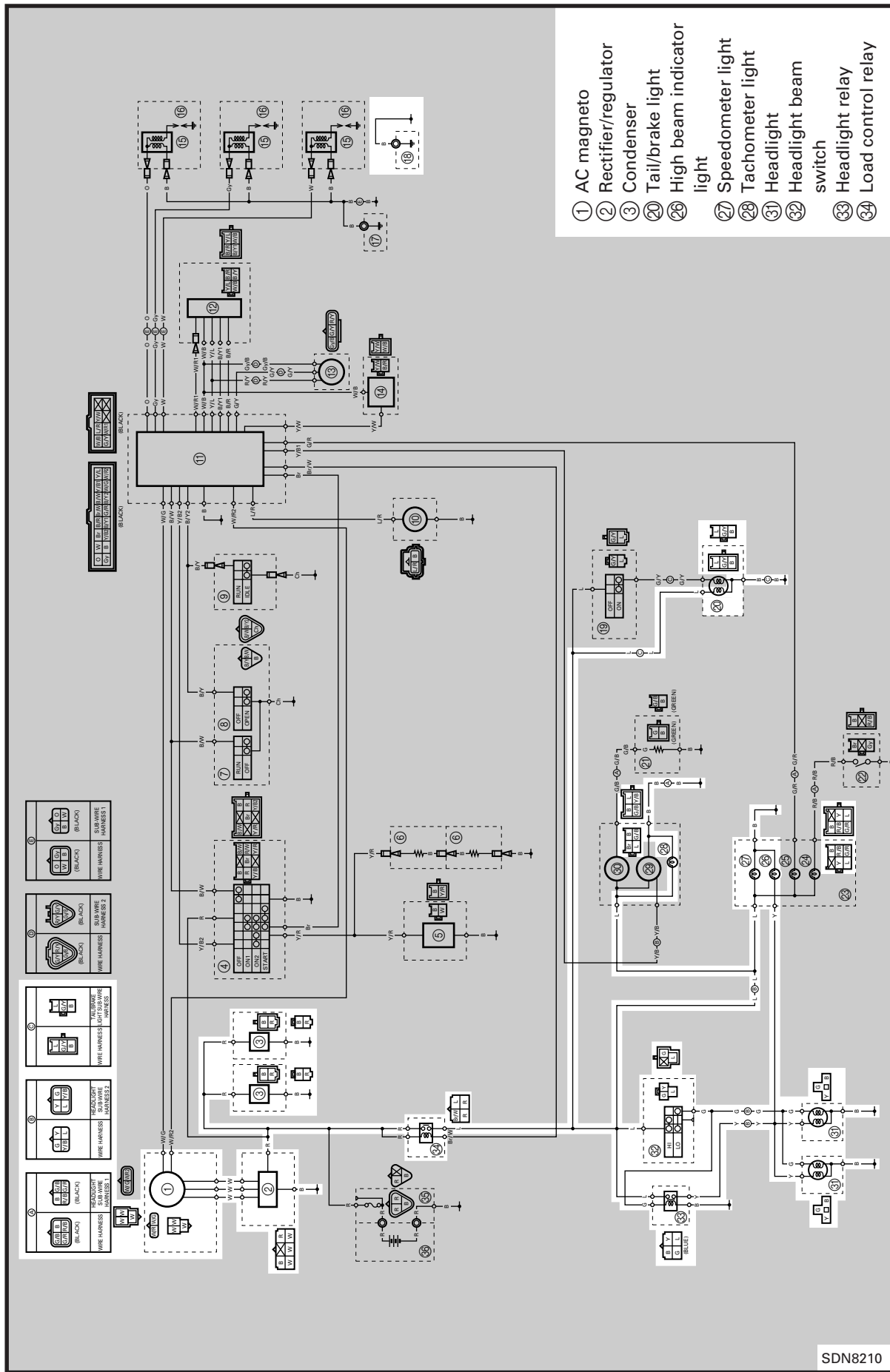
If a short circuit occurred in the lighting system, the signal system, or the meter system, the engine can be started and the vehicle ridden in an emergency by cutting off the load control relay.

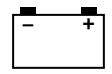
1. Disconnect:

- Load control relay (white) ①

2. Start the engine.

LIGHTING SYSTEM CIRCUIT DIAGRAM





TROUBLESHOOTING

HEADLIGHT, TAIL LIGHT AND/OR METER LIGHT DO NOT COME ON.

Check the bulb(s).



OK

NO CONTINUITY



Replace the bulb(s).

Check the headlight relay and load control relay.



OK

FAULTY



Replace the headlight relay and/or load control relay.

Check for voltage on the condenser coupler.



OK

OUT OF SPECIFICATION



Correct connection and/or replace the DC regulator.

Check the condenser.



OK

OUT OF SPECIFICATION



Replace the condenser.

Check the headlight beam switch and stator coil.



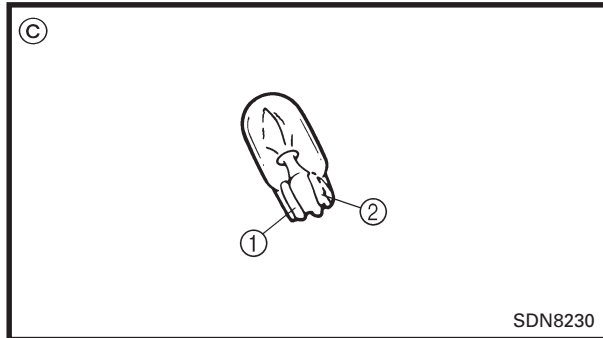
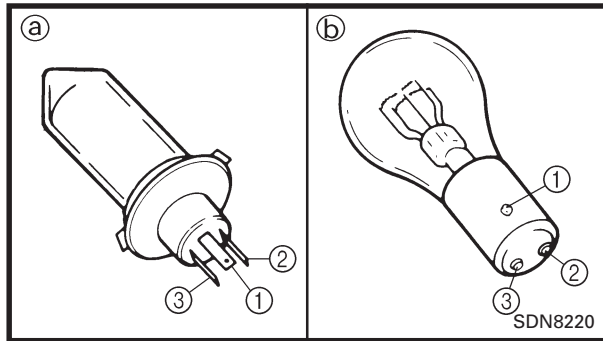
OK

FAULTY



Replace the headlight beam switch and/or the AC magneto.

Correct the connection and/or replace the rectifier/regulator.



BULB(S)

1. Remove:
 - Headlight bulb ①
 - Tail/brake light bulb ②
 - Meter light bulb ③
2. Connect:
 - Pocket tester
(to the bulb terminals)

⚠ WARNING

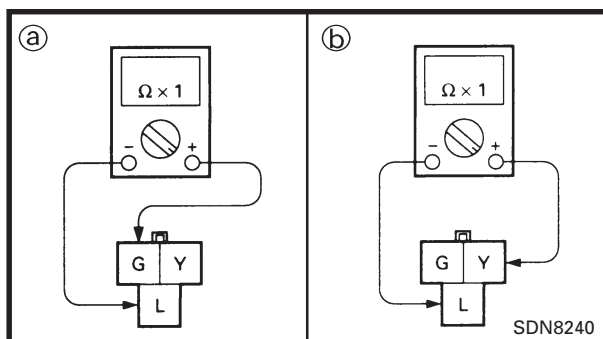
Keep flammable products and your hands away from the bulb while it is on; it will be hot. Do not touch the bulb until it cools down.

3. Check:
 - Bulb(s)

Terminal	Continuity
① – ②	Yes
① – ③	Yes

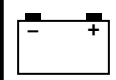
HEADLIGHT BEAM SWITCH

1. Disconnect:
 - Headlight beam switch coupler
2. Connect:
 - Pocket tester
(to the headlight beam switch coupler)

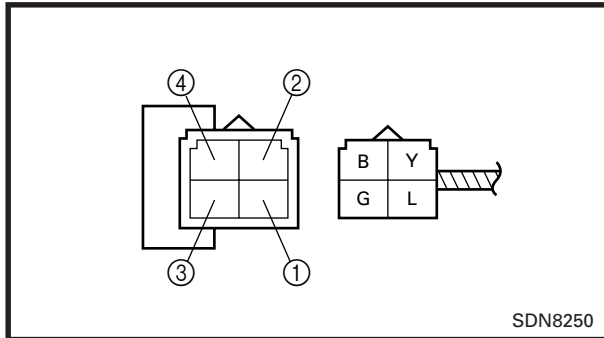
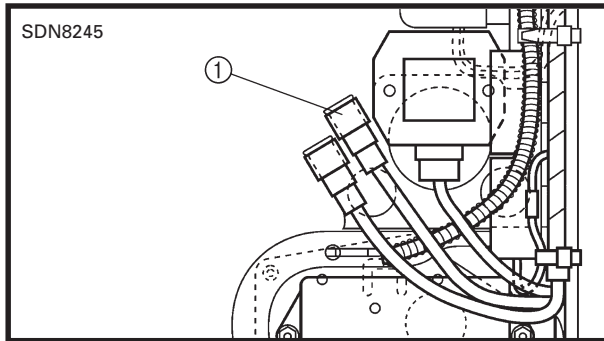


3. Check:
 - Headlight beam switch continuity
Faulty → Replace.

Switch position	① Continuity	② Continuity
HI	No	Yes
LO	Yes	No



SDN8245



SDN8250

HEADLIGHT RELAY

1. Inspect:

- Headlight relay (blue) ①

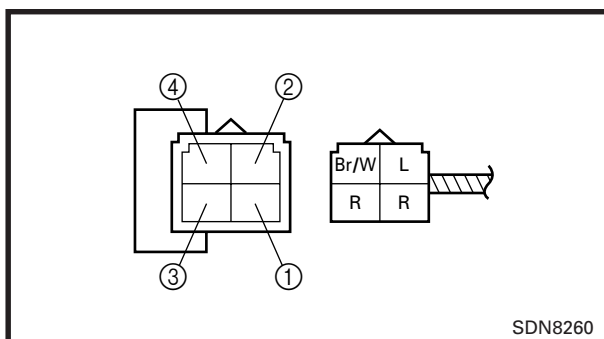
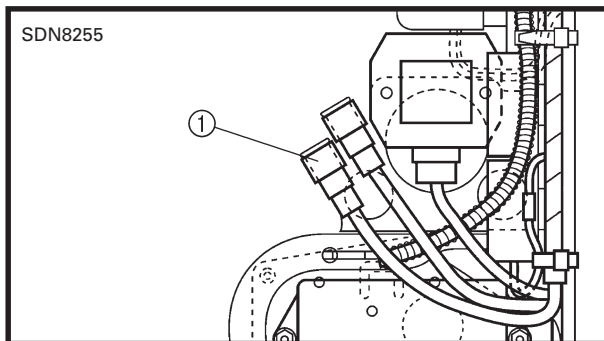
Inspection steps:

- 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 → **Green** ①**Negative battery terminal** → **Black** ②**Positive tester probe** → **Blue** ③**Negative tester probe** → **Yellow** ④

- If headlight relay does not have continuity between the blue and yellow terminals, replace it.

SDN8255



SDN8260

LOAD CONTROL RELAY

1. Inspect:

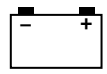
- Load control relay (white) ①

Inspection steps:

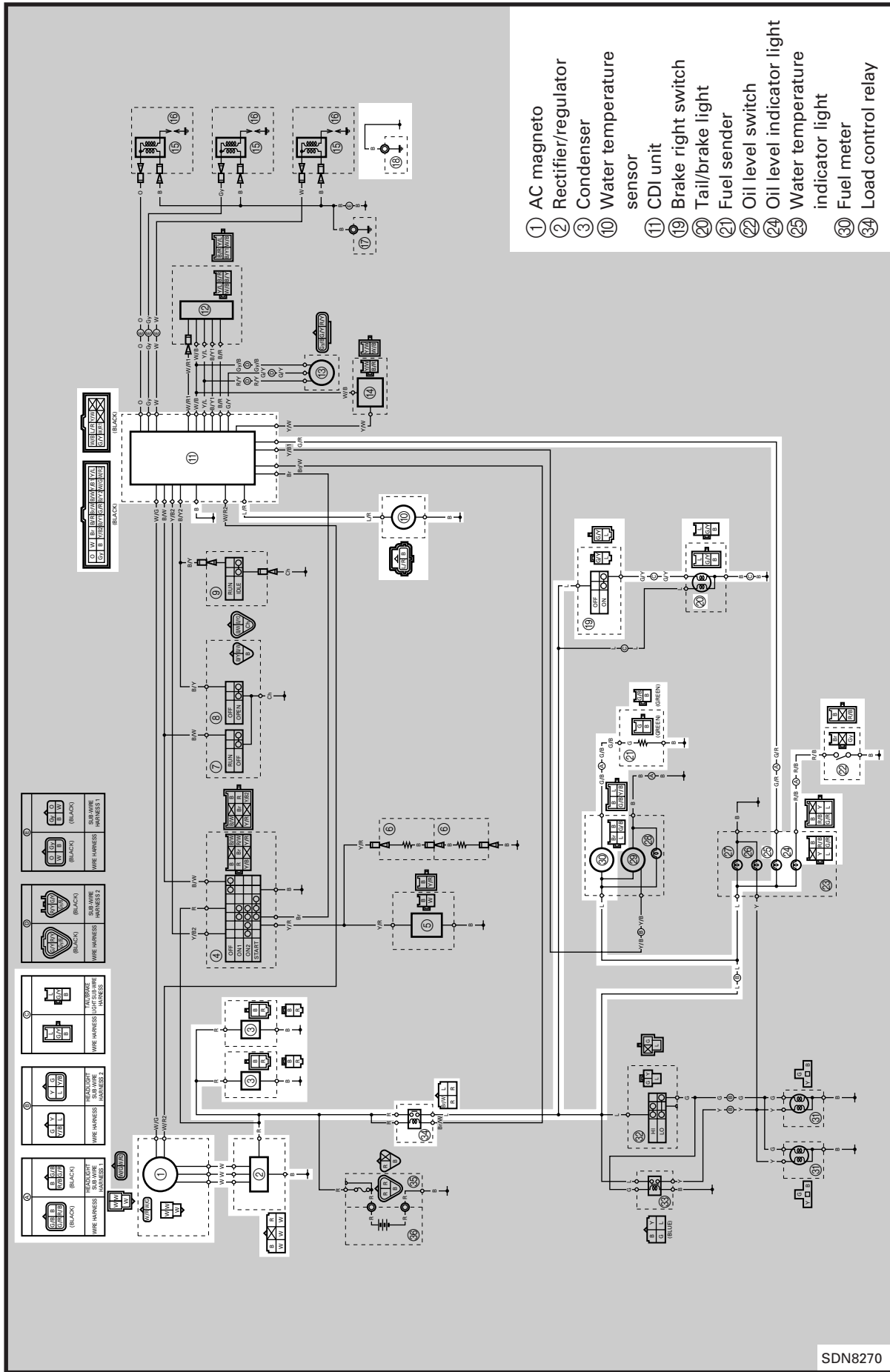
- Disconnect the load control relay from the coupler.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the load control relay terminals as shown.

