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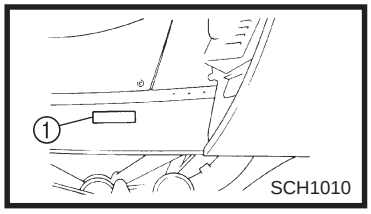
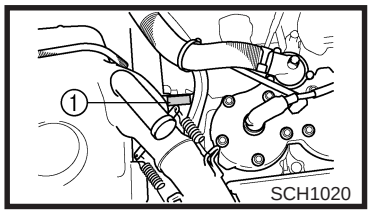




GENERAL INFORMATION

MACHINE IDENTIFICATION

FRAME SERIAL NUMBER

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

ENGINE SERIAL NUMBER

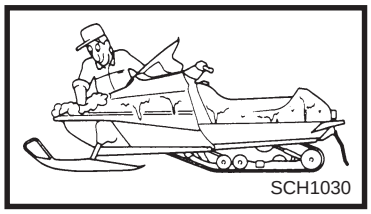
The engine serial number ① is located on the right-hand side of the crankcase.

NOTE:

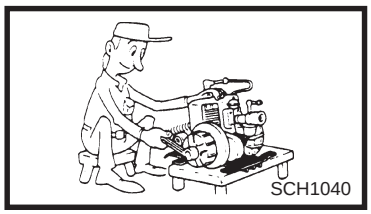
Designs and specifications are subject to change without notice.

IMPORTANT INFORMATION

PREPARATION FOR REMOVAL AND DISASSEMBLY


SCH1030

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.


SCH1040

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

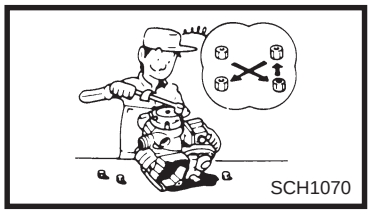

SCH1050

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.

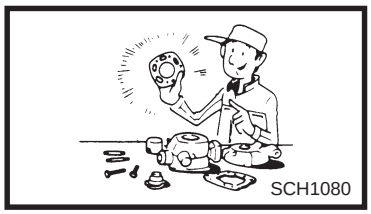

SCH1060

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.


SCH1070

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.

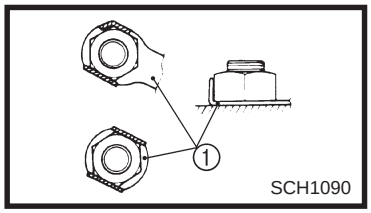

SCH1080

ALL REPLACEMENT PARTS

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

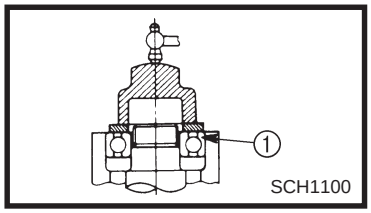
GASKETS, OIL SEALS, AND O-RINGS

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



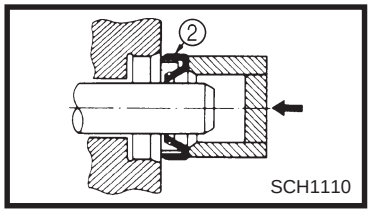
LOCK WASHERS/PLATES AND COTTER PINS

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



BEARINGS AND OIL SEALS

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

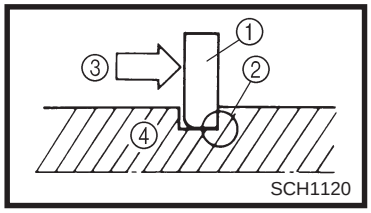


CAUTION:

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

CIRCLIPS

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



④ Shaft

LOCTITE®

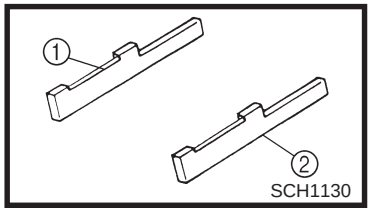
After installing fasteners that have LOCTITE® applied, wait 24 hours before using the machine. This will give the LOCTITE® time to dry properly.

SPECIAL TOOLS

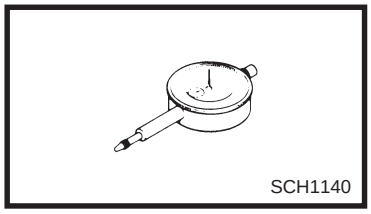
Some special tools are necessary for a completely accurate tune-up and assembly. Using the correct special tool will help prevent damage that can be caused by the use of improper tools or improvised techniques.

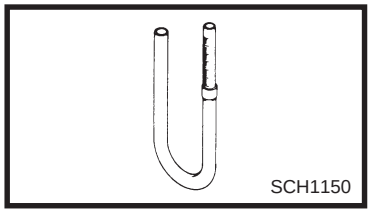
NOTE:

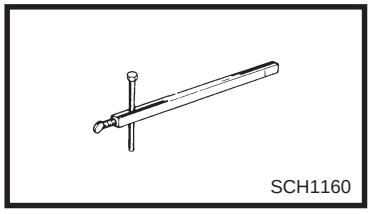
Be sure to use the correct part number when ordering the tool, since the part number may differ according to country.



SCH1130


SCH1140


SCH1150


SCH1160

FOR TUNE UP

- Sheave gauge
  P/N: YS-42421-1 (15 mm offset) ①
  YS-42421-2 (20 mm offset) ②

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)

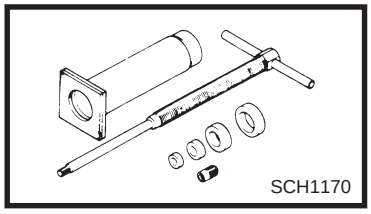
This gauge is used for run out measurement.

- 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)

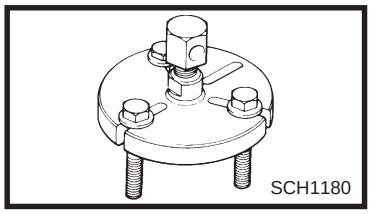
This gauge is used to measure the distance between the center of the primary sheave and the center of the secondary sheave.


SCH1170

FOR ENGINE SERVICE

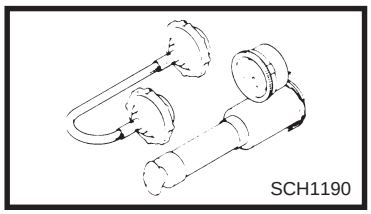
- Piston pin puller
  P/N: YU-01304 (for U.S.A./Canada)
  90890-01304 (for Europe)

This tool is used to remove the piston pin.


SCH1180

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

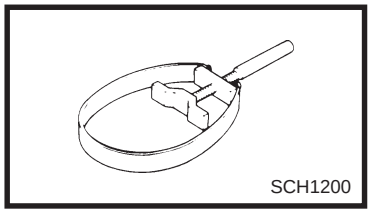
This tool is used to remove the magneto rotor.


SCH1190

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

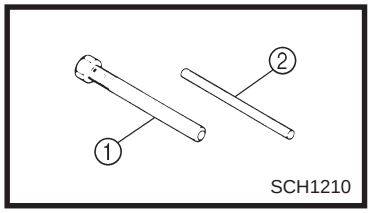
This tester is used for checking the cooling system.

FOR POWER TRAIN SERVICE


SCH1200

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

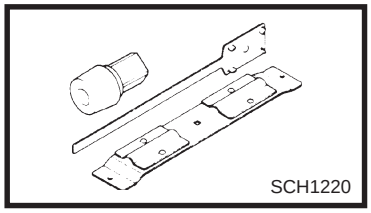
This tool is used to hold the primary sheave.



SCH1210

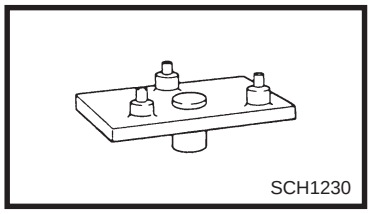
- Primary sheave puller (18 mm)
  P/N: YS-01881-1①, YS-01882-1②

This tool is used for removing the primary sheave.


SCH1220

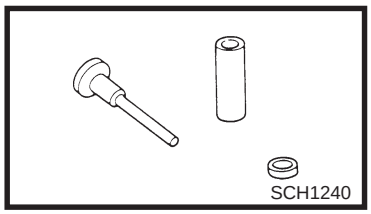
- Clutch spider separator
  P/N: YS-28890-B (for U.S.A./Canada)
  90890-01711 (for Europe)

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


SCH1230

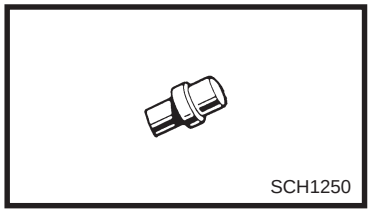
- Clutch separator adapter
  P/N: YS-34480 (for U.S.A./Canada)
  90890-01740 (for Europe)

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


SCH1240

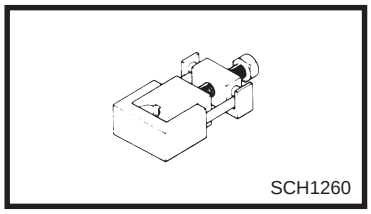
- YXR clutch bushing jig kit
  P/N: YS-39752

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


SCH1250

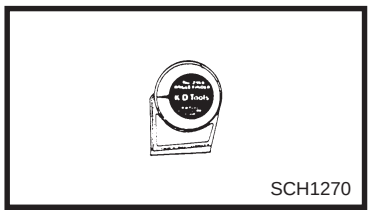
- Clutch bushing press
  P/N: YS-42424

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


SCH1260

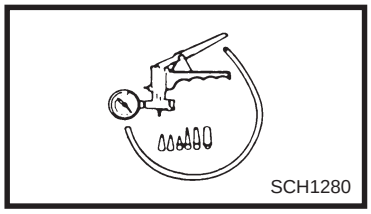
- Track clip installer
  P/N: YS-91045-A (for U.S.A./Canada)
  90890-01721 (for Europe)

This tool is used for installing the track clip.


SCH1270

- Angle finder
  P/N: YS-42422

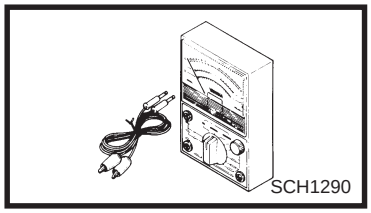
This tool is used for checking and adjusting the ski spindle camber.


SCH1280

FOR CARBURETION SERVICE

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

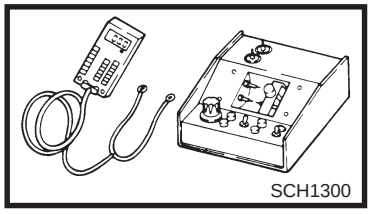
This tool is used to check the fuel pump.


SCH1290

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.


SCH1300

- 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.

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

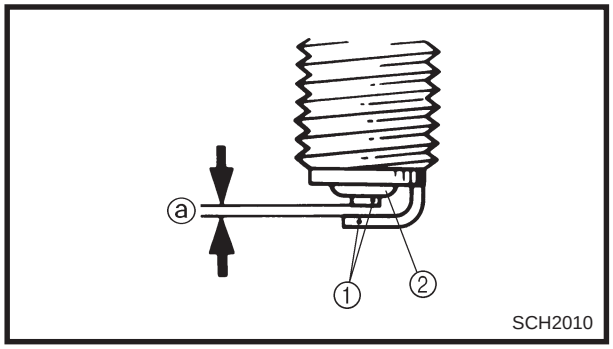
Item	Remarks	Pre-operation check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every Seasonally or 3,200 km (2,000 mi) (160 hr)
Spark plugs	Check condition. Adjust gap and clean. Replace if necessary.			●
Engine oil	Check oil level.	●		
	Air bleed the oil pump if necessary.			●
Fuel	Check fuel level.	●		
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.			●
Carburetors	Check throttle lever operation.	●		
	Adjust the jets.	Whenever operating condition (elevation/temperature) is changed.		
Recoil starter	Check operation and rope damage. Replace if necessary.	●		
Engine stop switch	Check operation Repair if necessary.	●		
Throttle override system (T.O.R.S.)	Check operation. Repair if necessary.	●		
Throttle lever	Check operation. Repair if necessary.	●		
Exhaust system	Check for leakage. Retighten or replace gasket if necessary.			●
Decarbonization	More frequently if necessary.			●
Drive guard	Check for cracks, bends or damage. Replace if necessary.	●		
V-belt	Check for wear and damage. Replace if necessary.	●		
Drive track and idler wheels	Check deflection, and for wear and damage. Adjust/replace if necessary.	●		
Slide runners	Check for wear and damage.	●		
	Replace if necessary.			●

Item	Remarks	Pre-operation check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every Seasonally or 3,200 km (2,000 mi) (160 hr)
Brake and parking brake	Check operation and fluid leakage.	●		
	Adjust free play and/or replace pads if necessary.			●
	Replace brake fluid.	See NOTE.		
Drive chain oil	Check oil level.		●	
	Replace.			●
Drive chain	Check deflection. Adjust if necessary.	Initial at 500 km (300 mi) and every 800 km (500 mi) thereafter.		
Skis and ski runners	Check for wear and damage.	●		
	Replace if necessary.			●
Steering system	Check operation.	●		
	Adjust toe-out if necessary.			●
Strap (MM700)	Check for damage. Replace if necessary.	●		
Lights	Check operation. Replace bulbs if necessary.	●		
Battery (VX700DX/VT700)	Check fluid level. Add only distilled water if necessary.	●		
	Check specific gravity and breather hose operation. Charge/correct if necessary.			●
Primary and secondary clutches	Check engagement and shift speed. Adjust if necessary.			●
		Whenever operating elevation is changed.		
	Inspect sheaves for wear/damege. Inspect weights/rollers and bushings for wear-for primary. Inspect ramp shoes/bushings for wear-for secondary. Replace if necessary.			●
	Lubricate with specified grease.			●
Steering column bearing	Lubricate with specified grease.			●
Ski and front suspension	Lubricate with specified grease.			●
Suspension component	Lubricate with specified grease.			●
Parking brake cable end and lever end/throttle cable end	Lubricate with specified grease.			●
	Check cable damage. Replace if necessary.			●
Shroud latches	Make sure that the shroud latches are hooked.	●		
Fittings and fasteners	Check tightness. Repair if necessary.	●		
Tool kit and recommended equipment	Check proper placement.	●		

NOTE:

Brake fluid replacement:

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

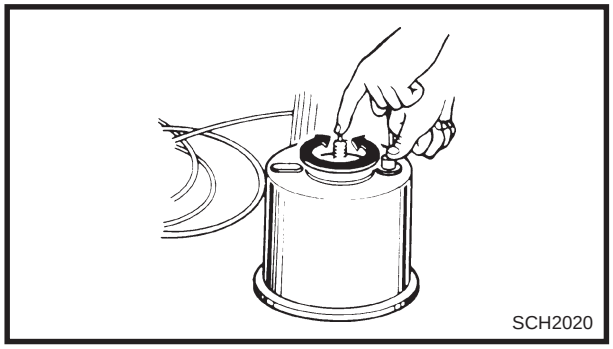


ENGINE

SPARK PLUGS

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

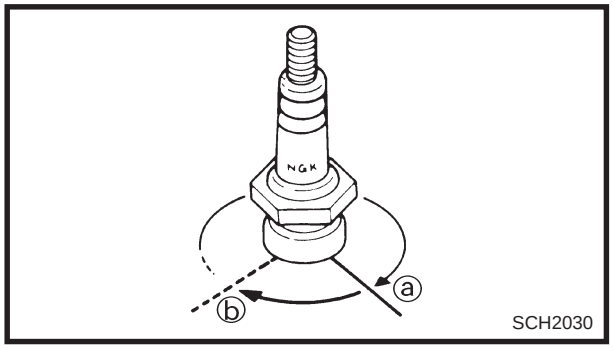
Spark plug gap ⓐ:
0.7 ~ 0.8 mm (0.028 ~ 0.031 in)



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

Standard spark plug:
BR9ES (NGK)

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



4. Install:
   - Spark plugs

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

NOTE:
Finger-tighten ⓐ the spark plug before torquing ⓑ it to specification.

