

**SUZUKI**

***DR-Z 125/L***

**SERVICE MANUAL**



## FOREWORD

This manual contains an introductory description on the SUZUKI DR-Z125/L 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 motorcycle and its maintenance. Use this section as well as other sections to use as a guide for proper inspection and service. This manual will help you know the motorcycle 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 motorcycle.

\* Illustrations in this manual are used to show the basic principles of operation and work procedures. They may not represent the actual motorcycle exactly in detail.

\* This manual is written for persons who have enough knowledge, skills and tools, including special tools, for servicing SUZUKI motorcycles. 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 motorcycle unsafe for the rider.

## GROUP INDEX

<b>GENERAL INFORMATION</b>	<b>1</b>
<b>PERIODIC MAINTENANCE</b>	<b>2</b>
<b>ENGINE</b>	<b>3</b>
<b>FUEL AND LUBRICATION SYSTEM</b>	<b>4</b>
<b>CHASSIS</b>	<b>5</b>
<b>ELECTRICAL SYSTEM</b>	<b>6</b>
<b>SERVICING INFORMATION</b>	<b>7</b>
<b>DR-Z125/LK4 ('04-MODEL) DR-Z125/LK5 ('05-MODEL)</b>	<b>8</b>
<b>DR-Z125/LK6 ('06-MODEL) DR-Z125/LK7 ('07-MODEL)</b>	<b>9</b>
<b>DR-Z125/LK8 ('08-MODEL)</b>	<b>10</b>

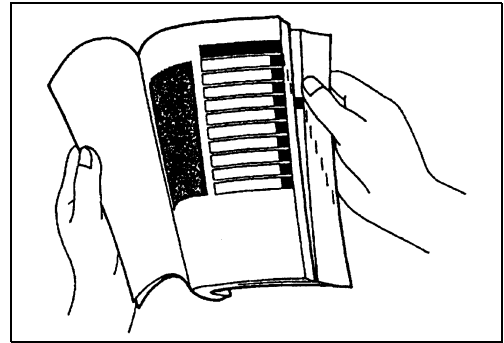
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# HOW TO USE THIS MANUAL

## 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.

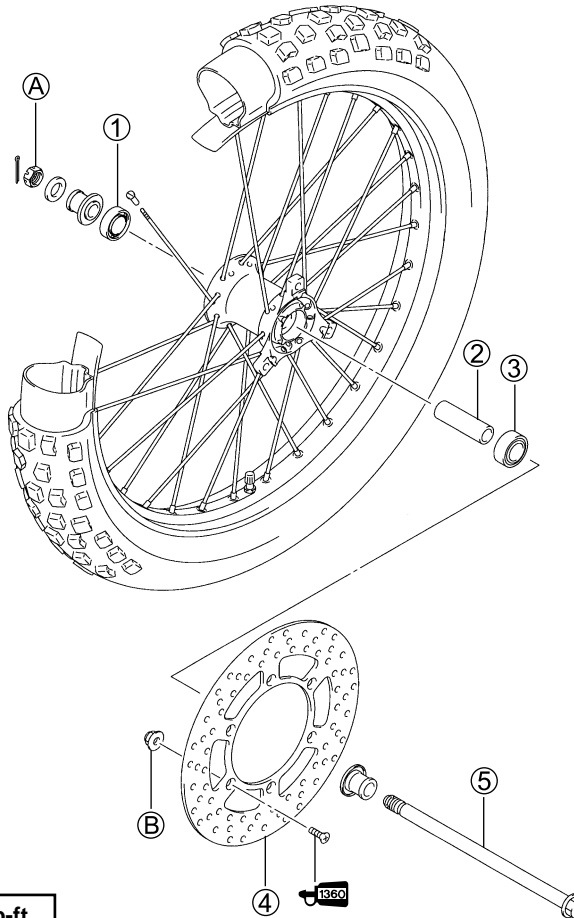


## COMPONENT PARTS AND WORK TO BE DONE

Under the name of each system or unit there is an exploded view which provides work instructions and other service information (e.g., tightening torque, lubricating points, and locking agent points).

Example: Front wheel (DR-Z125L)






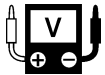



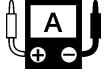

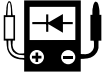







- ① Bearing
- ② Spacer
- ③ Bearing
- ④ Brake disc
- ⑤ Front axle
- Ⓐ Front axle nut
- Ⓑ Brake disc mounting nut



ITEM	N·m	kgf·m	lb·ft
Ⓐ	44	4.4	32.0
Ⓑ	8.5	0.85	6.0

## SYMBOL

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
	Indicates service data.		Apply or use brake fluid.
	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 resistance range.
	Apply SUZUKI SUPER GREASE "A". 99000-25030 (For USA) 99000-25010 (For the other counties)		Measure in current range.
	Apply SUZUKI SILICONE GREASE. 99000-25100		Measure in diode test range.
	Apply SUZUKI MOLY PASTE. 99000-25140		Measure in continuity test range.
	Apply SUZUKI BOND "1207B". 99104-31140 (For USA) 99000-31140 (For the other countries)		Use special tool.
	Apply SUZUKI BOND "1216B". 99000-31230		Use fork oil. 99000-99001-SS8
	Apply THREAD LOCK SUPER "1303". 99000-32030		

# GENERAL INFORMATION

## CONTENTS

<b>WARNING/CAUTION/NOTE .....</b>	<b>1- 2</b>
<b>GENERAL PRECAUTIONS .....</b>	<b>1- 2</b>
<b>SUZUKI DR-Z125/LK3 ('03-MODEL) .....</b>	<b>1- 4</b>
<b>SERIAL NUMBER LOCATION .....</b>	<b>1- 4</b>
<b>FUEL AND OIL RECOMMENDATION .....</b>	<b>1- 4</b>
<b>FUEL .....</b>	<b>1- 4</b>
<b>ENGINE OIL .....</b>	<b>1- 5</b>
<b>BRAKE FLUID .....</b>	<b>1- 5</b>
<b>FRONT FORK OIL .....</b>	<b>1- 5</b>
<b>BREAK-IN PROCEDURES .....</b>	<b>1- 5</b>
<b>INFORMATION LABELS .....</b>	<b>1- 6</b>
<b>SPECIFICATIONS .....</b>	<b>1- 7</b>
<b>DIMENSIONS AND DRY MASS .....</b>	<b>1- 7</b>
<b>ENGINE .....</b>	<b>1- 7</b>
<b>DRIVE TRAIN .....</b>	<b>1- 7</b>
<b>CHASSIS .....</b>	<b>1- 8</b>
<b>ELECTRICAL .....</b>	<b>1- 8</b>
<b>CAPACITIES .....</b>	<b>1- 8</b>
<b>COUNTRY AND AREA CODES .....</b>	<b>1- 9</b>

## 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 manufacturer's instructions.
- \* Never use gasoline as a cleaning solvent.
- \* To avoid getting burned, do not touch the engine, engine oil, radiator, and exhaust system until they have cooled.
- \* After servicing the fuel, oil, exhaust or brake 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 and orientation.
  - \* 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 lubricants, bonds, or sealant.
  - \* When removing the battery, disconnect the negative cable first and then the positive cable. When reconnecting the battery, connect the positive cable first and then the negative cable, and replace the terminal cover on the positive terminal.
  - \* When performing service to electrical parts, if the service procedures not require use of battery power, disconnect the negative cable the battery.
  - \* When tightening the cylinder head and case bolts and nuts, tighten the larger sizes first. Always tighten the bolts and nuts from the inside working out, in a crisscross manner.
  - \* 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 all other fluids: batteries and tires.
  - \* To protect the Earth's natural resources, properly dispose of used motorcycle and parts.

## SUZUKI DR-Z125/LK3 ('03-MODEL)



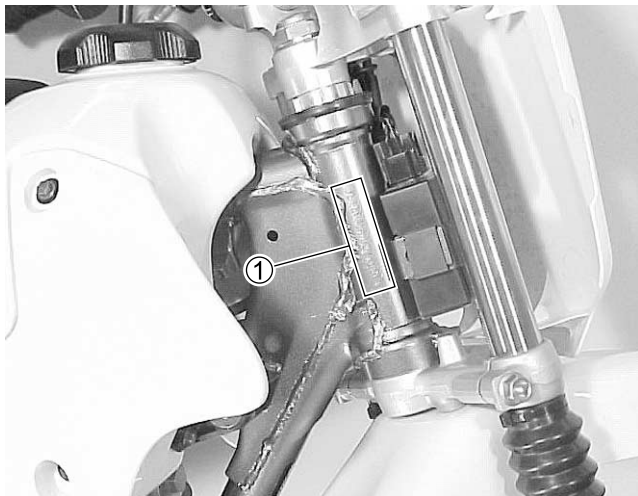
LEFT SIDE



RIGHT SIDE

### SERIAL NUMBER LOCATION

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



### FUEL AND OIL RECOMMENDATION

#### FUEL

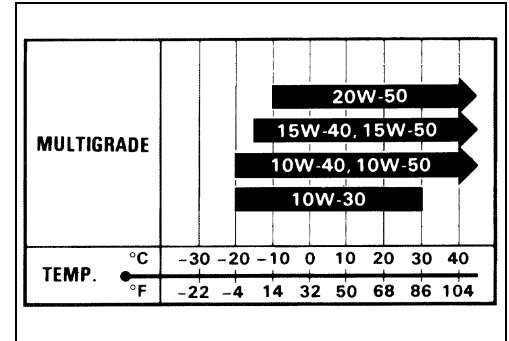
Gasoline used should be graded 95 octane (Research Method) or higher. An unleaded gasoline type is recommended.



## ENGINE OIL

Use a premium quality 4-stroke motor oil to ensure longer service life of your motorcycle. Use only oils which are rated SF or SG under the API service classification.

The recommended viscosity is SAE 10W-40. If an SAE 10W-40 motor oil is not available, select an alternative according to the right chart.



## BRAKE FLUID



Specification and Classification: DOT 4

### ⚠ WARNING

Since the brake system of this motorcycle is filled with a glycol-based brake fluid by the manufacturer, do not use or mix different types of fluid such as silicone-based and petroleum-based fluid for refilling the system, otherwise serious damage will result.

Do not use any brake fluid taken from old or used or unsealed containers.

Never re-use brake fluid left over from a previous servicing, which has been stored for a long period.

## FRONT FORK OIL

SUZUKI fork oil SS-08 or an equivalent fork oil.

## BREAK-IN PROCEDURES

During manufacture only the best possible materials are used and all machined parts are finished to a very high standard but 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. The general rules are as follows.

- Keep to this break-in throttle opening limits:

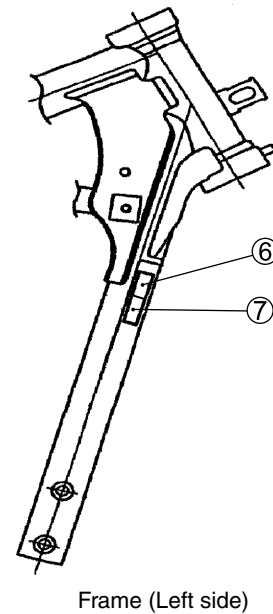
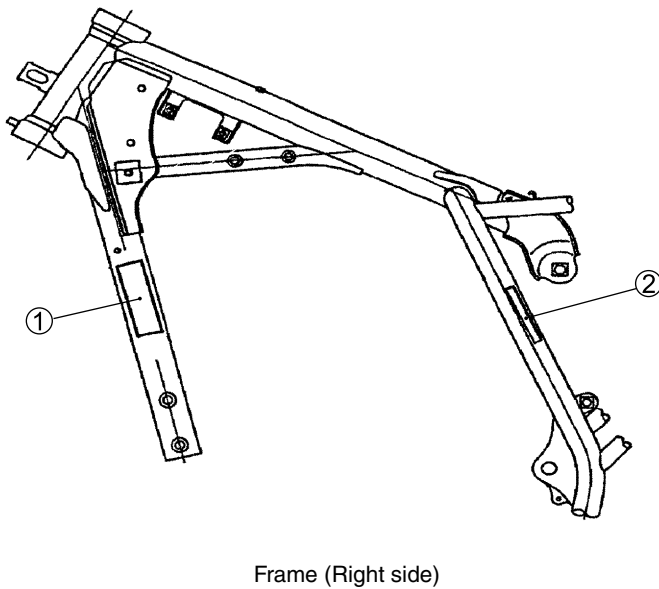
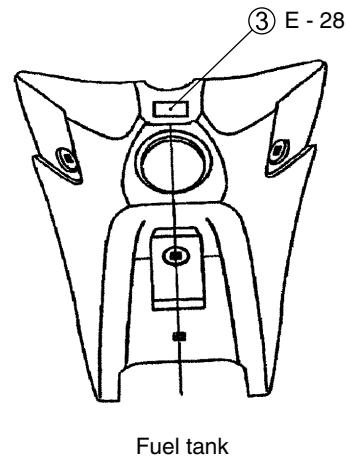
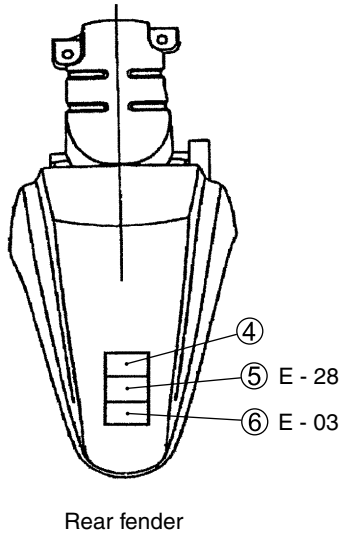
**Initial 10 hours: Less than 1/2 throttle**

**Up to 15 hours: Less than 3/4 throttle**

# INFORMATION LABELS

DR-Z125/L

NO	LABEL or PLATE NAME	APPLIED SPECIFICATION	
		E-28	E-03
①	Noise label	—	○
②	Information label	—	○
③	Fuel caution label	○	—
④	Manual notice label	—	○
⑤	Warning safety label	○	○
⑥	Certification plate	—	○
⑦	Compliance label	○	—



## SPECIFICATIONS

### DIMENSIONS AND DRY MASS

Overall length .....	1 835 mm (72.2 in)	
	1 885 mm (74.2 in) .....	DR-Z125L
Overall width .....	770 mm (30.3 in)	
Overall height .....	1 060 mm (41.7 in)	
	1 095 mm (43.1 in).....	DR-Z125L
Wheelbase .....	1 245 mm (49.0 in)	
	1 270 mm (50.0 in) .....	DR-Z125L
Ground clearance.....	260 mm (10.2 in)	
	290 mm (11.4 in) .....	DR-Z125L
Seat height .....	775 mm (30.5 in)	
	805 mm (32.0 in) .....	DR-Z125L
Dry mass .....	80 kg (176 lbs)	
	81 kg (178 lbs).....	DR-Z125L

### ENGINE

Type .....	Four-stroke, air-cooled, OHC
Number of cylinders .....	1
Bore.....	57.0 mm (2.244 in)
Stroke.....	48.8 mm (1.921 in)
Displacement .....	124 cm <sup>3</sup> (7.6 cu.in)
Compression ratio .....	9.5 : 1
Carburetor .....	MIKUNI VM20SS
Air cleaner .....	Polyurethane foam element
Starter system .....	Primary kick
Lubrication system .....	Wet sump
Idle speed.....	1 700 ± 100 r/min

### DRIVE TRAIN

Clutch .....	Wet multi-plate type	
Transmission.....	5-speed constant mesh	
Gearshift pattern .....	1-down, 4-up	
Primary reduction ratio .....	3.470 (59/17)	
Gear ratios, Low .....	3.000 (33/11)	
2nd .....	1.857 (26/14)	
3rd.....	1.368 (26/19)	
4th .....	1.095 (23/21)	
Top.....	0.923 (24/26)	
Final reduction ratio.....	3.642 (51/14)	
	4.071 (57/14) .....	DR-Z125L
Drive chain .....	D.ID.428HG, 122 links	
	D.ID.428HG, 130 links.....	DR-Z125L

## CHASSIS

Front suspension .....	Telescopic, coil spring, oil damped,
Rear suspension .....	Link type, coil spring, oil damped,
Front suspension stroke.....	180 mm (7.1in)
Rear wheel travel .....	160 mm (6.3in)
	170 mm (6.7in) .....DR-Z125L
Caster .....	28°
	27° 30' .....DR-Z125L
Trail.....	88 mm (3.46 in)
	99 mm (3.90 in) .....DR-Z125L
Steering angle.....	45° (right & left)
Turning radius .....	1.9 m (6.2 ft)
	2.0 m (6.6 ft) .....DR-Z125L
Front brake.....	Drum brake
	Disc brake .....DR-Z125L
Rear brake .....	Drum brake
Front tire size .....	70/100-17 40M, tube type
	70/100-19 42M, tube type ..... DR-Z125L
Rear tire size.....	90/100-14 49M, tube type
	90/100-16 52M, tube type ..... DR-Z125L

## ELECTRICAL

Ignition type.....	Electronic ignition (CDI)
Ignition timing .....	13° B.T.D.C. at 1 700 r/min
Spark plug.....	NGK: DR8EA or DENSO: X24ESR-U
Generator.....	Single-phase A.C. generator

## CAPACITIES

Fuel tank, including reserve .....	6.6 L (1.7/1.5 US/Imp gal)
Reserve .....	1.7 L (0.4/0.4 US/Imp gal)
Engine oil, oil change .....	850 ml (0.9/0.7 US/Imp qt)
with filter change .....	950 ml (1.0/0.8 US/Imp qt)
overhaul.....	1 100 ml (1.2/1.0 US/Imp qt)
Front fork (each leg).....	172 ml (5.8/6.1 US/Imp oz)

*These specifications are subject to change without notice.*

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**COUNTRY AND AREA CODES**

The following codes stand for the applicable countries and areas.

<b>CODE</b>	<b>COUNTRY OR AREA</b>
E-03	USA
E-28	Canada

# PERIODIC MAINTENANCE

## CONTENTS

<b>PERIODIC MAINTENANCE SCHEDULE .....</b>	<b>2- 2</b>
<b>PERIODIC MAINTENANCE CHART .....</b>	<b>2- 2</b>
<b>LUBRICATION POINTS .....</b>	<b>2- 3</b>
<b>MAINTENANCE AND TUNE-UP PROCEDURES .....</b>	<b>2- 4</b>
<b>AIR CLEANER .....</b>	<b>2- 4</b>
<b>VALVE CLEARANCE .....</b>	<b>2- 5</b>
<b>CAM CHAIN TENSION ADJUSTER .....</b>	<b>2- 6</b>
<b>SPARK PLUG .....</b>	<b>2- 7</b>
<b>THROTTLE CABLE PLAY .....</b>	<b>2- 8</b>
<b>ENGINE IDLE SPEED .....</b>	<b>2- 8</b>
<b>FUEL HOSE .....</b>	<b>2- 9</b>
<b>CLUTCH .....</b>	<b>2- 9</b>
<b>ENGINE OIL AND OIL FILTER .....</b>	<b>2-10</b>
<b>SPARK ARRESTER .....</b>	<b>2-11</b>
<b>DRIVE CHAIN .....</b>	<b>2-12</b>
<b>FRONT BRAKE LEVER PLAY (DR-Z125) .....</b>	<b>2-14</b>
<b>FRONT DISC BRAKE (DR-Z125L) .....</b>	<b>2-14</b>
<b>REAR BRAKE PEDAL HEIGHT .....</b>	<b>2-16</b>
<b>BRAKE HOSES (DR-Z125L) .....</b>	<b>2-17</b>
<b>STEERING .....</b>	<b>2-17</b>
<b>TIRES .....</b>	<b>2-17</b>
<b>SPOKE NIPPLES .....</b>	<b>2-18</b>
<b>EXHAUST PIPE BOLTS AND MUFFLER MOUNTING BOLT ....</b>	<b>2-19</b>
<b>FRONT FORK .....</b>	<b>2-19</b>
<b>REAR SUSPENSION .....</b>	<b>2-19</b>
<b>CHASSIS BOLTS AND NUTS .....</b>	<b>2-20</b>
<b>COMPRESSION PRESSURE CHECK .....</b>	<b>2-22</b>
<b>COMPRESSION TEST PROCEDURE .....</b>	<b>2-22</b>
<b>OIL PRESSURE CHECK .....</b>	<b>2-23</b>
<b>OIL PRESSURE TEST PROCEDURE .....</b>	<b>2-23</b>

## PERIODIC MAINTENANCE SCHEDULE

The chart below lists the recommended intervals for all the required periodic service work necessary to keep the motorcycle operating at peak performance and economy.

**NOTE:**

*More frequent servicing may be performed on motorcycles that are use under severe conditions.*

### PERIODIC MAINTENANCE CHART

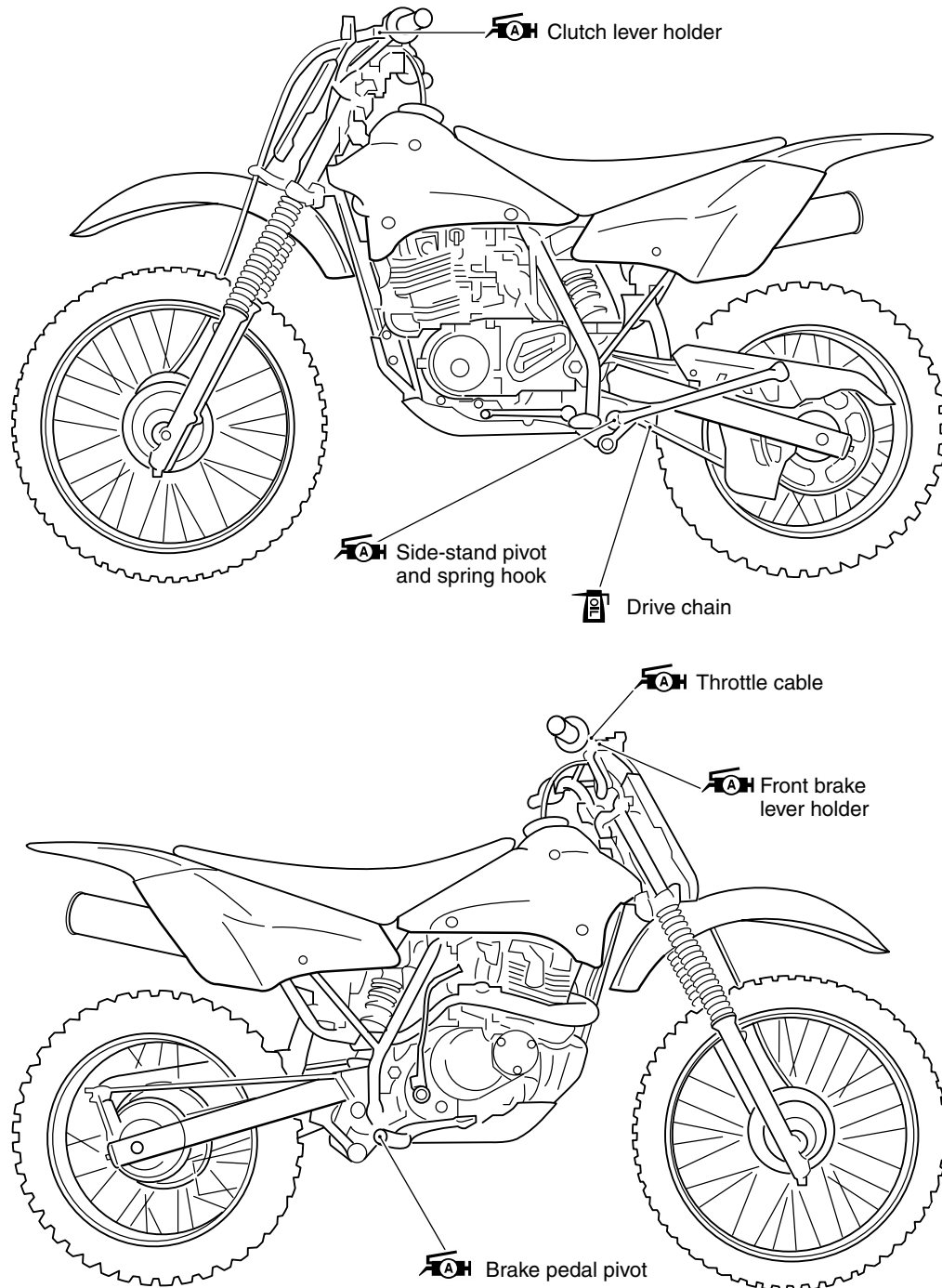
Item	Interval months	Initially 1 month	Every 6 months	Every 12 months
Air cleaner element		—	I	I
Exhaust pipe bolts and muffler mounting bolts		T	T	T
Valve clearance		I	I	I
Spark plug		—	I	R
Spark arrester		—	—	C
Fuel line		I	I	I
		Replace every 4 years.		
Cam chain tension adjuster		I	I	I
Engine oil filter		R	—	R
Engine oil		R	R	R
Throttle cable		I	I	I
Idle speed		I	I	I
Clutch		I	I	I
Drive chain		Clean, oil and inspect each time motorcycle is ridden.		
Brakes		I	I	I
Brake hose		—	I	I
		Replace every 4 years.		
Brake fluid		—	I	I
		Replace every 2 years.		
Tires		—	I	I
Spoke nipple		Inspect each time the motorcycle is ridden.		
Steering		I	—	I
Front forks		—	—	I
Rear suspension		—	—	I
Chassis nuts and bolts		T	T	T

**NOTE:**

*Inspect: I=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 motorcycle. 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 motorcycle has been operated under wet or rainy condition.



## MAINTENANCE AND TUNE-UP PROCEDURES

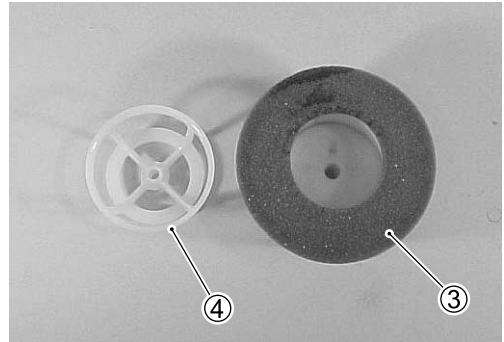
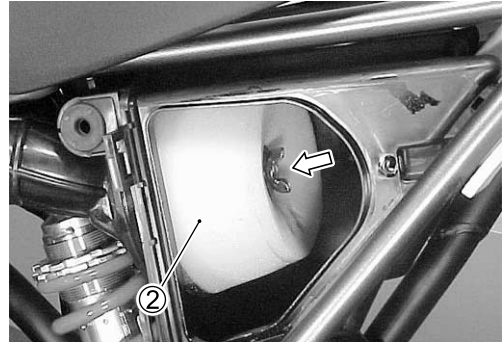
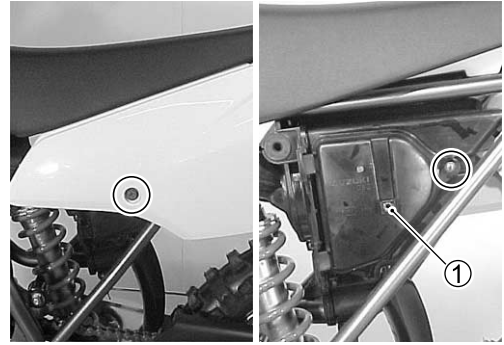
This section describes the servicing procedures for each item in the Periodic Maintenance chart.

### AIR CLEANER

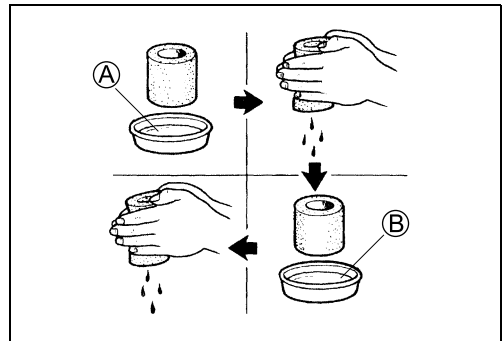
**Clean every 6 months.**

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

- Remove the left frame cover. (➡ 5-2)
- Remove the air cleaner cover ①.
- Remove the air cleaner element ②.
- Separate the polyurethane foam element ③ and element frame ④.



- 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.

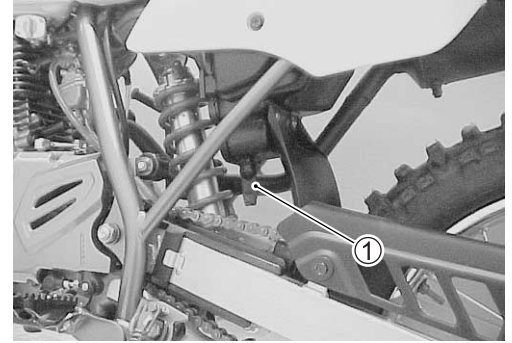


#### CAUTION

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

- Ⓐ Non-flammable cleaning solvent
- Ⓑ Motor oil SAE #30 or SAE 10W-40

- Remove the drain plug ① to allow any water to drain out.



- 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**

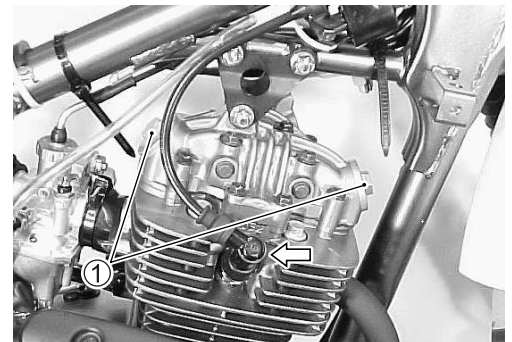
If driving under dusty conditions, clean the air cleaner element more frequently. The surest way to accelerate engine wear is to operate the engine without the element or to use a torn element. Make sure that the air cleaner is in good condition at all times. The life of the engine depends largely on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

**VALVE CLEARANCE**

Inspect initially at 1 month and every 6 months thereafter.

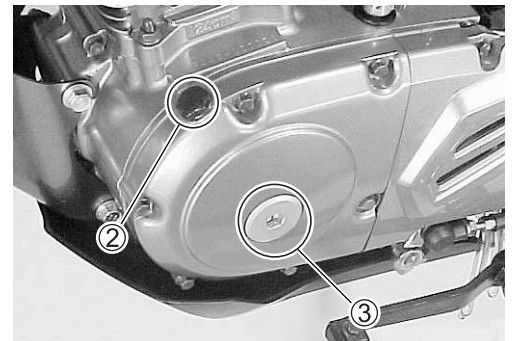
**REMOVAL**

- Remove the frame covers, seat and fuel tank. (☞ 5-2)
- Remove the spark plug. (☞ 2-7)
- Remove the valve inspection caps ①.
- Remove the valve timing inspection plug ② and generator cover plug ③.



**INSPECTION**

The valve clearance specification is different for intake and exhaust valves. Valve clearance adjustment must be checked and adjusted, 1) at the time of periodic inspection, 2) when the valve mechanism is serviced, and 3) when the camshaft is disturbed by removing it for servicing.



**NOTE:**

- \* The piston must be at (TDC) on the compression stroke in order to check the valve clearance or to adjust valve clearance.
- \* The clearance specification is for COLD state.
- \* To turn the crankshaft for clearance checking, rotate in the normal running direction. The spark plug should be removed.

- Turn crankshaft to bring the “TDC” line on the rotor to the index mark (A) on the generator cover.

- Insert a thickness gauge between the valve stem end and the adjusting screw on the rocker arm.  
If the clearance is out of specification, bring it into the specified range.

**TOOL** 09900-20803: Thickness gauge  
09917-13210: Valve clearance adjusting driver

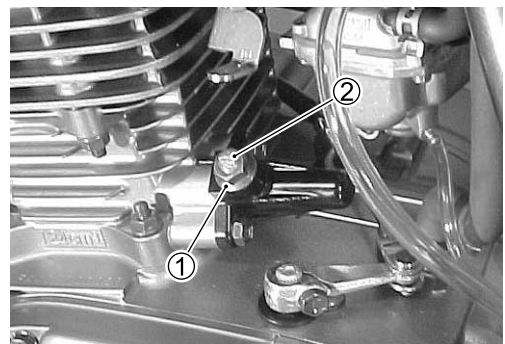
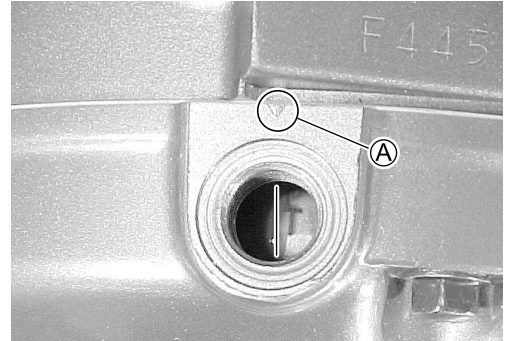
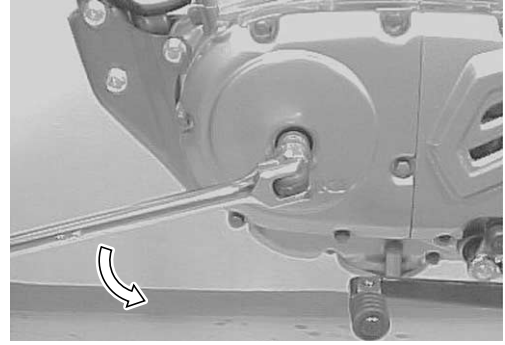
**DATA** Valve clearance (when cold):  
IN.: 0.08 – 0.13 mm (0.003 – 0.005 in)  
EX.: 0.13 – 0.18 mm (0.005 – 0.007 in)

## CAM CHAIN TENSION ADJUSTER

Inspect initially at 1 month and every 6 months thereafter.

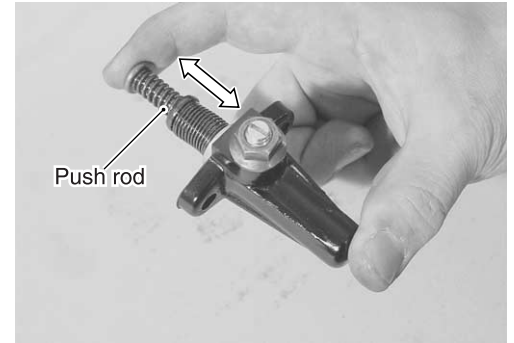
The cam chain is maintained at the proper tension by a manually adjusted cam chain tension adjuster. To prevent chain noise, the cam chain tension adjuster must be adjusted at the intervals listed above. The procedure for adjusting the cam chain tension adjuster is as follows:

- Loosen the lock nut ① on the cam chain tension adjuster and back out the set screw ② one turn. This will allow a spring to push the push rod firmly on to the cam chain tensioner, and provide proper operating chain tension.
- Tighten the set screw ② to lock the push rod in position and tighten the lock nut ① to secure the set screw ②.



**NOTE:**

If the cam chain is noisy after having been adjusted, the push rod is probably sticking. Remove the cam chain tension adjuster, clean and lubricate the push rod to obtain smooth movement and proper tensioning action.



