SUZUKI

LT-A50

SERVICE MANUAL

99500-20210-01E

FOREWORD

This manual contains an introductory description on the SUZUKI LT-A50 and procedures for its inspection/service and overhaul of its main components. Other information considered as generally known is not included.
Read the GENERAL INFORMATION section to familiarize yourself with the vehicle and its maintenance. Use this section as well as other sections as a guide for proper inspection and service.
This manual will help you know the vehicle better so that you can assure your customers of fast and reliable service.

- ** This manual has been prepared on the basis of the latest specifications at the time of publication. If modifications have been made since then, differences may exist between the content of this manual and the actual vehicle.*
- ** Illustrations in this manual are used to show the basic principles of operation and work procedures. They may not represent the actual vehicle exactly in detail.*
- ** This manual is written for persons who have enough knowledge, skills and tools, including special tools, for servicing SUZUKI vehicle. If you do not have the proper knowledge and tools, ask your authorized SUZUKI motorcycle dealer to help you.*

⚠ WARNING

Inexperienced mechanics or mechanics without the proper tools and equipment may not be able to properly perform the services described in this manual. Improper repair may result in injury to the mechanic and may render the vehicle unsafe for the rider.

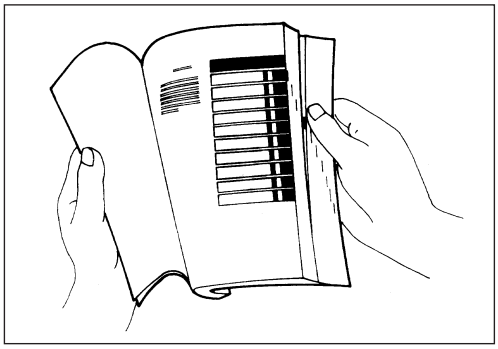
SUZUKI MOTOR CORPORATION
Overseas Service Department

GROUP INDEX

HOW TO USE THIS MANUAL

TO LOCATE WHAT YOU ARE LOOKING FOR:

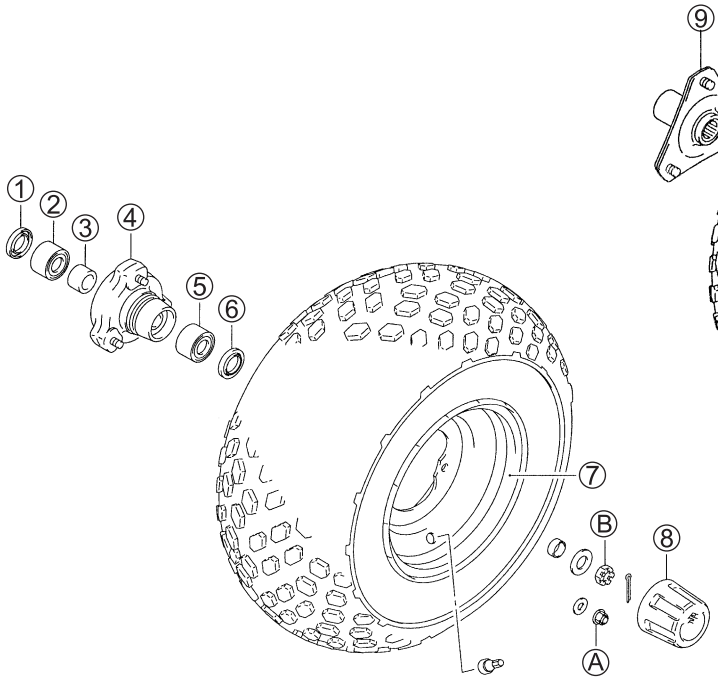
1. The text of this manual is divided into sections.
2. The section titles are listed in the GROUP INDEX.
3. Holding the manual as shown at the right will allow you to find the first page of the section easily.
4. The contents are listed on the first page of each section to help you find the item and page you need.



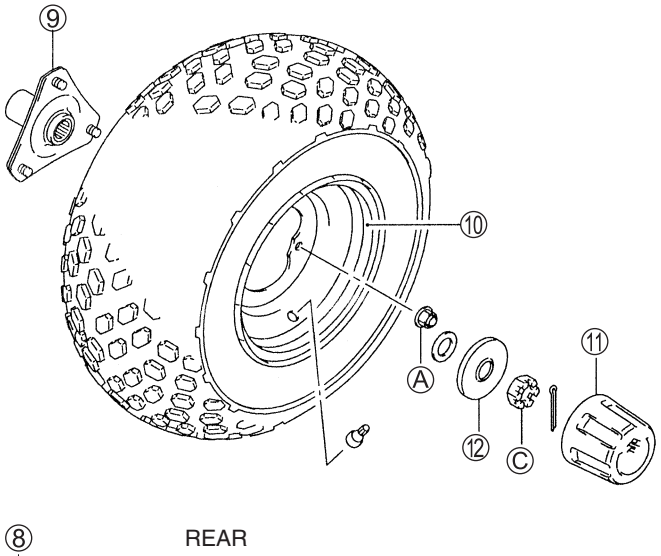
COMPONENT PARTS AND WORK TO BE DONE

Under the name of each system or unit, is its exploded view. Work instructions and other service information such as the tightening torque, lubricating points and locking agent points, are provided.

Example: Front and rear wheel



FRONT



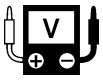
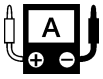
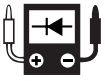
REAR

ITEM	N·m	kgf·m	lb-ft
Ⓐ	28	2.8	20.5
Ⓑ	65	6.5	47.5
Ⓒ	75	7.5	55.0

① Oil seal
② Bearing
③ Spacer
④ Front wheel hub
⑤ Bearing
⑥ Oil seal
⑦ Front wheel
⑧ Front wheel center cap
⑨ Rear wheel hub
⑩ Rear wheel
⑪ Rear wheel center cap
⑫ Center cap holder
Ⓐ Wheel nut (front and rear)
Ⓑ Front hub nut
Ⓒ Rear hub nut

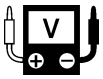
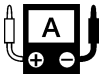
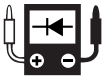
SYMBOL (FOR USA)

Listed in the table below are the symbols indicating instructions and other information necessary for servicing. The meaning of each symbol is also included in the table.

SYMBOL	DEFINITION	SYMBOL	DEFINITION
	Torque control required. Data beside it indicates specified torque.		Apply THREAD LOCK SUPER "1360". 99000-32130
	Apply oil. Use engine oil unless otherwise specified.		Measure in voltage range.
	Apply molybdenum oil solution. (Mixture of engine oil and SUZUKI MOLY PASTE in a ratio of 1:1)		Measure in current range.
	Apply SUZUKI SUPER GREASE "A". 99000-25030		Measure in diode test range.
	Apply SUZUKI MOLY PASTE. 99000-25140		Measure in continuity test range.
	Apply SUZUKI BOND "1207B". 99104-31140		Use special tool.
	Apply THREAD LOCK SUPER "1303". 99000-32030		Indication of service data.
	Apply THREAD LOCK "1342". 99000-32050		

SYMBOL (For the other countries)

Listed in the table below are the symbols indicating instructions and other information necessary for servicing. The meaning of each symbol is also included in the table.

SYMBOL	DEFINITION	SYMBOL	DEFINITION
	Torque control required. Data beside it indicates specified torque.		Apply THREAD LOCK “1342”. 99000-32050
	Apply oil. Use engine oil unless otherwise specified.		Apply THREAD LOCK SUPER “1360”. 99000-32130
	Apply molybdenum oil solution. (Mixture of engine oil and SUZUKI MOLY PASTE in a ratio of 1:1)		Measure in voltage range.
	Apply SUZUKI SUPER GREASE “A”. 99000-25010		Measure in current range.
	Apply SUZUKI MOLY PASTE. 99000-25140		Measure in diode test range.
	Apply SUZUKI BOND “1207B”. 99000-31140		Measure in continuity test range.
	Apply SUZUKI BOND “1215” 99000-31110		Use special tool.
	Apply THREAD LOCK SUPER “1303”. 99000-32030		Indication of service data.

GENERAL INFORMATION

1

CONTENTS

WARNING/CAUTION/NOTE

Please read this manual and follow its instructions carefully. To emphasize special information, the symbol and the words WARNING, CAUTION and NOTE have special meanings. Pay special attention to the messages highlighted by these signal words.

⚠ WARNING

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

CAUTION

Indicates a potential hazard that could result in vehicle damage.

NOTE:
Indicates special information to make maintenance easier or instructions clearer.

Please note, however, that the warnings and cautions contained in this manual cannot possibly cover all potential hazards relating to the servicing, or lack of servicing, of the vehicle. In addition to the WARNINGS and CAUTIONS stated, you must use good judgement and basic mechanical safety principles. If you are unsure about how to perform a particular service operation, ask a more experienced mechanic for advice.

GENERAL PRECAUTIONS

⚠ WARNING

- **Proper service and repair procedures are important for the safety of the service mechanic and the safety and reliability of the vehicle.**
- **When 2 or more persons work together, pay attention to the safety of each other.**
- **When it is necessary to run the engine indoors, make sure that exhaust gas is forced outdoors.**
- **When working with toxic or flammable materials, make sure that the area you work in is well-ventilated and that you follow all of the material manufacturer's instructions.**
- **Never use gasoline as a cleaning solvent.**
- **To avoid getting burned, do not touch the engine, transmission oil and exhaust system until they have cooled.**
- **After servicing the fuel, oil or exhaust systems, check all of the lines and fittings related to the system for leaks.**

CAUTION

*** If parts replacement is necessary, replace the parts with Suzuki Genuine Parts or their equivalent.**
*** When removing parts that are to be reused, keep them arranged in an orderly manner so that they may be reinstalled in the proper order.**
*** Be sure to use special tools when instructed.**
*** Make sure that all parts used in reassembly are clean. Lubricate them when specified.**
*** Use the specified lubricant, bond, or sealant.**
*** When tightening cylinder head nuts and crankcase screws, tighten the larger sizes first. Always tighten the bolts and nuts from the inside working out, in a crisscross pattern and to the specified tightening torque.**
*** Whenever you remove oil seals, gaskets, packing, O-rings, locking washers, self-locking nuts, cotter pins, circlips, and certain other parts as specified, be sure to replace them with new ones. Also, before installing these new parts, be sure to remove any left over material from the mating surfaces.**
*** Never reuse a circlip. When installing a new circlip, take care not to expand the end gap larger than required to slip the circlip over the shaft. After installing a circlip, always ensure that it is completely seated in its groove and securely fitted.**
*** Use a torque wrench to tighten fasteners to the specified torque. Wipe off grease and oil if a thread is smeared with them.**
*** After reassembling, check parts for tightness and proper operation.**

*** To protect the environment, do not unlawfully dispose of used motor oil and tires.**
*** To protect Earth's natural resources, properly dispose of used vehicle and parts.**

SUZUKI LT-A50K2 (2002-MODEL)

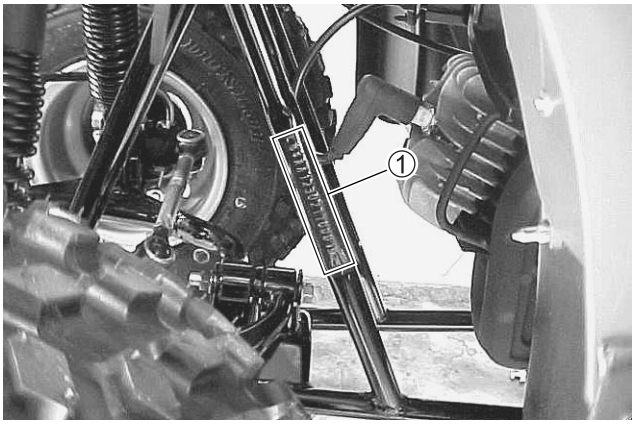
LEFT

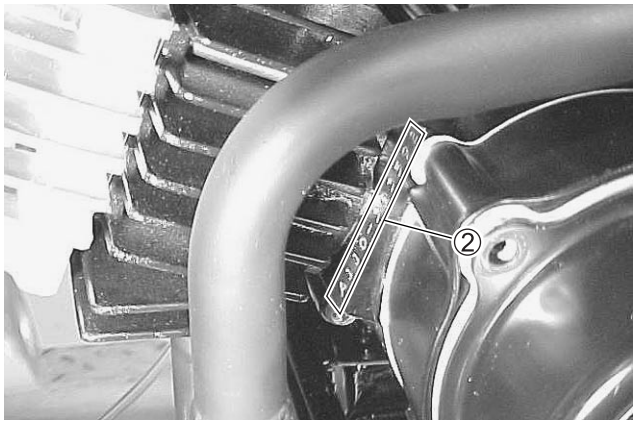
RIGHT

* Difference between photographs and the actual vehicles depends on the markets.

SERIAL NUMBER LOCATION

The frame serial number or V.I.N. (Vehicle Identification Number) ① is stamped on the left side of the frame pipe. The engine serial number ② is located on the crankcase. These numbers are required especially for registering the machine and ordering spare parts.





FUEL AND OIL RECOMMENDATIONS

FUEL (For USA and CANADA)

1. Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$) method or 91 octane or higher rated by the research method.
2. Suzuki recommends that customers use alcohol free, unleaded gasoline whenever possible.
3. Use of blended gasoline containing MTBE (Methyl Tertiary Butyl Ether) is permitted.
4. Use of blended gasoline/alcohol fuel is permitted, provided that the fuel contains not more than 10 % ethanol. Gasoline/alcohol fuel may contain up to 5 % methanol if appropriate cosolvents and corrosion inhibitors are present in it.
5. If the performance of the vehicle is unsatisfactory while using blended gasoline/alcohol fuel, you should switch to alcohol-free unleaded gasoline
6. Failure to follow these guideline could possibly void applicable warranty coverage. Check with your fuel supplier to make sure that the fuel you intend to use meets the requirements listed above.

FUEL (For the other countries)

Gasoline used should be graded 91 octane or higher. An unleaded gasoline is recommended.

ENGINE OIL (For USA)

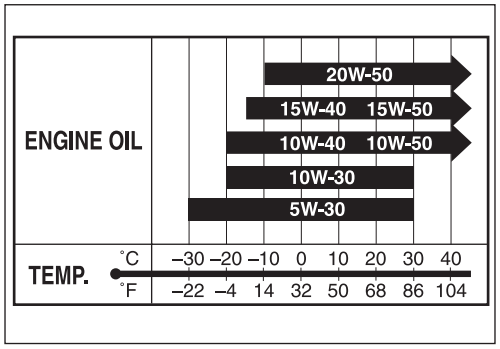
Use SUZUKI CCI SUPER 2-CYCLE MOTOR LUBRICANT or an equivalent good quality synthetic based 2-stroke engine oil rated FC under the JASO classification.

ENGINE OIL (For the other countries)

Use SUZUKI CCI SUPER OIL.
If they are not available, use a good quality 2-stroke engine oil rated FC under the JASO classification.

TRANSMISSION OIL

Use a good quality SAE 10W-40 multi-grade motor oil.



BREAK-IN PROCEDURES

During manufacturing only the best possible materials are used and all machined parts are finished to a very high standard. It is still necessary to allow the moving parts to “BREAK-IN” before subjecting the engine to maximum stresses. The future performance and reliability of the engine depends on the care and restraint exercised during its early life. Refer to the following throttle position recommendations.

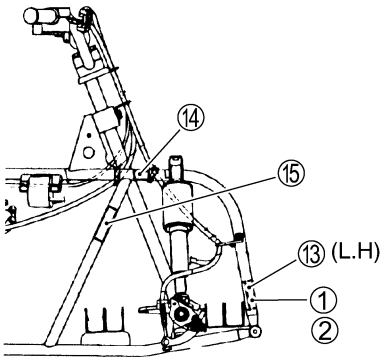
- Keep to these break-in throttle position.

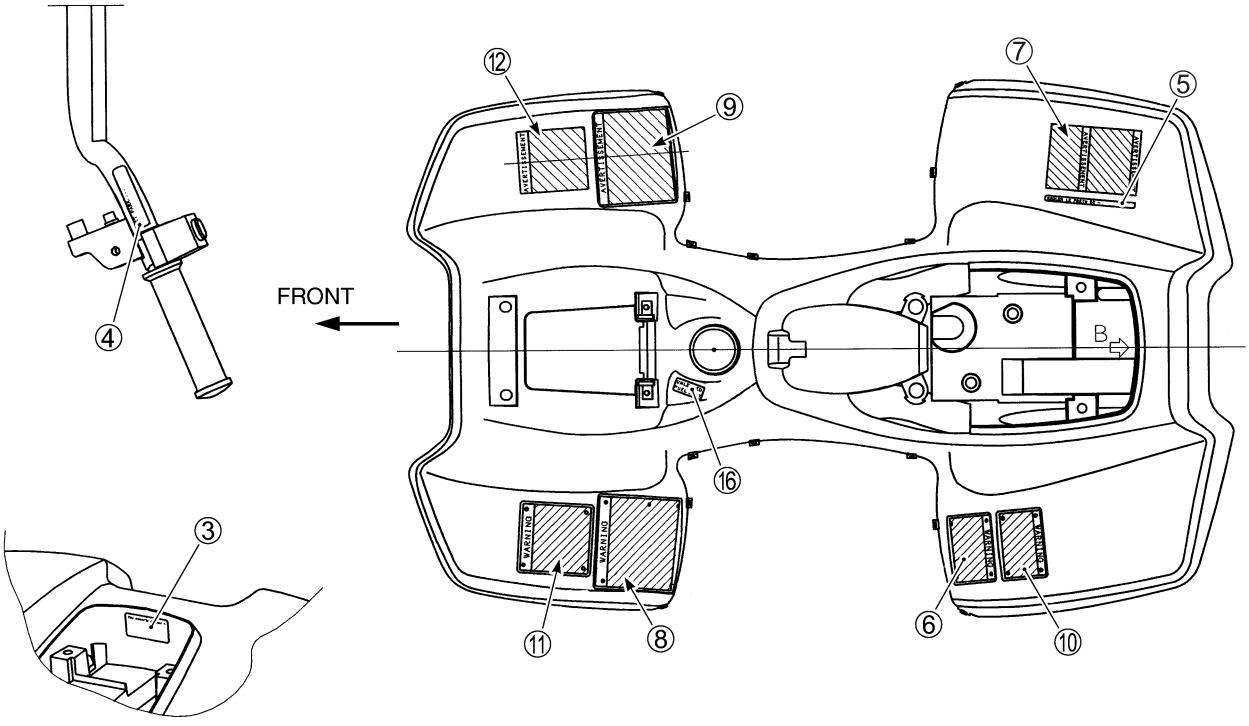
Up to 10 hours: Below ½ throttle

INFORMATION LABELS

No	LABEL or PLATE NAME	APPLIED SPECIFICATION		
		P02	P03	P28
1	Certification plate	○	○	
2	Compliance label			○
3	Manual notice label		○	
4	Parking brake label Ⓔ	○	○	○
5	Parking brake label Ⓕ			○
6	Tire pressure label Ⓔ	○	○	○
7	Tire pressure label Ⓕ			○
8	General warning label Ⓔ	○	○	○
9	General warning label Ⓕ			○
10	No-passenger label	○	○	○
11	Age. 6 label Ⓔ	○	○	○
12	Age. 6 label Ⓕ			○
13	Approval label	○		
14	EC mark label	○		
15	ICES Canada label			○
16	Fuel caution label	○		

Ⓔ: English Ⓕ: French





SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	1 260 mm (49.6 in)
Overall width	760 mm (29.9 in)
Overall height	745 mm (29.3 in)
Wheelbase	825 mm (32.5 in)
Ground clearance	120 mm (4.7 in)
Seat height	535 mm (21.1 in)
Front track	575 mm (22.6 in)
Rear track	575 mm (22.6 in)
Dry mass	71 kg (156 lbs)

ENGINE

Type	Two-stroke, air-cooled
Intake system	Piston valve
Number of cylinders	1
Bore × Stroke	41.0 × 37.8 mm (1.61 × 1.49 in)
Displacement	49 cm^3 (3.0 cu. in)
Corrected compression ratio	5.6 : 1
Carburetor	MIKUNI VM12SC, single
Air cleaner	Polyurethane foam element
Idle speed	1 800 ± 100 r/min

TRANSMISSION

Transmission	2.416 (29/12)
Primary reduction	2.650 (53/20)
Final reduction	3.700 (37/10)
Drive chain	D.I.D. 420

CHASSIS

Front suspension	Independent, swing axle, coil spring, oil damped
Rear suspension	Swingarm, coil spring, oil damped
Front wheel travel	52 mm (2.0 in)
Rear wheel travel	51 mm (2.0 in)
Caster	3°
Trail	10 mm (0.39 in)
Camber	0°
Steering angle	35°
Turning radius	2.0 m (6.6 ft)
Front brake	Drum brake
Rear brake	Drum brake
Front tire size	AT16 × 8-7☆ tubeless
Rear tire size	AT16 × 8-7☆ tubeless

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	24° B.T.D.C. at 3 000 r/min
Spark plug	NGK BPR-4H

CAPACITIES

Fuel tank	2.6 L (0.7/0.6 US/Imp gal)
Engine oil tank	0.5 L (0.53/0.44 US/Imp qt)
Transmission oil	500 ml (0.53/0.44 US/Imp qt)
Front fork oil (each leg)	700 ml (23.7/24.6 US/Imp oz)

COUNTRY OR AREA CODES

The following codes stand for the applicable country(-ies) and area(-s).

CODE	COUNTRY or AREA
P-02	UK
P-03	USA
P-28	Canada

PERIODIC MAINTENANCE

CONTENTS

PERIODIC MAINTENANCE SCHEDULE

The chart below lists the recommended intervals for all the required periodic service work necessary to keep the vehicle operating at peak performance and economy. Maintenance intervals are expressed in terms of kilometers, miles and months, and are dependent on whichever comes first.

NOTE:
More frequent servicing may be performed on vehicle that are used under severe conditions.

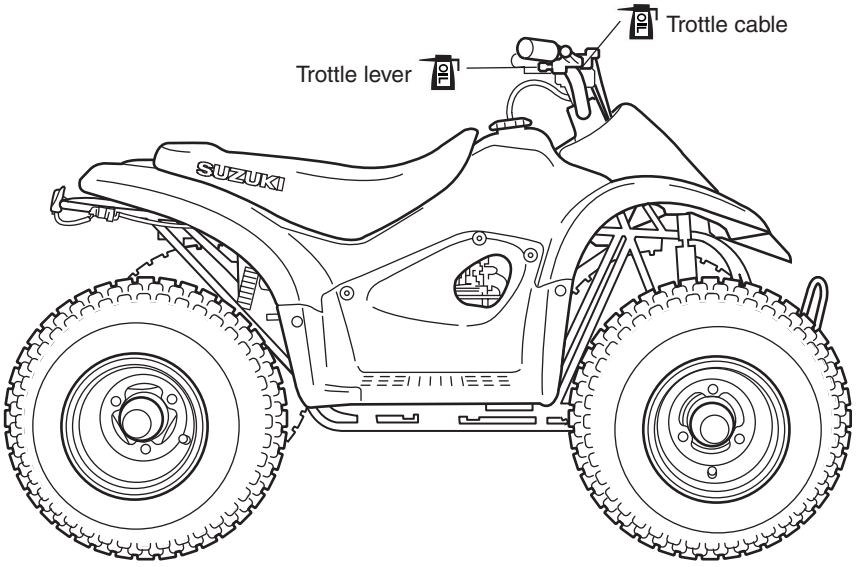
PERIODIC MAINTENANCE CHART

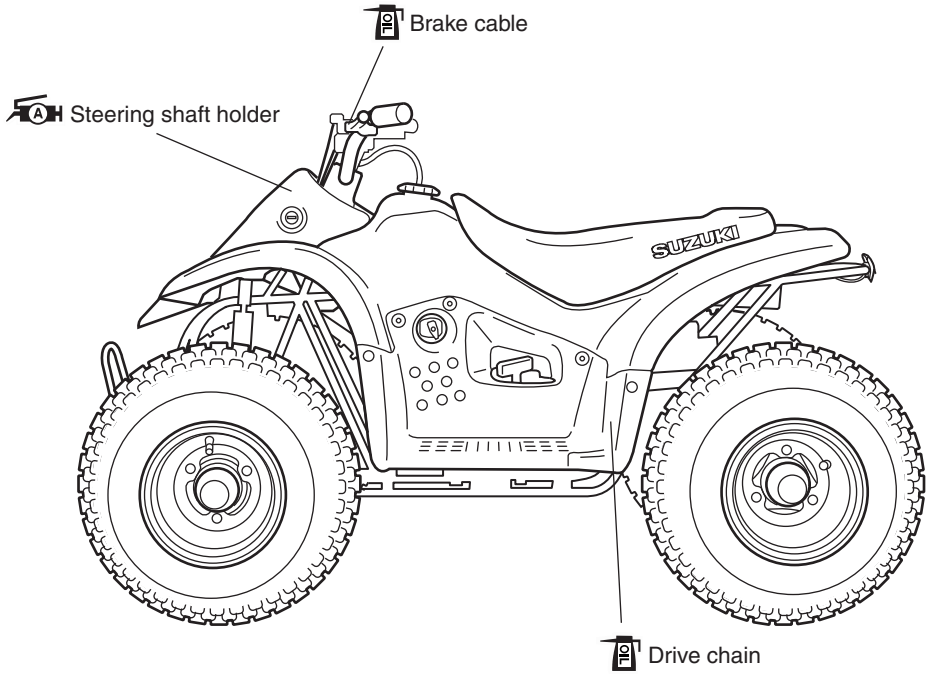
Interval / Item	Initial	Every	Every
	1 month	3 months	6 months
Air cleaner	–	C	–
Cylinder head, cylinder and muffler	–	C	C
Spark plug	–	C	R
Throttle cable	I	I	I
Idle speed	I	I	I
Fuel line	I	I	I
	Replace every 4 years		
Transmission oil	R	–	R
Drive chain	Clean, lubricate and inspect each time the motorcycle is ridden.		
Brakes	I	I	I
Tires	Inspect every month		
Suspension	–	–	I
Steering	I	I	I
Exhaust pipe bolt and muffler bolt	T	T	T
Spark arrester	–	–	C
Chassis bolts and nuts	T	T	T

NOTE:
Inspect: Inspect and clean, adjust, replace or lubricate as necessary.
C: Clean R: Replace T: Tighten

LUBRICATION POINTS

Proper lubrication is important for smooth operation and long life of each working part of the vehicle. Major lubrication points are indicated below.





NOTE:

* *Before lubricating each part, clean off any rusty spots and wipe off any grease, oil, dirt or grime.*
* *Lubricate exposed parts which are subject to rust, with a rust preventative spray especially whenever the vehicle has been operated under wet or rainy condition.*

MAINTENANCE AND TUNE-UP PROCEDURES

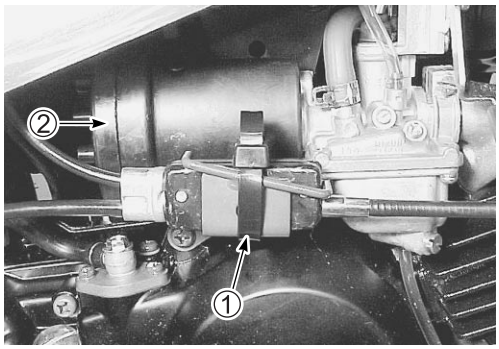
This section describes the servicing procedures for each item in the Periodic Maintenance chart.

AIR CLEANER

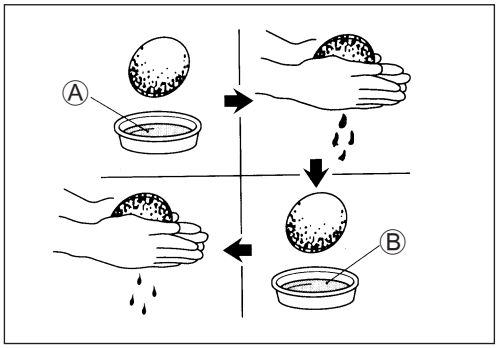
Clean every 3 months.

If the air cleaner is clogged with dust, intake resistance will be increase, resulting in a decrease in engine output and an increase in fuel consumption. Clean the air cleaner element in the following manner.

- Remove the right frame cover. (☞5-2)
- Remove the clamp ① and air cleaner cover ②.
- Remove the element.



- Fill a container with a non-flammable cleaning solvent.
- Immerse the air cleaner element in the cleaning solvent and wash it.
- Squeeze the cleaning solvent out of the washed element by pressing it between the palms of both hands: do not twist or wring the element or it will develop tears.
- Immerse the element in motor oil and squeeze the oil out of the element leaving it slightly wet with oil.



CAUTION

Inspect the air cleaner element for tears. A torn element must be replaced.

Ⓐ Non-flammable cleaning solvent
Ⓑ Motor oil SAE #30

• Reinstall the cleaned air cleaner element in the reverse order of removal.

CAUTION

*** Be sure to position the element snugly and correctly, so that no incoming air will by-pass it. Remember, the rapid wear of piston rings and the cylinder bore is often caused by a defective or poorly fitted element.**

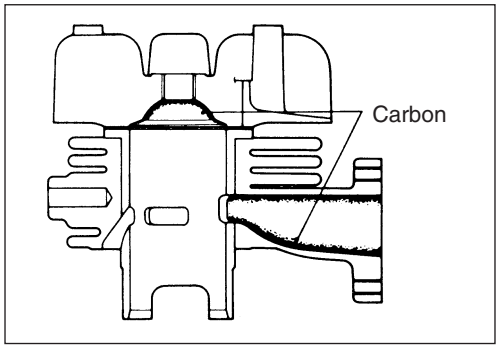
CAUTION

If driving under dusty conditions, clean the air cleaner element more frequently. The surest way to accelerate engine wear is to operate the engine without the element or to use a torn element. Make sure that the air cleaner is in good condition at all times. The life of the engine depends largely on this component!

CYLINDER HEAD AND CYLINDER

Remove carbon every 3 months.

(☞3-13)



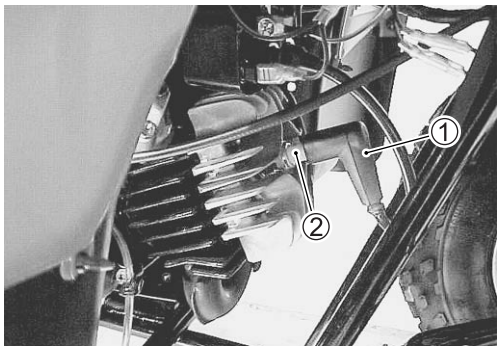
SPARK PLUG

Clean every 3 months.
Replace every 6 months.

Neglecting the spark plug maintenance will eventually leads to difficult starting and poor engine performance. If the spark plug is used for a long period, the electrode gradually burns away and carbon builds up along the inside part of the spark plug. In accordance with the Periodic Maintenance chart, the spark plug should be inspected, cleaned and regapped at the recommended intervals.

- Disconnect the spark plug cap ① and remove the spark plug ②.

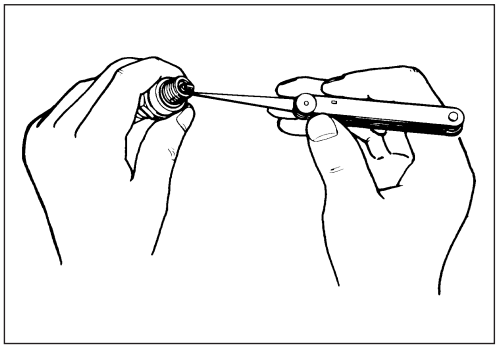
TOOL 09930-10121: Spark plug socket wrench set



- Carbon deposits on the spark plug will prevent good sparking and may cause the engine to misfire. Be sure to clean the carbon deposits off periodically.
- If the center electrode is fairly worn down, the spark plug should be replaced and the spark plug gap set to the specification using a thickness gauge.

TOOL 09900-20804: Thickness gauge

DATA Spark plug gap: 0.5 – 0.6 mm (0.020 – 0.024 in)

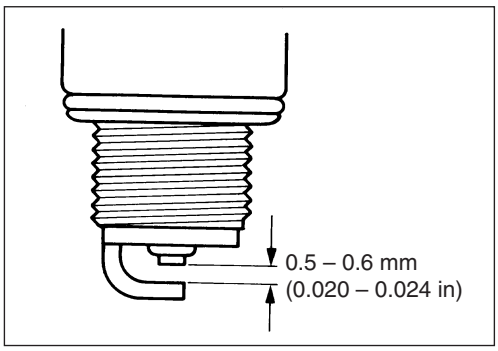


- Check the spark plug for burns. If any abnormalities are found, replace the spark plug as indicated below.

	NGK
STD	BPR4H

CAUTION

Confirm the thread size and reach when replacing the spark plug. If the reach is too short, carbon will be deposited on the screw portion of the plug hole and engine damage may result.



CAUTION

Before using a spark plug wrench, carefully turn the spark plug by finger into the threads of the cylinder head to prevent damage.

- Tighten the spark plug to the using the special tool.

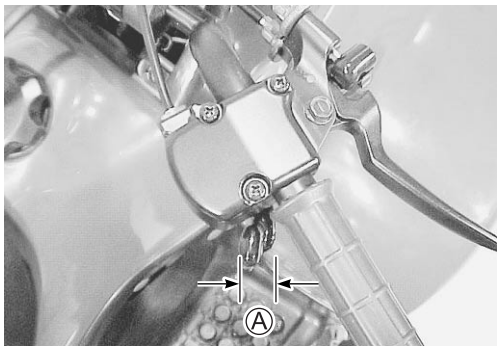
TOOL 09930-10121: Spark plug socket wrench set

THROTTLE CABLE PLAY

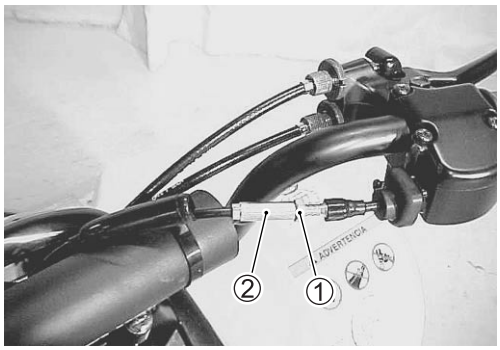
Inspect initially at 1 month and every 3 months thereafter.

Throttle cable play Ⓐ should be 3 – 5 mm (0.12 – 0.20 in) as measured at throttle when turning the throttle lightly. If the play Ⓐ is incorrect, adjust it as follows:

- Loosen the locknut ① and turn the adjuster ② in or out until the specified play is obtained.
- Tighten the locknut ① while holding the adjuster ②.



DATA Throttle cable play Ⓐ: 3 – 5 mm (0.12 – 0.20 in)



⚠ WARNING

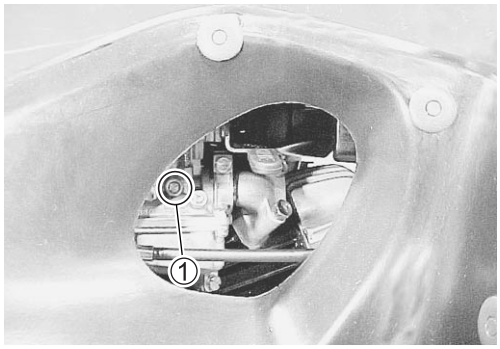
After the adjustment is completed, check that handlebars movement does not raise the engine idle speed and that the throttle lever returns smoothly and automatically.

ENGINE IDLE SPEED

Inspect initially at 1 month and every 3 months thereafter.

- Adjust the throttle cable play. (See above.)
- Warm up the engine.

NOTE:
Make this adjustment when the engine is hot.

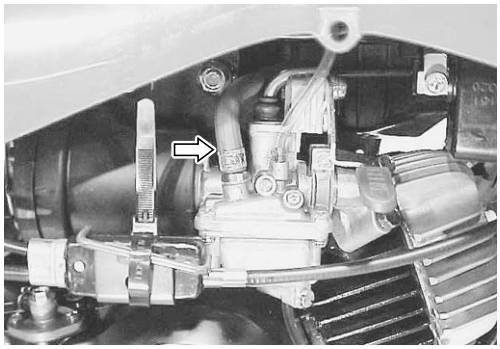


- Start the engine, turn the throttle stop screw ① and set the engine idle speed as follows.

DATA Engine idle speed: 1 700 – 1 900 r/min

FUEL HOSE

Inspect initially at 1 month and every 3 months thereafter. Replace every 4 years.



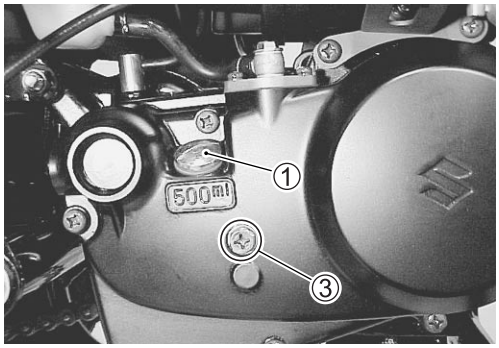
TRANSMISSION OIL

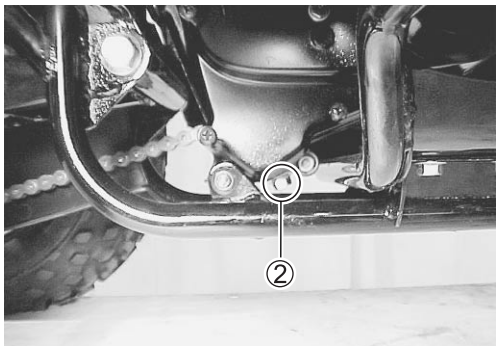
Change initially at 1 month and every 6 months thereafter.

After a long period of use, the transmission oil will deteriorate and quicken the wear of sliding and interlocking surfaces. Replace the transmission oil periodically. Refer to the following procedures.

- Place the vehicle on level ground.
- Start the engine to warm up the oil, this will facilitate draining of the oil. Shut off the engine.
- Remove the oil filler cap ①.
- Remove the drain plug ②. Drain the oil into a oil pan.
- Reinstall the drain plug ②.
- Remove the oil level screw ③.
- Pour new oil through the oil filler hole until the oil reaches the oil level hole.
- Tighten the oil level screw ③ and reinstall the oil filler cap ①.

DATA **Transmission oil capacity: 500 ml (0.5/0.4 US/Imp qt)**





DRIVE CHAIN

Clean, lubricate and inspect each time the vehicle is ridden.

Visually inspect the drive chain for the possible defects listed below.

* Loose pins
* Damaged rollers
* Rusted links
* Twisted or seized links
* Excessive wear
* Kinked or binding links

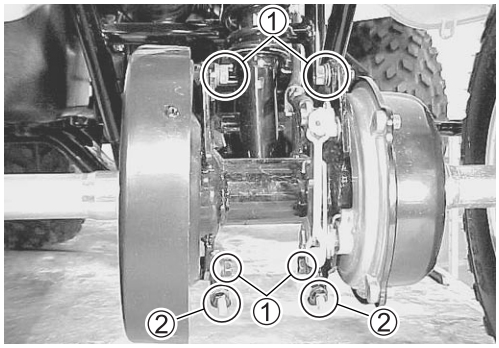
If any defects are found, the drive chain must be replaced.

CAUTION

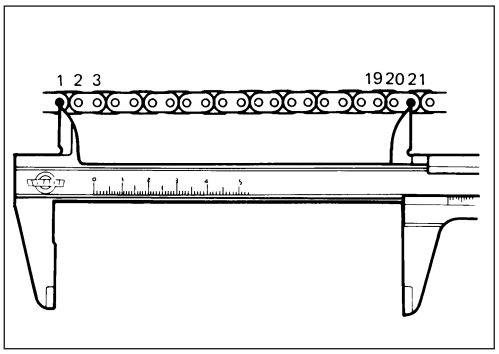
The standard drive chain is DID420. SUZUKI recommends to use this standard drive chain as a replacement.

CHECKING

- Loosen the bolts ①.
- Tense the drive chain fully by turning both chain adjusters ②.



• Count out 21 pins (20-pitch) on the chain measure the distance between the two points. If the distance exceeds the service limit, the chain must be replaced.

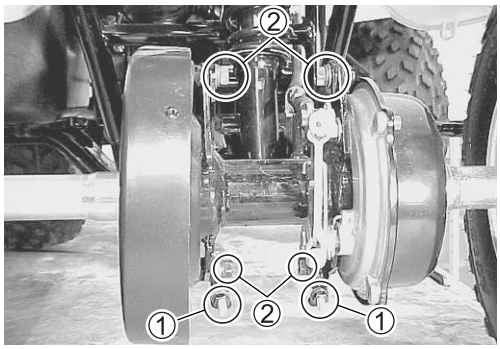


DATA Drive chain 20-pitch length: 259.0 mm (10.20 in)

NOTE:
When replacing the drive chain, replace the drive chain and sprockets as a set.

ADJUSTING

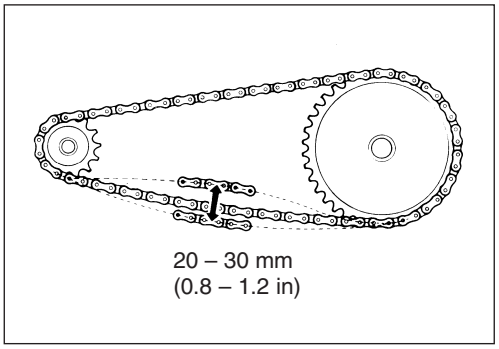
• Place the vehicle on the level ground.
• Loosen or tighten both chain adjusters ① equally until the chain has 20 – 30 (0.8 – 1.2 in) of slack at the middle of the chain between the engine and rear sprockets as shown.



DATA Drive chain slack: 20 – 30 mm (0.8 – 1.2 in)

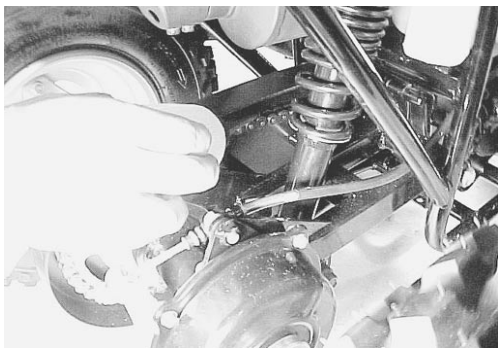
• After adjusting the drive chain, tighten the bolts ② to the securely.
• Recheck the chain slack after tightening the bolts ②.

NOTE:
After drive chain adjustment adjust the rear brake.
**Rear brake adjustment ..... ☞2-10*



CLEANING AND LUBRICATING

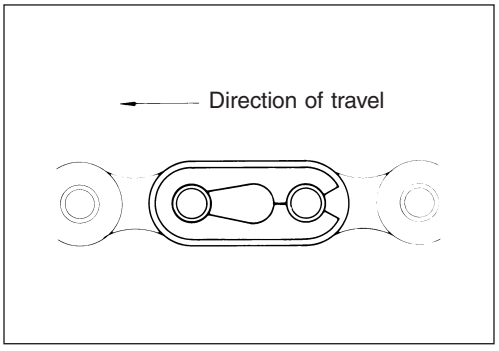
• Clean the drive chain with kerosine. If the drive chain tends to rust quickly, the intervals must be shortened.