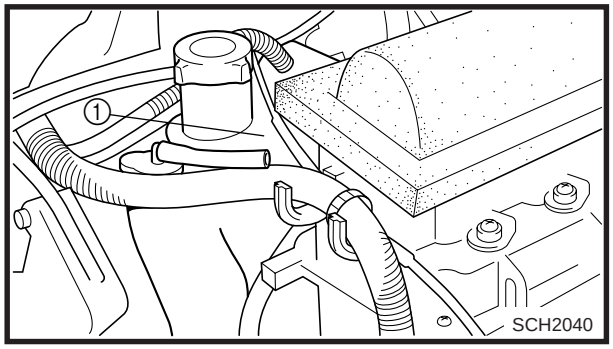
OIL PUMP

Air bleeding

CAUTION:

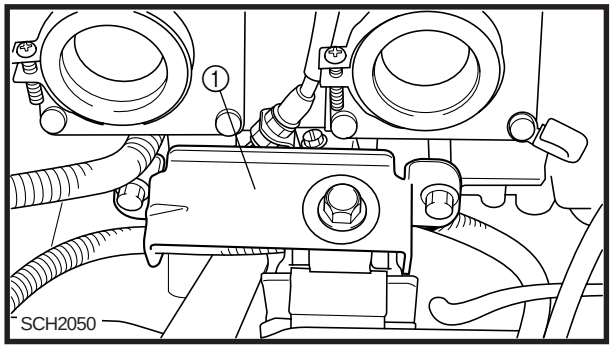
The oil pump and oil delivery line must be bled in the following cases:

- **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.**

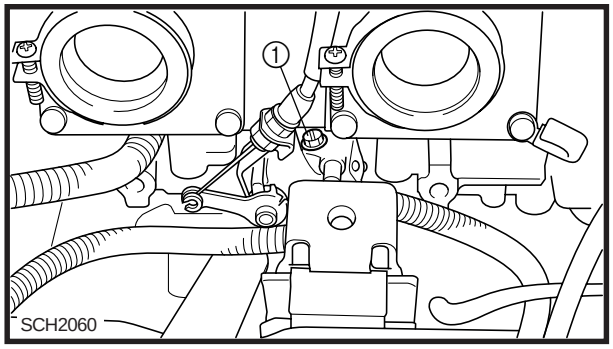


1. Fill:
   - Oil tank ①

Recommended oil:
YAMALUBE 2-cycle oil
Oil tank capacity:
3.0 L (2.6 Imp qt, 3.2 US qt)



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

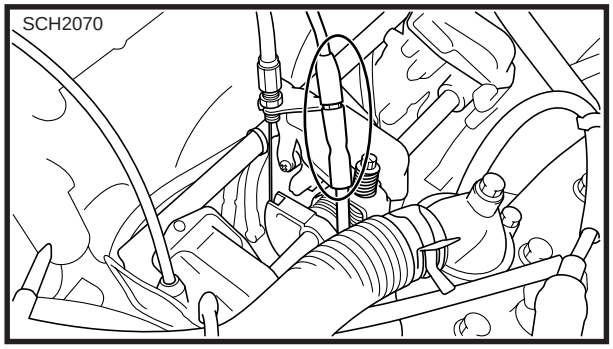


11. Remove:
    - Bleed bolt ①
    - Gasket (bleed bolt)
12. Drain the oil until no more air bubbles appear from the bleed hole.
13. Inspect:
    - Gasket (bleed bolt)
      Damage/wear → Replace.

14. Install:
    - Gasket (bleed bolt)
    - Bleed bolt
15. Install:
    - Rear bracket (right)

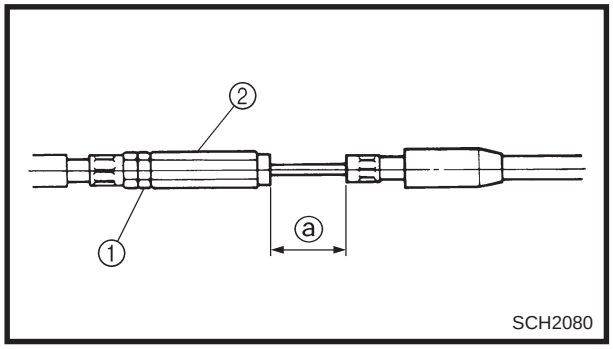
M8 mounting bolt (rear):
33 Nm (3.3 m · kg, 24 ft · lb)
M10 mounting bolt (rear):
57 Nm (5.7 m · kg, 41 ft · lb)

16. Install:
    - Carburetors
      Refer to “CARBURETORS” in CHAPTER 7.



Cable adjustment

NOTE:
Before adjusting the oil pump cable, the throttle cable free play should be adjusted.

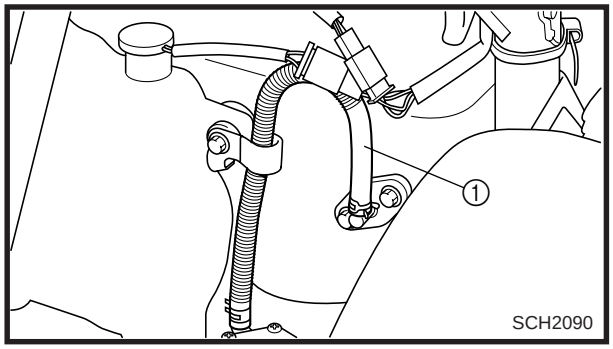


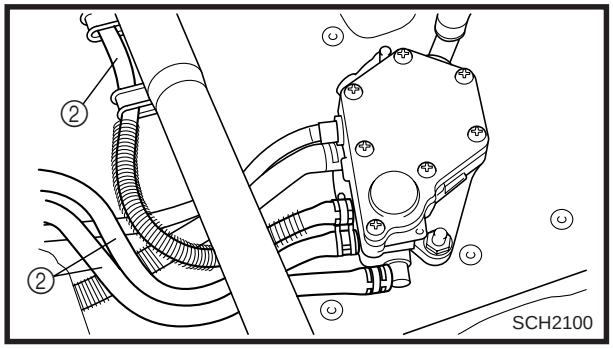
Adjustment steps:
- Slide back the adjuster cover.
- Loosen the locknut ①.
- Turn the adjuster ② in or out until the specified distance ⓐ is obtained.

Distance ⓐ:
22 ± 1 mm (0.866 ± 0.039 in)

Turning in → Distance ⓐ is increased.
Turning out → Distance ⓐ 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

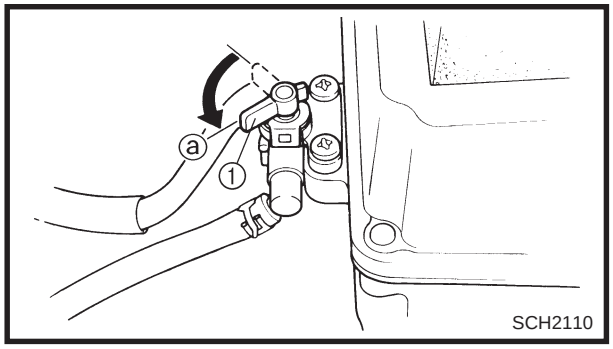
Coolant replacement

NOTE:

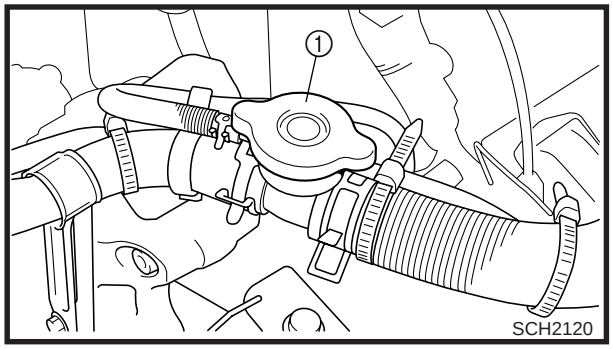
The coolant should be changed at least every season.

1. Place the machine on a level surface.

2. Remove:
   - Exhaust pipe
   - Exhaust joint
     Refer to “EXHAUST ASSEMBLY” in CHAPTER 5.



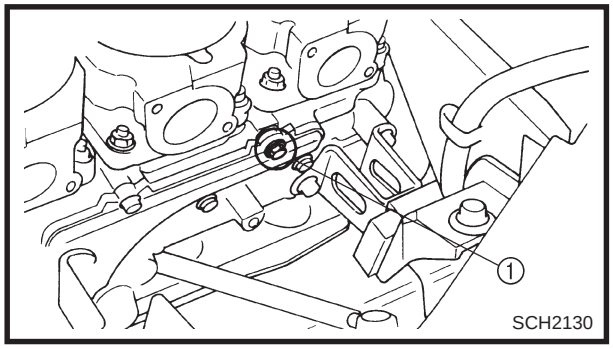
3. Make sure that the carburetor heating lever ① is turned to “ON” ⓐ.



4. Remove:
   - Coolant filler cap ①

⚠ WARNING

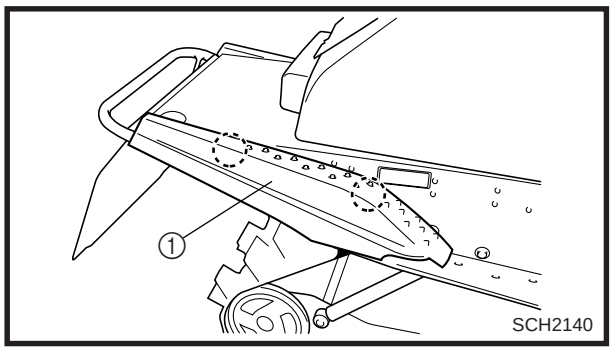
Do not remove the coolant filler cap ① when the engine is hot. Pressurized scalding hot fluid and steam may be blown out, which could cause serious injury. When the engine has cooled, place a thick rag or a towel over the coolant filler cap. Slowly turn the cap counterclockwise until it stop. This allows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



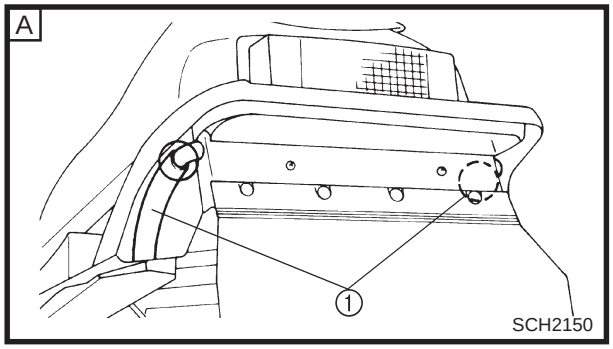
5. Place an open container under the coolant drain bolt ①.
6. Remove:
   - Coolant drain bolt
   - Gasket (coolant drain bolt)
7. Drain the coolant.

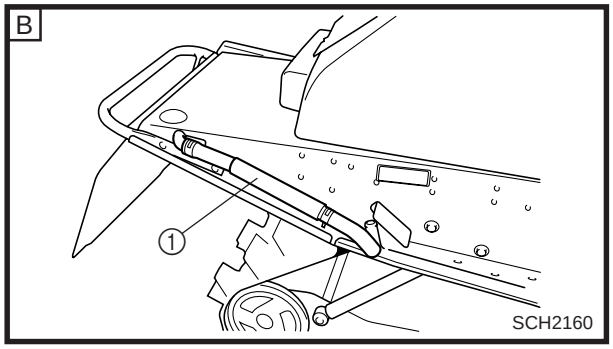
NOTE:

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



8. Remove:
   - Right side cover ① (MM700)





9. Disconnect:
   - Coolant hoses ①

   A VX700/VX700DX/SX700/VT700
   B MM700
10. Drain the coolant.

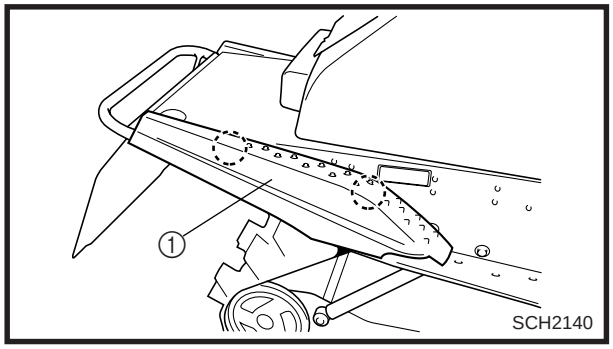
NOTE:

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

⚠ WARNING

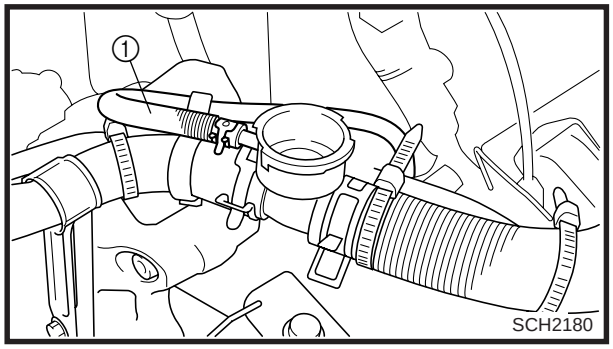
Coolant is poisonous. It is harmful or fatal if swallowed.