Positive battery terminal → **Red** ①**Negative battery terminal** → **Brown/White** ②**Positive tester probe** → **Red** ③**Negative tester probe** → **Blue** ④

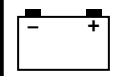
- If load control relay does not have continuity between the red and blue terminals, replace it.



**SIGNAL SYSTEM
CIRCUIT DIAGRAM**



SDN8270



TROUBLESHOOTING

BRAKE LIGHT DOES NOT COME ON.

Check the tail/brake light bulb.



OK

NO CONTINUITY



Replace the bulb.

Check the load control relay.



OK

FAULTY



Replace the load control relay.

Check the brake light switch.



OK

FAULTY



Replace the brake light switch.

Check for voltage on the condenser coupler.



OK

OUT OF SPECIFICATION



Correct connection and/or replace the DC regulator.

Check the condenser.



OK

OUT OF SPECIFICATION



Replace the condenser.

Check the stator coil.



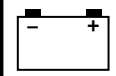
OK

OUT OF SPECIFICATION



Replace the AC magneto.

Correct the connection and/or
replace the rectifier/regulator.

**WATER TEMPERATURE AND/OR OIL LEVEL INDICATOR LIGHTS DO NOT COME ON.**

Check the water temperature and/or oil level indicator light bulb(s).

↓ OK NO CONTINUITY → Replace the bulb(s).

Check the load control relay.

↓ OK FAULTY → Replace the load control relay.

Check for voltage on the condenser coupler.

↓ OK OUT OF SPECIFICATION → Correct connection and/or replace the DC regulator.

Check the condenser.

↓ OK OUT OF SPECIFICATION → Replace the condenser.

Check the stator coil.

↓ OK FAULTY → Replace the AC magneto.

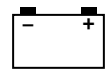
Check the water temperature sensor or oil level switch.

↓ OK FAULTY → Replace the water temperature sensor or oil level switch.

Correct the connection and/or replace the rectifier/regulator and/or CDI unit.

NOTE:

The indicator lights come on for a few seconds after the engine starts. If the lights do not come on, check the indicator light circuit and bulb(s).

**FUEL METER DOES NOT OPERATE.**

Check the load control relay.



OK

FAULTY



Replace the load control relay.

Check the stator coil.



OK

FAULTY



Replace the AC magneto.

Check the fuel sender.



OK

FAULTY



Replace the fuel sender.

Check for voltage on the condenser coupler.



OK

OUT OF SPECIFICATION



Correct the connection and/or replace the rectifier/regulator.

Check the condenser.



OK

OUT OF SPECIFICATION



Replace the condenser.

Check the fuel meter.



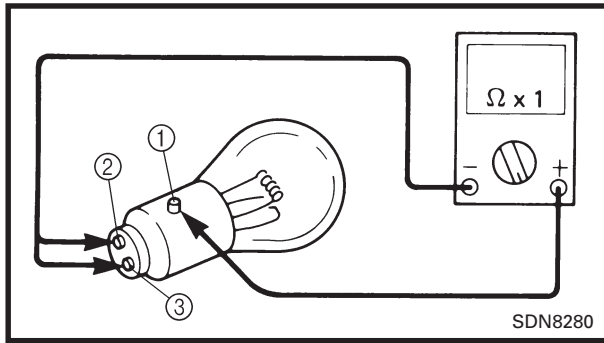
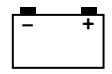
OK

DOES NOT MOVE



Replace the fuel meter.

Correct the connection for the fuel meter system and/or replace the rectifier/regulator.

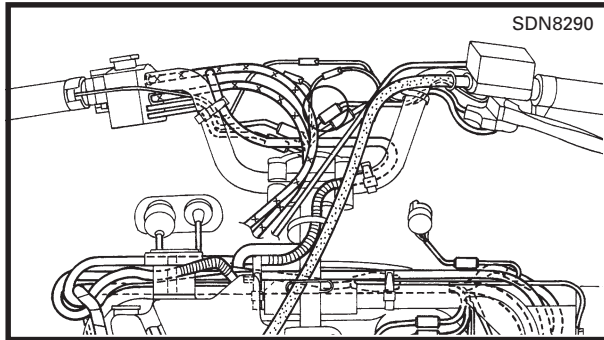


TAIL/BRAKE LIGHT BULB

1. Remove:

- Tail/brake light bulb

Terminal	Continuity
① – ②	Yes
① – ③	Yes



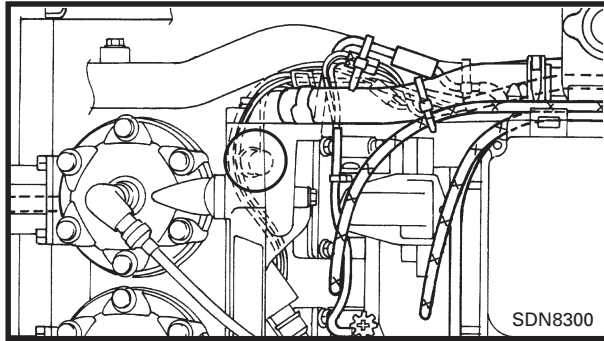
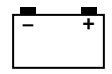
BRAKE LIGHT SWITCH

1. Check:

- Brake light switch continuity

Faulty → Replace.

Switch position	Continuity
Brake lever operates	Yes
Brake lever does not operate	No



WATER TEMPERATURE SENSOR

1. Disconnect the water temperature sensor coupler 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:

2.21 ~ 2.70 k Ω at 20°C (68°F)

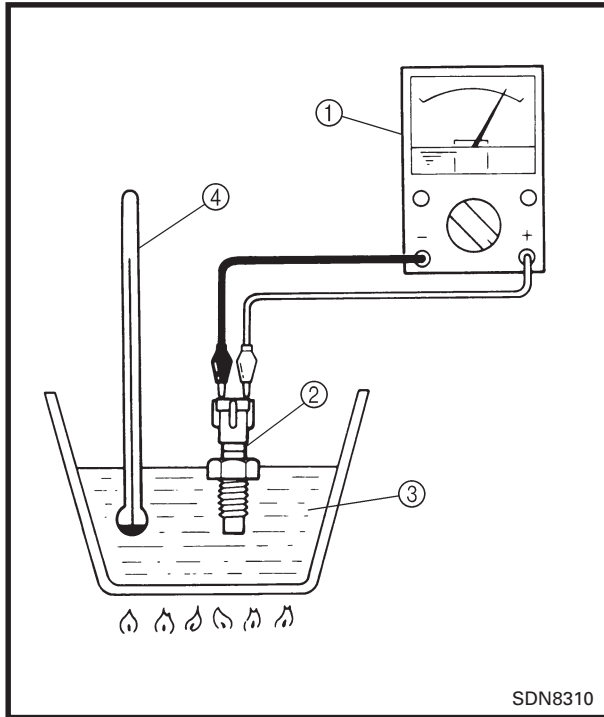
1.03 ~ 1.26 k Ω at 40°C (104°F)

0.52 ~ 0.65 k Ω at 60°C (140°F)

0.29 ~ 0.35 k Ω at 80°C (176°F)

0.17 ~ 0.21 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.

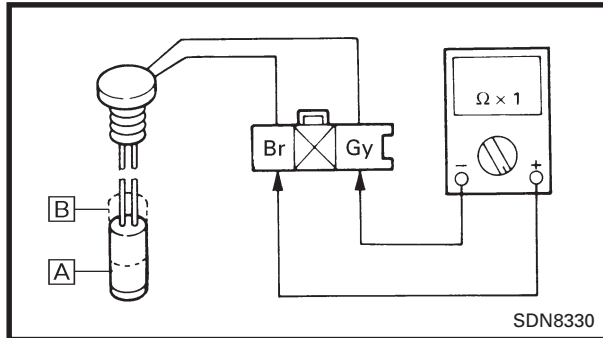
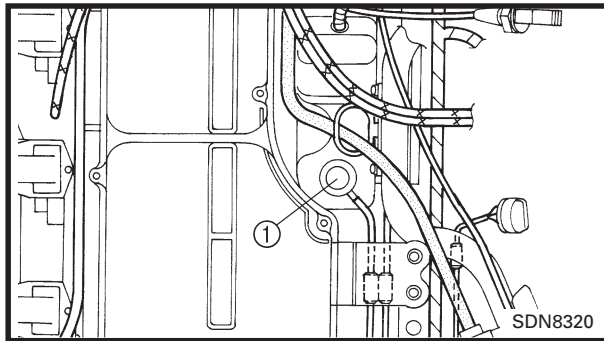
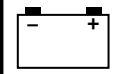


Water temperature sensor:

23 Nm (2.3 m · kg, 17 ft · lb)

CAUTION:

Do not overtighten the water temperature sensor.



OIL LEVEL SWITCH

1. Remove:

- Intake silencer
Refer to "FUEL PUMP" in CHAPTER 7.
- Oil level gauge ①

2. Connect:

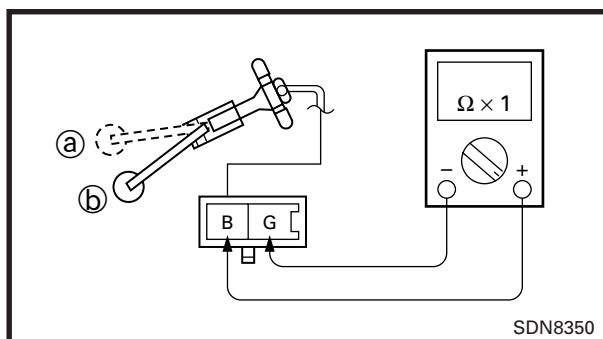
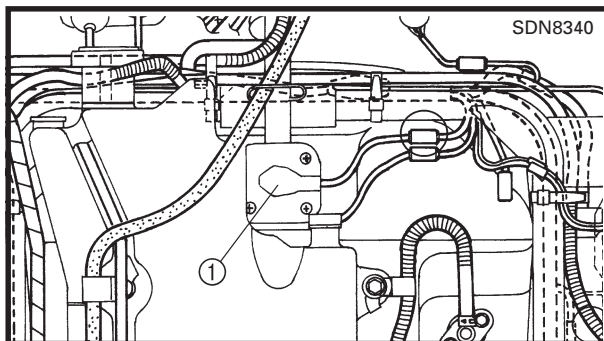
- Pocket tester
(to the oil level switch coupler)

3. Check:

- Oil level switch continuity
Faulty → Replace.