• After cleaning and drying the chain, oil it with a heavy-weight engine oil.

CAUTION

The drive chain joint clip should be attached in the way that the slit end will face opposite to the direction of travel.



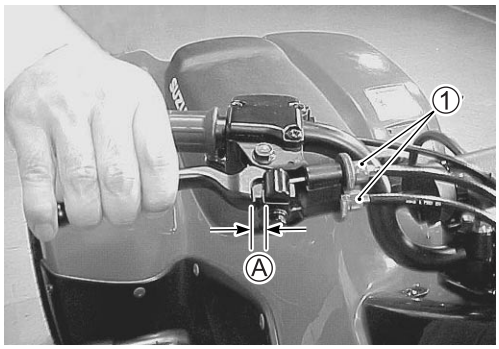
BRAKES

Inspect initially at 1 month and every 3 months thereafter.

FRONT BRAKE LEVER PLAY

- Turn the adjusting nuts ① so that the brake lever play Ⓐ is within specification.

DATA **Front brake lever play Ⓐ: 3 – 7 mm (0.12 – 0.28 in)**

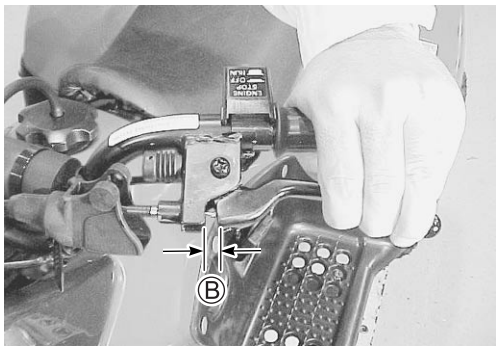


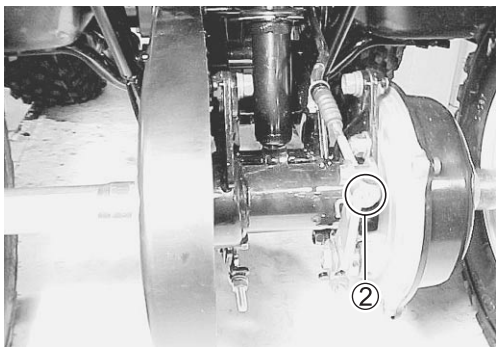
REAR BRAKE LEVER PLAY

- Turn the adjusting nut ② so that the free travel Ⓑ is within specification.

DATA **Rear brake lever play Ⓑ: 4 – 6 mm (0.16 – 0.24 in)**

NOTE:
After rear brake adjustment adjust the recoil srarter.
**Recoil starter adjustment ..... ☞2-11*

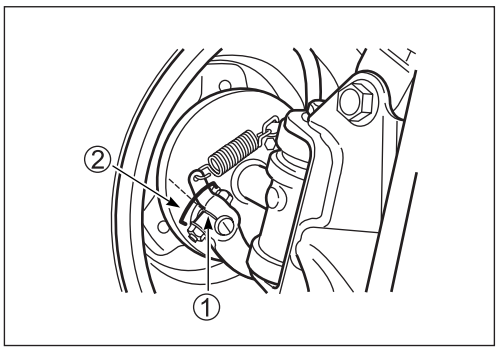


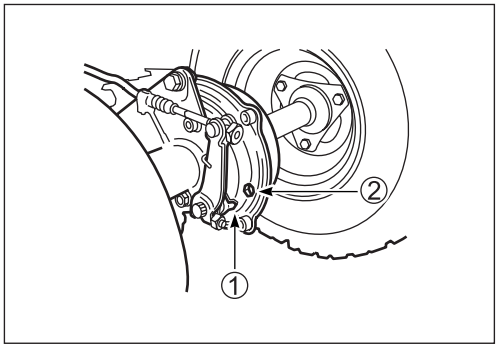


FRONT AND REAR BRAKE SHOE WEAR

This vehicle is equipped with brake wear limit indicators for the front and rear brake. Check brake lining wear as follows:

- Make sure the brake play is properly adjusted.
- While fully applying the brake, check to see that the extension line of the index mark ① is within the renge ②.
- If the index mark goes beyond the renge, the brake shoe assembly should be replaced with a new set of shoes.

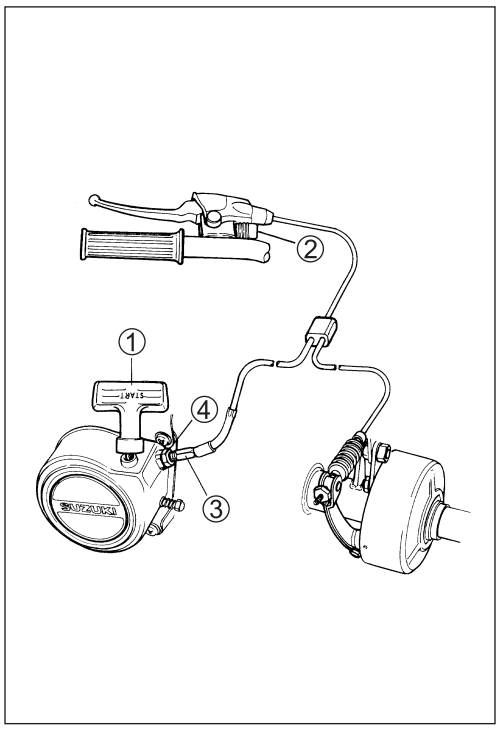




RECOIL STARTER ADJUSTMENT

NOTE:
Check the rear brake cable play.

- Loosen the adjuster lock nut ④ and turn the recoil adjuster ③ clockwise as far as it will go.
- Set the parking brake ② and make sure that the rear wheels and locked.
- Turn the recoil adjuster ③ counter clockwise by a half turn and pull the starter grip ①. Slowly to see if the retchet engages and engine can be cranked. If the recoil starter retched does not engage, turn the recoil adjuster ③ counter clockwise by another half turn. Repeat this procedure until the starter retchet mechanism begins to engage.
- After locating the point where the starter retchet begins to engage and secure it by tightening the adjuster lock nut.
- Check again to make sure that the recoil starter ratchet engages after the adjuster lock nut ④ has been tightened.



TIRES

Inspect every months.

TIRE PRESSURE

If the tire pressure is too high or too low, steering will be adversely affected and tire wear increased. Therefore, maintain the correct tire pressure for good roadability and a longer tire life. Cold inflation tire pressure is as follows.

COLD INFLATION TIRE PRESSURE	kPa	kgf/cm²	psi
FRONT	20	0.20	2.9
REAR	20	0.20	2.9

VEHICLE LOAD CAPACTY LIMIT: 38 kg (84 lbs)

CAUTION

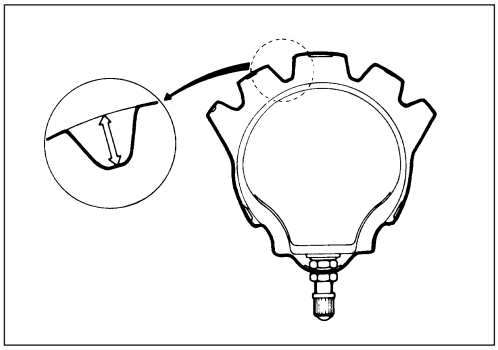
The standard tire fitted on this vehicle is a AT16×8-7☆ for the front and rear. The use of tires other than those specified may cause instability. It is highly recommended to use the specified tire.

TIRE TREAD CONDITION

Operating the vehicle with excessively worn tires will decrease riding stability and consequently invite a dangerous situation. It is highly recommended to replace a tire when the remaining depth of the tire tread reaches the following specification.

DATA Tire depth limit
Front and Rear: 4.0 mm (0.16 in)

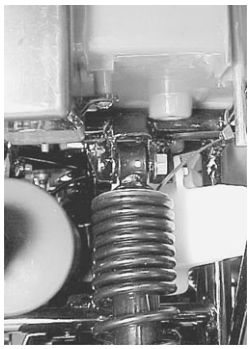
TOOL 09900-20805: Tire depth gauge



SUSPENSION

Inspect every 6 months thereafter.

Inspect the front and rear shock absorbers for oil leakage and wear. Replace the defective part if necessary.



STEERING

Inspect initial 1 month and every 3 months thereafter.

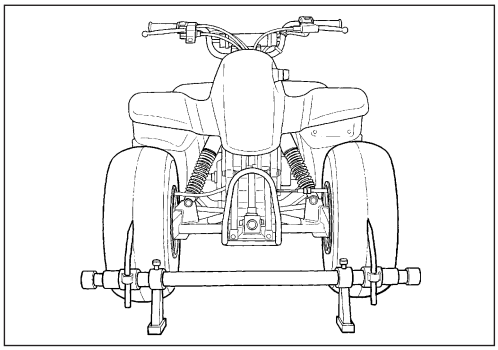
Steering system should be adjusted properly for smooth manipulation of the handlebars and safe running.

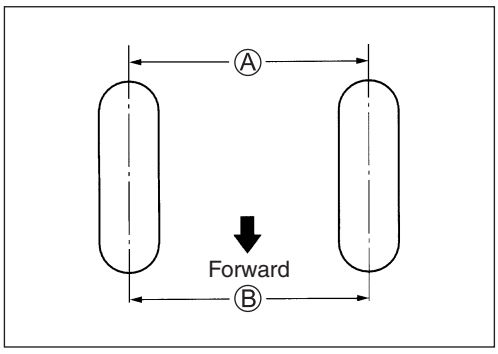
TOE-IN

- Place the vehicle on level ground.
- Make sure the tire pressure for both tire is the same and set to the proper specification.
- Set the front wheels in the forward position.
- Place a load of 30 kg (16 lbs) on the seat.
- Measure the distance Ⓐ and Ⓑ of the front wheels with a Toe-in gauge as shown and calculate the difference between Ⓐ and Ⓑ.

DATA Toe-in: 1.5 ± 3 mm (0.06 ± 0.12 in)

- If the toe-in is out of specification, bring it into the specified range. (☞5-23)



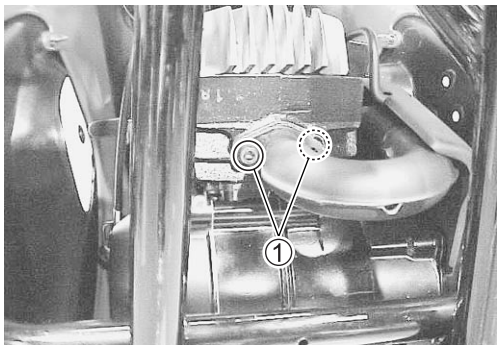


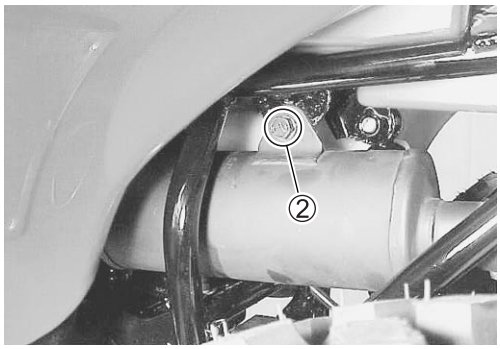
EXHAUST PIPE BOLT AND MUFFLER BOLT

Tighten initial 1 month and every 3 months thereafter.

- Remove the frame cover. (☞5-2)
- Tighten the exhaust pipe bolts ① and muffler mounting bolt ② to the specified torque.

Exhaust pipe bolts: 10 N·m (1.0 kgf·m, 7.0 lb-ft)
Muffler mounting bolt: 23 N·m (2.3 kgf·m, 16.5 lb-ft)

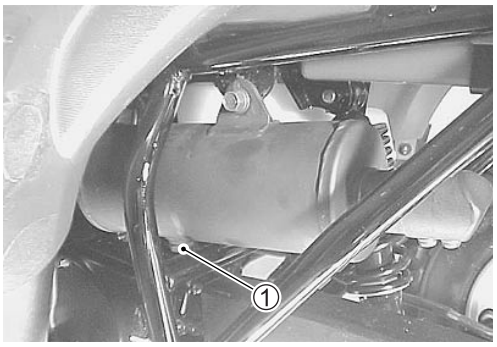




SPARK ARRESTER

Clean every 6 months.

- Put the range lever into neutral and set the parking brake.
- Remove the drain bolts ①.
- Start the engine and fully open the throttle several times to blow out the accumulated carbon particles.
- Stop the engine, and replace the drain bolts ①.



⚠ WARNING

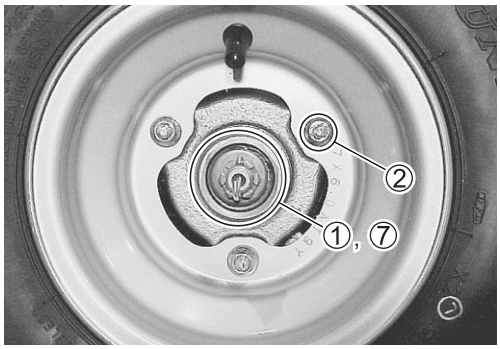
Only clean the spark arrester in an open area away from combustible materials. Exhausted hot carbon particles can start a fire.

CHASSIS BOLTS AND NUTS

Tighten initially at 1 month and every 3 months thereafter.

Check that all chassis bolts and nuts are tightened to their specified torque. (Refer to page 2-15 for the locations of the following bolts and nuts on the motorcycle.)

ITEM	N·m	kgf·m	lb-ft
① Front hab nut	65	6.5	47.5
② Wheel nut (front and rear)	28	2.8	20.5
③ Steering shaft holder bolt	23	2.3	16.5
④ Steering shaft lower nut	29	2.9	21.0
⑤ Handlebar clamp bolt	13	1.3	9.5
⑥ Footrest bolt	23	2.3	16.5
⑦ Rear hab nut	75	7.5	55.0
⑧ Swing arm pivot nut	102	10.2	74.0
⑨ Tie-rod lock nut	29	2.9	21.0
⑩ Rear shock absorber	29	2.9	21.0
⑪ Front brake cam lever nut	3.3	0.33	2.43
⑫ Rear brake cam lever nut	7.7	0.77	5.3
⑬ Front suspension arm bolt	50	5.0	36.5
⑭ Front shock absorber bolt (lower and upper)	29	2.9	21.0
⑮ Rear brake panel nut	28	2.8	20.5
⑯ Tie-rod end nut	29	2.9	21.0
⑰ Knuckle arm nut	50	5.0	36.0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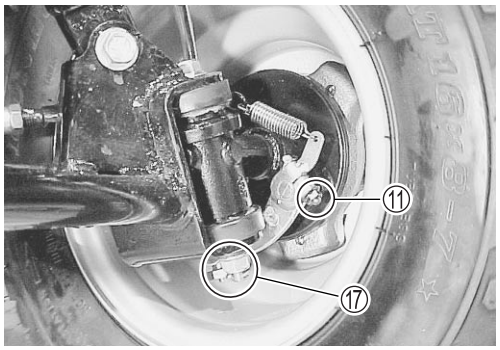
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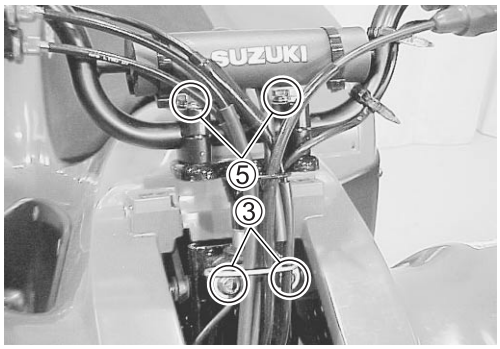
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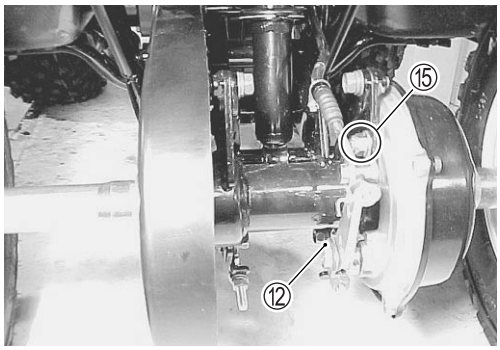
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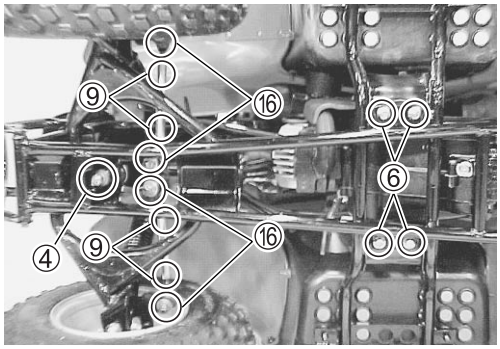
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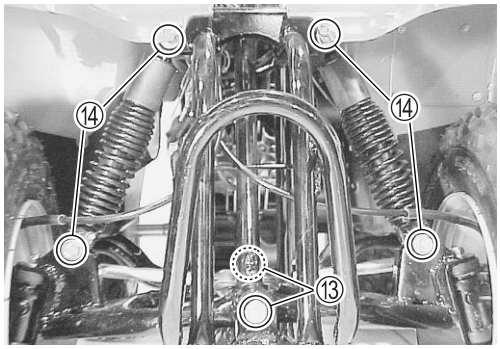
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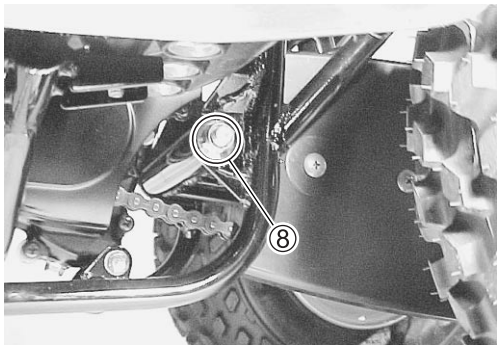
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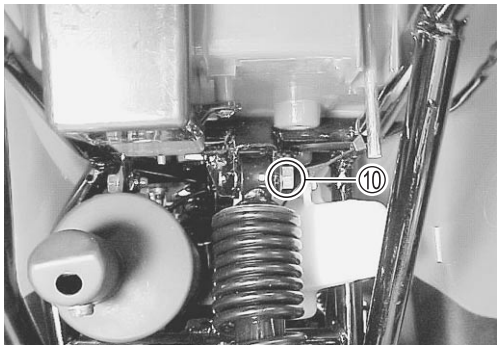

⑩

INITIAL ENGAGEMENT AND CLUTCH LOCK-UP INSPECTION

The LT-A50 is equipped with a centrifugal type automatic clutch. To insure proper performance and longevity of the clutch assemblies it is essential that the clutches engage smoothly and gradually. Before checking the initial engagement and clutch lock-up two inspection checks must be performed to thoroughly check the operation of the drive train. Perform the following:

- Check the oil level. (☞2-8)
- Warm up the engine.

INITIAL ENGAGEMENT INSPECTION

- Connect the tachometer onto the spark plug lead.
- Start the engine.
- Slowly open the throttle and note the engine speed (r/min) when the vehicle begins to move forward.

DATA Engagement speed: 2 200 – 2 600 r/min

If the engagement speed does not coincide with the standard range, inspect the following items for any abnormalities.

* Clutsh shoes ..... ☞3-17
* Clutch wheel ..... ☞3-17

CLUTCH LOCK-UP INSPECTION

Perform this inspection to determine if the clutch is engaging fully and not slipping.

- Connect a tachometer onto the spark plug lead.
- Start the engine.
- Apply the front and rear brakes as firmly as possible.
- Fully open the throttle for a brief period and note the maximum engine speed sustained during the test cycle.

DATA Lock-up speed: 2 500 – 2 900 r/min

CAUTION

Do not apply full power for more than 10 seconds or damage to the clutch or engine may occur.

If the lock-up speed (r/min) does not coincide with the standard range, inspect the following items for any abnormalities.

* Clutch shoes ..... ☞3-17
* Clutch wheel ..... ☞3-17

ENGINE

CONTENTS

ENGINE COMPONENTS REMOVABLE WITH THE ENGINE IN PLACE

The parts listed below can be removed and reinstalled without removing the engine from the frame. Refer to the pages listed in each section for removal and reinstallation instructions.

ENGINE LEFT SIDE

Engine sprocket ..... ☞3-9
Generator rotor ..... ☞3-10 and -21
Recoil stater ..... ☞3-25

ENGINE CENTER

Exhaust pipe ..... ☞3-3
Cylinder ..... ☞3-9 and -25
Piston ..... ☞3-9 and -24
Cylinder head ..... ☞3-9 and -25
Carburetor ..... ☞4-4 and -7

ENGINE RIGHT SIDE

Oil pump ..... ☞4-11
Clutch cover ..... ☞3-10 and -24
Clutch assembly ..... ☞3-10 and -22
Primary driven gear ..... ☞3-10 and -22

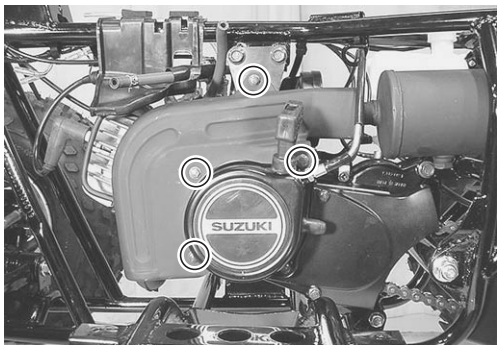
ENGINE REMOVAL AND REMOUNTING

ENGINE REMOVAL

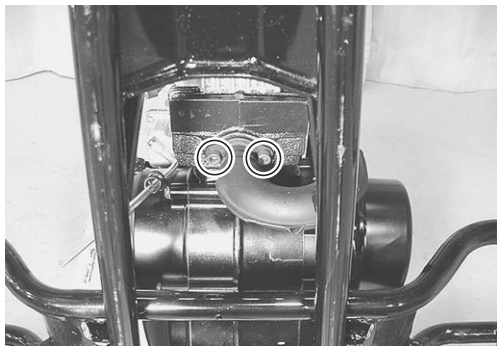
Before taking the engine out of the frame, wash the engine using a steam cleaner. Engine removal is sequentially explained in the following steps.

- Drain the transmission oil. (☞2-8)
- Remove the seat. (☞5-2)
- Remove the frame cover. (☞5-2)
- Remove the fuel tank. (☞4-2)

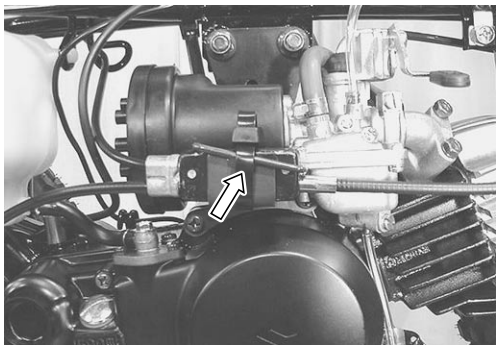
- Remove the exhaust pipe cover.



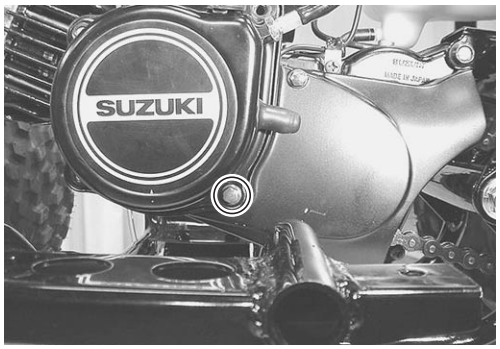
- Remove the exhaust pipe bolts.
- Remove the muffler.



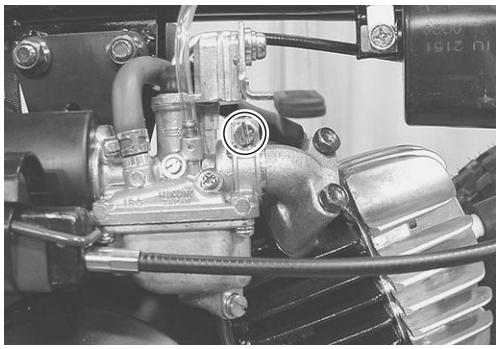
- Remove the clamp.



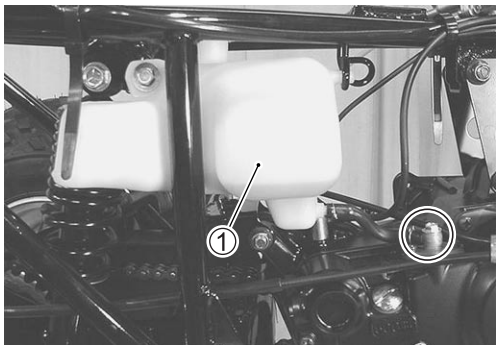
- Remove the recoil starter bolt.



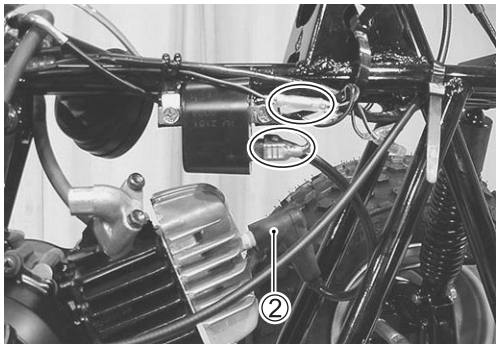
- Loosen the screw.
- Remove the carburetor assembly.



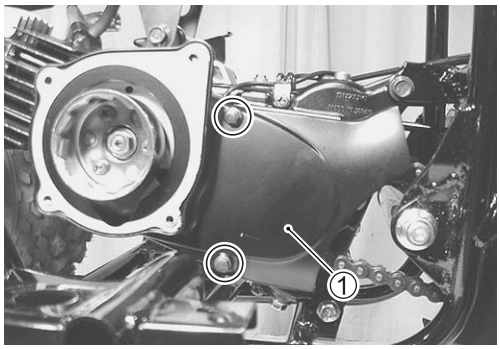
- Remove the oil tank ①.



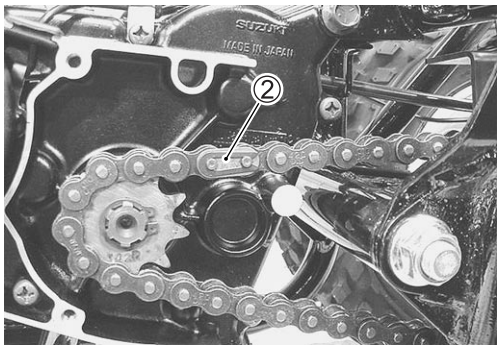
- Disconnect the generator lead wire and remove the spark plug cap ②.



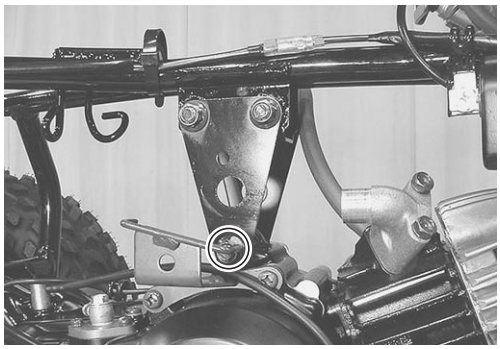
• Remove the engine sprcket cover ①.

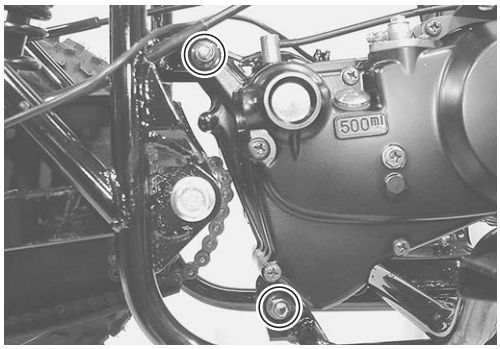


• Remove the drive chain ②.



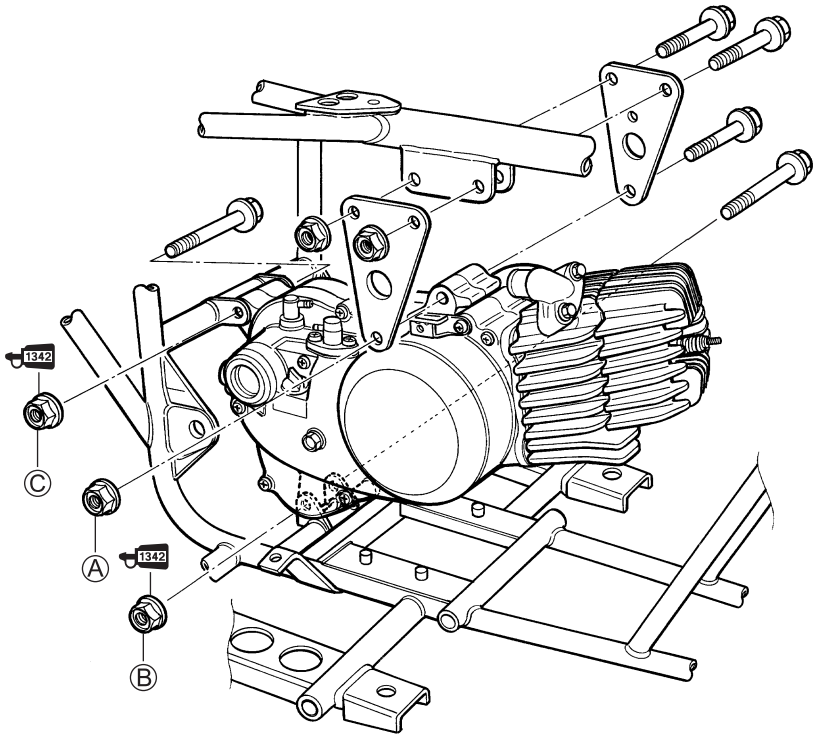
• Remove the engine mounting bolts.





ENGINE REMOUNTING

Remount the engine in the reverse order of engine removal.



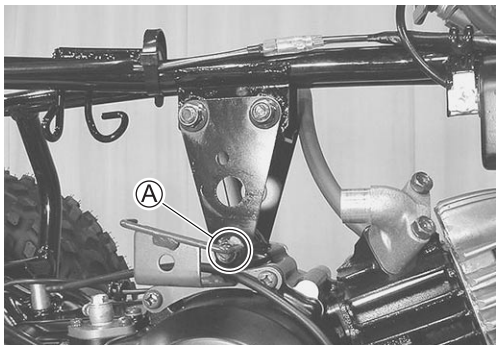
ITEM	N·m	kgf·m	lb-ft
Ⓐ Engine mounting nut	31	3.1	22.5
Ⓑ Engine mounting nut	41	4.1	29.5
Ⓒ Engine mounting nut	31	3.1	22.5

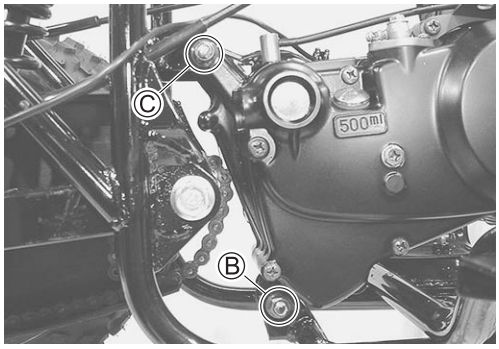
- Apply a small quantity of THREAD LOCK "1342" to the threasds of engine mounting nut B and C.

1342 99000-32050: THREAD LOCK "1342"

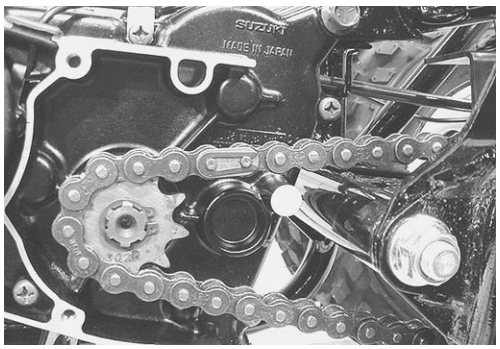
- Tighten the engine mounting nuts to the specified torque.

Engine mounting nut Ⓐ: 31 N·m (3.1 kgf·m, 22.5 lb-ft)
Engine mounting nut Ⓑ: 41 N·m (4.1 kgf·m, 29.5 lb-ft)
Engine mounting nut Ⓒ: 31 N·m (3.1 kgf·m, 22.5 lb-ft)



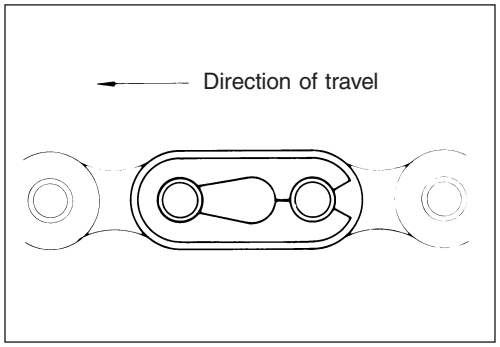


• Install the drive chain.



CAUTION

The drive chain joint clip should attached in the way that the slit end will face opposite the direction of travel.



• Pour the specified amount of transmission oil in to the crankcase. (☞2-8)

DATA **Oil change : 500 ml (0.53/0.44 US/Imp qt)**
Overhaul : 550 ml (0.58/0.48 US/Imp qt)

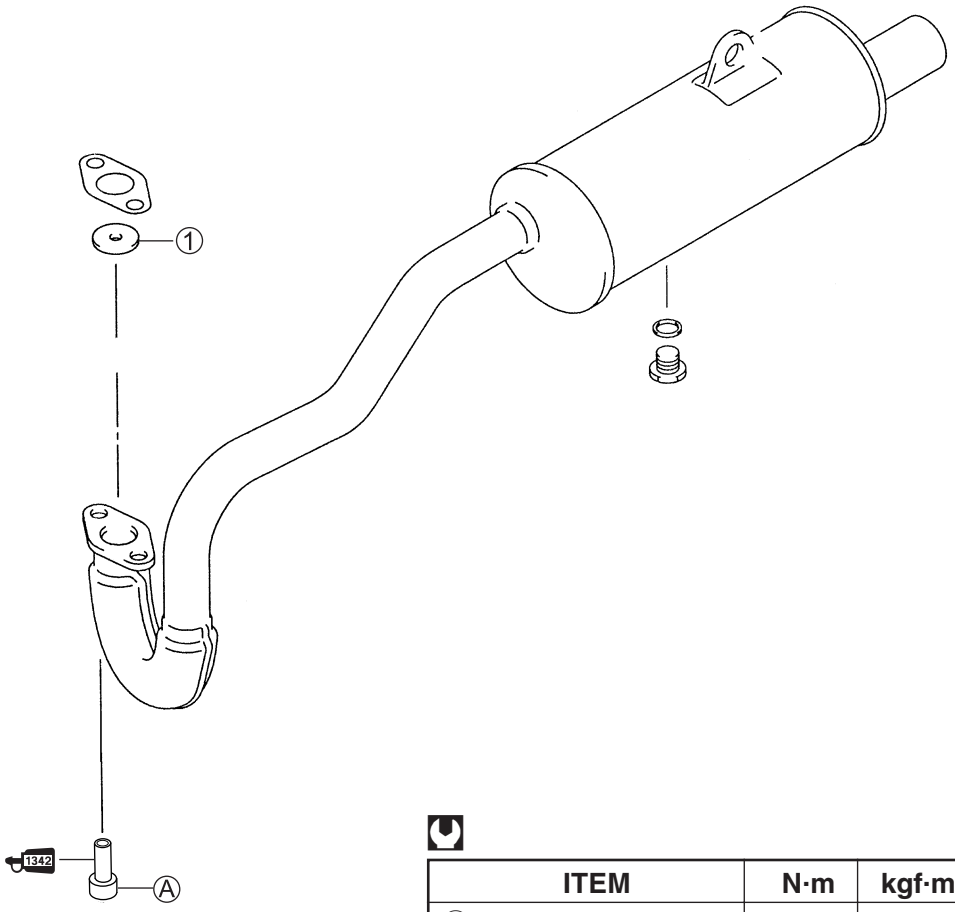
• After remounting the engine, the following adjustments are necessary.
  * Engine idle speed ..... ☞2-7
  * Throttle cable play ..... ☞2-7
  * Rear brake cable play ..... ☞2-10
  * Drive chain slack ..... ☞2-8
  * Oil pump air bleeding ..... ☞4-13
  * Recoil starter ..... ☞2-11

CAUTION

Check the wire and cable routing.

POWER REDUCTION PLATE

The power reduction plate ① has been attached inside the exhaust flange as shown in the illustrations.



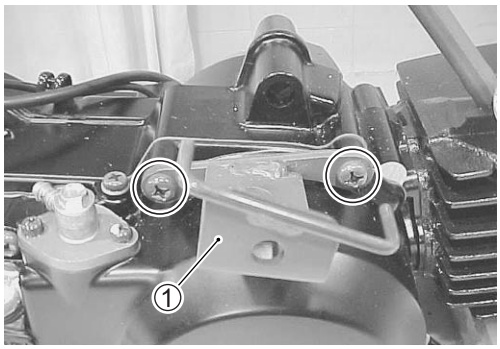
ITEM	N·m	kgf·m	lb-ft
Ⓐ Exhoust pipe bolts	10	1.0	7.0

⚠ WARNING

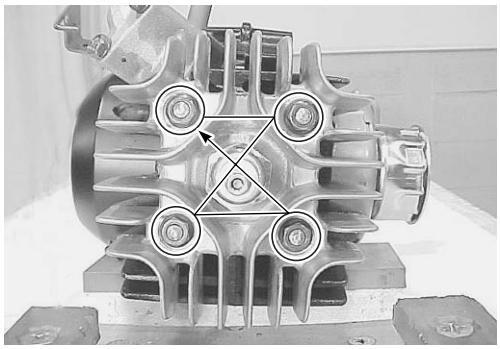
Do not remove the power reduction plate until the rider develops sufficient skills to operate LT-A50 safety at the maximum speed with the power reduction system in place.

ENGINE DISASSEMBLY

- Remove the rear brake cable guide ①.

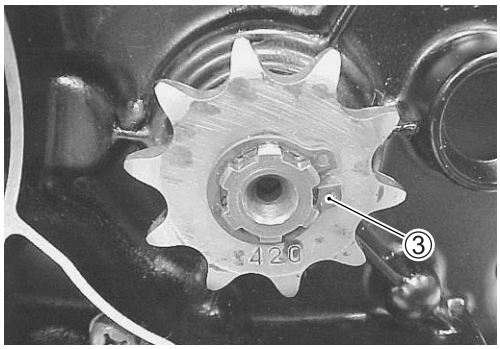


- Remove the cylinder head and cylinder.

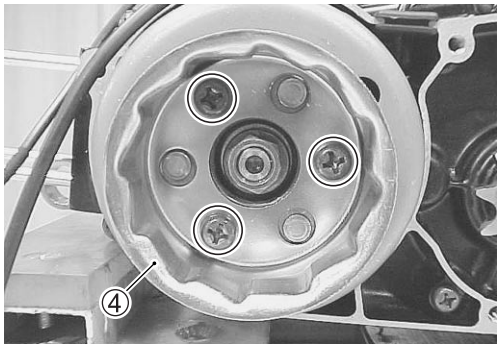


- Place a clean rag over the cylinder base to prevent the piston pin circlip from dropping into the crankcase.
- Remove the piston pin circlip ②.
- Remove the piston pin and piston.

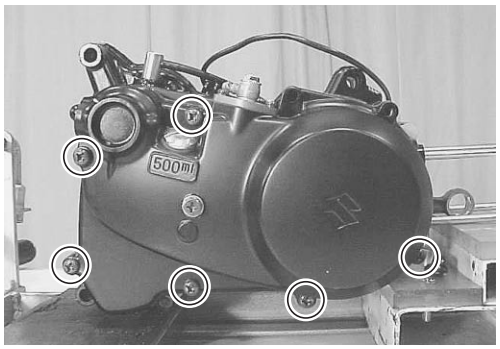
- Remove the circlip ③.
- Remove the engine sprocket.



- Remove the recoil starter cup ④.

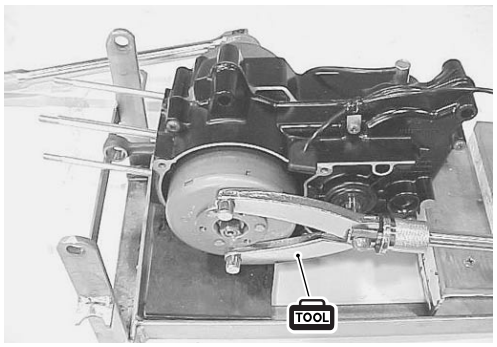


- Remove the clutch cover.

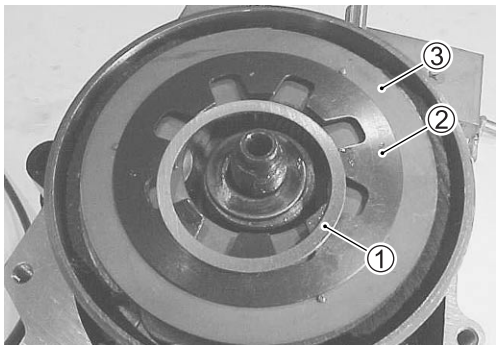


- Hold the generator rotor using the special tool.
- Remove the clutch sleeve nut.

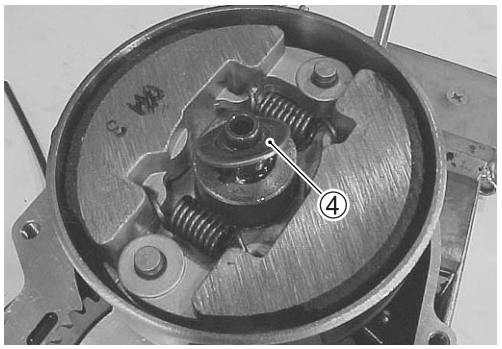
TOOL 09930-40113: Rotor holder



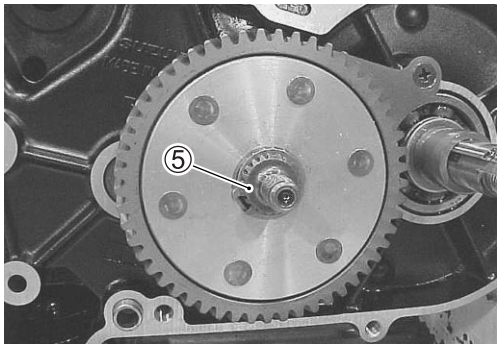
- Remove the thrust washer ①, wave washer ② and clutch guide plate ③.



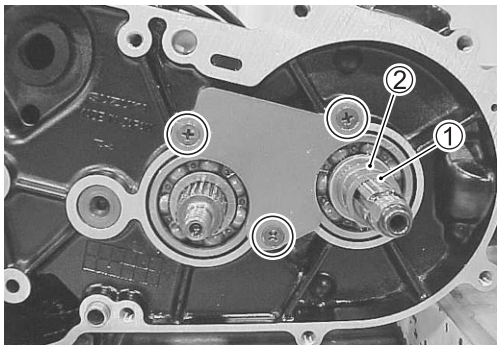
- Remove the washer ④ and clutch shoe assembly, clutch drum.



- Remove the circlip ⑤.
- Remove the primary driven gear.