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

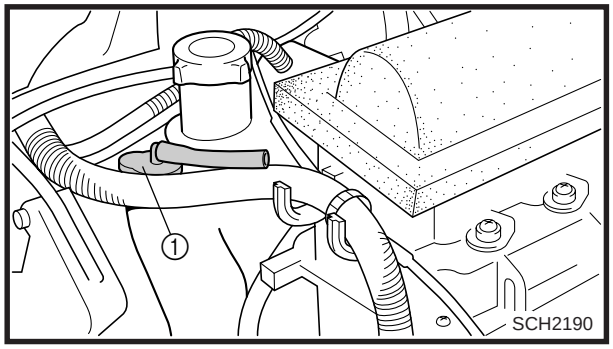


11. Connect:
    - Coolant hoses
12. Install:
    - Right side cover ① (MM700)

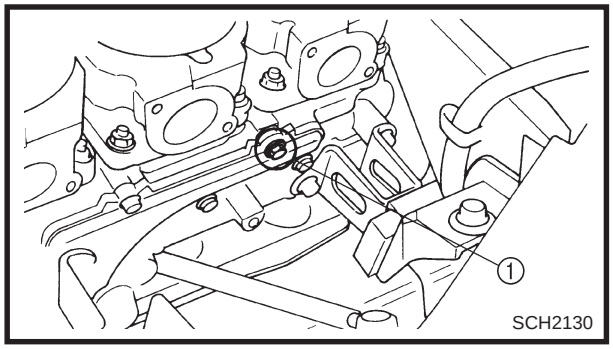
Bolt (side cover):
3 Nm (0.3 m · kg, 2.2 ft · lb)

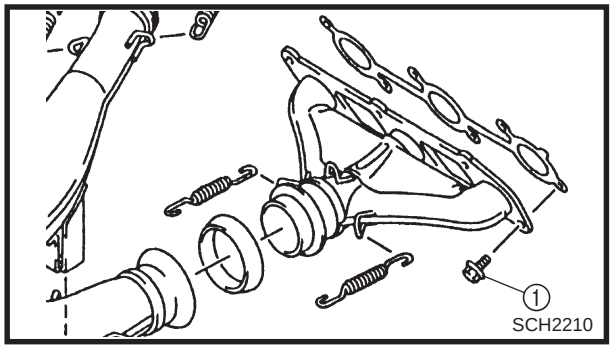


13. Disconnect:
    - Coolant reservoir hose ①



14. Remove:
    - Coolant reservoir cap ①
15. Drain the coolant from the coolant reservoir.
16. Install:
    - Coolant reservoir cap
17. Connect:
    - Coolant reservoir hose





18. Inspect:
- Gasket (coolant drain bolt)
  Damage → Replace.

19. Install:
- Gasket
- Coolant drain bolt ①

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

20. Install:
- Exhaust joint
- Exhaust pipe
  Refer to "EXHAUST ASSEMBLY" in CHAPTER 5.

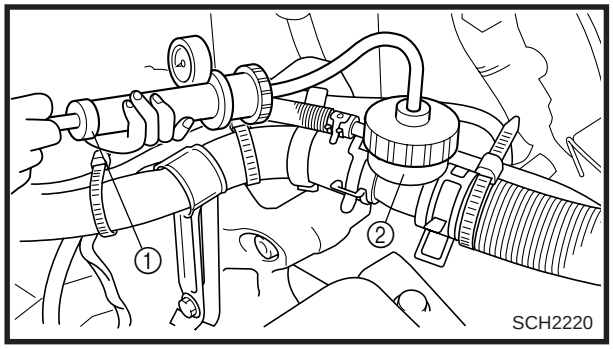
Bolt (exhaust joint) ①:
1st:
18 Nm (1.8 m · kg, 13 ft · lb)
2nd:
27 Nm (2.7 m · kg, 19 ft · lb)

21. Fill:
- Cooling system

Recommended coolant:
High quality ethylene glycol antifreeze containing corrosion inhibitors
Coolant mixing ratio (coolant:water)
3:2 (60%:40%)
Total amount:
VX700/VX700DX/SX700:
3.8 L (3.34 lmp qt, 4.02 US qt)
MM700:
3.9 L (3.43 lmp qt, 4.12 US qt)
VT700:
4.0 L (3.52 lmp qt, 4.23 US qt)
Reservoir tank capacity:
0.28 L (0.25 lmp qt, 0.30 US qt)
From LOW to FULL level:
0.13 L (0.11 lmp qt, 0.14 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.**

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

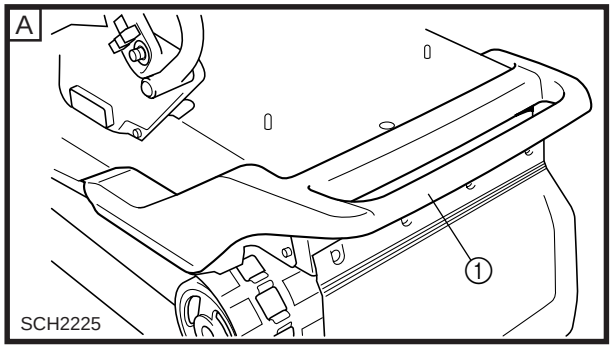


Inspection steps:

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

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

- Apply 100 kPa (1.0 kg/cm^2, 14 psi).
- Measure the pressure with the gauge.

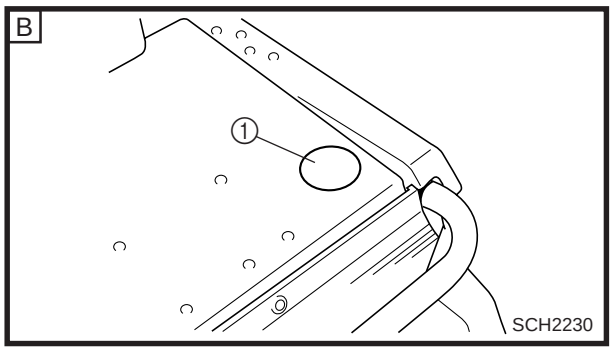


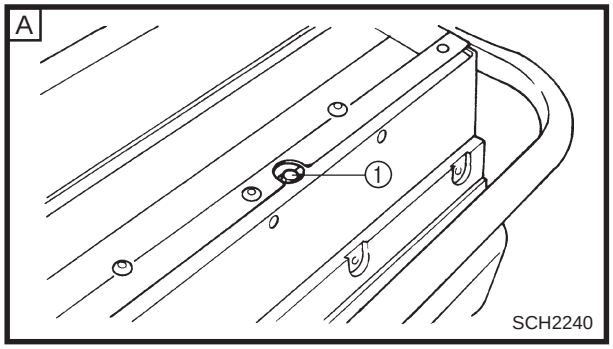
Air bleeding

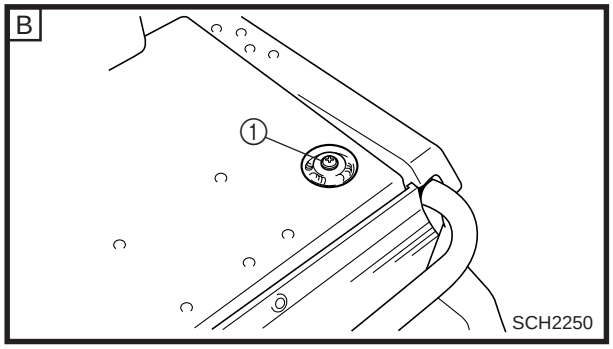
1. Remove:
   - Seat (VX700/VX700DX/SX700/VT700)
   - Rear bumper cover ① (VT700)
   - Bleed bolt cap ① (MM700)

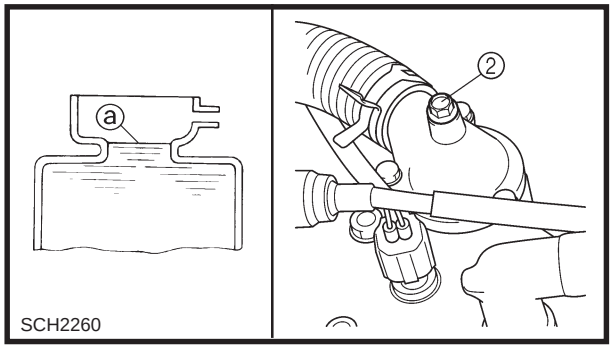
Ⓐ VT700
Ⓑ MM700

2 .Bleed air from the cooling system.









Air bleeding steps:

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

Bleed bolt ①:
VX700/VX700DX/SX700/VT700:
13 Nm (1.3 m · kg, 9.4 ft · lb)
MM700:
4 Nm (0.4 m · kg, 2.9 ft · lb)

Ⓐ VX700/VX700DX/SX700/VT700
Ⓑ MM700

- Add coolant to the coolant cold level ⓐ.
- Loosen the bleed bolt ② on the thermostatic cover.
- Drain the coolant until no more air bubbles appear.
- Tighten the bleed bolt ②.

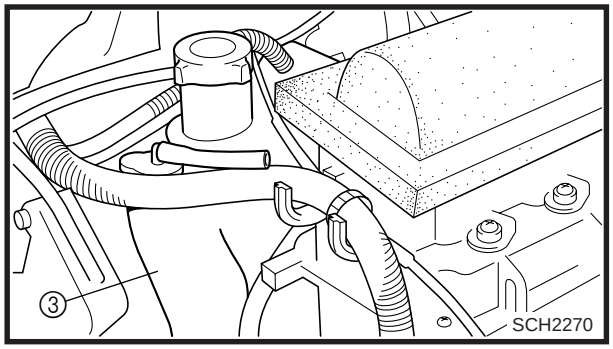
Bleed bolt ②:
7 Nm (0.7 m · kg, 5.1 ft · lb)

- 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 coolant circulates (approximately 3 ~ 5 minutes). The rear heat exchanger will be warm to the touch.

⚠ WARNING

To avoid severe injury or death:

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

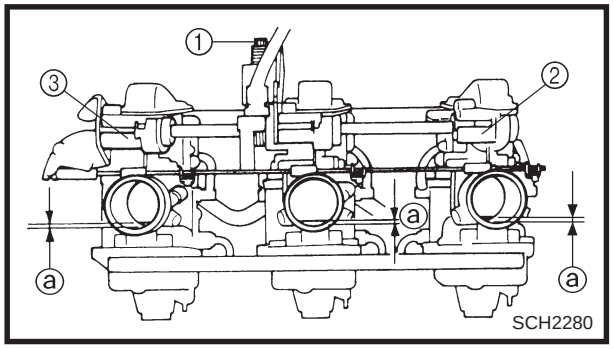


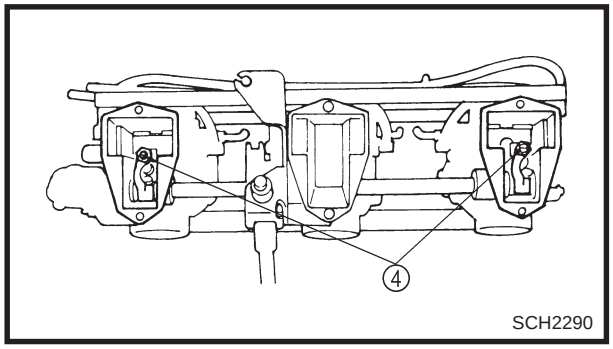
- Remove the coolant filler cap and bleed the cooling system again, as described above.
  No air bubbles → OK.
- Add coolant to the specified level.
- Pour coolant into the coolant reservoir ③ until the coolant level reaches the "FULL" level mark.

3. Install:
   - Bleed bolt cap (MM700)
   - Seat (VX700/VX700DX/SX700/VT700)

CARBURETOR SYNCHRONIZATION

1. Remove:
   - Carburetors
     Refer to "CARBURETORS" in CHAPTER 7.
2. Adjust:
   - Carburetor synchronization





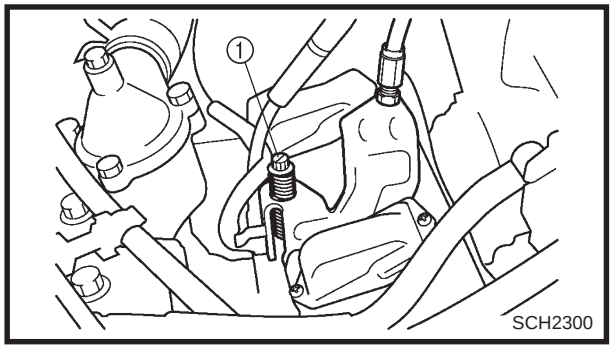
Adjustment steps:

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

Throttle valve height ⓐ:
1.2 mm (0.047 in)

- Adjust the throttle valve height ⓐ on carburetor #1 ② and #3 ③ with the adjusting screws ④.
- 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.

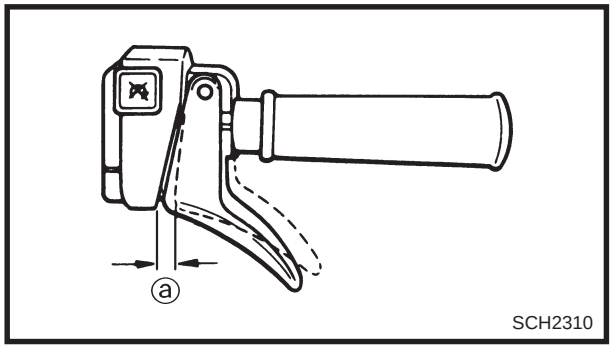
Turning in → Idle speed is increased.
Turning out → Idle speed is decreased.

Engine idle speed:
1,600 ± 100 r/min

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

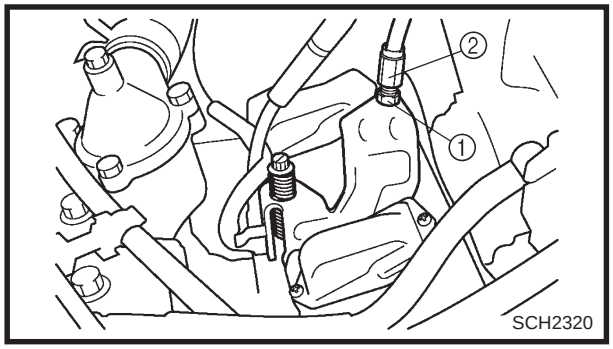
THROTTLE CABLE FREE PLAY ADJUSTMENT

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



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

Throttle cable free play ⓐ:
1.0 ~ 2.0 mm (0.04 ~ 0.08 in)



2. Adjust:
   - Throttle cable free play

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

Turning in → Free play is increased.
Turning out → Free play is decreased.

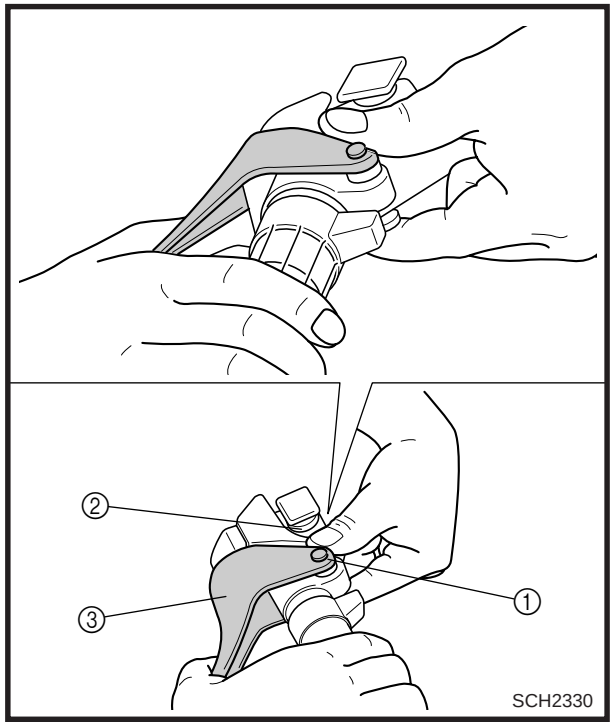
- Tighten the locknut.