**SPARK PLUG**

**Inspect every 6 months.  
Replace every 12 months.**

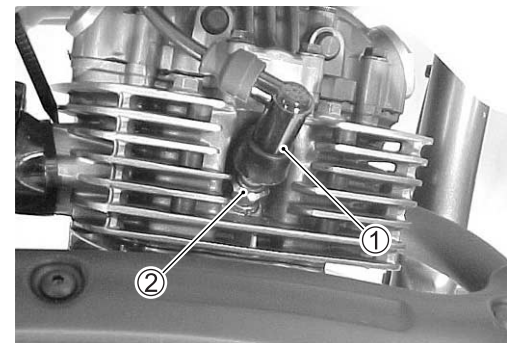
	NGK	DENSO
STD	DR8EA	X24ESR-U

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

**TOOL** 09930-10121: Spark plug wrench set

**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.**

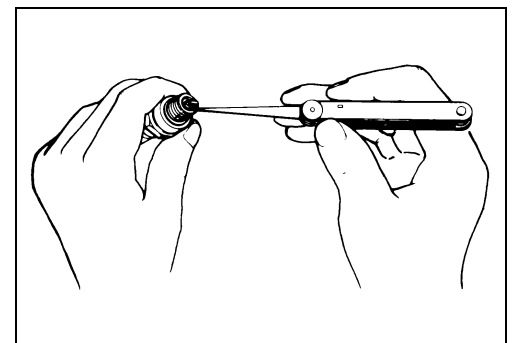


- Carbon deposits on the spark plug will prevent good sparking and may cause the engine to misfire. Be sure to clean the carbon deposits off periodically.
- If the center electrode is fairly worn down, the spark plug should be replaced and the spark plug gap set to the specification using a thickness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

**TOOL** 09900-20804: Thickness gauge

**DATA** Spark plug gap: 0.6 – 0.8 mm (0.024 – 0.031 in)

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

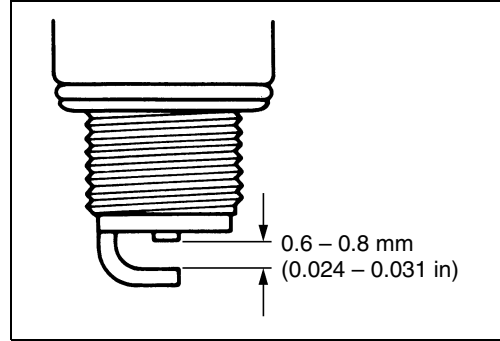


**CAUTION**

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.

 **09930-10121: Spark plug wrench set**

**THROTTLE CABLE PLAY**

Inspect initially at 1 month and every 6 months thereafter.

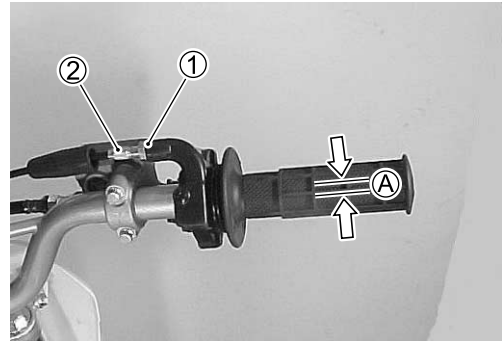
Throttle cable play  $\text{\textcircled{A}}$  should be 2.0 – 4.0 mm (0.08 – 0.16 in) as measured at throttle grip when turning the throttle grip lightly. If the play  $\text{\textcircled{A}}$  is incorrect, adjust it as follows:

- Loosen the locknut  $\text{\textcircled{1}}$  and turn the adjuster  $\text{\textcircled{2}}$  in or out until the specified play is obtained.
- Tighten the locknut  $\text{\textcircled{1}}$  while holding the adjuster  $\text{\textcircled{2}}$ .

**DATA** Throttle cable play  $\text{\textcircled{A}}$ : 2.0 – 4.0 mm (0.08 ± 0.16 in)

**WARNING**

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

**ENGINE IDLE SPEED**

Inspect initially at 1 month and every 6 months thereafter.

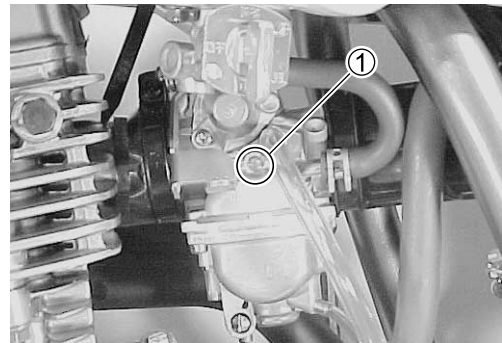
- Adjust the throttle cable play. (See above.)
- Warm up the engine.

**NOTE:**

Make this adjustment when the engine is hot.

- Start the engine, turn the throttle stop screw  $\text{\textcircled{1}}$  and set the engine idle speed as follows.

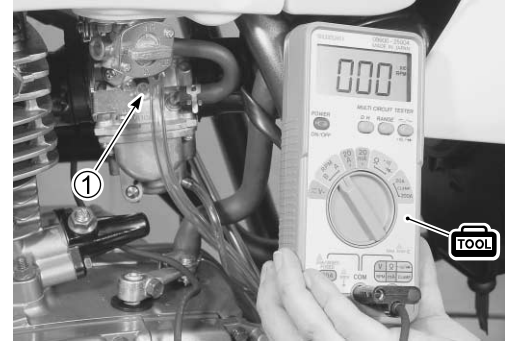
**DATA** Engine idle speed: 1 600 – 1 800 r/min



- Connect the electric tachometer or the multi circuit tester to the high-tension cord.
- Start the engine and set the engine idle speed between 1 600 and 1 800 r/min by turning the throttle stop screw ①.

**DATA** Engine idle speed: 1 700 ± 100 r/min

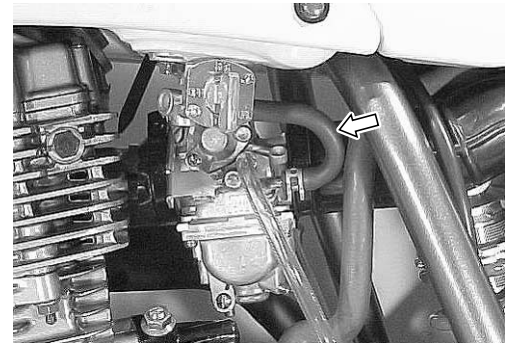
**TOOL** 09900-26006: Tachometer, or  
09900-25008: Multi circuit tester set



## FUEL HOSE

Inspect initially at 1 month and every 6 months thereafter. Replace every 4 years.

Inspect the fuel hose for damage and fuel leakage. If any damages are found, replace the fuel hoses with a new one.

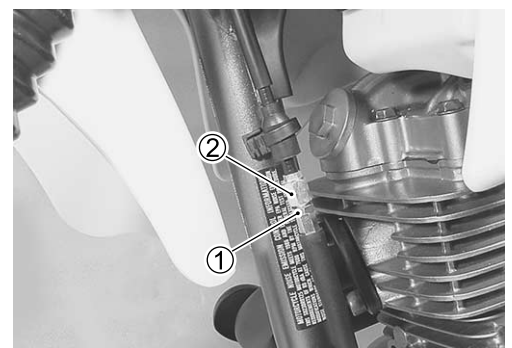
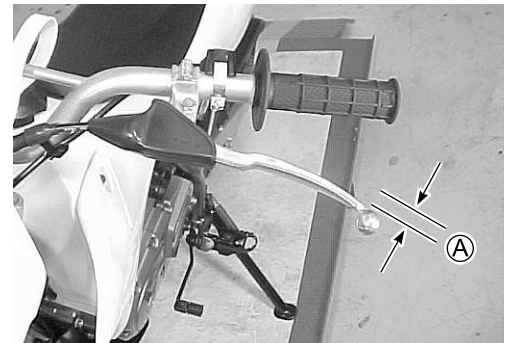


## CLUTCH

Inspect initially 1 month and every 6 months.

- Clutch cable play should be 10 – 15 mm (0.4 – 0.6 in) ① as measured at the clutch lever holder before the clutch begins to disengage.
- Loosen the locknut ② and adjust the clutch cable play by turning the adjuster ③ in or out to acquire the specified play.

**DATA** Clutch lever play: 10 – 15 mm (0.4 – 0.6 in)



## ENGINE OIL AND OIL FILTER

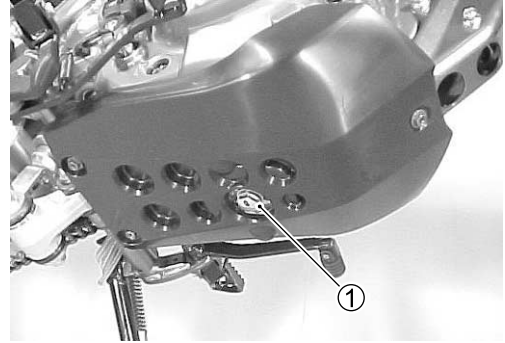
### ENGINE OIL REPLACEMENT

**Replace initially at 1 month and every 6 months thereafter.**

- Place an oil pan below the engine. Drain oil by removing the engine oil drain plug ①.
- Remove the oil filter cap ②.
- Tighten the engine oil drain plug ① to the specified torque. Pour new oil through the oil filler hole. When performing an oil change (without oil filter replacement), the engine will hold about 0.85 L (0.9/0.7 US/Imp qt) of oil. Use an engine oil that meets API service classifications SF or SG and that has a viscosity rating of SAE 10W-40.

#### Engine oil drain plug ①: 28 N·m (2.8 kgf·m, 20.5 lb·ft)

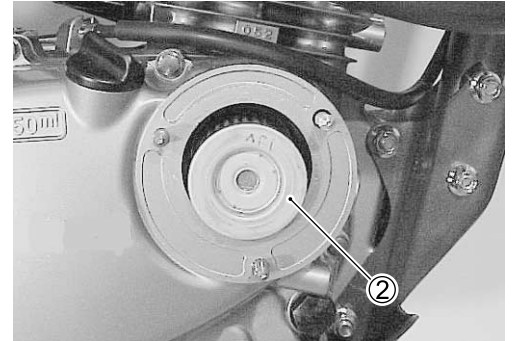
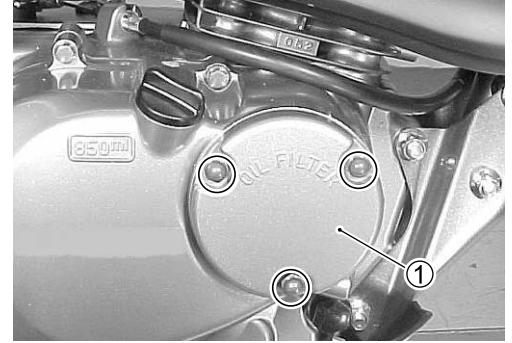
- Make sure that the engine is cooled.
  - Place the motorcycle on level ground and hold it vertically.
  - Install the oil filler cap ②.
  - Start the engine and allow it to run for a few minutes at idling speed.
- 
- Turn off the engine and wait about three minutes, and then check the oil level through the inspection window. If the oil level is below “L”, add oil to “F”. If the level is above “F”, drain oil to “F”.



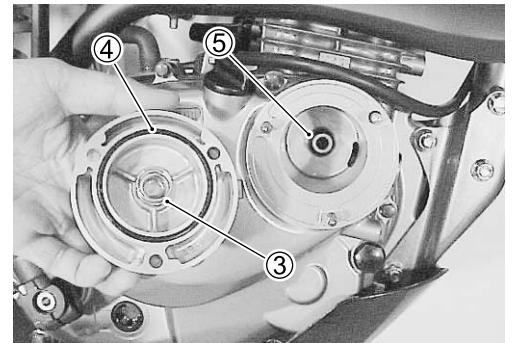
## OIL FILTER REPLACEMENT

Replace initially at 1 month and every 12 months thereafter.

- Drain the engine oil as described in the engine oil replacement procedure.
- Remove the oil filter cap ① and oil filter ②.
- Replace the oil filter with a new one.



- Install the spring ③ correctly.
- Apply engine oil lightly to the O-ring ④ and ⑤.
- Install the oil filter cap and tighten the nut securely.
- Add new engine oil and check the oil level as described in the engine oil replacement procedure.



### **DATA** Engine oil capacity

Oil change:	0.85 L (0.9/0.7 US/Imp qt)
Oil and filter change:	0.95 L (1.0/0.8 US/Imp qt)
Engine overhaul:	1.1 L (1.2/1.0 US/Imp qt)

### **CAUTION**

When reassembling the oil filter, make sure that the oil filter is installed as shown above. If the filter is installed improperly, serious engine damage may result.

## SPARK ARRESTER

Clean every 12 months.

### **WARNING**

A hot muffler can burn you. The muffler will be hot enough to burn you for some time after stopping the engine.

Wait until the muffler cools to avoid burns.





- Remove the spark arrester.
- Remove carbon deposits from the spark arrester by using a brush.
- Inspect the spark arrester for damage. If any defects are found, replace the spark arrester with a new one.



## DRIVE CHAIN

**Clean, lubricate and inspect each time the motorcycle is ridden.**

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

- |                   |                           |
|-------------------|---------------------------|
| * Loose pin       | * Twisted or seized links |
| * Damaged rollers | * Excessive wear          |
| * Rusted links    | * Kinked or binding links |

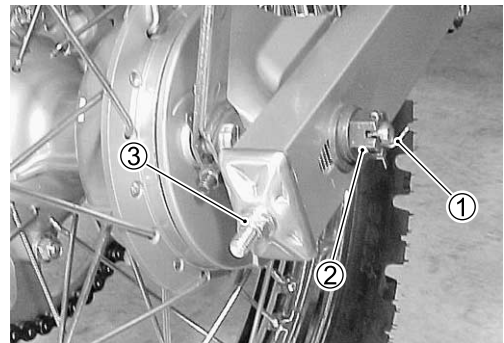
If any defects are found, the drive chain must be replaced.

### CAUTION

**The standard drive chain is DID428HG. SUZUKI recommends to use this standard drive chain as a replacement.**

### CHECKING AND ADJUSTING

- Remove the rear axle cotter pin ①.
- Loosen the rear axle nut ②.
- Tense the drive chain fully by turning both chain adjusters ③.

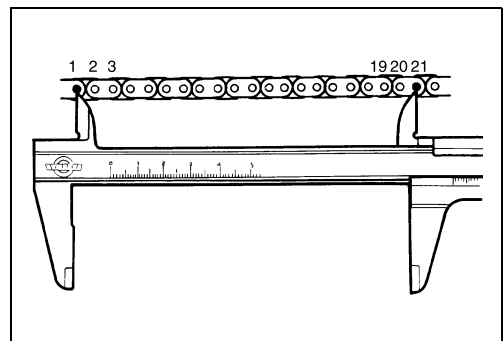


- Count out 21 pins (20-pitch) on the chain measure the distance between the two points. If the distance exceeds the service limit, the chain must be replaced.

**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.



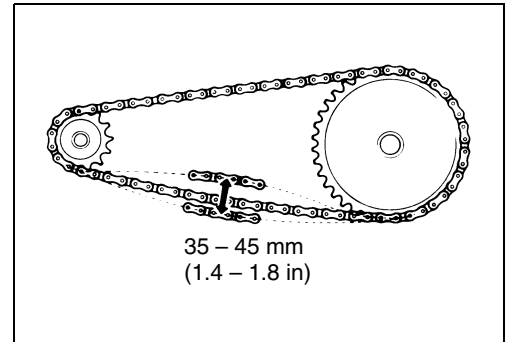
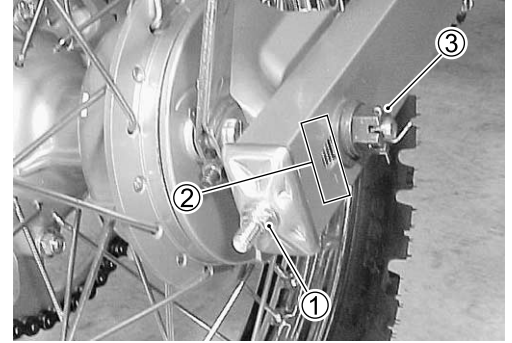
- Place the motorcycle on the side-stand.
- Loosen or tighten both chain adjusters ① until the chain has 35 – 40 mm (1.4 – 1.6 in) of slack at the middle of the chain between the engine and rear sprockets as shown. The reference marks ② must be at the same position on the scale to ensure that the front and rear wheels are correctly aligned.

**DATA** Drive chain slack: 35 – 45 mm (1.4 – 1.8 in)

- After adjusting the drive chain, tighten the rear axle nut ③ to the specified torque.

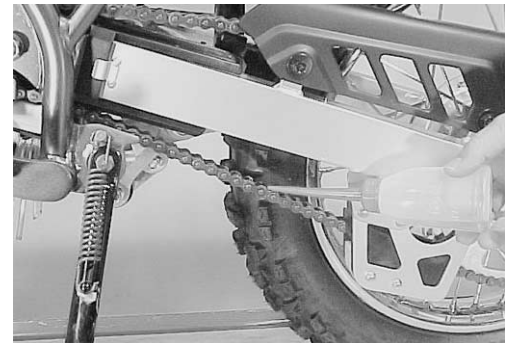
**U** Rear axle nut: 45 N·m (4.5 kgf·m, 32.5 lb-ft)

- Recheck the chain slack after tightening the axle nut and readjust if necessary.
- Tighten both chain adjusters ① securely.
- Install the new cotter pin.



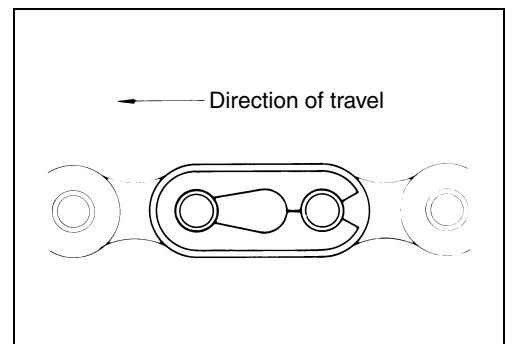
**CLEANING AND LUBRICATING**

- 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**

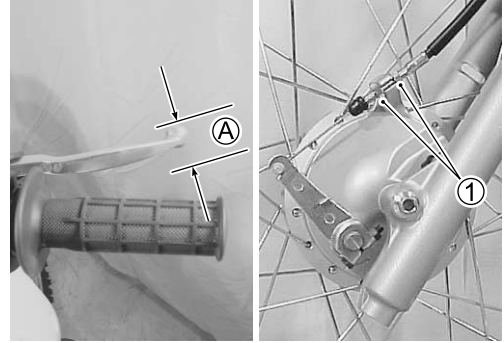
The drive chain joint clip should be attached in the way that the slit end will face opposite to the direction of travel.



## FRONT BRAKE LEVER PLAY (DR-Z125)

- Turn the adjusting nuts ① so that the brake lever play ② is within specification.

**DATA** Front brake lever play ②: 15 – 25 mm (0.6 – 1.0 in)



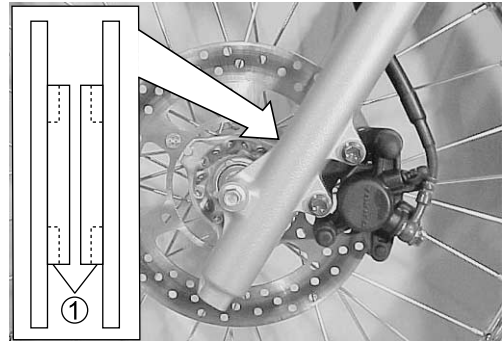
## FRONT DISC BRAKE (DR-Z125L)

### BRAKE PADS

The extent of brake pad wear can be checked by observing the grooved limit line ① on the brake pad. When the wear exceeds the grooved limit line, replace the pads with new ones. (5-11)

### CAUTION

Replace the brake pads as a set, otherwise braking performance will be adversely affected.

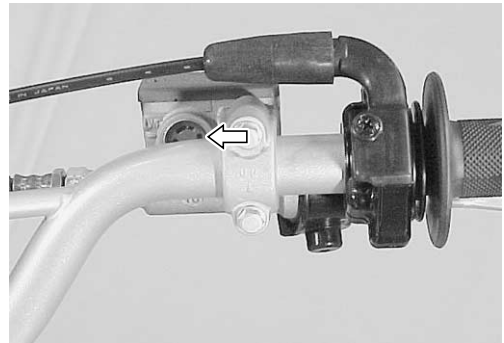


### BRAKE FLUID

Inspect every 6 months. Replace every 2 years.

- Keep the motorcycle upright and place the handlebar straight.
- Check the brake fluid level by observing the lower limit line on the front and rear brake fluid reservoir.
- When the brake fluid level is below the lower limit line, replenish with fluid that meets the following specification.

**BF** Specification and classification: DOT4



### ⚠ WARNING

- \* The brake system is filled with a glycol-based brake fluid, which is classified DOT 4. Do not use or mix other types of brake fluid, such as silicone-based and petroleum-based brake fluids when refilling the brake system, otherwise serious damage to the brake system will result.
- \* Do not use any brake fluid taken from old, used, or unsealed containers.
- \* Do not reuse brake fluid left over from the last servicing or which has been stored for a long period of time.
- \* When storing brake fluid, make sure to seal the container completely and keep it out of the reach of children.
- \* When replenishing brake fluid, make sure not to get any dust or other foreign materials in the fluid.
- \* Brake fluid, if it leaks, will interfere with safe running and immediately discolor painted surfaces. Check the brake hoses and hose joints for cracks and oil leakage before riding.

### AIR BLEEDING THE BRAKE FLUID CIRCUIT

Air trapped in the brake fluid circuit acts like a cushion to absorb a large proportion of the pressure developed by the master cylinder and thus interferes with the full braking performance of the brake caliper. The presence of air is indicated by “sponginess” of the brake lever and also by lack of braking force. Considering the danger to which such trapped air exposes the machine and rider, it is essential that, after remounting the brake and restoring the brake system to the normal condition, the brake fluid circuit be purged of air in the following manner:

- Fill the master cylinder reservoir to the top of the inspection window. Replace the reservoir cap to prevent dirt from entering.
- Attach a hose to the air bleeder valve, and insert the free end of the hose into a receptacle.

Bleed air from the brake system.

- Squeeze and release the brake lever several times in rapid succession and squeeze the lever fully without releasing it. Loosen the air bleeder valve by turning it a quarter of a turn so that the brake fluid runs into the receptacle, this will remove the tension of the brake lever causing it to touch the handle-bar grip. Then, close the air bleeder valve, pump and squeeze the lever, and open the valve. Repeat this process until the fluid flowing into the receptacle no longer contains air bubbles.

#### NOTE:

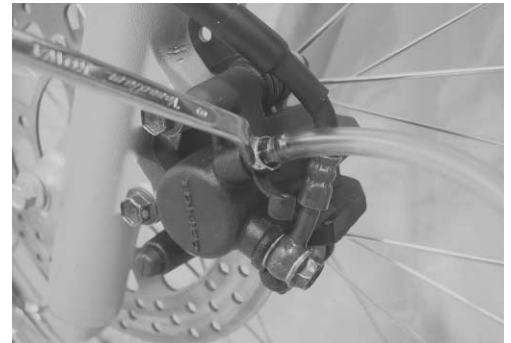
*While bleeding the brake system, replenish the brake fluid in the reservoir as necessary. Make sure that there is always some fluid visible in the reservoir.*

- Close the air bleeder valve, and disconnect the hose. Fill the reservoir with brake fluid to the top of the inspection window.

 **Air bleeder valve: 7.5 N·m (0.75 kgf·m, 5.5 lb·ft)**

#### CAUTION

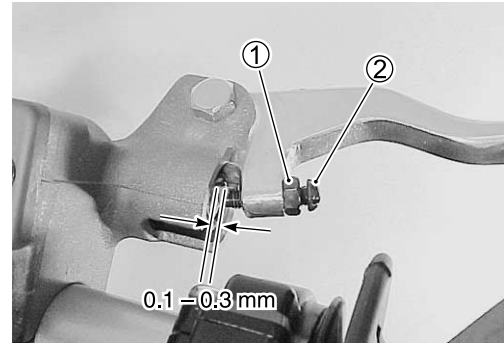
**Handle brake fluid with care: the fluid reacts chemically with paint, plastics, rubber materials, etc.**



**FRONT BRAKE LEVER PLAY**

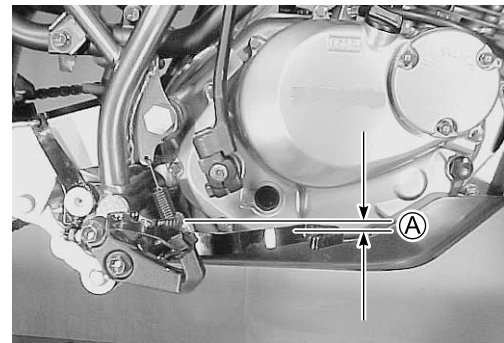
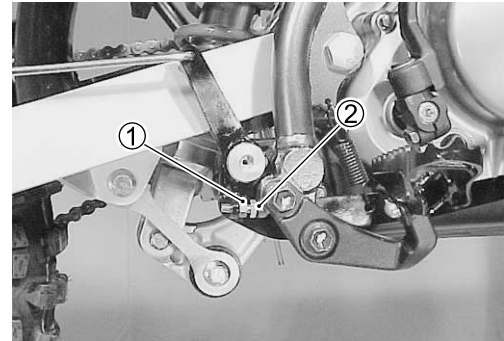
Check the front brake lever play. If the play is out of specifications, loosen the lock nut ① and turn the adjuster ② to obtain the specified play.

**DATA** Front brake lever play: 0.1 – 0.3 mm (0.004 – 0.012 in)

**REAR BRAKE PEDAL HEIGHT**

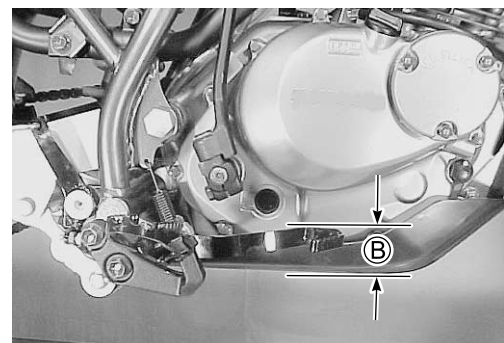
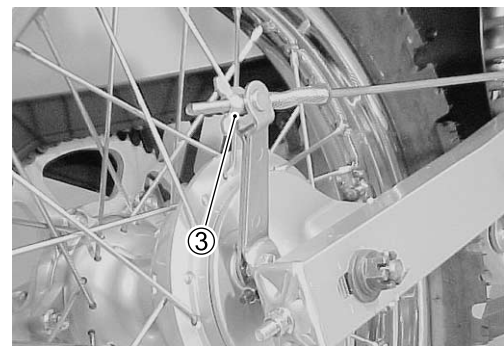
- Loosen the lock nut ① and rotate the adjusting bolt ② to locate brake pedal 10 mm (0.4 in) ① below the top face of the footrest.
- Retighten the lock nut ① to secure the adjusting bolt ② in the proper position.

**DATA** Brake pedal height ①: 0 – 10 mm (0 – 0.4 in)



- By repositioning the adjusting nut ③ on the brake rod, set the pedal play to between 20 – 30 mm ② as measured at pedal tip.

**DATA** Brake pedal free travel ②: 20 – 30 mm (0.8 – 1.2 in)

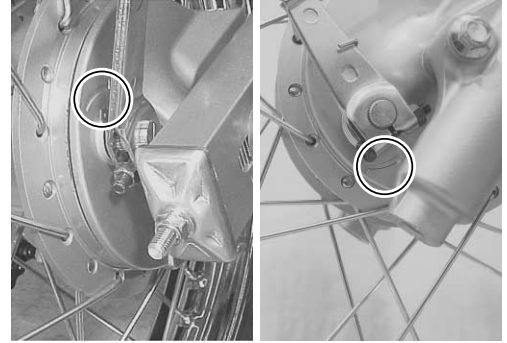


**BRAKE SHOE WEAR (REAR BRAKE)**

This motorcycle is equipped with the brake lining wear limit indicator on the rear brake.

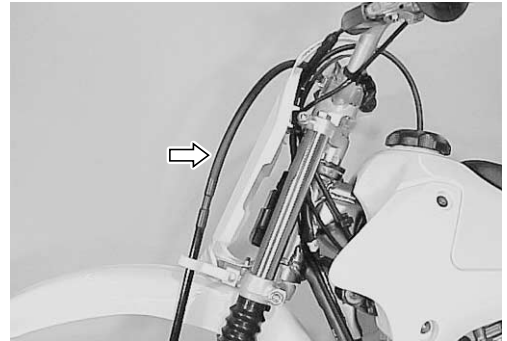
To check wear of the brake lining, perform the following steps.

- First, check if the brake system is properly adjusted.
- While operating the brake, check to see that the tip of indicator is within the range on the brake panel.
- If the tip of indicator is beyond the range, the brake shoe assembly should be replaced with a new set of shoe.

**BRAKE HOSES (DR-Z125L)**

**Inspect every 6 months. Replace every 4 years.**

Check the brake hoses for leakage, cracks, wear and damage. If any damages are found, replace the brake hoses with new ones.

**STEERING**

**Inspect initially at 1 month and every 12 months thereafter.**

The steering should be adjusted properly for smooth turning of handlebars and safe operation. Overtight steering prevents smooth turning of the handlebars and too loose steering will cause poor stability. Check that there is no play in the front fork. Support the motorcycle so that the front wheel is off the ground. With the wheel facing straight ahead, grasp the lower fork tubes near the axle and pull forward. If play is found, readjust the steering. (📖 5-27)

**TIRES**

**Inspect every 6 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.

**TIRE TREAD CONDITION**

Operating the motorcycle 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

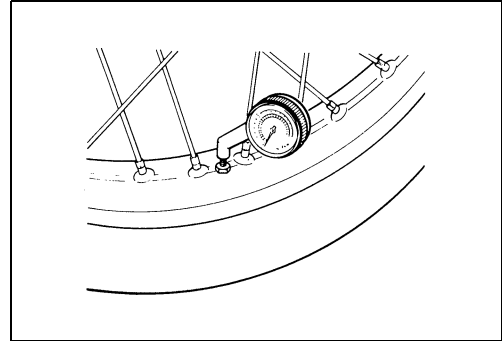
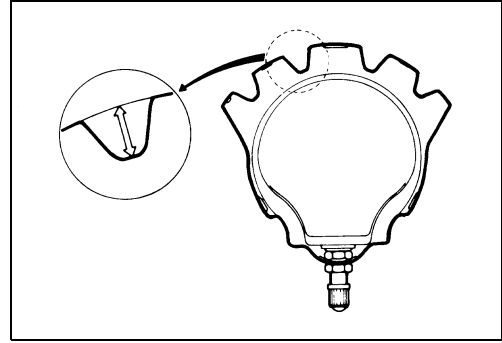
Front and Rear: 4.0 mm (0.16 in)

**TOOL** 09900-20805: Tire depth gauge**TIRE PRESSURE**

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

DR-Z125/L

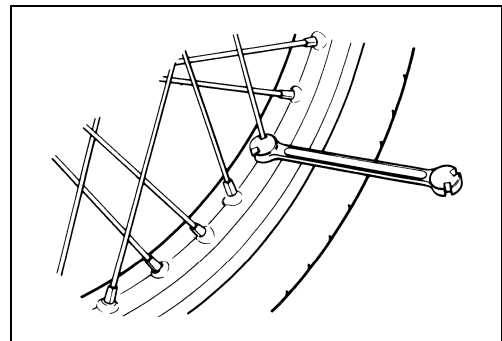
COLD INFLATION TIRE PRESSURE	kPa	kgf/cm <sup>2</sup>	psi
FRONT	100	1.0	14
REAR	100	1.0	14

**CAUTION**

The standard tire fitted on DR-Z125 is a 70/100-17 40M for the front and a 90/100-14 49M for the rear, and fitted on DR-Z125L is a 70/100-19 42M for the front and a 90/100-16 52M for the rear. The use of tires other than those specified may cause instability. It is highly recommended to use the specified tires.

**SPOKE NIPPLES**

Make sure that the nipples are tight. If necessary, tighten them with a spoke nipple wrench.

**TOOL** Spoke nipple: 4.5 N·m (0.45 kgf·m, 3.0 lb·ft)

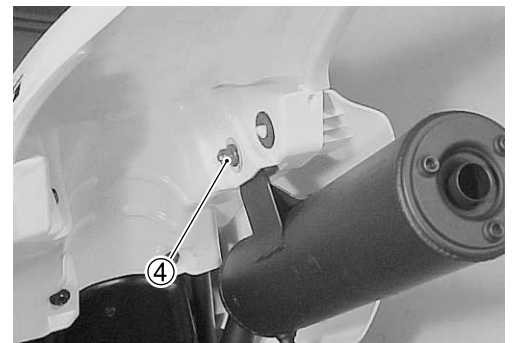
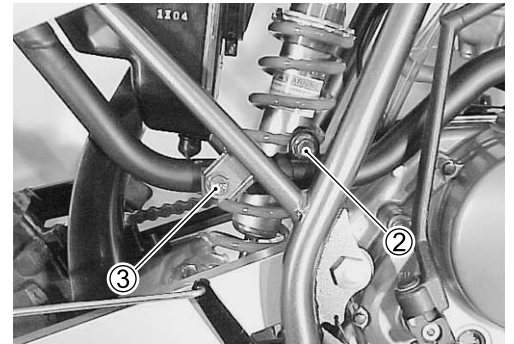
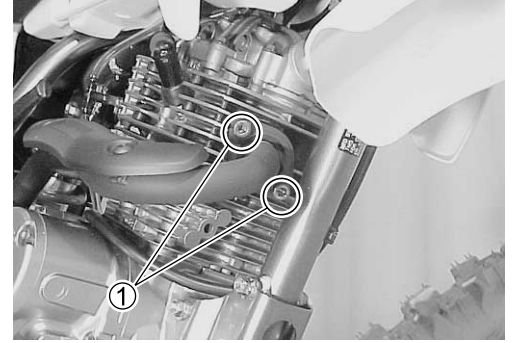
## EXHAUST PIPE BOLTS AND MUFFLER MOUNTING BOLT

**Tighten initially at 1 month and every 6 months thereafter.**

Cylinder head nuts, when they are not tightened to the specified torque, may result in leakage of the compressed mixture and reduce output.

- Tighten the exhaust pipe bolts and muffler mounting bolt to the specified torque.

**🔧 Exhaust pipe bolt ①: 23 N·m (2.3 kgf-m, 16.5 lb-ft)**  
**Muffler connection bolt ②: 23 N·m (2.3 kgf-m, 16.5 lb-ft)**  
**Muffler mounting nut and bolt ③, ④: 23 N·m (2.3 kgf-m, 16.5 lb-ft)**



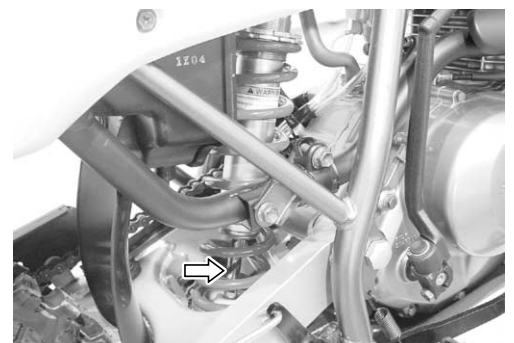
## FRONT FORK

Inspect the front forks for oil leakage, scoring, or scratches on the outer surface of the inner tubes. If any damages are found, replace the front fork with a new one.