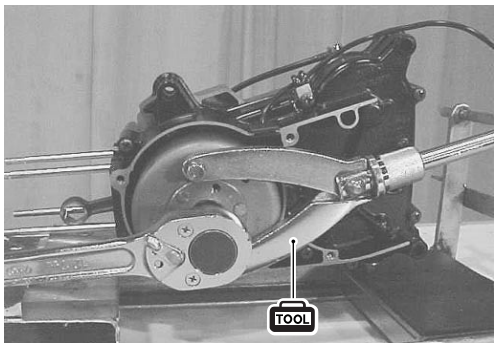


- Remove the oil guide bearing retainer plate.
- Remove the spacer ① and washer ②.



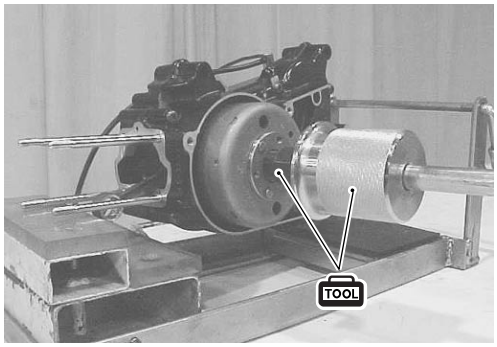
- Hold the generator rotor using the special tool.
- Remove the generator rotor nut.

TOOL 09930-40113: Rotor holder

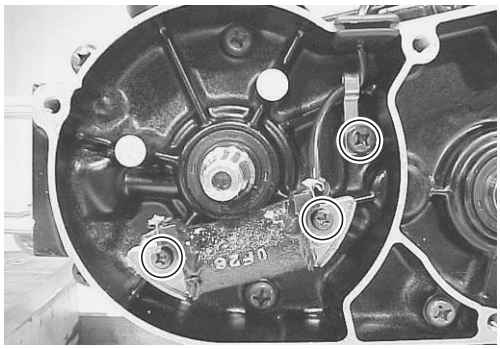


- Remove the generator rotor using the special tools.

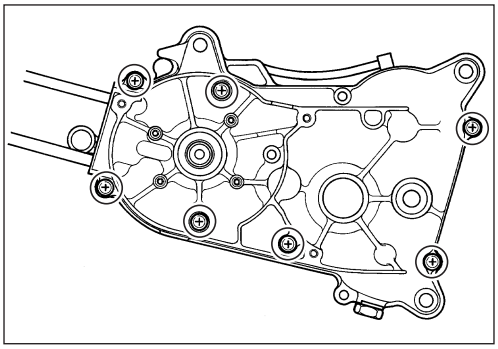
TOOL 09930-30104: Sliding shaft
09930-30161: Attachment "C"



- Remove the primary coil.

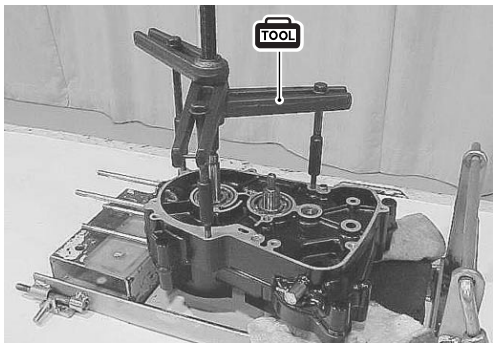


- Remove the crankcase securing screws.

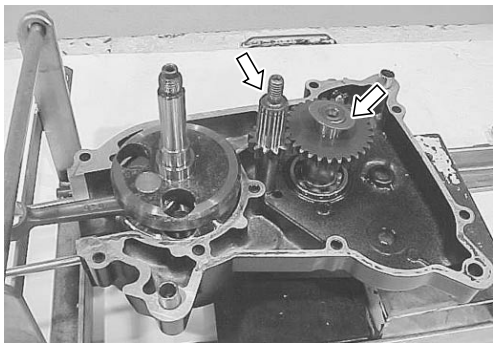


• Separate the crankcase using the special tool.

TOOL 09920-13120: Crankcase separator

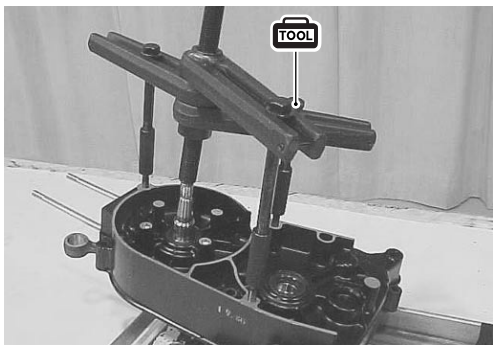


• Remove the countershaft and driveshaft.



• Remove the crankshaft using the special tool.

TOOL 09920-13120: Crankcase separator

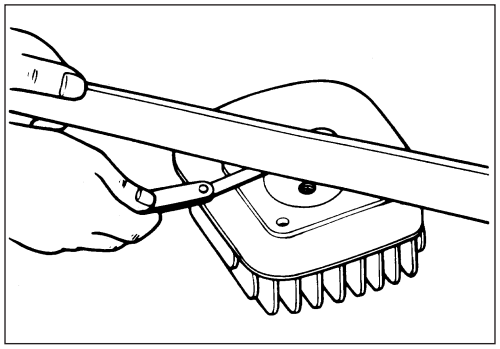


ENGINE COMPONENTS INSPECTION AND SERVICE

CYLINDER HEAD

Remove carbon from the combustion chamber and clean the cylinder head.

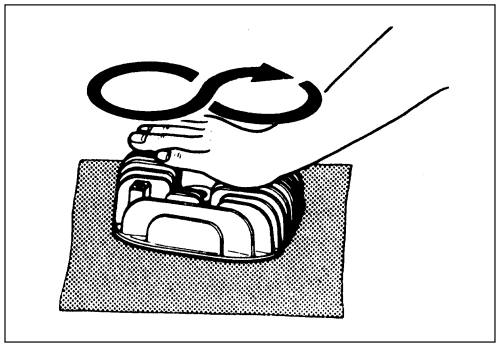
Check the gasket surface of the cylinder head for distortion. Use a straightedge and thickness gauge. Take clearance readings at several places.



TOOL **09900-20803: Thickness gauge**

DATA **Cylinder head distortion**
Service Limit: 0.05 mm (0.002 in)

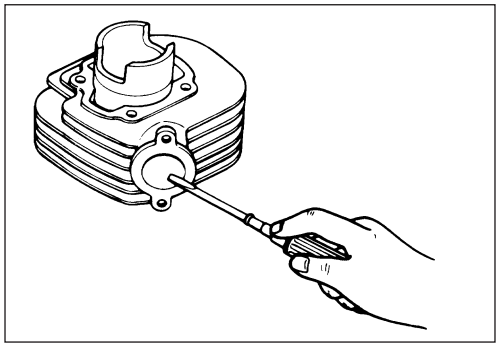
If clearance readings exceed the service limit, flatten the cylinder head. Place a sheet of emery paper (about #400 grit) on a surface plate. Use a figure-eight motion when grinding the cylinder head surface.



The gasket surface must be smooth and perfectly flat, for a tight fit. A leaky joint can be the cause of reduced power and increased fuel consumption.

CYLINDER

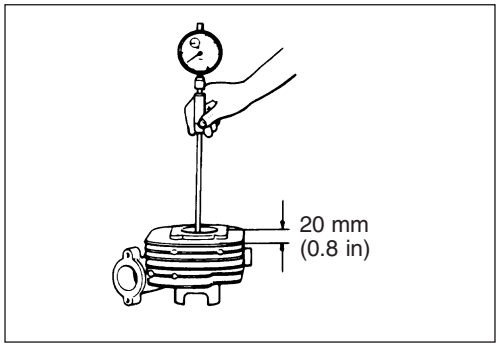
Remove carbon from the exhaust port and the upper part of the cylinder. Take care not to damage the surface of the cylinder wall. Measure the cylinder bore with the cylinder gauge at 20 mm (0.8 in) from the top of the cylinder.



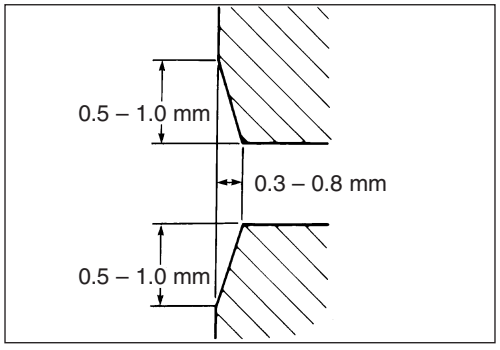
Rebore the cylinder when the cylinder bore exceeds the service limit. Oversize pistons are available in two sizes: 0.5 mm and 1.0 mm

TOOL **09900-20508: Cylinder gauge set**

DATA **Cylinder bore**
Service Limit: 41.065 mm (1.6167 in)



Chamfer the port edges after reboring. Use a scraper and take care not to nick the surface of the walls. Use emery paper to smooth the chamfered edges.



NOTE:
Shallow grooves or minor scuffs can be removed by using emery paper (about #400). If the flaws are deep grooves or cannot be removed with the emery paper, the cylinder must be replaced with a new one.

PISTON

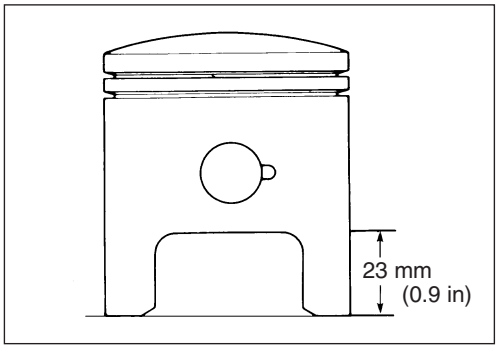
PISTON DIAMETER

Measure the piston diameter with a micrometer at 23 mm (0.9 in) from the skirt end.

If the piston diameter is less than the service limit, replace the piston.

TOOL 09900-20202: Micrometer (25 – 50 mm)

DATA Piston diameter
Service Limit: 40.880 mm (1.6094 in)

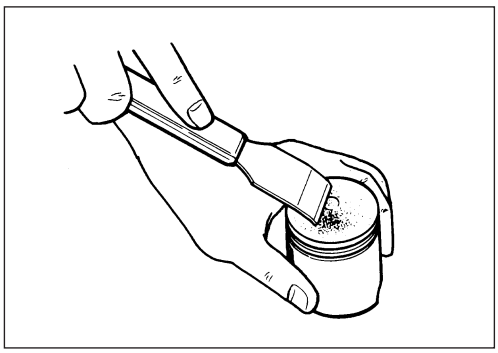


PISTON-CYLINDER CLEARANCE

Subtract the piston diameter from the cylinder bore. If the piston-to-cylinder clearance exceeds the service limit, rebore the cylinder and use an oversize piston or replace both the cylinder and the piston.

Unit: mm (in)

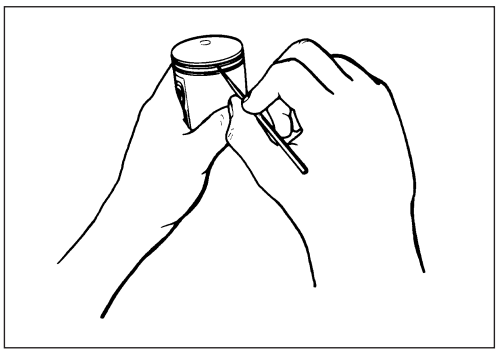
	STD	Service Limit
Cylinder bore	41.000 – 41.015 (1.6142 – 1.6148)	41.065 (1.6167)
Piston diam.	40.930 – 40.945 (1.6114 – 1.620)	40.880 (1.6094)
Cylinder to piston	0.065 – 0.075 (0.0026 – 0.0030)	0.120 (0.0047)

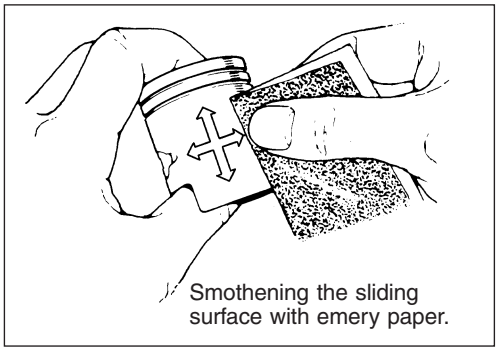


CARBON REMOVAL

Remove the carbon from the crown of the piston and piston ring grooves. After cleaning the piston ring grooves, install the piston rings and rotate them in their respective grooves to be sure that they move smoothly.

Carbon in the piston ring groove can cause the piston ring to get stuck, reducing engine power output. Replace the scuffed piston. Shallow grooves or minor scuff can be removed by using emery paper (about #400).





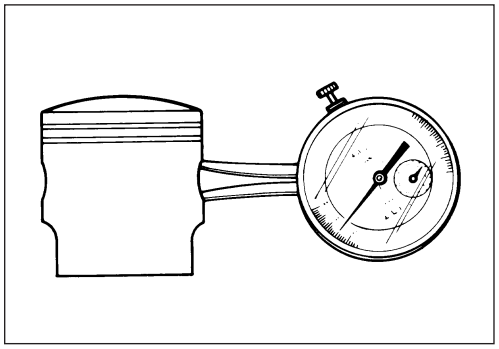
Smothening the sliding surface with emery paper.

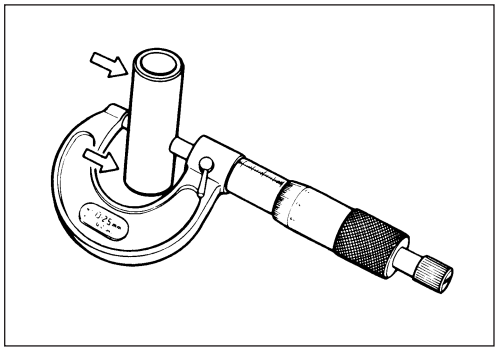
PISTON PIN AND PIN BORE

Measure the piston pin bore inside diameter using the caliper gauge and measure the piston pin outside diameter using the micrometer. If either is out of specification or the different between these two measurements is more than the limits, replace both the piston and piston pin.

TOOL 09900-20605: Dial calipers
09900-20205: Micrometer (0 – 25 mm)

DATA Piston pin bore
Service Limit: 12.030 mm (0.4736 in)
Piston pin O.D.
Service Limit: 11.980 mm (0.4717 in)





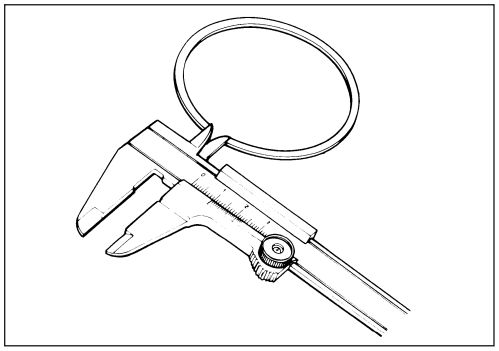
PISTON RINGS

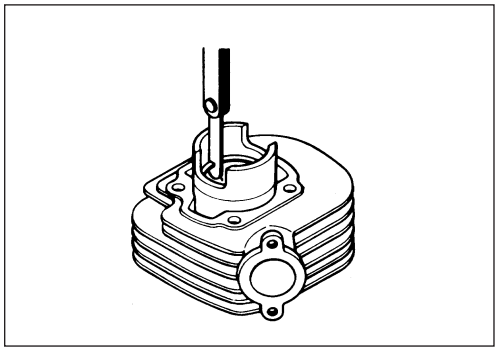
Use vernier calipers to measure the piston ring free end gap. Next, fit the piston ring squarely into the cylinder and measure the piston ring end gap with a thickness gauge.
If any of the measurements exceed the service limit, replace the piston ring with a new one.

TOOL 09900-20101: Vernier calipers
09900-20803: Thickness gauge

DATA Piston ring free end gap
Service Limit: 1st (R) ..... 3.6 mm (0.14 in)
1st (T) ..... 3.6 mm (0.14 in)
2nd (R) ..... 3.3 mm (0.13 in)
2nd (T) ..... 4 mm (0.16 in)

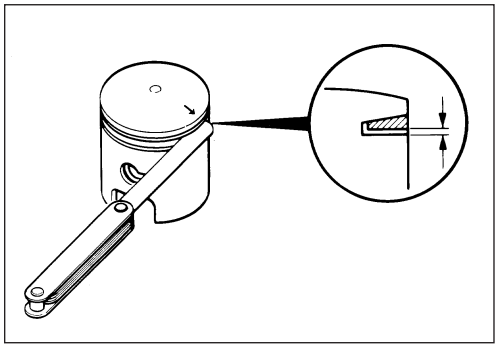
DATA Piston ring end gap
Service Limit: 1st & 2nd ..... 0.80 mm (0.031 in)



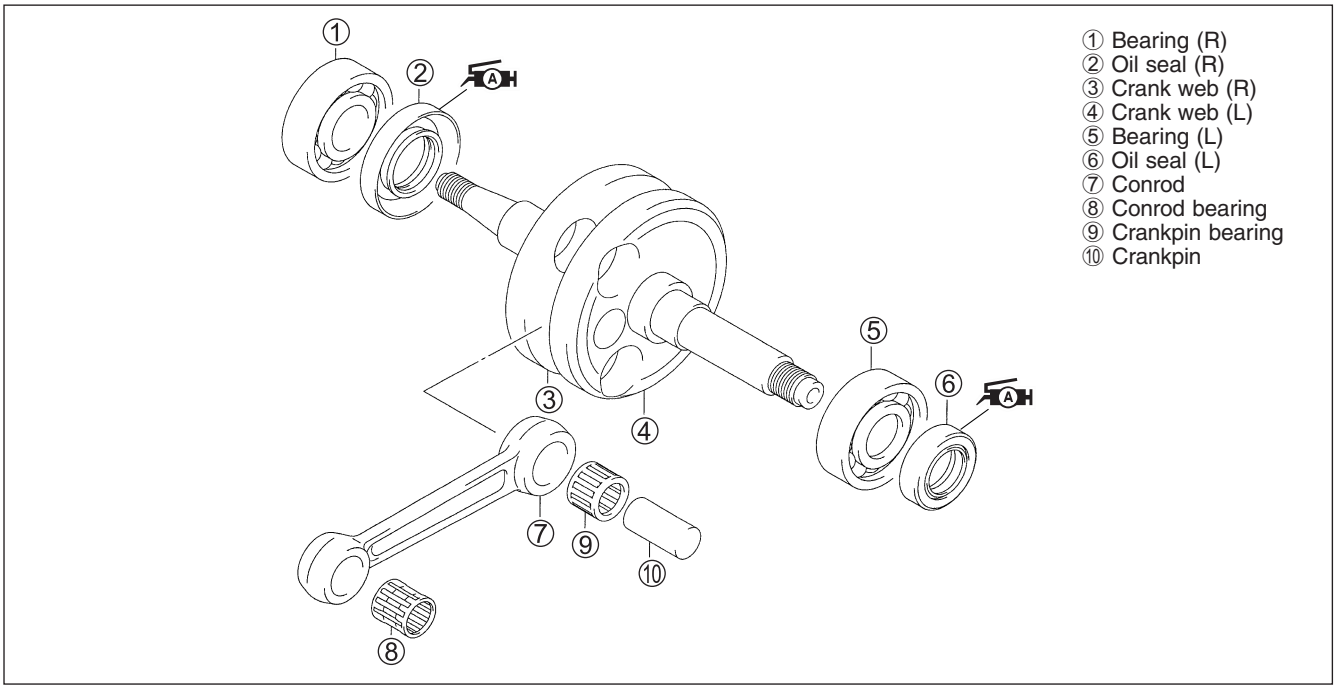


Install the piston ring into the piston ring groove. Insert the thickness gauge under the piston ring and measure the piston ring side clearance.
If any of the measurements exceed the service limit, replace both the piston and piston rings.

DATA Piston ring to groove clearance
STD (1st and 2nd): 0.02 – 0.06 mm
(0.0008 – 0.0024 in)



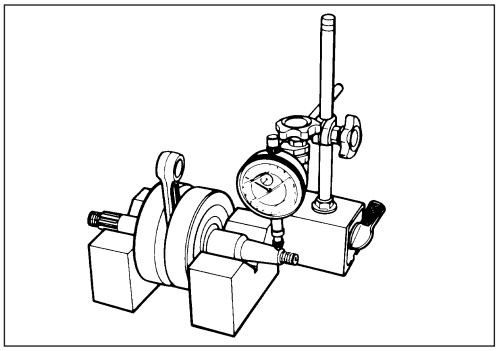
CRANKSHAFT



CRANKSHAFT RUNOUT

Support the crankshaft using the V-blocks as shown. Position the dial gauge, as shown, and rotate the crankshaft slowly to read the runout.

If the runout exceeds the service limit, correct the runout or replace the crankshaft assembly with a new one.

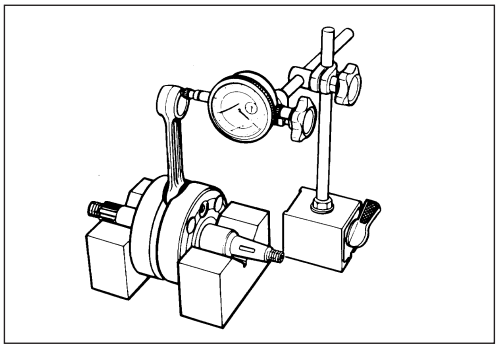


TOOL 09900-21303: V-block (75 mm)
09900-20701: Magnetic stand
09900-20607: Dial gauge (1/100 mm)

DATA Crankshaft runout
Service Limit: 0.05 mm (0.002 in)

CONROD DEFLECTION

Wear on the big end of the conrod can be estimated by checking the movement of the small end of the rod. This method can also check the extent of wear on the parts of the big end of the conrod.



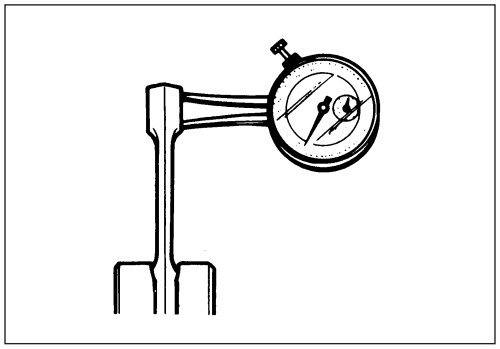
TOOL 09900-21303: V-block (75 mm)
09900-20701: Magnetic stand
09900-20607: Dial gauge (1/100 mm)

DATA Conrod deflection
Service Limit: 3.0 mm (0.12 in)

If the service limit is exceeded, replace the crankshaft assembly or bring the deflection into specification by replacing the worn parts (eg., conrod, big end bearing and crank pin).

CONROD SMALL END I.D.

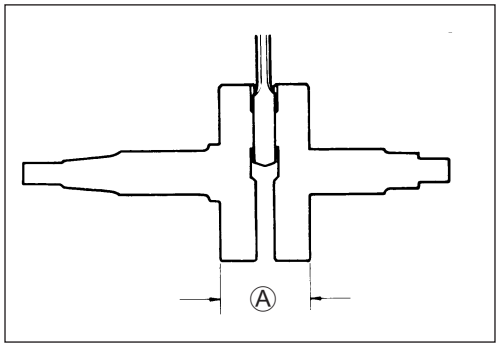
Measure the conrod small end inside diameter using the dial calipers.
If the conrod small end inside diameter exceeds the service limit, replace the conrod.



DATA Conrod small end I.D.
Service Limit: 16.040 mm (0.6315 in)

TOOL 09900-20605: Dial calipers

- When rebuilding the crankshaft, the width Ⓐ between the webs should be within the specified range.



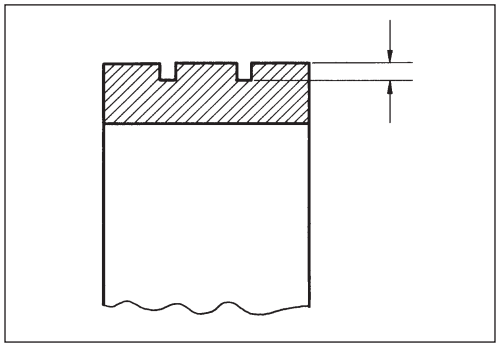
DATA Crank web to web width Ⓐ
Standard: 32.0 ± 0.1 mm (1.260 ± 0.004 in)

CLUTCH

CLUTCH SHOE

Inspect the shoes visually for chips, cracking, uneven wear, burning and check the depth of the grooves on the shoes. If there is no groove at any part of the shoes, replace them as a set.

NOTE:
Clutch shoes must be changed as a set and never individually.



CLUTCH WHEEL

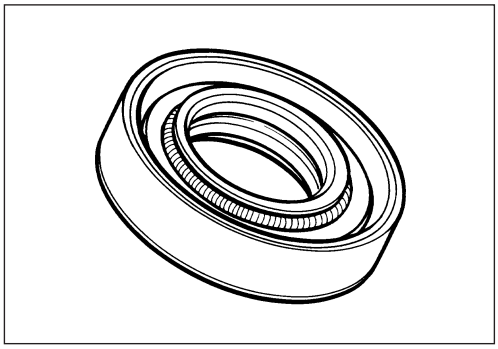
Inspection visually the condition of the inner clutch wheel surface for scrolling, cracks, or uneven wear. Measure the diameter at several points to check for an out-of-round condition as well as wear.

DATA Clutch wheel I.D.
Service Limit: 87.50 mm (3.445 in)

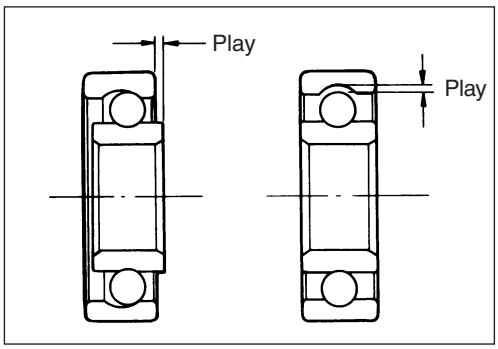
OIL SEALS AND BEARINGS

INSPECTION

Damage to the lip of the oil seal may result in leakage of the fuel-air mixture or transmission oil. Inspect the oil seal and if it is damaged, replace it with a new one.



Wash the bearing with a cleaning solvent and lubricate it with motor oil before inspection. Turn the inner ring and check to see that it turns smoothly. If it does not turn quietly and smoothly, or if there are signs of any abnormalities, the bearing is defective and must be replaced with a new one.



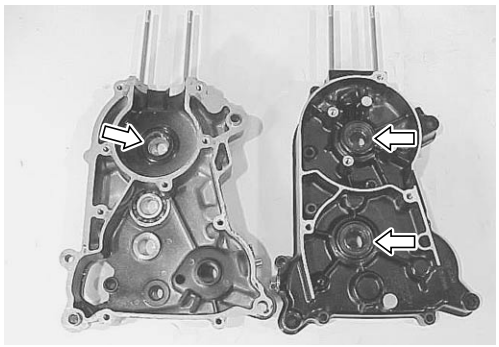
REMOVAL

- Remove the oil seals using the special tool.

TOOL 09913-50121: Oil seal remover

CAUTION

Replace the removed oil seals with new ones.

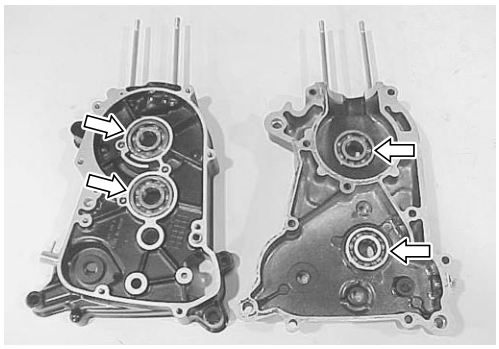


- Remove the bearings using the special tool.

TOOL 09921-20240: Bearing remover set

CAUTION

Replace the removed bearings with new ones.



REASSEMBLY

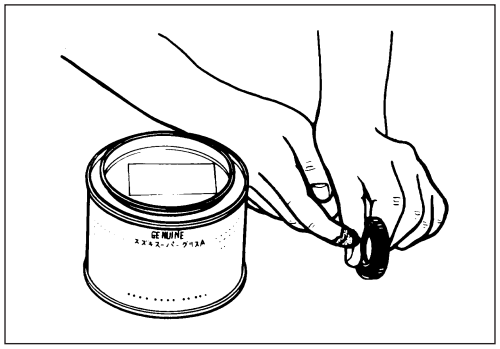
- Apply grease to the lip of the oil seals.

For U.S.A.

99000-25030: SUZUKI SUPER GREASE "A"

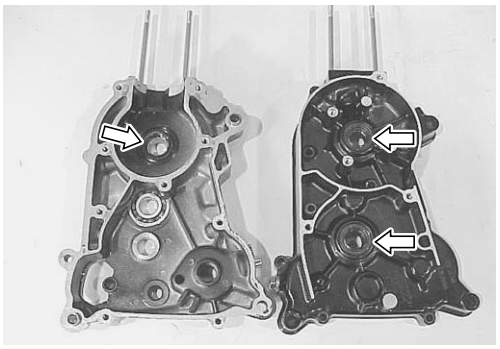
For the others

99000-25010: SUZUKI SUPER GREASE "A"



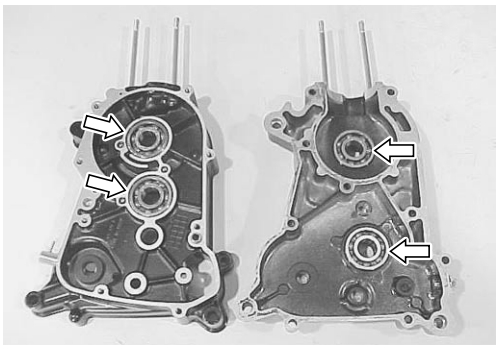
- Install the oil seals using the special tool.

09913-70210: Bearing installer set



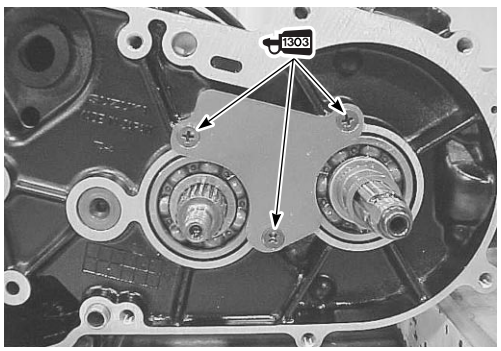
- Install the bearings using the special tool.

09913-70210: Bearing installer set



- Apply a small quantity of THREAD LOCK SUPER "1303" to the bearing retainer plate screws and tighten them securely.

99000-32030: THREAD LOCK SUPER "1303"



ENGINE REASSEMBLY

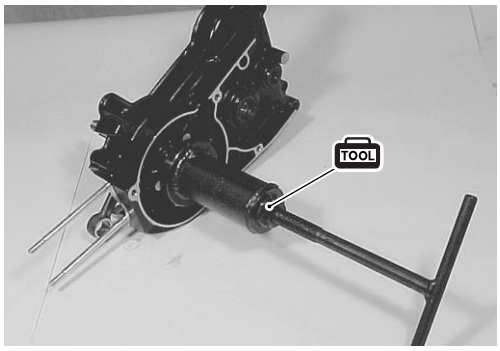
Reassemble the engine in the reverse order of disassembly. The following steps require special attention or precautionary measures should be taken.

NOTE:
Apply engine oil to each running and sliding part before reassembling.

CRANKSHAFT

- Apply engine oil to the crankshaft bearings inner race.
- When installing the crankshaft into the crankcase, it is necessary to pull its left end into the left crankcase using the special tool.

TOOL 09910-32812: Crankshaft installer

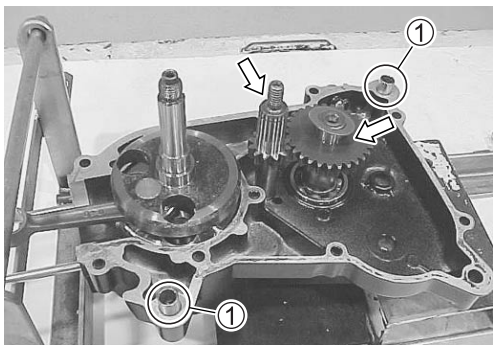


CAUTION

Never install the crankshaft into the crankcase by striking it with a plastic hammer. Always use the special tool, otherwise crankshaft may be misaligned.

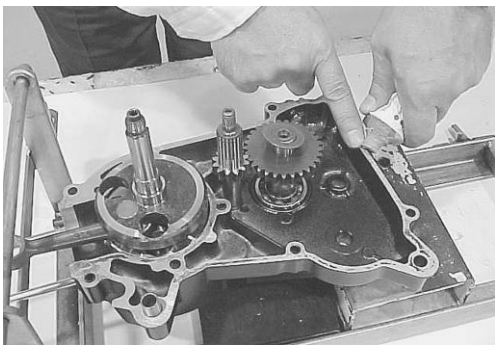
CRANKCASE

- Install the countershaft and driveshaft.
- Install the dowel pins ①.
- Before assembling the crankcase, apply the engine oil to each gear and bearing.

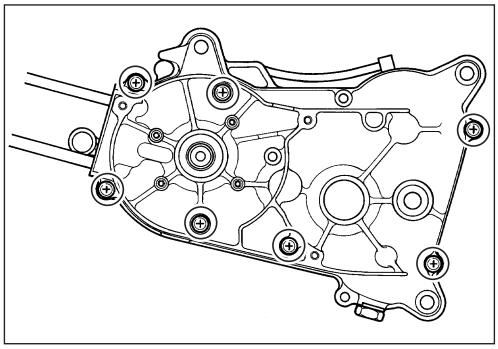


- Apply sealant to the crankcase.

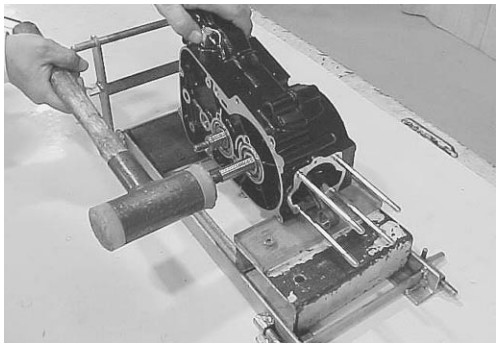
1207B 09900-31140: SUZUKI BOND "1207B"



- Tighten the crankcase screws diagonally.



- After the crankcase screws have been tightened, make sure that the crankshaft, countershaft and driveshaft rotate smoothly.
- If their shafts do not rotate smoothly, try to free it by tapping with plastic hammer.



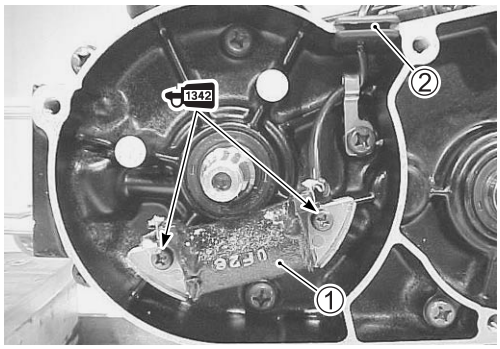
GENERATOR ROTOR

- Install the generator stator ①.

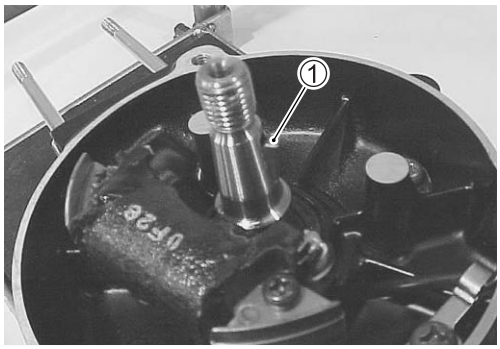
NOTE:
Apply a small quantity of THREAD LOCK "1342" to the threads of the screws.

1342 99000-32050: THREAD LOCK "1342"

- Fit the grommet ② securely.



- Remove any grease from the tapered portion of the crankshaft and also from the generator rotor.
- Install the generator rotor key ① onto the crankshaft.



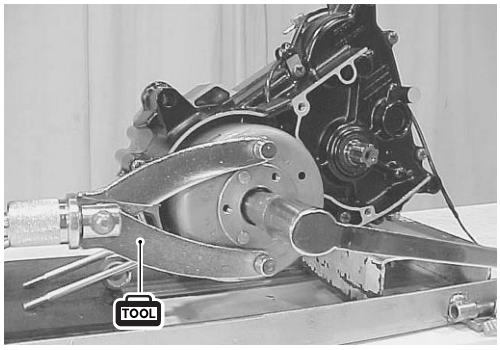
- Apply a small quantity of THREAD LOCK SUPER "1303" to the threads of the generator rotor nut.

1303 99000-32030: THREAD LOCK SUPER "1303"

- Hold the generator rotor using the special tool and tighten the generator rotor nut to the specified torque.

TOOL 09930-40113: Rotor holder

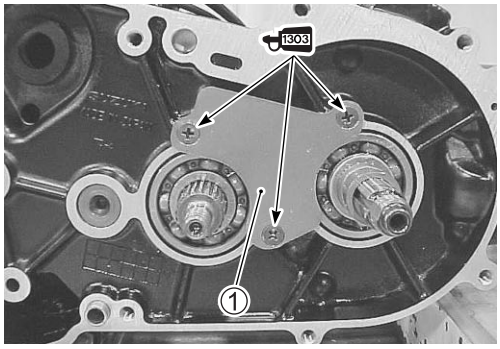
Generator rotor nut: 50 N·m (5.0 kgf·m, 36.0 lb-ft)



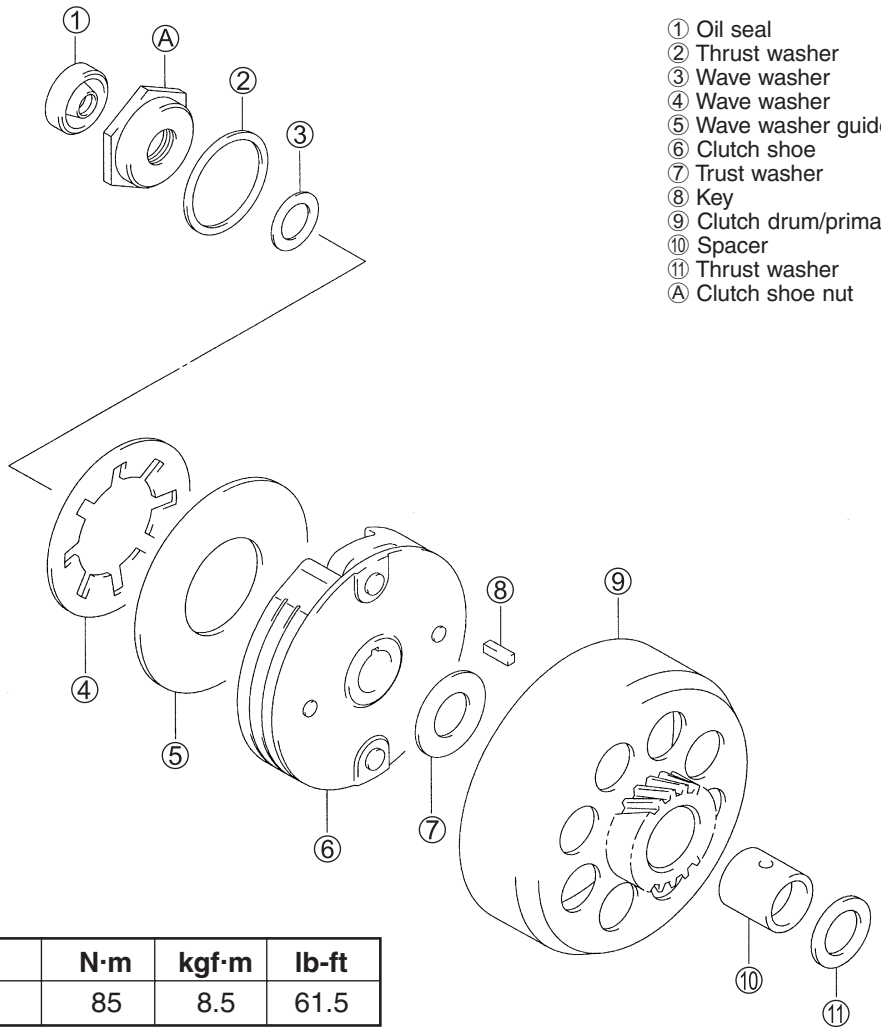
OIL GUIDE/BEARING RETAINER PLATE

- Install the oil guide/bearing retainer plate ①.
- Apply a small quantity of THREAD LOCK SUPER "1303" to the threads of the screws.

1303 99000-32030: THREAD LOCK SUPER "1303"



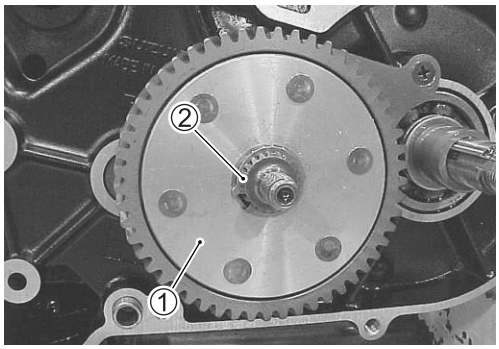
CLUTCH



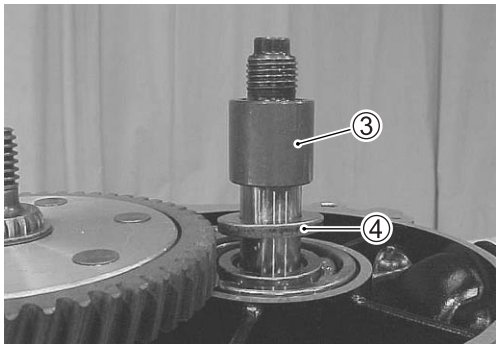
ITEM	N·m	kgf·m	lb-ft
Ⓐ Clutch shoe nut	85	8.5	61.5

- Install the primary driven gear ① and a new circlip ②.

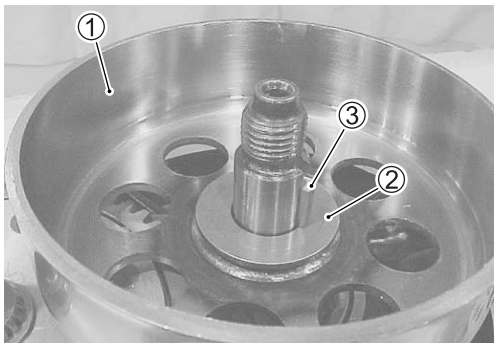
NOTE:
Fit the circlip into groove securely.



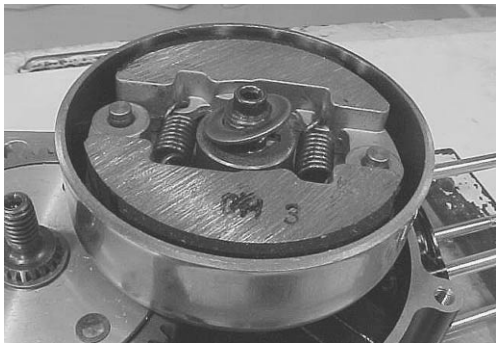
- Install the washer ④ and spacer ③.