Switch position		Good condition	Bad condition		
A	Down position	○	×	×	○
B	Up position	×	○	×	○

○ : Continuity × : No continuity



FUEL SENDER

1. Remove:

- Intake silencer
Refer to "FUEL PUMP" in CHAPTER 7.
- Fuel sender ①
(from the fuel tank)

2. Connect:

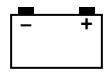
- Pocket tester
(to the fuel sender coupler)

3. Measure:

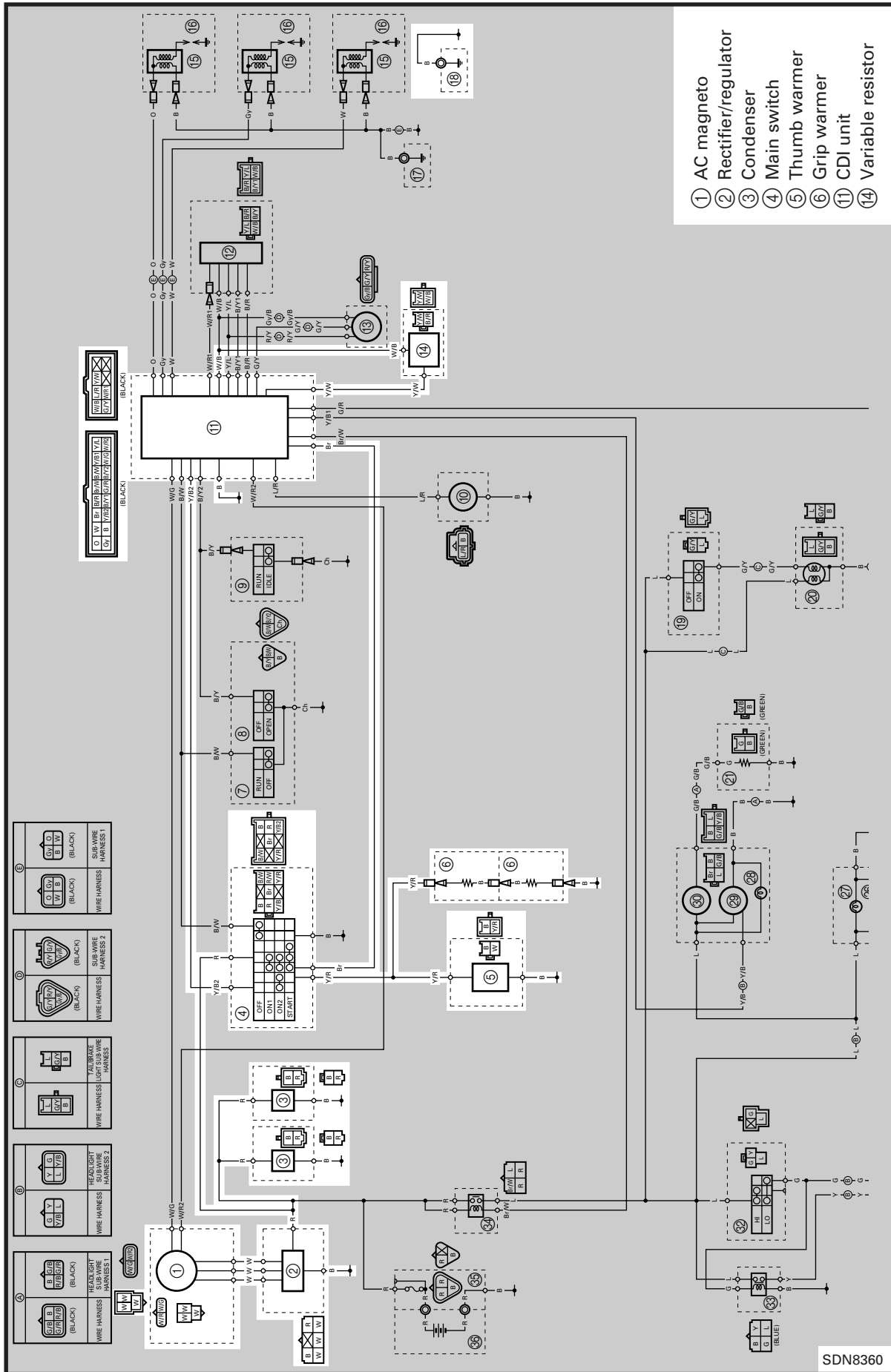
- Fuel sender resistance
Out of specification → Replace.



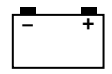
Fuel sender resistance (up ①):
9.0 ~ 11.0 Ω at 20°C (68°F)
Fuel sender resistance (down ②):
81 ~ 99 Ω at 20°C (68°F)



GRIP WARMER SYSTEM CIRCUIT DIAGRAM



SDN8360



TROUBLESHOOTING

GRIP WARMER DOES NOT OPERATE.

Check the main switch.



OK

NO CONTINUITY



Replace the main switch.

Check the grip and thumb warmer.



OK

NO CONTINUITY



Replace the grip warmer and/or thumb warmer.

Check the variable resistor.



CORRECT

INCORRECT



Replace the variable resistor.

Check for voltage on the condenser coupler.



OK

OUT OF SPECIFICATION



Correct connection and/or replace the DC regulator.

Check the condenser.



OK

OUT OF SPECIFICATION



Replace the condenser.

Check the stator coil and/or connection.



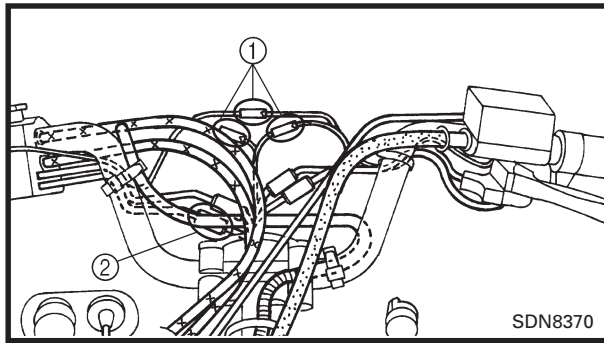
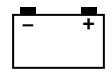
OK

NO CONTINUITY



Replace the AC magneto and/or correct connection.

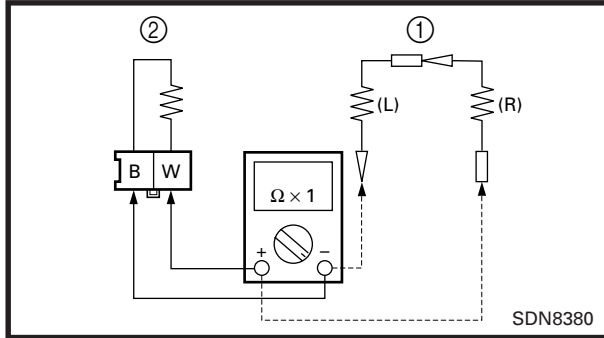
Replace the rectifier/regulator and/or CDI unit.

**GRIP AND THUMB WARMER COIL****1. Disconnect:**

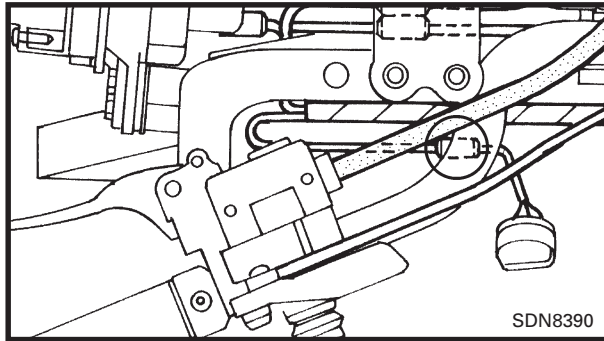
- Grip warmer leads ①
- Thumb warmer coupler ②

2. Connect:

- Pocket tester
(to the grip warmer coil leads and/or thumb warmer coil leads)

**3. Check:**

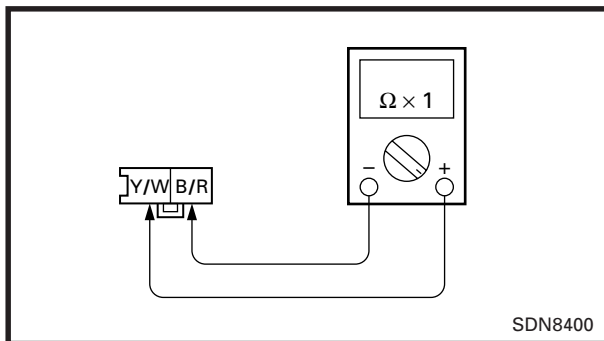
- Grip warmer ① continuity
 - Thumb warmer ② continuity
- No continuity → Replace both grips together or separately and/or the handlebar switch.

**VARIABLE RESISTOR****1. Disconnect:**

- Variable resistor coupler

2. Connect:

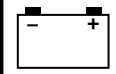
- Pocket tester
(to the variable resistor coupler)

**3. Check:**

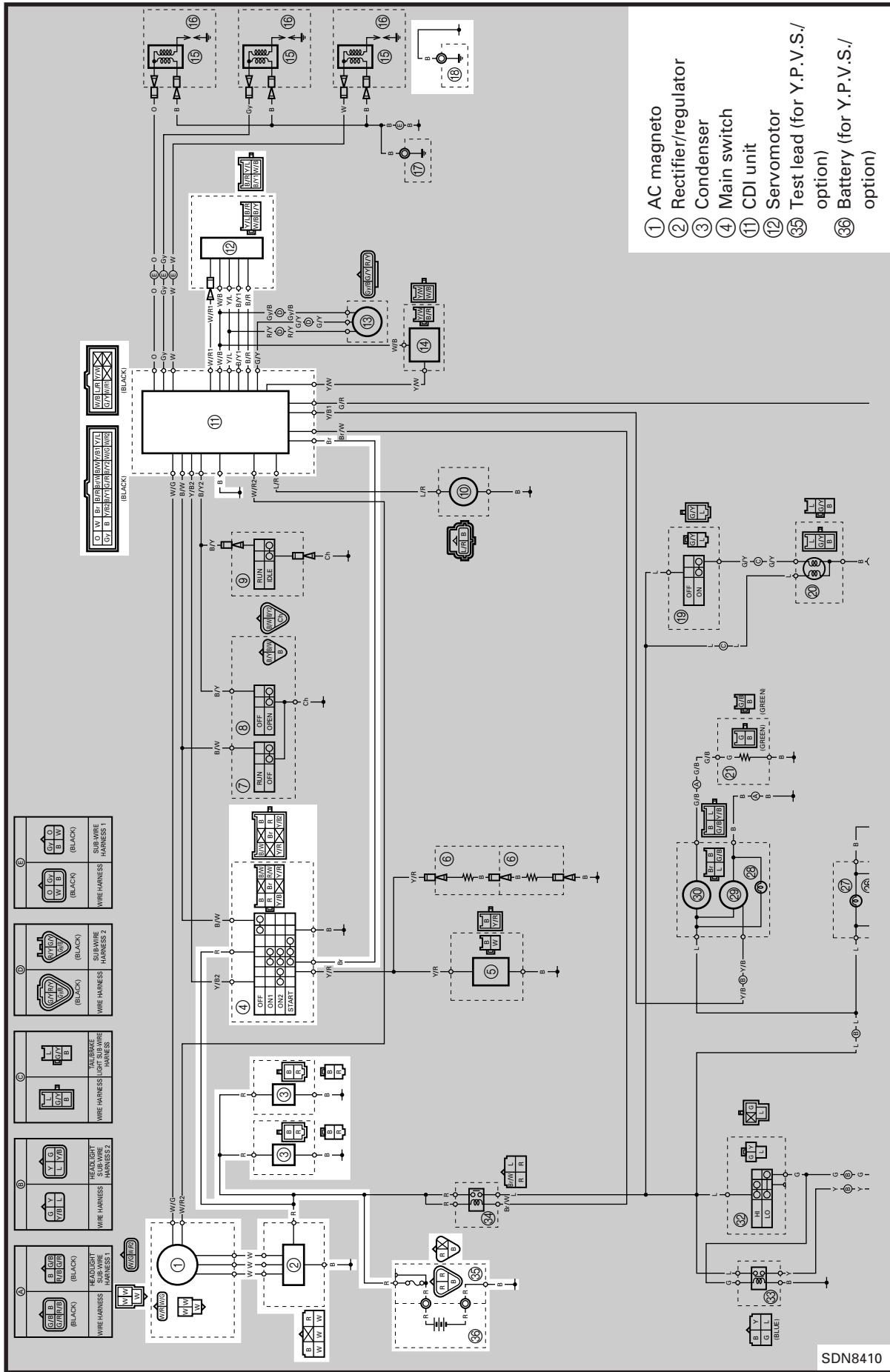
- Variable resistor resistance
- When pulley is turned once.
Out of specification → Replace the variable resistor.



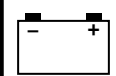
Variable resistor resistance:
(Yellow/White – Black/Red)
400 ~ 600 Ω at 20°C (68°F)



YAMAHA POWER VALVE SYSTEM (Y.P.V.S.) CIRCUIT DIAGRAM



SDN8410



TROUBLESHOOTING

SERVOMOTOR DOES NOT MOVE.

Check the main switch.



OK

NO CONTINUITY



Replace the main switch.

Check the servomotor operation.



OK

DOES NOT MOVE



Replace the servomotor.

Check for voltage on the condenser coupler.



OK

OUT OF SPECIFICATION



Correct connection and/or replace the DC regulator.

Check the condenser.



OK

OUT OF SPECIFICATION



Replace the condenser.

Check the stator coil.