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

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

⚠ WARNING

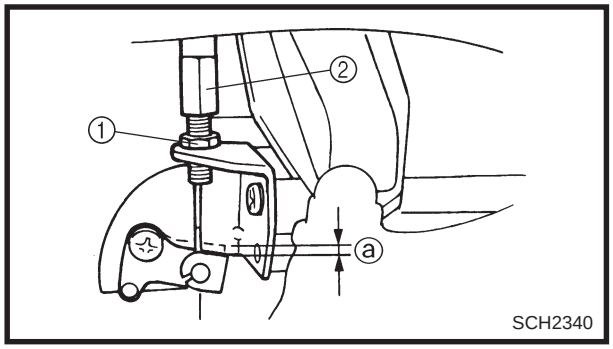
When checking T.O.R.S.:
- **Be sure the parking brake is applied.**
- **Be sure the throttle lever moves smoothly.**
- **Do not run the engine up to the clutch engagement speed. Otherwise, the machine could start moving forward unexpectedly, which could cause an accident.**



1. Start the engine.
2. Hold the pivot point of the throttle lever away from the throttle switch by putting your thumb (above) and forefinger (below) between the throttle lever pivot ① and stop switch housing ②.
   While holding as described above, press the throttle lever ③ gradually.
   The T.O.R.S. will operate and the engine should run between 2,800 and 3,000 r/min.

⚠ WARNING

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



STARTER (CHOKE) CABLE FREE PLAY ADJUSTMENT

1. Measure:
   - Starter cable free play ⓐ
     Out of specification → Adjust.

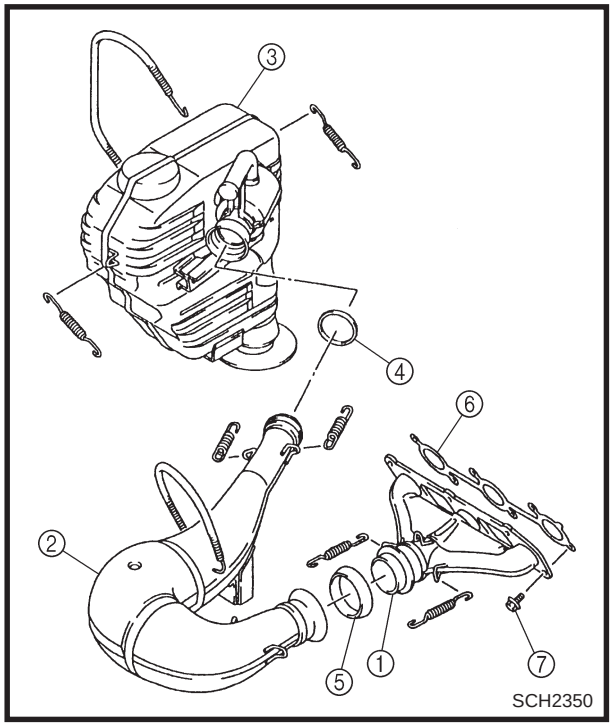
Starter cable free play ⓐ:
0.5 ~ 1.5 mm (0.02 ~ 0.06 in)

2. Adjust:
   - Starter cable free play

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

Turning in → Free play is increased.
Turning out → Free play is decreased.

- Tighten the locknut.



EXHAUST SYSTEM INSPECTION

1. Open the shroud.
2. Remove:
   - Springs
     Refer to “EXHAUST ASSEMBLY” in CHAPTER 5.
3. Inspect:
   - Exhaust joint ①
   - Exhaust pipe ②
   - Exhaust silencer ③
     Cracks/damage → Replace.
   - Gasket 1 ④
   - Gasket 2 ⑤
   - Gasket 3 ⑥
     Exhaust gas leaks → Replace.
4. Check:
   - Tightening torque ⑦

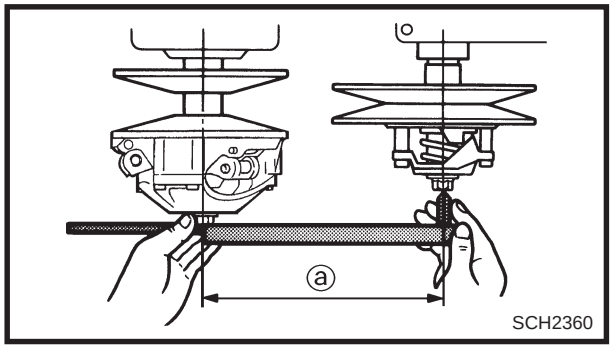
Bolt (exhaust joint) ⑦:
1st:
18 Nm (1.8 m · kg, 13 ft · lb)
2nd:
27 Nm (2.7 m · kg, 19 ft · lb)

5. Install:
   - Springs
     Refer to “EXHAUST ASSEMBLY” in CHAPTER 5.

POWER TRAIN

SHEAVE DISTANCE AND OFFSET ADJUSTMENT

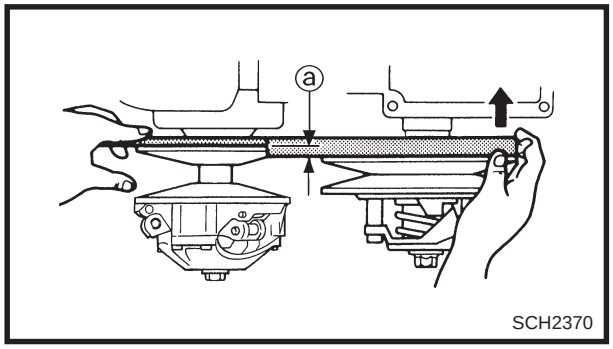
1. Open the shroud.
2. Remove:
   - Drive V-belt guard
   - Drive V-belt



3. Measure:
   - Sheave distance ⓐ
     Use the distance gauge.
     Out of specification → Adjust.

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

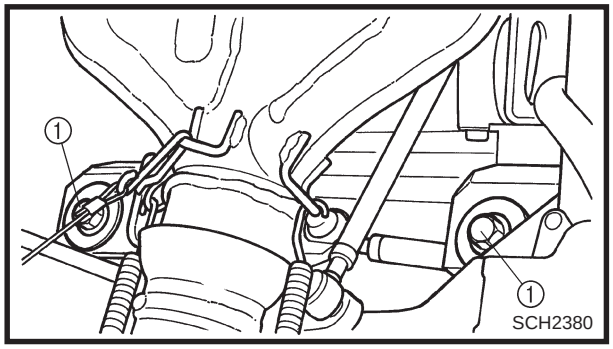
Distance gauge:
90890-01702, YS-91047-3



4. Measure:
   - Sheave offset ⓐ
     Use the sheave gauge.
     Out of specification → Adjust.

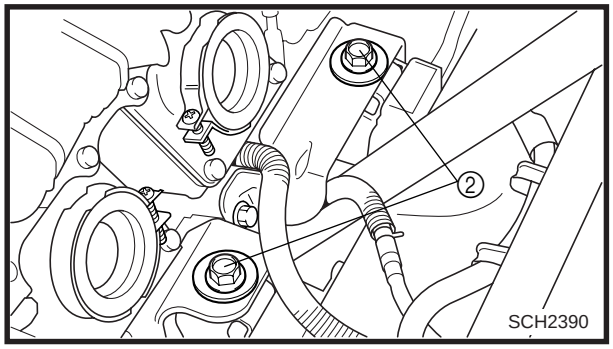
Sheave offset ⓐ:
VX700/SX700/MM700:
13.5 ~ 16.5 mm (0.53 ~ 0.64 in)
VX700DX/VT700
18.5 ~ 21.5 mm (0.73 ~ 0.85 in)

Sheave gauge:
YS-42421-1 (15 mm offset)
YS-42421-2 (20 mm offset)

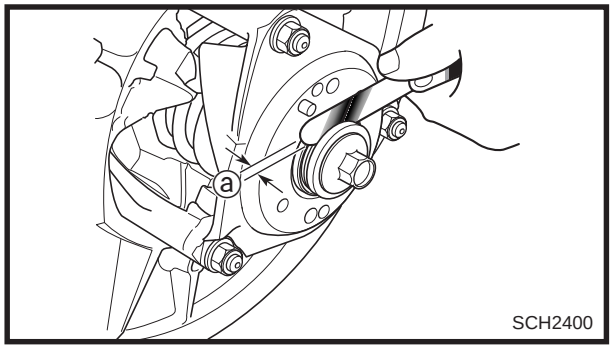


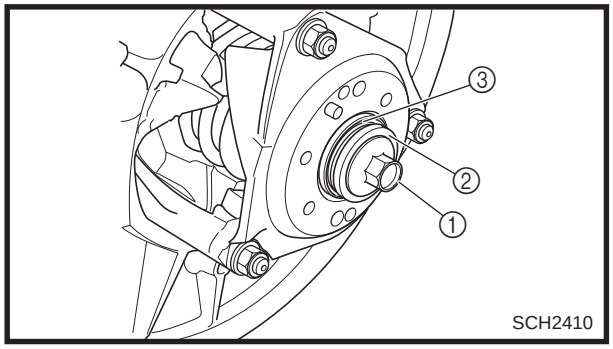
5. Adjust:
   - Sheave distance

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 (front) ①:
90 Nm (9.0 m · kg, 65 ft · lb)
Mounting bolt (rear) ②:
57 Nm (5.7 m · kg, 41 ft · lb)





6. Measure:
   - Secondary sheave free play (clearance) ⓐ
     Use a thickness gauge.
     Out of specification → Adjust.

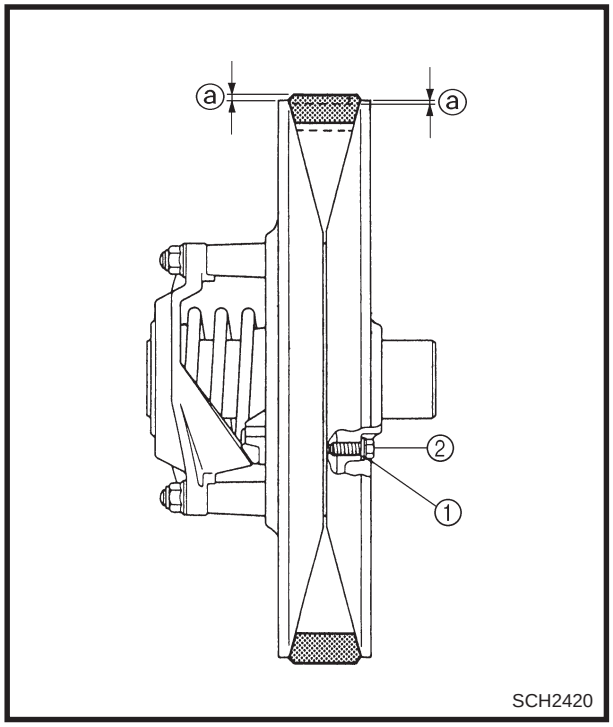
Secondary sheave free play (clearance) ⓐ:
1.0 ~ 2.0 mm (0.04 ~ 0.08 in)

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

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

Shim size:

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



DRIVE V-BELT

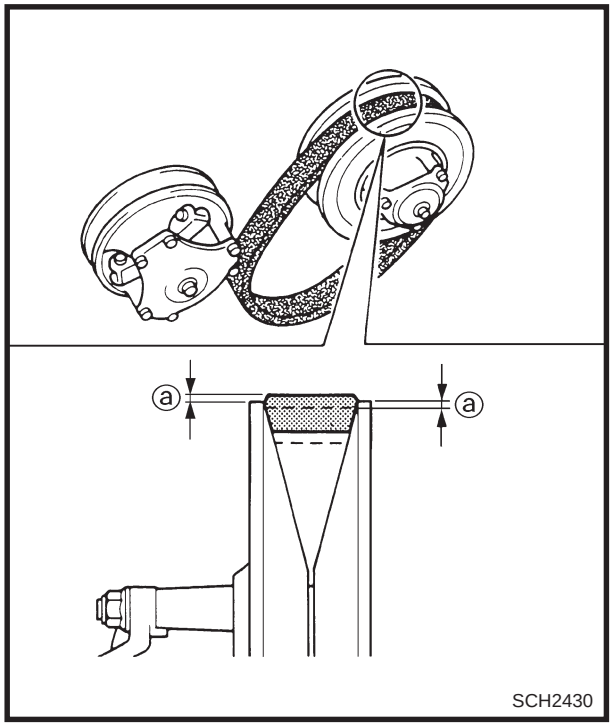
⚠ WARNING

When installing the new V-belt, make sure that it is positioned from 1.5 mm (0.06 in) above the edge of the secondary sheave to –0.5 mm (–0.02 in) below the edge ⓐ.
If the V-belt is not positioned correctly, the clutch engagement speed will be changed. The machine may move unexpectedly when the engine is started.
Adjust the V-belt position by removing or adding a spacer ① on each adjusting bolt ②.

CAUTION:

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

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

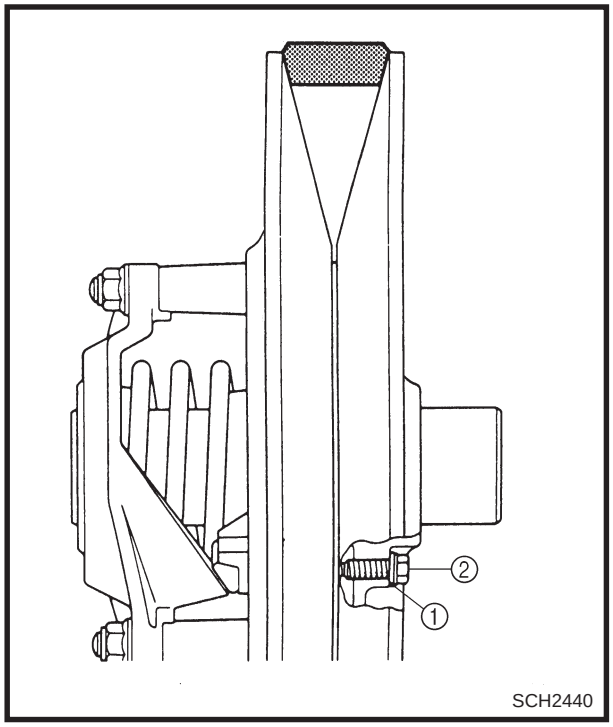


1. Measure:
   - V-belt position ⓐ

NOTE:

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

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

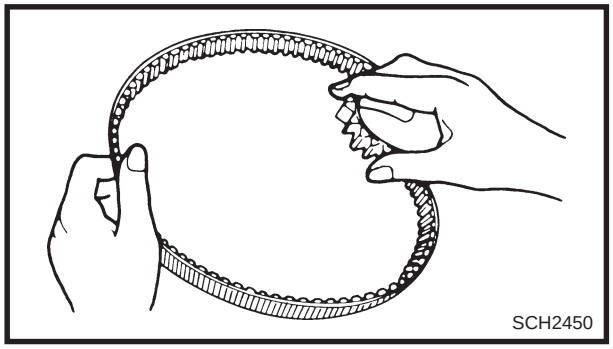


2. Adjust the position of the V-belt by removing or adding a spacer ① on each adjusting bolt ②.

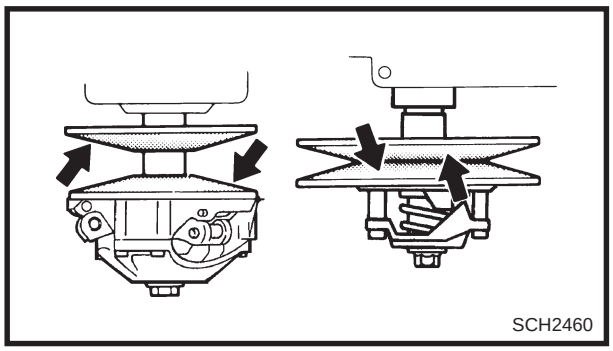
V-belt position	Adjustment
More than 1.5 mm (0.06 in) above the edge	**Remove a spacer**
From 1.5 mm (0.06 in) above the edge to –0.5 mm (–0.02 in) below the edge	**Not necessary (It is correct.)**
More than –0.5 mm (–0.02 in) below the edge	**Add spacer**

3. Tighten:
   - Adjusting bolt ②

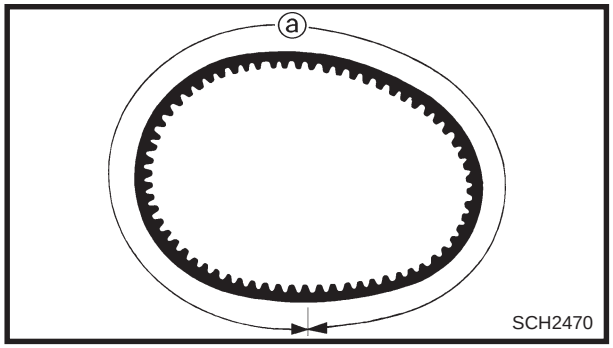
Adjusting bolt ②:
10 Nm (1.0 m · kg, 7.2 ft · lb)



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 circumference ⓐ
     Out of specification → Replace.