- Install the clutch drum ①, washer ② and key ③.



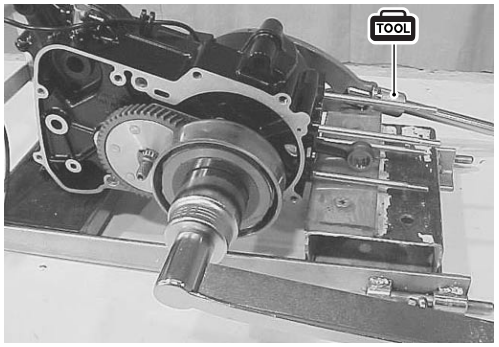
- Install the key into the key groove and mount the clutch shoe on the key.
- Install the wave washer.



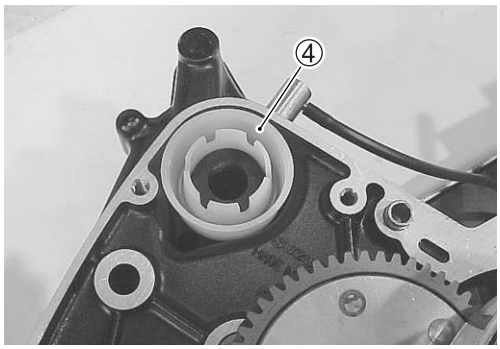
- Install the guide plate, wave washer and thrust washer.
- Hold the generator rotor using special tool.
- Tighten the clutch shoe nut to the specified torque.

Clutch shoe nut: 85 N·m (8.5 kgf·m, 61.5 lb-ft)

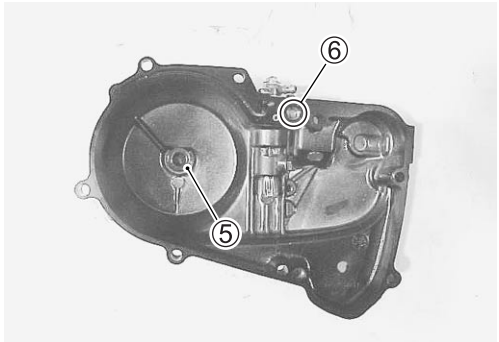
09930-40113: Rotor holder



- Install the crankcase oil separator ④.

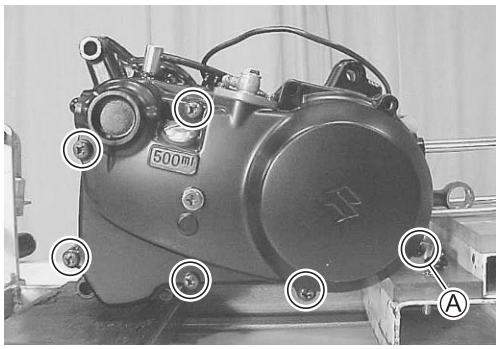


- Before installing the clutch cover, check the oil passage and check valve ⑥ for clogging and oil seal ⑤ for damage.



• Install the new gasket and clutch cover.

NOTE:
** Screw Ⓐ holds a clamp for carburetor overflow pipe.*

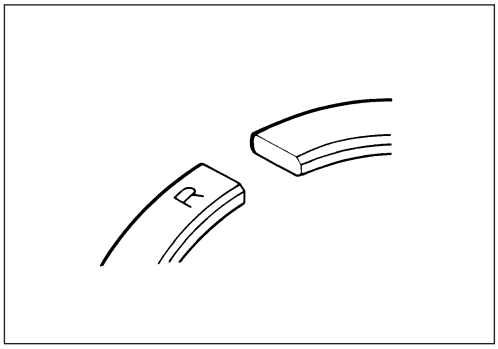


PISTON RING AND PISTON

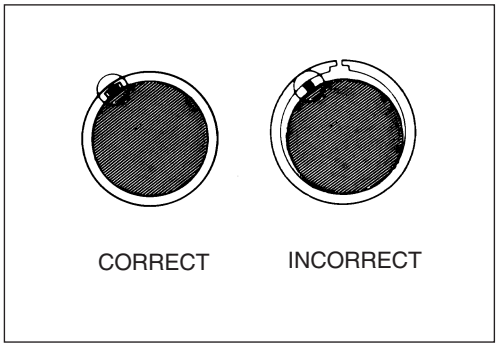
• Install the piston rings onto the piston.

1st ring : Keystone ring
2nd ring : Keystone ring and expander ring

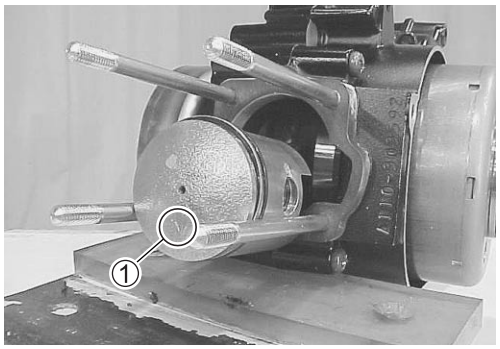
NOTE:
The piston rings should be installed with the mark facing up.



• Position the piston ring gap, as shown. Before inserting the piston into the cylinder, check that the gaps are properly positioned.



• Before installing the piston pin, apply SUZUKI CCI SUPER oil onto its surface.
• Apply SUZUKI CCI SUPER oil to the big and small ends of the conrod.
• Place a clean rag over the cylinder base to prevent the piston pin circlip from dropping into crankcase.
• Install the piston with the arrow mark ① facing towards the exhaust side.
• Install the piston pin circlip ② with long-nose pliers.

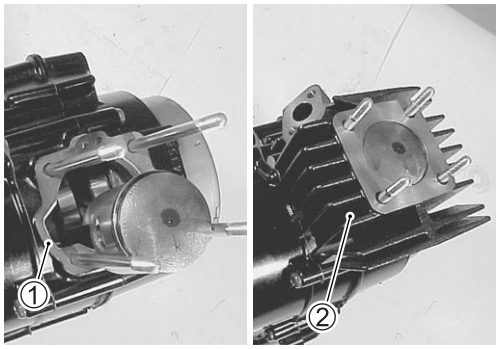


CAUTION

Use a new piston pin circlip ② to prevent circlip failure.

CYLINDER

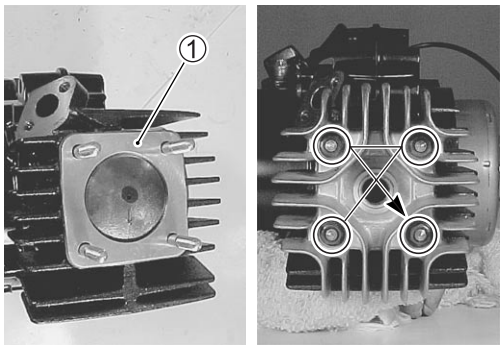
- Install the new cylinder base gasket ①.
- Apply SUZUKI CCI SUPER oil onto the piston and cylinder wall surfaces and then carefully install the cylinder ② over the piston.



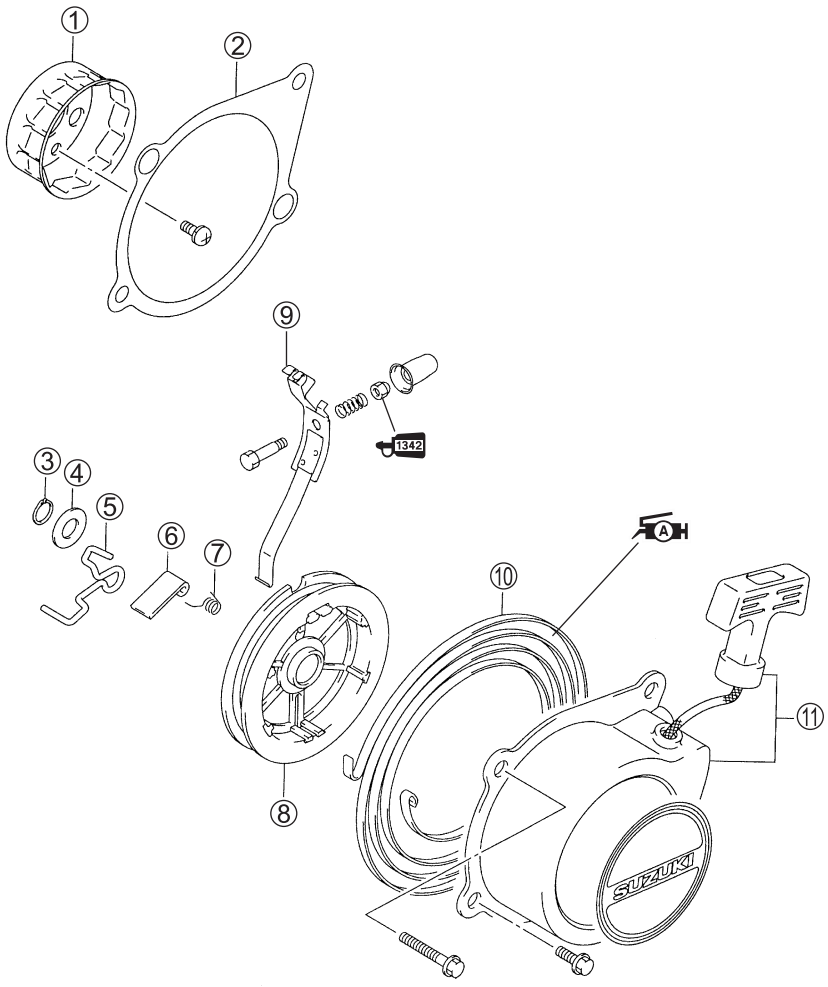
CYLINDER HEAD

- Install the new cylinder head gasket ①.
- Install the cylinder head and tighten the cylinder head nuts diagonally to the specified torque.

Cylinder head nut: 9 N·m (0.9 kgf·m, 6.5 lb-ft)



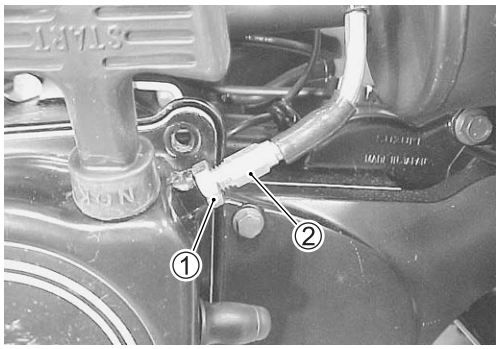
RECOIL STARTER



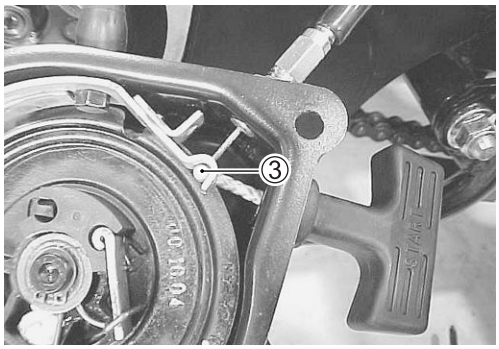
① Recoil starter cup
② Gasket
③ Circlip
④ Washer
⑤ Lever
⑥ Rachet
⑦ Return spring
⑧ Reel
⑨ Lever assembly
⑩ Spiral spring
⑪ Rope assembly

REMOVAL AND DISASSEMBLY

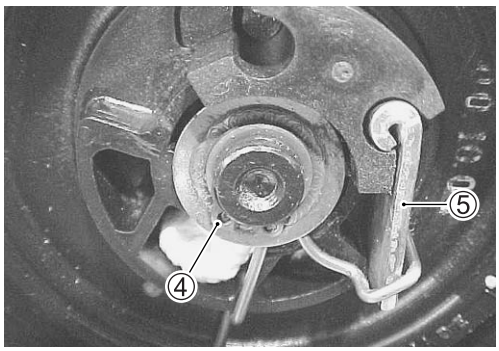
- Loosen the lock nut ① and turn the adjuster ② clockwise as far as going in.



- Unhook the cable end piece ③ from the lever assembly.



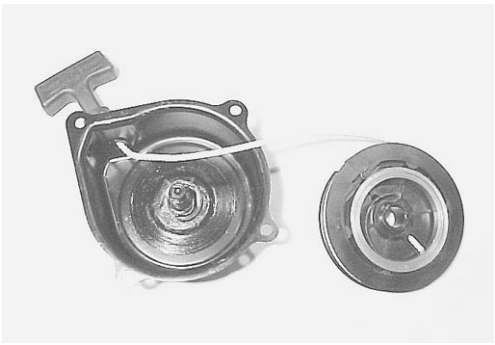
- Remove the circlip ④ and washer.
- Remove the lever assembly ⑤ from the cover.



- Pull out the reel.

⚠ WARNING

When removing and installing the reel, spiral spring will expand. Protect your hands with gloves.



REASSEMBLY

- Hitch the one end ⑥ of the spring to the reel as shown in the figure and install the spring in the reel.
- Apply SUZUKI SUPER GREASE “A” to the spiral spring.

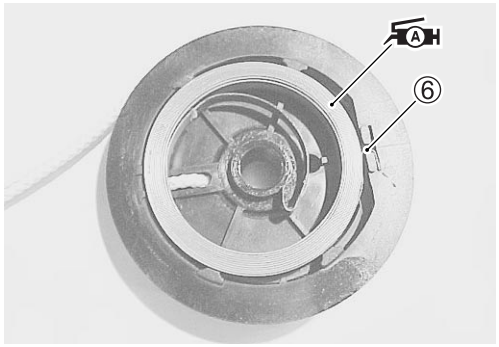
For USA

99000-25030: SUZUKI SUPER GREASE “A”

For the others

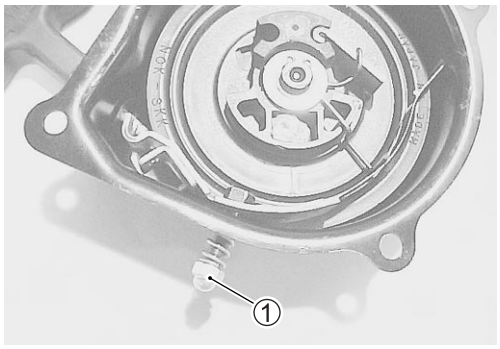
99000-25010: SUZUKI SUPER GREASE “A”

- Turn the starter rope on the reel properly.



- Install the lever assembly to the cover.
- Apply THREAD LOCK “1342” to the nut ①.

1342 99000-32050: THREAD LOCK “1342”



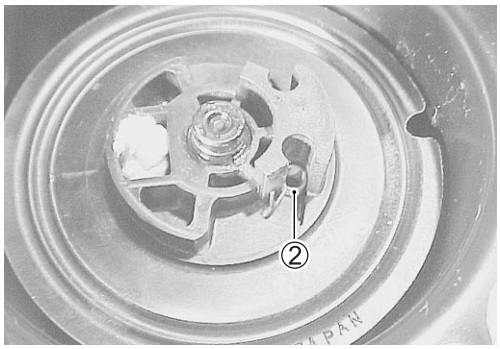
- Install the reel in the cover.
- Install the return spring to the cover so that the rachet is pushed inward.
- Apply SUZUKI SUPER GREASE “A” to the return spring ②.

For USA

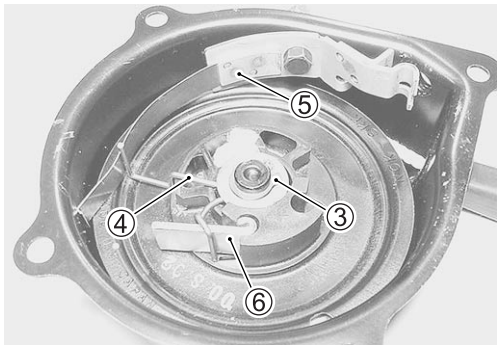
A 99000-25030: SUZUKI SUPER GREASE “A”

For the others

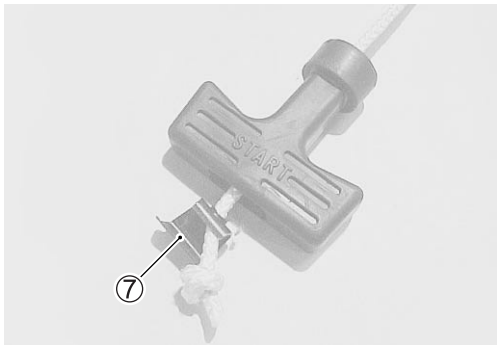
A 99000-25010: SUZUKI SUPER GREASE “A”



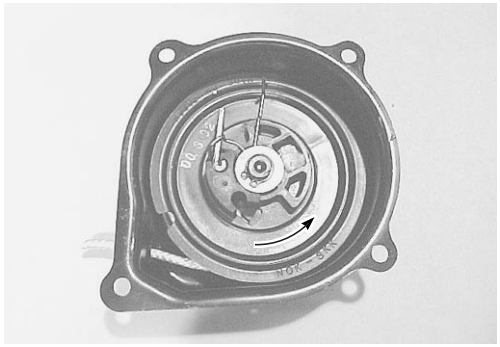
- Install the lever on the rachet.
- Install the washer and circlip ③.
- Confirm that the lever ④ touches the lever guide ⑤ and pushes the rachet ⑥ outward when the end of the lever guide is pushed to the case and the starter rope is pulled slowly.



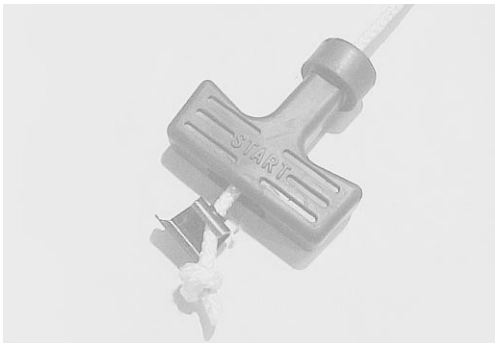
- Remove the cap ⑦ from the recoil starter grip.
- Untie a knot at the rope.



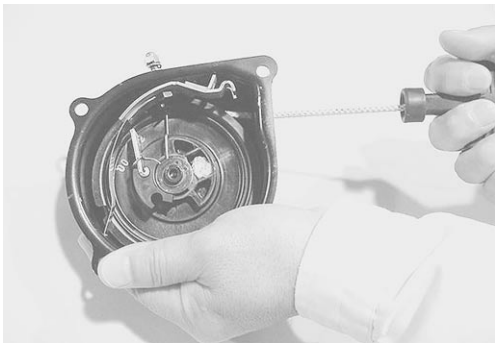
- Turn the rope on the real properly.



- Tie a knot at the end of rope.



- Pull the rope and check that the ratchet is pushed out.

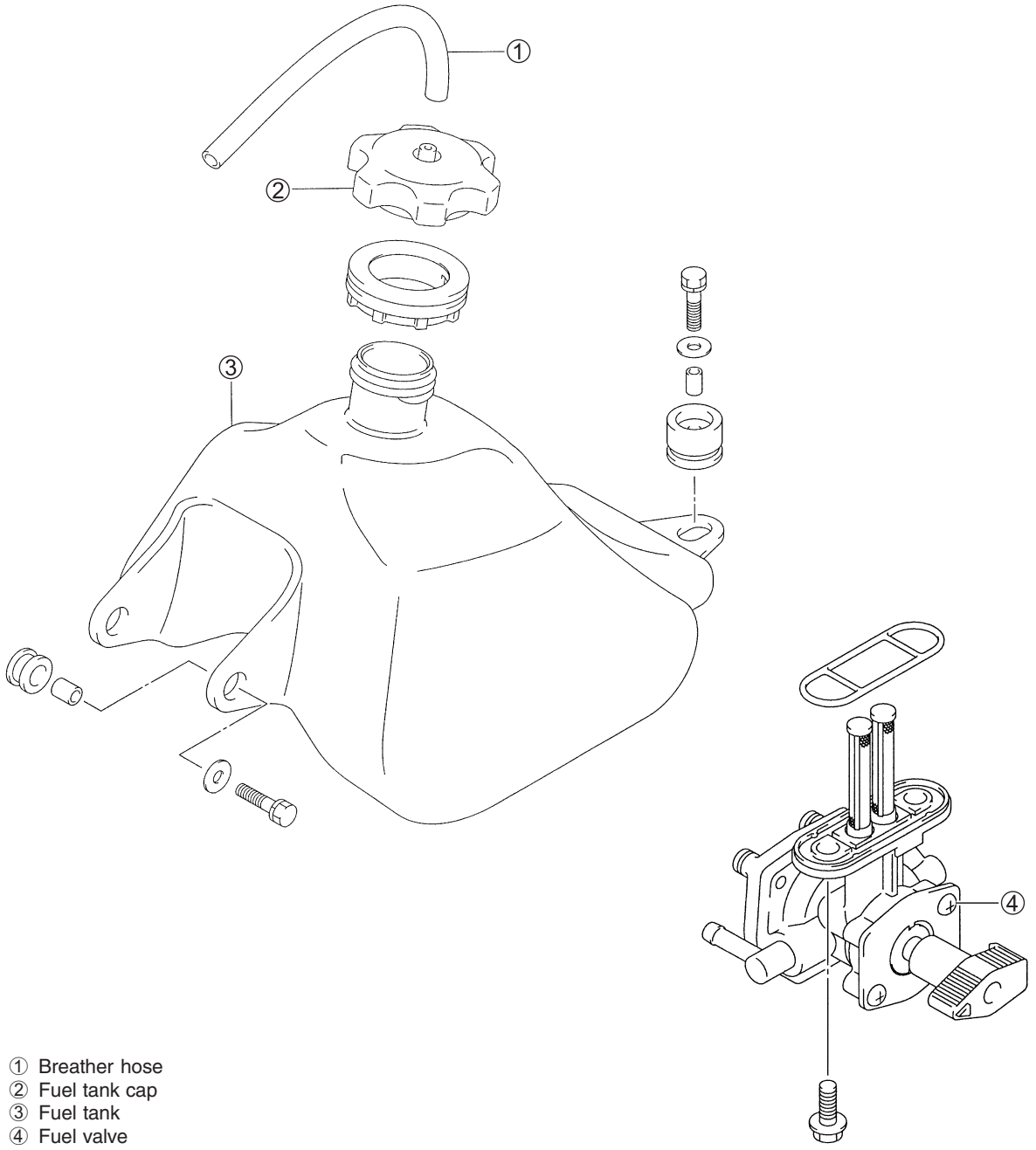


- After remounting the recoil starter, the following adjustment or necessary.
  *Rear brake lever play ..... ☞2-10
  *Recoil starter adjustment ..... ☞2-11

FUEL AND LUBRICATION SYSTEM

CONTENTS

FUEL TANK AND FUEL VALVE



① Breather hose
② Fuel tank cap
③ Fuel tank
④ Fuel valve

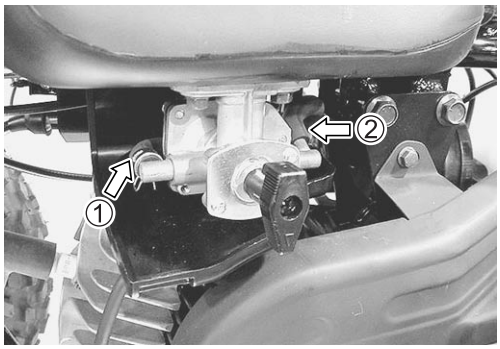
REMOVAL

⚠ WARNING

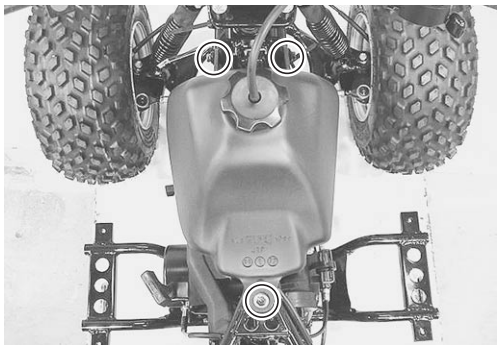
Gasoline is very explosive.
Extrem care must be taken.

- Turn the fuel valve “OFF” position.
- Remove the frame cover. (☞5-2)
- Replace the fuel tank cap.

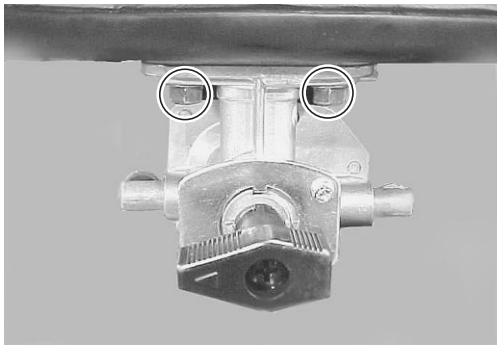
• Disconnect the fuel hose ①, and vacuum hose ②.



• Remove the fuel tank.



• Remove the fuel valve assembly.

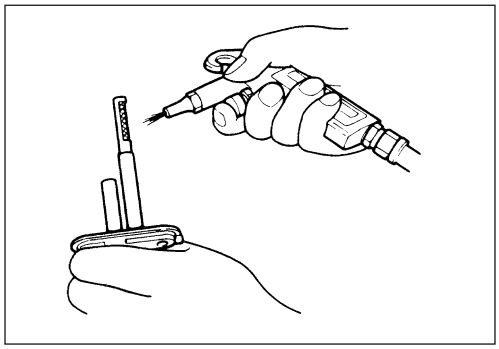


FUEL FILTER INSPECTION AND CREANING

If the fuel filter is dirty with sediment or rust, fuel will not flow smoothly and loss in engine power may result.
Clean the fuel filter with compressed air also check the fuel filter for cracks.

⚠ WARNING

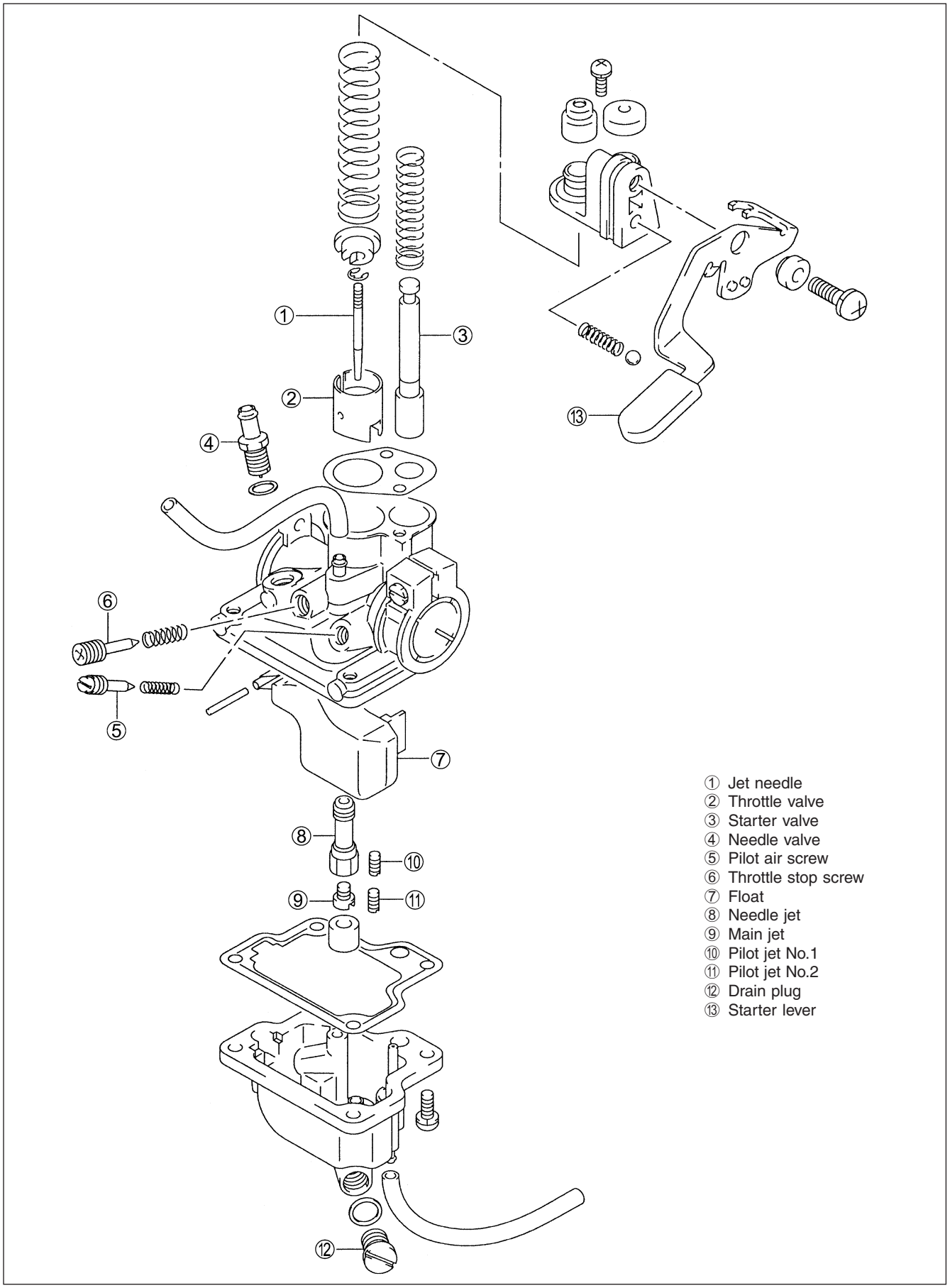
Gasket and O-rings must be replaced with new ones to prevent fuel leakage.



REMOUNTING

• Remount the fuel tank and fuel valve in the reverse order of removal.

CARBURETOR

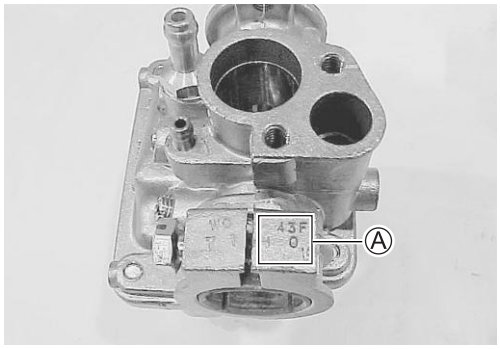

① Jet needle
② Throttle valve
③ Starter valve
④ Needle valve
⑤ Pilot air screw
⑥ Throttle stop screw
⑦ Float
⑧ Needle jet
⑨ Main jet
⑩ Pilot jet No.1
⑪ Pilot jet No.2
⑫ Drain plug
⑬ Starter lever

SPECIFICATIONS

ITEM		SPECIFICATION
Carburetor type		MIKUNI VM12SC
Bore size		12 mm
I.D. No		43F0
Idle r/min.		1 800 ± 100 r/min.
Float height		24.5 – 25.0 mm (0.96 – 0.98 in)
Main jet	(M.J.)	# 55
Jet needle	(J.N.)	3E3-4th
Needle jet	(N.J.)	E-6
Pilot jet	(P.J.)	# 15
Air screw	(A.S.)	1⅛ turns out
Throttle cable play		2 – 4 mm (0.08 – 0.16 in)

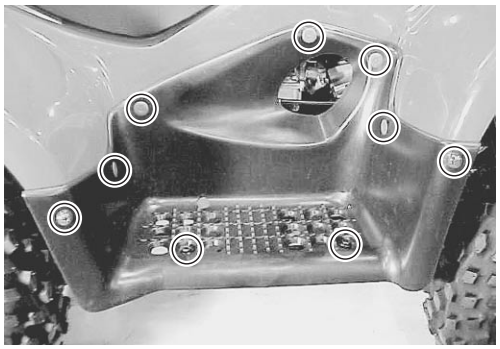
I.D. NO. LOCATION

The carburetor has I.D. Number Ⓐ stamped on its body according to its specifications.

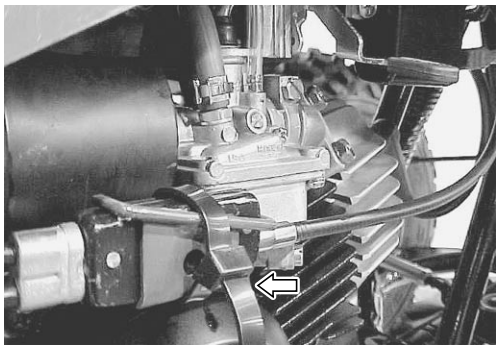


REMOVAL

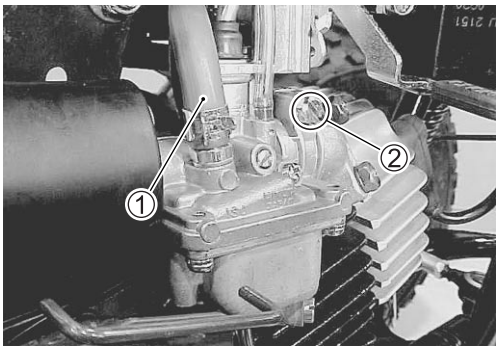
- Remove the right frame cover. (☞5-2)



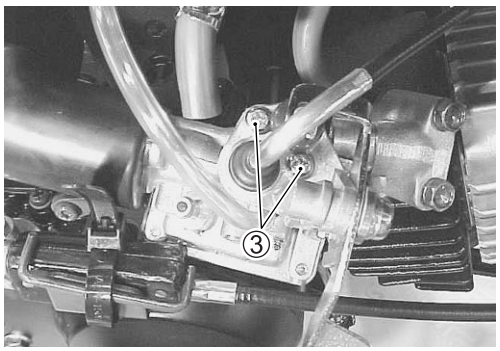
- Remove the clamp.



- Turn the fuel valve to “OFF” position.
- Disconnect the fuel hose ①.
- Lossen the carburetor clamp bolt ②.



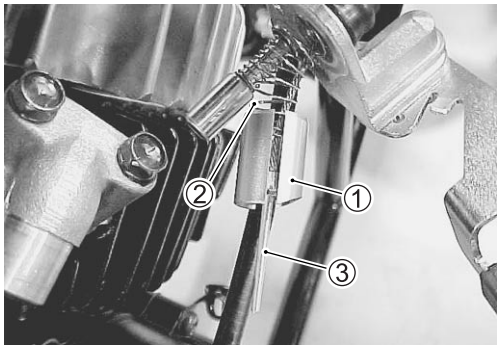
- Remove the screws ③ with throttle valve.
- Remove the carburetor assebly.



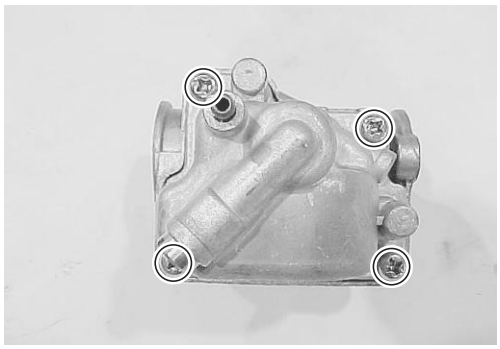
- Remove the air cleaner case.

DISASSEMBLY

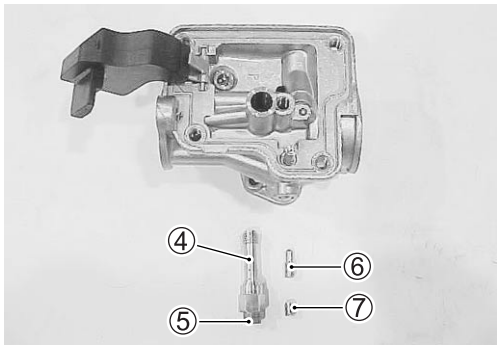
- Disconnect the throttle cable and remove the throttle valve ① and spring ②.
- Remove the jet needle ③.



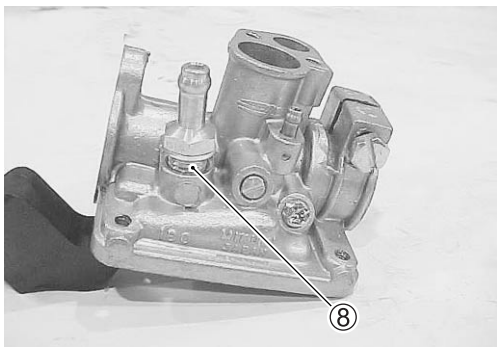
- Remove the screws and float chamber.



- Remove the main jet ④, needle jet ⑤, pilot jet No.1 ⑥ and pilot jet No.2 ⑦.



- Remove the needle valve ⑧.

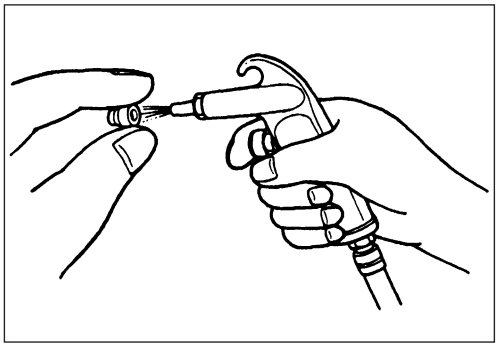


CLEANING

⚠ WARNING

Some carburetor cleaning chemicale, especially dip-type soaking solutions, are very corrosive and must be hardled carefully. Always follow the chemical manufacturer's instructions on proper use, handling and storage.

- Clean all jets with a spray-type carburetor cleaner and dry them using compressed air.
- Clean all circuits of the carburetor thoroughly - not just the perceived problem area. Clean the circuits in the carburetor body with a spray-type cleaner and allow each circuit to soak, if necessary, to loosen dirt and varnish. Blow the body dry using compressed air.



CAUTION

Do not use a wire to clean the jets or passageways. A wire can damage the jets and passageways. If the components cannot be cleaned with a spray cleaner it may be necessary to use a dip-type cleaning solution and allow them to soak. Always follow the chemical manufacturer's instructions for proper use and cleaning of the carburetor components.

- After cleaning, reassemble the carburetor with new seals and gaskets.

INSPECTION AND ADJUSTMENT

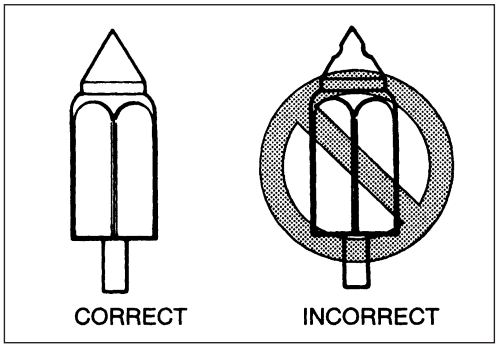
Check the following items for any damage or clogging.

* Main jet
* Pilot jet
* Needle jet
* Gasket
* Throttle valve
* Float
* Needle valve

NEEDLE VALVE INSPECTION

If foreign matter is caught between the valve seat and the needle valve, the gasoline will continue flowing and overflow. If the needle valve is worn beyond the permissible limit, similar trouble will occur. Conversely, if the needle valve sticks, the gasoline will not flow into the float chamber. Clean the float chamber and float parts with gasoline.

If the needle valve is worn, as shown in the illustration, replace the needle valve assembly with a new one. Clean the fuel passage of the mixing chamber with compressed air.

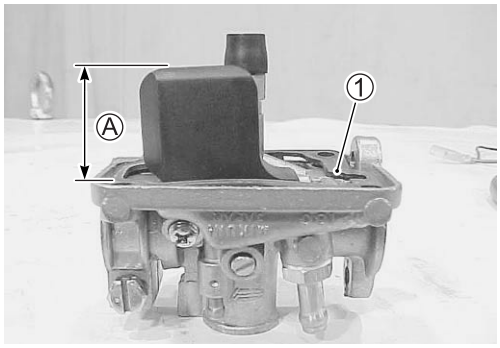


FLOAT HEIGHT ADJUSTMENT

To check the float height, turn the carburetor upside down. Measure the float height Ⓐ while the float arm is just contacting the needle valve using vernier calipers. Bend the tongue ① as necessary to bring the float height Ⓐ to the specified value.

DATA Float height Ⓐ: 24.5 – 25.0 mm (0.96 – 0.98 in)

TOOL 09900-20101: Vernier calipers

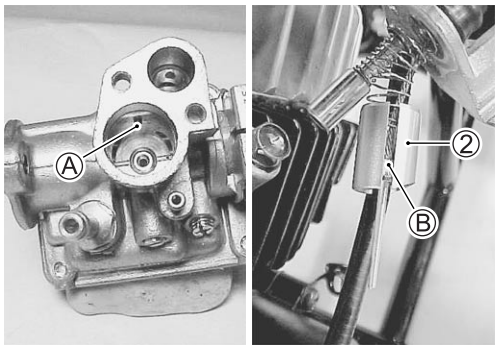


REASSEMBLY AND REMOUNTING

Reassemble and remount the carburetor in the reverse order of disassembly and removal.

Pay attention to the following points:

- Align the projection Ⓐ on the carburetor body with the slit Ⓑ of the throttle valve ②.



- Install the air cleaner case.
- Apply a small quantity of THREAD LOCK “1342” to the threads of the screws ③.

1342 9900-32050: THREAD LOCK “1342”

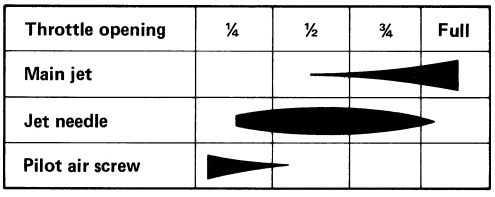
- Ajust the following items to the specification.
  * Engine idle r/min ..... ☞2-7
  * Throttle cable play ..... ☞2-7

MIXTURE ADJUSTMENT

- The main jet, jet needle and air screw affect the mixture adjustment.
  Before adjusting the air-fuel mixture, make sure that the float height is correct and the vacuum inlet hose and air cleaner are in good condition and free of obstructions.
- Ride the vehicle about one kilometer to determine at which throttle position the engine lacks power or performs poorly.
  Then, check the color and appearance of the spark plug and piston crown.
- The air-fuel mixture can be made “richer” or “leaner” by adjusting the main jet, jet needle or air screw. Throttle position determines how accurate the adjustment will be.

NOTE:

If the vehicle is tested at 1/2 throttle and either a too rich or too lean mixture is indicated, then make adjustments with the jet needle.