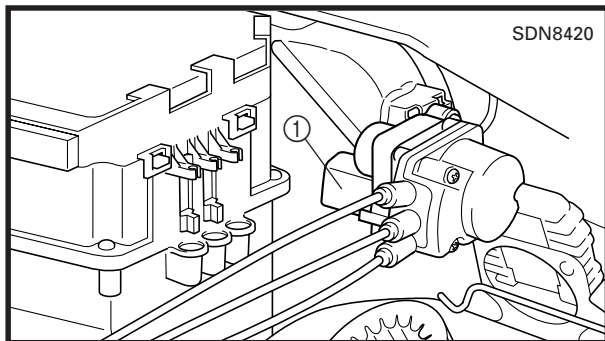
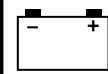
CORRECT

INCORRECT



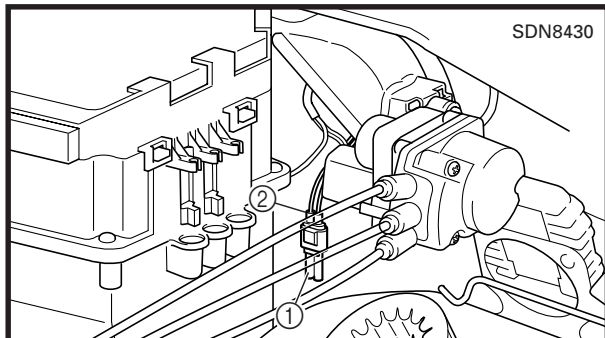
Replace the AC magneto.

Correct connection and/or replace CDI unit and/or rectifier/regulator.

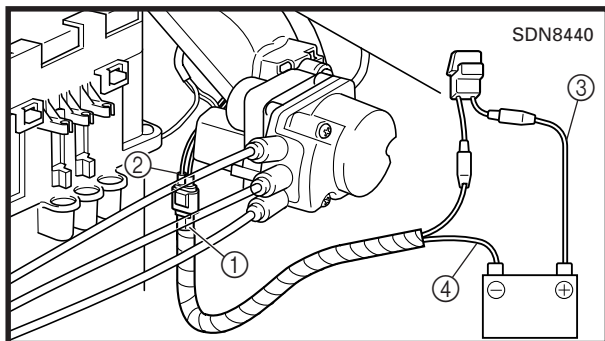
**SERVOMOTOR**

1. Remove:

- Cover ①



2. Disconnect the Y.P.V.S. check coupler cap ① from the Y.P.V.S. check coupler ②.



3. Inspect:

- Servomotor

Inspection steps:

- Connect the Y.P.V.S. adjustment coupler ① to the Y.P.V.S. check coupler ② and apply battery voltage (12 V) to the Y.P.V.S. adjustment coupler lead.

Y.P.V.S. (+) test lead ③ → Battery (+) terminal

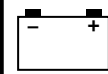
Y.P.V.S. (-) test lead ④ → Battery (-) terminal


Y.P.V.S. adjustment coupler:
YS-43092
⚠ WARNING**Do not operate the engine.**

- If servomotor does not move, replace it.

4. Connect:

- Y.P.V.S. check coupler



FAULT LOCATION TABLE

NOTE:

When more than one problem is detected, the water temperature indicator light flashes in the pattern of the lowest numbered problem. After that problem is corrected, the water temperature indicator light flashes in the pattern of the next lowest numbered problem. This continues until all of the problems are detected and corrected.

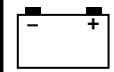
No.	Patterns	Condition	Reference
1	SDN8450 * If the CDI unit is working properly, the water temperature indicator light continues flashing in this pattern when the test lead is connected or after the engine is turned on.	- Water temperature indicator light is good. - If the water temperature indicator light does not come on replace it.	Refer to "SIGNAL SYSTEM".
2	SDN8460	Overheat.	Refer to "COOLING SYSTEM" in CHAPTER 2.
3	SDN8470	Discontinuity or shorting of the water temperature sensor is detected.	Refer to "WATER TEMPERATURE SENSOR".
4	SDN8480	Discontinuity or shorting of the throttle position sensor is detected.	Refer to "THROTTLE POSITION SENSOR INSPECTION AND ADJUSTMENT" in CHAPTER 7.



ON Warning light ON



OFF Warning light OFF



No.	Patterns	Condition	Reference
5	SDN8490	Discontinuity or shorting of the servomotor is detected.	Refer to "SERVOMOTOR".
6	SDN8500	Discontinuity of the variable resistor is detected.	Refer to "VARIABLE RESISTOR".
7	SDN8510	Shorting of grip warmer is detected.	Refer to "GRIP AND THUMB WARMER COIL".

ON Warning light ON
 OFF Warning light OFF



SPECIFICATIONS

GENERAL SPECIFICATIONS

Model	SRX700	SRX700S
Model code number:	8DN	8DW
Dimensions:		
Overall length	2,760 mm (108.7 in)	
Overall width	1,170 mm (46.1 in)	
Overall height	1,085 mm (42.7 in)	
Weight:	237 kg (522 lb)	238 kg (525 lb)
Minimum turning radius:		
Clockwise	3.8 m (12.5 ft)	
Counterclockwise	3.8 m (12.5 ft)	
Engine:		
Engine type	Liquid cooled 2-stroke	
Induction system	Crankcase reed valve	
Cylinder arrangement	Forward inclined parallel 3-cylinder	
Displacement	696 cm ³ (62.5 cu.in)	
Bore × Stroke	69 × 62 mm (2.72 × 2.44 in)	
Compression ratio	6.5 : 1	
Maximum horse power r/min	8,500 ± 250 r/min	
Maximum torque r/min	8,250 ± 250 r/min	
Starting system	Recoil hand starter	
Lubrication system:	Separate lubrication (YAMAHA AUTOLUBE)	
Engine oil:		
Type	YAMALUBE 2-cycle oil	
Tank capacity	3.3 L (2.9 Imp qt, 3.5 US qt)	
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:		
Total amount	5.6 L (4.94 Imp qt, 5.92 US qt)	
Fuel:		
Type	Premium unleaded gasoline (Pump Octane $\frac{R + M}{2}$; 91) Premium unleaded gasoline Research octane; 97 (for Europe)	
Tank capacity	44.3 L (9.74 Imp gal, 11.70 US gal)	

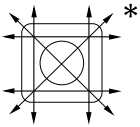
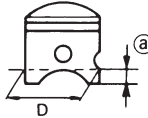
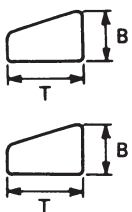


Model	SRX700	SRX700S
Carburetor: Type/quantity Manufacturer	TM33/3 MIKUNI	
Spark plug: Type Manufacturer Gap	BR9ECS NGK 0.7 ~ 0.8 mm (0.028 ~ 0.031 in)	
Transmission: Primary reduction system Primary reduction ratio Clutch type Secondary reduction system Secondary reduction ratio Reverse system	V-Belt 3.8 ~ 1.0 : 1 Automatic centrifugal engagement Chain 1.65 (38/23) No	
Chassis: Frame type Caster Ski stance (center to center)	Monocoque 22.5° 1,040 mm (40.9 in)	
Suspension: Front suspension type Rear suspension type	Leading arm Slide rail suspension	
Track: Track type Track width Length on ground Track deflection mm	Internal drive type 381 mm (15.0 in) 752 mm (29.6 in) 25 ~ 30 mm (0.98 ~ 1.18 in)/10 kg (22 lb)	
Brake: Brake type Operation method	Caliper type disc brake Handle lever, left hand operated	
Electrical: Ignition system/manufacture Generator system	CDI/MITSUBISHI Flywheel magneto	
Bulb wattage × quantity: Headlight Tail/brake light Tachometer light Speedometer light High beam indicator light Oil level indicator light Water temperature indicator light	12 V, 60 W/55 W × 2 12 V, 8 W/23 W × 1 12 V, 1.7 W × 1 12 V, 1.7 W × 1 12 V, 1.7 W × 1 12 V, 1.7 W × 1 12 V, 1.7 W × 1	

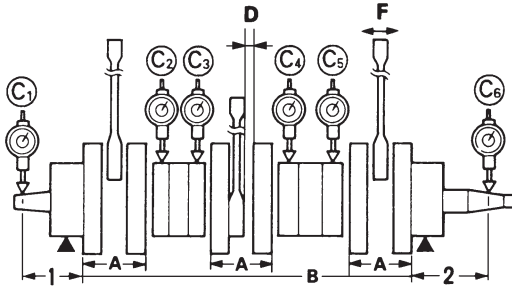


MAINTENANCE SPECIFICATIONS

ENGINE

Model	SRX700	SRX700S
Cylinder head: Volume (with spark plug) <Warp limit> 	25.3 ~ 25.6 cm ³ (1.54 ~ 1.56 cu.in) <0.03 mm (0.0012 in)> *Lines indicate straight edge measurement.	
Cylinder: Material Bore size <Taper limit> <Out-of-round limit>	Cast iron 69.000 ~ 69.014 mm (2.7165 ~ 2.7171 in) <0.05 mm (0.002 in)> <0.01 mm (0.0004 in)>	
Piston: Piston size "D" Measuring point ① Piston to-cylinder clearance <Limit> Piston offset Piston offset direction Piston pin bore inside diameter 	68.944 ~ 68.947 mm (2.7143 ~ 2.7144 in) 10 mm (0.39 in) 0.065 ~ 0.070 mm (0.0026 ~ 0.0028 in) <0.01 mm (0.004 in)> 0.75 mm (0.0295 in) EX side 20.004 ~ 20.015 mm (0.7876 ~ 0.7880 in)	
Piston pin: Piston pin outside diameter Piston pin length	19.995 ~ 20.000 mm (0.7872 ~ 0.7874 in) 55.7 ~ 56.0 mm (2.193 ~ 2.205 in)	
Piston ring: Sectional sketch Top Ring 2nd Ring End gap (installed) Side clearance Coating 	Keystone B = 1.20 mm (0.047 in) T = 2.75 mm (0.108 in) Keystone B = 1.20 mm (0.047 in) T = 2.75 mm (0.108 in) 0.35 ~ 0.55 mm (0.014 ~ 0.022 in) 0.35 ~ 0.55 mm (0.014 ~ 0.022 in) 0.02 ~ 0.06 mm (0.0008 ~ 0.0024 in) 0.02 ~ 0.06 mm (0.0008 ~ 0.0024 in) Chrome plated/parkerizing Chrome plated/parkerizing	



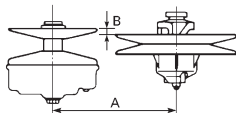
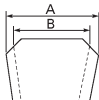
Model	SRX700	SRX700S
Crankshaft: Crank width "A" Crank width "B" Crankshaft deflection "C": C ₁ C ₂ ~ C ₅ C ₆ Measuring points: 1 2 Connecting rod big end side clear- ance "D" Connecting rod small end free play "F"	56.95 ~ 57.00 mm (2.242 ~ 2.244 in) 292.75 ~ 293.30 mm (11.526 ~ 11.547 in) Below 0.03 mm (0.0012 in) Below 0.04 mm (0.0016 in) Below 0.03 mm (0.0012 in) 89.5 mm (3.52 in) 84.5 mm (3.33 in) 0.25 ~ 0.75 mm (0.01 ~ 0.03 in) 0.8 ~ 1.0 mm (0.03 ~ 0.04 in)	
		
Big end bearing: Type	Needle bearing	
Small end bearing: Type	Needle bearing	
Crank pin: Crank pin outside diameter	26.991 ~ 27.000 mm (1.0627 ~ 1.0630 in)	
Connecting rod: Small end diameter Big end diameter	24.995 ~ 25.005 mm (0.9841 ~ 0.9844 in) 34.020 ~ 34.033 mm (1.3394 ~ 1.3399 in)	
Read valve: Material Thickness <Bending limit> Stopper height	Resin 0.35 ~ 0.49 mm (0.014 ~ 0.019 in) <1.5 mm (0.059 in)> 10.3 ~ 10.7 mm (0.41 ~ 0.42 in)	



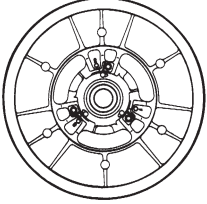
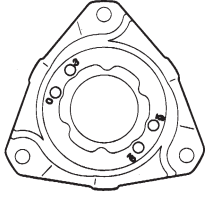
Model	SRX700	SRX700S
Carburetor: Type/quantity Manufacturer I.D. mark Main jet (M.J) Pilot jet (P.J) Jet needle (J.N) Needle jet (N.J) Pilot air jet (P.A.J) Pilot outlet (P.O) Bypass (B.P.1) Pilot screw (P.S) Throttle valve (Th.V) Valve seat size (V.S) Starter jet (G.S) Float height (F.H) Fuel level (from the bore center) Engine idle speed	TM33/3 MIKUNI 8DN10 #1: 147.5 #2,3: 146.3 #42.5 6GM26-3 Q-6 1.0 ø0.9 1.0 1-1/8 C.A 2.5 ø1.3 ø1.2 11.3 ~ 15.3 mm (0.44 ~ 0.60 in) 36 ~ 38 mm (1.42 ~ 1.50 in) 1,800 ± 100 r/min	
Fuel pump: Type Manufacturer Pump cable adjustment	DIAPHRAM TAIYO GIKEN B-type	
Oil pump: Pump cable adjusting length	20 ~ 22 mm (0.79 ~ 0.86 in)	
Cooling system: Filler cap opening pressure	100 ~ 120 kPa (1.0 ~ 1.2 kg/cm ² , 14 ~ 17 psi)	
Thermostat: Opening temperature Valve lift	40 ~ 44°C (112 ~ 120°F) 8 mm/55°C (0.31 in/142°F)	
Water pump: Type	Impeller type	
Coolant: Type Capacity Coolant mixing ratio (coolant:water)	High quality ethylene glycol antifreeze containing corrosion inhibitor 5.6 L (4.94 Imp qt, 5.92 US qt) 3:2 (60%/40%)	