## REAR SUSPENSION

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



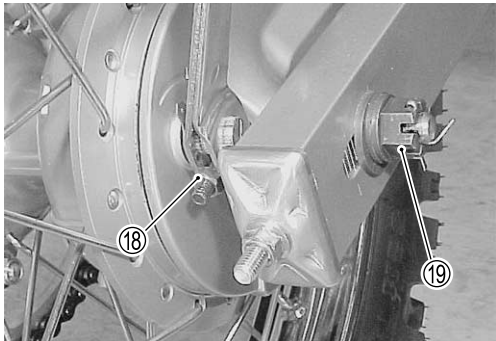
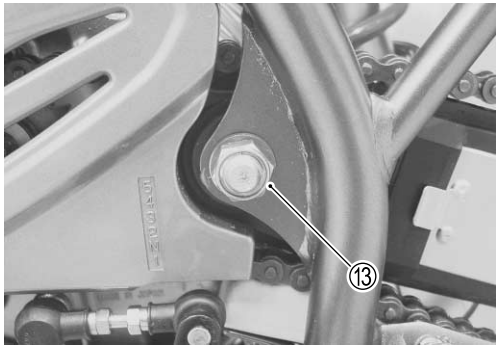
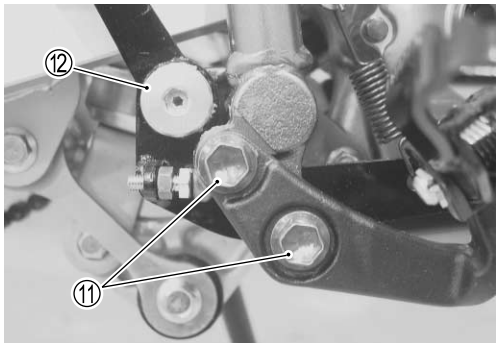
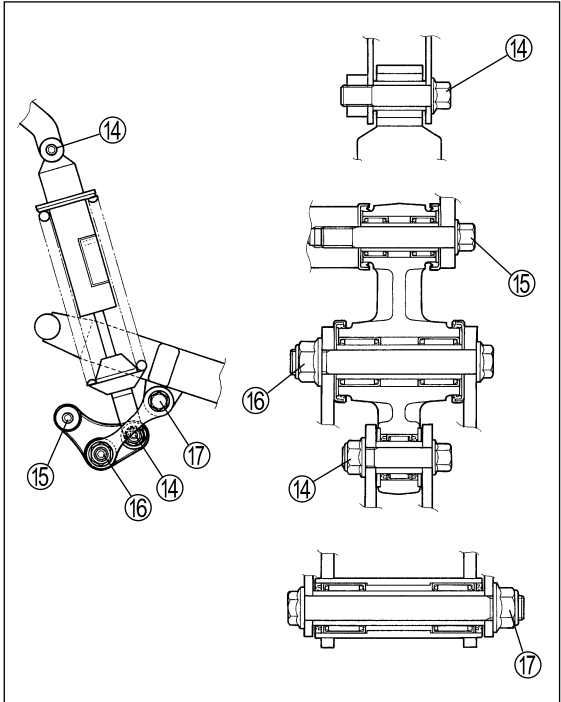
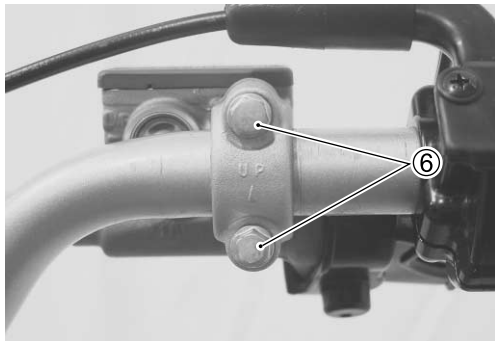
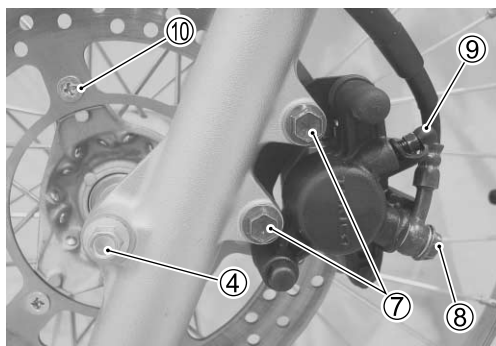
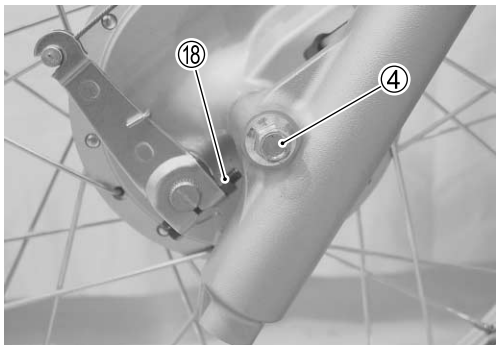
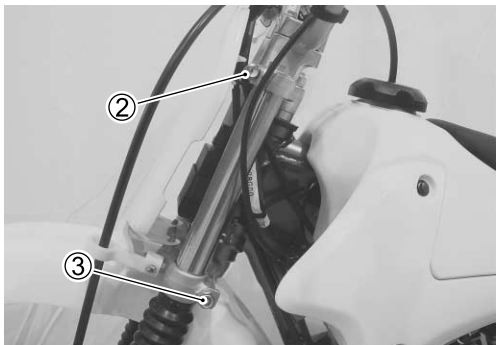
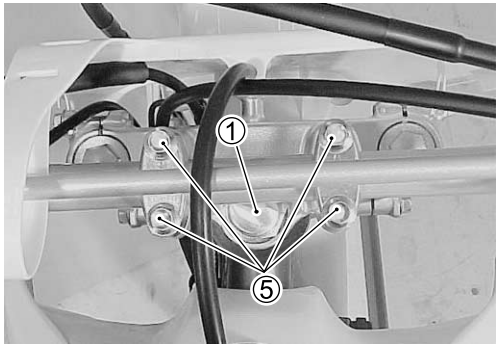


## CHASSIS BOLTS AND NUTS

**Tighten initially at 1 month and every 6 months thereafter.**

Check that all chassis bolts and nuts are tightened to their specified torque. (Refer to page 2-21 for the locations of the following bolts and nuts on the motorcycle.)

Item	N·m	kgf-m	lb-ft
① Steering stem head nut	90	9.0	65.0
② Front fork upper clamp bolt	23	2.3	16.5
③ Front fork lower clamp bolt	33	3.3	24.0
④ Front axle nut (DR-Z125)	35	3.5	25.5
(DR-Z125L)	44	4.4	32.0
⑤ Handlebar clamp bolt	23	2.3	16.5
⑥ Front brake master cylinder mounting bolt (DR-Z125L)	10	1.0	7.0
⑦ Front brake caliper mounting bolt (DR-Z125L)	23	2.3	16.5
⑧ Brake hose union bolt (DR-Z125L)	23	2.3	16.5
⑨ Air bleeder valve (DR-Z125L)	7.5	0.75	5.5
⑩ Brake disc mounting nut (DR-Z125L)	8.5	0.85	6.0
⑪ Front footrest bolt	55	5.5	40.0
⑫ Brake pedal boss nut/bolt	29	2.9	21.0
⑬ Swingarm pivot nut	65	6.5	47.0
⑭ Rear shock absorber mounting bolt/nut (Upper & Lower)	60	6.0	43.5
⑮ Cushion lever bolt (Front)	55	5.5	40.0
⑯ Cushion lever nut (Center)	80	8.0	58.0
⑰ Cushion rod nut	80	8.0	58.0
⑱ Brake cam lever nut	11	1.1	8.0
⑲ Rear axle nut	45	4.5	32.5



## COMPRESSION PRESSURE CHECK

The compression pressure reading of a cylinder is a good indicator of its internal condition.

The decision to overhaul the cylinder is often based on the results of a compression test. Periodic maintenance records kept at your dealership should include compression readings for each maintenance service.

### COMPRESSION PRESSURE SPECIFICATION

Standard	Limit
1 200 – 1 600 kPa (12 – 16 kgf-cm <sup>2</sup> ) (171 – 228 psi)	1 000 kPa (10 kgf-cm <sup>2</sup> ) (142 psi)

**Low compression pressure can indicate any of the following conditions:**

- \* Excessively worn cylinder walls
- \* Worn piston or piston rings
- \* Piston rings stuck in grooves
- \* Poor valve seating
- \* Ruptured or otherwise defective cylinder head gasket

#### NOTE:

*When the compression pressure goes below specification, check the engine for conditions listed above.*

## COMPRESSION TEST PROCEDURE

#### NOTE:

- \* *Before testing the engine for compression pressure, make sure that the cylinder head nuts are tightened to the specified torque values and the valves are properly adjusted.*
- \* *Warm up the engine before testing.*

Remove the related parts and test the compression pressure in the following manner.

- Remove the spark plug. (☞ 2-7)
- Install the compression gauge and adaptor in the spark plug hole. Make sure that the connection is tight.
- Keep the throttle lever in the fully open position.
- Press the starter button and crank the engine for a few seconds.
- Record the maximum gauge reading as the cylinder compression.



**TOOL** 09915-64510: Compression gauge set  
09915-63310: Adaptor

## OIL PRESSURE CHECK

Check the engine oil pressure periodically. This will give a good indication of the condition of the moving parts.

### **DATA** Oil pressure:

**Above 15 kPa (0.15 kgf/cm<sup>2</sup>, 2.1 psi)**  
**Below 35 kPa (0.35 kgf/cm<sup>2</sup>, 4.9 psi)** at 3 000 r/min., oil temp. at 60 °C (140 °F)

Low or high oil pressure can indicate any of the following conditions:

#### LOW OIL PRESSURE

- \* Clogged oil filter
- \* Oil leakage from the oil passage
- \* Damaged O-ring
- \* Defective oil pump
- \* Combination of the above items

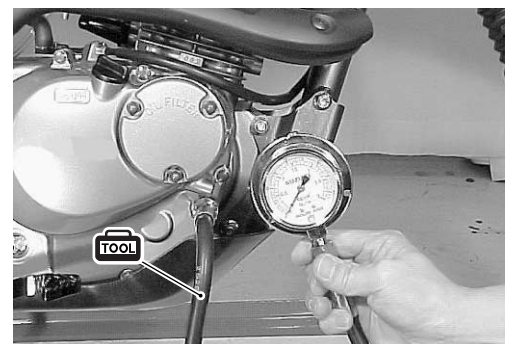
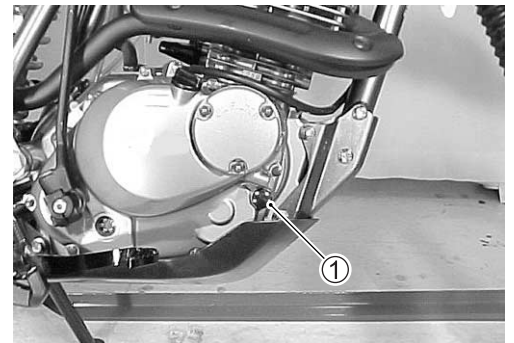
#### HIGH OIL PRESSURE

- \* Engine oil viscosity is too high
- \* Clogged oil passage
- \* Combination of the above items

## OIL PRESSURE TEST PROCEDURE

- Connect a tachometer to the high-tension cord.
- Remove the main oil gallery plug ①.
- Install the oil pressure gauge and adaptor into the main oil gallery.
- Warm up the engine as follows:  
 Summer: 10 minutes at 2 000 r/min  
 Winter: 20 minutes at 2 000 r/min
- After warming up the engine, increase the engine speed to 3 000 r/min (observe the tachometer), and read the oil pressure gauge.

**TOOL** 09915-74510: Oil pressure gauge  
 09915-70610: Adaptor



# ENGINE

## CONTENTS

<b>ENGINE COMPONENTS REMOVABLE WITH ENGINE IN PLACE ...</b>	<b>3- 2</b>
<b>ENGINE LEFT SIDE .....</b>	<b>3- 2</b>
<b>ENGINE RIGHT SIDE .....</b>	<b>3- 2</b>
<b>ENGINE CENTER .....</b>	<b>3- 2</b>
<b>ENGINE REMOVAL AND REINSTALLATION .....</b>	<b>3- 3</b>
<b>ENGINE REMOVAL .....</b>	<b>3- 3</b>
<b>ENGINE REINSTALLATION .....</b>	<b>3- 6</b>
<b>ENGINE DISASSEMBLY .....</b>	<b>3- 9</b>
<b>ENGINE COMPONENTS INSPECTION AND SERVICE .....</b>	<b>3-18</b>
<b>CYLINDER HEAD COVER .....</b>	<b>3-18</b>
<b>CYLINDER HEAD .....</b>	<b>3-20</b>
<b>CAMSHAFT .....</b>	<b>3-29</b>
<b>CYLINDER .....</b>	<b>3-30</b>
<b>PISTON AND PISTON PIN .....</b>	<b>3-31</b>
<b>CRANKSHAFT AND CONROD .....</b>	<b>3-34</b>
<b>TRANSMISSION .....</b>	<b>3-36</b>
<b>PRIMARY DRIVEN GEAR .....</b>	<b>3-38</b>
<b>CLUTCH .....</b>	<b>3-39</b>
<b>OIL FILTER .....</b>	<b>3-40</b>
<b>OIL SUMP FILTER .....</b>	<b>3-40</b>
<b>KICK STARTER .....</b>	<b>3-41</b>
<b>CRANKCASE BEARINGS .....</b>	<b>3-43</b>
<b>CLUTCH RELEASE CAMSHAFT .....</b>	<b>3-45</b>
<b>ENGINE REASSEMBLY .....</b>	<b>3-46</b>
<b>CLUTCH .....</b>	<b>3-52</b>

## ENGINE COMPONENTS REMOVABLE WITH 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

PARTS	REMOVAL	INSTALLATION
Generator cover	3-11	3-54
Generator rotor	3-15	3-49
Generator stator	3-15	3-38
Cam chain	3-15	3-38

### ENGINE RIGHT SIDE

PARTS	REMOVAL	INSTALLATION
Kick starter lever	3-9	3-60
Clutch cover	3-12	3-54
Clutch	3-12	3-52
Oil pump	3-13	3-50
Gearshift shaft	3-13	3-51
Primary drive gear	3-14	3-49
Oil filter	3-40	3-40
Oil sump filter	3-40	3-40

### ENGINE CENTER

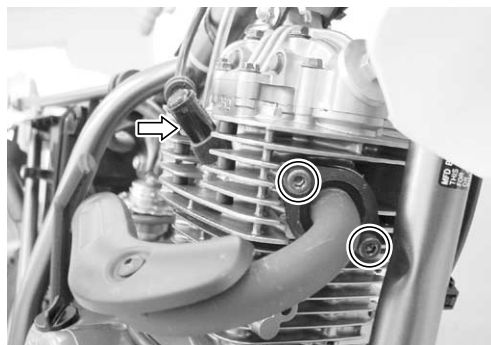
PARTS	REMOVAL	INSTALLATION
Cylinder head cover	3-9	3-59
Cam chain tension adjuster	3-10	3-59
Camshaft	3-10	3-58
Cylinder head	3-10	3-57
Cylinder	3-11	3-56
Piston	3-11	3-55

# ENGINE REMOVAL AND REINSTALLATION

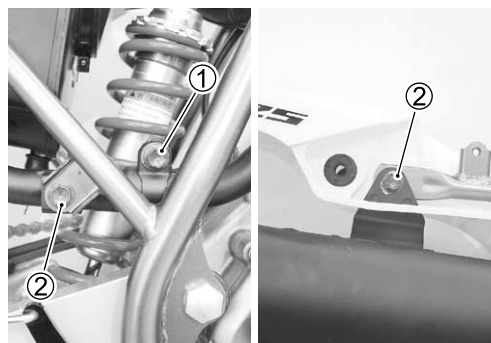
## ENGINE REMOVAL

- Remove the seat. (☞ 5-2)
- Remove the fuel tank. (☞ 4-2)
- Remove the carburetor. (☞ 4-5)
- Drain engine oil. (☞ 2-10)

- Disconnect the plug cap.
- Remove the exhaust pipe bolts.



- Remove the muffler connecting bolt ① and mounting bolts ②.
- Remove the exhaust pipe/muffler assembly.



- Remove the engine under cover.



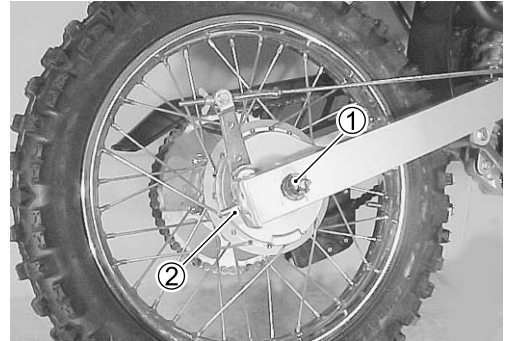
- Remove the engine sprocket cover and stay.



- Remove the gearshift cam lever.



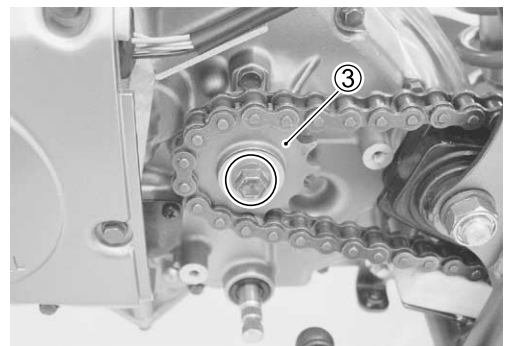
- Loosen the rear axle nut ① and chain adjuster nuts ② (left and right). Make sure that the drive chain has enough slack.



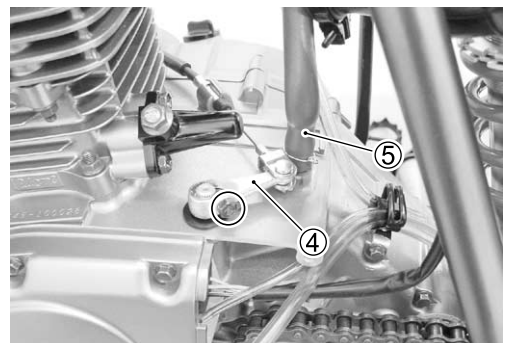
- Remove the engine sprocket ③.

**NOTE:**

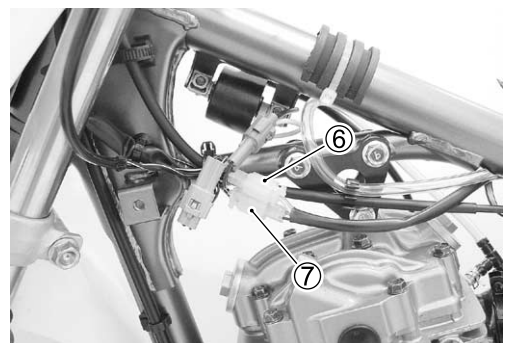
*When loosening the engine sprocket bolt, depress the brake pedal.*



- Remove the clutch release arm ④ along with the clutch cable.
- Disconnect the crankcase breather hose ⑤.

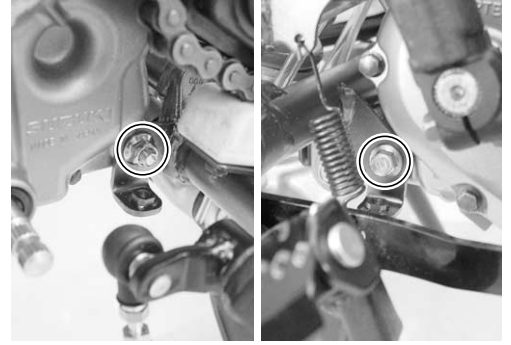


- Disconnect the generator lead wire coupler ⑥ and pick-up coil lead wire coupler ⑦.

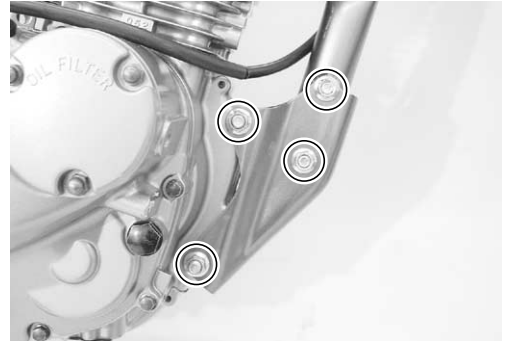




- Remove the rear engine mounting nut and bolt.



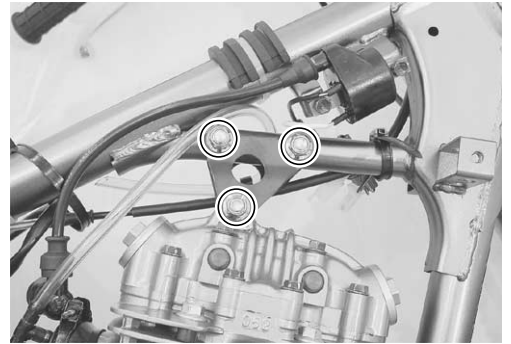
- Remove the front engine mounting bolts and bracket.



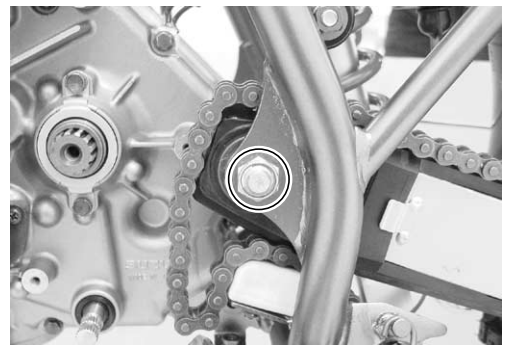
- Remove the upper engine mounting bolts and bracket.

**NOTE:**

*When removing the upper mounting bolts and nuts, support the engine with a jack.*



- Remove the swingarm pivot nut and washer.

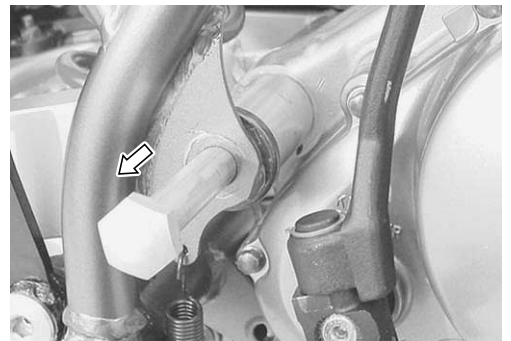


- Partially remove the swingarm pivot shaft so that the engine can be removed.

**NOTE:**

*Be careful not to draw out the pivot shaft.*

- Gradually lower the engine.



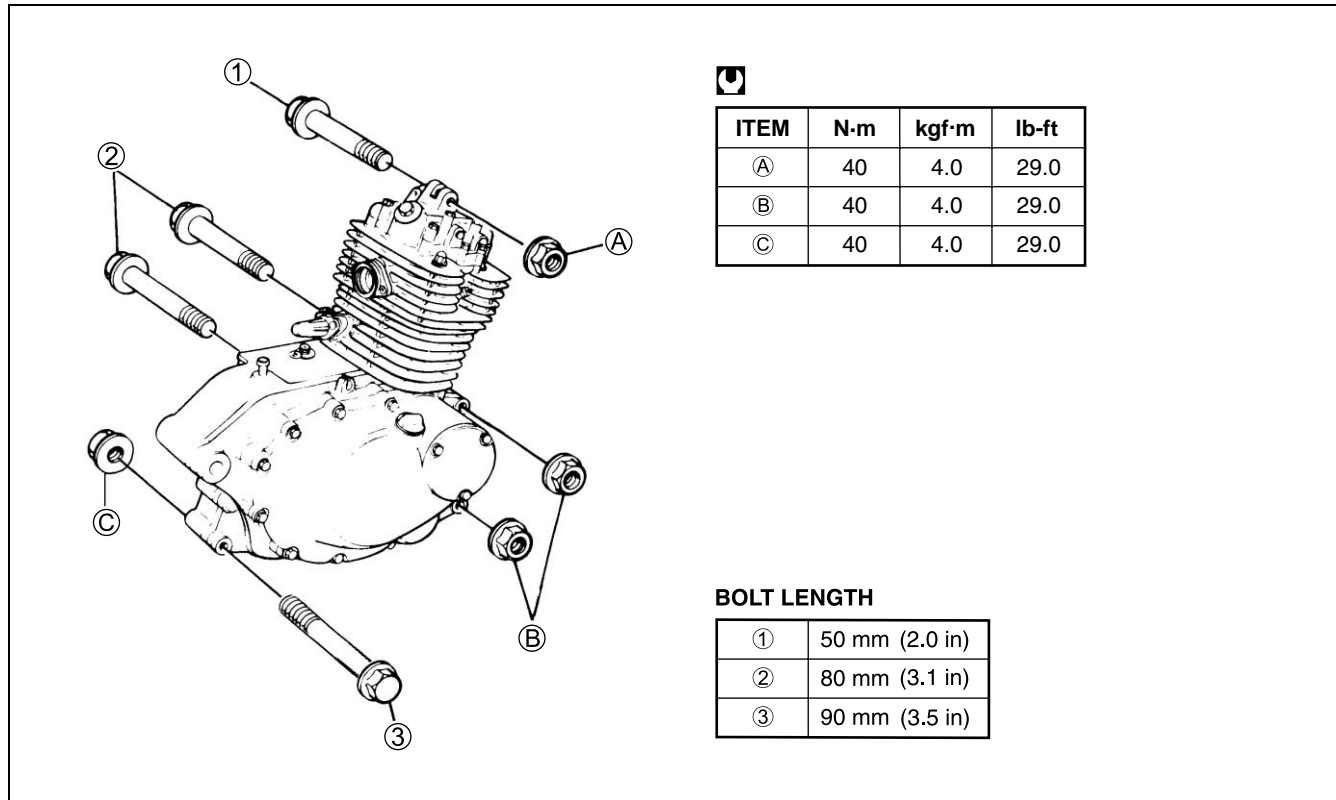
## ENGINE REINSTALLATION

Reinstall the engine in the reverse order of engine removal.

- Install the engine mounting bolts and nuts as shown in the following illustration.
- Tighten the engine mounting nuts to the specified torque.

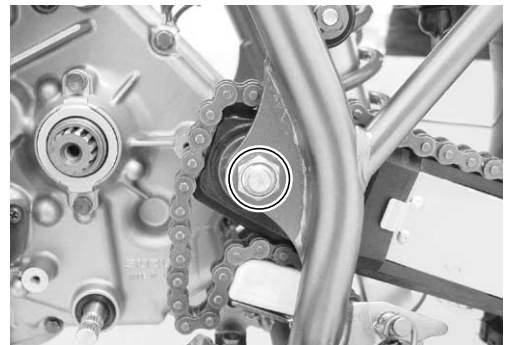
### NOTE:

The engine mounting nuts are self-locking. Once the nuts have been removed, they are no longer of any use.



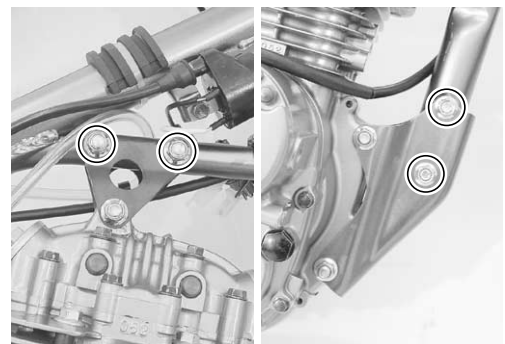
- Tighten the swingarm pivot nut to the specified torque.

 **Swingarm pivot nut: 65 N·m (6.5 kgf·m, 47.0 lb·ft)**



- Tighten the engine mounting bracket nuts to the specified torque.

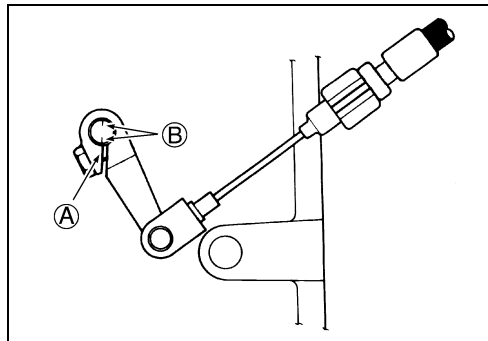
 **Engine mounting bracket nut:**  
**40 N·m (4.0 kgf·m, 29.0 lb·ft)**



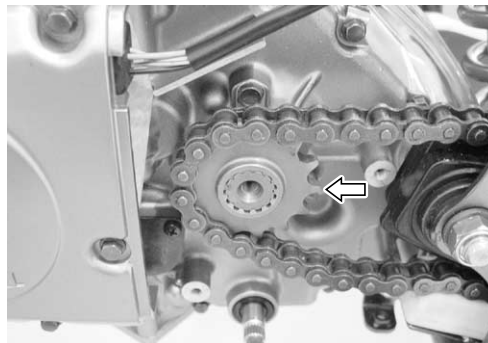
- Install the clutch release arm as shown in the illustration.

**NOTE:**

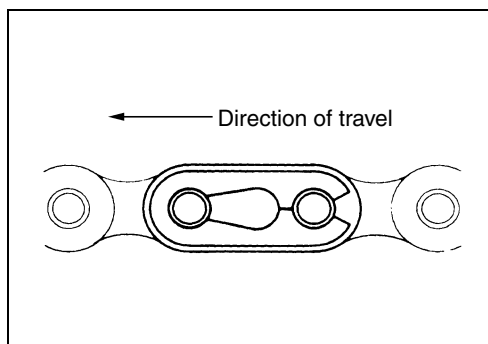
Align the release arm slit surface (A) with the notch mark (B) on the release camshaft.



- Install the engine sprocket with drive chain as shown.

**CAUTION**

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



- Tighten the engine sprocket bolt to the specified torque.


 **Engine sprocket bolt: 25 N·m (2.5 kgf·m, 18.0 lb·ft)**

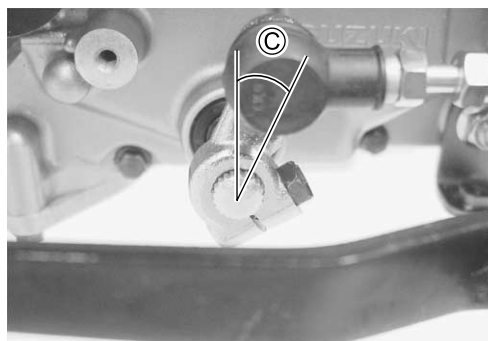
**NOTE:**

When tightening the engine sprocket bolt, depress the brake pedal.



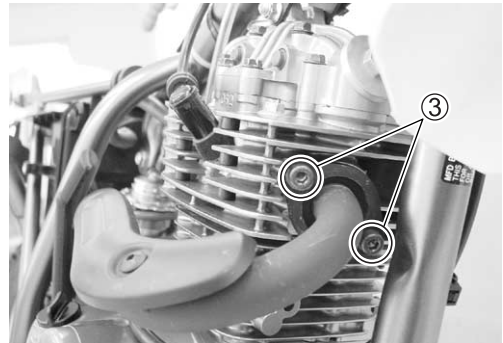
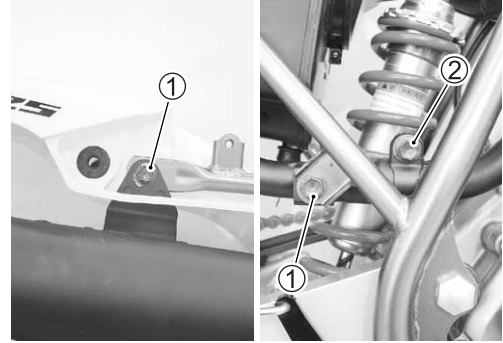
- Install the gearshift cam lever to the gearshift shaft in the correct position.

 **Gearshift arm angle (C): Approx. 12°**

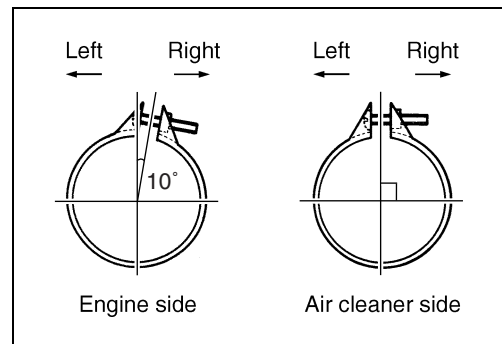


- Tighten the muffler mounting bolts ①, clamp bolt ② and exhaust pipe bolts ③ to the specified torque.

- ☑ **Muffler mounting bolt ①: 23 N·m (2.3 kgf-m, 16.5 lb-ft)**
- ☑ **Muffler connecting bolt ②: 23 N·m (2.3 kgf-m, 16.5 lb-ft)**
- ☑ **Exhaust pipe bolt ③: 11 N·m (1.1 kgf-m, 8.0 lb-ft)**



- Position the carburetor clamps as shown in the illustration.



- After remounting the engine, the following adjustments are necessary.
- \* Clutch lever play ..... ☞ 2- 9
- \* Throttle cable play ..... ☞ 2- 8
- \* Engine idle speed ..... ☞ 2- 8
- \* Drive chain slack ..... ☞ 2-13

**CAUTION**

**Check the wire, cable and hose routing.**  
 (☞ 7-10)

- Pour 1 100 ml (1.2/1.0 US/Imp qt) of 10W-40 (SAE), SF or SG (API) engine oil into the engine after overhauling it. Start the engine and allow it to run for three minutes at idle speed. Turn off the engine and wait three minutes, and then check the oil level. If the level is below the “L” line, add oil until the level reaches the “F” line. (☞ 2-10)

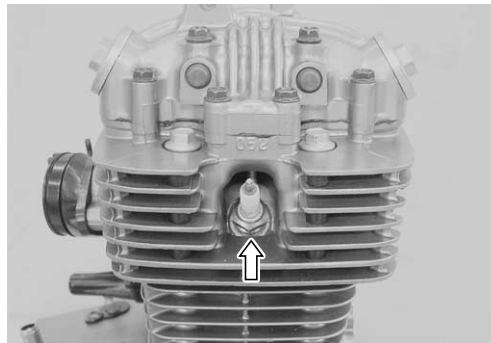


## ENGINE DISASSEMBLY

The procedure for engine disassembly is sequentially explained in the following steps.

- Remove the spark plug.

 **09930-10121: Spark plug wrench set**

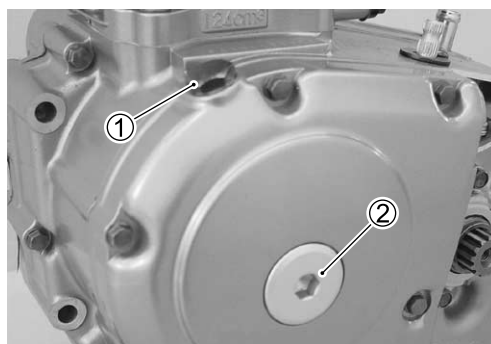


## KICK STARTER LEVER

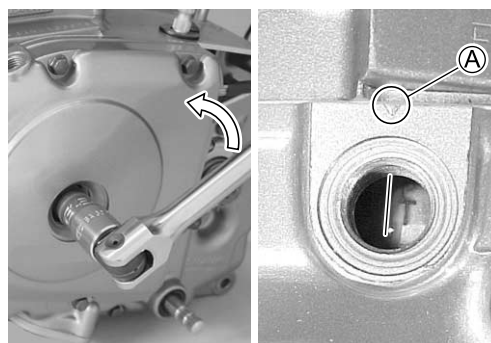
- Remove the kick starter lever.



- Remove the timing inspection plug ① and generator cover plug ②.

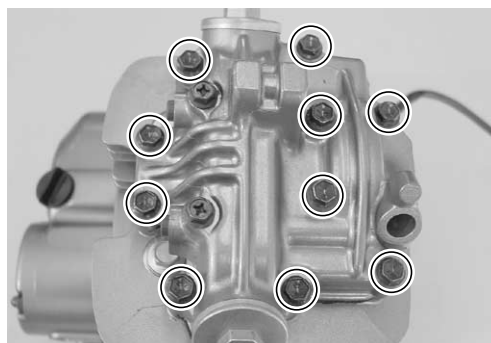


- Rotate the crankshaft and align the “T” line on the generator rotor with the mark (A) on the generator cover.