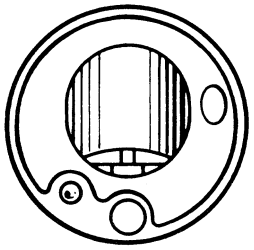
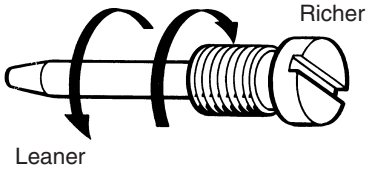
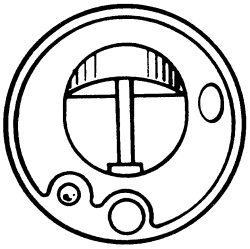
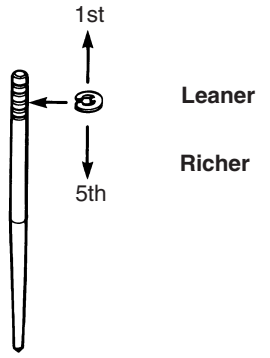
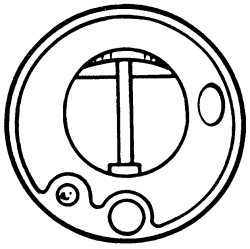
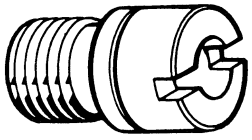


CARBURETION

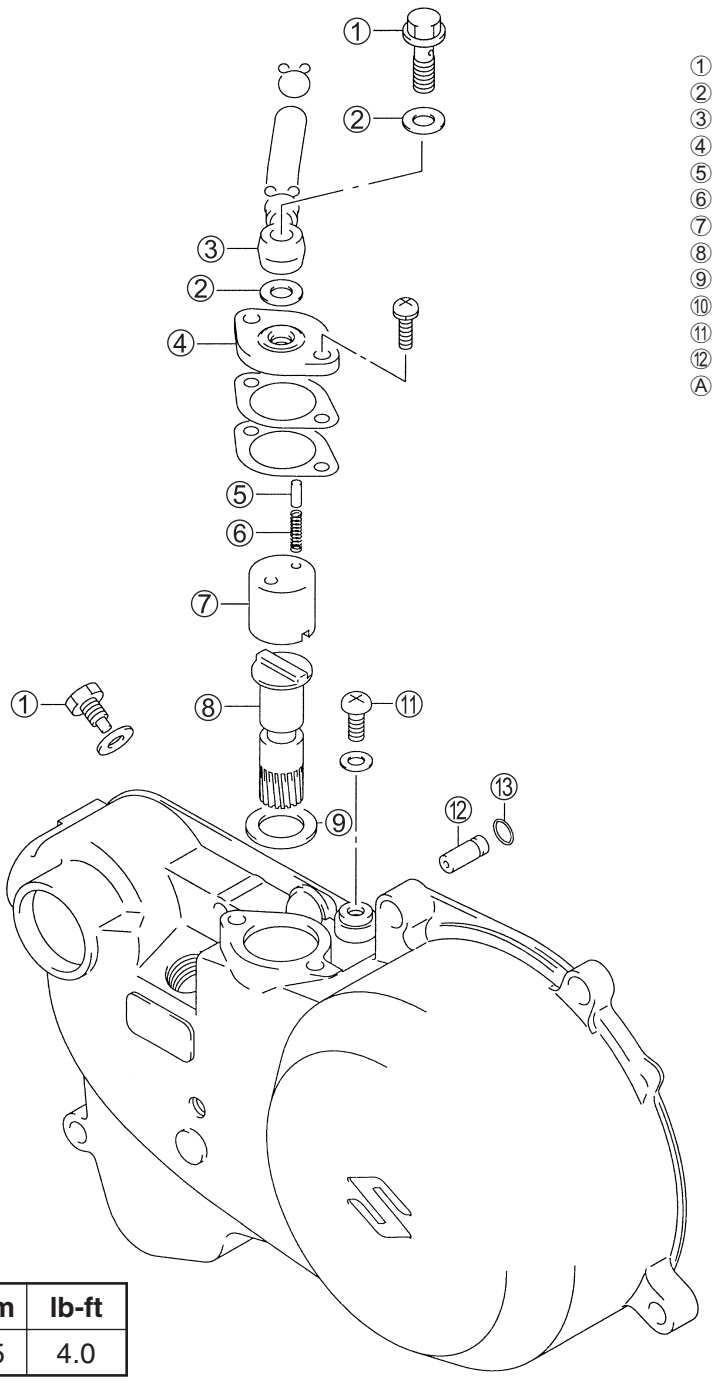
Proper carburetion is determined by several interrelated factors (i.e. engine power, fuel consumption, fuel cooling ability, jet settings etc.). Therefore, the jet size and the positions of any adjustable parts should not be changed from the original settings.

Changes should only be made when adjusting for differences in altitude or other climatic conditions. When adjustment is necessary, refer to the following chart.

AIR/FUEL MIXTURE RATIO CAN BE CHANGED AS FOLLOWS:

Throttle opening	Method of changing ratio	Standard setting
 **Slight**	 **Air screw**	**• 1⅛ turns out**
 **Medium**	 **Jet needle**	**• 3E3-4th**
 **High**	 Larger number: richer mixture Smaller number: leaner mixture **Main jet**	**• #55**

OIL PUMP

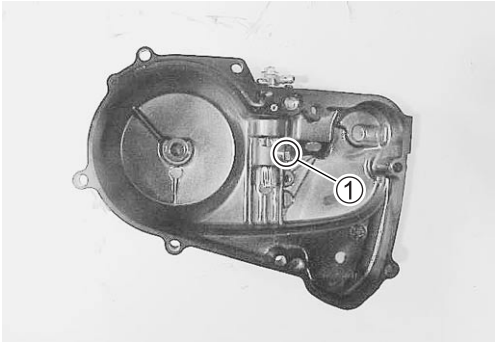


① Stopper screw
② Gasket
③ Oil hose
④ Oil pump cam
⑤ Plunger
⑥ Plunger spring
⑦ Oil pump valve
⑧ Oil pump driven gear
⑨ Oil seal
⑩ Air bleeder screw
⑪ O-ring
⑫ Check valve
Ⓐ Union bolt

ITEM	N·m	kgf·m	lb-ft
Ⓐ	5.5	0.55	4.0

INSPECTION AND DISASSEMBLY

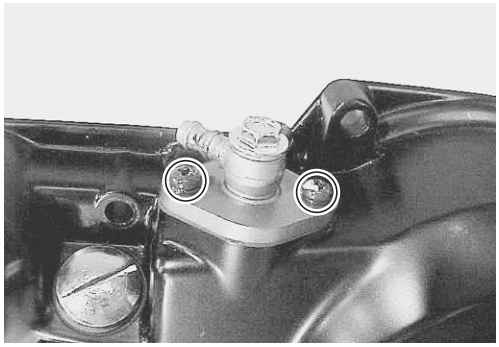
- Remove the stopper screw ① and from the clutch cover.



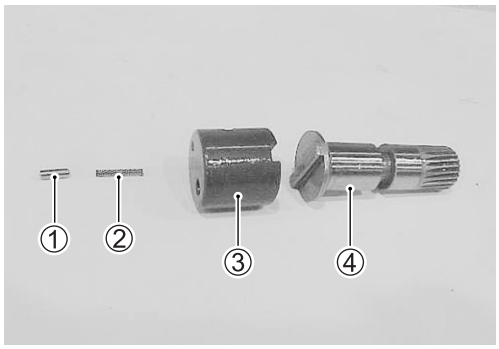
- Remove the oil pump cam.

NOTE:
When removing the oil pump cam, the plunger and its spring will pop out. Do not miss there two parts.

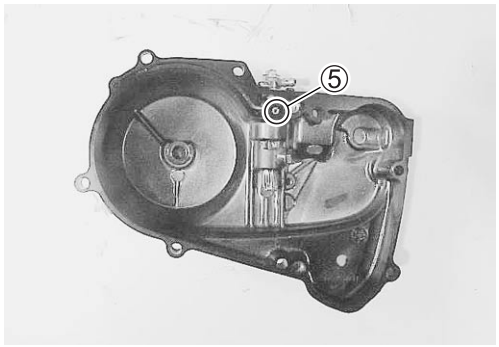
Inspect the oil pump valve wall and clutch cover bore wall for nick, scratches or other damage.



- Inspect plunger ① and spring ② for proper operation.
- Inspect the oil pump valve ③. Oil pump driven gear ④ for any damage. If there are any damages are found, replace the part with new one.

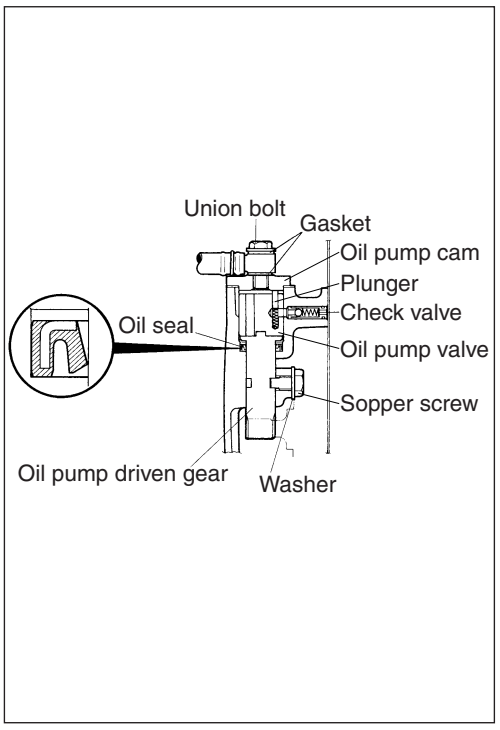


NOTE:
If the oil pump valve or clutch cover bore wall has any defect, replace the clutch cover assembly. Inspect the oil passege and check valve ⑤ for clogging.



REASSEMBLY

- Wash the oil pump components with feash engine oil before reassembly.
- Install the oil as shown in the illustration.
- After reassembly, check the oil pump driven gear for smooth turning.



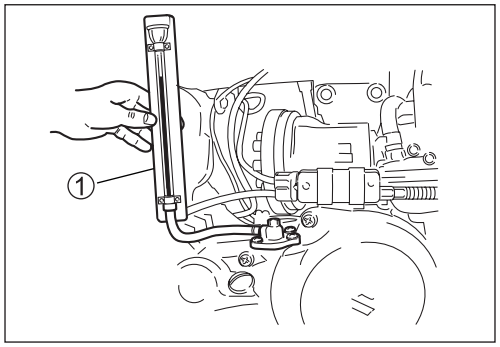
AIR BLEEDING

- Supply the engine oil to the hole of the oil pump until it runs out from the oil pump hole before installing oil hose bolts.

CHECKING OIL PUMP

Use the CCI oil gauge to check the oil pump discharge rate. Measure the amount of oil that the oil pump draws during the procedure.

- Remove the frame cover. (☞5-2)
- Remove the drive chain and engine sprocket from the drive shaft. (☞3-5)
- Fill the CCI oil gauge ① with SUZUKI CCI SUPER OIL. Connect the oil gauge to the suction side of the oil pump.
- Run the engine at 2 000 r/min.
- Keep the engine speed at 2 000 r/min. Allow the pump to draw for 5 minutes. The measurement on the oil gauge should be within specification.



TOOL 09900-21602: CCI oil gauge

DATA Oil discharge amount: 0.6 – 0.8 ml (0.020/0.021 – 0.027/0.030 US/Imp oz) for 5 minutes at 2 000 r/min.

⚠ WARNING

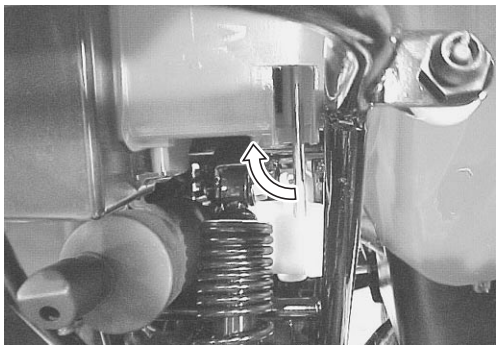
During this inspection, observe the following points.

NOTE:
Adjust the engine idle speed after checking the oil pump. (☞2-7)

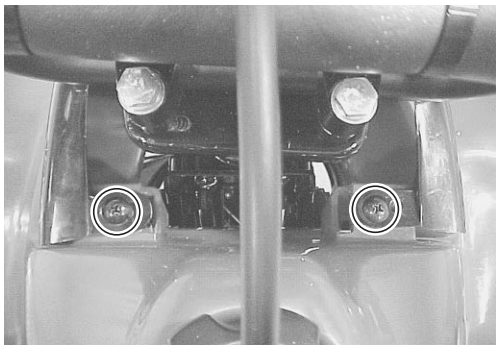
CHASSIS

CONTENTS

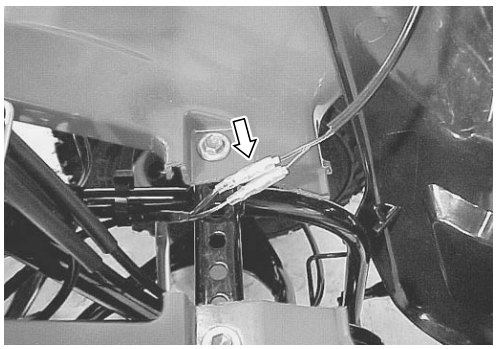
EXTERIOR PARTS
REMOVAL
SEAT
- Remove the seat.



STEERING COVER
- Remove the screws.

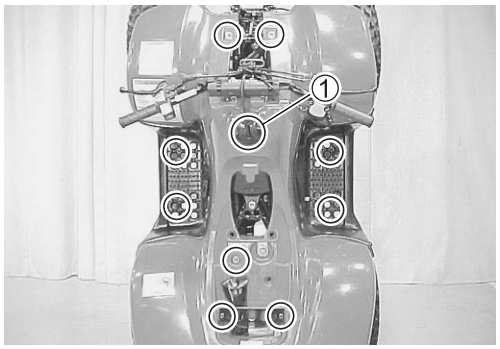


- Disconnect the ignition switch lead wires, and than remove the steering cover.



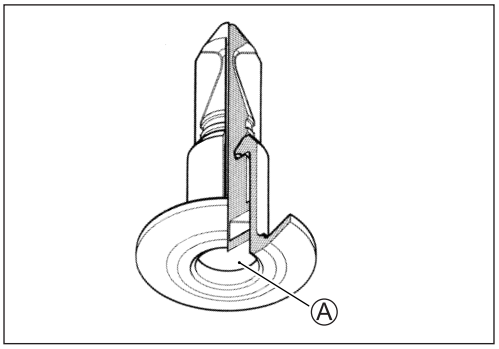
FRAME COVER
- Remove the frame cover.

NOTE:
Replace the fuel tank cap ① after removing the frame cover.



- Remove the screws ② and fasteners right and left.

NOTE:
To remove the fastener, dapress the head Ⓐ of fastener core and pull out the fastener.



REMOUNTING

Remount the exterior parts in the reverse order of removal. Pay attention following point:

FRAME COVER

- Install the frame cover using the fastner.
- Push the botton Ⓐ of fastener core as shown Fig 1.
- Install the fastner into the frame cover right and left securelly and then push the head Ⓑ of fastener core as shown Fig 2.

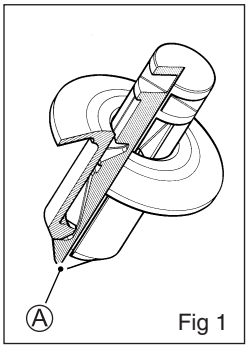


Fig 1

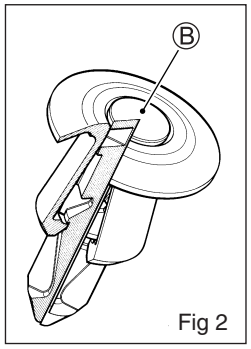
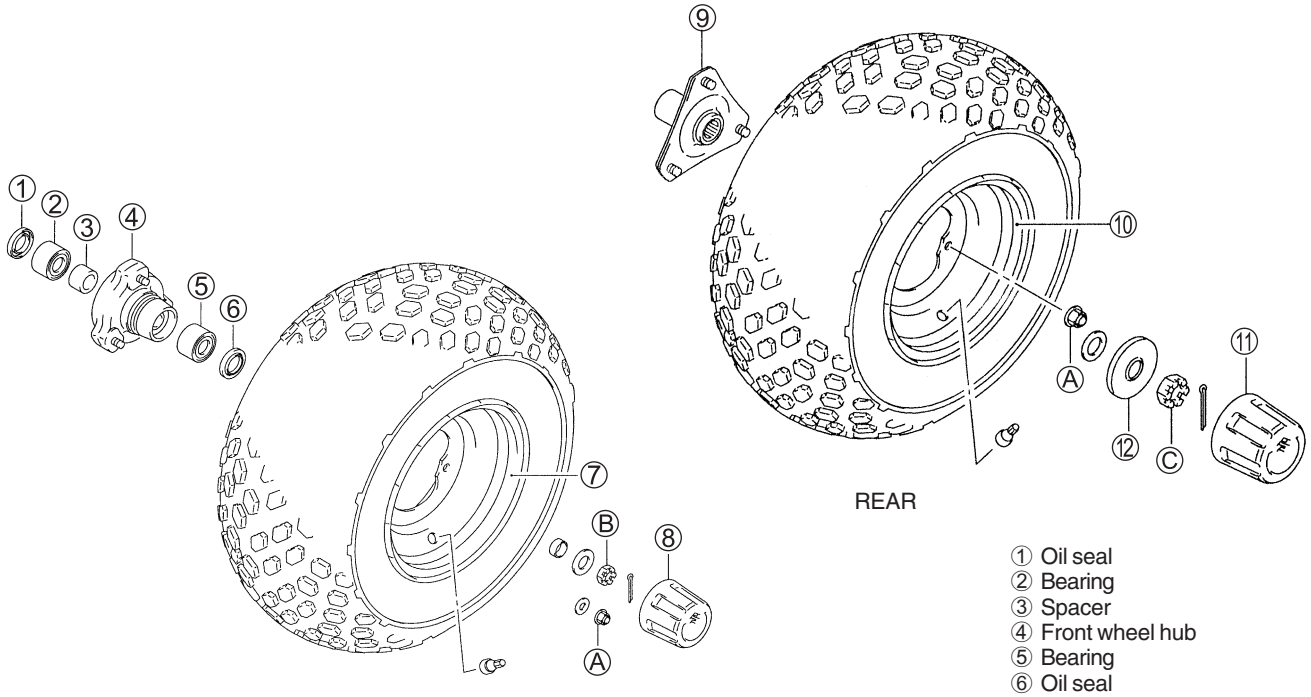


Fig 2

FRONT AND REAR WHEELS



FRONT

ITEM	N·m	kgf·m	lb-ft
Ⓐ	28	2.8	20.5
Ⓑ	65	6.5	47.5
Ⓒ	75	7.5	55.0

① Oil seal
② Bearing
③ Spacer
④ Front wheel hub
⑤ Bearing
⑥ Oil seal
⑦ Front wheel
⑧ Front wheel center cap
⑨ Rear wheel hub
⑩ Rear wheel
⑪ Rear wheel center cap
⑫ Center cap holder
Ⓐ Wheel nut (front and rear)
Ⓑ Front hub nut
Ⓒ Rear hub nut

REMOVAL

- Place the vehicle on level ground.
- Remove the wheel set nuts.
- Support the vehicle with a jack or wooden block and remove the front and rear wheels.

Front wheel

REMOUNTING

- Remount the wheels in the reverse order of removal. Pay attention to the following point.
- Tighten the wheel set nuts to the specified torque.

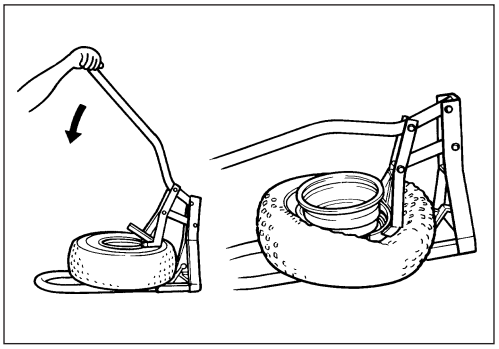
Front and rear wheel nut: 28 N·m (2.8 kgf·m, 20.5 lb-ft)

Rear wheel

TIRES

TIRE REPLACEMENT

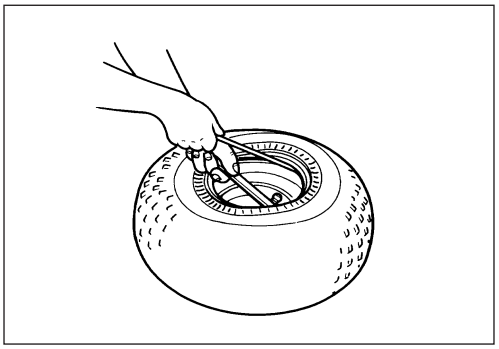
- Remove the front and rear wheels. (☞5-4)
- After removing the air valve cap, release the tire pressure by depressing the valve.
- Dismount the bead from the rim completely as shown.



- Separate the tire from the rim by using a set of tire levers and rim protectors.

CAUTION

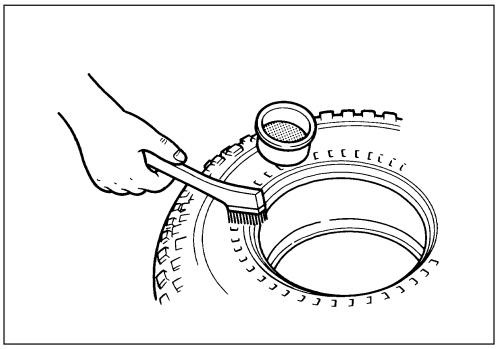
When using the tire lever, do not scratch or hit the sealing portion (hump) of the wheel or it may cause air-leakage.



- Apply clean water to the tire bead and the flange of the rim.

CAUTION

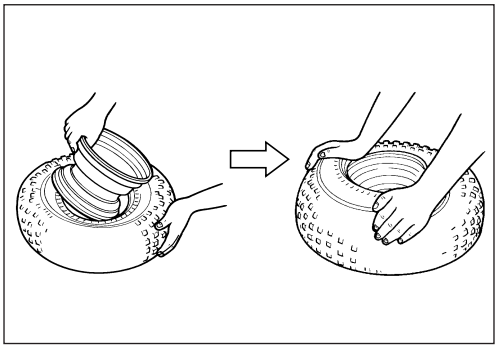
Never apply grease, oil, or gasoline to the tire bead because they will deteriorate the tire.



CAUTION

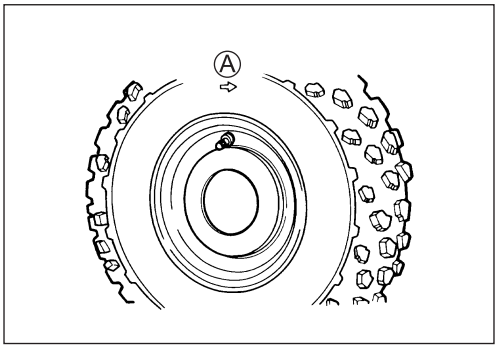
The standard tire fitted on this vehicle is AT16 × 8-7 ☆ for the front and rear.
The use of tires other than the standard may cause instability. It is highly recommended to use the specified tire.

- Mount the tire on the rim by hand as shown.



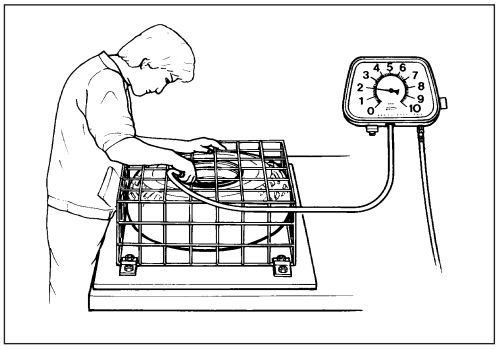
NOTE:
Inspect the sealing portion of the rim before installing the tire on the rim.

- When installing each tire, make sure the arrow Ⓐ on the tire points in the direction of rotation. Also, make sure the outer side of the wheel rim is facing outward.



NOTE:
For inspecting the tire refer to page 2-11.
Inspact the valve core, before installation.

• Inflate the tire to seat the tire bead.

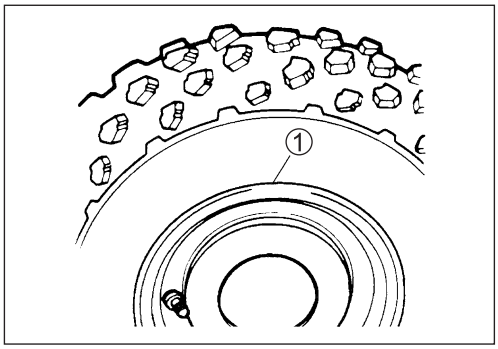


DATA Maximum tire bead seat pressure
Front : 250 kPa (2.5 kgf/cm², 36 psi)
Rear : 250 kPa (2.5 kgf/cm², 36 psi)

CAUTION

Place the tire under a protective tire cage or similar protective covering device before inflating the tire. To minimize the possibilty of tire damage when seating the tire bead, never exceed the MAXIMUM TIRE BEAD SEAT PRESSURE rating shown on the tire.

NOTE:
Check the "rim line" ① cast on the tire side walls. It must be equidistant from the wheel rim all the way around. If the distance between the rim line and the wheel rim varies this indicates that the bead is not properly seated. If this is so, deflate the tire completely, and unseat the tire bead on both sides. Then, coat the bead with clean water, and re-seat the tire.



• Adjust the tire pressure to specification.

DATA Cold inflation tire pressure
Front : 20 kPa (0.20 kgf/cm², 2.9 psi)
Rear : 20 kPa (0.20 kgf/cm², 2.9 psi)

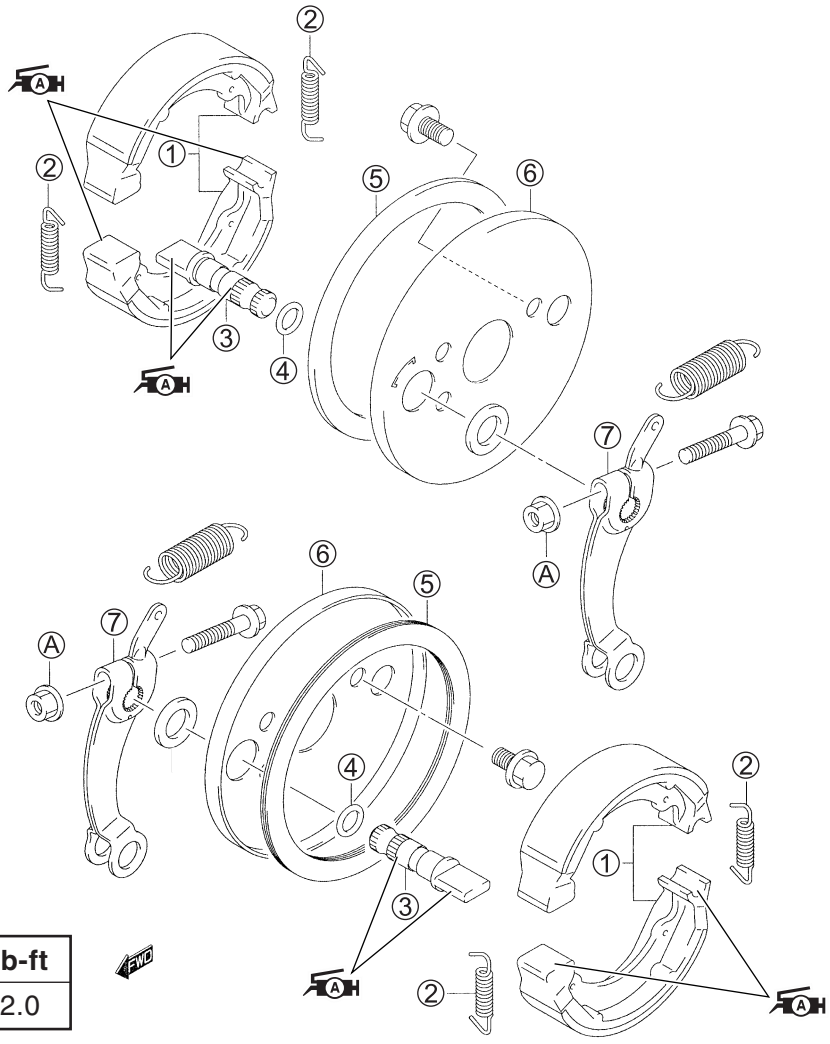
DATA Vehicle load capacity: 38 kg (84 lbs)

CAUTION

Before inflating the tire, chack the MAXIMUM OPERATING PRESSURE rating of the tire. This is indicated by a "☆" following the tire size shown on the sidewall. The number of "☆"on the tire indicates the maximum operating pressure.

DATA Maximum operating pressure
☆ : 25 kPa (0.25 kgf/cm², 3.6 psi)
☆ ☆ : 35 kPa (0.35 kgf/cm², 5.1 psi)
☆ ☆ ☆ : 45 kPa (0.45 kgf/cm², 6.5 psi)

FRONT BRAKE

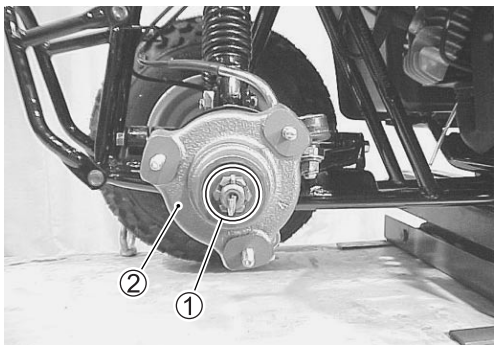


① Front brake shoe
② Spring
③ Front brake cam shaft
④ O-ring
⑤ Dust seal
⑥ Front brake panel
⑦ Cam lever
Ⓐ Front brake cam lever nut

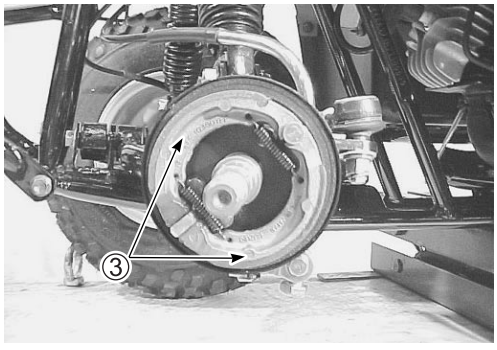
ITEM	N·m	kgf·m	lb-ft
Ⓐ	3	0.3	2.0

REMOVAL AND DISASSEMBLY

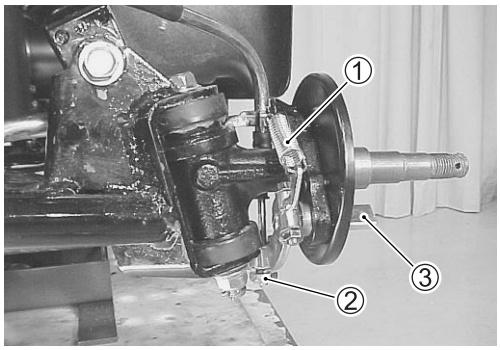
- Remove the front wheel. (☞5-4)
- Remove the wheel center cap.
- Remove the cotter pin and axle nut ①.
- Remove the front wheel hub ②.



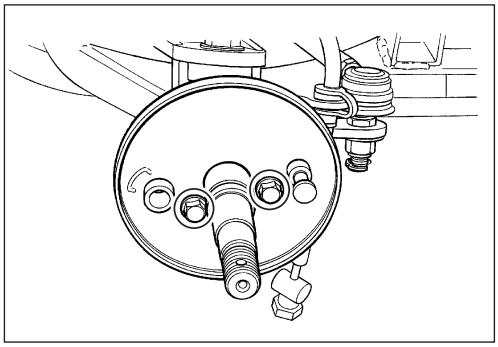
- Remove the front brake shoe assembly ③.



- Remove the spring ①.
- Remove the front brake adjusting nut ②.
- Remove the front brake cam lever nut and bolt.
- Remove the brake cam lever and front brake camshaft ③.

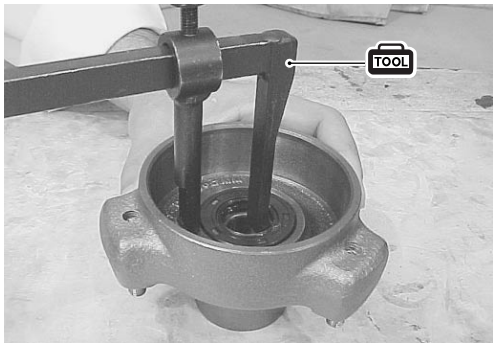


- Remove the brake panel.



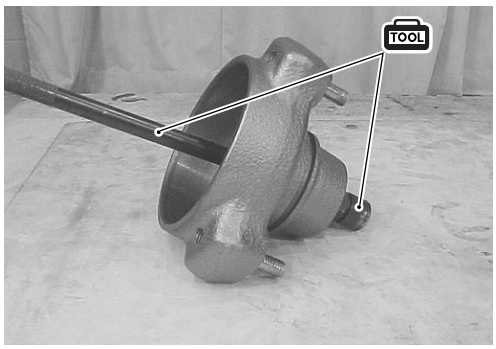
- Remove the inner dust seal using the special tool.

TOOL 09913-50121: Oil seal remover



- Remove the wheel hub inner and outer bearing using the special tool.

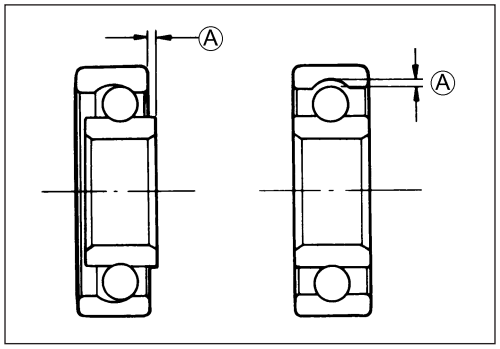
TOOL 09941-50111: Bearing remover



INSPECTION

BEARINGS

Inspect the play Ⓐ of the wheel hub bearings by hand while they are in the wheel hub. Rotate the inner race by hand to inspect it for abnormal noise and smooth rotation. Replace the wheel hub bearings if there is anything unusual.



BRAKE DRUM/WHEEL HUB

Inspect the brake drum and measure the brake drum I. D. to determine the extent of wear. Replace the brake drum if the measurement exceeds the service limit.
The valve of this limit is indicated inside the brake drum.

TOOL 09900-20101: Vernier calipers
DATA Brake drum I. D.
Service Limit: 80.7 mm (3.18 in)

BRAKE SHOE

Inspect the brake shoes wear or damage. If it worn or damaged, replace it with new ones.

CAUTION

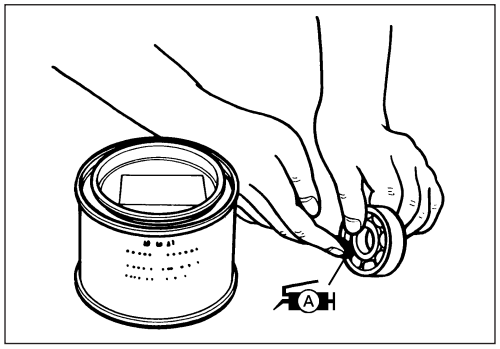
Replace the brake shoes as a set, otherwise braking performance will be adversely attected.

REASSEMBLY AND REMOUNTING

- Apply SUZUKI SUPER GREASE “A” to the bearing before installing.

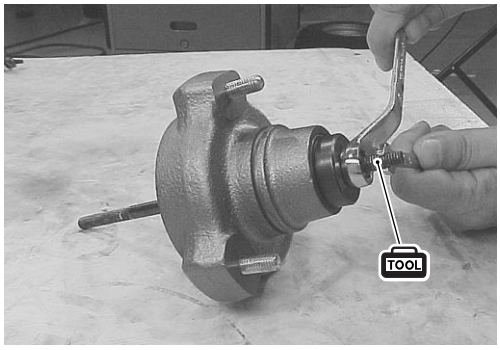
For USA
99000-25030: SUZUKI SUPER GREASE “A”

For the others
99000-25010: SUZUKI SUPER GREASE “A”



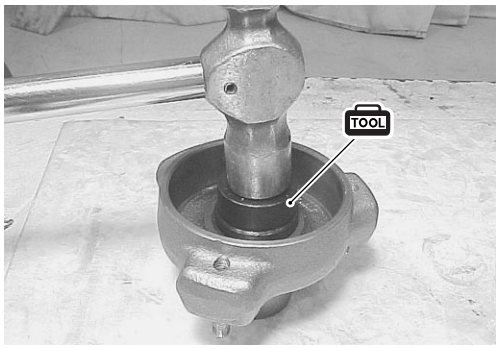
- Install the front wheel hub bearing using the special tool.

TOOL 09924-84521: Bearing installer set.



• Install the new dust seal using the special tool.

09924-84521: Bearing installer set



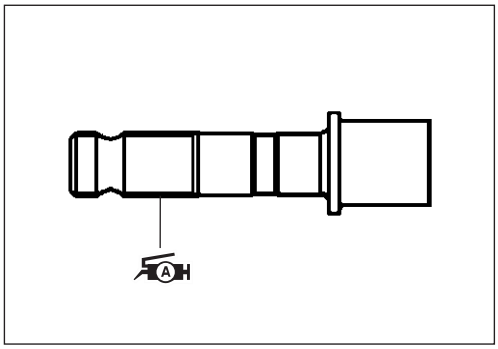
• When installing the brake camshaft, apply SUZUKI SUPER GREASE “A” to the camshaft.

For USA

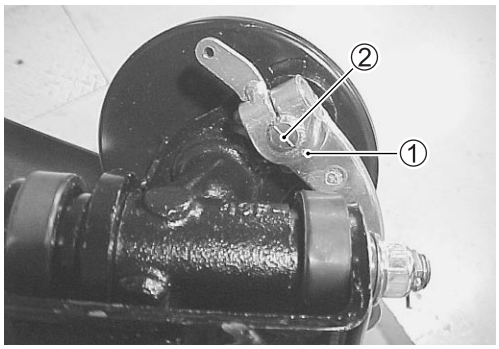
99000-25030: SUZUKI SUPER GREASE “A”

For the others

99000-25010: SUZUKI SUPER GREASE “A”



• When installing the brake cam lever on the camshaft align the panch mark ① of the cam lever with the slit ② of the camshaft.



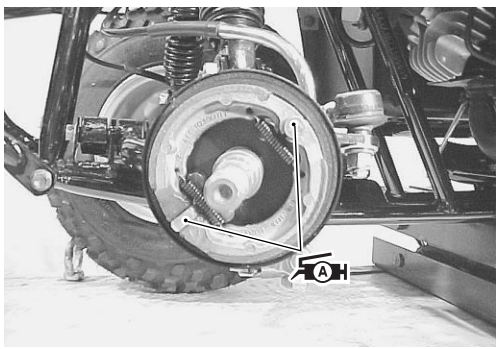
• Apply SUZUKI SUPER GREASE “A” to the brake cam and pin, and install the brake shoes.

For USA

99000-25030: SUZUKI SUPER GREASE “A”

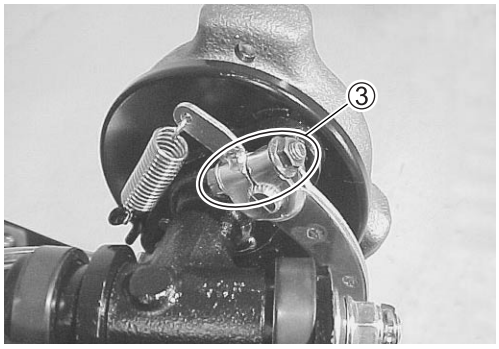
For the others

99000-25010: SUZUKI SUPER GREASE “A”



• Install the front wheel hub and spring.
• Tighten front brake cam lever nut to the specified torque.

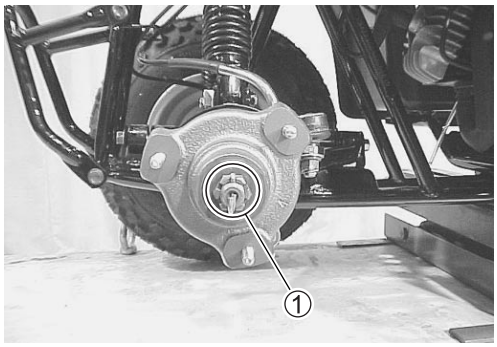
Front brake cam lever nut: 3.3 N·m (0.33 kgf·m, 2.43 lb-ft)



- Tighten the front hub nut ① to the specified torque.