V-belt circumference ⓐ:
1,129 ~ 1,137 mm (44.4 ~ 44.7 in)

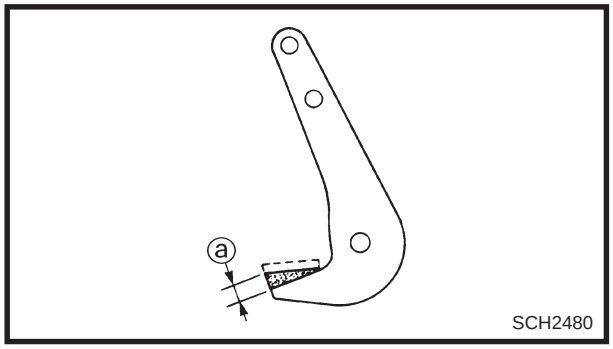
ENGAGEMENT SPEED CHECK

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.

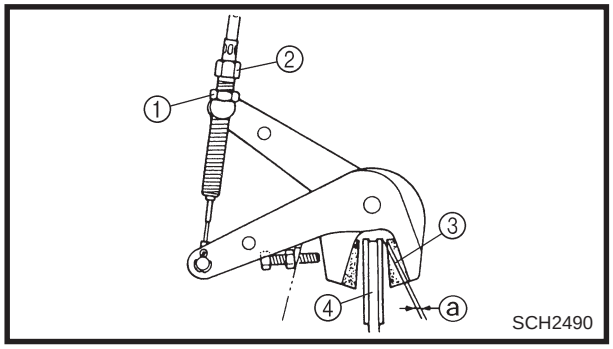
Engagement speed:
VX700/VX700DX:
4,000 ± 200 r/min
(3,800 ~ 4,200 r/min)
SX700/VT700:
3,900 ± 200 r/min
(3,700 ~ 4,100 r/min)
MM700:
4,700 ± 200 r/min
(4,500 ~ 4,900 r/min)



PARKING BRAKE PAD INSPECTION

1. Measure:
   - Parking brake pad thickness ⓐ
     Out of specification → Replace as a set.

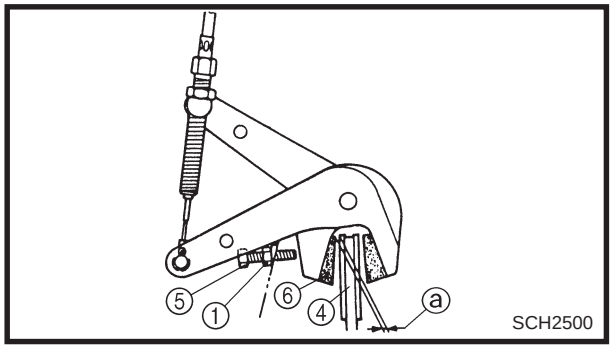
Wear limit ⓐ:
6.0 mm (0.24 in)



PARKING BRAKE ADJUSTMENT

1. Measure:
   - Clearance ⓐ
     Out of specification → Adjust.

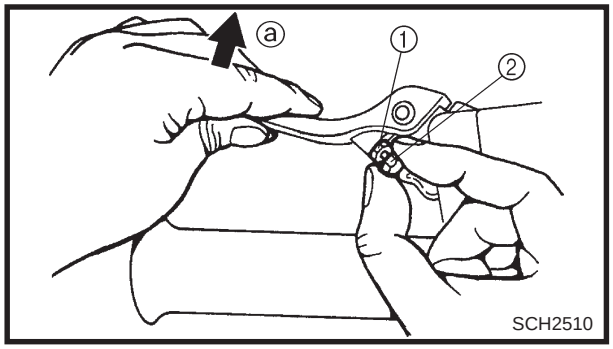
Clearance ⓐ:
1.2 ~ 1.3 mm (0.047 ~ 0.051 in)



2. Adjust:
   - Clearance ⓐ

Adjustment steps:

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



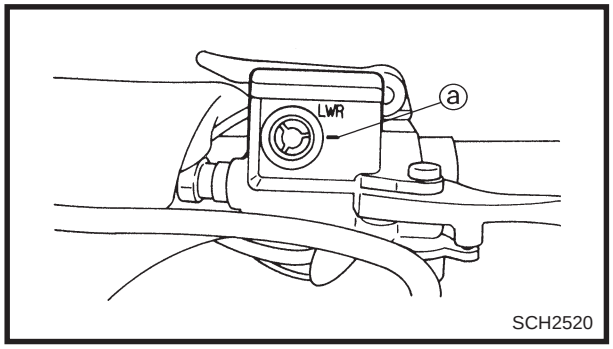
BRAKE LEVER ADJUSTMENT (VX700DX/SX700/VT700)

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 ⓐ, turn the adjusting bolt ② by fingers to set the brake lever to the desired position.
- Tighten the locknut securely after adjusting.

Locknut ①:
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 ⓐ
     → Fill to the proper level.

Recommended brake fluid:
DOT 4

NOTE:

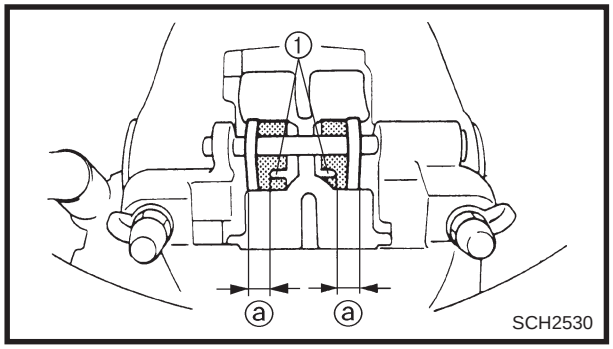
For a correct reading of the brake fluid level, make sure that the top of the handlebar brake master cylinder reservoir is horizontal.

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 ⓐ:
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

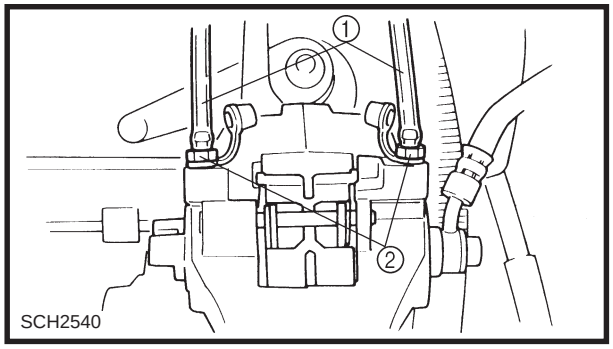
Bleed the brake system in the following cases:
- **The system has been disassembled.**
- **A brake hose is loosened or removed.**
- **The brake fluid has been very low.**
- **Brake operation is faulty.**

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 clear plastic hoses ① tightly to the brake caliper bleed screws ②.
- Place the other ends of the hoses in a container.

a. Slowly apply the brake lever several times.
b. Pull the lever in, then hold the lever in position.
c. Loosen the bleed screws and allow the brake lever to travel towards its limit.



d. Tighten the bleed screws when the brake lever limit has been reached, then release the lever.
- Repeat steps (a) to (d) until all of the air bubbles have disappeared from the fluid.
- Tighten the bleed screws.

Bleed screw 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

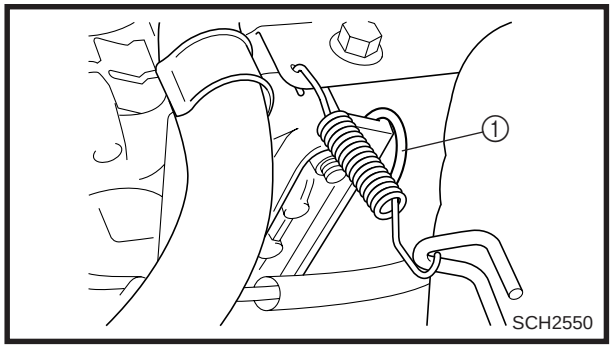
After bleeding the brake system, check the brake operation.

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.



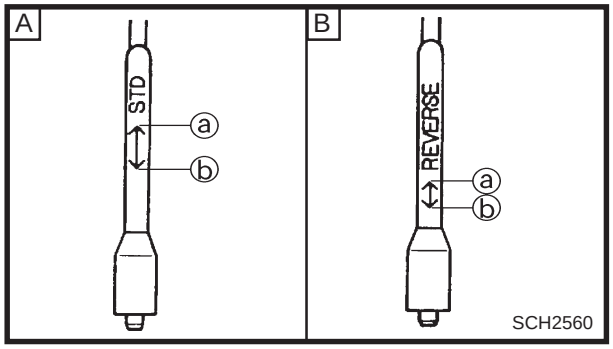
1. Place the machine on a level surface.
2. Check:
   - Oil level

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

CAUTION:

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

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

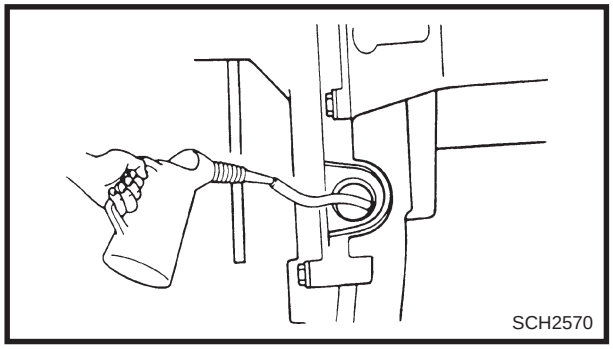


- Remove the dipstick and check that the oil is between the upper ⓐ and lower ⓑ levels. If not, add oil to the upper level.

A For models without reverse transmissions (VX700/SX700/MM700)

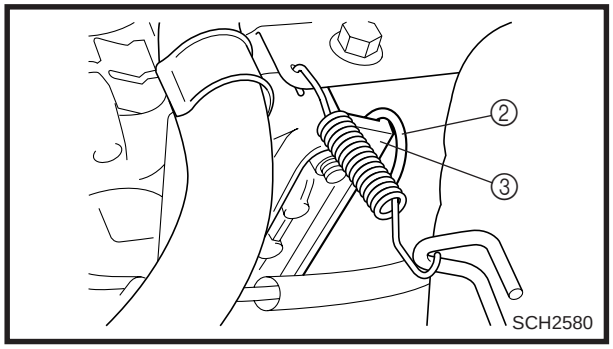
B For models with reverse transmissions (VX700DX/VT700)

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

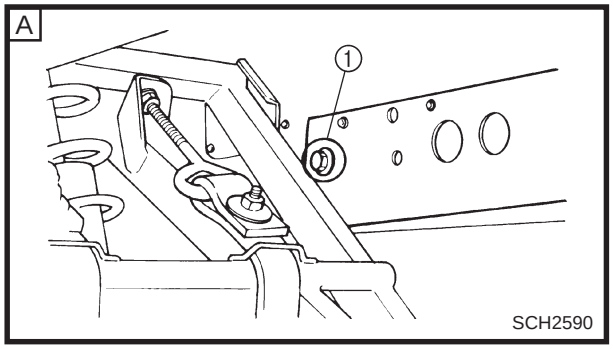


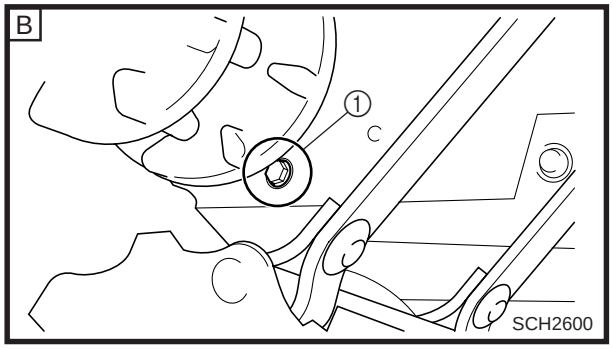
CAUTION:

Make sure that no foreign material enters the gear case.



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





Oil replacement

Oil replacement steps:
- Place the oil pan under the drain hole.
- Remove the oil drain bolt ① and drain the oil.

CAUTION:

Be sure to remove any oil from the heat protector.

- Install the oil drain bolt ①.

Oil drain bolt ①:
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)

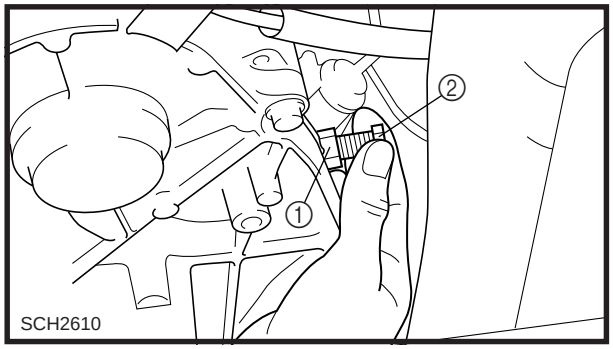
Ⓐ VX700/VX700DX/SX700/VT700
Ⓑ MM700

Chain slack adjustment

1. Remove:
   - Battery (VX700DX/VT700)
   - Battery bracket (VX700DX/VT700)

⚠ WARNING

When removing the battery, disconnect the negative lead first.



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:
   - Battery bracket (VX700DX/VT700)
   - Battery (VX700DX/VT700)

CAUTION:

- **Connect the positive lead to the battery terminal first.**
- **Make sure the battery leads are connected properly. Reversing the leads can seriously damage the electrical system.**
- **Make sure that the battery breather hose is properly connected and is not obstructed.**

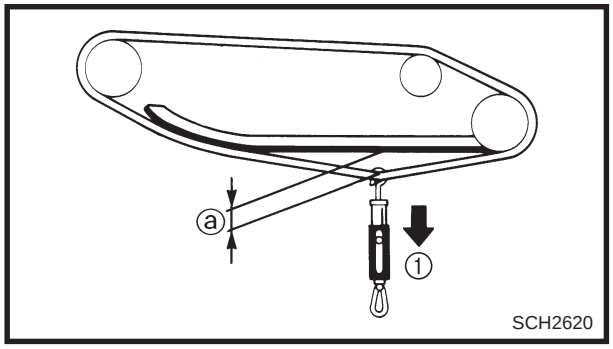
TRACK TENSION ADJUSTMENT

⚠ WARNING

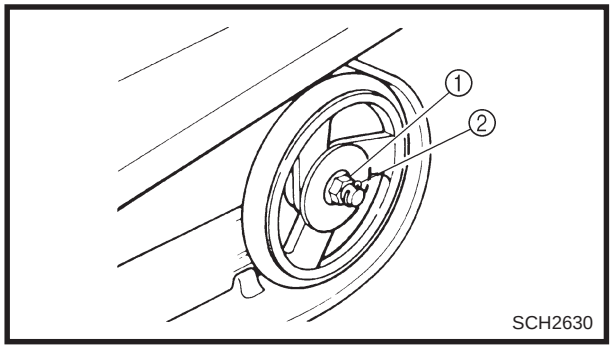
A broken track or track fittings, and debris thrown by the track could be dangerous to an operator or by standers. Observe the following precautions.