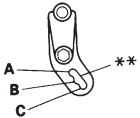
POWER TRAIN

Model	SRX700	SRX700S
Transmission: Type Range of ratio Engagement r/min Shift r/min Sheave center distance "A" Sheave offset "B" 	V-belt automatic 3.8 ~ 1.0 :1 4,000 ± 200 r/min (3,800 ~ 4,200 r/min) 8,500 ± 250 r/min (8,250 ~ 8,750 r/min) 267 ~ 270 mm (10.52 ~ 10.62 in) 13.5 ~ 16.5 mm (0.53 ~ 0.64 in)	
V-Belt: Part number/manufacture Outside circumference Width "A" <Wear limit "B"> 	8DN-17641-00/MITSUBOSHI 1,129 ~ 1,137 mm (44.4 ~ 44.7 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	90501-603L2 Yellow – White – Yellow 60.0 mm (2.362 in) 6.0 mm (0.236 in) 450 N (45 kg, 99 lb) 25 N/mm (2.5 kg/mm, 140 lb/in) 5.39 91.4 mm (3.6 in)	
Primary sheave weight arm: Part number (with bushing) Weight Additional weight type	8DN-17605-20 42.09 g (1.48 oz) Rivet	



Model	SRX700	SRX700S
Rivet: Outer Part number Material Size Quantity Hole quantity Inner Part number Material Size Quantity Hole quantity	90261-06033 Steel 17.2 mm (0.68 in) 3 pcs 3 pcs 90261-06034 Steel 13.9 mm (0.55 in) 3 pcs 3 pcs	
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	90508-536A9 Red 69.5 mm (2.736 in) 5.3 mm (0.208 in) 2-6 (80°) 7.4 N/mm (0.74 kg/mm, 41.57 lb/in) 5.53 75 mm (2.95 in) 47°	
Drive chain: Type Number of links	BWA 23RH303-70ASM 70 L	



Model	SRX700	SRX700S
Track: Part number Width Length Pitch Number of links Thickness "A" Height "B" 	8EA-47110-00 381 mm (15.0 in) 3,072 mm (120.9 in) 64 mm (2.52 in) 48 6 mm (0.24 in) 23 mm (0.91 in)	
Deflection	25 ~ 30 mm (0.98 ~ 1.18 in)/10 kg (22 lb)	
Slide rail suspension: Front travel Rear travel Suspension spring rate Front Rear Spring wire diameter Front Rear	162 mm (6.38 in) 200 mm (7.87 in) 55.0 Nm (5.5 kg/mm, 309 lb/in) 28.0 ~ 48.0 N/mm (2.8 ~ 4.8 kg/mm, 157 ~ 270 lb/in) 9.5 mm (0.37 in) 10.8 mm (0.43 in)	
Suspension setting position: Hook setting length *  Full rate adjusting position ** 	32 mm (1.26 in) B	



Model	SRX700	SRX700S
Slide runner: Thickness <Wear limit>	17.8 mm (0.70 in) <10 mm (0.39 in)>	
Track sprocket wheel: Material Number of teeth	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> Disc outside diameter Disc thickness	10.2 mm (0.40 in) <4.7 mm (0.19 in)> 220 mm (8.66 in) 10 mm (0.39 in)	



CHASSIS

Model	SRX700	SRX700S
Frame: Frame material Seat height Luggage box location	Aluminum 685 mm (26.8 in) Rear side of seat	
Steering: Lock-to-lock angle (left) (right) Ski alignment Toe-out size Ski stance (center to center)	34.8° (L ski) 29.6° (R ski) 29.6° (L ski) 34.8° (R ski) Toe-out 0 ~ 15 mm (0 ~ 0.59 in) 1,040 mm (40.9 in)	
Ski: Ski material Length Width Ski runner material Ski cover	Plastic 1,000 mm (39.4 in)	
	139.7 mm (5.50 in)	131.0 mm (5.16 in)
	Carbide No	
Ski suspension: Type Travel Spring type Spring rate Wire diameter	Leading arm 173 mm (6.81 in) Coil spring 27.0 Nm (2.7 kg/mm, 151.7 lb/in) 8.0 mm (0.315 in)	← 177 mm (6.97 in) ← ← 7.8 mm (0.307 in)



ELECTRICAL

Model	SRX700	SRX700S
Voltage:	12 V	
Ignition system: Advanced type	Electrical type	
AC magneto: Magneto model/manufacture Pickup coil resistance (color code) Charge coil resistance (color code) CDI unit model/manufacture	F4T36971/MITSUBISHI 189 ~ 231 Ω at 20°C (68°F) (White/Red – White/Green) 0.36 ~ 0.44 Ω at 20°C (68°F) (White – White) F8T36871/MITSUBISHI	
Ignition coil: Model/manufacture Minimum spark gap Primary coil resistance Secondary coil resistance	F6T535/MITSUBISHI 3 mm (0.118 in) 0.38 ~ 0.46 Ω at 20°C (68°F) 5.8 ~ 7.0 k Ω at 20°C (68°F)	
Spark plug cap: Type Model/manufacture Resistance	Resin type 8DF/TOKAI DENSO 5 k Ω at 20°C (68°F)	
Charging system: Type	Flywheel magneto	
Rectifier/regulator: Type Model/manufacture No load regulated voltage DC	Semiconductor-short circuit type SH6500-11/SHINDENGEN 14.1 ~ 14.9 V	



Model	SRX700	SRX700S
Oil level switch: Model/manufacturer	8CR/ASTI	
Fuel sender: Model/manufacturer Sender unit resistance Full Empty	8CW/NIPPON SEIKI 9.0 ~ 11.0 Ω at 20°C (68°F) 81 ~ 99 Ω at 20°C (68°F)	
Headlight relay: Model/manufacturer Coil resistance	1UY/MATSUSHITA 72 ~ 88 Ω at 20°C (68°F)	
Grip warmer: Heater resistance	1.53 ~ 1.87 Ω at 20°C (68°F)	
Water temperature sensor: Model/manufacturer Sensor resistance	0190/MITSUBISHI 0.29 ~ 0.35 k Ω at 80°C (176°F) 0.17 ~ 0.21 k Ω at 100°C (212°F)	
Y.P.V.S. servo motor Model/manufacturer	8DF/YAMAHA	



HIGH ALTITUDE SETTINGS

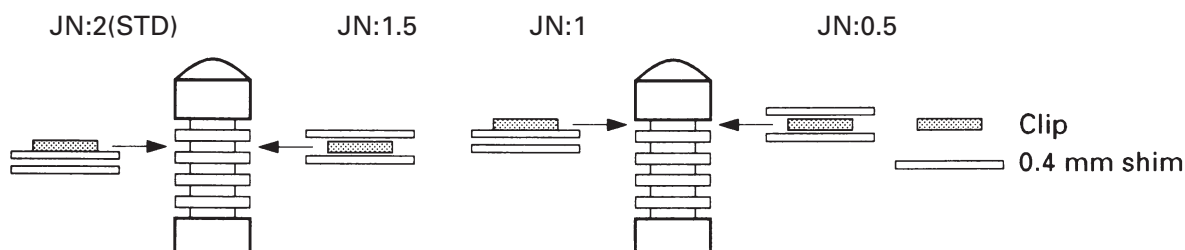
SRX700/700S

Altitude \ Temperature	−40°C (−40°F)	−29°C (−20°F)	−18°C (0°F)	−7°C (20°F)	4°C (40°F)	16°C (60°F)
0 ~ 250 m (0 ~ 800 ft)	MJ #1 #152.5 MJ #2#3 #151.3 PJ #42.5 JN 3.5 PS 1 1/8	MJ #1 #151.3 MJ #2#3 #150 PJ #42.5 JN 3 PS 1 1/8	MJ #1 #150 MJ #2#3 #148.8 PJ #40 JN 3 PS 1 1/8	MJ #1 #148.8 MJ #2#3 #147.5 PJ #40 JN 3 PS 1 1/8	MJ #1 #147.5 MJ #2#3 #146.3 PJ #37.5 JN 3 PS 1	
250 ~ 750 m (800 ~ 2,500 ft)	MJ #1 #150 MJ #2#3 #148.8 PJ #45 JN 3 PS 1 1/8	MJ #1 #148.8 MJ #2#3 #147.5 PJ #42.5 JN 3 PS 1 1/8	MJ #1 #147.5 MJ #2#3 #146.3 PJ #42.5 JN 3 PS 1 1/8	MJ #1 #146.3 MJ #2#3 #145 PJ #40 JN 3 PS 1 1/8	MJ #1 #145 MJ #2#3 #143.8 PJ #40 JN 3 PS 1	
750 ~ 1,500 m (2,500 ~ 4,900 ft)	MJ #1 #147.5 MJ #2#3 #146.3 PJ #45 JN 3 PS 1 1/4	MJ #1 #146.3 MJ #2#3 #145 PJ #45 JN 3 PS 1 1/4	MJ #1 #145 MJ #2#3 #143.8 PJ #42.5 JN 3 PS 1 1/4	MJ #1 #143.8 MJ #2#3 #142.5 PJ #42.5 JN 3 PS 1 1/4	MJ #1 #142.5 MJ #2#3 #141.8 PJ #40 JN 3 PS 1 1/8	
1,500 ~ 2,000 m (4,900 ~ 6,600 ft)	MJ #1 #143.8 MJ #2#3 #142.5 PJ #47.5 JN 2.5 PS 1 1/2	MJ #1 #142.5 MJ #2#3 #141.3 PJ #45 JN 2.5 PS 1 1/2	MJ #1 #141.3 MJ #2#3 #140 PJ #45 JN 2.5 PS 1 1/2	MJ #1 #140 MJ #2#3 #138.8 PJ #42.5 JN 2.5 PS 1 1/2	MJ #1 #138.8 MJ #2#3 #137.5 PJ #42.5 JN 2.5 PS 1 3/8	
2,000 ~ 2,500 m (6,600 ~ 8,200 ft)	MJ #1 #141.3 MJ #2#3 #140 PJ #50 JN 2.5 PS 1 5/8	MJ #1 #140 MJ #2#3 #138.8 PJ #47.5 JN 2.5 PS 1 5/8	MJ #1 #138.8 MJ #2#3 #137.5 PJ #47.5 JN 2.5 PS 1 5/8	MJ #1 #137.5 MJ #2#3 #136.3 PJ #45 JN 2.5 PS 1 5/8	MJ #1 #136.3 MJ #2#3 #135 PJ #45 JN 2.5 PS 1 1/2	
2,500 ~ 3,000 m (8,300 ~ 10,000 ft)	MJ #1 #138.8 MJ #2#3 #137.5 PJ #52.5 JN 2.5 PS 1 3/4	MJ #1 #137.5 MJ #2#3 #136.3 PJ #50 JN 2.5 PS 1 3/4	MJ #1 #136.3 MJ #2#3 #135 PJ #50 JN 2.5 PS 1 3/4	MJ #1 #135 MJ #2#3 #133.8 PJ #47.5 JN 2 PS 1 3/4	MJ #1 #133.8 MJ #2#3 #132.5 PJ #47.5 JN 2 PS 1 5/8	

[Production spec] MJ#1: #147.5 MJ#2, 3: #146.3 PJ: #42.5 JN: 6GM26-3 PAJ: 1.0 PS: 1-1/8
#: Main jet number JN: Jet needle clip position PS: Pilot screw turns out PJ: Pilot jet number

NOTE:

- Jet needle (JN) position.
Refer to the following information for the Jet needle shims installation.



- Oxygenated fuels
Use one size larger Main Jet than specified.