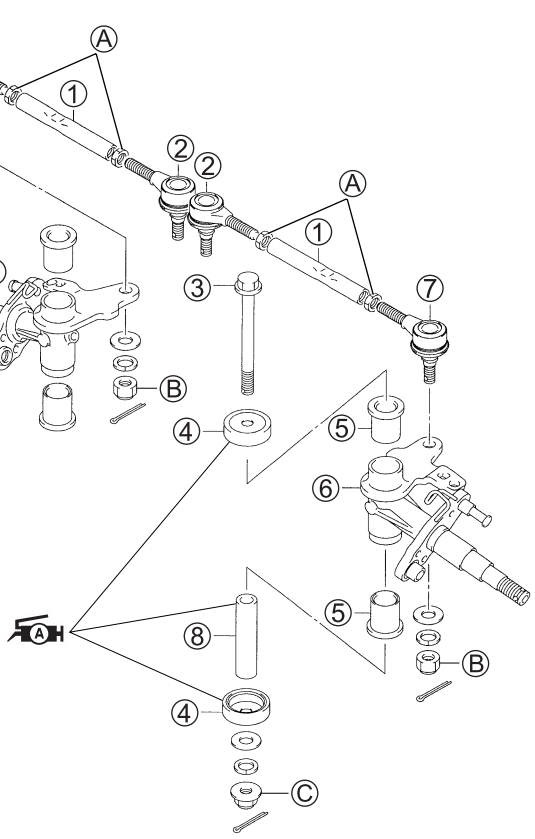
Front hub nut: 65 N·m (6.5 kgf·m, 47.9 lb-ft)

- Install the new cotter pin.
- Install the front wheel. (☞5-4)



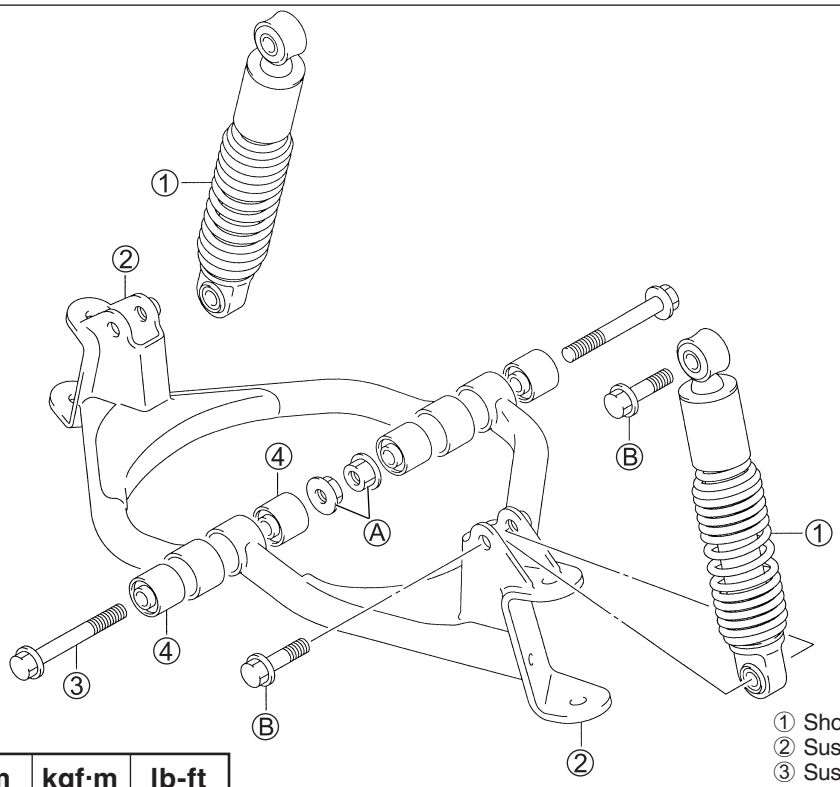
- After installing the front brake, adjust the following items.
  * Front brake lever play. (☞2-10)

STEERING AND FRONT SUSPENSION



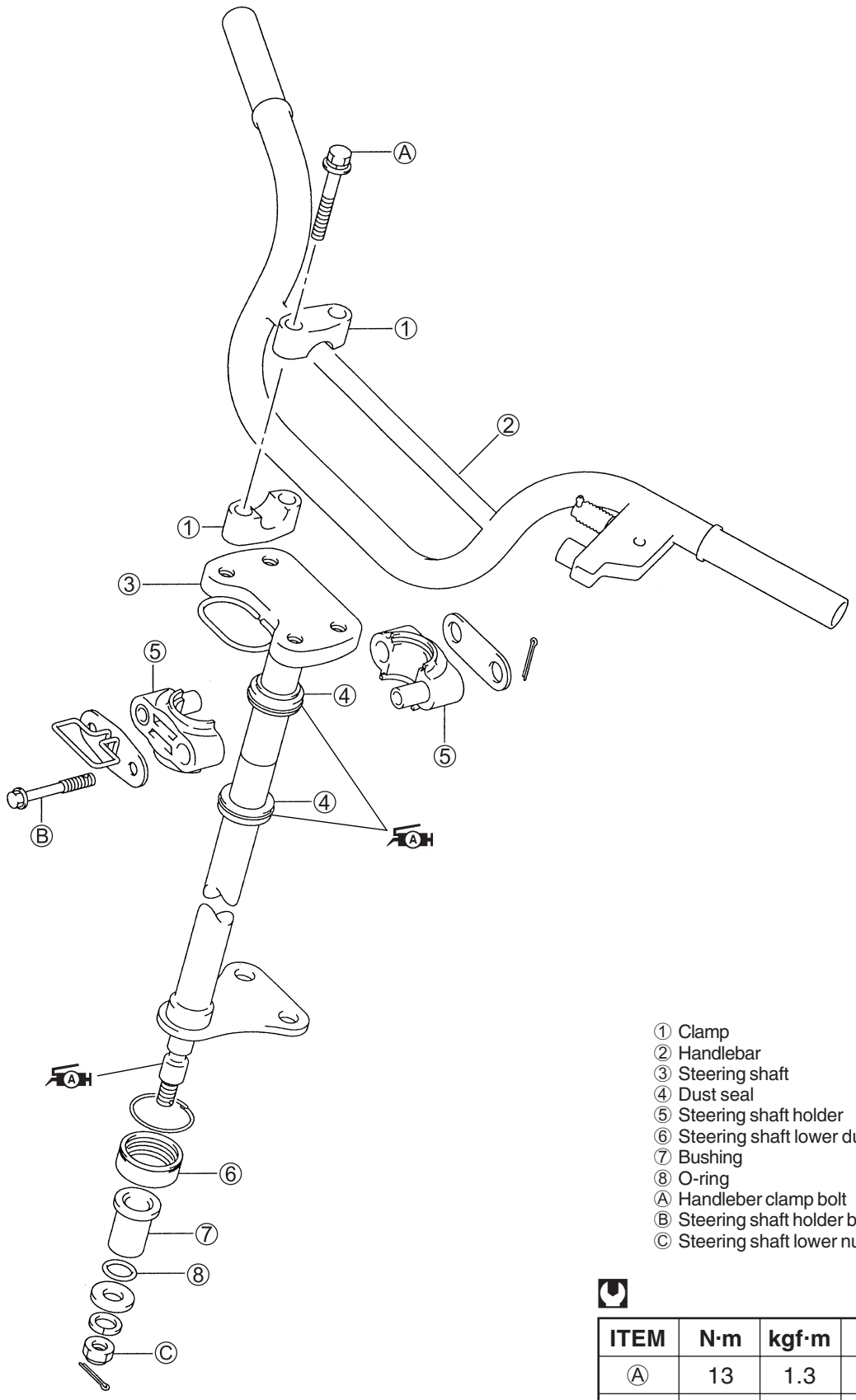
① Tie-rod
② Inner tie-rod end
③ knuckle arm bolt
④ Dust seal
⑤ Bushing
⑥ Knuckle arm (L)
⑦ Outer tie-rod end
⑧ Spacer
⑨ Knuckle arm (R)
Ⓐ Tie-rod lock nut
Ⓑ Tie-rod end nut
Ⓒ Kunckle arm nut

ITEM	N·m	kgf·m	lb-ft
Ⓐ	29	2.9	21
Ⓑ	29	2.9	21
Ⓒ	50	5.0	36



① Shock absorber
② Suspension arm
③ Suspension arm bolt
④ Bushing
Ⓐ Suspension arm nut
Ⓑ Shock absorber mounting bolt (lower and upper)

ITEM	N·m	kgf·m	lb-ft
Ⓐ	50	5.0	36
Ⓑ	29	2.9	21



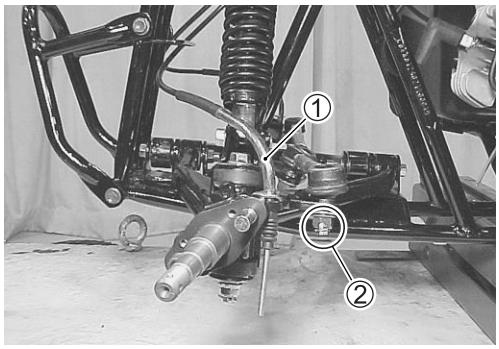
① Clamp
② Handlebar
③ Steering shaft
④ Dust seal
⑤ Steering shaft holder
⑥ Steering shaft lower dust seal
⑦ Bushing
⑧ O-ring
Ⓐ Handleber clamp bolt
Ⓑ Steering shaft holder bolt
Ⓒ Steering shaft lower nut

ITEM	N·m	kgf·m	lb-ft
Ⓐ	13	1.3	9.5
Ⓑ	23	2.3	16.5
Ⓒ	29	2.9	21

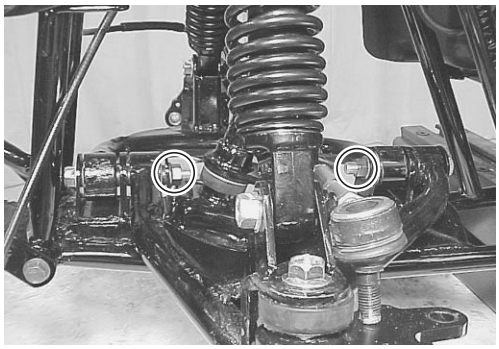
REMOVAL AND DISASSEMBLY

FRONT SUSPENSION

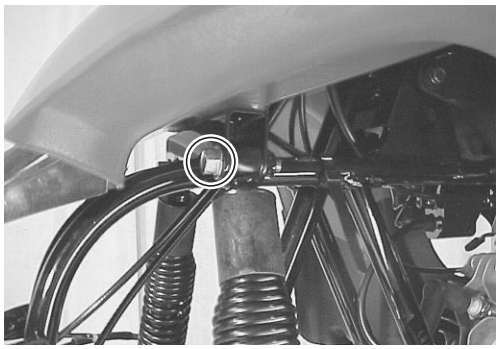
- Remove the front wheel. (☞5-4)
- Remove the front brake. (☞5-7)
- Remove the front brake cable ①.
- Remove the cotter pin and remove the tie-rod end nut ②.



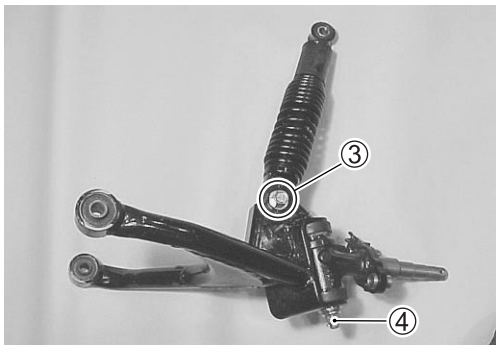
- Remove the front suspensions arm nuts.



- Remove the front shock absorber upper bolt.
- Remove the front shock absorber and suspension arm.



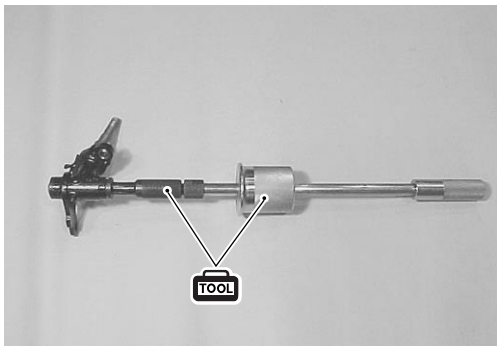
- Remove the front shock absorber lower bolt ③.
- Remove the cotter pin and knuckle arm nut ④.



- Remove the dust seals and spacer.

- Remove the knuckle arm bushings using the special tools.

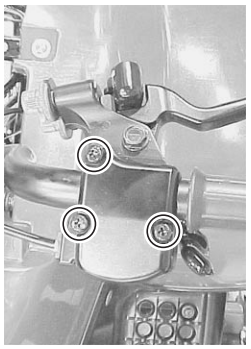
TOOL 09923-73210: Bearing remover
09930-30104: Sliding shaft

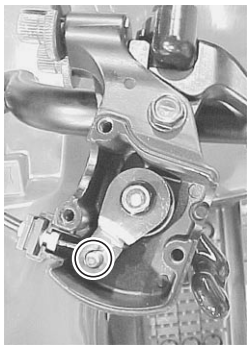


STEERING

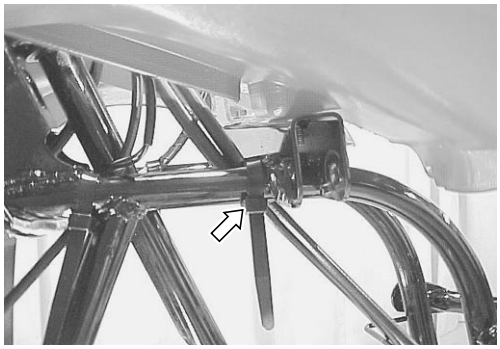
- Remove the front suspension. (☞5-12)
- Remove the front and rear brake cable.

- Remove the throttle case cover screws.
- Remove the throttle cable.

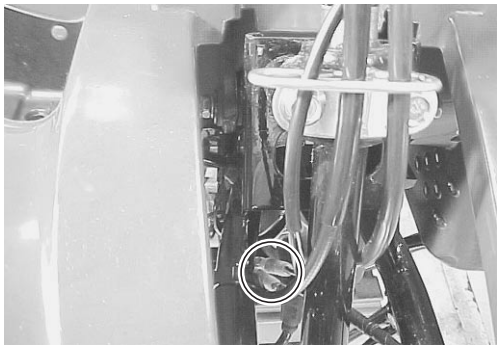




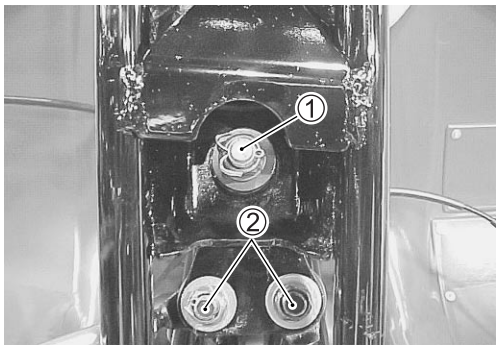
- Remove the clamp.



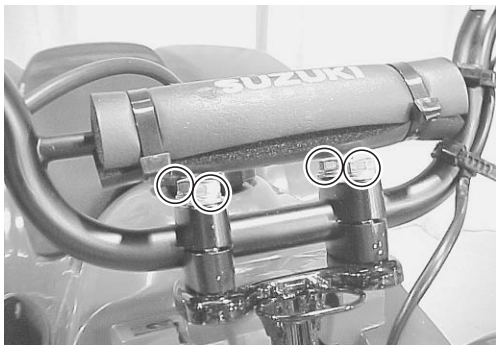
- Disconnect the lead wires.



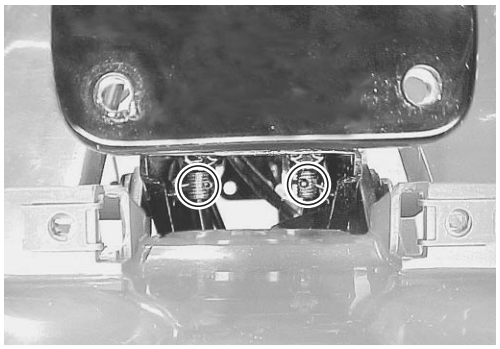
- Remove the cotter pin and steering shaft lower nut ① and tie-rod end nut ②.
- Remove the tie-rods.



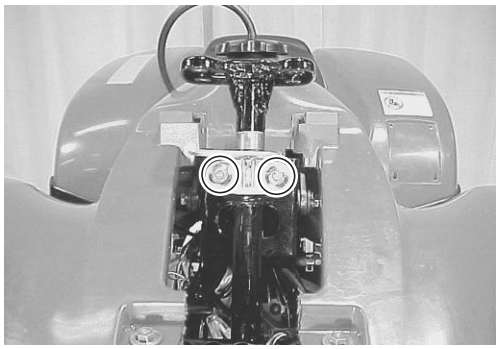
- Remove the handlebar clamp bolts.



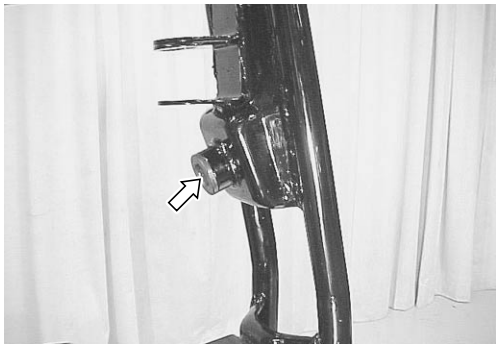
- Remove the cotter pin.



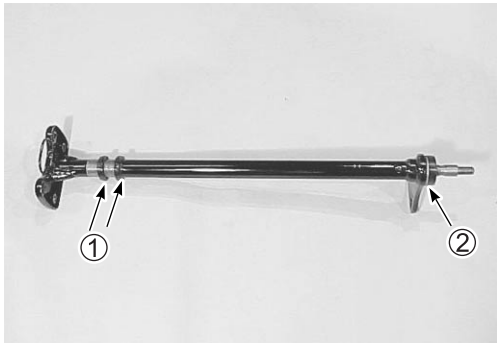
- Remove the steering shaft holder bolts.



- Remove the steering shaft bushing.



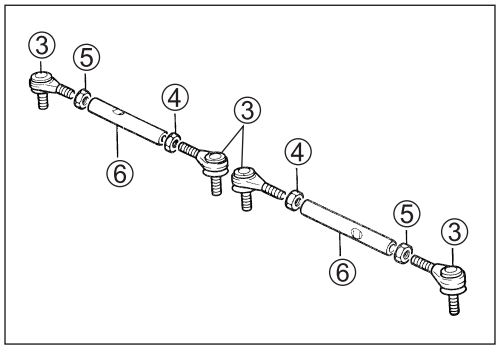
• Remove the dust seals ① and ②.



• Separate the tie rod ends ③, nuts ④, ⑤ and tie rods ⑥.

CAUTION

The lock nuts ④ have left hand threads.



INSPECTION

Inspect the removed parts for the following abnormallities.

* Handlebar distortion.
* Handlebar clamp wear.

DUST SEALS

Inspect the dust seals for wear or damage.

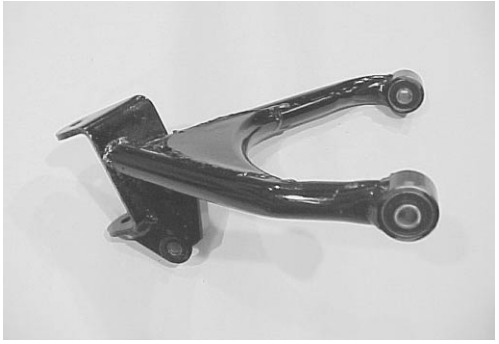
If any damages are found, replace the dust seals with new one.

KNUCKLE ARM BUSHING

• Insert the spacer into the bushing and inspect for abnormal noise and smooth rotation while rotating the spacer.
If any damage are found, replace the bushing with new one.

SUSPENSION ARM

• Inspect the suspension arm and suspension arm bushing for wear or damage. If any damages are found, replace the suspension arm with a new one.

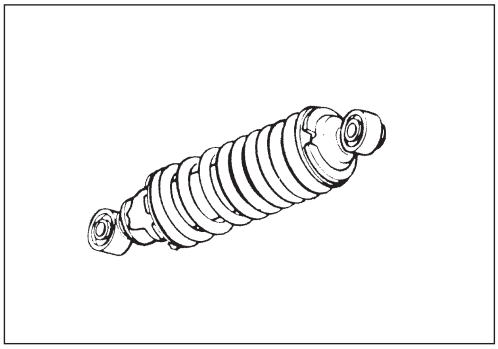


FRONT SHOCK ABSORBER

- Inspect the shock absorber for oil leakage or damage.
  If any damage are found, replace the front shock absorber with a new one.

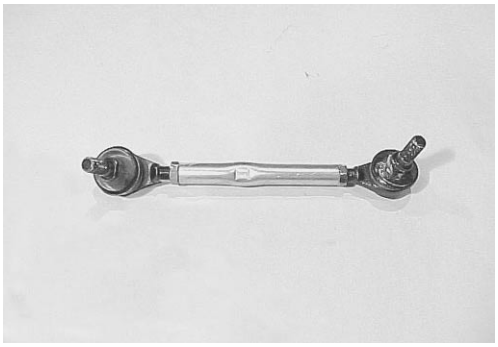
CAUTION

Do not attempt to disassemble the rear shock absorber. It is unserviceable.



TIE-ROD/TIE-ROD END

- Inspect the tie-rod for distortion and the boot for wear and tie-rod end for smooth movement.
  If any damage are found, replace the tie-rod with a new one.



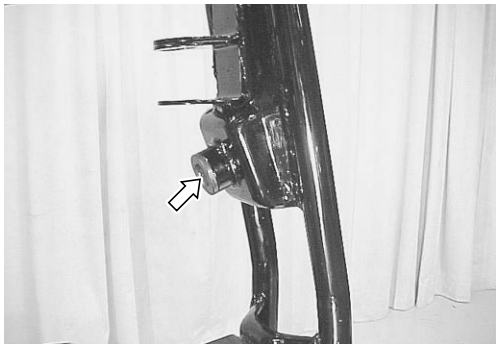
STEERING SHAFT AND HOLDER

- Inspect the steering shaft for distortion or bends. If any damages are found, replace the steering shaft with a new one.

- Inspect the two steering shaft holders for wear or damage. If any damages are found, replace the steering shaft holders with new ones.

STEERING SHAFT BUSHING

- Inspect the steering shaft bushing for wear or damage. If any damages are found, replace the steering shaft bushing with new one.



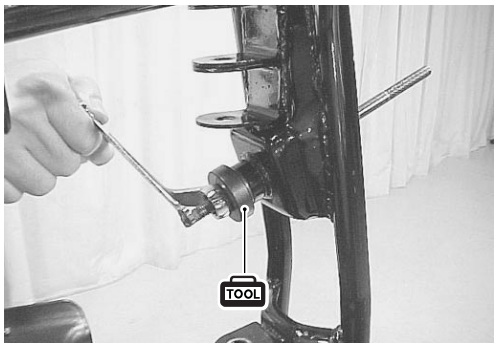
REASEMBLY AND REMOUNTING

Reassemble and remount the steering stem and front suspension in the reverse order of removal and disassembly. Pay attention to the following points.

STEERING SHAFT

- Install the steering shaft bushing using the special tool.

TOOL 09924-84510: Bearing installer set



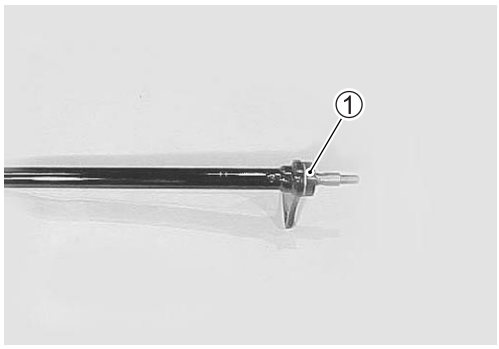
- Apply SUZUKI SUPER GREASE "A" to the new dust seal ①, steering shaft holders ② and new dust seals ③ before remounting the steering shaft.

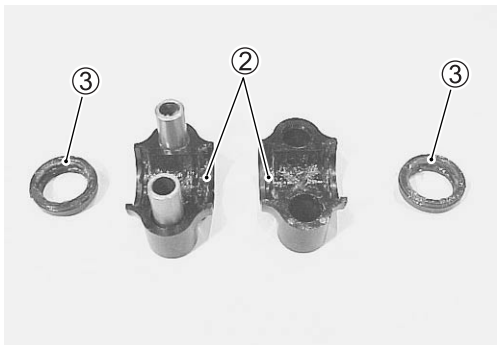
For USA

99000-25030: SUZUKI SUPER GREASE "A"

For the others

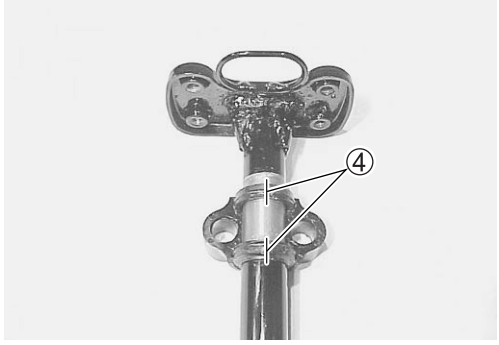
99000-25010: SUZUKI SUPER GREASE "A"





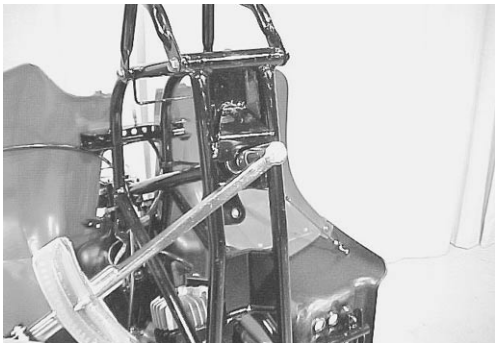
CAUTION

To prevent the entry of dirt, the dust seal end ④ must face forward when installed on the steering shaft.



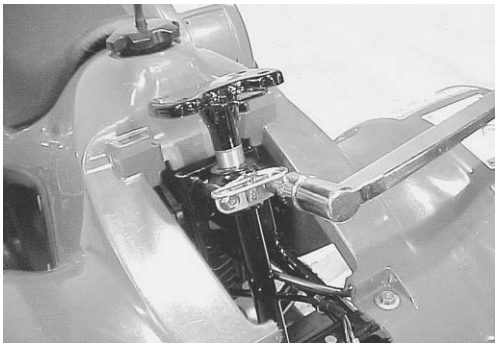
- Tighten the steering shaft nut to the specified torque and new cotter pin.

Steering shaft lower nut: 29 N·m (2.9 kgf·m, 2.1 lb-ft)



- Tighten the steering shaft holder bolts to the specified torque and new cotter pins.

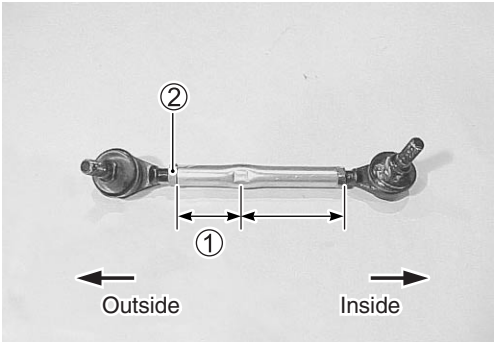
Steering shaft holder bolt: 23 N·m (2.3 kgf·m, 16.5 lb-ft)



TIE-ROD

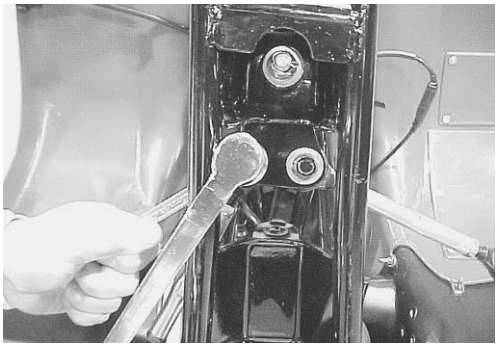
- When installing the tie-rod, make sure that the narrow side ① of the tie-rod comes outside.

NOTE:
The lock nuts ② have left-hand threads.



- Tighten the tie-rod end nut to the specified torque and install new cotter pin.

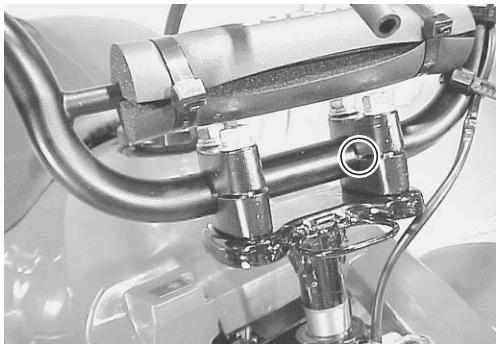
Tie-rod end nut: 29 N·m (2.9 kgf·m, 21 lb-ft)



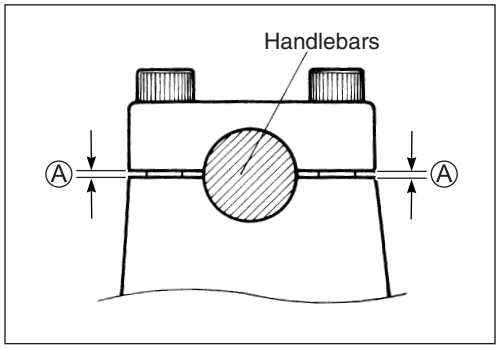
HANDLEBAR

- Tighten the handlebar clamp bolts temporarily.
- Set the handlebars to mutch its dent mark to the mating surface between handlebar clamps as shown. Tighten the handlebar clamp bolts to the specified torque.

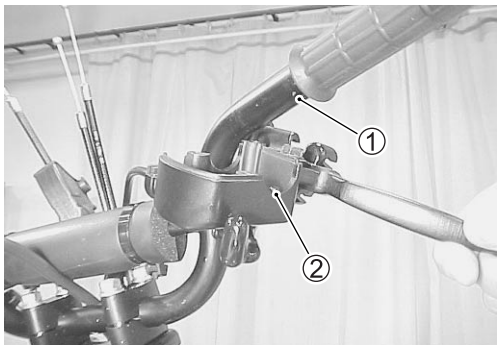
Handlebar clamp bolt: 13 N·m (1.3 kgf·m, 9.5 lb-ft)



- Secure the each handlebar clamp in such a way that the clearances Ⓐ ahead and behind of the handlebars are equalized.



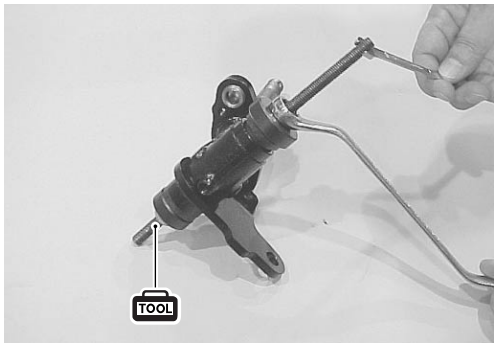
- Align the groove ① on the handlebar with the lug ② on the handlebar switch.



FRONT SUSPENSION

- Install the knuckle arm bushing using the special tool.

TOOL 09924-84510: Bearing installer set



- Apply SUZUKI SUPER GREASE "A" to the knuckle arm dust seals.
- Apply SUZUKI SUPER GREASE "A" to the knuckle arm bushings and install the spacer and the dust seals.

For USA

99000-25030: SUZUKI SUPER GREASE "A"

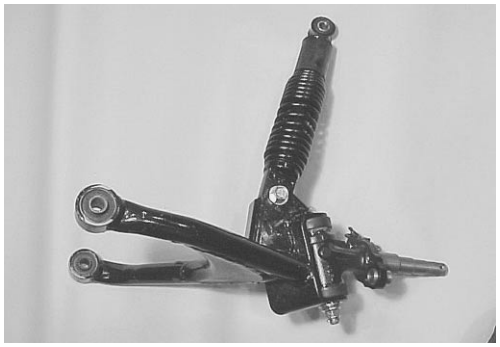
For the others

99000-25010: SUZUKI SUPER GREASE "A"

- Tighten the front shock absorber lower nut to the specified torque.
- Tighten the knuckle arm bolt to the specified torque and install a new cotter pin.

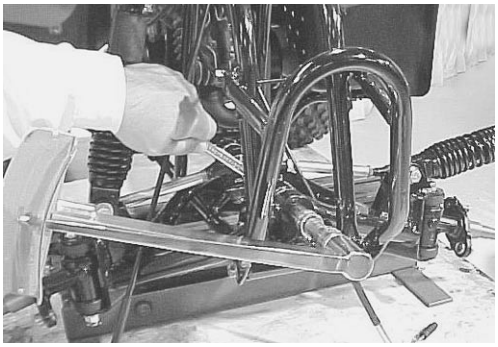
Front shock absorber lower nut:
29 N·m (2.9 kgf·m, 21 lb-ft)

Knuckle arm nut: 50 N·m (5.0 kgf·m, 36 lb-ft)



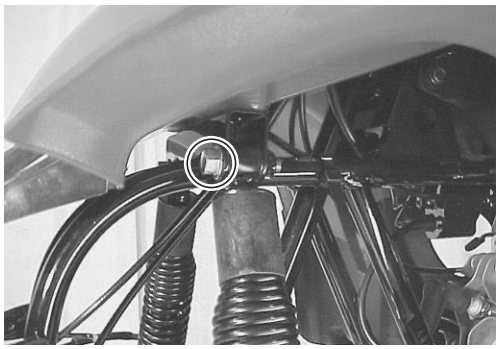
- Tighten the front suspension arm bolts to the specified torque.

Front suspension arm bolt: 50 N·m (5.0 kgf·m, 36 lb-ft)



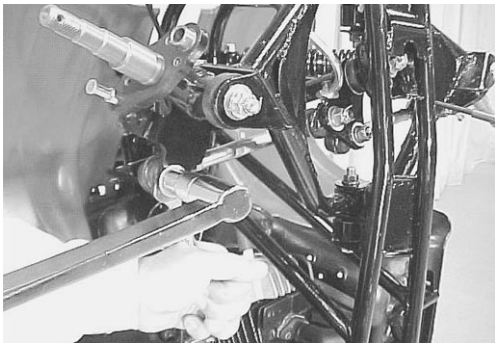
- Tighten the front shock absorber upper bolt to the specified torque.

Front shock absorber upper bolt: 29 N·m (2.9 kgf·m, 21lb-ft)



- Tighten the tie-rod end nut to the specified torque and install a new cotter pin.

Tie-rod end nut: 29 N·m (2.9 kgf·m, 21 lb-ft)



- Install the front brake. (☞5-9)
- Install the front wheel. (☞5-4)

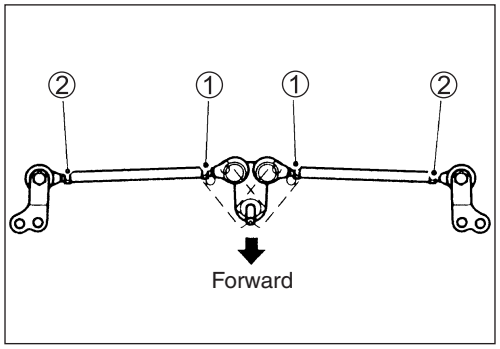
After installing the front brake and front suspension, adjust the following items.

* Front brake lever play. (☞2-10)
* TOE-IN adjustment. (☞5-23)

TOE-IN ADJUSTMENT

Adjust the toe-in as follows:

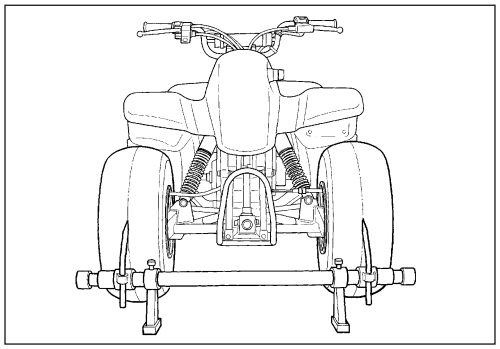
- Place the vehicle on level ground and set the handlebars straight.
  Make sure all the tires are inflated to the standard pressure. (☞2-11)
- Place 30 kg (66 lbs) of weight on the seat.
- Loosen the locknuts (①, ②) on each tie rod.



CAUTION

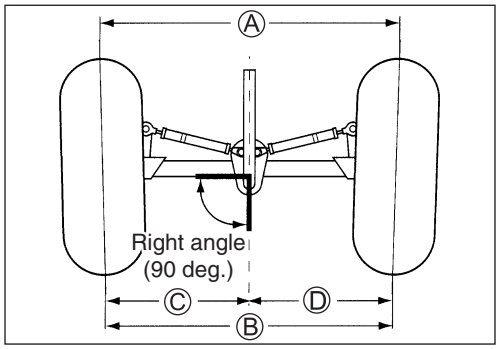
The locknuts ② have left-hand threads.

- Measure the distances (Ⓐ and Ⓑ) between the front wheels. Subtract the measurements of Ⓐ from the measurements of Ⓑ to find the toe-in. If the toe-in is not within specification, adjust the tie rod to the right or left until the toe-in is within the specified range.
  Ⓐ – Ⓑ = Toe-in



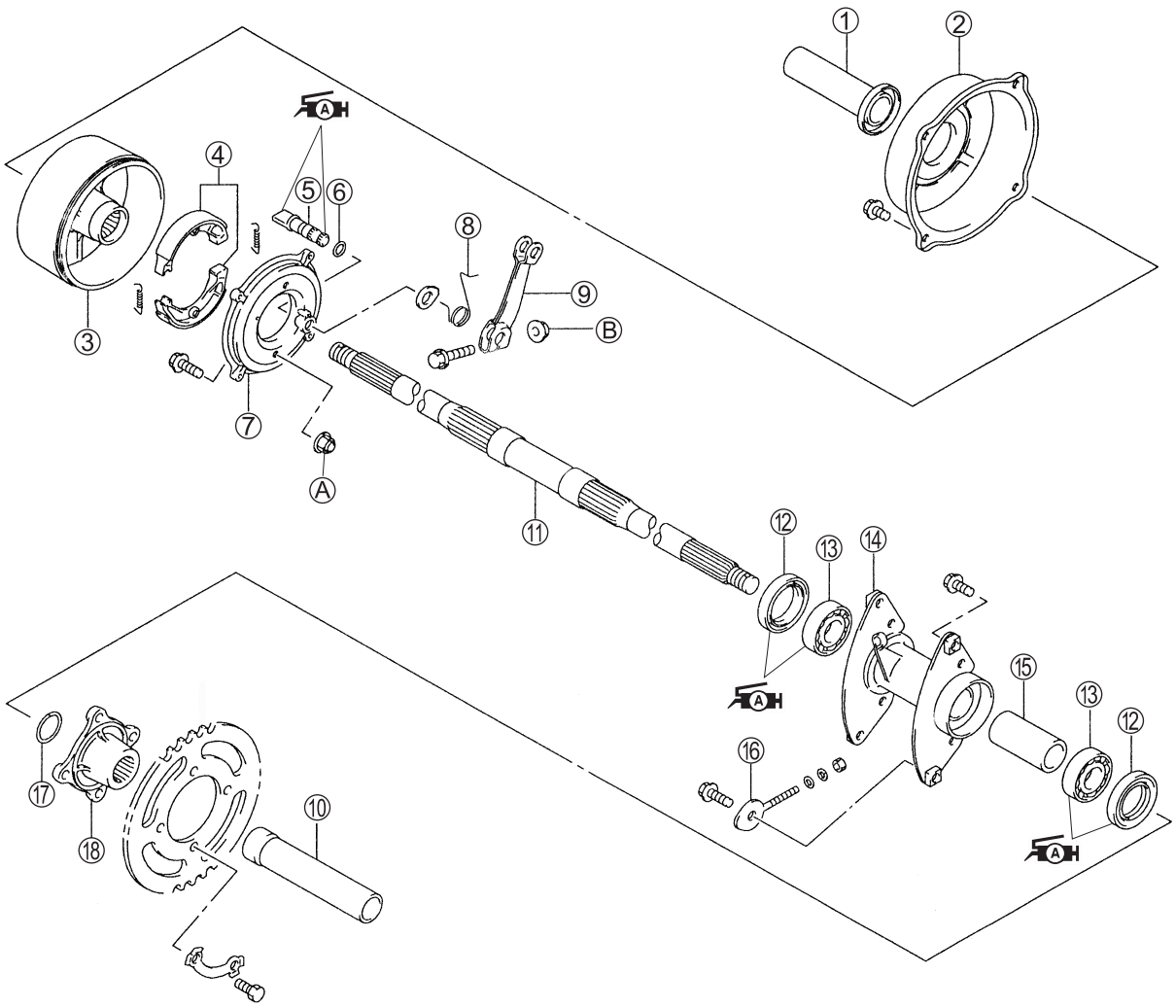
DATA Toe-in
Standard: 1.5 mm ± 3 mm (0.06 ± 0.16 in)

- Temporarily tighten the four locknuts.
- Check that the distances (Ⓒ and Ⓓ) are equal, as shown. If the distances are not equal, adjust the tie rod to the right or left until the toe-in is within specification. Check the toe-in again by measuring distances Ⓐ and Ⓑ.
- If the toe-in is not within specification, repeat the adjustment as above until the proper toe-in is obtained and distances Ⓒ and Ⓓ become equal.
- After adjustment has been made, tighten the four locknuts (①, ②) to the specified torque.



Tie rod locknut: 29 N·m (2.9 kgf·m, 21 lb-ft)

REAR BRAKE AND REAR AXLE HOUSING



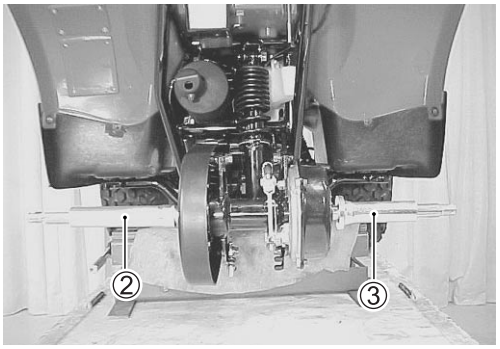
① Spacer (R)
② Rear brake cover
③ Rear brake drum
④ Rear brake shoe
⑤ Rear brake cam
⑥ O-ring
⑦ Rear brake anchor panel
⑧ Brake cam lever spring
⑨ Rear brake cam lever
⑩ Spacer (L)
⑪ Rear axle shaft
⑫ Oil seal
⑬ Bearing
⑭ Rear axle housing
⑮ Spacer (L)
⑯ Chain adjuster
⑰ Stopper ring
⑱ Mounting flange
Ⓐ Rear brake panel nut
Ⓑ Rear brake cam lever nut

ITEM	N·m	kgf·m	lb-ft
Ⓐ	28	2.8	20.5
Ⓑ	75	7.5	55.0

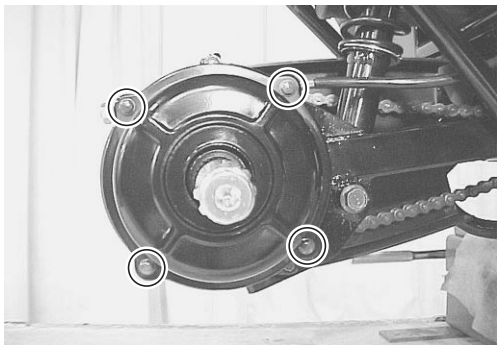
REMOVAL AND DISASSEMBLY

- Remove the cotter pin ①.
- Remove the rear axle nut by applying the rear brake.
- Remove the rear wheels.

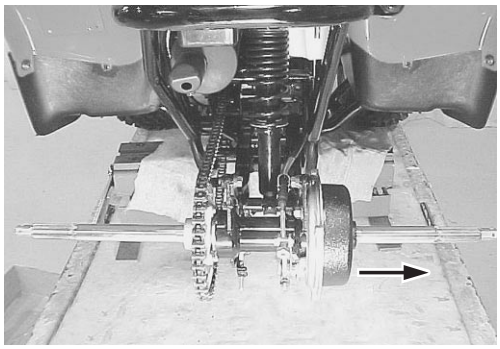
- Remove the spacer, ②, ③.



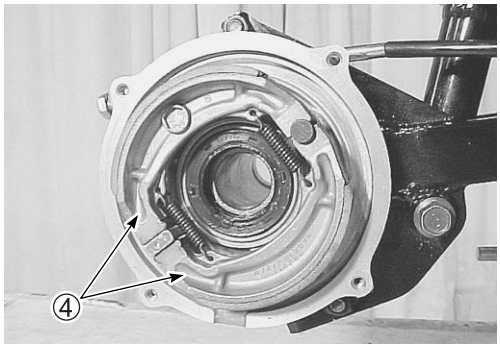
- Remove the rear brake drum cover.



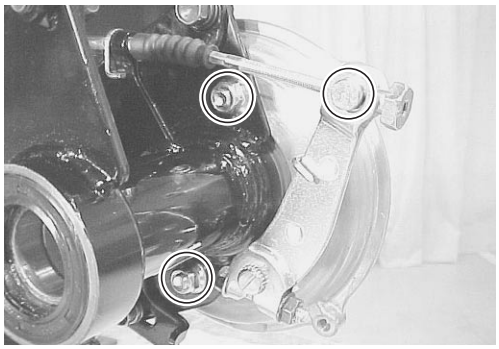
- Remove the rear axle, rear brake drum and rear sprocket.



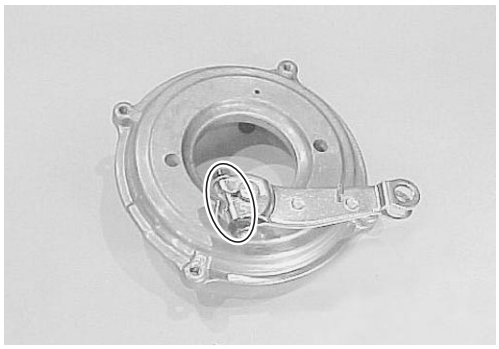
- Remove the rear brake shoes ④.



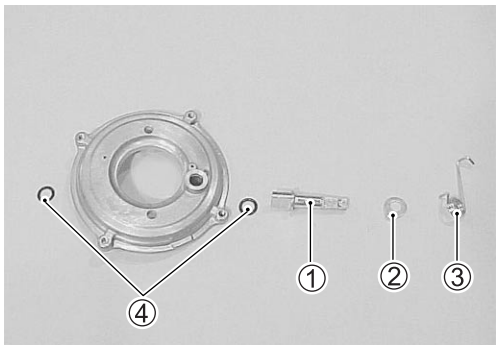
- Disconnect the rear brake cables.
- Remove the rear brake panel.