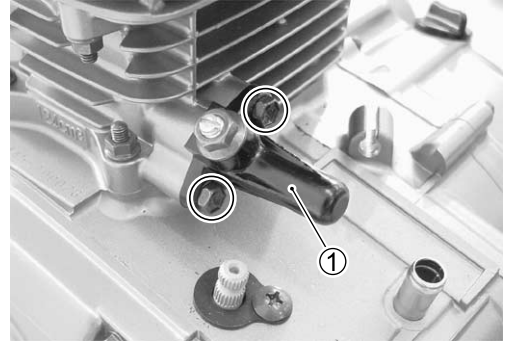
## CYLINDER HEAD COVER

- Remove the cylinder head cover.



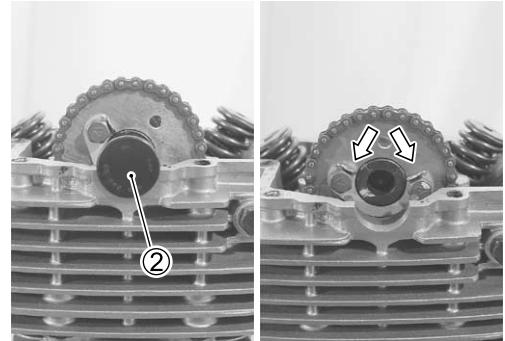
### CAM CHAIN TENSION ADJUSTER

- Remove the cam chain tension adjuster ①.



### CAMSHAFT

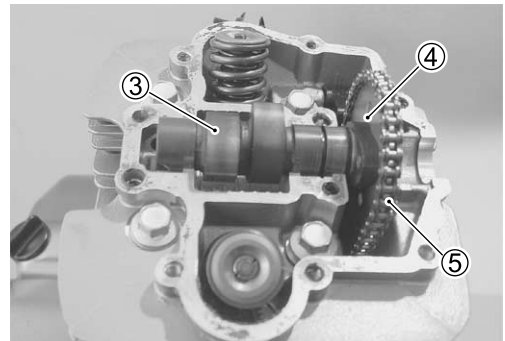
- Remove the camshaft end cap ②.
- Flatten the lock washer and remove the camshaft sprocket bolts.



- Remove the camshaft ③ and camshaft sprocket ④.

#### CAUTION

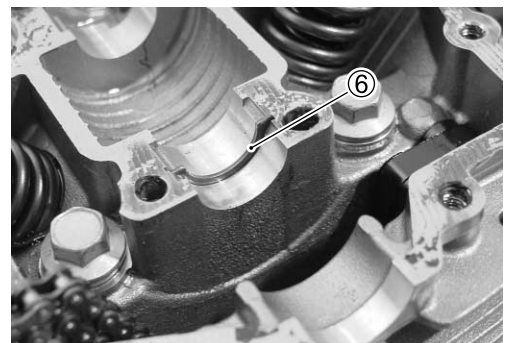
Do not drop the cam chain ⑤ into the crankcase.



- Remove the C-ring ⑥.

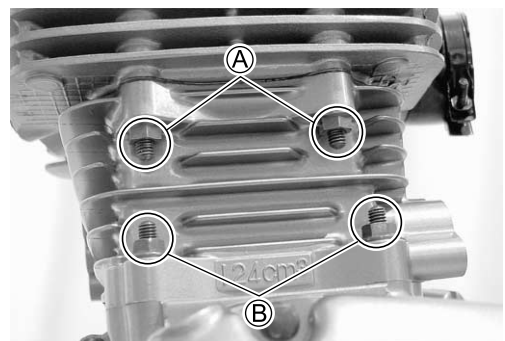
#### CAUTION

Do not drop the C-ring ⑥ into the crankcase.



### CYLINDER HEAD

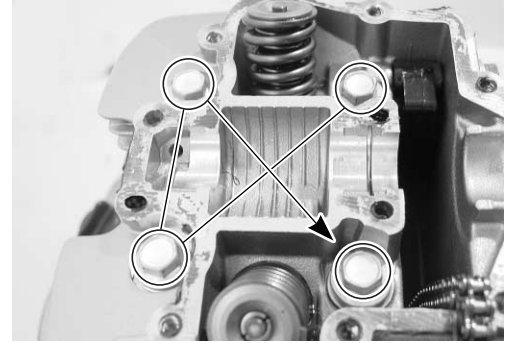
- Remove the cylinder head nuts (A).
- Loosen the cylinder base nuts (B).



- Remove the cylinder head bolts diagonally.
- Remove the cylinder head.

**NOTE:**

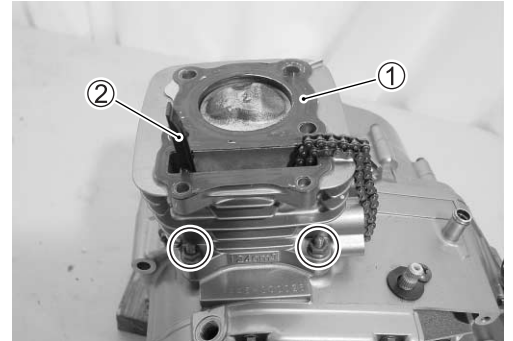
If the cylinder head does not come off, lightly tap on the finless portion of it with a plastic hammer.

**CYLINDER**

- Remove the gasket ①.
- Remove the cam chain guide ②.
- Remove the cylinder by removing the nuts.

**NOTE:**

If the cylinder does not come off, lightly tap on the finless portion of it with a plastic hammer.

**PISTON**

- Place a clean rag over the cylinder base to prevent the piston pin circlip ③ from dropping into the crankcase. Then, remove the piston pin circlip ③.



- Remove the piston pin.

**NOTE:**

Use the special tool if necessary.

**TOOL** 09910-34510: Piston pin puller

- Remove the piston.

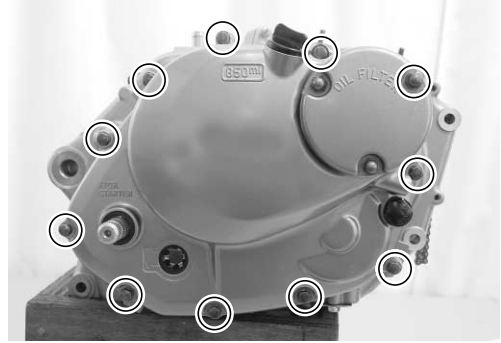
**GENERATOR COVER**

- Remove the generator cover.



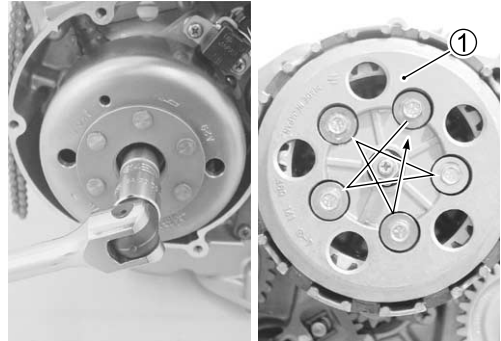
**CLUTCH COVER**

- Remove the clutch cover.

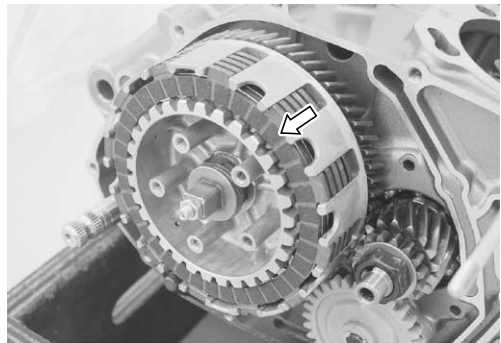


**CLUTCH**

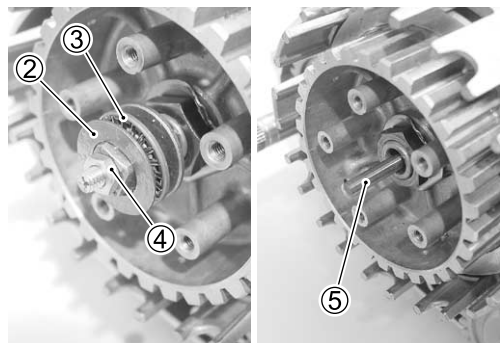
- While holding the generator rotor nut, remove the clutch spring mounting bolts in a crisscross pattern, and remove the clutch springs and clutch pressure plate ①.



- Remove the clutch drive and driven plates.



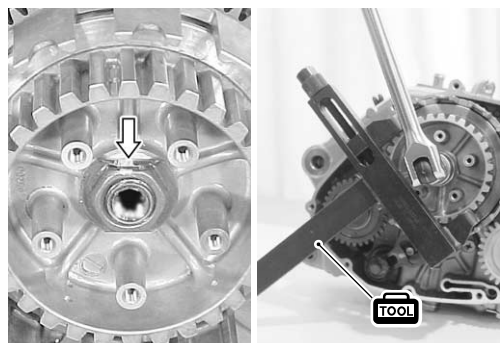
- Remove the washer ②, bearing ③, clutch push piece ④ and clutch push rod ⑤.



- Flatten the lock washer, and remove the clutch sleeve hub nut with the special tool.

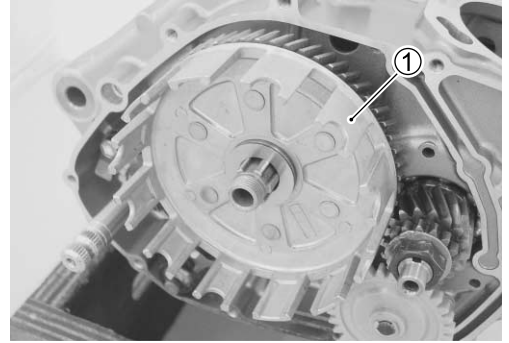
**TOOL** 09920-53740: Clutch sleeve hub holder

- Remove the clutch sleeve hub.

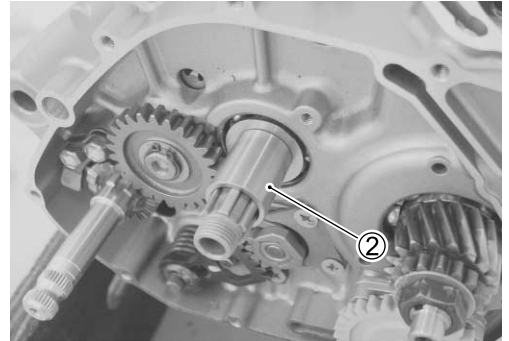




- Remove the washer and primary driven gear assembly ①.

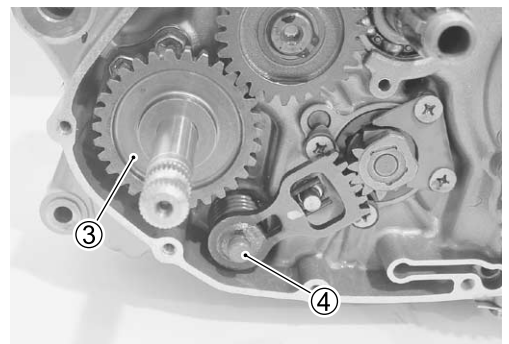


- Remove the spacer ② and washer.



### GEARSHIFT

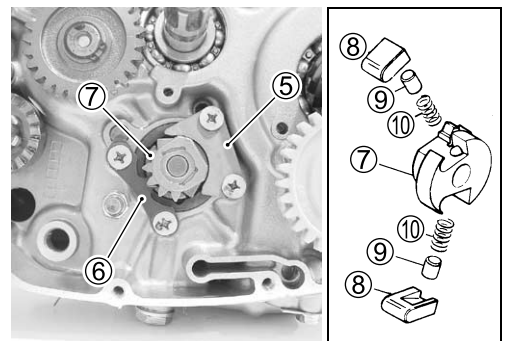
- Remove the kick starter drive gear ③ and washer.
- Remove the gearshift shaft ④.



- Remove the pawl lifter ⑤ and cam guide ⑥.
- Remove the gearshift cam driven gear ⑦.

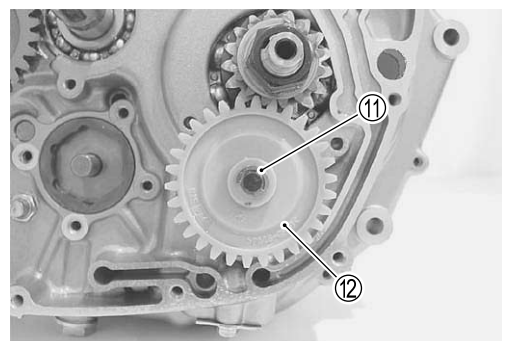
#### NOTE:

When removing the cam driven gear ⑦, do not lose the pawls ⑧, pins ⑨ and springs ⑩.



### OIL PUMP

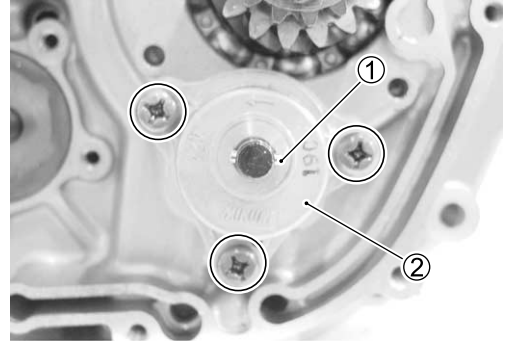
- Remove the circlip ⑪ and oil pump driven gear ⑫.



- Remove the pin ①.
- Remove the oil pump ②.

**CAUTION**

**Do not attempt to disassemble the oil pump assembly.**



**PRIMARY DRIVE GEAR**

- Flatten the lock washer of the primary drive gear nut.

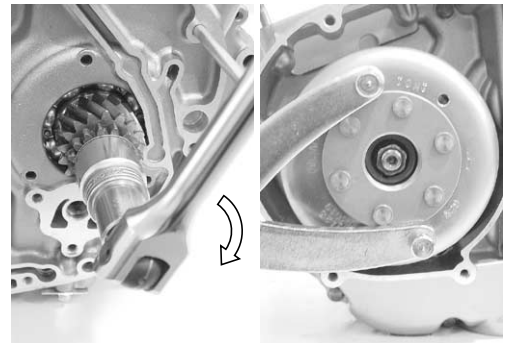


- Remove the primary drive gear/oil pump drive gear nut with the special tool.

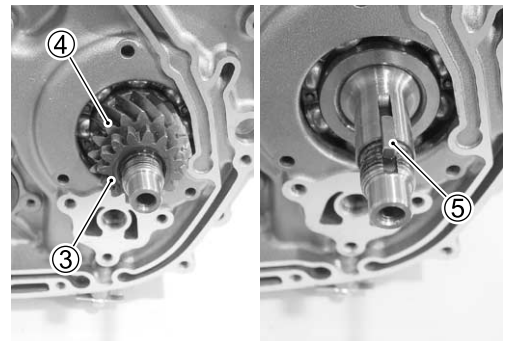
**TOOL** 09930-40113: Rotor holder

**CAUTION**

**The primary drive gear/oil pump drive gear nut has left-hand threads.**

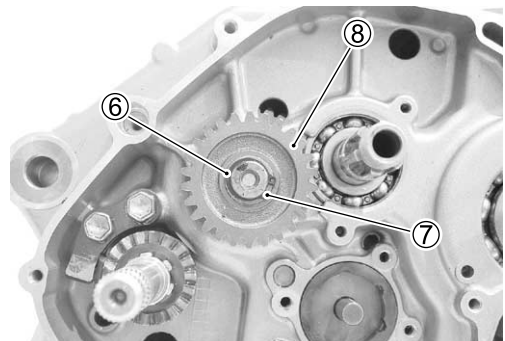


- Remove the oil pump drive gear ③ and primary drive gear ④.
- Remove the key ⑤.




- Remove the snap ring ⑥, washer ⑦ and kick starter idle gear ⑧.

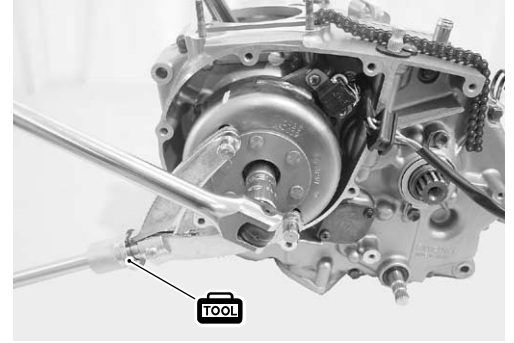
**TOOL** 09900-06107: Snap ring pliers



**GENERATOR ROTOR**

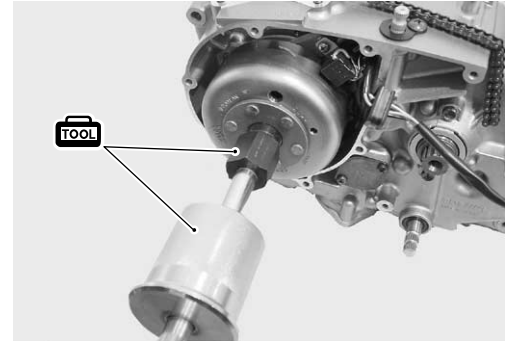
- Remove the generator rotor nut with the special tools.

 **09930-40113: Rotor holder**

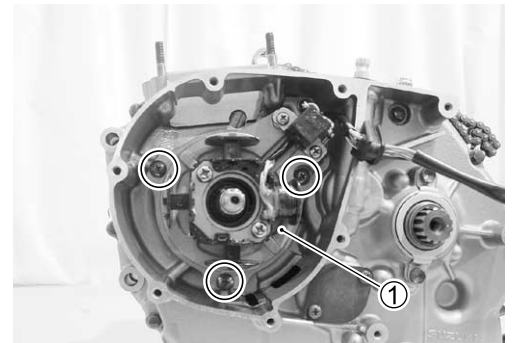


- Remove the generator rotor with the special tools.

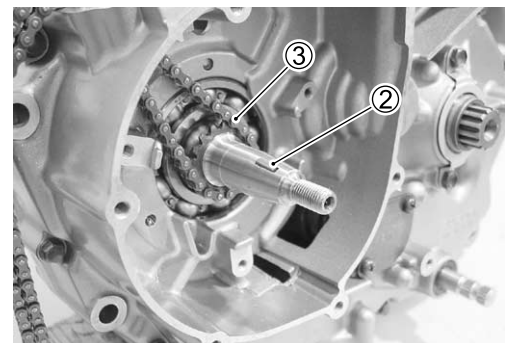
 **09930-30161: Rotor remover attachment**  
**09930-30102: Sliding shaft**

**GENERATOR STATOR**

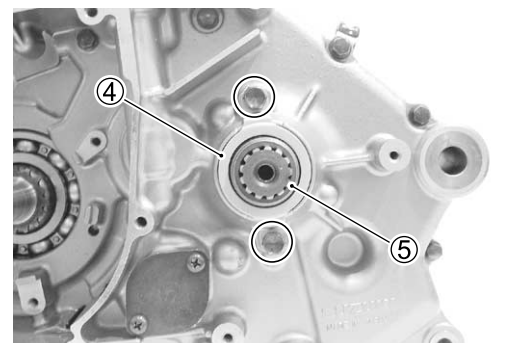
- Remove the generator stator ①.

**CAM CHAIN**

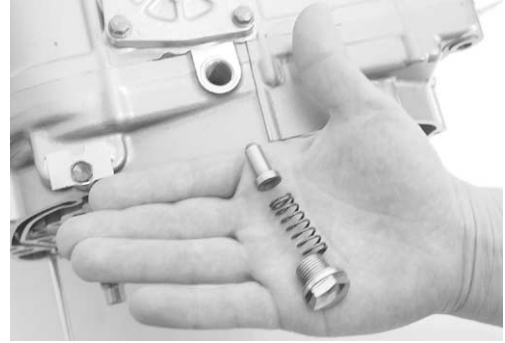
- Remove the generator rotor key ②.
- Remove the cam chain ③.



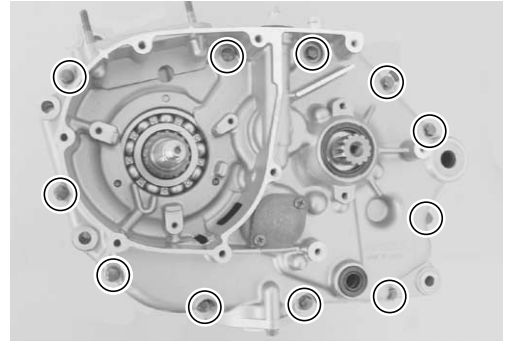
- Remove the oil seal retainer ④.
- Remove the engine sprocket spacer ⑤.



- Remove the gearshift cam stopper.



- Remove the crankcase bolts.

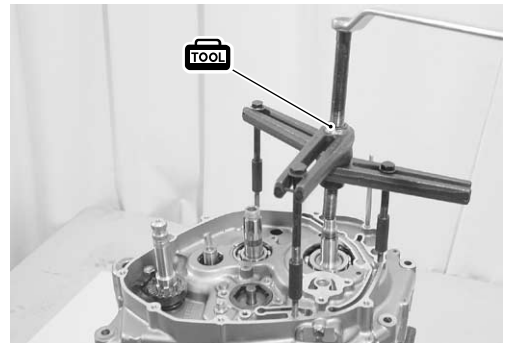


- Separate the left and right crankcases with the special tool.

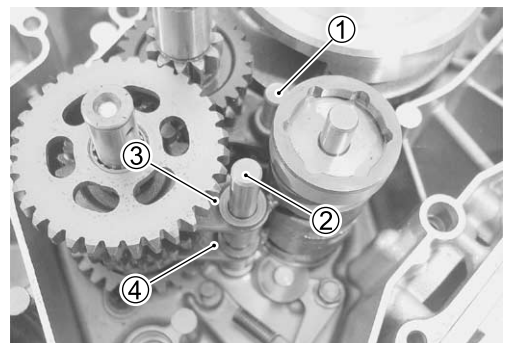
 **09920-13120: Crankcase separator**

**NOTE:**

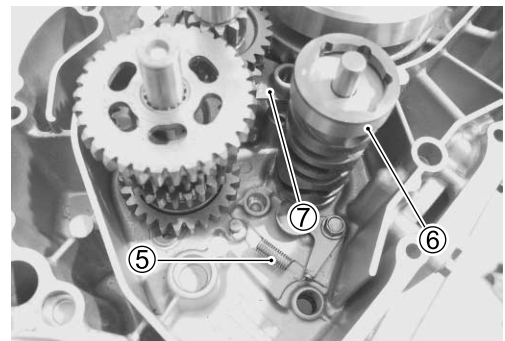
- \* Fit the crankcase separator, so that the tool arms are in parallel with the side of crankcase.
- \* The crankshaft and transmission components should remain in the left crankcase half.
- \* When separating the crankcase, tap the end of the countershaft with a plastic mallet.



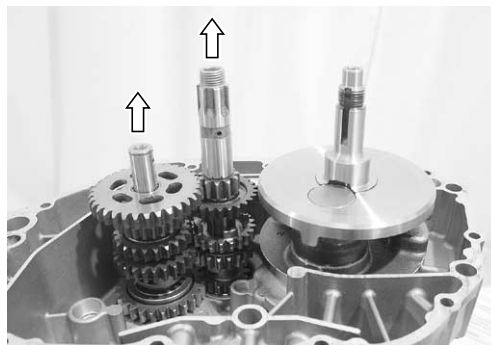
- Remove the gearshift fork shafts (①, ②) and gearshift forks (③, ④).



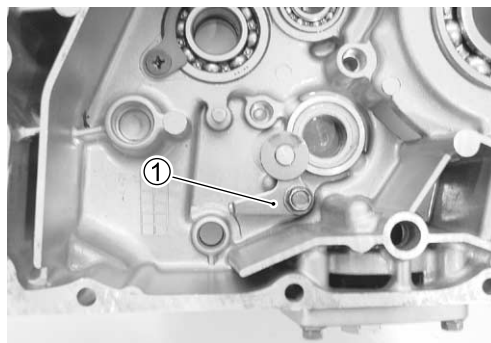
- Remove the gearshift cam stopper spring ⑤.
- Remove the gearshift cam ⑥.
- Remove the gearshift fork ⑦.



- Remove the driveshaft and countershaft.



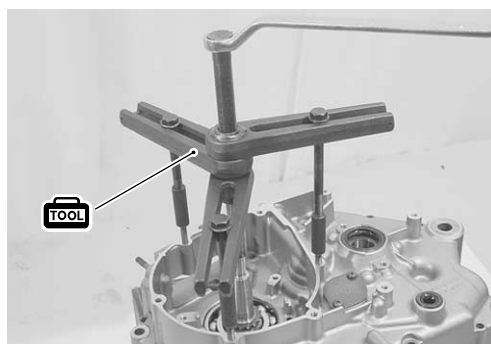
- Remove the gearshift cam stopper ①.



### CRANKSHAFT

- Remove the crankshaft with the special tool.

 **09920-13120: Crankcase separator**

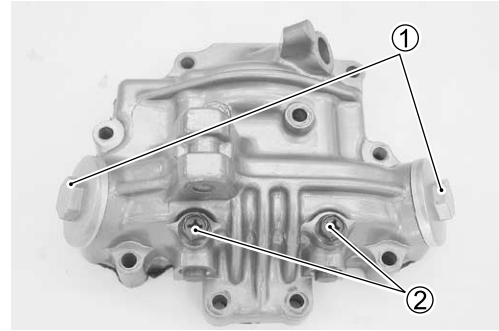


# ENGINE COMPONENTS INSPECTION AND SERVICE

## CYLINDER HEAD COVER

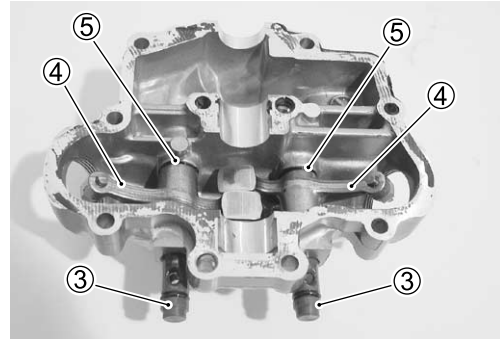
### CAUTION

Identify the position of each removed part. Organize the parts in their respective groups (i.e., intake or exhaust) so that they can be installed in their original locations.



### DISASSEMBLY

- Remove the inspection caps ①.
- Remove the rocker arm shaft bolts ②.
- Remove the rocker arm shafts ③.
- Remove the rocker arms ④ and wave washers ⑤.

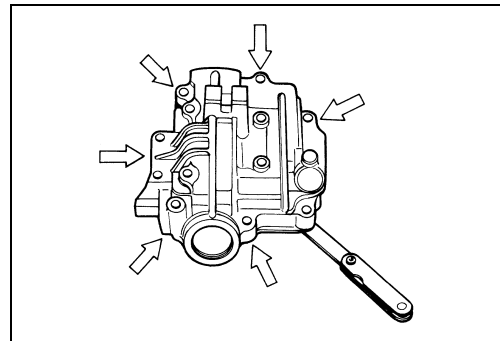


### CYLINDER HEAD COVER DISTORTION

After removing sealant from the fitting surface of the cylinder head cover, place the cylinder head cover on a surface plate and check for distortion with a thickness gauge. Check points are shown in Fig.

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

**TOOL** 09900-20803: Thickness gauge



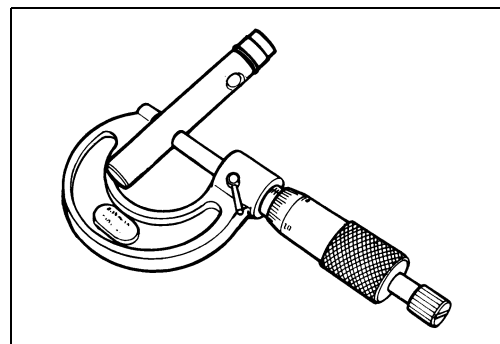
If the distortion exceeds the limit, replace the cylinder head cover.

### ROCKER ARM SHAFT O.D.

Measure the diameter of the rocker arm shafts.

**DATA** Rocker arm shaft O.D.  
Standard (IN. & EX.):  
11.977 – 11.995 mm (0.4715 – 0.4722 in)

**TOOL** 09900-20205: Micrometer (0 – 25 mm)



**ROCKER ARM I.D.**

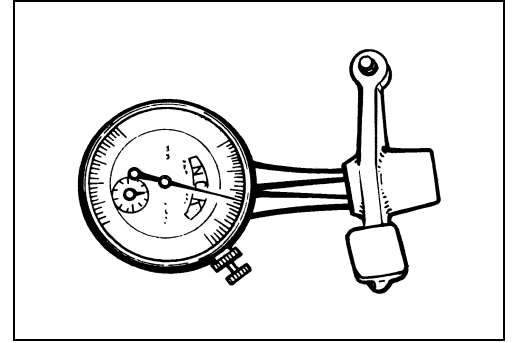
Measure the inside diameter of the rocker arm and check the wear of the camshaft contacting surface.

**DATA** Rocker arm I.D.

Standard (IN. & EX.):

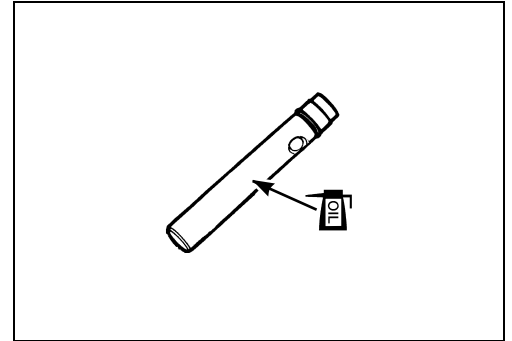
12.000 – 12.018 mm (0.4724 – 0.4731 in)

**TOOL** 09900-20605: Dial calipers

**REASSEMBLY**

Reassemble the cylinder head cover in the reverse order of disassembly. Pay attention to the following points:

- Apply engine oil to the rocker arm shafts.

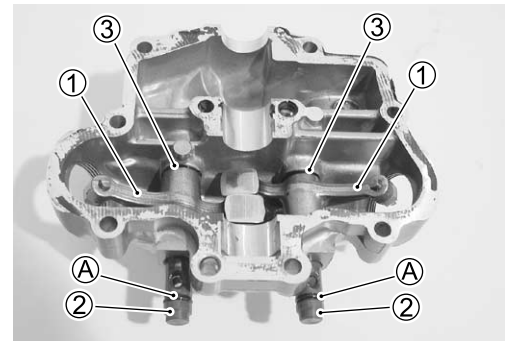


- Install the rocker arms ①, wave washers ③ and shafts ②.

- ① Rocker arm
- ② Rocker arm shaft
- ③ Wave washer

**CAUTION**

Use the new O-rings (A) to prevent oil leakage.

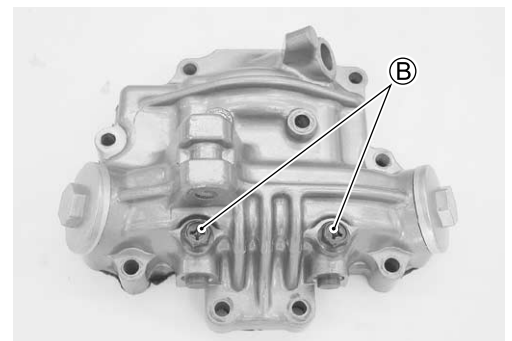


- Tighten the rocker arm shaft bolts to the specified torque.

**T** Rocker arm shaft bolt: 10 N·m (1.0 kgf·m, 7.0 lb·ft)

**CAUTION**

Install the gasket washer to the bolt (B).



## CYLINDER HEAD

### CAUTION

Identify the position of each removed part. Organize the parts in their respective groups (i.e., intake or exhaust) so that they can be installed in their original locations.

### DISASSEMBLY

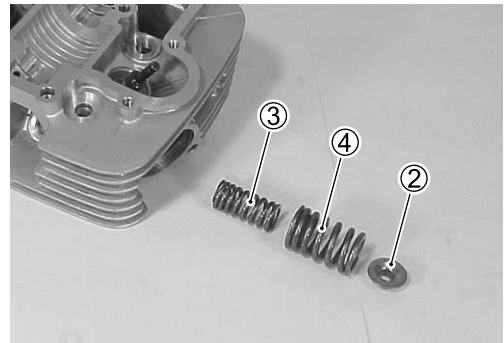
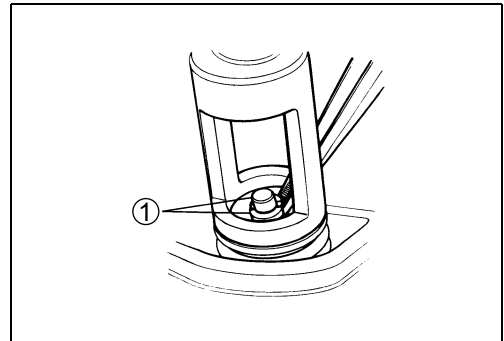
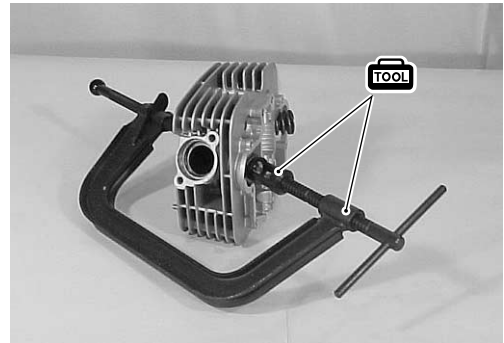
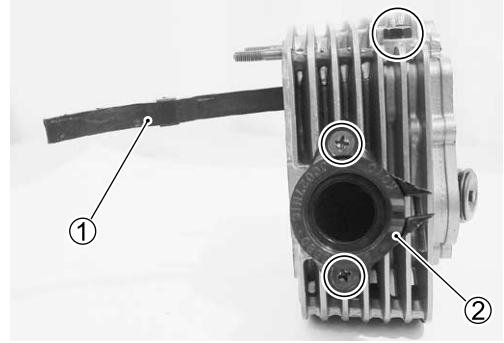
- Remove the cam chain tensioner ①.
- Remove the intake pipe ②.
- Compress the valve spring with the special tools.

**TOOL** 09916-14510: Valve lifter  
09916-14910: Valve lifter attachment

- Remove the valve cotters ① from the valve stem.

**TOOL** 09916-84511: Tweezers

- Remove the valve spring retainer ② and inner and outer valve springs (③, ④).

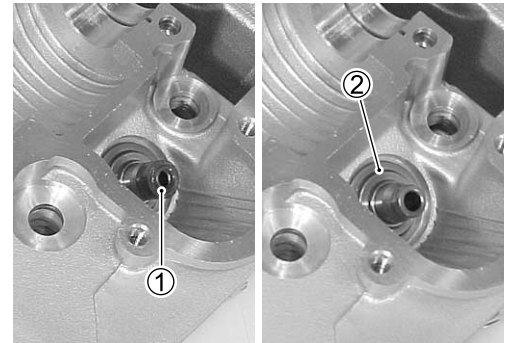




- Remove the valve from the combustion chamber side.



- Remove the valve stem seal ①.
- Remove the valve spring seat ②.



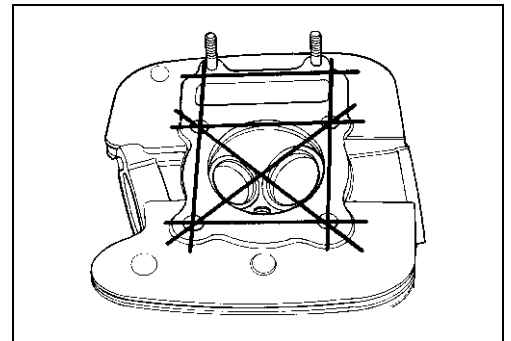
### CYLINDER HEAD DISTORTION

Decarbon the combustion chamber.