- **Do not allow anyone to stand behind the machine when the engine is running.**
- **When the rear of the machine is raised to allow the track to spin, a suitable stand must be used to support the rear of the machine. Never allow anyone to hold the rear of the machine off the ground to allow the track to spin. Never allow anyone near a rotating track.**
- **Inspect the condition of the track frequently. Replace the track if it is damaged to a level where the fabric reinforcement material is visible.**
- **Never install studs (cleats) closer than 76 mm (3 in) 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 ⓐ
     Using a spring scale ①, pull down on the center of the track with 10 kg (22 lb) of force.
     Out of specification → Adjust.



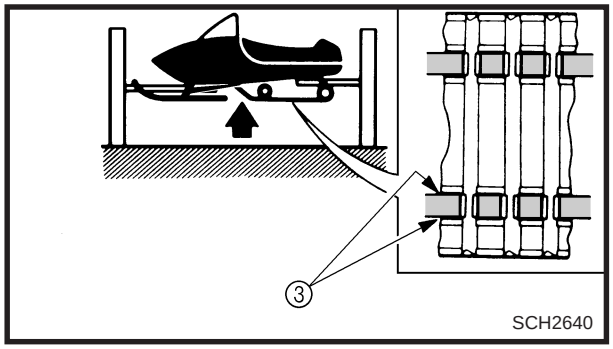
Track deflection ⓐ:
VX700/VX700DX/SX700/VT700:
25 ~ 30 mm (0.98 ~ 1.18 in)
MM700:
20 ~ 25 mm (0.79 ~ 0.98 in)



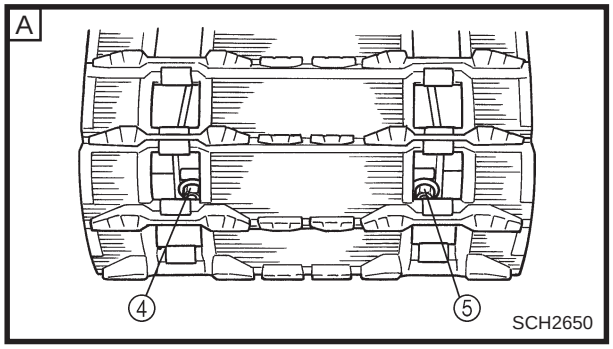
3. Adjust:
   - Track deflection

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

NOTE:
It is not necessary to remove the cotter pin ②.

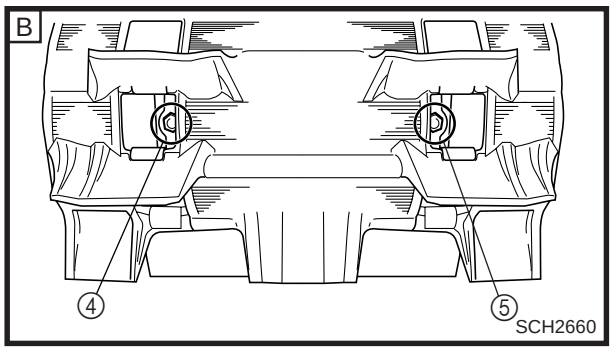


a. Start the engine and rotate the track once or twice. Stop the engine.
b. Check the track alignment with the slide runner ③. If the alignment is incorrect, turn the left and right adjusters to adjust.



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

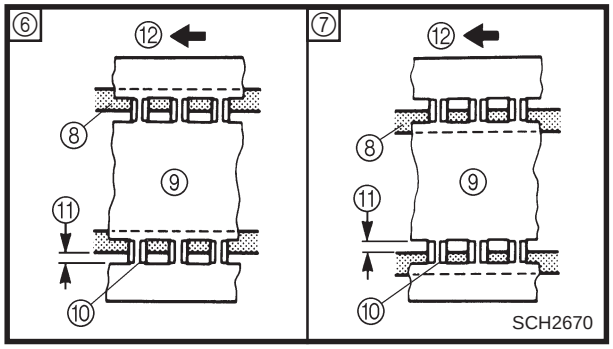
⑧ Slide runner ⑨ Track
⑩ Track metal ⑪ Gap ⑫ Forward
A VX700/VX700DX/SX700/VT700
B MM700



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

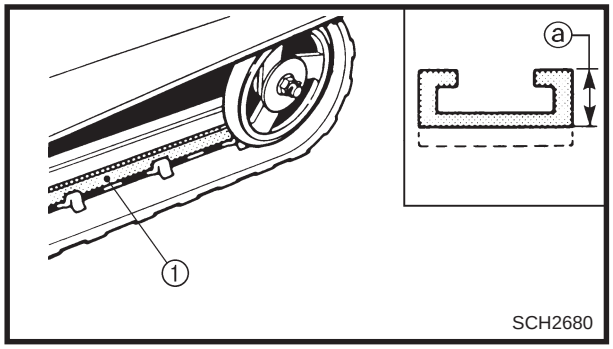
Track deflection	More than specified	Less than specified
④ Left adjuster	Turn in	Turn out
⑤ Right adjuster	Turn in	Turn out

CAUTION:
The adjusters should be turned an equal amount.



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

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



SLIDE RUNNER INSPECTION

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

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

MAXIMIZING DRIVE TRACK LIFE

Recommendations

Track tension

During initial break-in, the new drive track will tend to stretch quickly as the track settles. Be sure to correct the track tension and alignment frequently. (See pages 2-26 ~ 2-27 for adjustment procedures.) A loose track can slip (ratchet), derail or catch on suspension parts causing severe damage. Do not overtighten the drive track, otherwise it may increase the friction between the track and the slide runnners, resulting in the rapid wear of both components. Also, this may put an excessive load on the suspension components, resulting in component failure.

Marginal snow

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

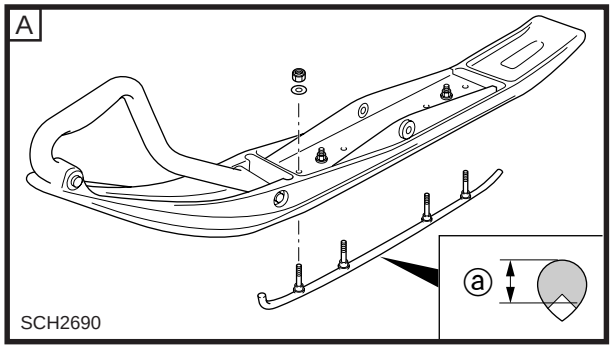
Off-trail riding

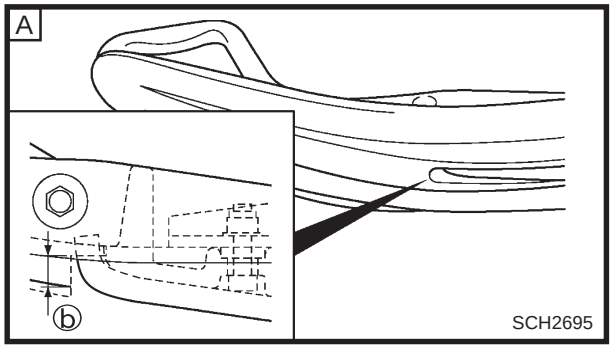
Avoid off-trail riding until there is sufficient snow coverage. It generally takes several feet of snow to provide a good overall base to properly cover debris, such as rocks, logs, etc. If snow coverage is not sufficient, stay on trails to avoid impact damage to the drive track.

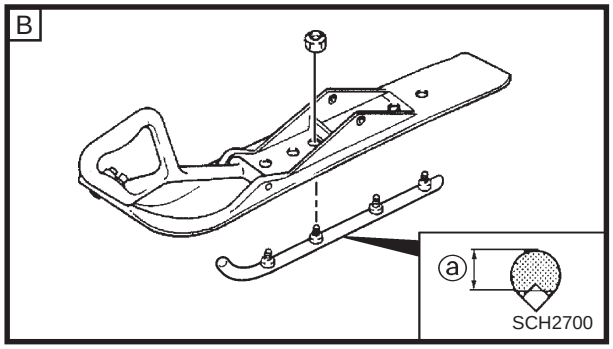
Studded track

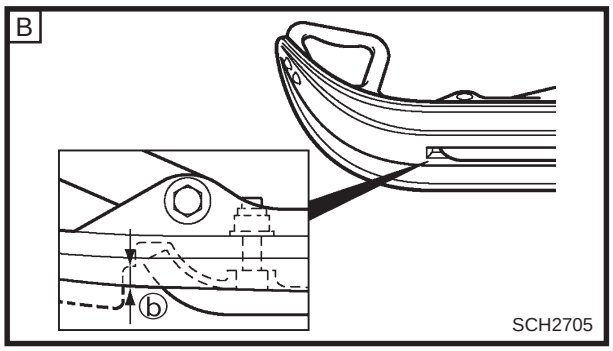
In general, track life will be shortened when studs are installed. Drilling stud holes into the drive track will cut the internal fibers, which weakens the track. Avoid spinning the drive track. Studs may catch on an object and pull out of the track, leaving tears and damage around the already weakened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

Yamaha does not recommend track studding.









CHASSIS

SKI/SKI RUNNER

1. Inspect:
   - Ski
   - Ski runner

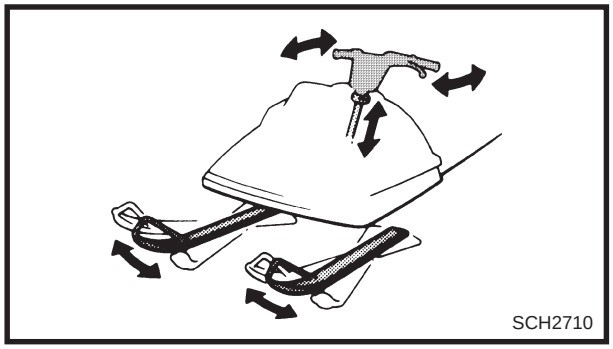
   Damage/wear → Replace.

Ski runner wear limit ⓐ:
8 mm (0.31 in)
Plastic ski wear limit ⓑ:
VX700/VX700DX/VT700:
13 mm (0.51 in)
SX700/MM700:
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.

Ⓐ VX700/VX700DX/VT700
Ⓑ SX700/MM700


SCH2710

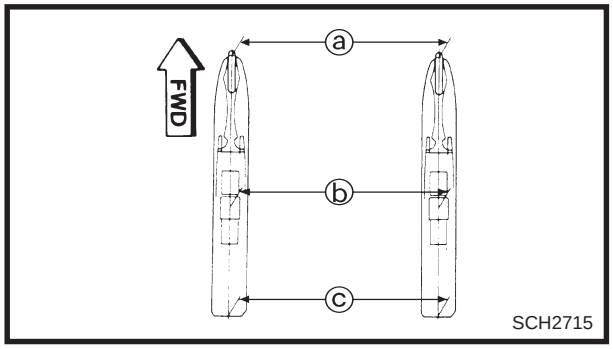
STEERING SYSTEM

Free play check

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

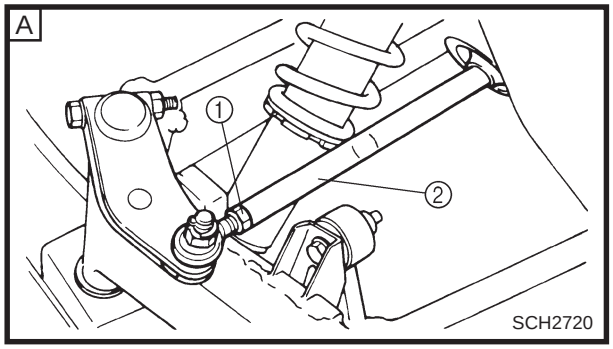
Toe-out adjustment

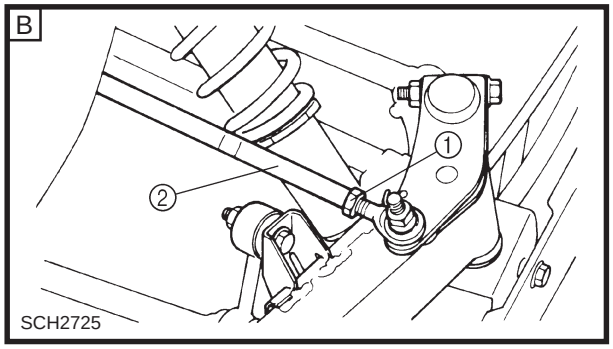
1. Place the machine on a level surface.
2. Check:
   - Ski toe-out
     Point the skis forward.
     Out of specification → Adjust.

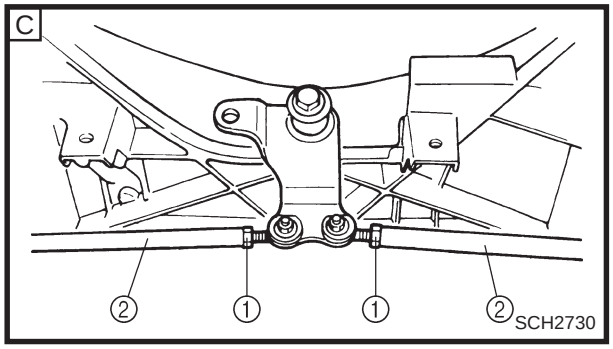


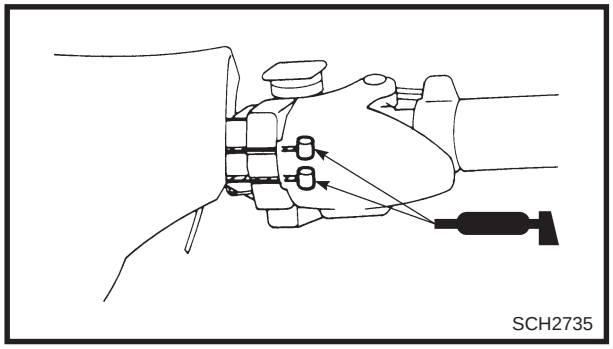
SCH2715

Ski toe-out (ⓐ – ⓒ):
0 ~ 15 mm (0 ~ 0.59 in)
Ski stance ⓑ (center to center):
VX700/VX700DX/SX700/VT700:
1,070 mm (42.1 in)
MM700:
980 mm (38.6 in)









3. Adjust:
   - Ski toe-out

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

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

CAUTION:

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

A Left side
B Right side
C Inside

LUBRICATION

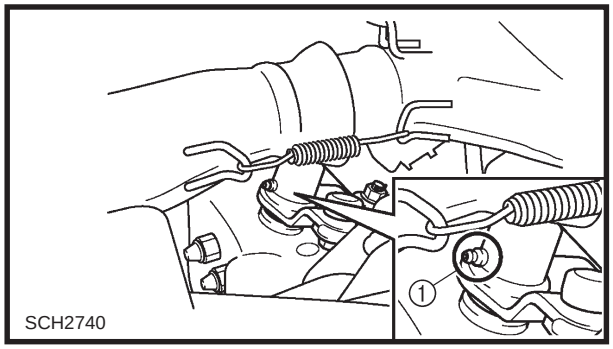
Brake lever, throttle lever and throttle cable end

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

Recommended lubricant:
ESSO Beacon 325 Grease

⚠ WARNING

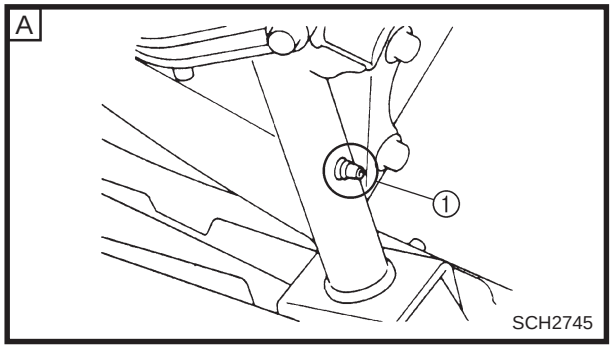
Apply a dab of grease onto only the end of the cables.
Do not grease the throttle cables.
They could freeze and cause a loss of control.