TIGHTENING TORQUE ENGINE

Parts to be tightened	Tightening torque			Remarks
	Nm	m • kg	ft • lb	
Crankcase (M8 × 80) (first)	13	1.3	9.4	Tighten the bolts in two stages.
(final)	27	2.7	19	
Crankcase (M8 × 35)	15	1.5	11	
Engine bracket and frame	50	5.0	36	Tighten the nuts in two stages.
Engine rear bracket (right • center) and engine	33	3.3	24	
Engine rear bracket (left) and engine	23	2.3	17	
Engine rear bracket (left) and connecting arm	40	4.0	29	
Engine front bracket and damper	40	4.0	29	
Exhaust silencer joint nut	13	1.3	9.4	
Exhaust silencer nut	16	1.6	11	
Exhaust joint	15	1.5	11	
Cylinder head				
Nut (first)	13	1.3	9.4	
(final)	28	2.8	20	
Cylinder nut	33	3.3	24	
Cylinder head and outlet water jacket joint	14	1.4	10	
Ignition coil	14	1.4	10	
Spark plug	20	2.0	14	
Oil pump breather hose and crankcase	14	1.4	10	Apply LOCTITE®
Clamp and intake manifold	14	1.4	10	
Read valve screw	1	0.1	0.7	
Oil pump	8	0.8	5.8	
Starter puller	23	2.3	17	
Magneto rotor nut	110	11.0	80	
Clamps and recoil hand starter case	23	2.3	17	
Recoil starter	18	1.8	13	
Servo motor assembly and frame	6.5	6.5	4.7	
Y.P.V.S. valve assembly	11	1.1	8.0	
Y.P.V.S. locknut	7	0.7	5.1	
Y.P.V.S. puller	7	0.7	5.1	
Y.P.V.S. valve housing	8	0.8	5.8	
Water pump cover	13	1.3	9.4	
Impeller	10	1.0	7.2	
Coolant drain bolt	13	1.3	9.4	
Bleed bolt front (cooling system)	4	0.4	2.9	
Bleed screw rear (cooling system)	4	0.4	2.9	
Carburetor heating knob hexagon socket bolt	10	1.0	7.2	
Thermostat cover	10	1.0	7.2	
Water temperature sensor	23	2.3	17	
Carburetor				
Pilot jet	0.7	0.07	0.51	
Valve seat	1	0.1	0.7	
Main jet	1.8	0.18	1.3	
Starter plunger assembly	2.5	0.25	1.8	
Throttle position sensor	3.5	0.35	2.5	
Fuel pump	10	1.0	7.2	
Reservoir tank and intake silencer	7	0.7	5.1	



POWER TRAIN

Parts to be tightened	Tightening torque			Remarks
	Nm	m • kg	ft • lb	
Primary sheave (first)	120	12.0	85	Tighten the bolts in two stages. See NOTE. Left-hand thread. Apply LOCTITE®
(final)	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)				
Bolt	6	0.6	4.3	
Screw	3	0.3	2.2	
Secondary sheave	64	6.4	46	
Secondary sheave plate 1, 2	4	0.4	2.9	
Stopper (secondary sheave)	6.5	0.65	4.6	
Bolt (secondary sheave clearance)	10	1.0	7.2	
Spring seat (secondary sheave)	23	2.3	17	
Drive sprocket	60	6.0	43	
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	11	
Chain housing cover	24	2.4	17	
Chain housing and brake caliper	48	4.8	35	
Bleed screw (brake caliper)	6	0.6	4.3	
Nut (parking brake)	10	1.0	7.2	
Brake hose	23	2.3	17	Apply LOCTITE®
Brake master cylinder side (brake hose joint)	14	1.4	10	
Brake hose side (brake hose joint)	30	3.0	22	
Bearing set screw (jackshaft)	8.5	0.85	6.1	
Bearing holder (jackshaft)	23	2.3	17	
Stopper band	4	0.4	2.9	
Hook and front pivot arm	16	1.6	11	
Wheel bracket and sliding frame	24	2.4	17	
Bracket bolt (rear)	30	3.0	22	
Bracket bolt (front)	72	7.2	52	
Front pivot arm and front pivot arm bracket	72	7.2	52	Apply LOCTITE®
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	
Sliding frame and slide runner	3	0.3	2.2	
	4	0.4	2.9	
Slide rail suspension mounting bolt	72	7.2	52	
Rear pivot arm and bracket	24	2.4	17	
Rear pivot arm and rod	49	4.9	35	
Rear suspension bracket and rod	49	4.9	35	
Shock absorber and rear suspension bracket (full rate adjuster)	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	
Rear pivot arm bracket	72	7.2	52	
Shock absorber and rear pivot arm	49	4.9	35	



Parts to be tightened	Tightening torque			Remarks
	Nm	m • kg	ft • lb	
Wheel bracket shaft and sliding frame	72	7.2	52	
Set bolt (front axle)	8	0.8	5.8	
Speedometer gear assembly	20	2.0	14	

NOTE:

Tightening steps:

1. Tighten the bolt to a torque of 120 Nm (12 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

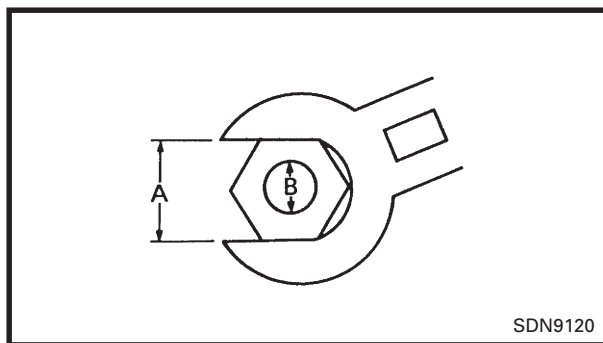
Parts to be tightened	Tightening torque			Remarks
	Nm	m • kg	ft • lb	
Handlebar holder	15	1.5	11	Apply LOCTITE®
Steering column				
Upper	23	2.3	17	
Lower	23	2.3	17	
Steering column and relay rod	35	3.5	25	
Relay rod and relay arm	35	3.5	25	
Relay arm and tie rod	35	3.5	25	
Tie rod and steering arm	42	4.2	30	
Relay arm	67	6.7	48	
Locknut (relay rod/tie rod)	25	2.5	18	
Ski	48	4.8	35	
Ski runner	21	2.1	15	
Ski column lower bracket	11	1.1	8.0	
Shock absorber (upper)	48	4.8	35	
Shock absorber bracket	50	5.0	36	
Shock absorber (lower)	48	4.8	35	
Steering arm and ski column	56	5.6	40	
Lower control arm and frame	50	5.0	36	
Upper control arm and frame	50	5.0	36	
Control rod and front arm	56	5.6	40	
Front arm pivot bolt	78	7.8	56	
Stabilizer bar and connecting rod	23	2.3	17	Apply LOCTITE®
Connecting rod and front arm	23	2.3	17	
Frame cross member (M10 × 20)	48	4.8	35	
Frame cross member (M10 × 65)	48	4.8	35	
Brake lever adjuster locknut	6	0.6	4.3	
Seat and frame (nut)	9	0.9	6.5	
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



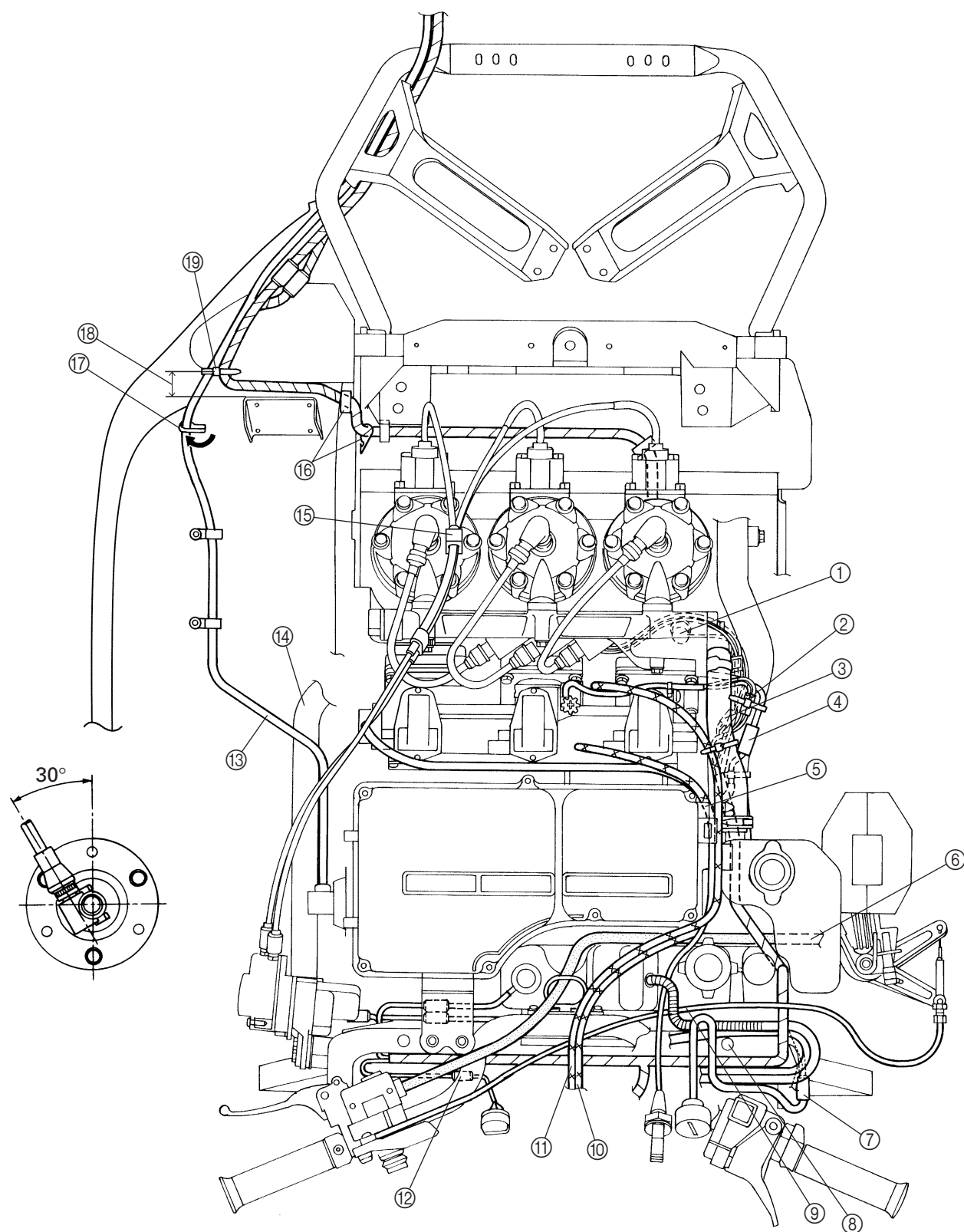
SDN9120

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

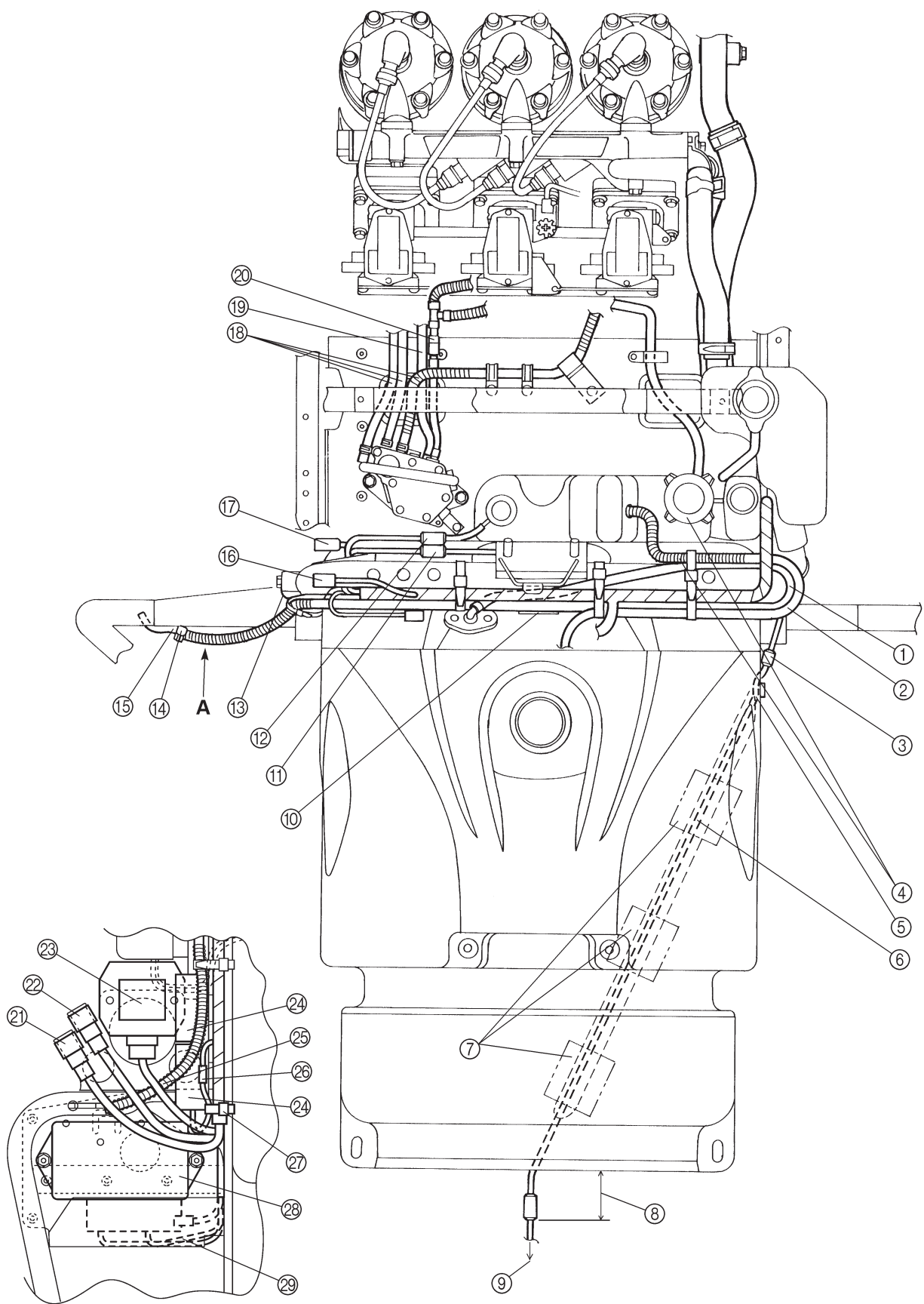


SDN9130



CABLE ROUTING

- ① Water temperature sensor coupler
- ② T.O.R.S. connector
- ③ Ignition coil coupler
- ④ Throttle position sensor coupler
- ⑤ Pass the throttle cable through the duct boss.
- ⑥ Brake hose
- ⑦ Install the main switch coupler behind the instrument panel. Position the main switch coupler under the fuel tank breather hose and oil tank breather hose.
- ⑧ Make sure that the switch wire harness is on the inside of the instrument panel screw (away from the engine).
- ⑨ Route the parking brake cable under the oil tank breather hose.
- ⑩ Throttle cable
- ⑪ Oil pump cable
- ⑫ Variable resistor coupler
- ⑬ Speedometer cable
- ⑭ Coolant hose
- ⑮ Position the cable holder as close to the spark plug as possible.
- ⑯ Clamp
- ⑰ Only this cable holder should be folded over toward the outside.
- ⑱ Under 50 mm (1.97 in)
- ⑲ Fasten the speedometer cable and wire harness with a plastic clamp. Install the clamp as close to the drive V-belt guard bracket, as possible (rearward)