Check the gasket surface of the cylinder head for distortion using a straightedge and thickness gauge. Take clearance readings at several places. If readings exceed the service limit, replace the cylinder head.

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

**TOOL** 09900-20803: Thickness gauge

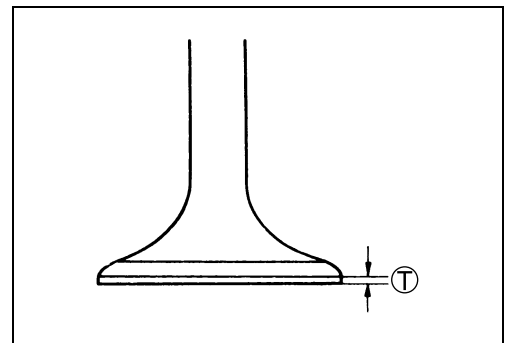


### VALVE FACE WEAR

The thickness of the valve face decreases as the face wears. Visually inspect each valve face for wear and replace any valve with an abnormally worn face. Measure the valve face thickness ①, if it is out of specification, replace the valve with a new one.

**DATA** Valve head thickness  
Service Limit: 0.5 mm (0.002 in)

**TOOL** 09900-20101: Vernier calipers

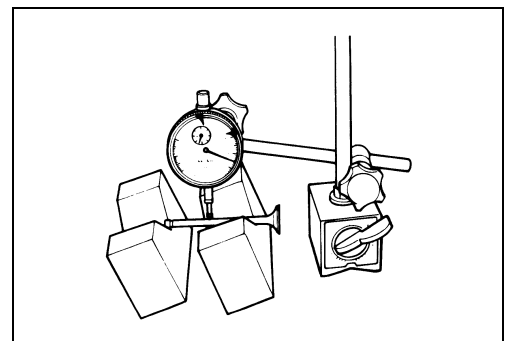


### VALVE STEM RUNOUT

Support the valve using V-blocks, as shown, and measure its runout with the dial gauge. If the runout exceeds the limit, replace the valve.

**DATA** Valve stem runout  
Service Limit: 0.05 mm (0.002 in)

**TOOL** 09900-20606: Dial gauge (1/100 mm)  
09900-20701: Magnetic stand  
09900-21304: V-block (100 mm)



**VALVE HEAD RADIAL RUNOUT**

Place the dial gauge at a right angle to the valve head face and measure the valve head radial runout.

If it measures more than the service limit, replace the valve.

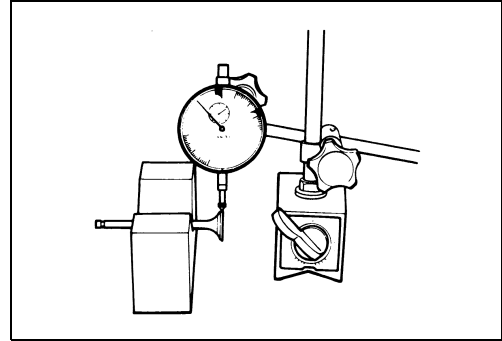
**DATA** Valve head radial runout

**Service Limit: 0.03 mm (0.001 in)**

**TOOL** 09900-20606: Dial gauge (1/100 mm)

09900-20701: Magnetic stand

09900-21304: V-block (100 mm)

**VALVE STEM DEFLECTION**

Lift the valve about 10 mm (0.4 in) from the valve seat. Measure the valve stem deflection in two directions, "X" and "Y", perpendicular to each other. Position the dial gauge as shown. If the deflection exceeds the service limit, then determine whether the valve or the guide should be replaced with a new one.

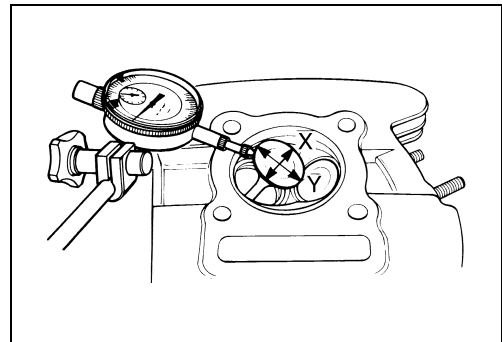
**DATA** Valve stem deflection

**Service Limit:**

**Intake and exhaust valves: 0.35 mm (0.014 in)**

**TOOL** 09900-20606: Dial gauge (1/100 mm)

09900-20701: Magnetic stand

**VALVE STEM WEAR**

Measure the valve stem O.D. using the micrometer. If it is out of specification, replace the valve with a new one. If the valve stem O.D. is within specification but the valve stem deflection is not, replace the valve guide. After replacing the valve or valve guide, re-check the deflection.

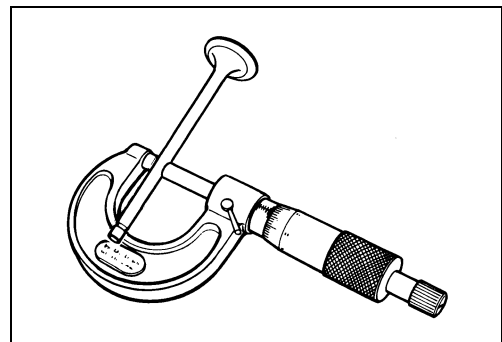
**DATA** Valve stem O.D.

**Standard:**

**IN.: 5.475 – 5.490 mm (0.2156 – 0.2161 in)**

**EX.: 5.455 – 5.470 mm (0.2148 – 0.2154 in)**

**TOOL** 09900-20205: Micrometer (0 – 25 mm)

**NOTE:**

*If valve guides have to be replaced, refer to the valve guide servicing steps below.*

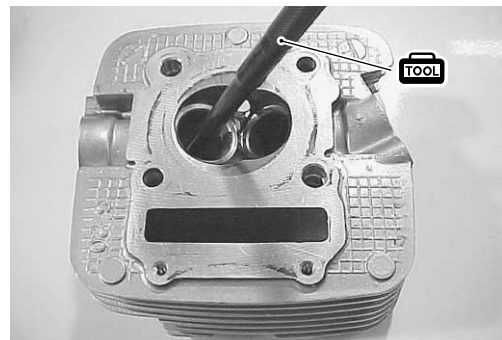
**VALVE GUIDE SERVICE**

- Remove the valve guide using the special tool.

**TOOL** 09916-44910: Valve guide remover/installer

**NOTE:**

- \* Discard the removed valve guide subassemblies.
- \* Only oversized valve guides are available as replacement parts.

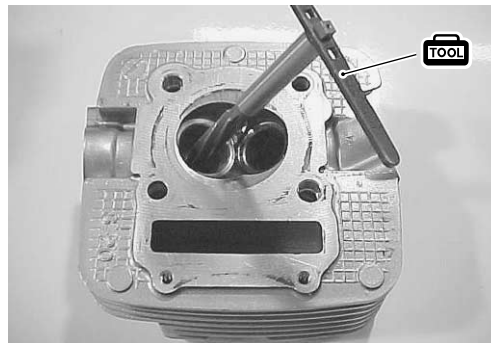


- Re-finish the valve guide holes in the cylinder head using the special tools.

**TOOL** 09916-34561: Valve guide reamer (11.3 mm)  
09916-34542: Handle

**NOTE:**

Insert the reamer from the combustion chamber side and always turn the reamer handle clockwise.



- Oil the stem hole of each valve guide and drive the guide into the guide hole using the special tool.

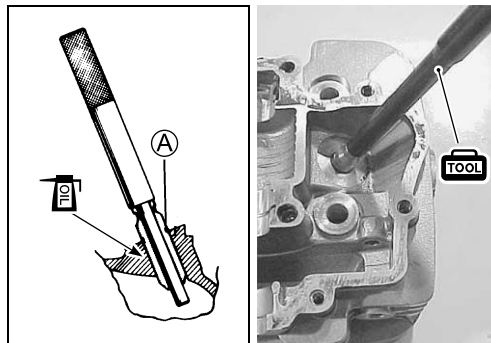
**TOOL** 09916-44910: Valve guide remover/installer

**CAUTION**

Be sure to use a new valve guide ring and valve guide.

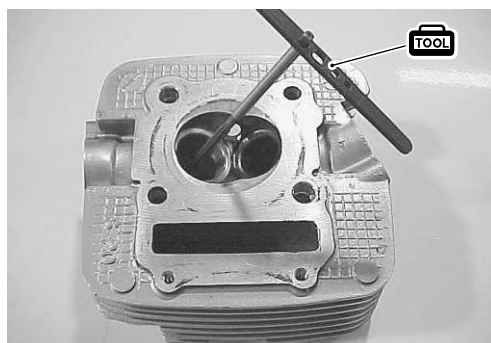
**NOTE:**

Install the valve guide until the ring **A** contacts with the cylinder head.



- After installing the valve guides, re-finish their guiding bores using the special tools. Be sure to clean and oil the guides after reaming.

**TOOL** 09916-34550: Valve guide reamer (5.5 mm)  
09916-34542: Handle



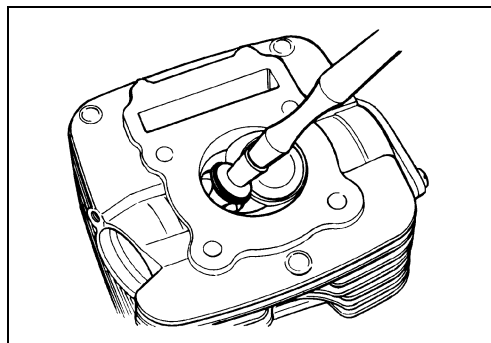
### VALVE SEAT WIDTH INSPECTION

Visually check for valve seat width on each valve face.

If the valve face has worn abnormally, replace the valve.

Coat the valve seat with Prussian Blue and set the valve in place. Rotate the valve with light pressure. Check that the transferred blue on the valve face is uniform all around and in center of the valve face.

If the seat width **W** measured exceeds the standard value, or seat width is not uniform, reface the seat using the seat cutter.

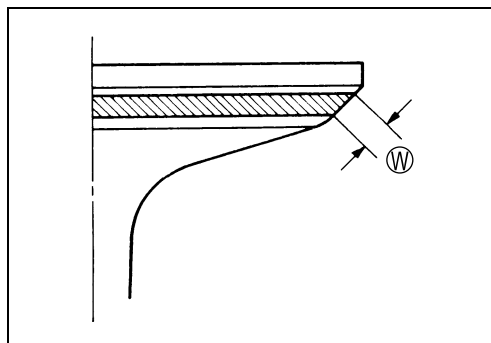


**DATA** Valve seat width **W**

Standard: 0.9 – 1.1 mm (0.035 – 0.043 in)

**TOOL** 09916-10911: Valve lapper set

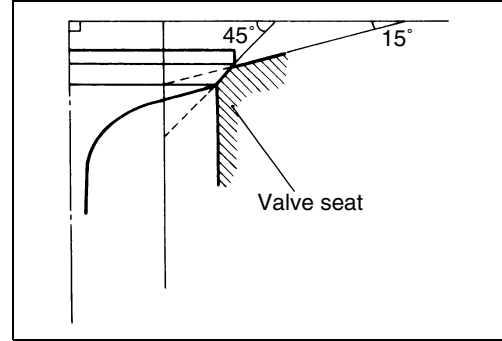
If the valve seat is out of specification, correct the seat by servicing it as follows.



**VALVE SEAT SERVICE**

The valve seats for both intake and exhaust valves are machined to two different angles. (The seat contact surface is cut at 45°.)

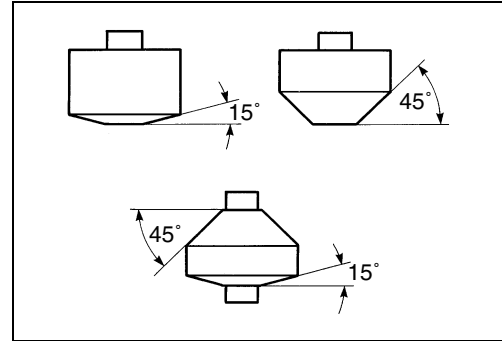
	INTAKE SIDE		EXHAUST SIDE
15°	N-212	15°	N-121
45°	N-122	45°	N-122



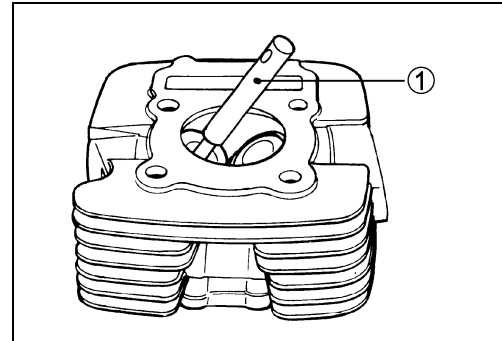
- TOOL** 09916-21111: Valve seat cutter set
- 09916-24480: Solid pilot (N-140-5.5)
- 09916-24900: Valve seat cutter set

**NOTE:**  
Use the solid pilot (N-100-5.52) along with the valve seat cutter (N-121 and -122)

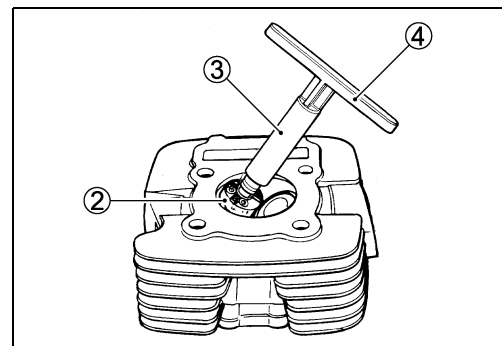
**CAUTION**  
The valve seat contact area must be inspected after each cut.



- When installing the solid pilot ①, rotate it slightly.

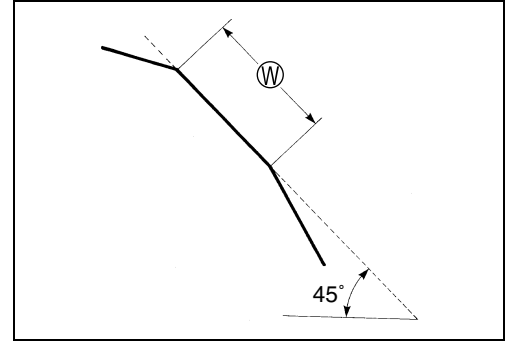


- Seat the pilot snugly. Install the 45° cutter ②, attachment ③ and T-handle ④.



**INITIAL SEAT CUT**

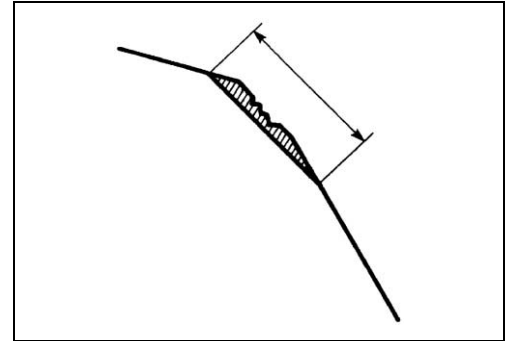
- Using the 45° cutter, descale and clean up the seat. Rotate the cutter one or two turns.
- Measure the valve seat width  $\text{W}$  after every cut.



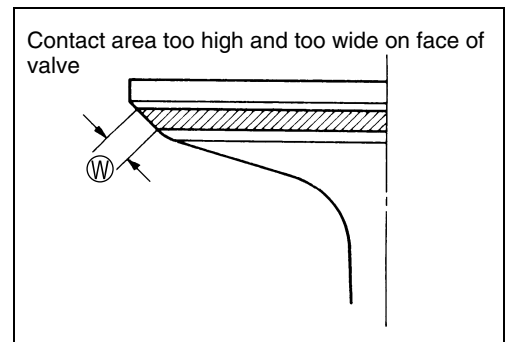
- If the valve seat is pitted or burned, use the 45° cutter to condition the seat some more.

**NOTE:**

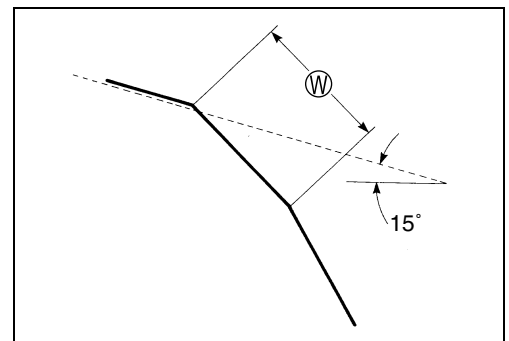
*Cut only the minimum amount necessary from the seat to prevent the possibility of the valve stem becoming too close to the rocker arm for correct valve contact angle.*

**TOP NARROWING CUT**

- If the contact area is too high and too wide on the face of valve, use the 15° cutter to lower and narrow the contact area.



(Use the 15° cutter.)

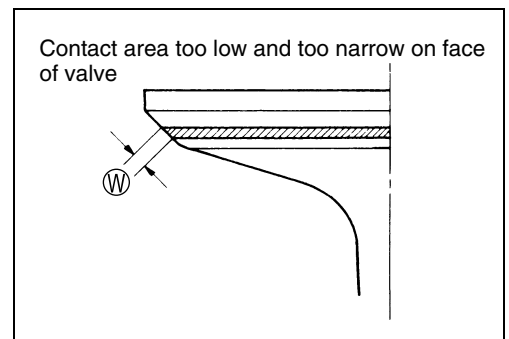
**FINAL SEAT CUT**

- If the contact area is too low or too narrow, use the 45° cutter to raise and widen the contact area.

**NOTE:**

*After cutting the 15° angle, it is possible that the valve seat (45°) is too narrow. If so, re-cut the valve seat to the correct width.*

- After the desired seat position and width is achieved, use the 45° cutter very lightly to clean up any burrs caused by the previous cutting operations.



**CAUTION**

Do not use lapping compound after the final cut is made. The finished valve seat should have a velvety smooth finish but not a highly polished or shiny finish. This will provide a soft surface for the final seating of the valve which will occur during the first few seconds of engine operation.

**NOTE:**

After servicing the valve seats, be sure to check the valve clearance after the cylinder head has been reinstalled. (☞ 2-7)

**VALVE SEAT SEALING CONDITION INSPECTION**

With the valve and valve spring assembled, pour a small quantity of gasoline into the intake or exhaust port.

Check that no gasoline leaks through the valve seat. If leakage is found, correct the sealing surface.

**⚠ WARNING**

Always use extreme caution when handling gasoline.

**VALVE STEM END CONDITION**

Inspect the valve stem end face for pitting and wear. If pitting or wear is present, resurface the valve stem end. Make sure that the length  $\textcircled{A}$  is not less than 2.5 mm (0.10 in). If this length becomes less than 2.5 mm (0.10 in), replace the valve.

**DATA**

**Valve stem end length**

**Service Limit: 2.5 mm (0.10 in)**

**VALVE SPRINGS**

Check the valve springs for proper strength by measuring their free length and also the force required to compress them. If the spring length is less than the service limit or if the force required to compress the spring does not fall within the specified range, replace the spring.

**DATA**

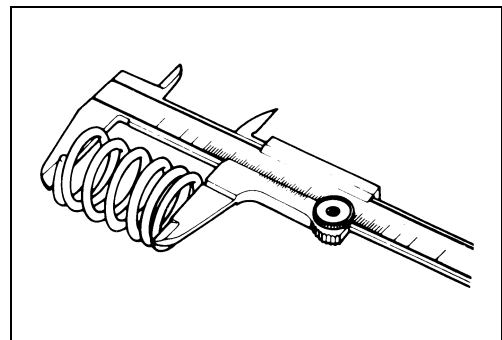
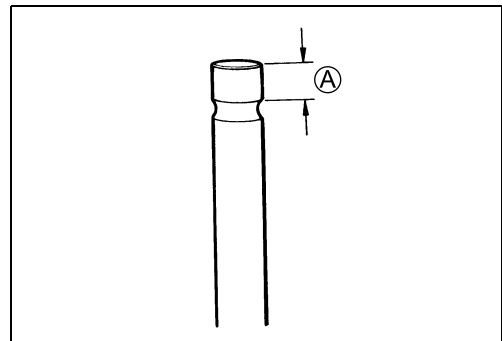
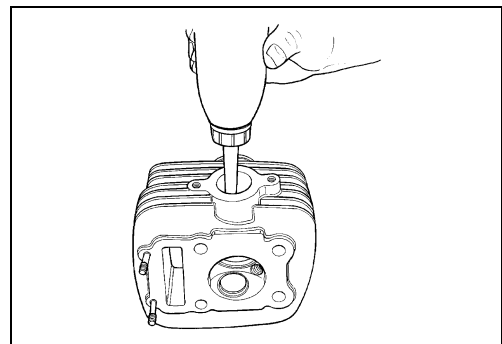
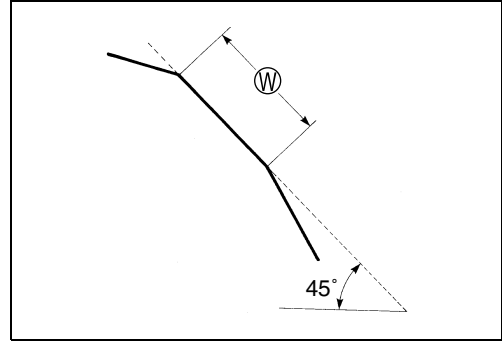
**Valve spring free length (IN. & EX.)**

**Service Limit INNER : 36.0 mm (1.42 in)**

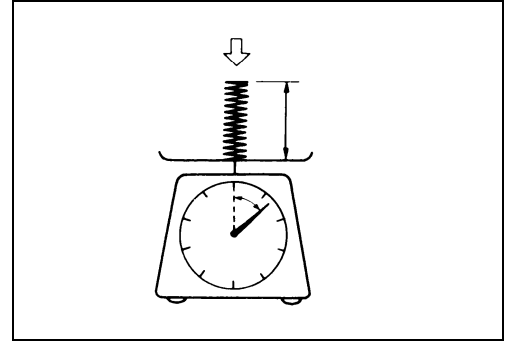
**OUTER: 39.3 mm (1.55 in)**

**TOOL**

**09900-20101: Venier calipers**



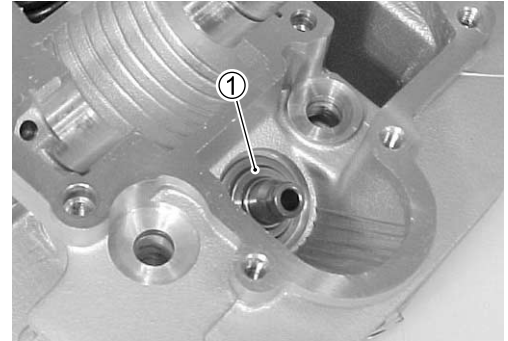
- DATA** Valve spring tension (IN. & EX.)  
 Standard INNER: 76 – 90 N/32.5 mm  
 (7.8 – 9.2 kgf/32.5 mm, 17.2 – 20.3 lbs/1.28 in)  
 OUTER: 186 – 219 N/36.0 mm  
 (18.9 – 22.3 kgf/36.0 mm, 41.7 – 49.2 lbs/1.42 in)



## REASSEMBLY

Reassemble the cylinder head in the reverse order of disassembly. Pay attention to the following points:

- Install each valve spring seat ①.



- Apply molybdenum oil solution to the valve stem seal, and press-fit the seal into position by hand.

### CAUTION

Do not reuse the valve stem seals.

### MOLYBDENUM OIL

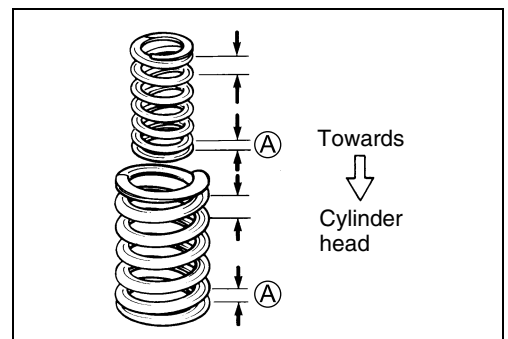
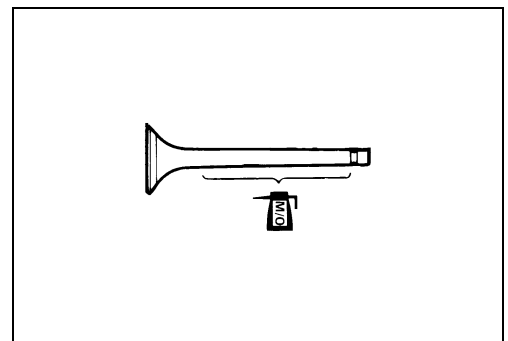
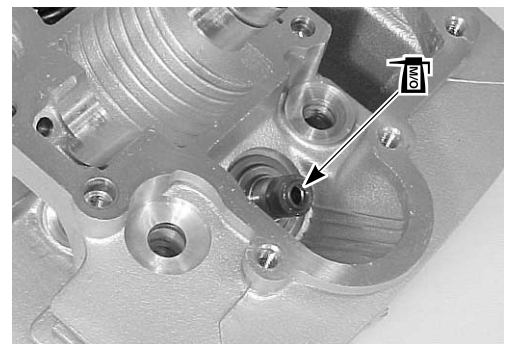
- Apply molybdenum oil solution to the valve stems.

### CAUTION

When inserting each valve, take care not to damage the lip of the stem seal.

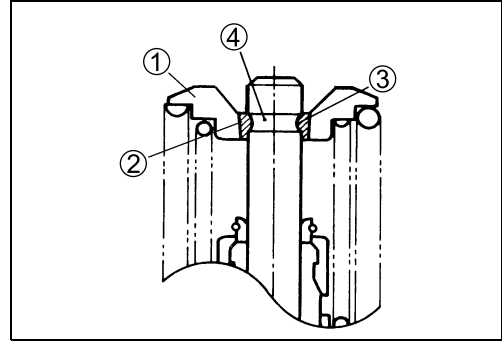
### MOLYBDENUM OIL

- Install the valve springs with the smaller pitch  $\textcircled{A}$  facing the cylinder head.



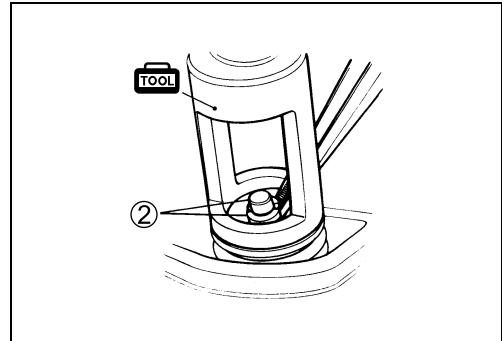
- Install the valve spring retainer ①, press down the spring using the valve lifter and then install the cotter halves onto the valve stem end. Then, release the valve lifter to allow the cotters ② to wedge between the retainer and the valve stem. Be sure that the rounded lip ③ of the cotter fits snugly into the groove ④ in the stem end.

- TOOL 09916-14510: Valve lifter  
 09916-14910: Valve lifter attachment  
 09916-84511: Tweezers



**CAUTION**

Be sure to install all of the parts in their original positions.



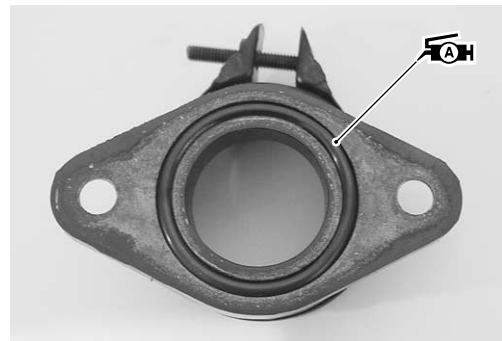
**INTAKE PIPE**

- When installing the intake pipe, apply grease to the O-ring.

- A 99000-25030: SUZUKI SUPER GREASE "A" (USA)  
 99000-25010: SUZUKI SUPER GREASE "A" (Others)

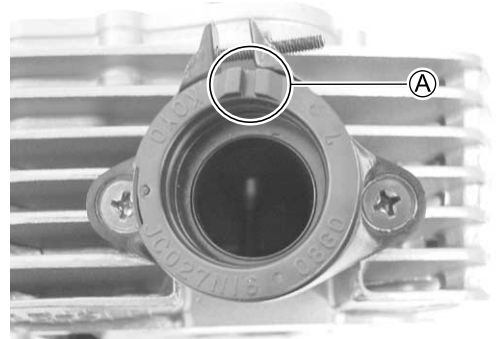
**CAUTION**

Use the new O-ring to prevent sucking air from the joint.



**NOTE:**

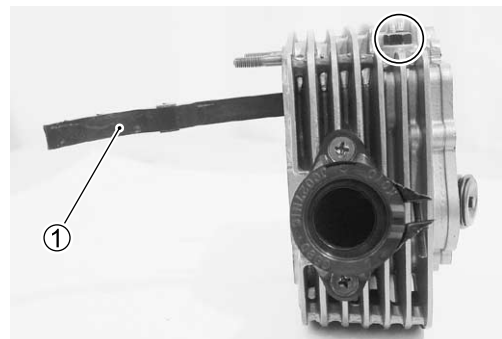
Make sure that the protrusion (A) comes upward.



**CAM CHAIN TENSIONER**

- Install the cam chain tensioner ①.
- Tighten the cam chain tensioner bolt to the specified torque.

- U Cam chain tensioner mounting bolt:  
 13 N·m (1.3 kgf·m, 9.5 lb-ft)





## CAMSHAFT

### CAMSHAFT INSPECTION

If the engine produces abnormal noises, vibration or lacks power, a camshaft may be distorted or worn to the service limit. The camshaft runout should be checked. Also, check the cams and journals for wear or damage.

### CAM WEAR

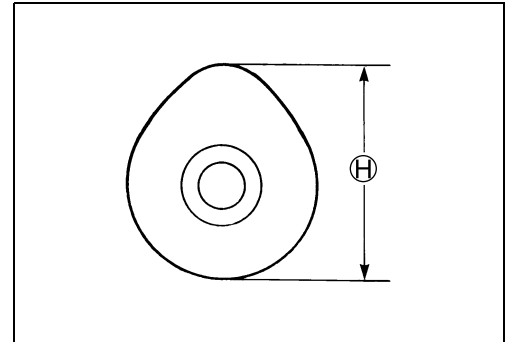
Worn-down cams are often the cause of mistimed valve operation resulting in reduced power output.

Measure the cam height  $\text{H}$  using the micrometer. Replace a camshaft if the cams are worn to the service limit.

**DATA** Cam height  $\text{H}$

**Service Limit (IN & EX): 32.83 mm (1.293 in)**

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



### CAMSHAFT JOURNAL WEAR

Determine whether or not each journal is worn down to the limit by measuring the oil clearance with the camshaft installed in place. Measure the clearance using the plastigauge ①.

**TOOL** 09900-22301: Plastigauge  
09900-22302: Plastigauge

#### NOTE:

*Install the cylinder head cover to its original position.*

- Tighten the cylinder head cover bolts evenly and diagonally to the specified torque.

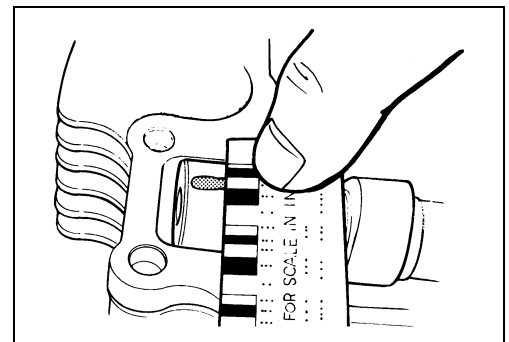
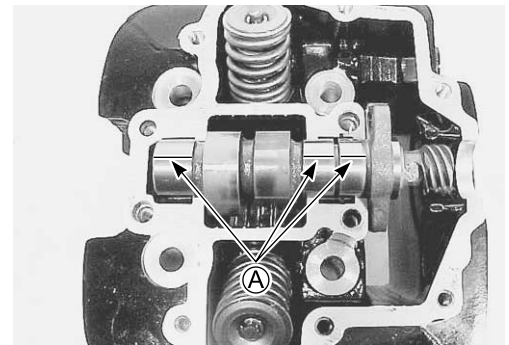
**U** Cylinder head cover bolt: 10 N-m (1.0 kgf-m, 7.0lb-ft)

#### NOTE:

*Do not rotate the camshaft with the plastigauge in place.*

Remove the cylinder head cover and measure the width of the compressed plastigauge using the envelope scale. This measurement should be taken at the widest part of the compressed plastigauge.

**DATA** Camshaft journal oil clearance  
**Service Limit: 0.150 mm (0.0059 in)**

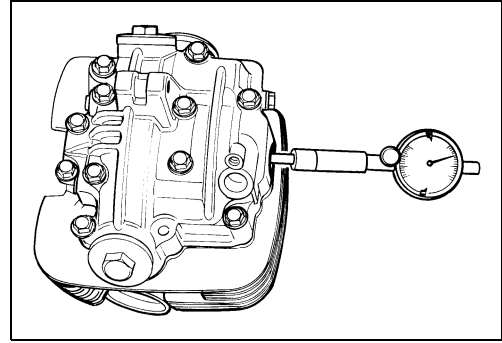


If the camshaft journal oil clearance exceeds the limit, measure the inside diameter of the camshaft journal holder and outside diameter of the camshaft journal. Replace the camshaft or the cylinder head depending upon which one exceeds the specification.

**DATA** Camshaft journal holder I.D.

Standard: 22.012 – 22.025 mm (0.8666 – 0.8671 in)

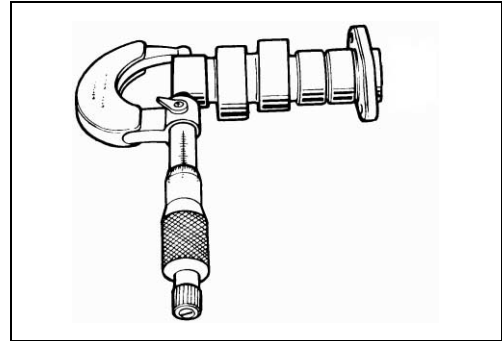
**TOOL** 09900-22403: Small bore gauge



**DATA** Camshaft journal O.D.

Standard: 21.959 – 21.980 mm (0.8645 – 0.8654 in)

**TOOL** 09900-20205: Micrometer (0 – 25 mm)



### CAMSHAFT RUNOUT

Measure the runout using a dial gauge. Replace the camshaft if the runout exceeds the limit.

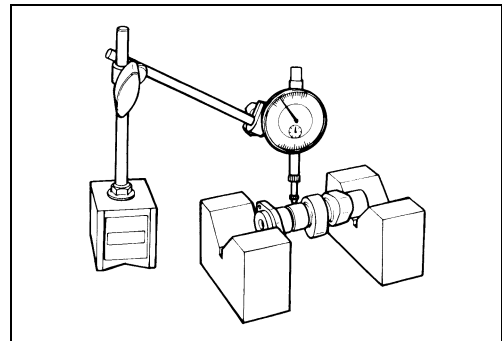
**DATA** Camshaft runout

Service Limit: 0.10 mm (0.004 in)

**TOOL** 09900-20606: Dial gauge (1/100 mm)

09900-20701: Magnetic stand

09900-21304: V-block (100 mm)



### CAM CHAIN TENSION ADJUSTER

Make sure the push rod movement. If the push rod is stuck or spring mechanism failed, replace the cam chain tension adjuster assembly with a new one.