Relay arm (steering)

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

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

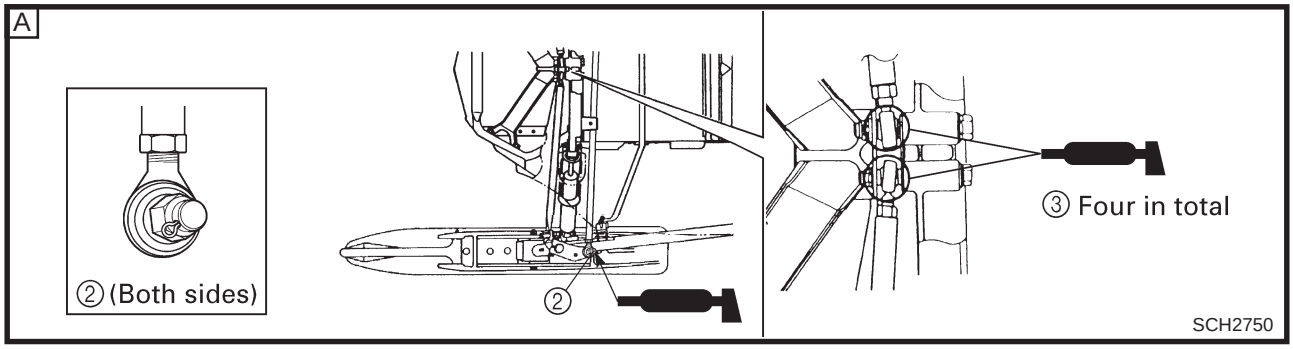


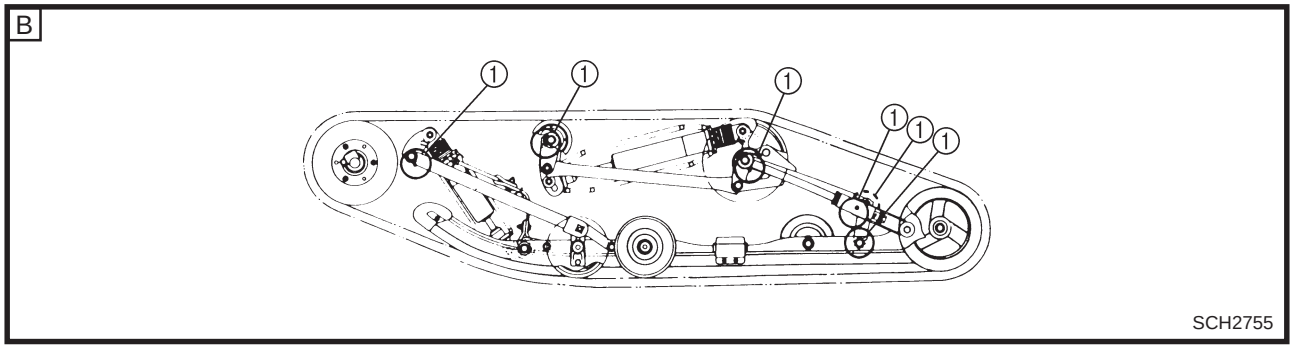
Front and rear suspension

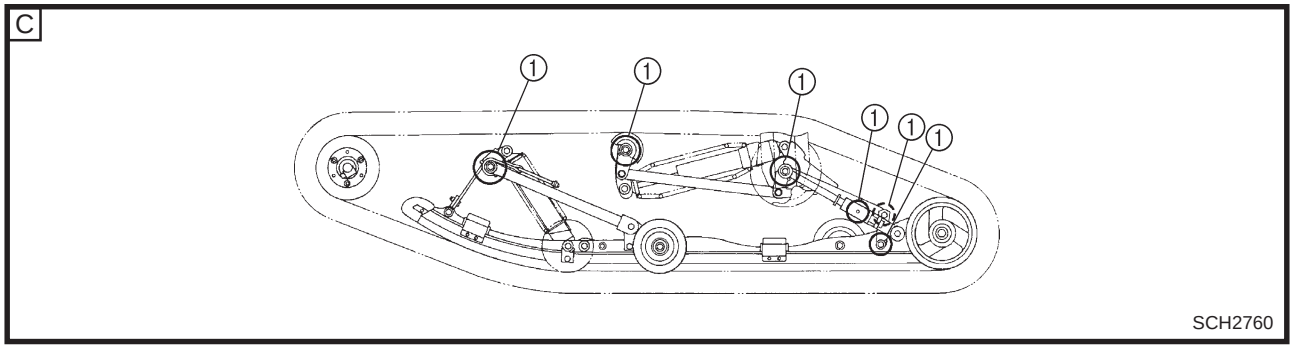
1. Use a grease gun to inject grease into the nipples ①.

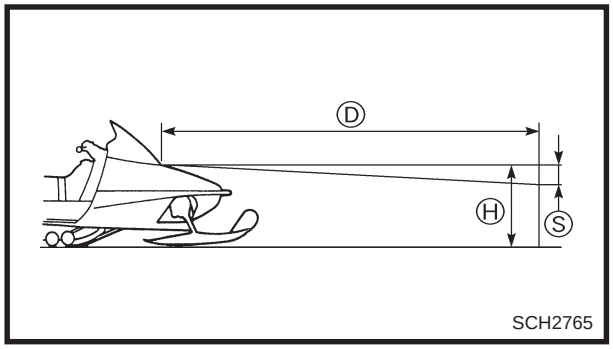
Recommended lubricant:
Esso Beacon 325 Grease or Aeroshell Grease #7A

A Front
B Rear (VX700/VX700DX/SX700/VT700)
C Rear (MM700)









SCH2765

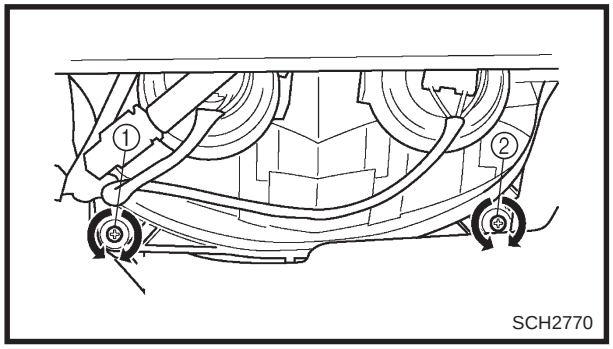
ELECTRICAL

HEADLIGHT BEAM ADJUSTMENT

1. Place the machine on a level surface.
2. Place the machine in front of a wall at the recommended distance Ⓓ. Refer to the table below.
3. Measure the distance Ⓗ 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 (set range Ⓢ).

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

Ⓓ: Distance Ⓢ: Set range



SCH2770

6. Adjust:
   - Headlight beam (vertically)

   Vertical adjustment

   Higher **Turn the adjusting screw ① + ② clockwise.**

   Lower **Turn the adjusting screw ① + ② counterclockwise.**

7. Adjust:
   - Headlight beam (horizontally)

   Horizontal adjustment

   To right **Turn the adjusting screw ① clockwise or turn the adjusting screw ② counterclockwise.**

   To left **Turn the adjusting screw ② clockwise or turn the adjusting screw ① counterclockwise.**

BATTERY INSPECTION (VX700DX/VT700)

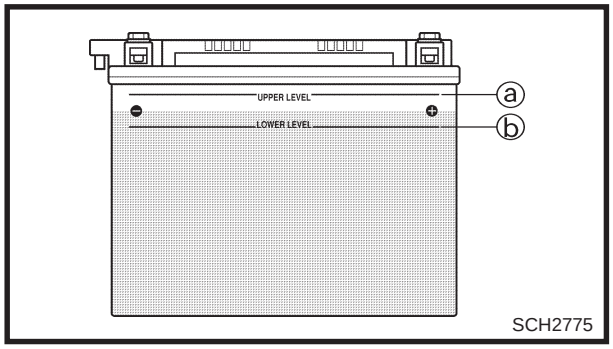
⚠ WARNING

Battery fluid is poisonous and dangerous, causes severe burns, etc. Contains sulfuric acid. Avoid contact with skin, eyes or clothing.
Antidote: EXTERNAL – Flush with water.
INTERNAL – Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call a physician immediately.
Eyes: Flush with water for 15 minutes and get prompt medical attention.
Batteries produce explosive gases. Keep sparks, flames, cigarettes, etc. away. Ventilate when charging or using in enclosed space. Always shield eyes when working near batteries.
KEEP OUT OF REACH OF CHILDREN.

1 .Remove:
- Battery

⚠ WARNING

When removing the battery, disconnect the negative lead first.



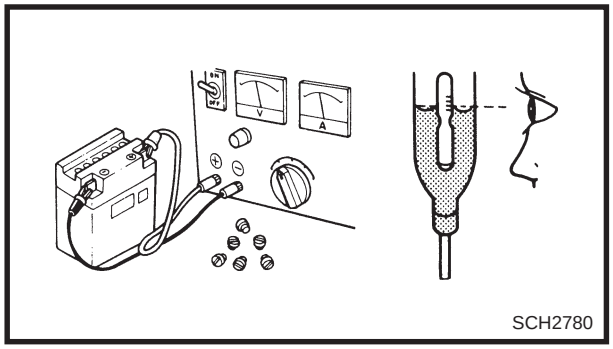
2. Inspect:
- Fluid level should be between "UPPER LEVEL" ⓐ and "LOWER LEVEL" ⓑ marks.
  Incorrect → Refill.

CAUTION:

Refill with distilled water only; tap water contains minerals harmful to a battery.

3 .Check:
- Specific gravity.
  Less than 1.280 → Recharge battery.

Specific gravity:
1.280 at 20˚C (68˚F)

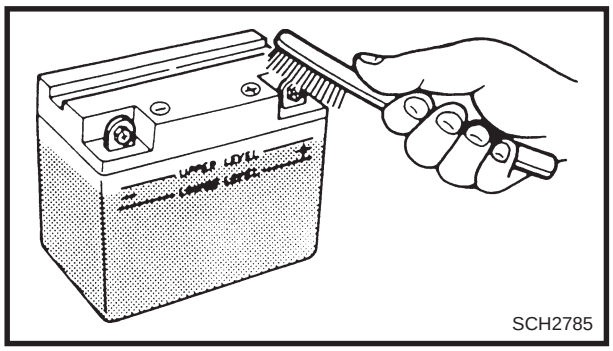


Replace the battery if:

- Battery voltage will not rise to a specific value or bubbles fail to rise even after many hours of charging.
- Sulfation of one or more cells occurs, as indicated by the plates turning white, or an accumulation of material exists in the bottom of the cell.
- Specific gravity readings after a long, slow charge indicate one cell to be lower than the rest.
- Warpage or buckling of plates or insulators is evident.

CAUTION:

Always charge a new battery before using it to ensure maximum performance.



4. Inspect:
   - Battery terminal
     Dirty terminal → Clean with a wire brush.
     Poor connection → Correct.

NOTE:

After cleaning the terminals, apply grease lightly to the terminals.

5. Install:
   - Battery

CAUTION:

- **Connect the positive lead to the battery terminal first.**
- **Make sure the battery leads are connected properly. Reversing the leads can seriously damage the electrical system.**
- **Make sure that the battery breather hose is properly connected and is not obstructed.**

BATTERY CHARGING (VX700DX/VT700)

The battery must be charged properly before using for the first time. This initial charge will prolong the life of the battery.

1. Remove:
   - Battery

⚠ WARNING

When removing the battery, disconnect the negative lead first.

Battery charging step:

- Remove all filler caps from the battery.

NOTE

Place the battery on a level place.

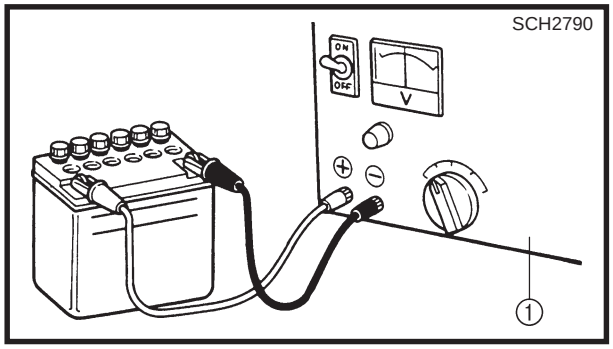
- Cool the electrolyte down to below 30°C (86°F).
- Pour electrolyte into each cell little by little up to the upper level line, and leave it for a while. When the battery fluid permeates the plates and separators, the fluid level begins to lower. Add electrolyte and bring back to upper level line.

NOTE:

Fill the battery with diluted sulfuric acid (electrolyte).

- Connect the battery to a battery charger ①.
- Set the battery charger rate at 1/10 the battery capacity and charge the battery for 10 hours.

Charging Rate:
2.0 Ah × 10 hours



- Turn the battery charger off then disconnect it from the battery.
- Check the specific gravity of each cell with a hydrometer. If the hydrometer reading is below the specification, additional charging is necessary.
- Install the filler caps, and thoroughly wipe off the fluid around the filler caps.

2. Install:
   - Battery

CAUTION:

- **Connect the positive lead to the battery terminal first.**
- **Make sure the battery leads are connected properly. Reversing the leads can seriously damage the electrical system.**
- **Make sure that the battery breather hose is properly connected and is not obstructed.**

FUSE INSPECTION (VX700DX/VT700)

The following procedure applies to all of the fuses.

CAUTION:

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

1 .Check:
   - Continuity

Checking steps:

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

NOTE:

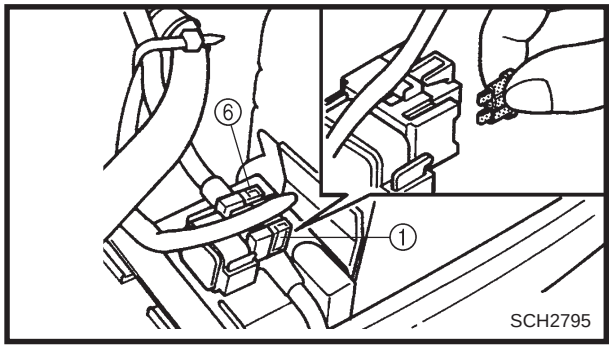
Set the pocket tester selector to "Ω × 1".