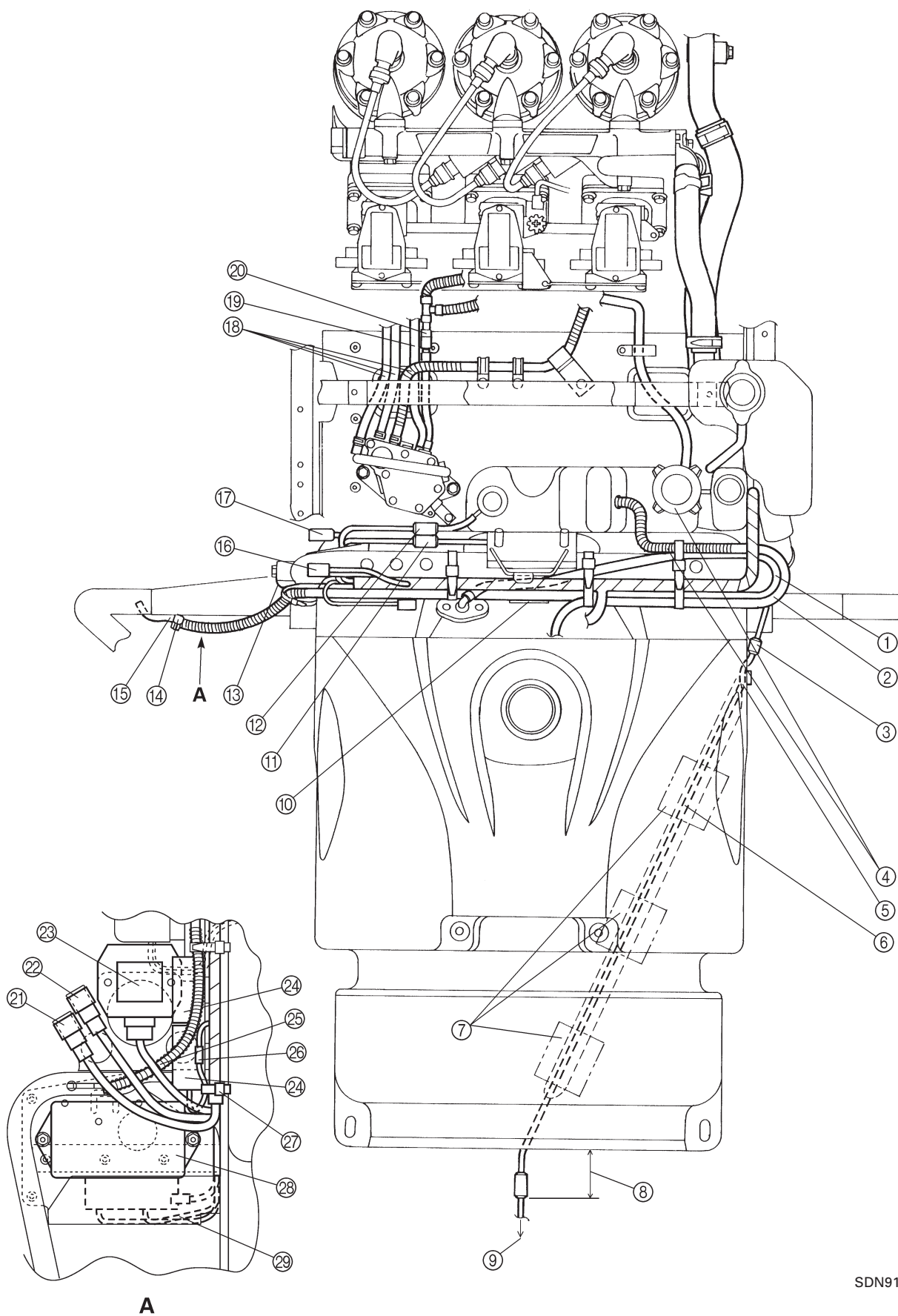


A

SDN9140



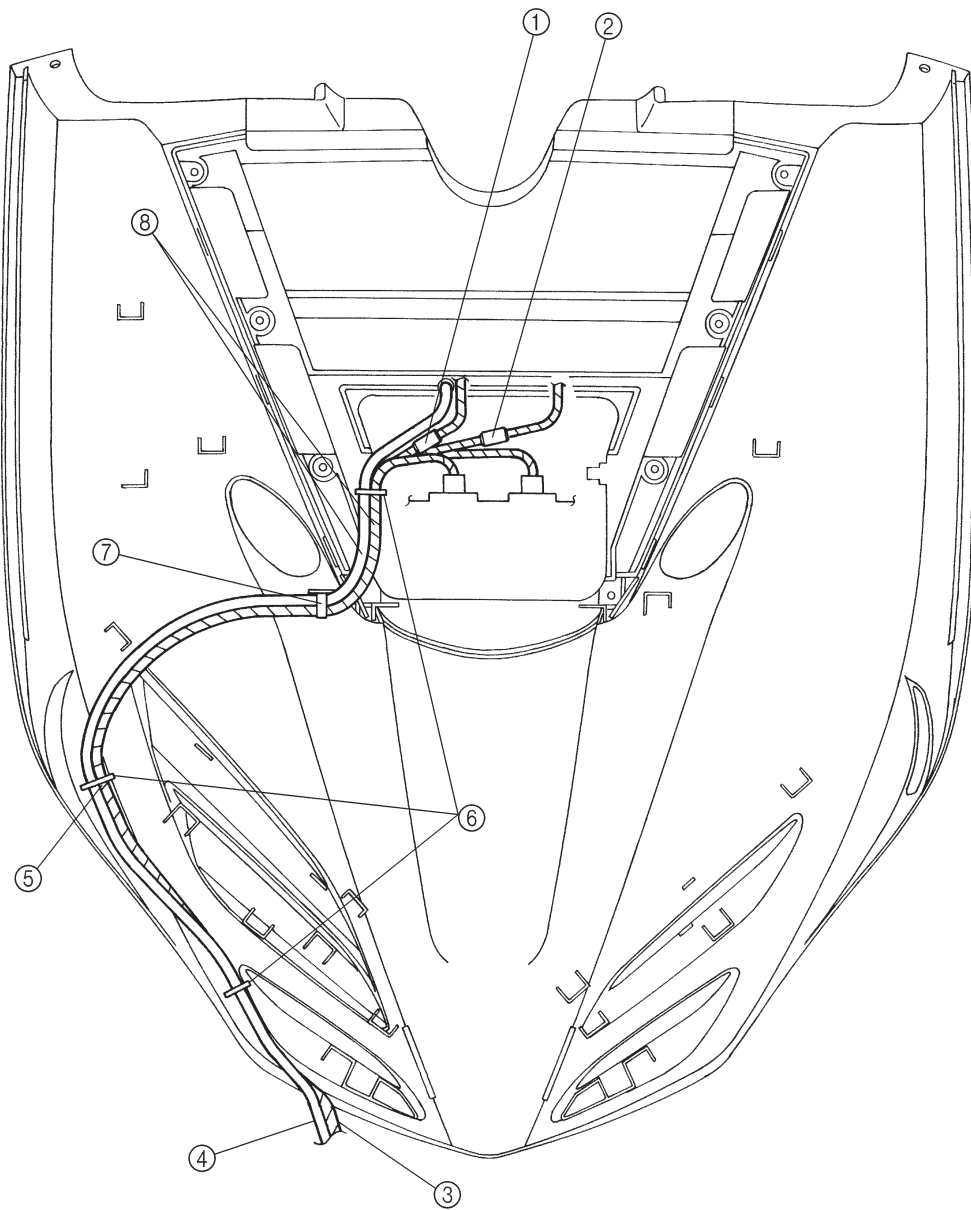
- ① Route the fuel tank breather hose along the side of the frame.
- ② Route the oil tank breather hose along the side of the frame.
- ③ Install the tail/brake light lead behind the instrument panel.
- ④ Make sure that the oil tank cap and oil tank breather hose do not touch each other.
- ⑤ Pass the tail/brake light lead through the inside of the tab on the frame. Route the tail/brake light lead behind the tab on the frame.
- ⑥ Route the tail/brake light lead between the fuel tank and the snowmobile body. Make sure that the fuel tank does not crush the tail/brake light lead. Then, fasten the three pieces of adhesive tape below the fuel tank as shown.
- ⑦ Adhesive tape
- ⑧ 50 mm (1.97 in)
- ⑨ To the tail/brake light
- ⑩ Fasten the wire harness and fuel tank breather hose with a holder.
- ⑪ Fuel sender coupler
- ⑫ Oil level switch coupler
- ⑬ Ground lead
- ⑭ Install the metal clip facing downward.
- ⑮ Insert the fuel tank breather hose until it can not be inserted further.
- ⑯ Condenser coupler
- ⑰ YAMAHA POWER VALVE SYSTEM (Y.P.V.S.) check coupler
- ⑱ Fuel hose
- ⑲ Pulser hose
- ⑳ Oil hose



SDN9145

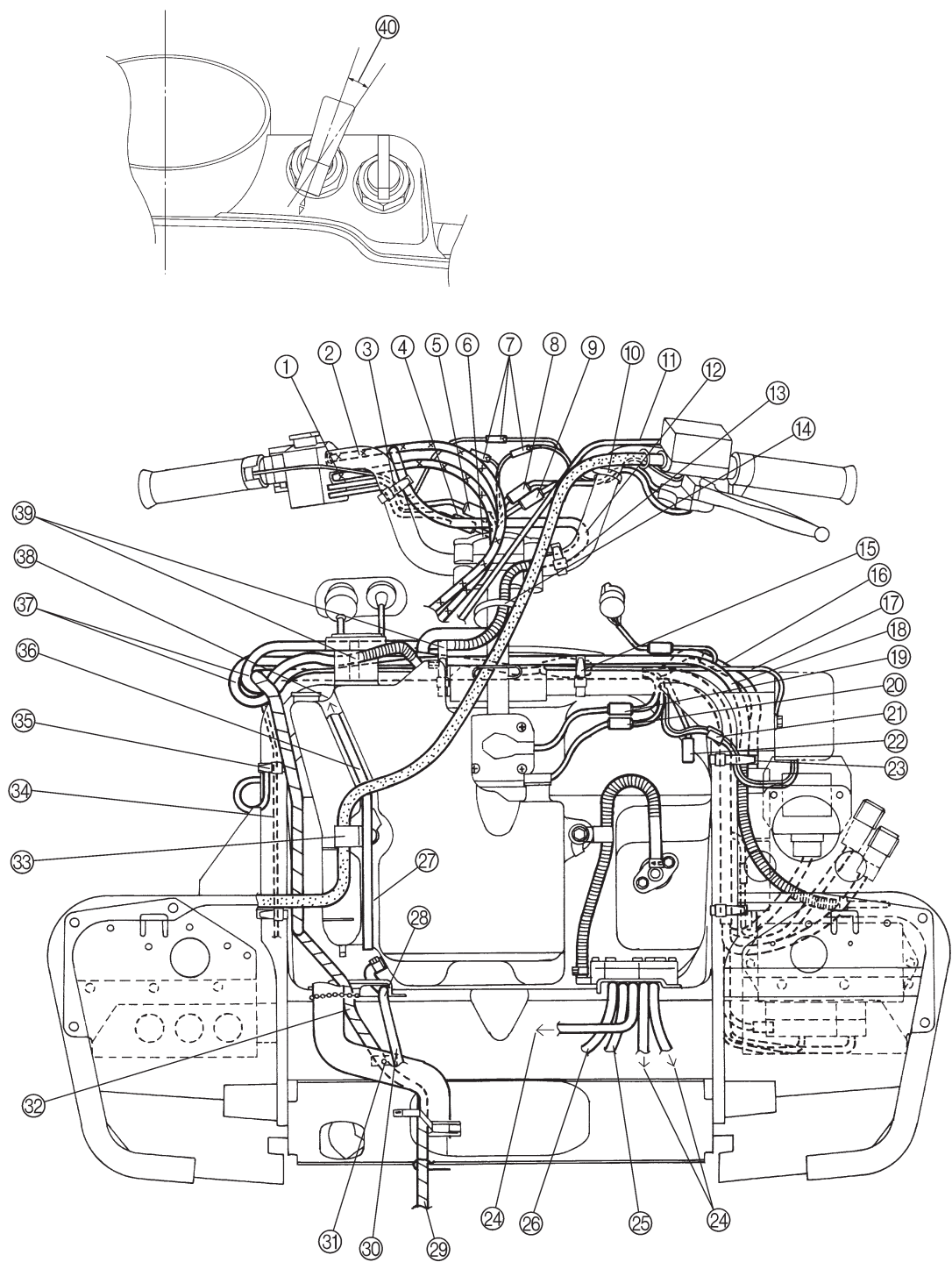


- ②① Load control relay (white)
- ②② Headlight relay (blue)
- ②③ Rectifier regulator
- ②④ Condenser
- ②⑤ Route the fuel tank breather hose behind the condenser.
- ②⑥ Condenser coupler
- ②⑦ Fasten the condenser leads and CDI unit leads with a plastic band.
- ②⑧ CDI unit
- ②⑨ Pass the CDI unit lead behind the footrest.