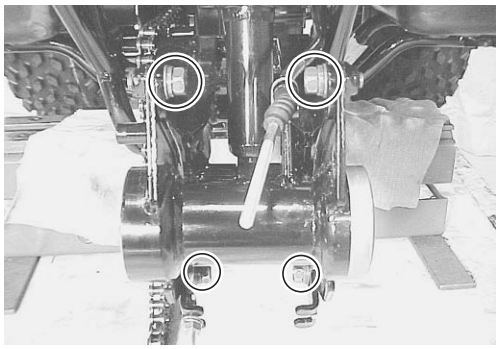
- Remove the rear brake cam lever bolt and cam lever.



- Remove the rear brake cam ①, brake lining indicator plate ②, spring ③, and O-rings ④.

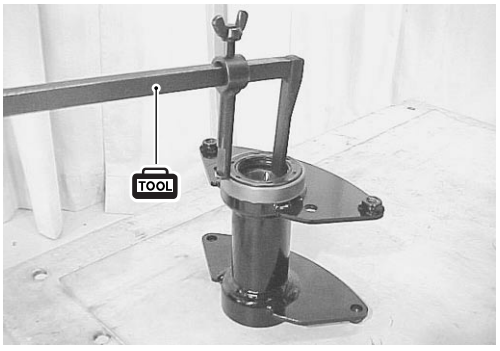


- Remove the rear axle housing.



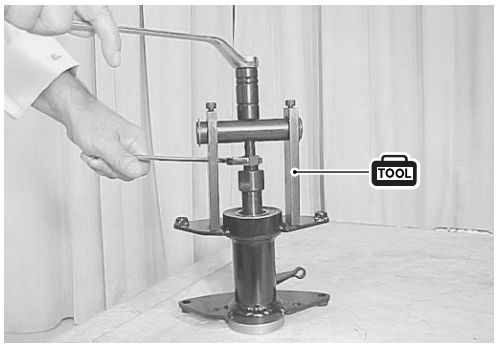
- Remove the dust seals using the special tool.

TOOL 09913-50121: Oil seal remover

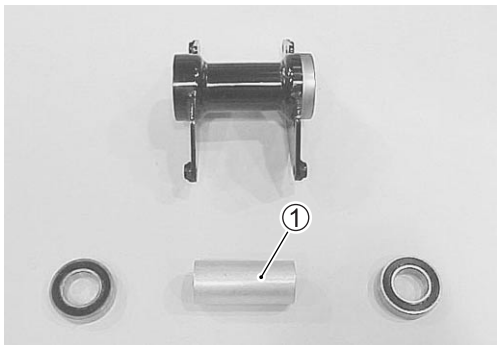


• Remove the rear axle bearings using the special tool.

TOOL **09921-20240: Bearing remover set**



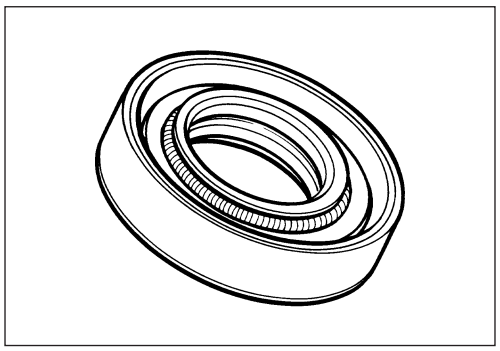
• Remove the spacer ①.



INSPECTION

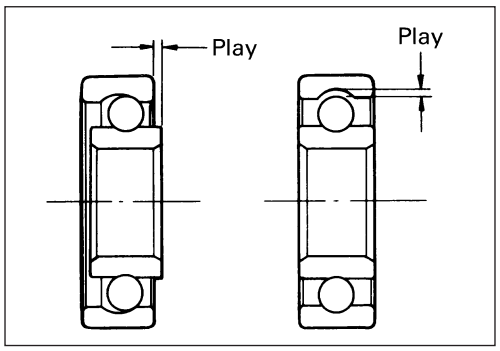
DUST SEAL

Inspect the dust seals for wear or damage. If any damages are found, replace the tie rod with a new one.



BEARING

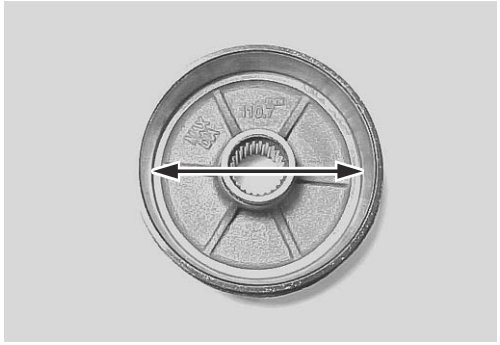
Wash the bearing with a cleaning solvent and lubricate it with motor oil before inspection. Turn the inner ring and check to see that it turns smoothly. If it does not turn quietly and smoothly, or if there are signs of any abnormalities, the bearing is defective and must be replaced with a new one.



BRAKE DRUM

• Inspect the brake drum and measure the brake drum inside diameter to determine the extent of wear. If the measurement exceed the service limit, replace the brake drum with a new one. The brake drum inside diameter is indicated inside the drum.

DATA **Brake drum I. D.**
Service Limit: 110.7 mm (4.36 in)



BRAKE SHOE

- Inspect the brake shoes for wear or damage. If any wear or damages are found, replace the brake shoes as a set.

CAUTION

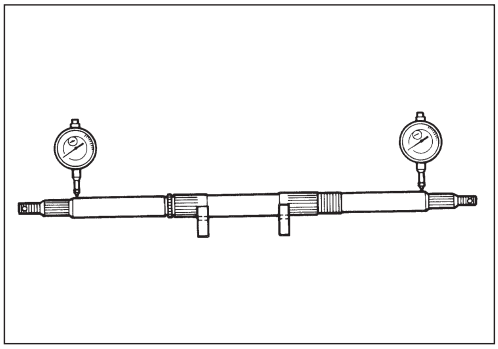
Replace the brake shoes as a set. Otherwise braking performence will be adversely affected.

REAR AXLE

Support the rear axle using v-blocks and measure the rear axle runout using the dial gauge as shown. If the runout exceeds the service limit, replace the rear axle with a new one.

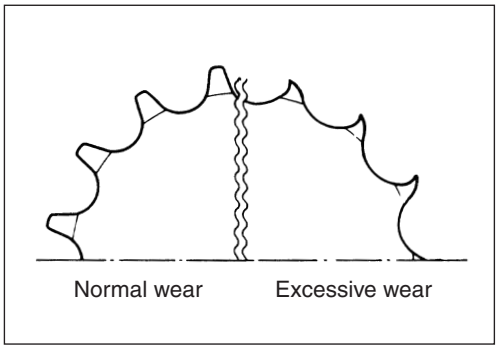
TOOL 09900-20607: Dial gauge (1/100 mm)
09900-20701: Magnetic stand
09910-21304: V-block set (100 mm)

DATA Rear axle runout
Service Limit: 3 mm (0.12 in)



REAR SPROCKET

- Inspect the sprocket teeth for wear. If they are worn as illustrated, replace the sproket and drive chain.



REASSEMBLY AND REMOUNTING

Reassemble and remount the rear suspension in the reverse order of removal and disassembly.
Pay attention to the following points:

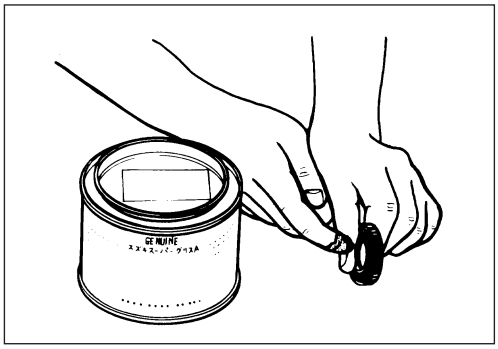
- Apply SUZUKI SUPER GREASE “A” to the rear axle bearings and the rip of the dust seals before installing them.

For USA

A 99000-25030: SUZUKI SUPER GREASE “A”

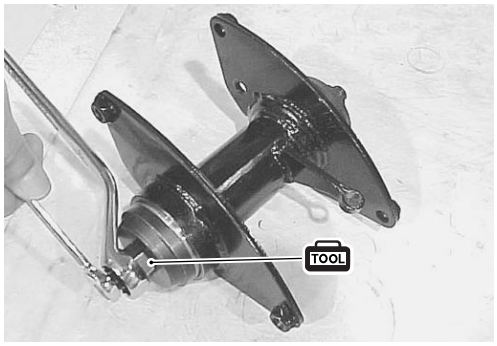
For the others

A 99000-25010: SUZUKI SUPER GREASE “A”

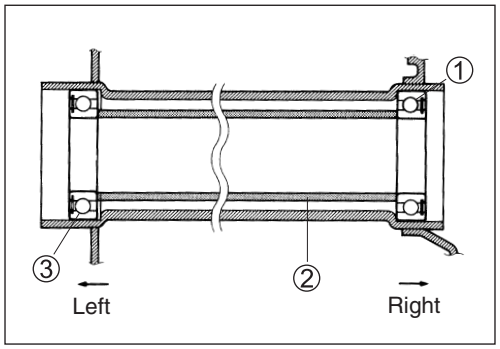


- Install the rear axle bearing using the special tool.
- Install the dust seals using the special tool.

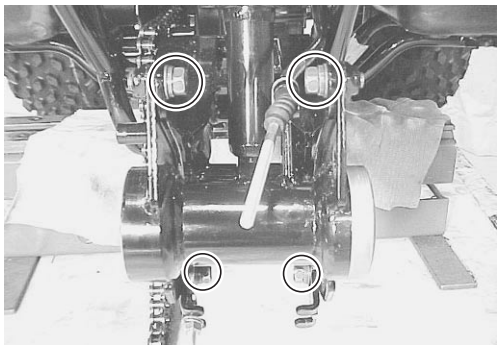
09924-84510: Bearing installer set



NOTE:
Install the right side bearing ① first, the spacer ② and left side bearing ③. Make sure the sealed side of the bearing face outward.



- Tighten the rear axle housing bolts to the securely.

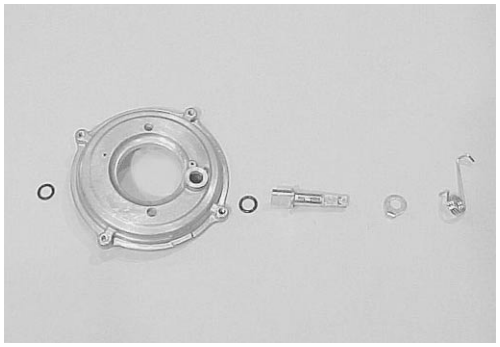


- Apply SUZUKI SUPER GREASE "A" to the rear brake cam shaft and new O-rings.

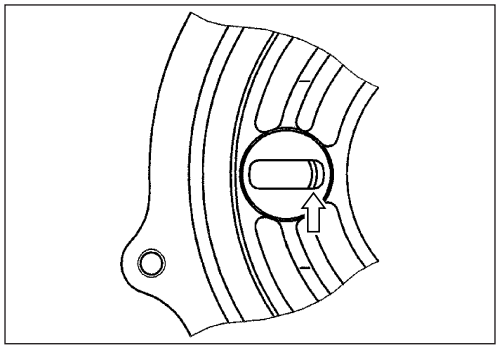
For USA
99000-25030: SUZUKI SUPER GREASE "A"

For the others
99000-25010: SUZUKI SUPER GREASE "A"

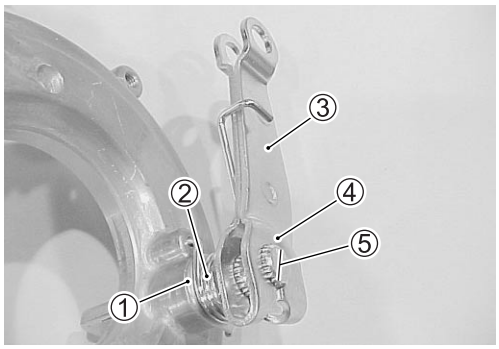
- Install the new O-rings into the brake camshaft hole.



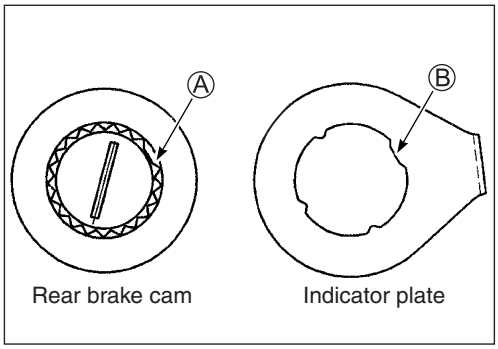
NOTE:
Face the groove on the cam shaft to the inside.



- Install the rear brake indicator plate ①, spring ②, and rear brake cam lever ③.
- When installing the brake cam lever on the camshaft, align the punch mark ④ of the cam lever with the slit ⑤ of the camshaft.

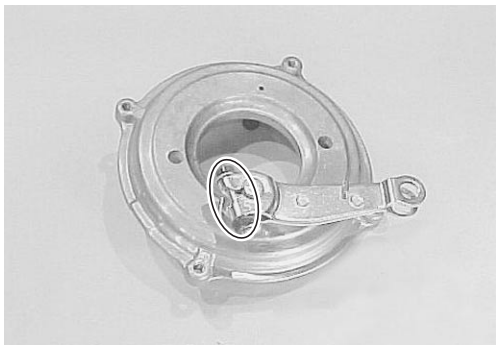


NOTE:
A line the groove Ⓐ on the cam shaft with the tongue Ⓑ of the indicator plate.



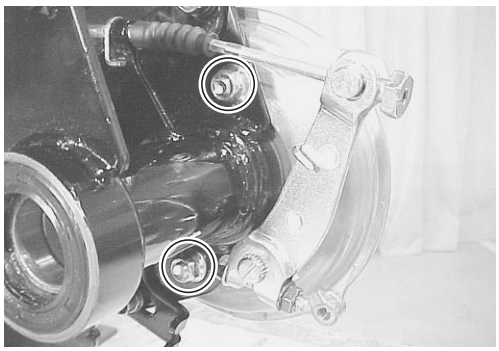
- Tighten the rear brake cam lever nut to the specified torque.

Rear brake cam lever nut: 7.5 N·m (0.75 kgf·m, 5.5 lb-ft)



- Install the rear brake panele.
- Tighten the rear brake panel nut to the specified torque.

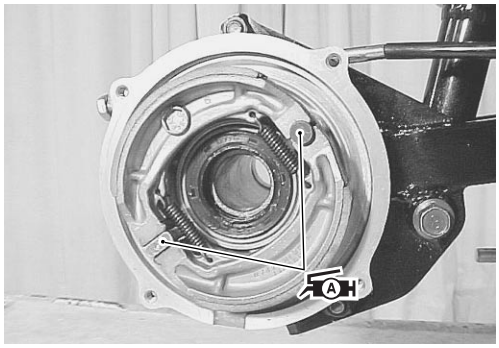
Rear brake panel nut: 28 N·m (2.8 kgf·m, 20.5 lb-ft)



- Apply SUZUKI SUPER GREASE “A” to the brake cam and pin.
- Install the brake shoes.

For USA
99000-25030: SUZUKI SUPER GREASE “A”

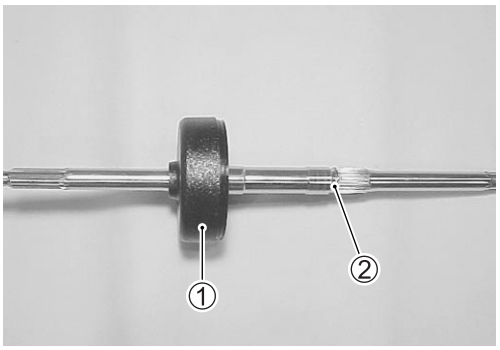
For the others
99000-25010: SUZUKI SUPER GREASE “A”



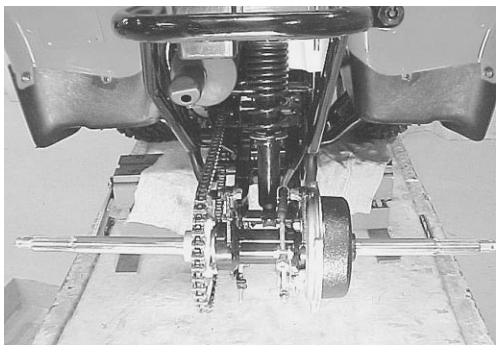
⚠ WARNING

Be careful not to apply too much grease to the cam and pin. If grease gets on the lining, brake slippage will result.

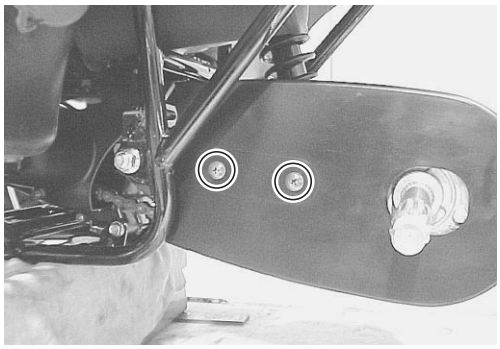
• Install the brake drum ①, and circrip ②.



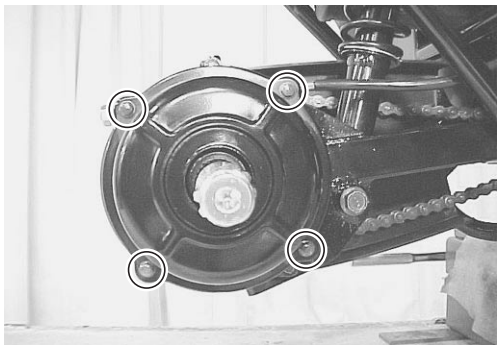
• Install the rear sprocket and rear axle.



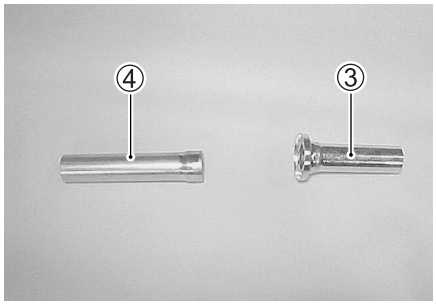
• Install the chain cover.

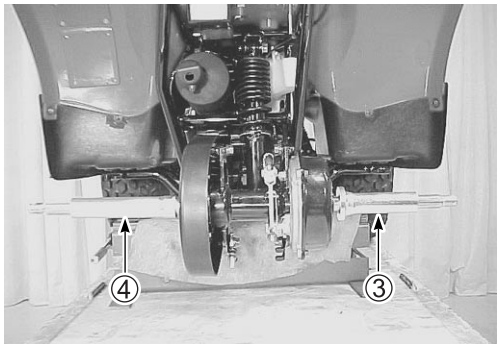


• Install the rear brake drum cover.



• Install the spacer right ③ and left ④.





- Tighten the rear hub nut to the specified torque.

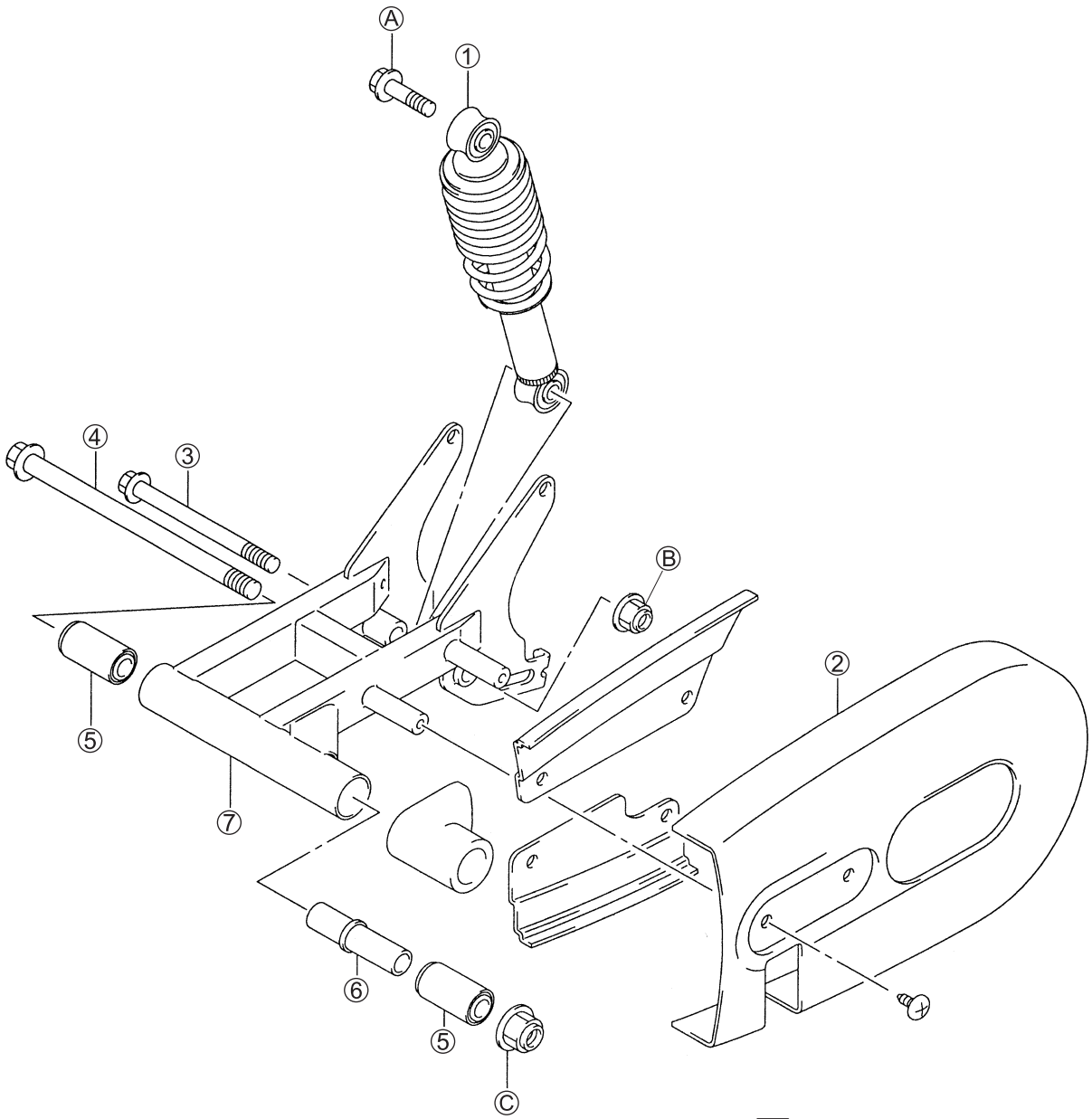
Rear hub nut: 75 N·m (7.5 kgf·m, 55 lb-ft)

- Install the new cotter pin.

- After installing the rear brake and drive chain, adjust the following items.
  * Rear brake lever play ..... ☞2-10
  * Drive chain slack ..... ☞2-8

REAR SUSPENSION

① Rear shock absorber
② Chain case
③ Rear shock absorber lower bolt
④ Swingarm pivot bolt
⑤ Bushing
⑥ Spacer
⑦ Swingarm
Ⓐ Rear shock absorber upper bolt
Ⓑ Rear shock absorber lower nut
Ⓒ Swingarm pivot nut

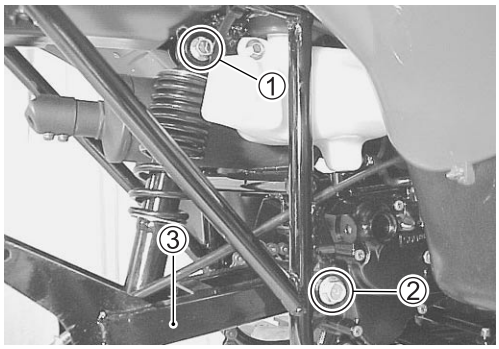


ITEM	N·m	kgf·m	lb-ft
Ⓐ	29	2.9	21
Ⓑ	29	2.9	21
Ⓒ	102	10.2	74

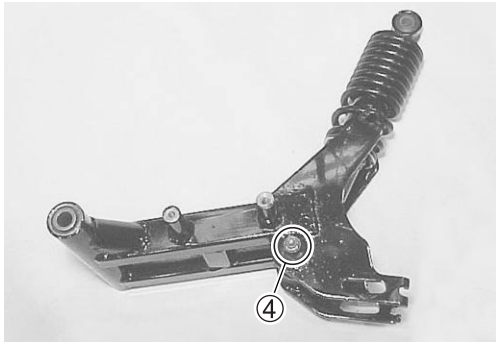
REMOVAL AND DISASSEMBLY

• Remove the rear brake and rear axle housing. (☞5-23)

• Remove the rear shock absorber upper bolt ①.
• Remove the swingarm pivot nut ②.
• Remove the swingarm ③.



• Remove the rear shock absorber lower bolt ④.



INSPECTION

REAR SHOCK ABSORBER

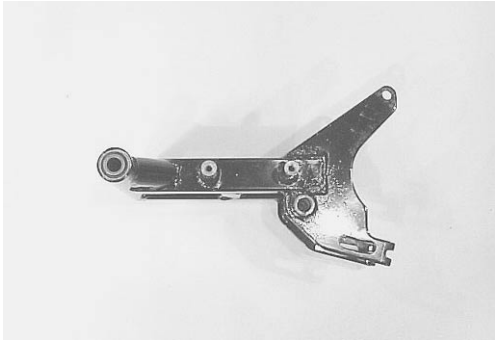
• Inspect the rear shock absorber for oil leakage or other damage. If any oil leakage or damage are found, replace the rear shock absorber with a new one.

CAUTION

Do not attempt to disassemble the rear shock absorber. It is unserviceable.

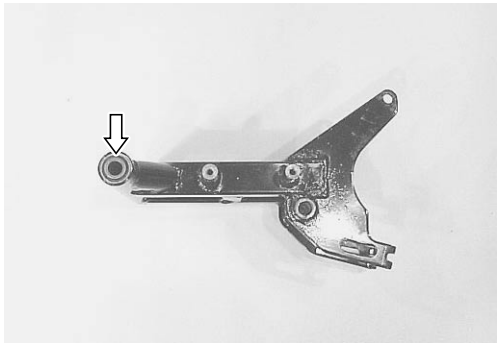
SWINGARM

• Inspect the swingarm for distortion or damage. If any damages are found, replace the swing arm with a new one.



BUSHING

- Inspect the bushing for wear or damage. If any dameges found, replace the bushing with a new one.

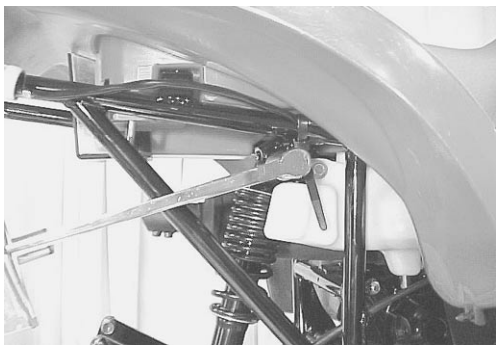


REASSEMBLY AND REMOUNTING

- Reasembl and remount the rear suspension in the reverse order of removal and disassembly. Pay attention to the following points:

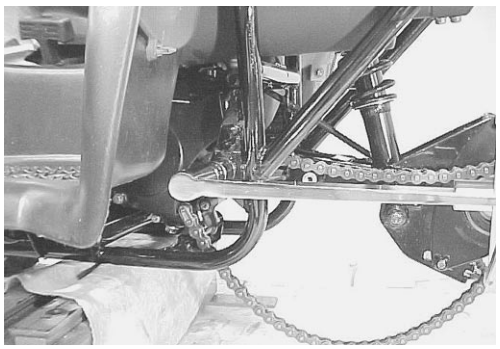
- Tighten the rear shock absorber upper bolt to the specified torque.

Rear shock absorber upper bolt: 29 N·m (2.9 kgf·m, 21 lb-ft)



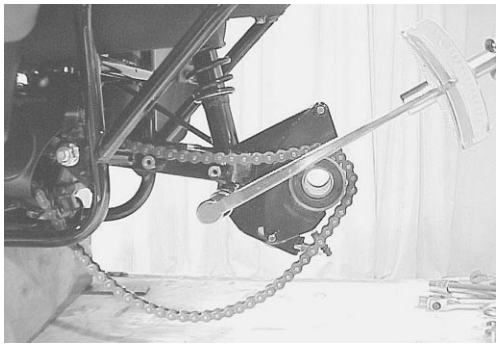
- Tighten the swingarm pivot nut to the specified torque.

Swing arm pivot nut: 102 N·m (10.2 kgf·m, 74 lb-ft)



- Tighten the rear shock absorber lower nut to the specified torque.

Rear shock absorber lower nut: 29 N·m (2.9 kgf·m, 21 lb-ft)



• Install the rear axle housing and rear brake. (☞5-27)

• After installing the rear suspension adjust the following items.
  * Rear brake lever play ..... ☞2-10
  * Drive chain slack ..... ☞2-8

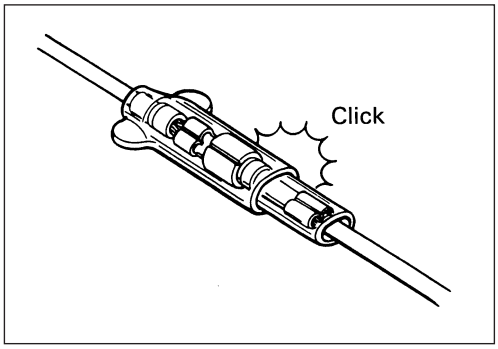
ELECTRICAL SYSTEM

CONTENTS

CAUTIONS IN SERVICING

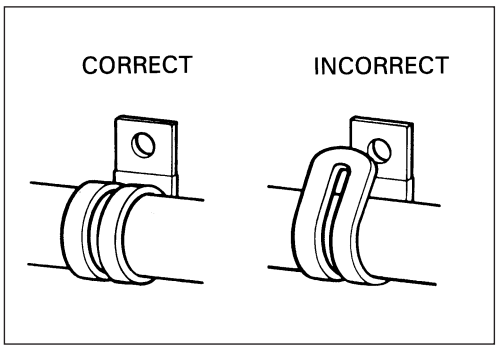
CONNECTORS

- When disconnecting a connector, be sure to hold the terminals; do not pull the lead wires.
- When connecting a connector, push it in so it is firmly attached.
- Inspect the connector for corrosion, contamination and any breakage in the cover.



CLAMPS

- Refer to “WIRE ROUTING” (☞7-8) for proper clamping procedures.
- Bend the clamp properly, as shown in the illustration.
- When clamping the wire harness, do not allow it to hang down.
- Do not use wire or any other substitute for the band-type clamp.



WIRING PROCEDURE

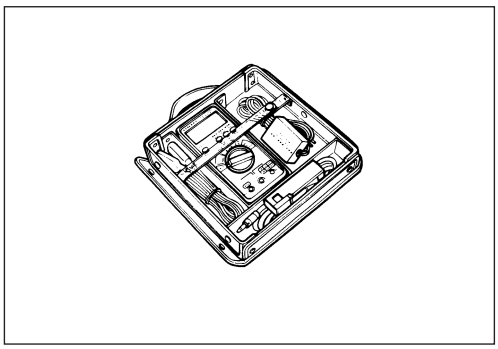
- Properly route the wire harness according to “WIRE ROUTING”. (☞7-8)

USING THE MULTI CIRCUIT TESTER

- Properly use the multi circuit tester (⊕) and (⊖) probes. Improper use can cause damage to the vehicle and tester.
- If the voltage and current values are not known, begin measuring in the highest range.
- When measuring the resistance, make sure that no voltage is applied. If voltage is applied, the tester will be damaged.
- After using the tester, turn the switch to the OFF position.

CAUTION

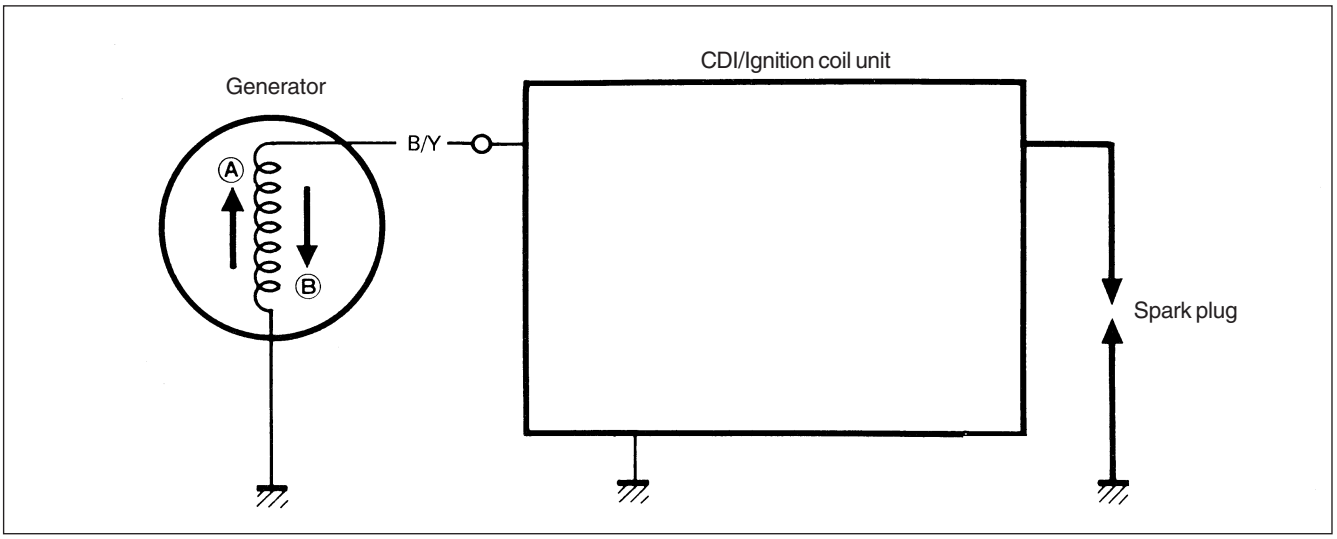
Before using the multi circuit tester, read its instruction manual.



IGNITION SYSTEM

DESCRIPTION

The ignition system is shown in the diagram below: namely the generator, CDI/Ignition coil unit and spark plug.



TROUBLESHOOTING

No spark or poor spark

Check the ignition system connectors for poor connections.
- Looseness → • Poor connection of connectors

Correct

Measure the ignition coil primary peak voltage. (☞6-4)
NOTE: The ignition coil peak voltage inspection method is applicable only with the multi circuit tester and peak volt adaptor.
- Correct → Inspect the spark plug. (☞2-6)
  - Correct → • Improper spark plug connection
  - Incorrect → • Faulty spark plug

Incorrect

Inspect the CDI/ignition coil. (☞6-5)
- Incorrect → • Faulty CDI/Ignition coil unit

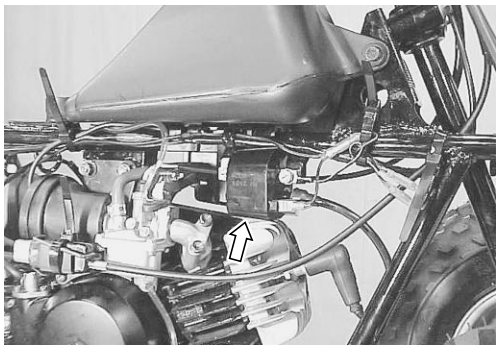
Correct

Measure the generator coil resistance. (☞6-5)
NOTE: The generator coil peak voltage inspection is applicable only with the multi circuit tester and the peak volt adaptor.
- Incorrect → • Faulty generator

Correct

→ • Faulty spark plug

INSPECTION



IGNITION COIL PRIMARY PEAK VOLTAGE

- Remove the seat. (☞5-2)
- Remove the frame cover. (☞5-2)
- Remove the spark plug cap.
- Connect a new spark plug to the spark plug cap on the cylinder head.

NOTE:
Make sure that the spark plug cap and spark plug are connected.

Measure ignition coil primary peak voltage using the multi circuit tester in the following procedure.

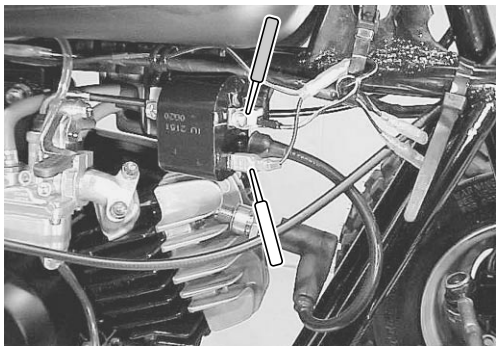
- Connect the multi circuit tester with the peak voltage adapter as follows.
  - ⊕ **Probe: Black with Yellow tracer**
  - ⊖ **Probe: Ground**

NOTE:
Do not disconnect the ignition coil primary wire.

TOOL 09900-25008: Multi circuit tester set

CAUTION

Before using the multi circuit tester and peak volt adapter, be sure to refer to the appropriate instruction manual.



- Pull the recoil starter and allow the engine to crank for few times, and then measure the ignition coil primary peak voltage.
- Repeat the above procedure a few times and measure the highest ignition coil primary peak voltage.

Tester knob indication: Voltage (⎓)

DATA Ignition coil primary peak voltage: More than 100 V

⚠ WARNING

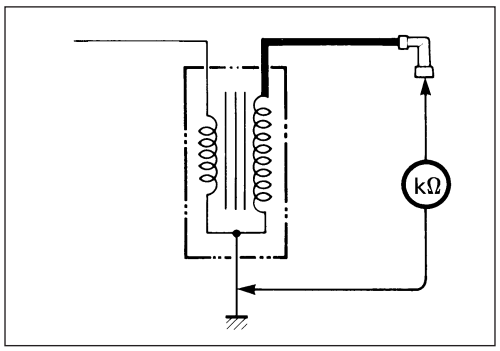
While testing, do not touch the tester probes and spark plug to prevent receiving an electric shock.

If the voltage is lower than the specified values, inspect the ignition coil. (☞6-5)

IGNITION COIL RESISTANCE

Measure the ignition coil resistance in the secondary winding. If the winding is in sound condition, the resistance should be close to the specified value.

DATA Ignition coil resistance
Secondary: 13 – 20 kΩ (Spark plug cap – Ground)

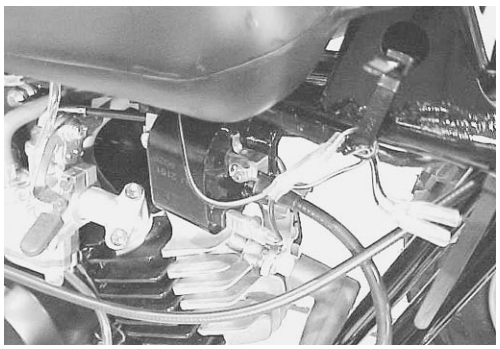


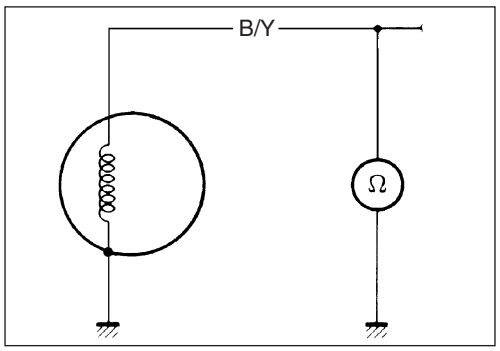
GENERATOR COIL RESISTANCE

- Remove the seat. (☞5-2)
- Remove the frame cover. (☞5-2)
- Disconnect the generator lead wire.

Measure the resistance between the Black/Yellow lead wire and ground. If the resistance is not within the specified value, replace the generator with a new one.

DATA Generator coil resistance:
: 100 – 160 Ω (Black/Yellow – Black/White)



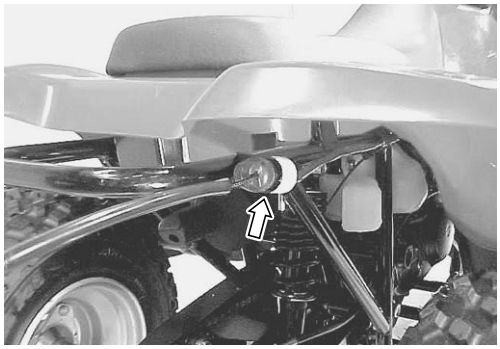


SWITCH

Measure the engine stop switch and emergency switch for continuity using a tester. If any abnormality is found, replace the switch assembly with a new one.

ENGINE STOP SWITCH

Color / Position	B/R	B/W
RUN		
OFF	○	○



EMERGENCY SWITCH

Color / Position	Y	B/W
PULL	○	○
FREE		

WIRE COLOR
B/R: Black with Red tracer
B/W: Black with White tracer

SERVICING INFORMATION

CONTENTS

TROUBLESHOOTING

ENGINE

Complaint	Symptom and possible causes	Remedy
Engine will not start, or is hard to start.	**Compression too low**	
	1. Worn cylinder.	Rebore or replace.
	2. Worn piston ring.	Replace.
	3. Stiff piston ring.	Repair or replace.
	4. Gas leaks from the joint in crankcase, cylinder or cylinder head.	Repair or replace.
	5. Loose spark plug.	Tighten.
	6. Broken, cracked or damaged piston.	Replace.
	Spark plug not sparking	
	1. Damaged spark plug.	Replace.
	2. Damaged spark plug cap.	Replace.
	3. Fouled spark plug.	Clean or replace.
	4. Wet spark plug.	Clean and dry or replace.
	5. Defective CDI/ignition coil unit.	Replace.
	6. Open or short in high-tension cord.	Replace.
	7. Defective generator coil.	Replace.
	No fuel reaching the carburetor	
	1. Clogged fuel tank vent hose.	Clean or replace.
	2. Clogged or defective fuel valve.	Clean or replace.
	3. Defective carburetor needle valve.	Replace.
	4. Clogged fuel hose.	Clean or replace.
	5. Clogged fuel filter.	Clean or replace.
Engine stalls easily.	1. Fouled spark plug.	Clean or replace.
	2. Defective CDI/Ignition coil unit.	Replace.
	3. Clogged fuel hose.	Clean.
	4. Clogged carburetor jets.	Clean.
	5. Clogged exhaust pipe.	Clean.
	6. Damaged cylinder head gasket.	Replace.
Engine is noisy.	**Noise seems to come from the piston**	
	1. Worn down piston.	Replace.
	2. Worn cylinder.	Replace.
	3. Carbon built-up in the combustion chamber.	Clean.
	4. Worn piston pin, bearing or piston pin bore.	Replace.
	5. Worn piston rings or ring grooves.	Replace.
	Noise seems to come from the clutch	
	1. Weak clutch shoe spring.	Replace.
	Noise seems to come from the crankshaft	
	1. Worn or burnt crank pin bearing.	Repalce.
	2. Worn or burnt crankshaft bearing.	Replace.
Clutch slips.	1. Worn or damaged clutch shoe.	Replace.
	2. Worn clutch drum.	Replace.