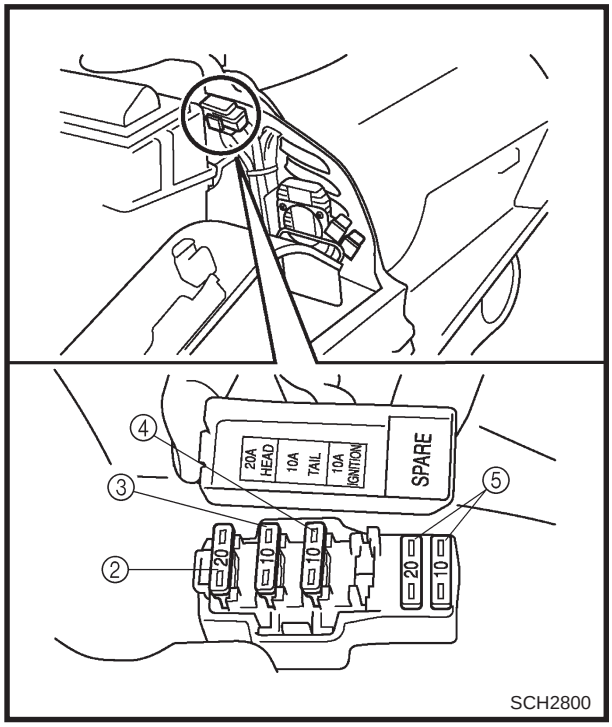
Pocket tester:
90890-03112, YU-03112

- If the pocket tester indicates "∞", replace the fuse.

2. Replace:
   - Blown fuse

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





Item	Amperage	Q’ty
① Main fuse	30 A	1
② “HEAD” fuse	20 A	1
③ “TAIL” fuse	10 A	1
④ “IGNITION” fuse	10 A	1
⑤ Reserve fuse	20 A 10 A	1 1
⑥ Reserve fuse	30 A	1

⚠ WARNING

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

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 free play**
- **Carburetor synchronization**
- **Starter cable free play**
- **Oil pump cable free play**

Carburetor tuning data

1. Standard specifications

A **Type**	**TM33**
B **Manufacturer**	**MIKUNI**
C **I.D. Mark**	**8CH10**
D **Main jet (M.J.)**	**#1:145, #2, 3:143.8**
E **Pilot jet (P.J.)**	**#45**
F **Pilot screw (P.S.)**	**1-1/2 turns out**
G **Float height**	**11.3 ~ 15.3 mm (0.44 ~ 0.60 in)**
H **Idle speed**	**1,600 ± 100 r/min**

Mid-range and high speed tuning

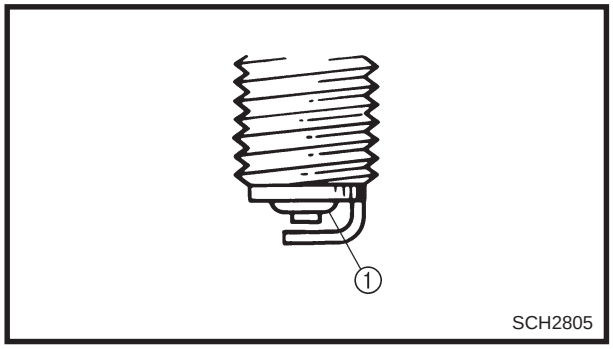
Adjustments are normally not required, but may sometimes be necessary, depending on temperatures, altitude or both.

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:

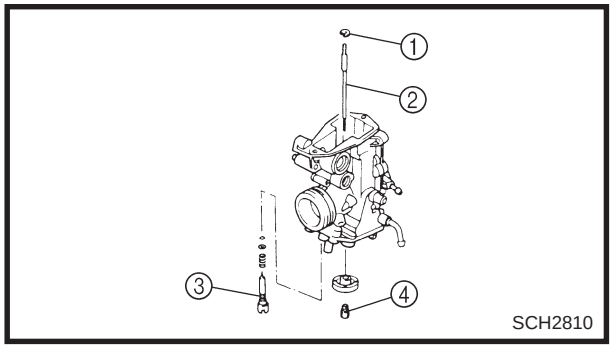
By checking the condition of the spark plugs, it is easy to get some idea of the condition of the engine. This may diagnose potential problems before engine damage occurs.

High altitude tuning

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

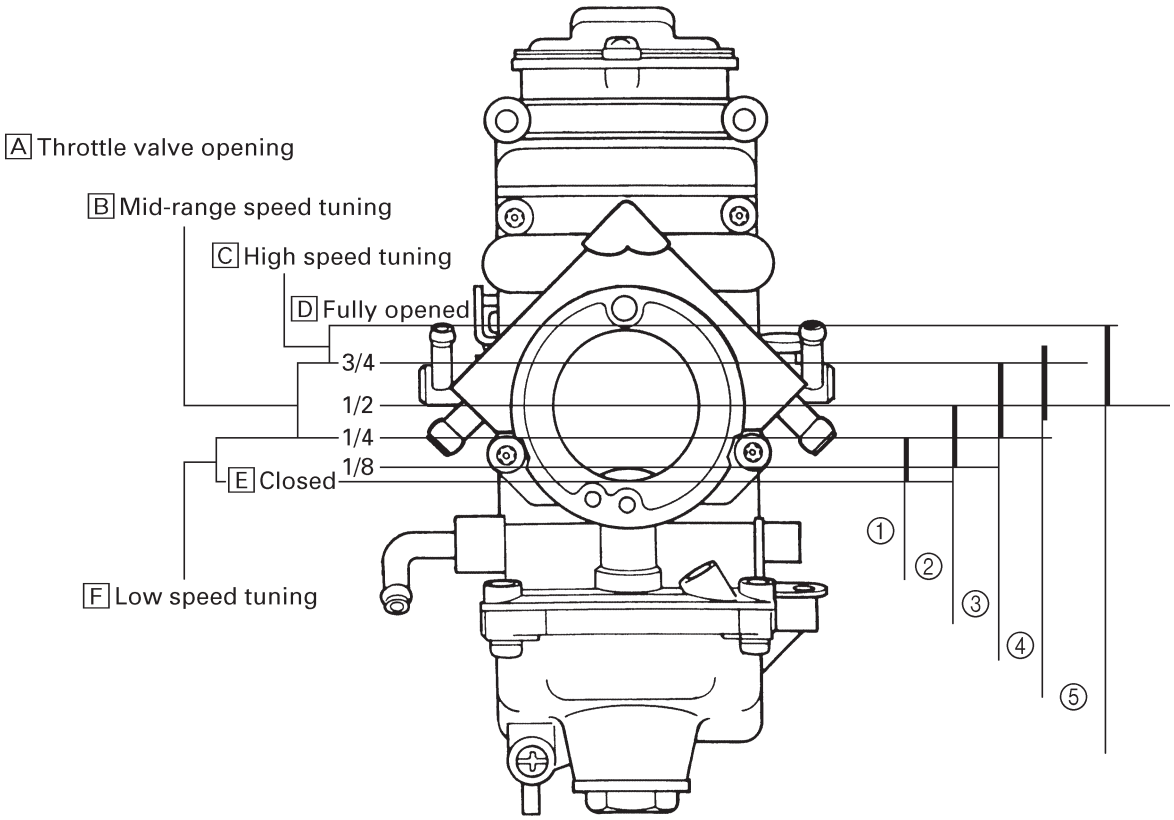
NOTE:

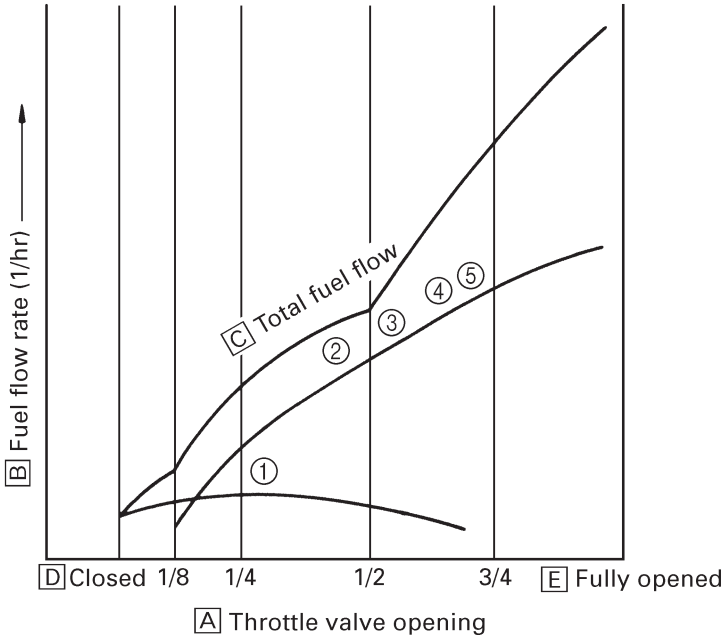
These jetting specifications are subject to change. Consult the latest technical information from Yamaha to be sure you have the most up-to-date jetting specifications.



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

Guide for carburetion





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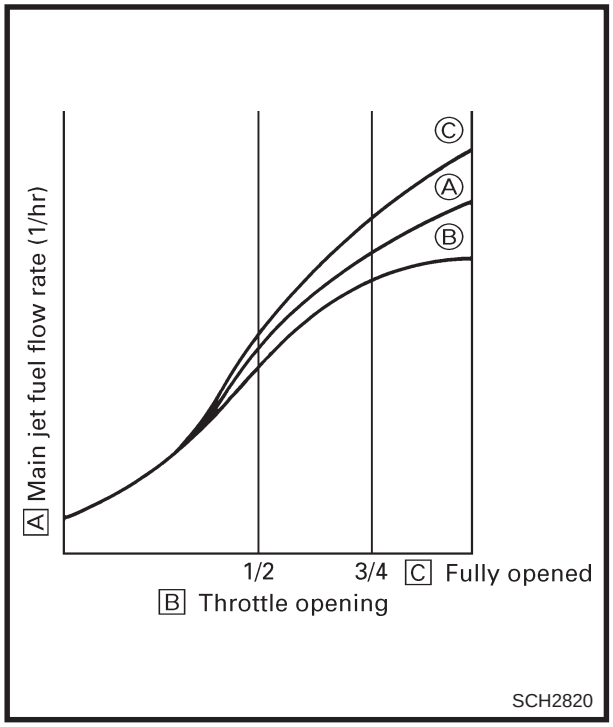
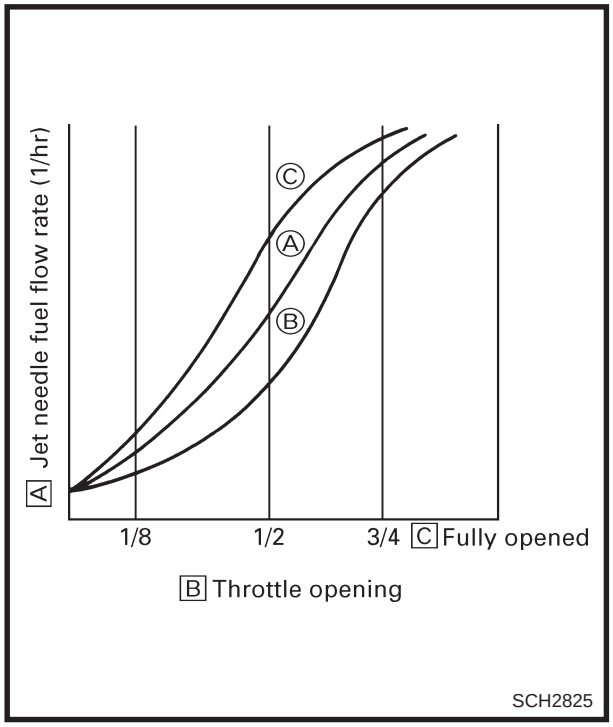
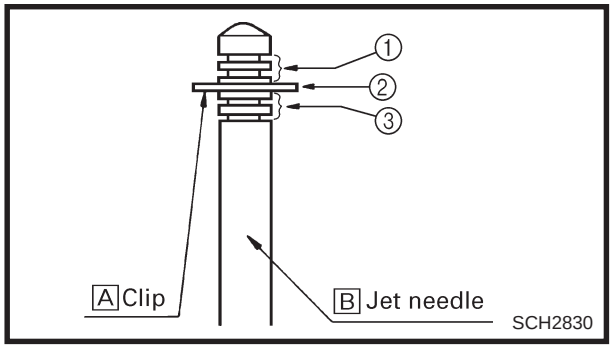


Ⓐ Standard main jet
Ⓑ Main jet whose diameter is 10% smaller than standard
Ⓒ Main jet whose diameter is 10% larger than standard

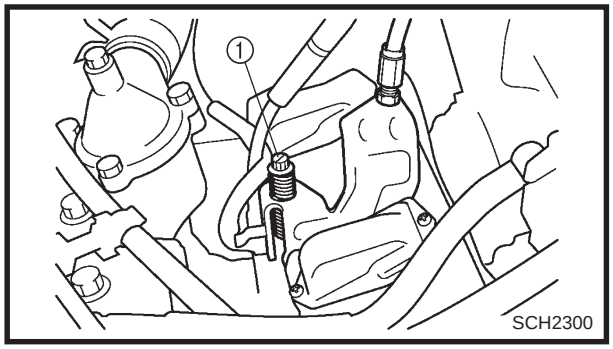


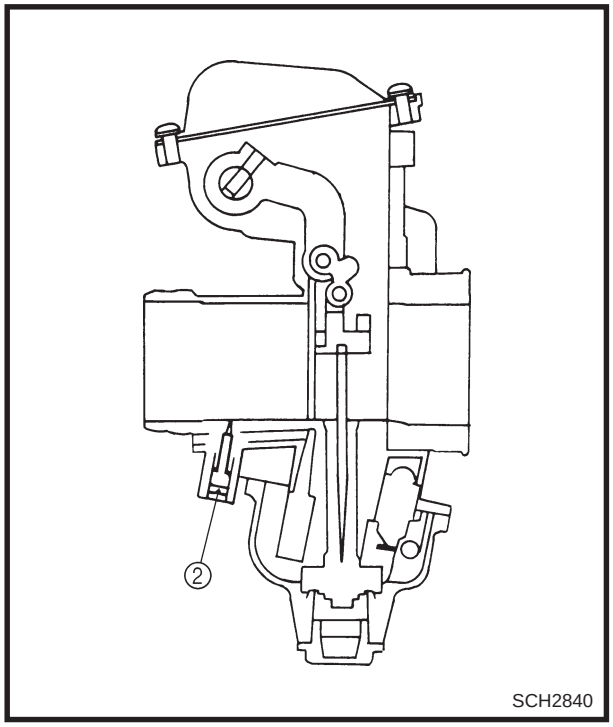
Ⓐ No. ② position
Ⓑ No. ① position
Ⓒ No. ③ position



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 ② and throttle stop screw ①.

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 ②:
1-1/2 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).

Engine idle speed:
1,600 ± 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:
#45

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.