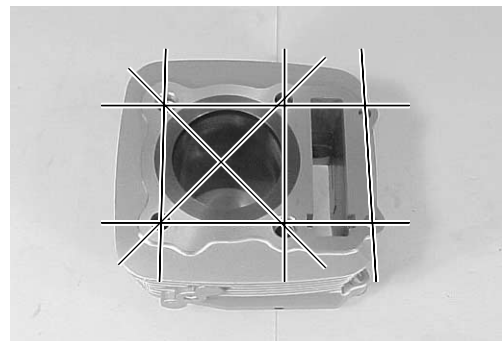
### CYLINDER DISTORTION

Check the gasket surface of the cylinder for distortion using a straightedge and thickness gauge. Take clearance readings at several places. If any reading exceeds the service limit, replace the cylinder.

**DATA** Cylinder distortion

Service Limit: 0.05 mm (0.002 in)

**TOOL** 09900-20803: Thickness gauge



**CYLINDER BORE**

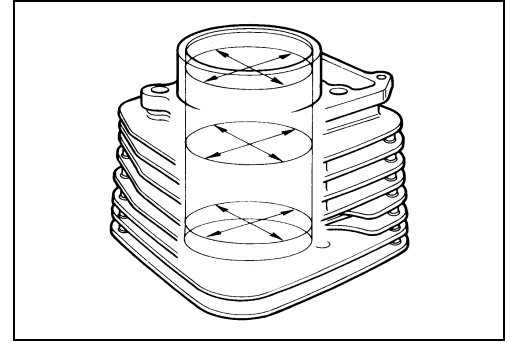
Measure the cylinder bore diameter at six places.

If any one of the measurements exceed the limit, overhaul the cylinder and replace the piston with an oversize piston, or replace the cylinder.

**DATA** Cylinder bore

**Service Limit: 57.110 mm (2.2484 in)**

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

**PISTON AND PISTON PIN DIAMETER**

Measure the piston diameter using the micrometer at 12 mm from the skirt end.

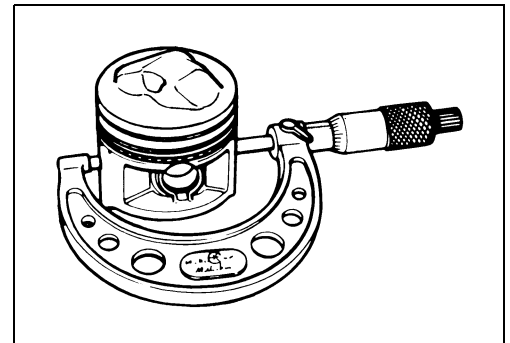
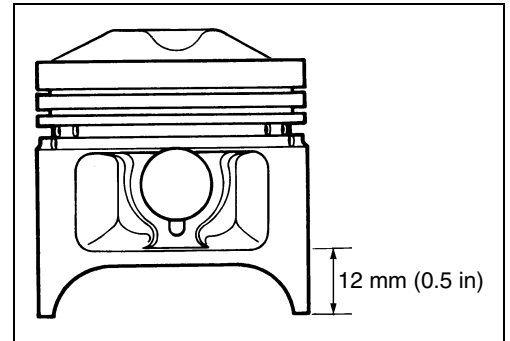
If the piston diameter is less than the service limit, replace the piston.

**DATA** Piston diameter

**Service Limit: 56.880 mm (2.2394 in)**

**Piston oversize: 0.5 mm (0.02 in)**

**TOOL** 09900-20203: Micrometer (50 – 75 mm)

**PISTON-TO-CYLINDER CLEARANCE**

Subtract the piston diameter from the cylinder bore diameter. 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.

**DATA** Piston-to-cylinder clearance

**Service Limit: 0.120 mm (0.0047 in)**

**PISTON RING GROOVE CLEARANCE**

Measure the side clearance of the 1st and 2nd rings using the thickness gauge. If any of the clearances exceed the limit, replace both the piston and piston rings.

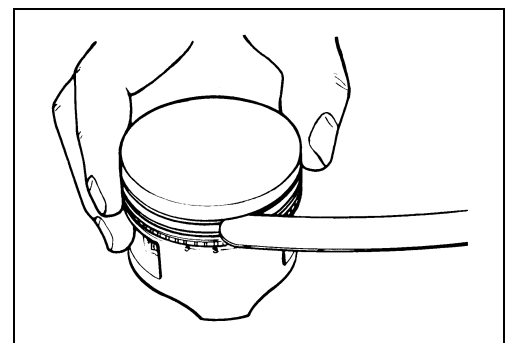
**DATA** Piston ring to groove clearance

**Service Limit 1st : 0.18 mm (0.007 in)**

**2nd : 0.15 mm (0.006 in)**

**TOOL** 09900-20803: Thickness gauge

**09900-20205: Micrometer (0 – 25 mm)**



**DATA** Piston ring groove width

Standard 1st : 1.21 – 1.23 mm (0.047 – 0.048 in)

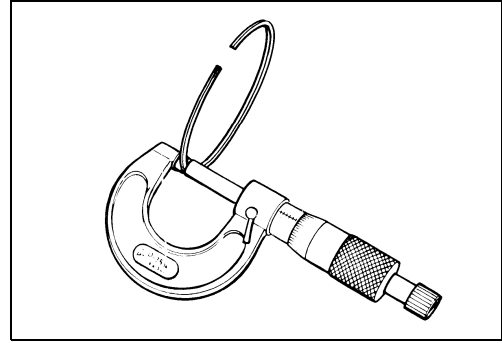
2nd : 1.21 – 1.23 mm (0.047 – 0.048 in)

Oil : 2.51 – 2.53 mm (0.099 – 0.110 in)

**DATA** Piston ring thickness

Standard 1st : 1.175 – 1.190 mm (0.0463 – 0.0469 in)

2nd : 1.170 – 1.190 mm (0.0461 – 0.0469 in)

**NOTE:**

Remove any carbon from the piston crown and ring grooves using a soft-metal scraper.

**PISTON RING FREE END GAP AND PISTON RING END GAP**

Measure the piston ring free end gap using a vernier calipers.

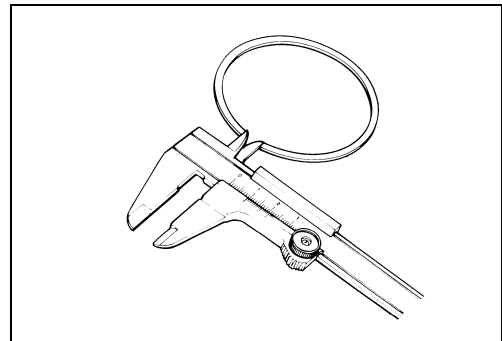
Next, fit the piston ring squarely into the cylinder and measure the piston ring end gap using a thickness gauge.

If the piston ring's end gap is out of specification, replace the piston ring.

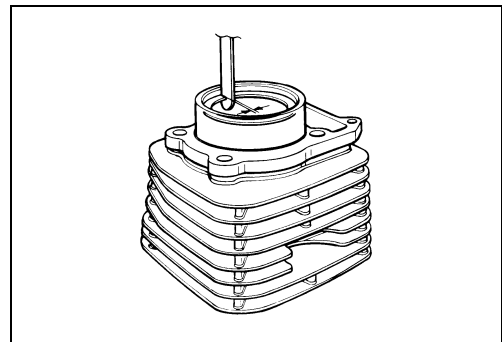
**DATA** Piston ring free end gap

Service Limit 1st : 5.6 mm (0.22 in)

2nd : 6.8 mm (0.27 in)

**TOOL** 09900-20101: Vernier calipers**DATA** Piston ring end gap

Service Limit 1st and 2nd: 0.5 mm (0.02 in)

**TOOL** 09900-20803: Thickness gauge

**OVERSIZE RINGS****Upsize piston ring**

The following oversize piston ring is used. It bears the following identification number.

**Piston ring 1st and 2nd 0.5 mm: 50**

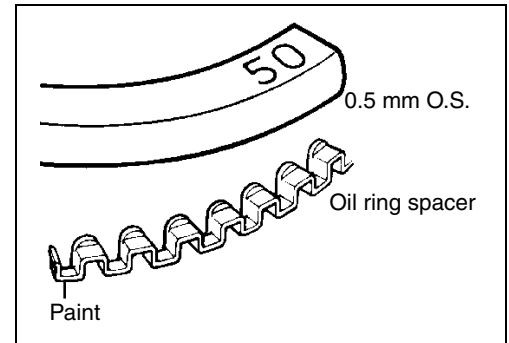
**Upsize oil ring**

The following oversize oil ring is used. It bears the following identification mark.

**Oil ring 0.5 mm: Painted red**

**Upsize side rail**

Measure the outside diameter to identify the size.

**PISTON 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 difference between these two measurements is more than the limits, replace both piston and piston pin.

**DATA** Piston pin bore

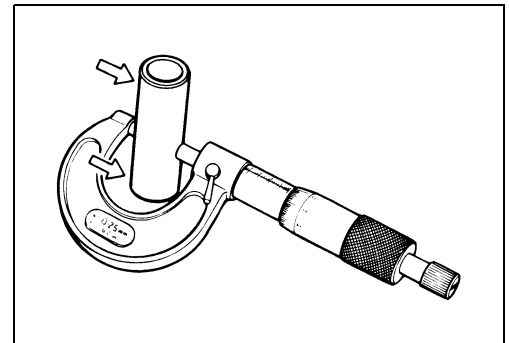
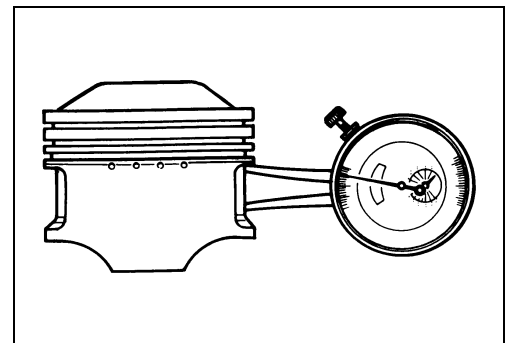
**Service Limit: 14.030 mm (0.5524 in)**

**DATA** Piston pin O.D.

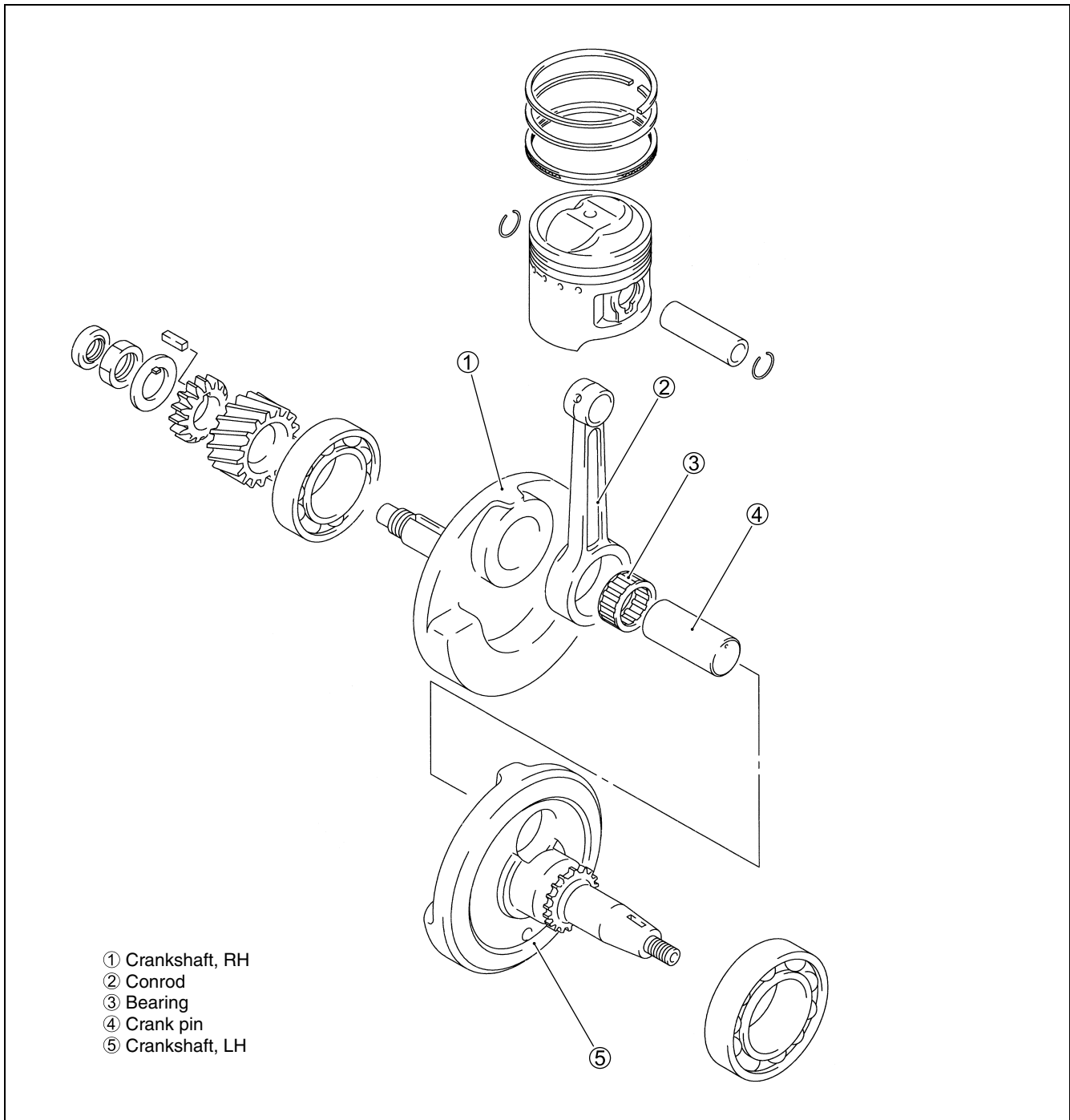
**Service Limit: 13.980 mm (0.5504 in)**

**TOOL** 09900-20605: Dial calipers

09900-20205: Micrometer (0 – 25 mm)



## CRANKSHAFT AND CONROD



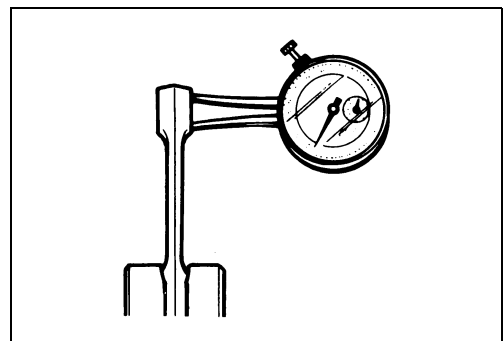
### CONROD SMALL END I.D.

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: 14.040 mm (0.5528 in)

**TOOL** 09900-20605: Dial calipers



### CONROD DEFLECTION AND CONROD BIG END SIDE CLEARANCE

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 conrod's big end.

#### **DATA** Conrod deflection

**Service Limit: 3.0 mm (0.12 in)**

**TOOL** 09900-20701: Magnetic stand  
09900-20606: Dial gauge (1/100 mm)  
09900-21304: V-block set (100 mm)

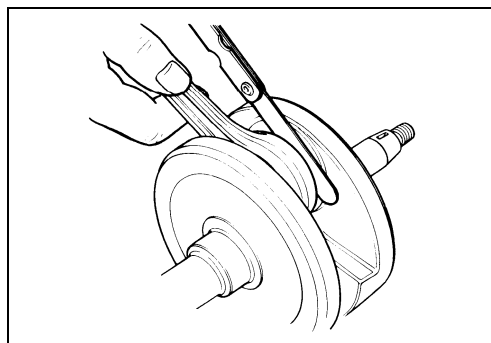
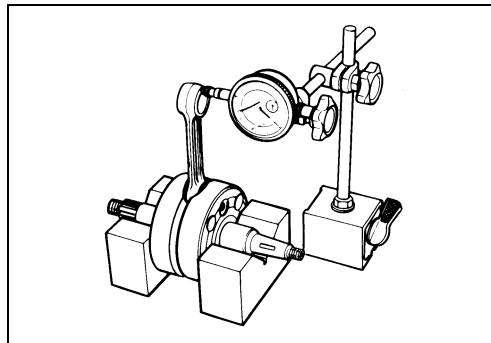
Push the big end of the conrod to one side and measure the side clearance using a thickness gauge.

#### **DATA** Conrod big end side clearance

**Service Limit: 1.0 mm (0.04 in)**

**TOOL** 09900-20803: Thickness gauge

If the clearance exceeds the service limit, replace crankshaft assembly or bring the deflection and side clearance into specification by replacing the worn parts. (e.g., conrod, big end bearing and crank pin)



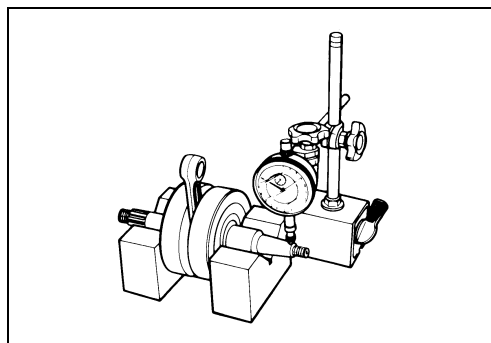
### CRANKSHAFT RUNOUT

Support the crankshaft with 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.

#### **DATA** Crankshaft runout

**Service Limit: 0.08 mm (0.003 in)**

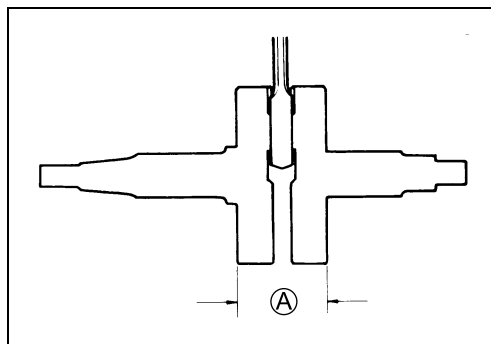
**TOOL** 09900-20701: Magnetic stand  
09900-20606: Dial gauge (1/100 mm)  
09900-21304: V-block set (100 mm)



### REASSEMBLY

- When rebuilding the crankshaft, the width between the webs  $\textcircled{A}$  should be within the standard range.

**DATA** Crank web to web width  $\textcircled{A}$ :  $53.0 \pm 0.1$  mm  
( $2.09 \pm 0.004$  in)



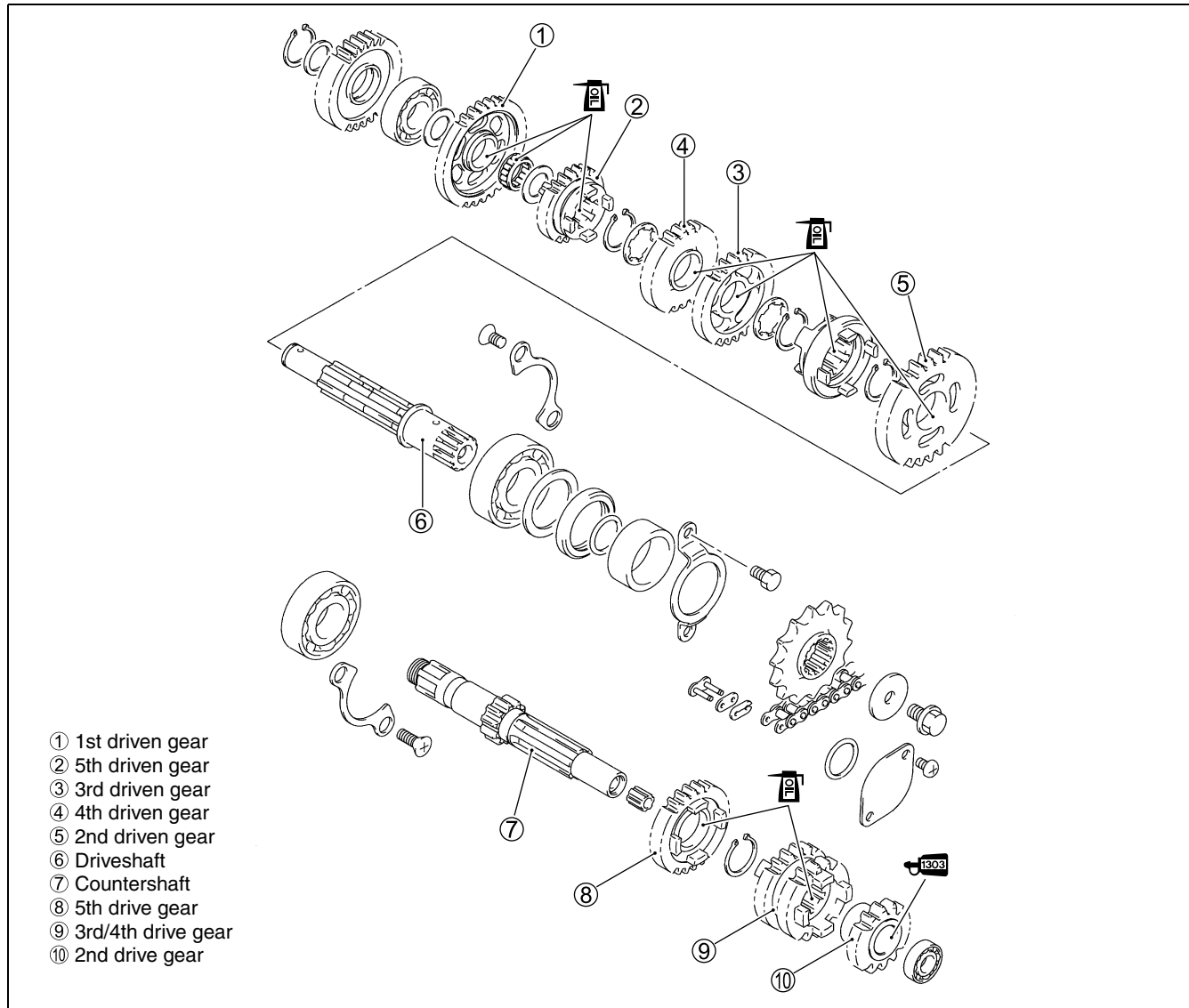
## TRANSMISSION

### DISASSEMBLY

- Disassemble the transmission gears as shown in the illustration.

#### NOTE:

When removing the 2nd drive gear, use a gear puller and a proper attachment.



### REASSEMBLY

Assemble the countershaft and driveshaft in the reverse order of disassembly. Pay attention to the following points:

#### NOTE:

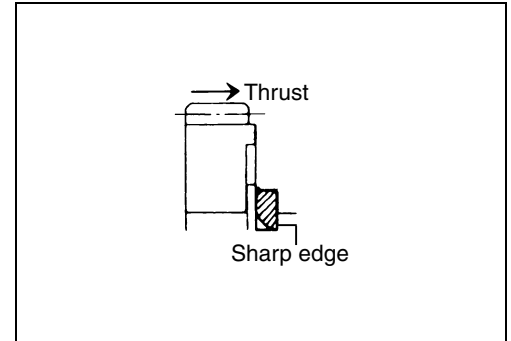
Before installing the gears, apply engine oil to the bearing and inner surface of the each gear.

#### CAUTION

- \* Never reuse a snap ring. After a snap ring has been removed from a shaft, it should be discarded and a new snap ring must be installed.
- \* When installing a new snap ring, do not expand the end gap larger than required to slip the snap ring over the shaft.
- \* After installing a snap ring, make sure that it is completely seated in its groove and securely fitted.



- When installing a new snap ring, pay attention to the direction of the snap ring. Fit the snap ring to the side where the thrust is as shown in the illustration. The rounded side should be against the gear surface.



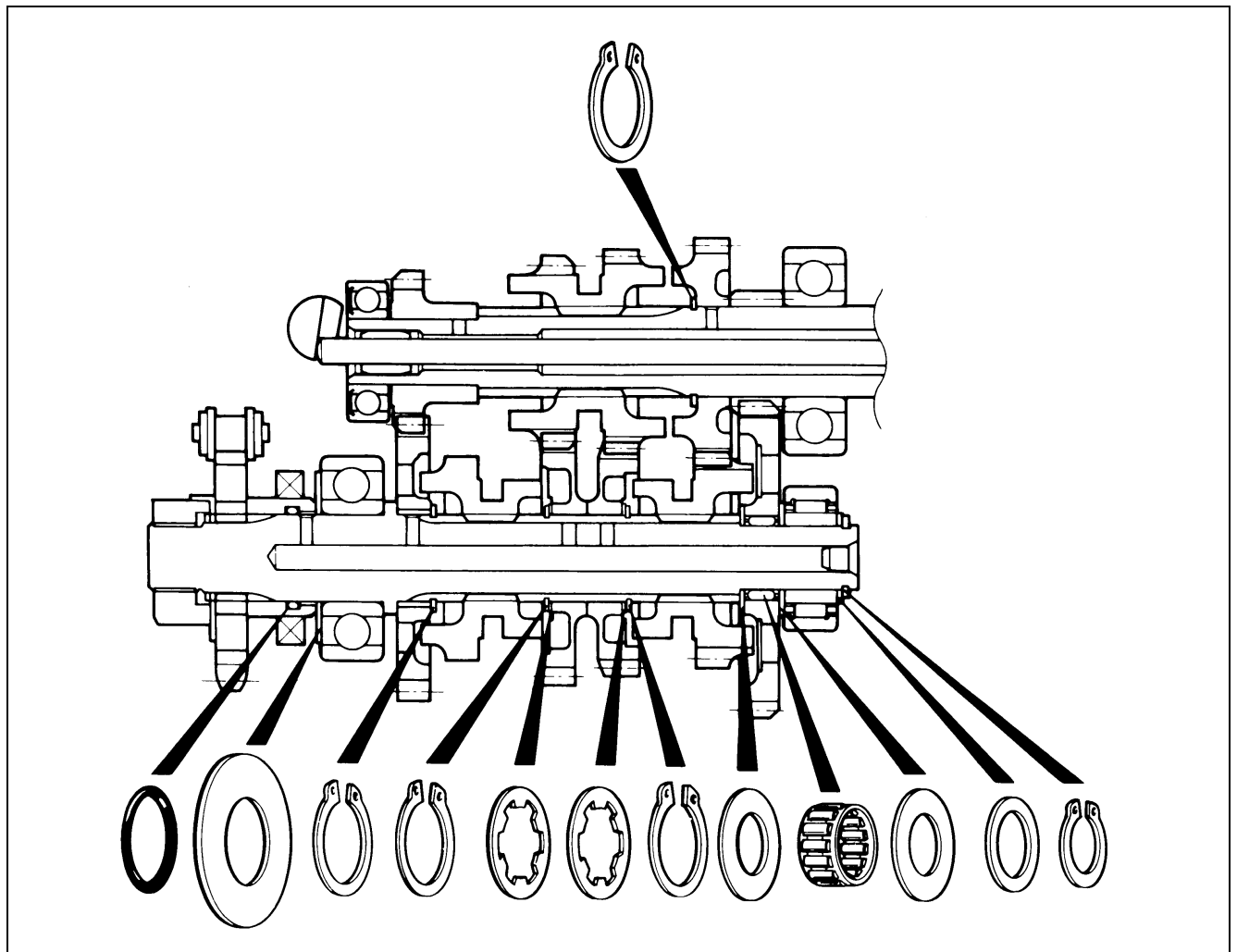
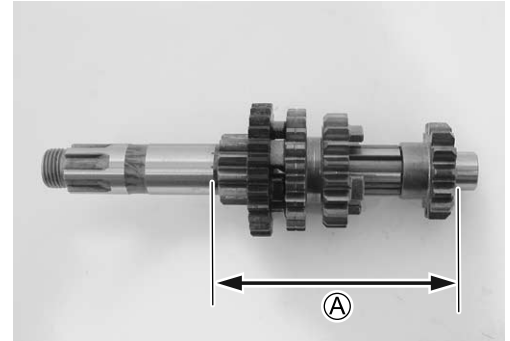
- Press fitted 2nd drive gear onto the countershaft. Before reassembling, coat the internal face of the 2nd drive gear with THREAD LOCK SUPER "1303" and install the gears so that the length ① is as shown.

**DATA** Countershaft length ①:  $88.0^{+0.1}_0$  mm ( $3.46^{+0.004}_0$  in)

**1303** 99000-32030: THREAD LOCK SUPER "1303"

**NOTE:**

*This procedure may be performed only twice before shaft replacement is required.*



## GEARSHIFT FORKS

Measure the gearshift fork clearance in the groove of its respective gear using the thickness gauge.

The clearance for each of the two gearshift forks plays an important role in the smoothness and positiveness of the shifting action. Each fork has its prongs fitted into the annular groove provided in its gear. During operation there is sliding contact between the fork and gear and, when a shifting action is initiated, the fork pushes the gear axially.

If the clearance is too great, the meshed gears may slip apart.

If the clearance exceeds the specification, replace the fork, its respective gear or both.

### **DATA** Gearshift fork to groove clearance

**Service Limit: 0.5 mm (0.02 in)**

**TOOL** 09900-20803: Thickness gauge

### **DATA** Gearshift fork groove width

**Standard**

**No.1: 5.0 – 5.1 mm (0.196 – 0.201 in)**

**No.3: 5.5 – 5.6 mm (0.217 – 0.224 in)**

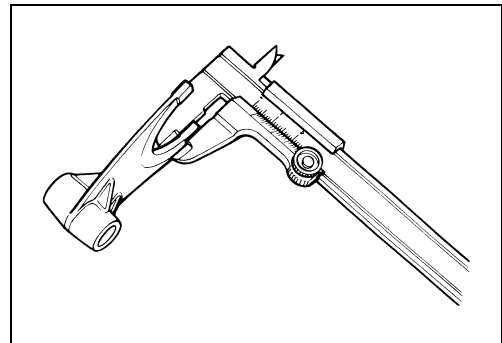
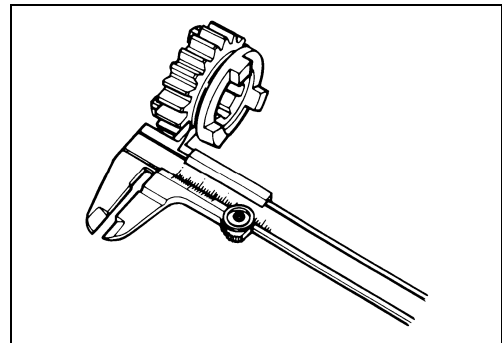
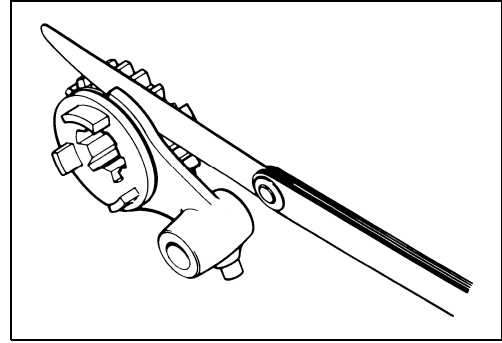
**TOOL** 09900-20101: Venier calipers

### **DATA** Shift fork thickness

**Standard**

**No.1: 4.8 – 4.9 mm (0.189 – 0.193 in)**

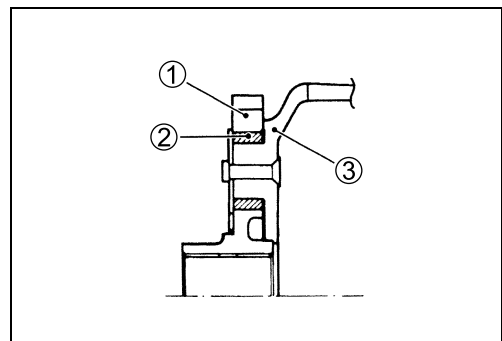
**No.3: 5.3 – 5.4 mm (0.209 – 0.213 in)**



## PRIMARY DRIVEN GEAR

If the internal damper wears, play is generated between gear and housing, causing abnormal noise. If the play is extreme, replace the primary driven gear assembly with a new one.

- ① Primary driven gear
- ② Damper
- ③ Clutch housing



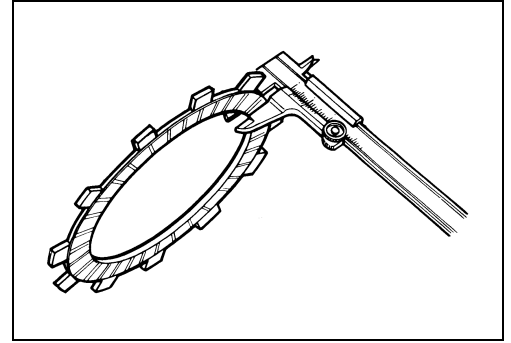
## CLUTCH

### CLUTCH DRIVE PLATES

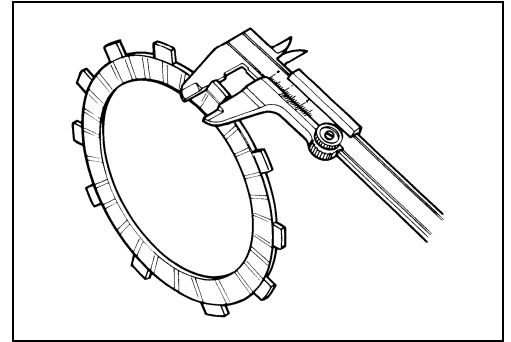
Measure the thickness and claw width of the clutch drive plates using vernier calipers. If a clutch drive plate is not within the service limit, replace the clutch plates as a set.

**DATA** Clutch drive plate thickness  
Service Limit: 2.6 mm (0.102 in)

**TOOL** 09900-20101: Vernier calipers



**DATA** Clutch drive plate claw width  
Service Limit: 11.5 mm (0.45 in)

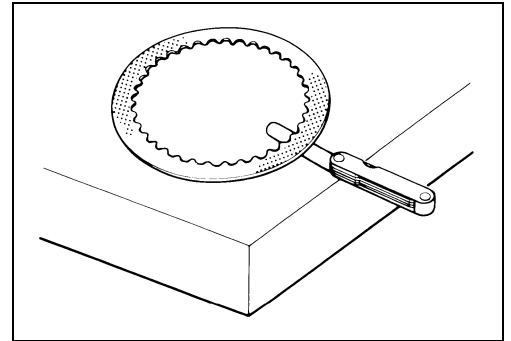


### CLUTCH DRIVEN PLATES

Measure each clutch driven plates for distortion using the thickness gauge. If a clutch driven plate is not within the service limit, replace the clutch plates as a set.

**DATA** Clutch driven plate distortion  
Service Limit: 0.10 mm (0.004 in)

**TOOL** 09900-20803: Thickness gauge

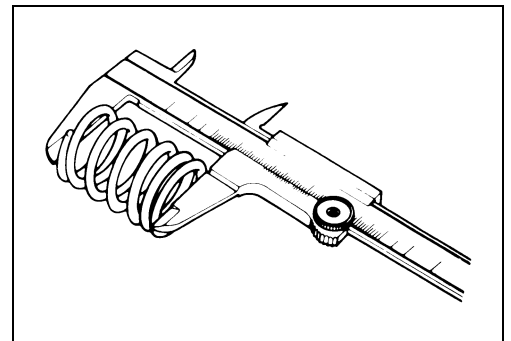


### CLUTCH SPRING FREE LENGTH

Measure the free length of each clutch spring using vernier calipers. If any spring is not within the service limit, replace all of the spring.

**DATA** Clutch spring free length  
Service Limit: 31.0 mm (1.22 in)

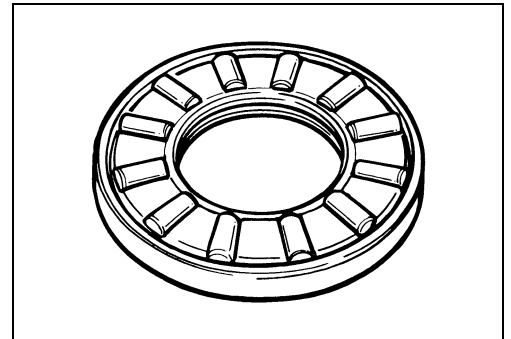
**TOOL** 09900-20101: Vernier calipers



### CLUTCH RELEASE BEARING

Inspect the clutch release bearing for any abnormality, especially cracks. When removing the bearing from the clutch, decide whether it can be reused or if it should be replaced.