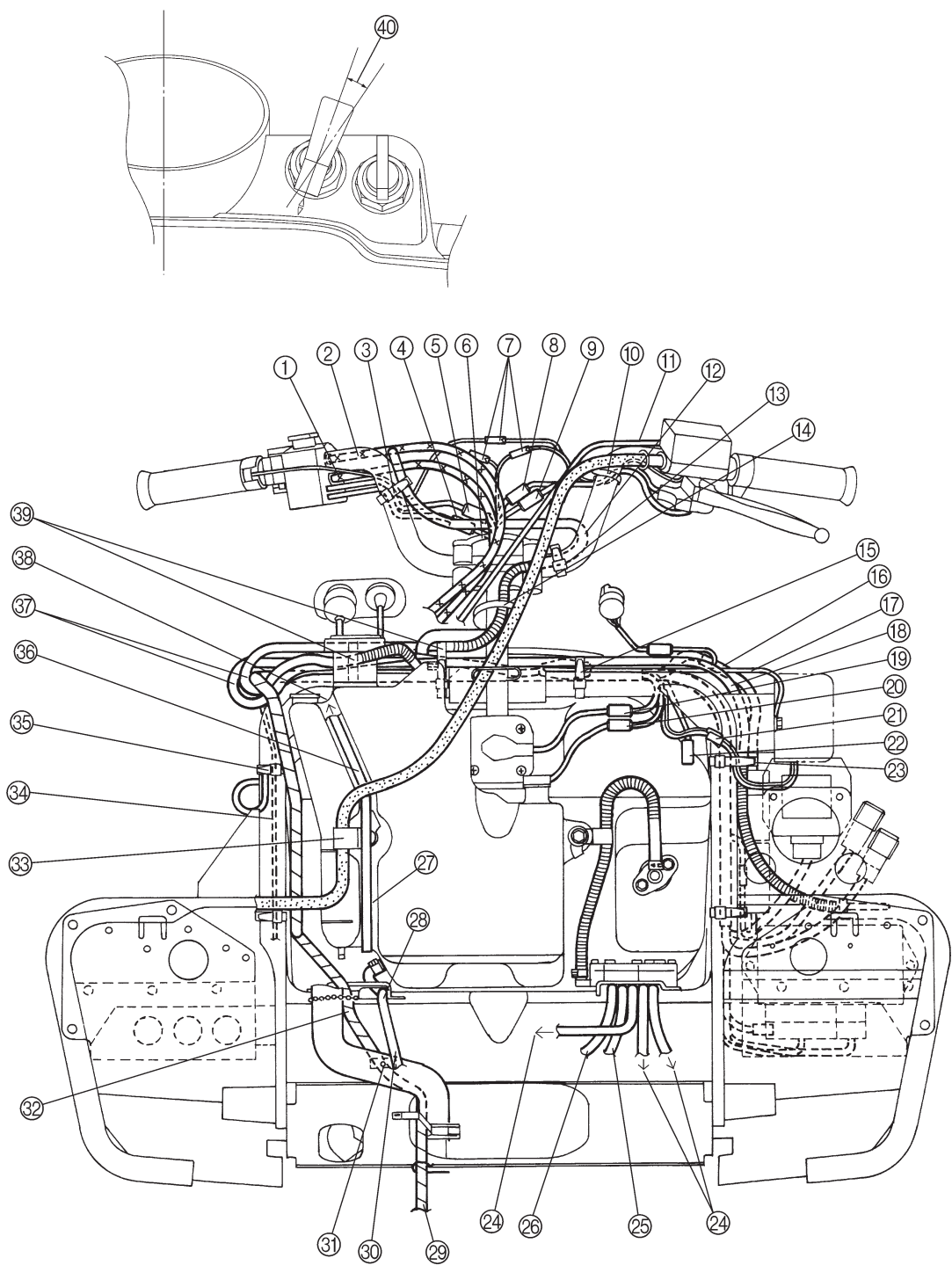


- ① Speedometer coupler
- ② Tachometer coupler
- ③ Headlight leads
- ④ Speedometer cable
- ⑤ Fasten the wire harness and speedometer cable at the white tape mark, with a plastic band.
- ⑥ Plastic band
- ⑦ Cable holder
- ⑧ Route the wire harness and speedometer cable over the shroud's stopper wire.



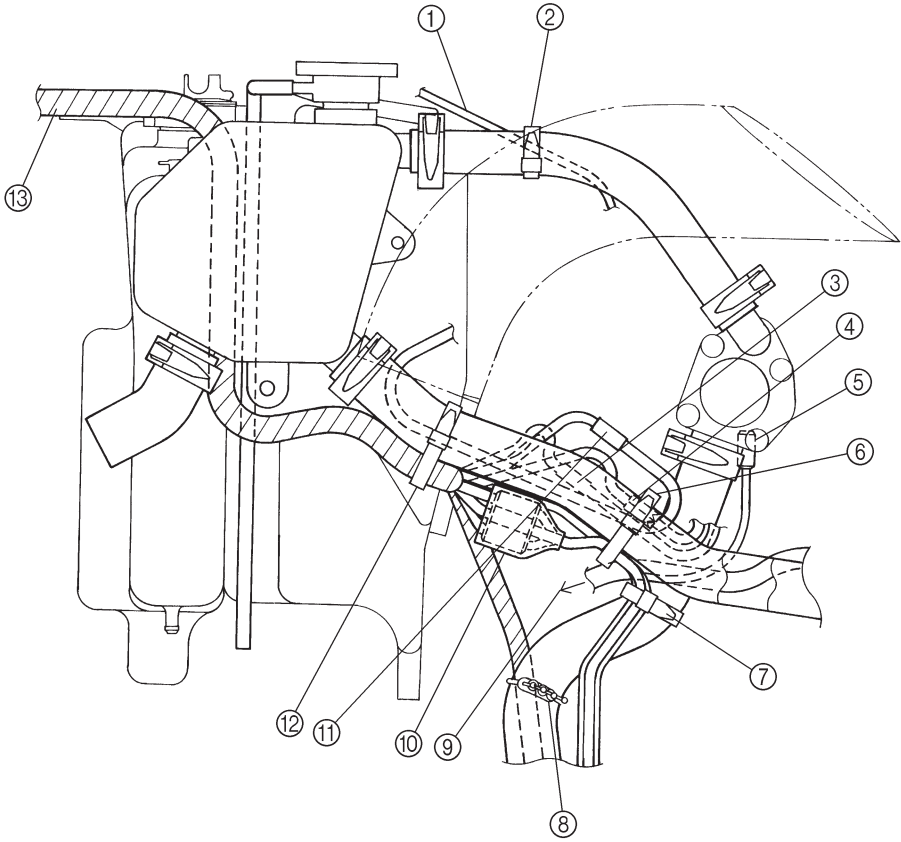


- ① Oil pump cable
- ② Throttle cable
- ③ Do not fasten the throttle cable and oil pump cable.
- ④ Thumb warmer coupler
- ⑤ Engine stop switch coupler
- ⑥ Pass the throttle cable and oil pump cable through the holder.
- ⑦ Grip warmer connector
- ⑧ Brake light switch coupler
- ⑨ Headlight beam switch
- ⑩ Fasten the brake light switch lead, headlight beam switch lead and grip warmer lead with a plastic band.
- ⑪ Parking brake cable
- ⑫ Oil tank breather hose
- ⑬ Fasten the oil tank breather hose with a plastic band.
- ⑭ Fasten the left and right handlebar switches, and the oil tank breather hose behind the steering column, with a plastic band. Do not fasten the parking brake cable and brake hose.
- ⑮ Fasten the wire harness and fuel tank breather hose with a plastic band.
- ⑯ Condenser coupler
- ⑰ Ground lead
- ⑱ Fuel tank breather hose
- ⑲ Fuel sender coupler
- ⑳ Oil level switch coupler
- ㉑ YAMAHA POWER VALVE SYSTEM (Y.P.V.S.) coupler and connector
- ㉒ YAMAHA POWER VALVE SYSTEM (Y.P.V.S.) check coupler.
- ㉓ Fasten the fuel tank breather hose, voltage regulator lead, CDI unit lead and YAMAHA POWER VALVE SYSTEM (Y.P.V.S.) lead with a plastic band.





- ②4 To the carburetor
- ②5 Vacuum hose
- ②6 Oil hose
- ②7 Reservoir tank hose
- ②8 Oil hose
- ②9 Wire harness
- ③0 To the oil pump
- ③1 Fasten the wire harness at the white tape mark, with a clamp.
- ③2 Route the wire harness and coolant hose next to each other.
- ③3 Pass the brake hose through the hose guide.
- ③4 Do not loosen the tail/brake light lead clamp.
- ③5 Fasten the tail/brake light lead with a plastic band (at the white tape mark).
Position the plastic band next to the starter rope guide, as shown.
- ③6 Route the coolant reservoir tank hose behind the brake hose.
- ③7 Does not kink.
- ③8 To the coolant reservoir tank.
- ③9 Fasten the wire harness, fuel tank breather hose and oil tank breather hose with a plastic band.
- ④0 Install the starter lever to the position as illustrated.





- ① Starter cable
- ② Fasten the starter cable, oil pump cable, and coolant hose with a plastic band without bending them.
- ③ Ignition coil coupler
- ④ T.O.R.S. connector
- ⑤ Water temperature sensor coupler
- ⑥ Fasten the wire harness, water temperature sensor lead, coolant hose, T.O.R.S. connector, ignition coil lead and throttle position sensor lead with a plastic band.
- ⑦ Fasten the wire harness and coolant hose at the spots marked with white paint.
- ⑧ Fasten the wire harness and coolant hose at the spots marked with white paint.
- ⑨ To the carburetor
- ⑩ The AC magneto coupler and rubber cover should be positioned below the coolant hose.
- ⑪ Throttle position sensor coupler
- ⑫ Fasten the wire harness, coolant hose and throttle position sensor lead at the spots marked with white paint.
- ⑬ Wire harness

- ① AC magneto
- ② Rectifier/regulator
- ③ Condenser
- ④ Main switch
- ⑤ Thumb warmer
- ⑥ Grip warmer
- ⑦ Engine stop switch
- ⑧ Throttle switch
- ⑨ Carburetor switch
- ⑩ Water temperature sensor
- ⑪ CDI unit
- ⑫ Servo motor
- ⑬ Throttle position sensor
- ⑭ Variable resistor
- ⑮ Ignition coil
- ⑯ Spark plug
- ⑰ Engine ground
- ⑱ Frame ground
- ⑲ Brake light switch
- ⑳ Tail/brake light
- ㉑ Fuel sender
- ㉒ Oil level switch
- ㉓ Speedometer
- ㉔ Oil level indicator light
- ㉕ Water temperature indicator light
- ㉖ High beam indicator light
- ㉗ Speedometer light
- ㉘ Tachometer light
- ㉙ Tachometer
- ㉚ Fuel meter
- ㉛ Headlight
- ㉜ Headlight beam switch
- ㉝ Headlight relay
- ㉞ Load control relay
- ㉟ Test lead (for Y.P.V.S./option)
- ㊱ Battery (for Y.P.V.S./option)

COLOR CODE

B Black
 Br Brown
 Ch Chocolate
 G Green
 Gy Gray
 L Blue
 O Orange
 R Red
 W White
 Y Yellow
 B/R Black/Red
 B/W Black/White
 B/Y Black/Yellow
 Br/W Brown/White
 G/B Green/Black
 G/R Green/Red
 G/Y Green/Yellow
 Gy/B Gray/Black
 L/R Blue/Red
 R/B Red/Black
 R/W Red/White
 R/Y Red/Yellow
 W/B White/Black
 W/G White/Green
 W/R White/Red
 Y/B Yellow/Black
 Y/L Yellow/Blue
 Y/R Yellow/Red
 Y/W Yellow/White

WIRING DIAGRAM

SRX700/SRX700S