Complaint	Symptom and possible causes	Remedy
Engine idles poorly.	1. Worn cylinder.	Replace.
	2. Worn piston rings.	Replace.
	3. Stiff piston ring.	Replace.
	4. Gas leaks from crankshaft oil seal.	Replace.
	5. Excessive spark plug gap.	Adjust or replace.
	6. Defective CDI/ignition coil unit.	Replace.
	7. Difective generator coil.	Replace.
	8. Incorrect float chamber fuel level.	Adjust float height.
	9. Clogged carburetor jet.	Clean.
Engine runs poorly in high-speed range.	1. Worn cylinder.	Replace.
	2. Worn piston rings.	Replace.
	3. Stiff piston ring.	Replace.
	4. Insufficient spark plug gap.	Regap or replace.
	5. Ignition not advanced sufficiently due to poorly working CDI/ignition coil unit.	Replace.
	6. Defective generator coil.	Replace.
	7. Low float chamber fuel level.	Adjust float height
	8. Dirty air cleaner element.	Clean.
	9. Clogged fuel hose, resulting in inadequate fuel supply to the carburetor.	Clean and prime.
	10. Clogged fuel valve.	Clean.
Exhaust smoke is dirty or thick.	1. Incorrect engine oil.	Change.
Engine lacks power.	1. Worn cylinder.	Replace.
	2. Worn piston rings.	Replace.
	3. Stiff piston rings.	Replace.
	4. Gas leaks from crankshaft oil seal.	Replace.
	5. Insufficient spark plug gap.	Regap or replace.
	6. Clogged carburetor jet.	Clean.
	7. Incorrect float chamber fuel level.	Adjust float height.
	8. Clogged air cleaner element.	Clean.
	9. Fouled spark plug.	Clean or replace.
	10. Air leakage from intake pipe.	Tighten or replace.
Engine overheats.	1. Carbon build-up on piston crown.	Clean.
	2. Defective oil pump or clogged oil circuit.	Clean or replace.
	3. Low float chamber fuel level.	Adjust float height.
	4. Air leakage from intake pipe.	Tighten or replace.
	5. Incorrect engine oil.	Change.
	6. Incorrect spark plug.	Change.
	7. Clogged exhaust pipe/muffler.	Clean or replace.

CARBURETOR

Complaint	Symptom and possible causes	Remedy
Starting difficulty.	1. Clogged fuel pipe. 2. Air leaking from joint between starter body and carburetor. 3. Air leaking from carburetor joint. 4. Improperly working starter plunger.	Clean. Tighten, adjust or replace gasket. Tighten or replace defective parts. Adjust.
Idling or low-speed trouble.	1. Clogged or loose pilot jet. 2. Air leaking from carburetor joint. 3. Clogged pilot outlet port. 4. Clogged bypass port. 5. Starter plunger not fully closed.	Clean or tighten. Tighten or replace defective part. Clean. Clean. Adjust.
Medium- or high-speed trouble.	1. Clogged main jet. 2. Clogged needle jet. 3. Improperly working throttle valve. 4. Clogged fuel filter.	Clean. Clean. Adjust. Clean or replace.
Overflow and fuel level fluctuations.	1. Worn or damaged needle valve. 2. Improperly working float. 3. Foreign matter on the needle valve. 4. Incorrect float chamber fuel level.	Replace. Adjust or replace. Clean or replace with needle valve seat. Adjust float height.

CHASSIS

Complaint	Symptom and possible causes	Remedy
Handling is too heavy or stiff.	1. Improper front wheel alignment. 2. Insufficiently lubricated. 3. Low air pressure in front tires. 4. Tie rod ends tending to seize. 5. Linkage connections tending to seize.	Adjust. Lubricate. Adjust. Replace. Repair or replace.
Steering wobbles.	1. Unequally inflated tires. 2. Loose front wheel hub nuts. 3. Damaged or worn front wheel hub bearings. 4. Worn or loose tie rod ends. 5. Defective or incorrect front tires. 6. Damaged or worn suspension arms and related bushings. 7. Loose chassis nuts and bolts.	Regulate. Tighten. Replace. Replace or tighten. Replace. Replace. Tighten.
Steering pulls to one side.	1. Unequally inflated tires. 2. Improper front wheel alignment. 3. Worn front wheel hub bearings. 4. Distored frame. 5. Defective shock absorber.	Regulate. Adjust. Replace. Repair or replace. Replace.
Shocks felt in the steering.	1. High tire pressure. 2. Worn steering linkage connections. 3. Loose suspension system bolts.	Regulate. Replace. Tighten.
Tires rapidly or unevenly wear.	1. Worn or loose front wheel hub bearings. 2. Improper front wheel alignment.	Replace. Adjust.
Steering too noisy.	1. Loose nuts and bolts. 2. Damaged or worn front wheel hub bearings. 3. Insufficiently lubricated.	Tighten. Replace. Lubricate.
Suspension too soft.	1. Weak spring. 2. Shock absorber leaks oil.	Replace. Replace.

Complaint	Symptom and possible causes	Remedy
Suspension too stiff.	1. Worn suspension arms and related bushings.	Replace.
Suspension too noisy.	1. Loose suspension system bolts. 2. Worn suspension arms and related bushings.	Tighten. Replace.
Rear wheels wobble.	1. Distorted rear wheel rims. 2. Damage or worn rear wheel hub bearings. 3. Defective or incorrect rear tires. 4. Loose rear wheel hub nuts. 5. Improper rear brake sdjustment. 6. Damaged or worn rear swingarm and related bushings. 7. Rear shock absorber leaks oil. 8. Loose rear suspension arm unit.	Replace. Replace. Replace. Tighten. Adjust. Replace. Replace. Tighten.

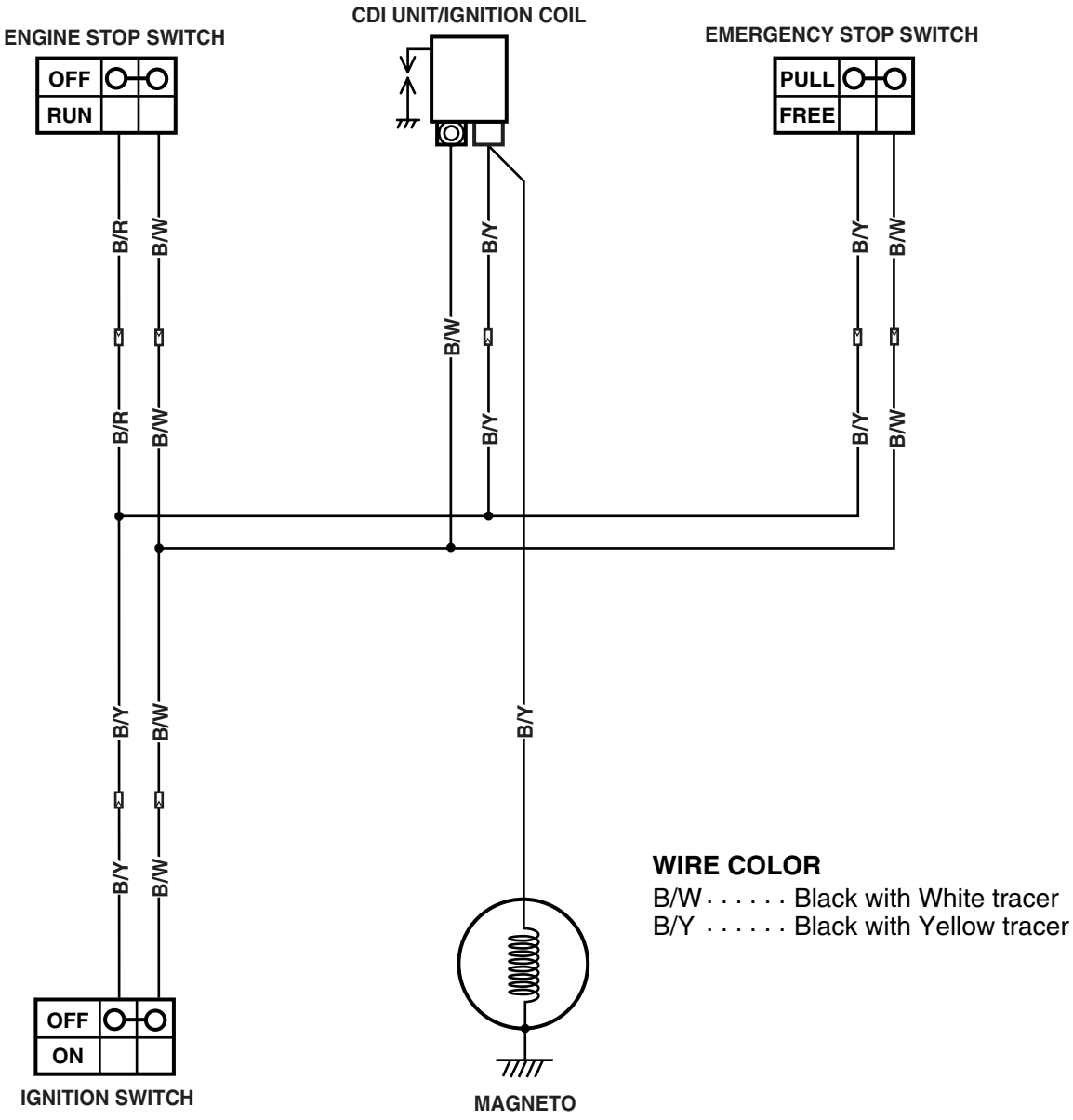
BRAKES

Complaint	Symptom and possible causes	Remedy
Poor braking.	1. Worn shoe linings. 2. Too much play on brake pedal.	Replace. Adjust.
Insufficient brake power.	1. Worn lining. 2. Worn brake drum.	Replace. Replace.
Brake squeaks.	1. Carbon adhesion on lining surface. 2. Loose front wheel axle or rear wheel axle. 3. Worn linings. 4. Wrongly fixed spring.	Repair surface with emery paper. Tighten to specified torqoe. Replace. Set correctly.
Excessive brake lever stroke.	1. Worn brake lever cam.	Replace brake cam.

ELECTRICAL

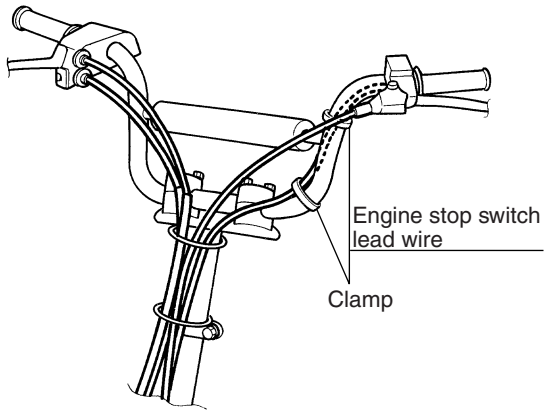
Complaint	Symptom and possible causes	Remedy
No sparking or poor sparking.	1. Defective CDI/Ignition coil unit. 2. Defective spark plug. 3. Defective generator coil. 4. Loose connection of lead wire.	Replace. Replace. Replace. Connect/tighten.
Spark plug is wet or quickly becomes fouled with carbon.	1. Excessively rich air/fuel mixture. 2. Excessively high idling speed. 3. Incorrect gasoline. 4. Clogged air cleaner element. 5. Incorrect spark plug.	Adjust carburetor. Adjust carburetor. Change. Clean or replace. Replace.
Spark plug quickly becomes fouled with oil or carbon.	1. Worn piston ring. 2. Worn piston. 3. Worn cylinder.	Replace. Replace. Rebore or replace.
Spark plug electrodes overheat or burn.	1. Incorrect spark plug. 2. Overheated engine. 3. Loose spark plug. 4. Excessively lean air/fuel mixture.	Replace. Tune-up. Tighten. Adjust carburetor.

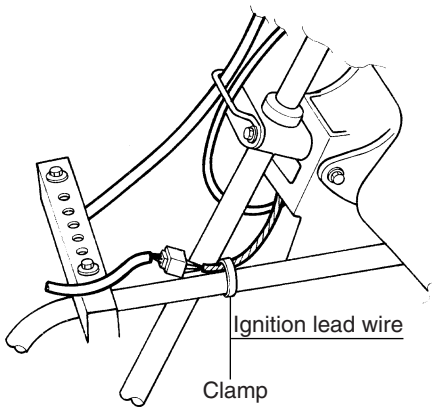
WIRING DIAGRAM

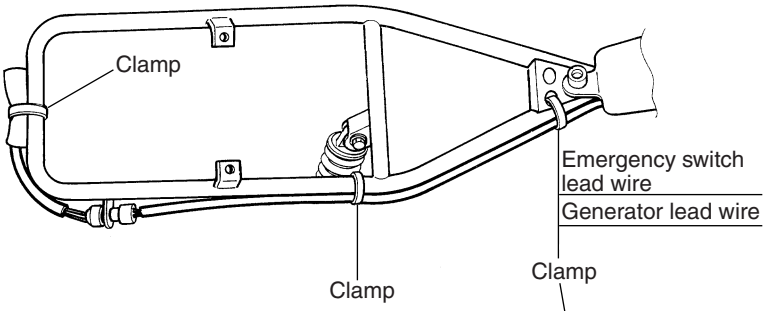


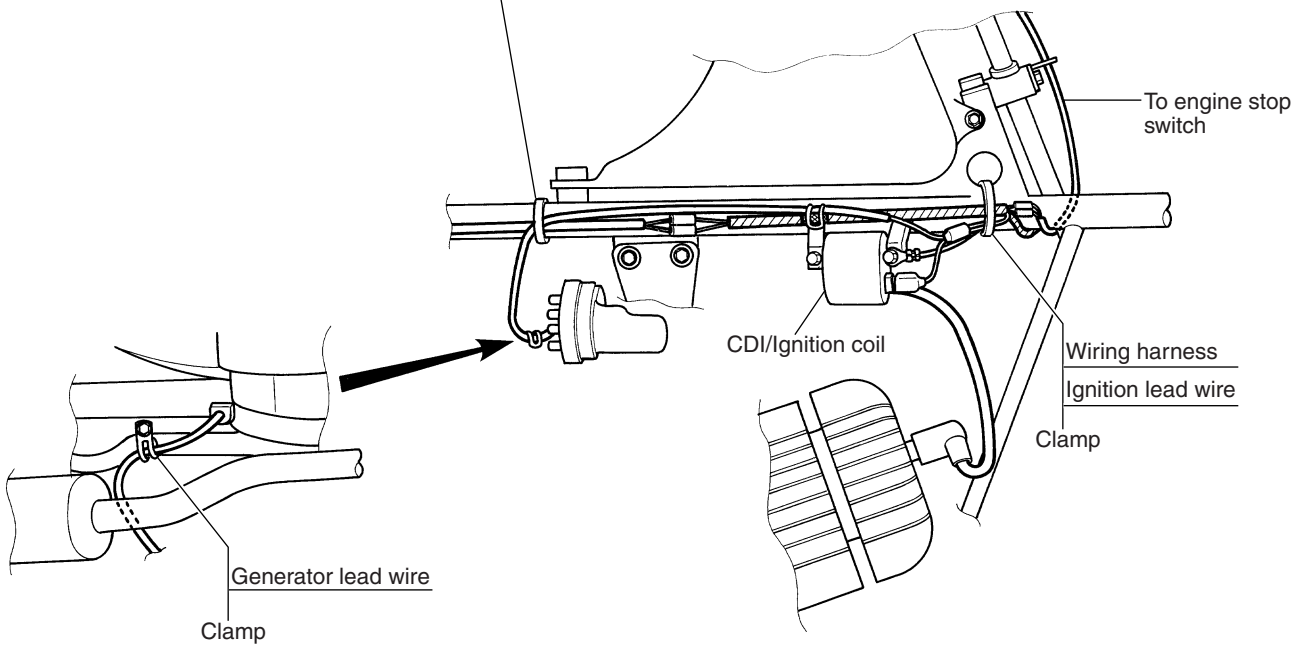
WIRE AND CABLE ROUTING

WIRE ROUTING

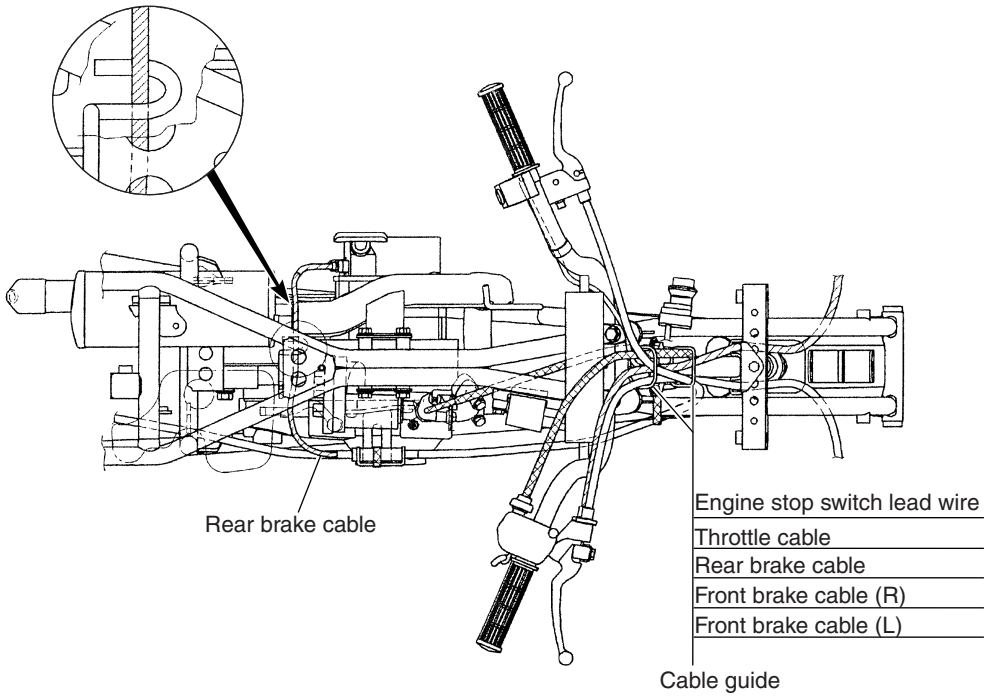


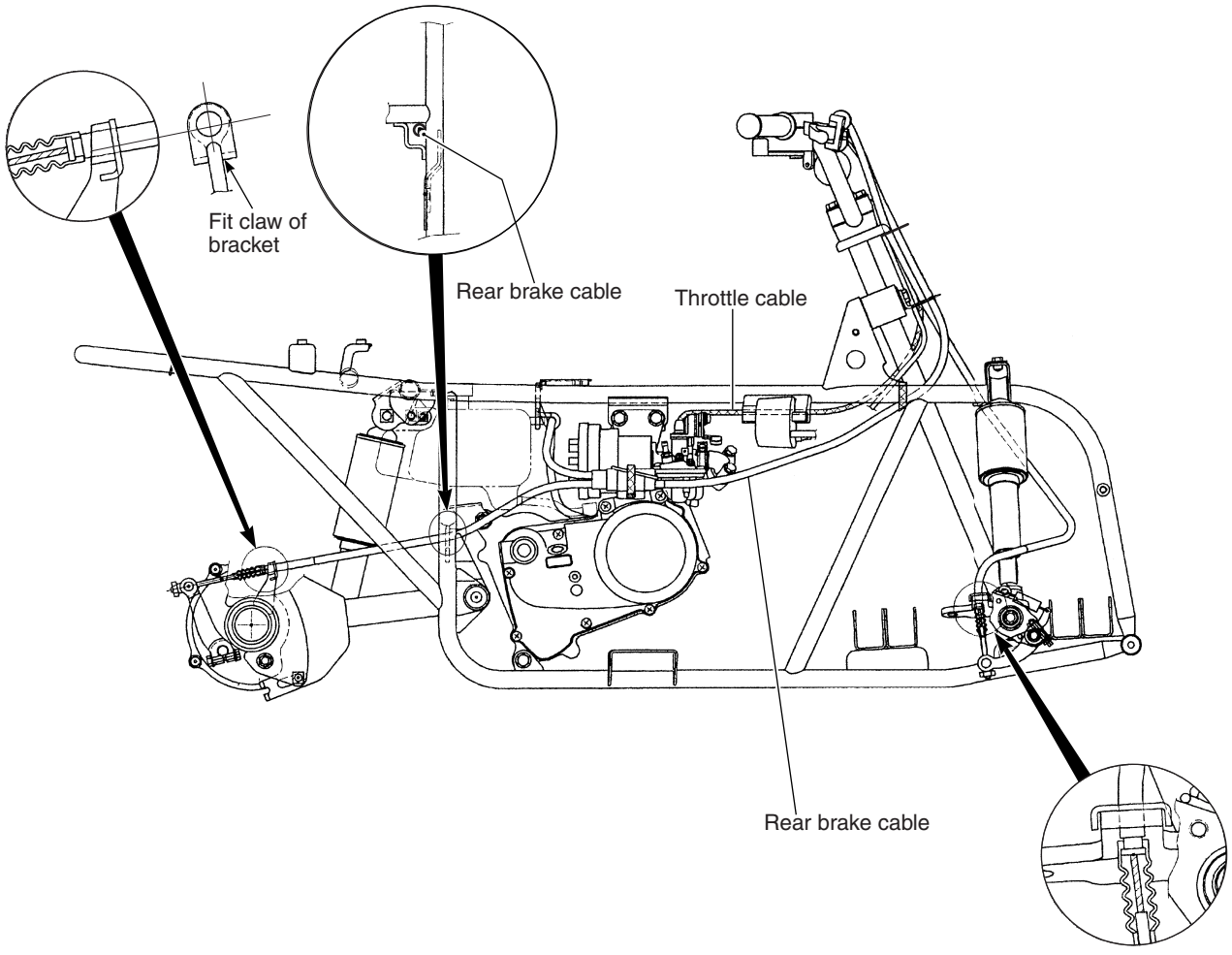


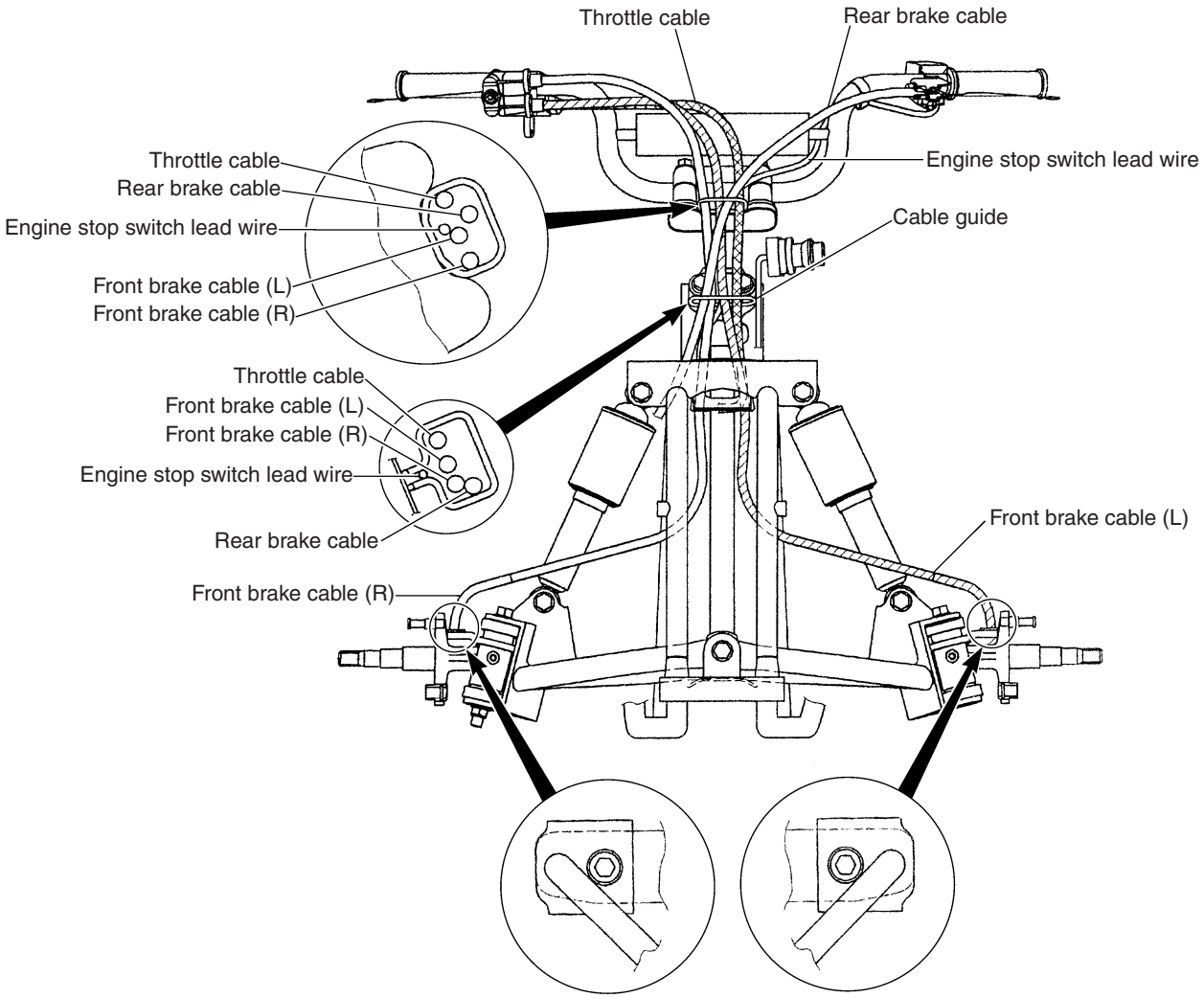




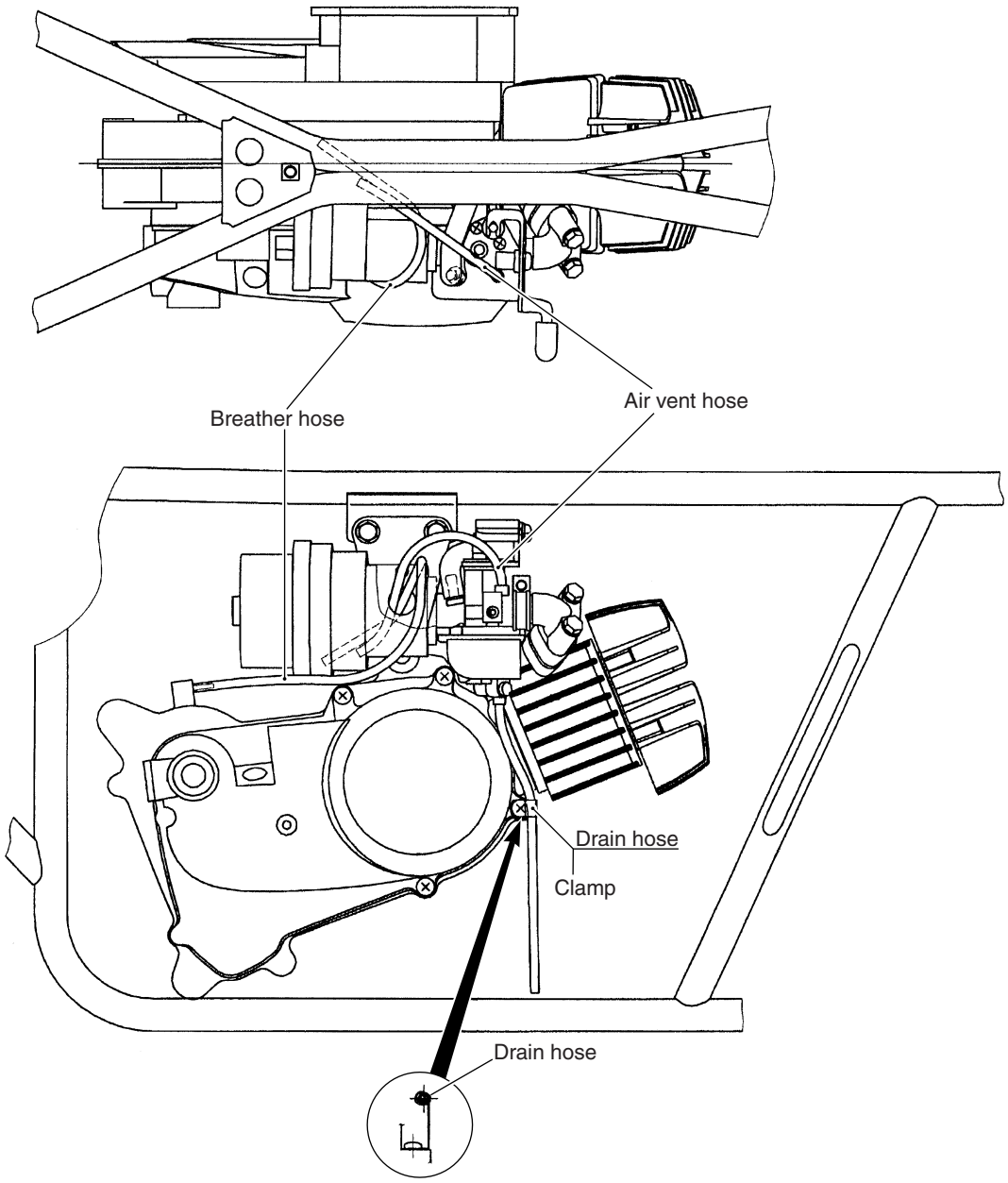
CABLE ROUTING



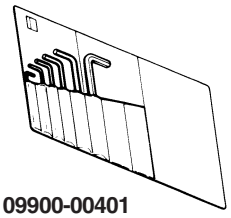
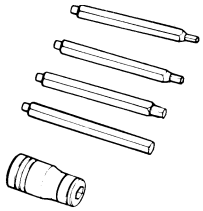
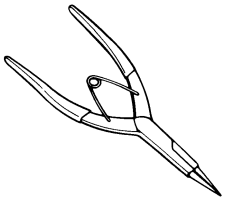
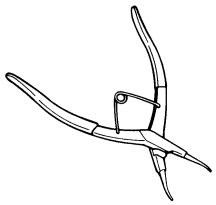
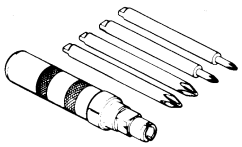
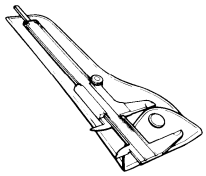
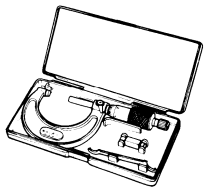
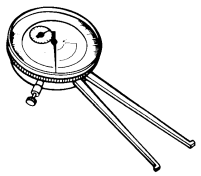
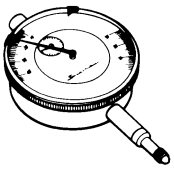
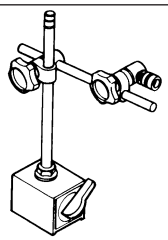
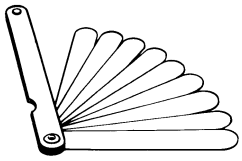
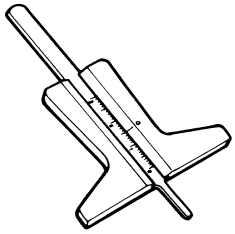
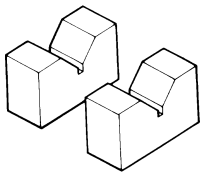
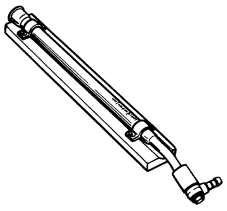
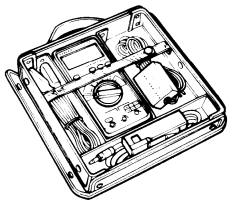
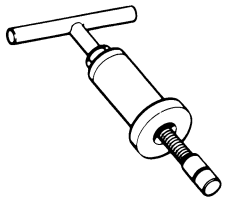
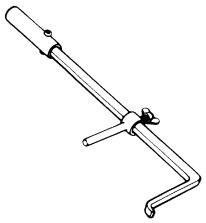
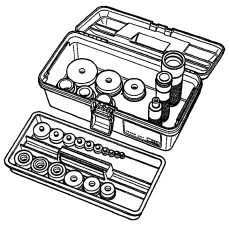
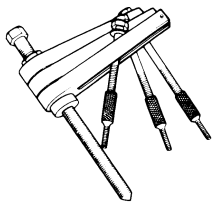
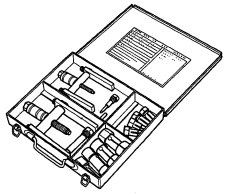
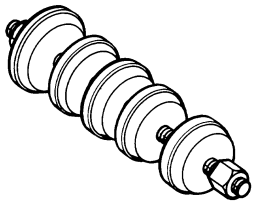
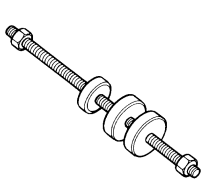
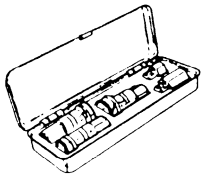
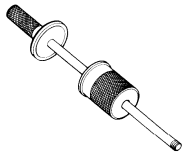
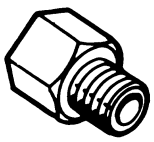
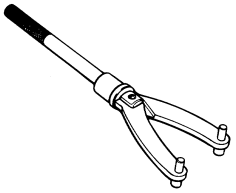


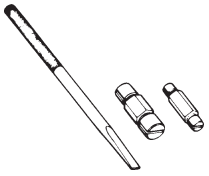

Throttle cable
Rear brake cable
Throttle cable
Rear brake cable
Engine stop switch lead wire
Front brake cable (L)
Front brake cable (R)
Engine stop switch lead wire
Cable guide
Throttle cable
Front brake cable (L)
Front brake cable (R)
Engine stop switch lead wire
Rear brake cable
Front brake cable (L)
Front brake cable (R)

BREATHER AND AIR VENT HOSE ROUTING



SPECIAL TOOLS

 09900-00401 "L" type hexagon wrench set	 09900-00410 Hexagon wrench set	 09900-06107 Snap ring pliers	 09900-06108 Snap ring pliers	 09900-09004 Impact driver set
 09900-20101 Vernier calipers (150 mm)	 09900-20202 Micrometer (25 – 50 mm)	 09900-20205 Micrometer (0 – 25 mm)	 09900-20508 Cylinder gauge set	 09900-20605 Dial calipers
 09900-20607 Dial gauge (1/100 mm, 10 mm)	 09900-20701 Magnetic stand	 09900-20803 Thickness gauge	 09900-20804 Thickness gauge	 09900-20805 Tire depth gauge
 09900-21303 V-block set (75 mm) 09900-21304 V-block set (100 mm)	 09900-21602 CCI oil gauge	 09900-25008 Multi circuit tester set	 09910-32812 Crankshaft installer	 09913-50121 Oil seal remover
 09913-70210 Bearing installer set	 09920-13120 Crankcase separator	 09921-20240 Bearing remover set	 09923-73210 Bearing remover	 09924-84510 Bearing installer set
 09924-84521 Bearing installer set	 09930-10121 Spark plug socket wrench set	 09930-30104 Sliding shaft	 09930-30161 Attachment "C"	 09930-40113 Rotor holder



09941-50111
Bearing remover

NOTE:
When ordering a special tool, please confirm whether it is available or not.

TIGHTENING TORQUE

ENGINE

ITEM	N·m	kgf·m	lb-ft
Exhaust pipe clamp nut	10	1.0	7.0
Engine mounting bolt (lower)	31	3.1	22.5
Engine mounting bolt	41	4.1	29.5
Cylinder head nut	9	0.9	6.5
Generator rotor nut	50	5.0	36.0
Clutch shoe nut	85	8.5	61.5

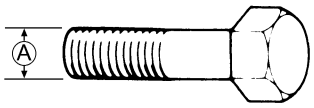
CHASSIS

ITEM	N·m	kgf·m	lb-ft
Handlebar clamp bolt	13	1.3	9.5
Wheel nut (Front and Rear)	28	2.8	20.5
Front hub nut	65	6.5	47.9
Front brake cam lever nut	3.3	0.33	2.43
Front shock absorber (lower and upper)	29	2.9	21.0
Front suspension arm bolt	50	5.0	36.0
Rear brake cam lever nut	7.7	0.7	5.3
Rear shock absorber (lower and upper)	29	2.9	21.0
Muffler mounting bolt	23	2.3	16.5
Footrest bolt	15	1.5	11.0
Rear hub nut	75	7.5	55.0
Oil pump union bolt	5.5	0.55	4.0
Steering shaft lower nut	29	2.9	21.0
Steering shaft holder bolt	23	2.3	16.5
Swing arm pivot nut	102	10.2	74.0
Tie-rod end nut	29	2.9	21.0
Tie-rod lock nut	29	2.9	21.0
Knuckle arm nut	50	5.0	36.0

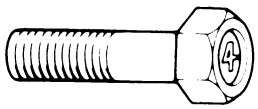
TIGHTENING TORQUE CHART

For other bolts and nuts listed in the preceding page, refer to this chart:

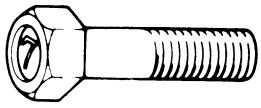
Bolt Diameter Ⓐ (mm)	Conventional or "4" marked bolt			"7" marked bolt		
	N·m	kgf·m	lb-ft	N·m	kgf·m	lb-ft
4	1.5	0.15	1.0	2.3	0.23	1.5
5	3	0.3	2.0	4.5	0.45	3.0
6	5.5	0.55	4.0	10	1.0	7.0
8	13	1.3	9.5	23	2.3	16.5
10	29	2.9	21.0	50	5.0	36.0
12	45	4.5	32.5	85	8.5	61.5
14	65	6.5	47.0	135	13.5	97.5
16	105	10.5	76.0	210	21.0	152.0
18	160	16.0	115.5	240	24.0	173.5



Conventional bolt



"4" marked bolt



"7" marked bolt

SERVICE DATA

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.065 – 0.075 (0.0026 – 0.0030)			0.120 (0.0047)
Cylinder bore	41.000 – 41.015 (1.6142 – 1.6148) Measure at 20 mm (0.8 in) from the top surface.			41.065 (1.6167)
Piston diam.	40.930 – 40.945 (1.6114 – 1.6120) Measure at 20 mm (0.8 in) from the top surface.			40.880 (1.6094)
Cylinder distortion	———			0.05 (0.002)
Cylinder head distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 4.5 (0.18)	3.6 (0.14)
		T	Approx. 4.5 (0.18)	3.6 (0.14)
	2nd	R	Approx. 4.1 (0.16)	3.3 (0.13)
		T	Approx. 5.0 (0.20)	4.0 (0.16)
Piston ring end gap	0.10 – 0.25 (0.004 – 0.010)			0.80 (0.031)
Piston ring to groove clearance	1st		0.020 – 0.060 (0.0008 – 0.0024)	———
	2nd		0.020 – 0.060 (0.0008 – 0.0024)	———
Piston pin bore	12.002 – 12.010 (0.4725 – 0.4728)			12.030 (0.4736)
Piston pin O.D.	11.996 – 12.000 (0.4723 – 0.4724)			11.980 (0.4717)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	16.003 – 16.011 (0.6300 – 0.6304)	16.040 (0.6315)
Conrod deflection	———	3.0 (0.12)
Crank web to web width	32.0 ± 0.1 (1.260 ± 0.004)	———
Crankshaft runout	———	0.05 (0.002)

OIL PUMP

ITEM	SPECIFICATION
Oil pump reduction ratio	60.95 (53/20 × 23/1)
Oil pump discharge rate (Full open)	0.6 – 0.8 ml (0.020/0.021 – 0.027/0.030 US/Imp oz) for 5 minutes at 2 000 r/min.

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch wheel I.D.	87.00 – 87.15 (3.425 – 3.431)	87.50 (3.445)
Clutch shoe thickness	———	No groove at any part
Clutch engagement	2 200 – 2 600 r/min.	———
Clutch lock-up	2 500 – 2 900 r/min.	———

TRANSMISSION

Unit: mm (in) Except ratio

ITEM	STANDARD	LIMIT
Primary reduction ratio	2.650 (53/20)	———
Final reduction ratio	3.700 (37/10)	———
Gear ratios	2.416 (29/12)	———

DRIVE CHAIN

Unit: mm (in)

ITEM	STANDARD		LIMIT
Drive chain	Type	D.I.D.: 420	———
	Links	78	———
	20-pitch length	———	259.0 (10.20)
Drive chain slack	20 – 30 (0.8 – 1.2)		———

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		MIKUNI VM12SC
Bore size		12 mm
I.D. No.		43F0
Idle r/min.		1 800 ± 100 r/min.
Float height		24.5 – 25.0 mm (0.96 – 0.98 in)
Main jet	(M.J.)	#55
Jet needle	(J.N.)	3E3-4th
Needle jet	(N.J)	E-6
Pilot jet	(P.J.)	#15
Air screw	(A.S.)	$1^{1}/_{8}$ turns out
Throttle cable play		3 – 5 mm (0.12 – 0.20 in)

ELECTRICAL

ITEM	SPECIFICATION		NOTE
Spark plug	Type	NGK: BPR4H	
	Gap	0.50 – 0.60 (0.020 – 0.024)	
Spark performance	Over 8 (0.3) at 1 atm.		

ITEM	SPECIFICATION		NOTE
Ignition coil resistance	Secondary	13 – 20 kΩ	Plug cap – ⊖ Terminal
Generator coil resistance	Primary	100 – 160 Ω	B/Y – Ground
Ignition coil primary peak voltage	More than 100 V		⊕ : B/Y ⊖ : Ground

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Front brake lever play	3 – 7 (0.12 – 0.28)		———
Rear brake lever play	4 – 6 (0.16 – 0.24)		———
Brake drum I.D.	Front	———	80.7 (3.18)
	Rear	———	110.7 (4.36)
Wheel axle runout	Rear	———	3.0 (0.12)
Wheel rim size	Front & Rear	7 × 6.0 AT	———
Toe-in (with 30 kg load)	1.5 ± 3 (0.06 ± 0.12)		———
Turning radius	2.0 m (6.6 ft)		———
Camber	0°		———
Caster	3°		———
Trail	10 (0.39)		———
Steering angle	Inside	33° 40’	———
	Outside	24°	———
Tire size	Front	AT16 × 8.00-7 ☆	———
	Rear	AT16 × 8.00-7 ☆	———
Tire tread depth	Front	———	4.0 (0.16)
	Rear	———	4.0 (0.16)

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	kPa	kgf/cm²	psi
FRONT	20	0.20	2.9
REAR	20	0.20	2.9

VEHICLE LOAD CAPACITY : 38 kg (841 lbs)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT
Front suspension stroke	31 (1.22)	———
Front wheel travel	52 (2.0)	———
Rear suspension stroke	31 (1.22)	———
Rear wheel travel	51 (2.0)	———

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$) or 91 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10 % ethanol, or less than 5 % methanol with appropriate cosolvents and corrosion inhibitor is permissible.		P-03, 28
	Gasoline used should be graded 91 octane or higher. An unleaded gasoline is recommended.		For the others
Fuel tank	2.6 L (0.7/0.6 US/Imp gal)		
Engine oil type	Use SUZUKI CCI SUPER 2-CYCLE MOTOR LUBRICANT or an equivalent good quality synthetic based 2-stroke engine oil rated FC under the JASO classification.		P-03
	Use SUZUKI CCI SUPER OIL. If they are not available, use a good quality 2-stroke engine oil rated FC under the JASO classification.		For the others
Engine oil tank capacity	0.5 L (0.53/0.44 US/Imp qt)		
Transmission oil type	SAE 10W-40		
Transmission oil capacity	Change	500 ml (0.53/0.44 US/Imp qt)	
	Overhaul	550 ml (0.58/0.48 US/Imp qt)	

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