Smooth engagement and disengagement of the clutch depends on the condition of this bearing.



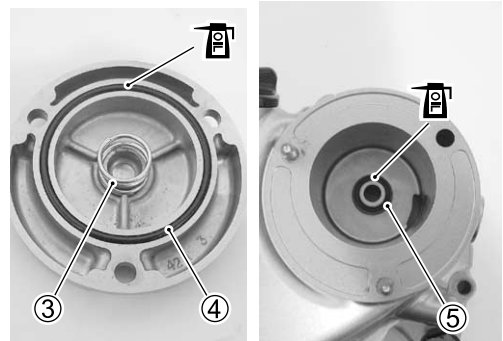
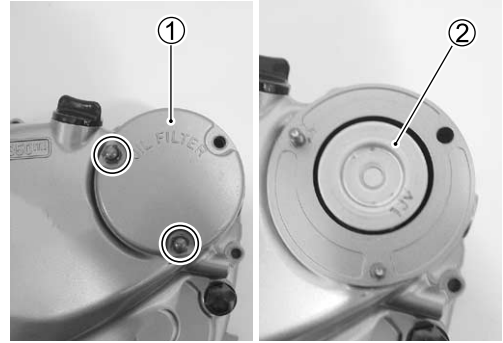
## OIL FILTER

- Remove the oil filter cap ①.
- Remove the oil filter ② and install a new one.

### NOTE:

Before installing the new oil filter and oil filter cap, make sure that the spring ③ and new O-rings (④, ⑤) are installed correctly.

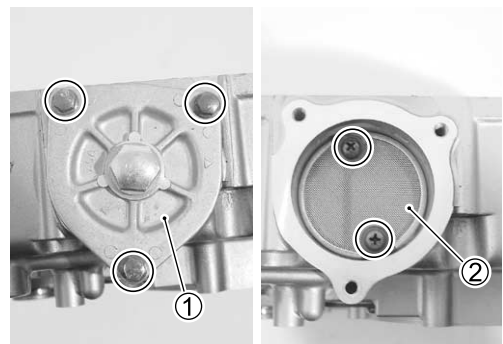
- Apply engine oil to the O-ring ④ and ⑤.
- Install the oil filter cap.



## OIL SUMP FILTER

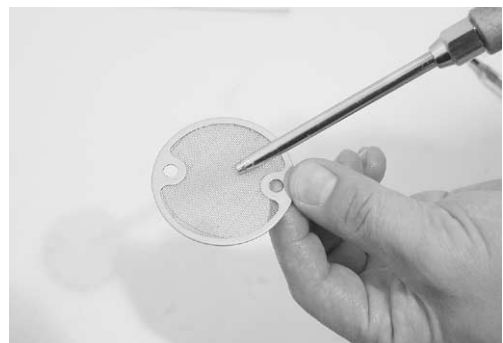
### REMOVAL

- Remove the oil sump filter cap ①.
- Remove the oil sump filter ②.



### CLEANING AND INSPECTION

- Clean the oil sump filter with a compressed air.
- Check the oil sump filter for any damage or clogs.

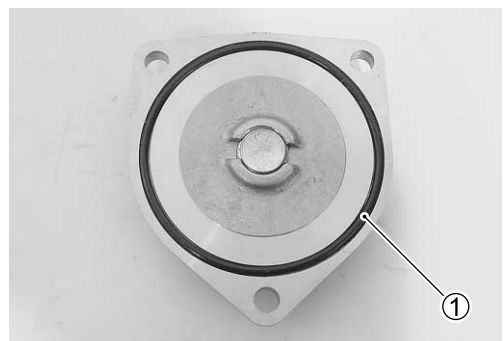


### REINSTALLATION

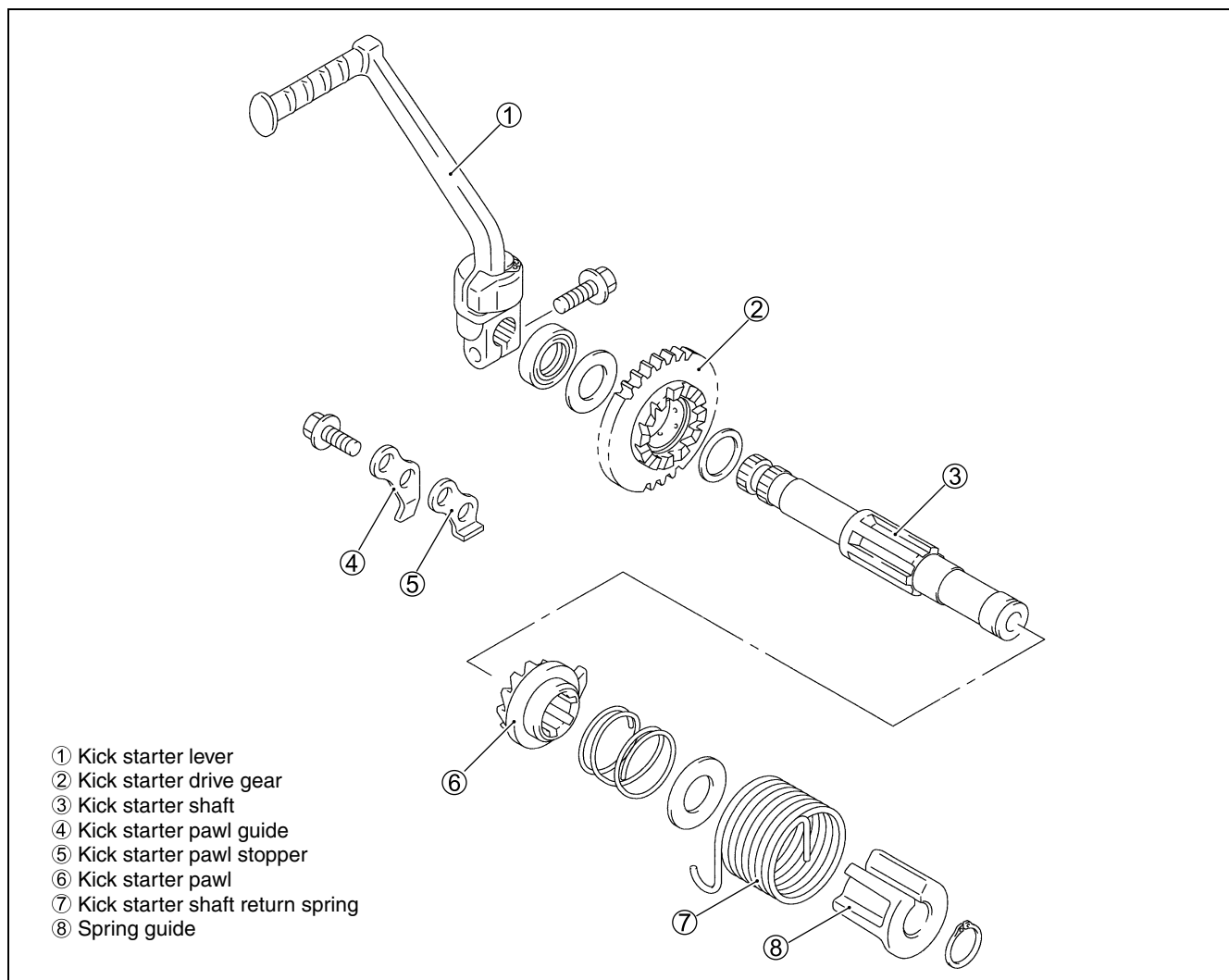
Install the oil sump filter in the reverse order of removal.

#### CAUTION

Replace the O-ring ① with a new one.



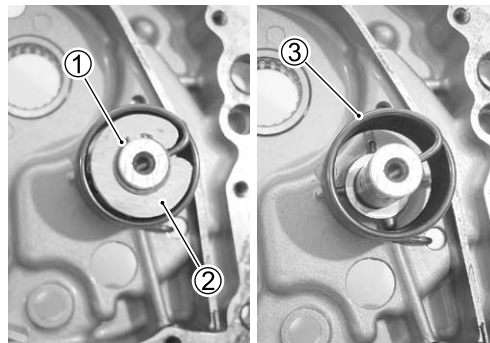
## KICK STARTER



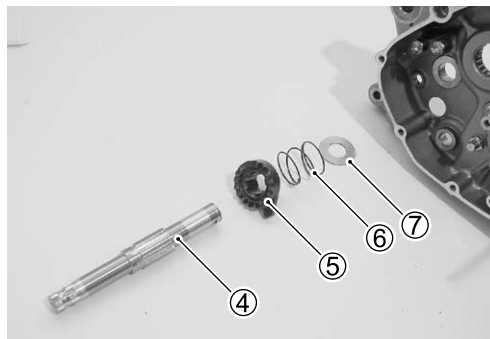
### REMOVAL

- Remove the snap ring ①.
- Remove the spring guide ②.
- Remove the kick starter shaft return spring ③.

**TOOL** 09900-06107: Snap ring pliers



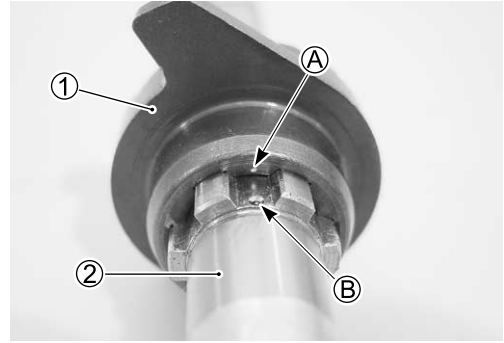
- Remove the kick starter shaft ④, kick starter ⑤, spring ⑥ and washer ⑦.



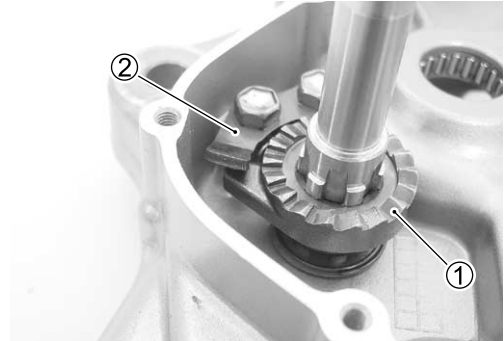
**REASSEMBLY**

Reassemble the kick starter in the reverse order of removal.  
Pay attention to the following points.

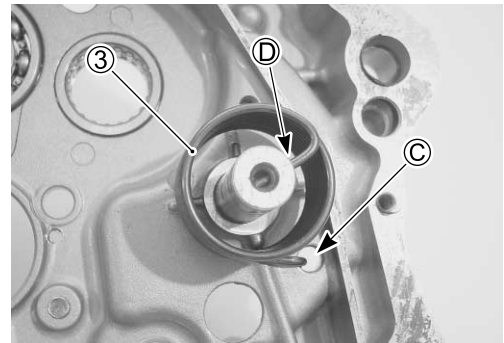
- Align the punch mark **A** on the kick starter **1** with the punch mark **B** on the kick starter shaft **2**.




- Insert the kick starter shaft into the crankcase.
- Engage the kick starter **1** to the guide **2**.

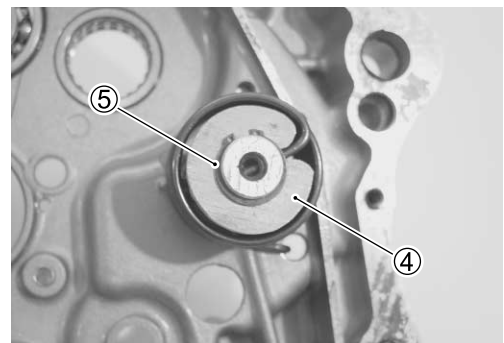


- Install the return spring **3** and hook the part **C** onto the crankcase.
- Turn the spring  $\frac{1}{2}$  a turn clockwise with pliers and fit the part **D** into hole of the kick starter shaft.



- Install the spring guide **4** and fit the snap ring **5**.

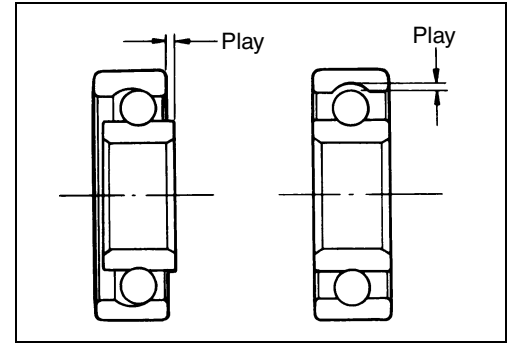
 **09900-06107: Snap ring pliers**



## CRANKCASE BEARINGS

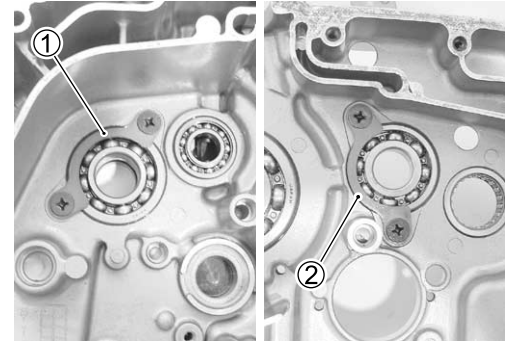
### BEARING INSPECTION

While the bearing is in the crankcase, rotate its inner race 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 as follows.



### BEARING REMOVAL

- Remove the bearing retainers (①, ②).



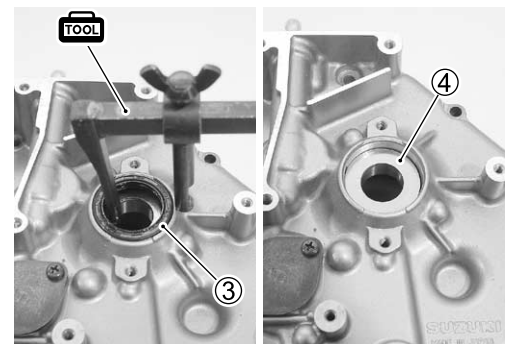
- Remove the oil seals (③) with the special tool.

**TOOL** 09913-50121: Oil seal remover

#### CAUTION

The removed oil seals should be replaced with new ones.

- Remove the washer (④).



- Remove the bearings.

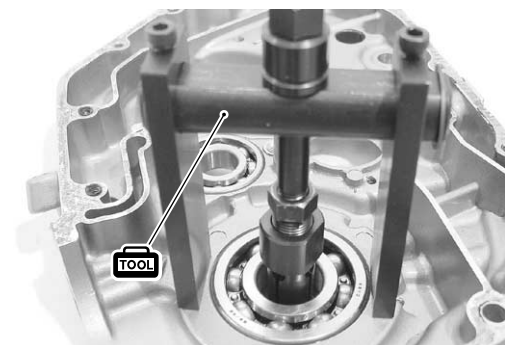
**TOOL** 09921-20240: Bearing remover set

09921-20210: Bearing remover

09930-30102: Sliding shaft

#### CAUTION

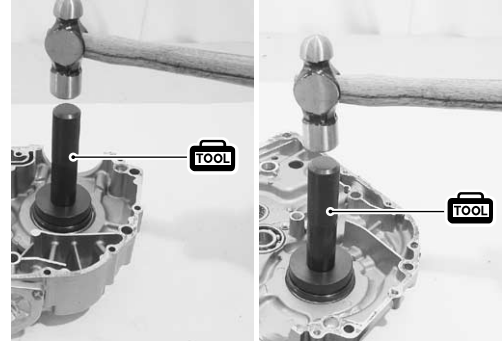
The removed bearings should be replaced with new ones.



### CRANKSHAFT BEARING INSTALLATION

- Install the crankshaft bearings with the special tool.

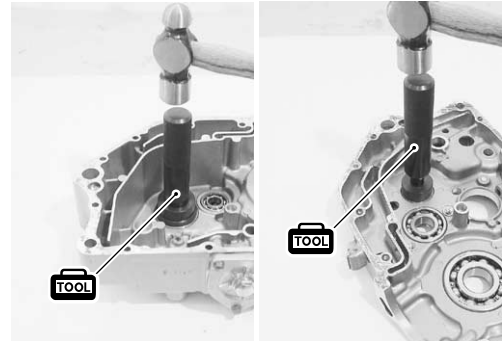
 **09913-70210: Bearing installer set**




### DRIVESHAFT BEARING INSTALLATION

- Install the driveshaft bearings using the special tool.

 **09913-70210: Bearing installer set**

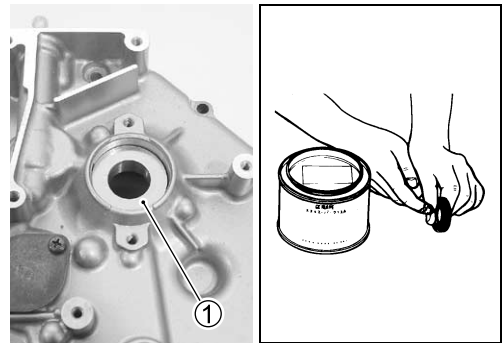


- Install the washer ①.
- Apply a small quantity of SUZUKI SUPER GREASE “A” to the lip of the oil seal.

 **99000-25030: SUZUKI SUPER GREASE “A” (USA)**  
**99000-25010: SUZUKI SUPER GREASE “A” (Others)**

- Install the oil seal using the special tool.

 **09913-70210: Bearing installer set**

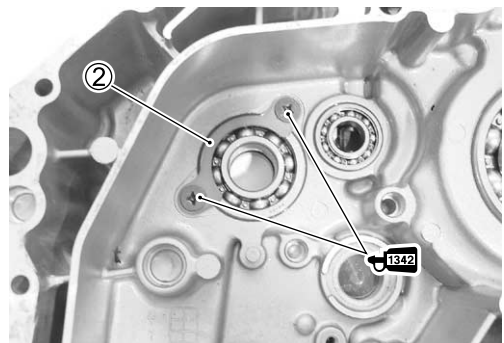


- Install the bearing retainer ②.

**NOTE:**

Apply a small quantity of **THREAD LOCK “1342”** to the bearing retainer screws.

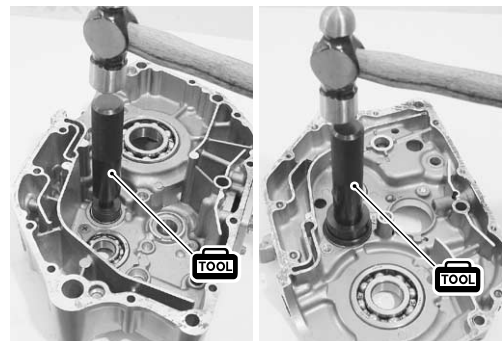
 **99000-32050: THREAD LOCK “1342”**



### COUNTERSHAFT BEARING INSTALLATION

- Install the countershaft bearings with the special tools.

 **09913-70210: Bearing installer set**



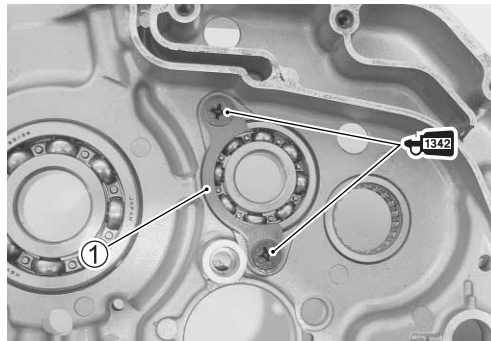


- Install the bearing retainer ①.

**NOTE:**

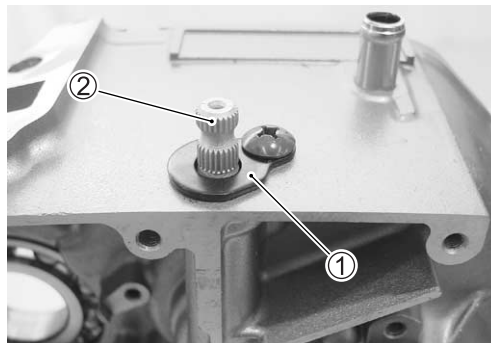
Apply a small quantity of **THREAD LOCK “1342”** to the bearing retainer screws.

 **99000-32050: THREAD LOCK “1342”**

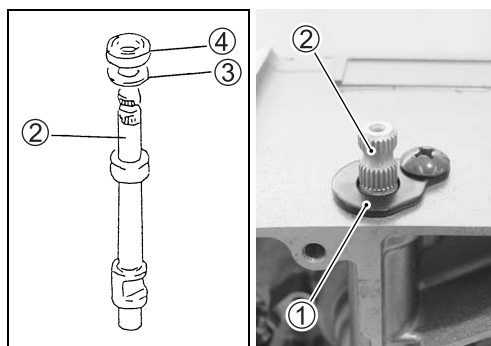


## CLUTCH RELEASE CAMSHAFT REMOVAL

- Remove the oil seal retainer ①.
- Remove the clutch release camshaft ②.

**REASSEMBLY**

- Install the clutch release camshaft ②, washer ③ and new oil seal ④.
- Install the oil seal retainer ①.



## 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

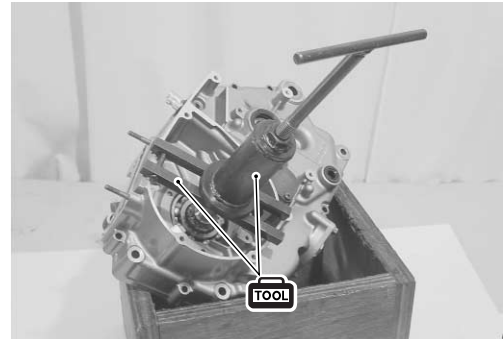
- When installing the crankshaft into the crankcase, it is necessary to pull its left end into the left crankcase with the special tools.

**TOOL** 09910-32812: Crankshaft installer  
09910-20116: Conrod holder

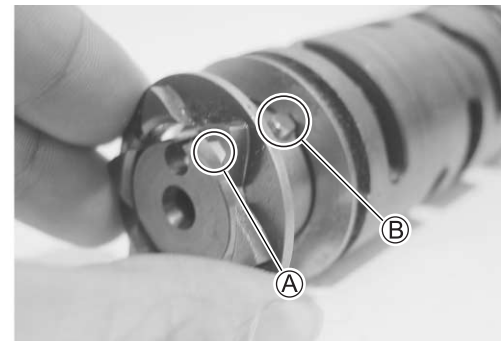
### CAUTION

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

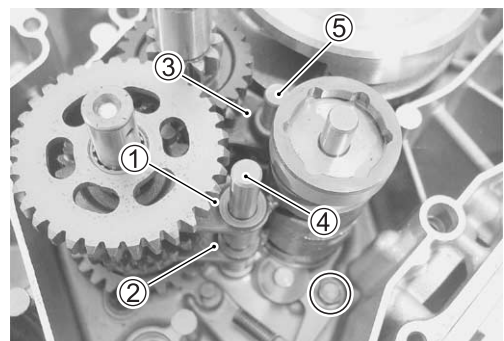
- Apply engine oil to the crankshaft bearings.
- Install the countershaft and driveshaft assemblies.



- Align the pin groove (A) of gearshift cam stopper plate with the pin (B) on the gearshift cam.

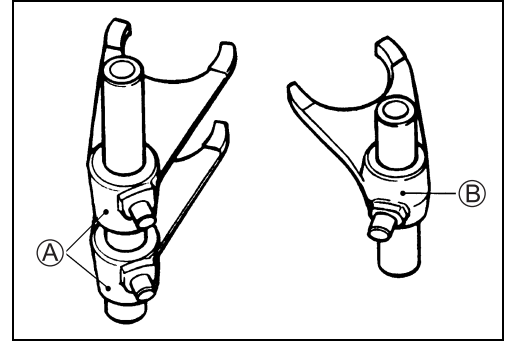


- Install the gearshift cam stopper and spring.
- Install the gearshift forks and gearshift cam.
  - ①: Gearshift fork No.1
  - ②: Gearshift fork No.2
  - ③: Gearshift fork No.3
- Install the gearshift fork shafts (④, ⑤).



**NOTE:**

Two kinds of gearshift forks (A, B) are used. They resemble each other very closely in external appearance and configuration. Carefully examine the illustration for correct installing positions and directions.

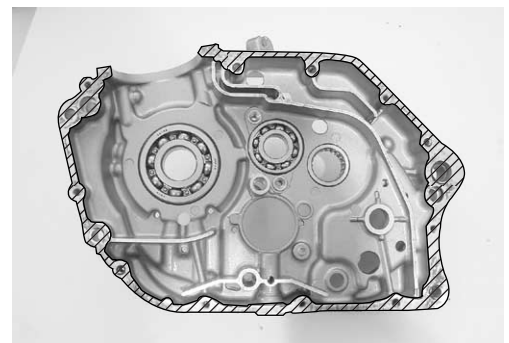
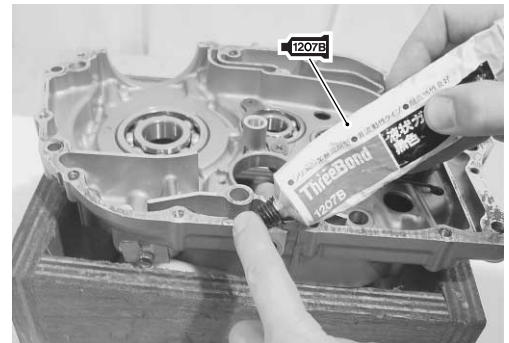
**NOTE:**

Position the gearshift cam as shown so that the gearshift fork shafts can be installed easily.



- Wipe both crankcase mating surfaces with a cleaning solvent.
- Apply SUZUKI BOND "1207B" uniformly to the mating surface of the right crankcase and assemble the cases within a few minutes.

**1207B** 99104-31140: SUZUKI BOND "1207B" (USA)  
 99104-31140: SUZUKI BOND "1207B" (Others)



- Install the dowel pins into the left half of the crankcase.
- Apply engine oil to the conrod big end and transmission gears.

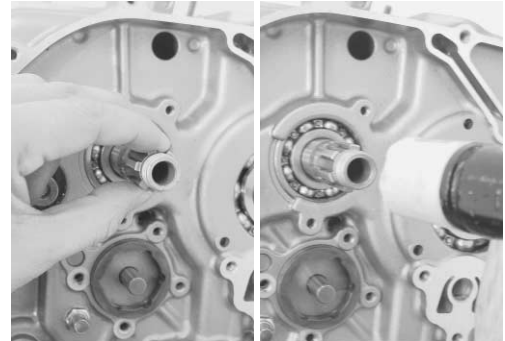
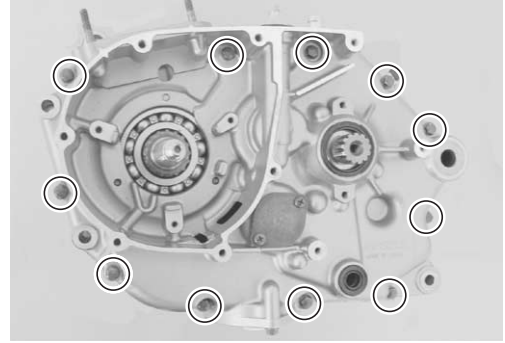


- Tighten the crankcase bolts to the specified torque.

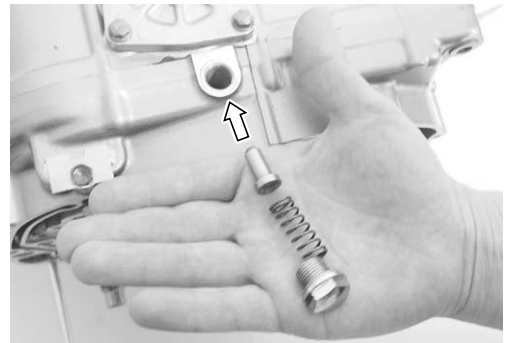
 **Crankcase bolt: 10 N·m (1.0 kgf·m, 7.0 lb-ft)**

**NOTE:**

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



- Install the gearshift cam stopper.

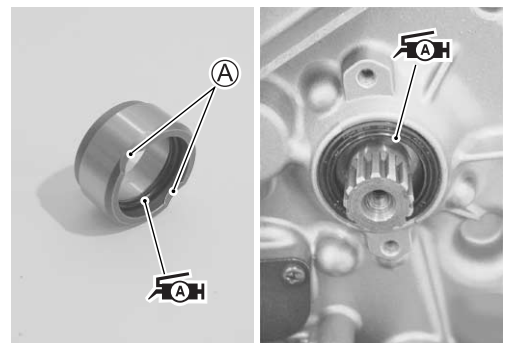


- Apply SUZUKI SUPER GREASE "A" to the O-ring of the engine sprocket spacer and the oil seal lip. When installing the engine sprocket spacer onto the driveshaft, face the grooves (A) toward inside.

 **99000-25030: SUZUKI SUPER GREASE "A" (USA)**  
**99000-25010: SUZUKI SUPER GREASE "A" (Others)**

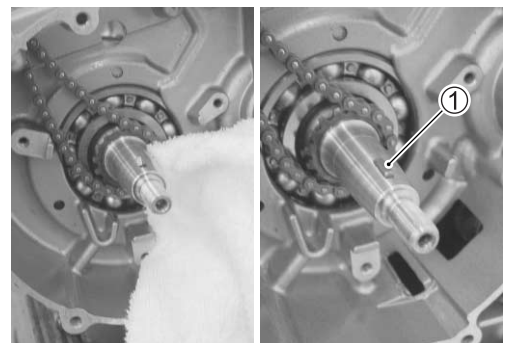
**CAUTION**

Use a new O-ring.

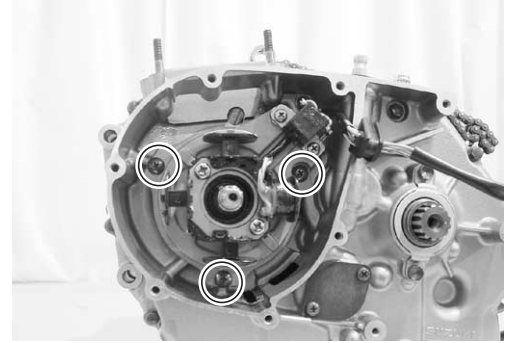


**CAM CHAIN/GENERATOR STATOR**

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




- Install the generator stator.

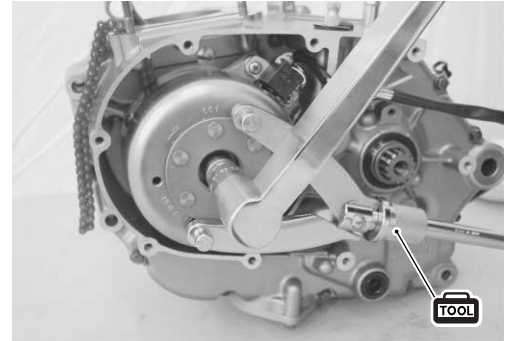


#### • GENERATOR ROTOR

- Install the generator rotor securely.
- Tighten the generator rotor nut to the specified torque with the special tool.

 **09930-40113: Rotor holder**


 **Generator rotor nut: 55 N·m (5.5 kgf-m, 40.0 lb-ft)**

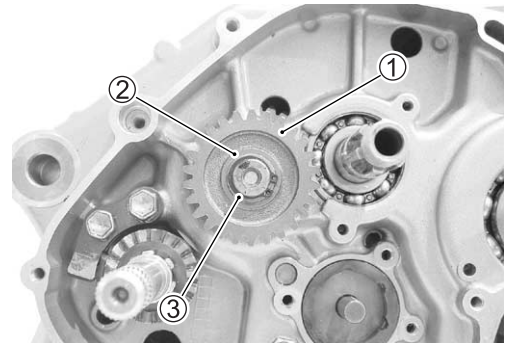


- Install the kick starter idle gear ①, washer ② and snap ring ③ to the driveshaft.

#### CAUTION

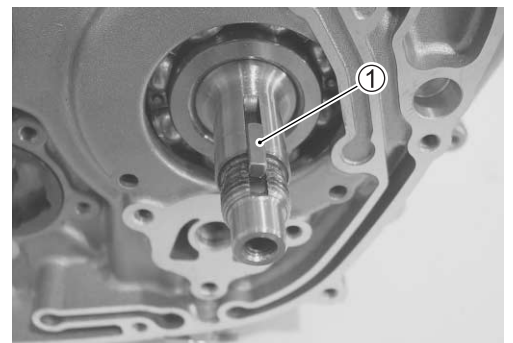
Use a new circlip ③.

 **09900-06107: Snap ring pliers**



#### PRIMARY DRIVE GEAR

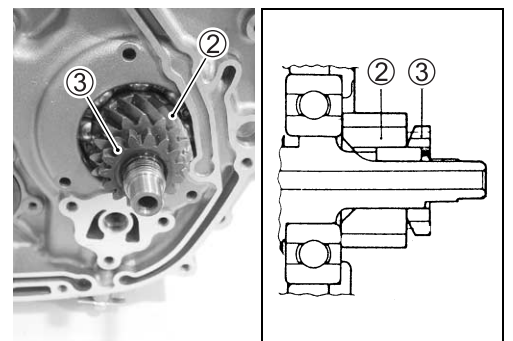
Install the key ① onto the crankshaft.



- Install the primary drive gear ② and oil pump drive gear ③.

#### NOTE:

Position the oil pump drive gear ③, as shown in the illustration.





- Install the washer and primary drive gear/oil pump drive gear nut.

**NOTE:**

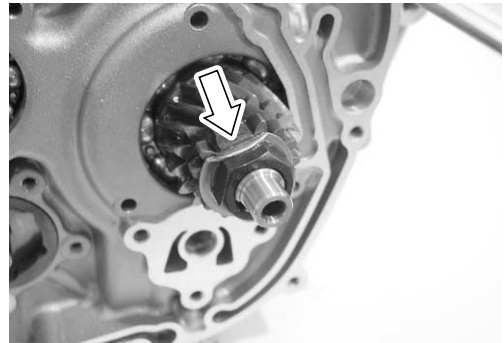
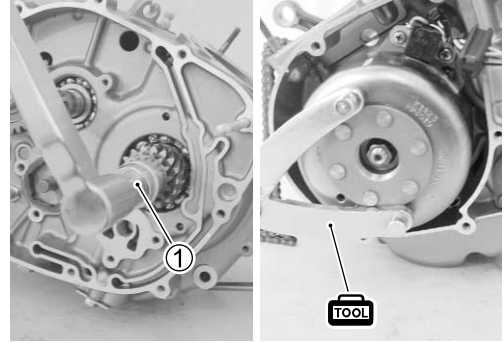
*This nut ① has left hand threads.*

- Tighten the primary drive gear/oil pump drive gear nut ① to the specified torque with the special tool.

 **09930-40113: Rotor holder**

 **Primary drive gear/oil pump drive gear nut:**  
**50 N·m (5.0 kgf·m, 36.0 lb-ft)**

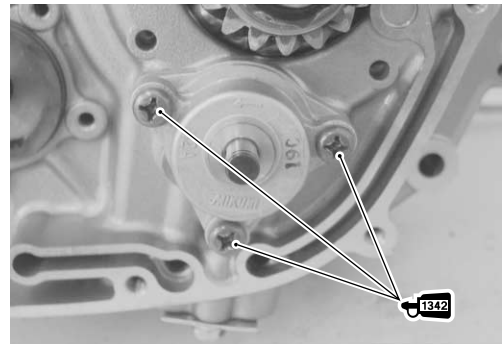
- Bend the lock washer securely.



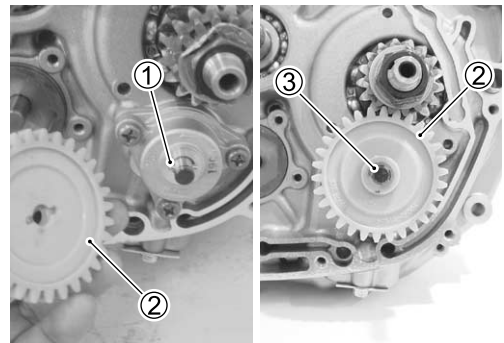
**OIL PUMP**

- Apply engine oil to the sliding surfaces of the oil pump case, outer rotor, inner rotor and shaft, before mounting the oil pump.
- Apply a small quantity of THREAD LOCK “1342” to the oil pump mounting screws and tighten them.

 **99000-32050: THREAD LOCK “1342”**



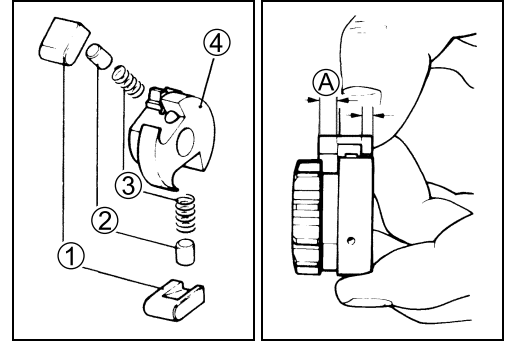
- Install the pin ①.
- Install the oil pump driven gear ② and E-ring ③.



- Install each pawl into the gearshift cam driven gear.
  - ① Gearshift pawl
  - ② Pin
  - ③ Spring
  - ④ Gearshift cam driven gear

**NOTE:**

The large shoulder **A** must face to the outside.

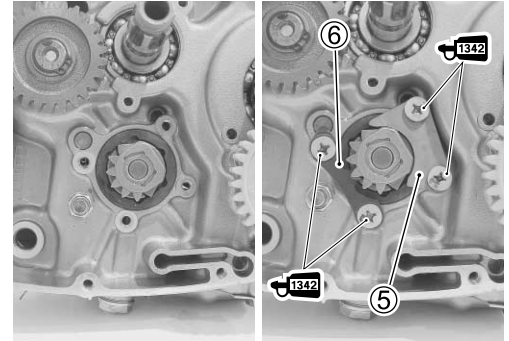


- Install the gearshift cam driven gear assembly.
- Install the pawl lifter (5) and cam guide (6).

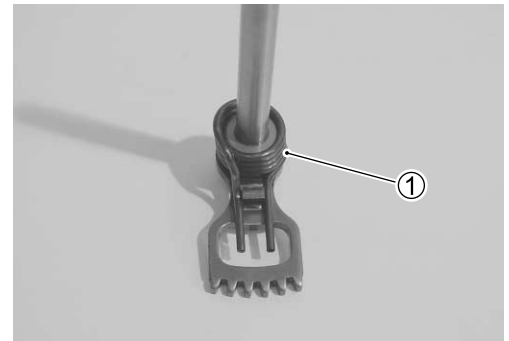
**NOTE:**

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

**1342** 99000-32050: **THREAD LOCK "1342"**

**GEARSHIFT SHAFT**

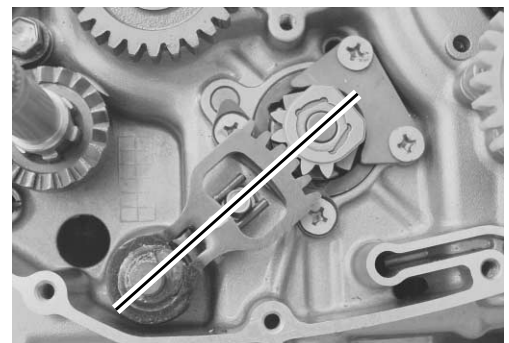
- Install the return spring (1) to the gearshift shaft.



- Install the gearshift shaft.

**NOTE:**

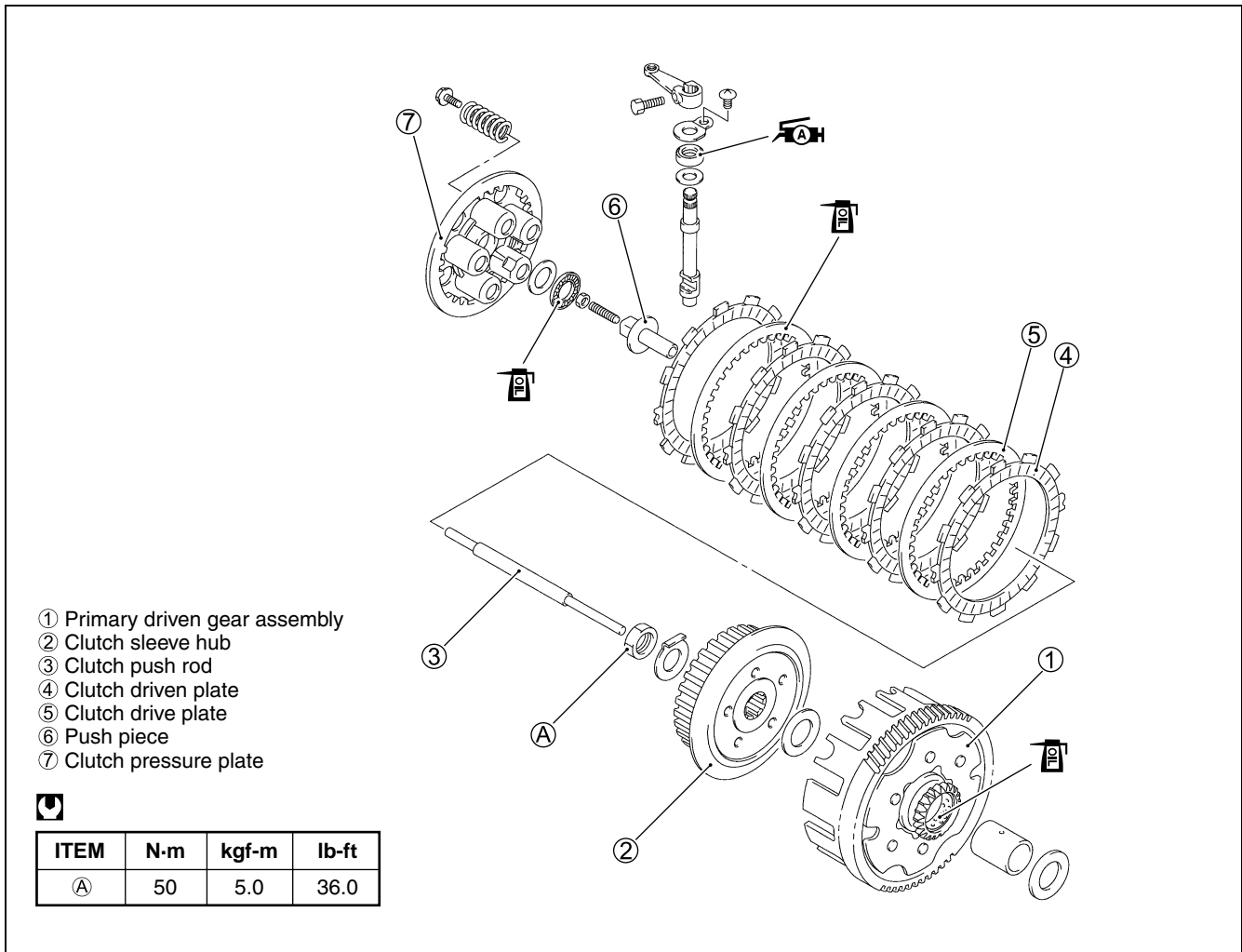
Align the center teeth on the gearshift shaft with the center teeth on the gearshift cam driven gear.



- Install the kick starter drive gear and washers.



# CLUTCH



- Install the washer ① and spacer ② onto the countershaft.

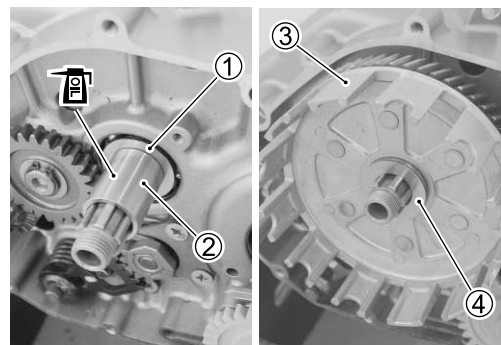
**NOTE:**

*Apply engine oil to the inside and outside surfaces of the spacer.*

- Install the primary driven gear assembly ③ and washer ④ onto the countershaft.

**NOTE:**

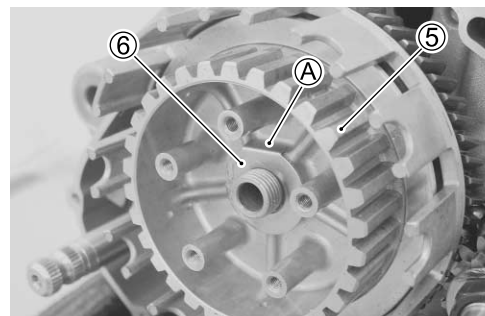
*When engaging the primary drive and driven gears, turn the primary driven gear assembly to the counterclockwise.*



- Install the clutch sleeve hub ⑤ and lock washer ⑥.

**CAUTION**

**Install the lock washer so that its tongue A is aligned with the flat portion of the clutch sleeve hub.**



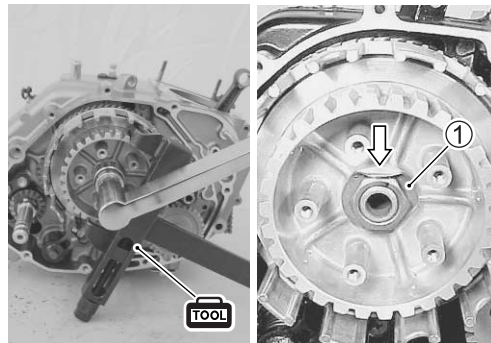


- Install the clutch sleeve hub nut, and tighten it to the specified torque with the special tool.

 **Clutch sleeve hub nut: 50 N·m (5.0 kgf-m, 36.0 lb-ft)**

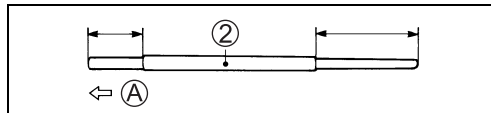
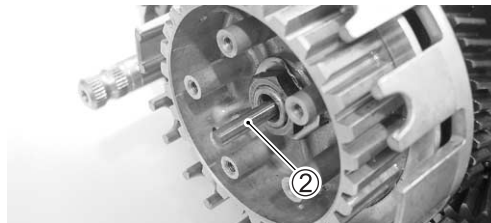
 **09920-53740: Clutch sleeve hub holder**

- Bend the lock washer ① securely.

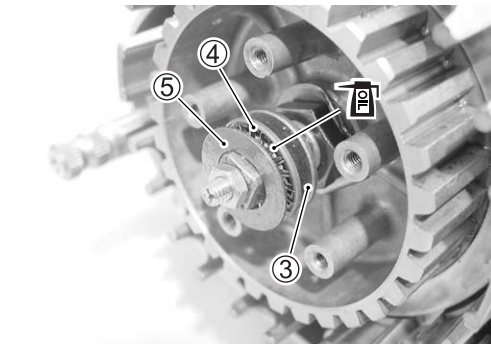


- Install the clutch push rod ② as shown in the illustration.

Ⓐ Push piece side



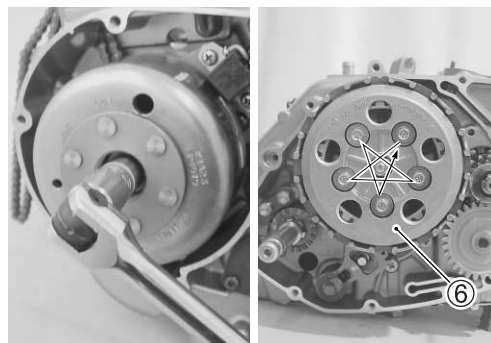
- Apply engine oil to the bearing.
- Install the push piece ③, bearing ④ and washer ⑤.



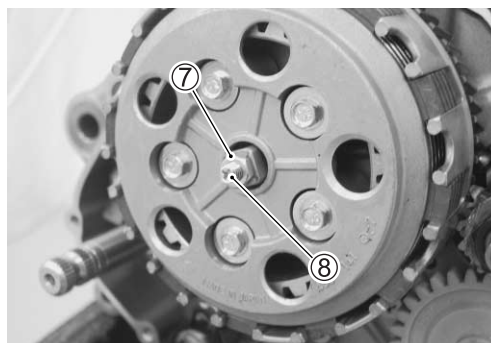
- Install the clutch drive and driven plates one by one into the clutch sleeve hub.
- Install the clutch pressure plate ⑥, clutch springs and clutch spring mounting bolts.
- Hold the generator rotor nut and tighten the clutch spring mounting bolts in a crisscross pattern.

**NOTE:**

*Make sure that the clutch pressure plate is installed correctly.*

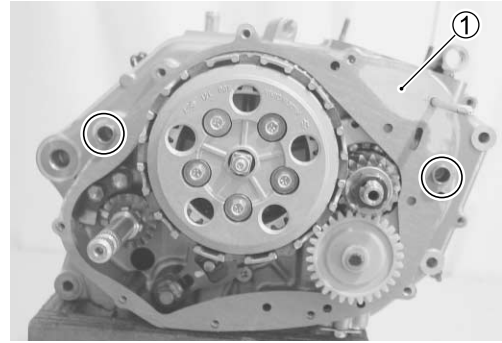


- Loosen the locknut ⑦, and turn in the release screw ⑧ to feel resistance.
- From that position, turn out the release screw ⑧ 1/4 turn, and tighten the lock nut ⑦ by holding the release screw ⑧.



### CLUTCH COVER

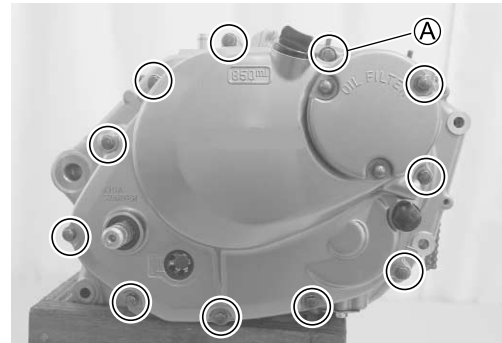
- Install the two dowel pins and new gasket ①.



- Tighten the clutch cover bolts and oil filter cap nut securely.

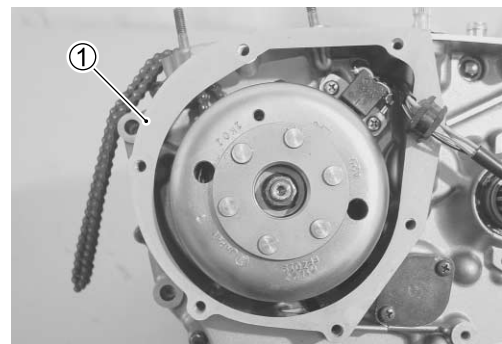
### CAUTION

Install the new gasket washer to the bolt (A).



### GENERATOR COVER

- Install the new gasket ①.



- Install the generator cover ② and tighten the bolts securely.

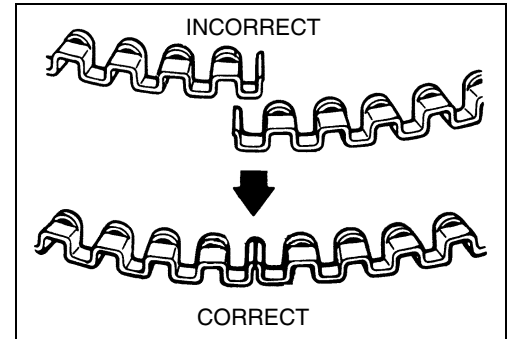
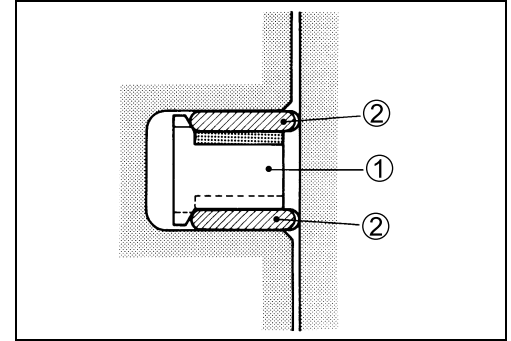


**PISTON/PISTON RING**

- First, install a spacer ① into the oil ring groove and then install the two side rails ②. The spacer and side rails do not have a specific top or bottom when they are new. When reassembling used parts, install them in their original place and direction.

**CAUTION**

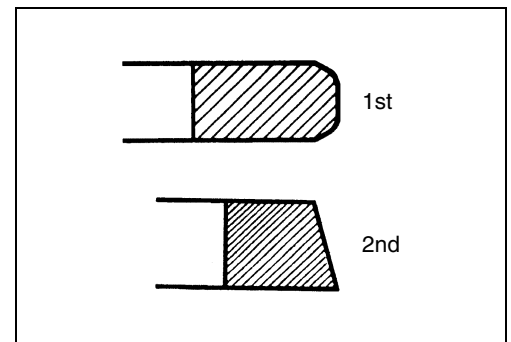
When installing the spacer, be careful not to allow its two ends to overlap in the piston ring groove.



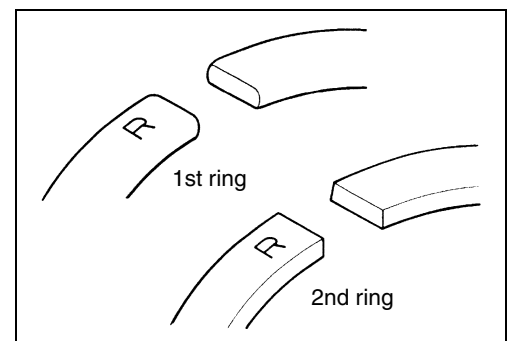
- Install the 2nd ring and 1st ring.

**NOTE:**

1st ring and 2nd ring differ in shape.



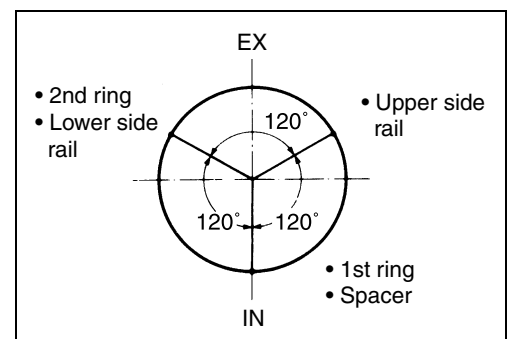
- The 1st and 2nd piston rings should be installed with their marks facing up.



- Position the piston ring gaps as shown.

**NOTE:**

Before inserting the piston into the cylinder, check that the gaps are properly positioned.



The followings are reminders for piston installation:

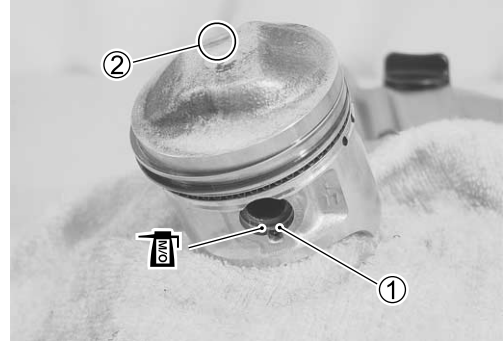
- Before installing the piston pin, apply molybdenum oil solution onto its surface.
- Apply engine oil to the big and small ends of the conrod.
- Place a clean rag over the cylinder base to prevent the piston pin circlip from dropping into crankcase. Install the piston pin circlip ①.

### MOLYBDENUM OIL SOLUTION

#### CAUTION

Use a new piston pin circlip ① to prevent circlip failure.

- Install the piston with the arrow mark ② facing towards the exhaust side.



### CYLINDER

Before installing the cylinder, oil the big and small ends of the conrod and also the sliding surface of the piston.

- Install the dowel pins into the crankcase and then install the cylinder gasket ①.

#### CAUTION

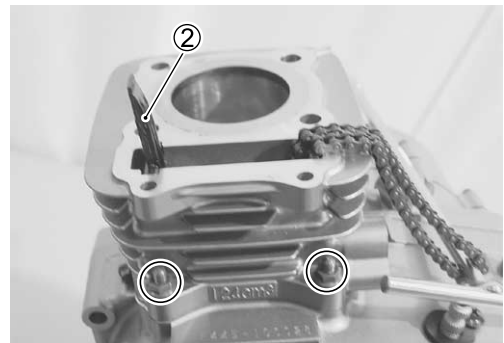
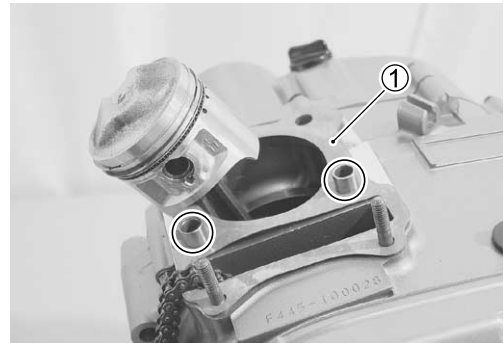
Use a new gasket to prevent oil leakage.

- Make sure that the piston rings are properly positioned, and insert the piston into the cylinder.

#### NOTE:

When mounting the cylinder, keep the cam chain taut. The cam chain must not be caught between the cam chain drive sprocket and crankcase when crankshaft is rotated.

- Temporarily tighten the cylinder base nuts.
- Install the cam chain guide ②.

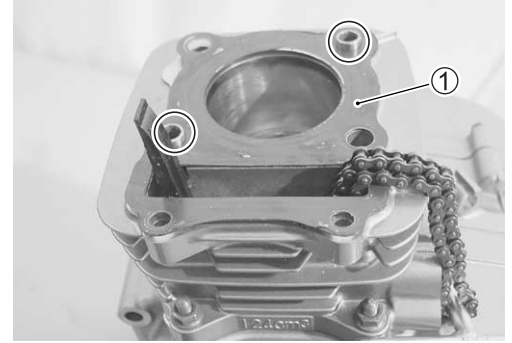


**CYLINDER HEAD**

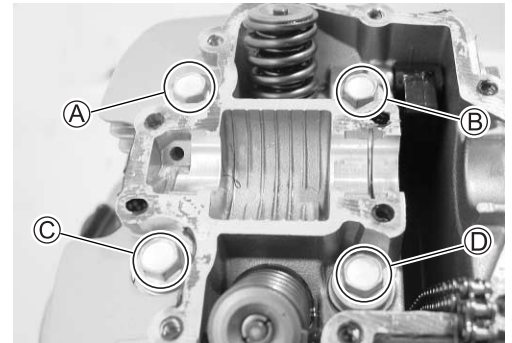
- Install the dowel pins into the cylinder and then install the cylinder head gasket ① onto the cylinder.

**CAUTION**

**Use a new gasket to prevent gas leakage.**

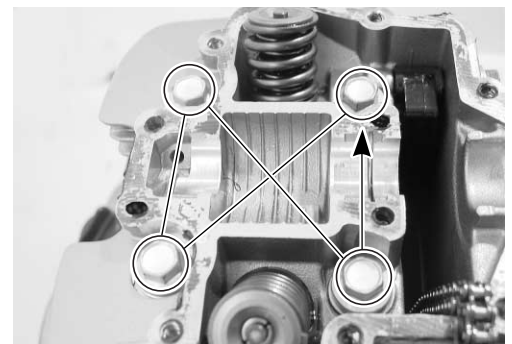


- Place the cylinder head onto the cylinder.
- Cylinder head bolts and washers must be installed correctly as shown in the photograph.
  - Ⓐ Long bolt + Copper washer
  - Ⓑ Short bolt + Steel washer
  - Ⓒ Long bolt + Steel washer
  - Ⓓ Short bolt + Copper washer



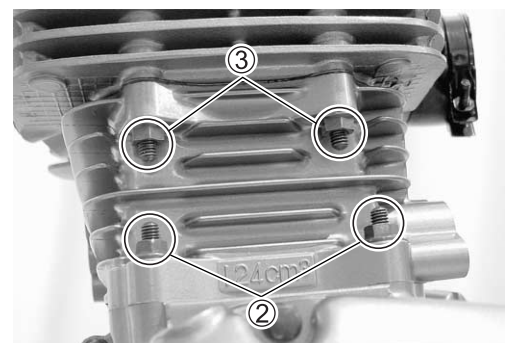
- Tighten the cylinder head bolts to the specified torque in a crisscross pattern.

**🔩 Cylinder head bolt: Initial 10 N·m (1.0 kgf-m, 7.0 lb-ft)  
Final 27 N·m (2.7 kgf-m, 19.5 lb-ft)**



- Tighten the cylinder base nuts ② and cylinder head nuts ③ to the specified torque.

**🔩 Cylinder base nut ②: 10 N·m (1.0 kgf-m, 7.0 lb-ft)  
Cylinder head nut ③: 10 N·m (1.0 kgf-m, 7.0 lb-ft)**



**CAMSHAFT**

- Turn the crankshaft counterclockwise, and align the “IT” line on the generator rotor with the mark **A** on the generator cover while keeping the cam chain tight.

**CAUTION**

**If the crankshaft is turned without drawing the cam chain upward, the cam chain will catch between crankcase and cam chain drive sprocket.**

**NOTE:**

*Just before installing the camshaft into the cylinder head, apply molybdenum oil solution to the camshaft journals and cam faces. Also, apply engine oil to the camshaft journal holders.*

**MOLYBDENUM OIL SOLUTION**

- Install the C-ring **①** into the ring groove of the cylinder head.

- Align the engraved line marks **A** on the camshaft so it is parallel with mating surface of the cylinder head and cylinder head cover.
- Engage the cam chain on the camshaft sprocket with the locating pin hole **B** at just past top position.

**NOTE:**

*Do not rotate the crankshaft while installing the camshaft or cam chain.*

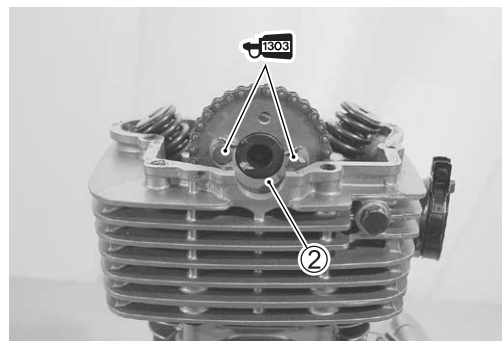
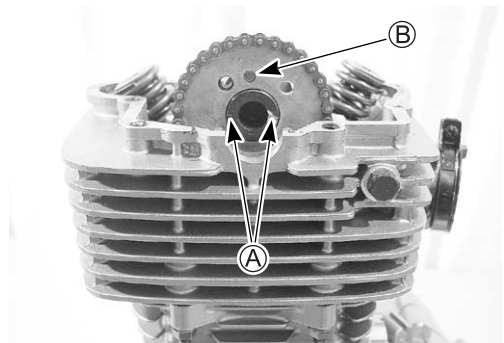
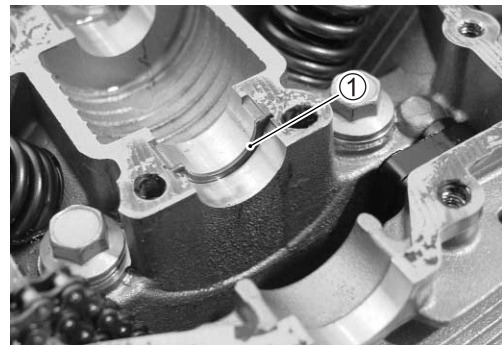
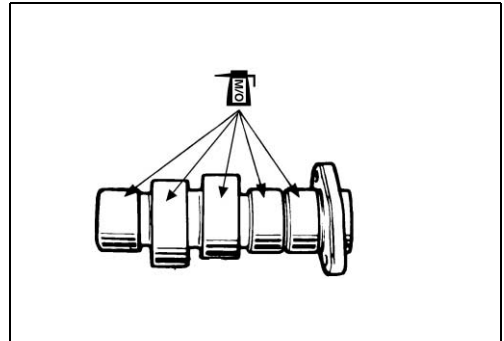
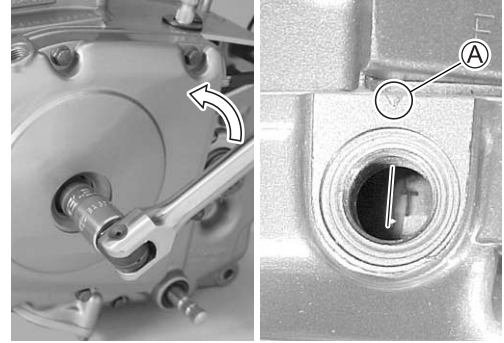
- Install the lock washer **②** so that it is covering the locating pin.

**NOTE:**

*Apply a small quantity of **THREAD LOCK SUPER “1303”** to the threads of the camshaft sprocket bolts.*

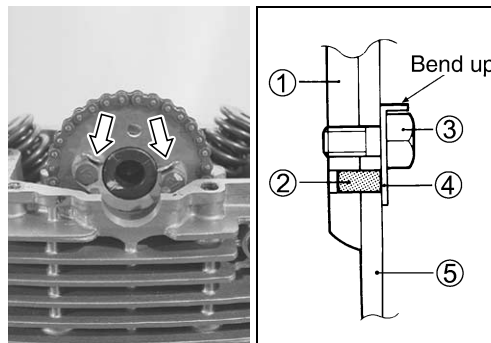
**1303 99000-32030: THREAD LOCK SUPER “1303”**

- Tighten the camshaft sprocket bolts to the specified torque.

**Camshaft sprocket bolt: 11 N·m (1.1 kgf·m, 8.0 lb·ft)**

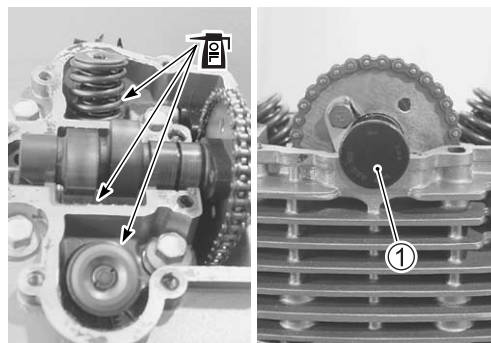
- Bend the lock washer securely.

- ① Camshaft
- ② Pin
- ③ Bolt
- ④ Lock washer
- ⑤ Camshaft sprocket



### CYLINDER HEAD COVER

- Pour engine oil in each oil pocket in the cylinder head.
- Install the camshaft end cap ①.



- Clean the mating surfaces of the cylinder head and head cover.
- Install the dowel pins.

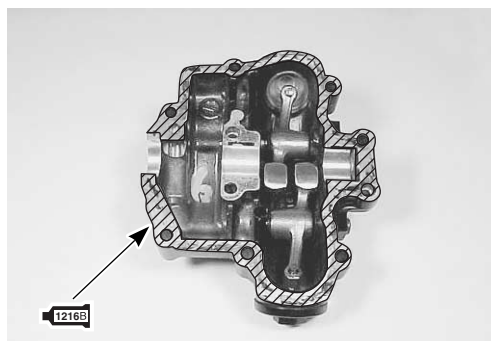
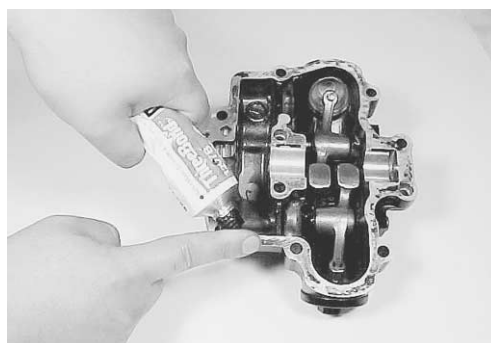


- Apply SUZUKI BOND “1216B” uniformly to the mating surface of the cylinder head cover and install it within a few minutes.

 99000-31230: SUZUKI BOND “1216B”

#### NOTE:

*When installing the cylinder head cover, the piston must be at top dead center on the compression stroke.*



- Tighten the cylinder head cover bolts to the specified torque with a torque wrench diagonally.

**🔧 Cylinder head cover bolt: 10 N·m (1.0 kgf-m, 7.0 lb-ft)**

**CAUTION**

Install the gasket washer to the bolt **A**.

**CAUTION**

Be sure to check the valve clearance. (👉 2-5)

**CAM CHAIN TENSION ADJUSTER**

Install the cam chain tension adjuster following the procedure below.

- After loosening the locknut **①**, loosen the set screw **②** one turn and fully insert the push rod **③** into the adjuster body. Lock the push rod **③** by tightening the set screw **②**.

- Install the cam chain tension adjuster to the cylinder and tighten its mounting bolts to the specified torque.

**🔧 Cam chain tension adjuster mounting bolt: 10 N·m (1.0 kgf-m, 7.0 lb-ft)**

**CAUTION**

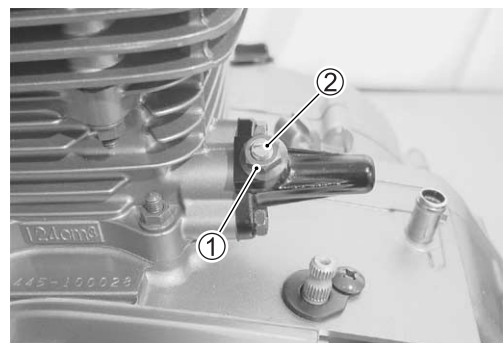
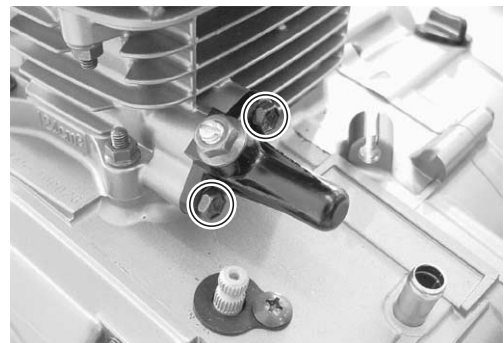
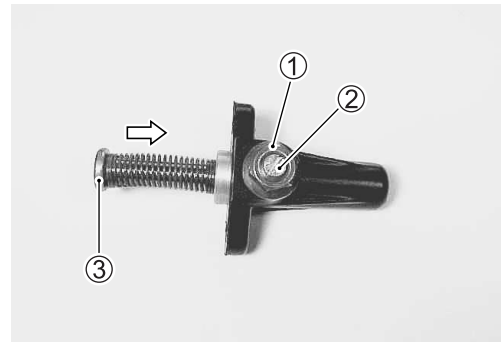
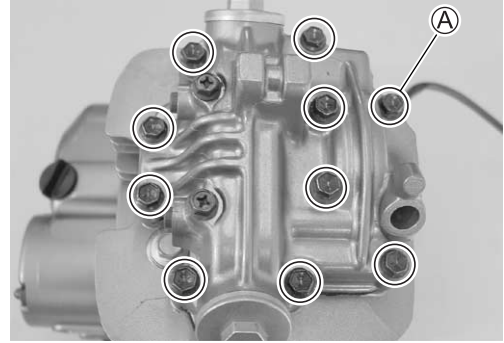
Replace the gasket with a new one.

- Turn the crankshaft normal direction, and stop it at exhaust valve operating position.
- Loosen the set screw **②** one turn.
- Tighten the set screw **②** to lock the tensioner push rod and then tighten the locknut **①** to the specified torque.

**🔧 Cam chain tension adjuster locknut: 12 N·m (1.2 kgf-m, 8.5 lb-ft)**

**KICK STARTER LEVER**

- Install the kick starter lever.





# FUEL AND LUBRICATION SYSTEM

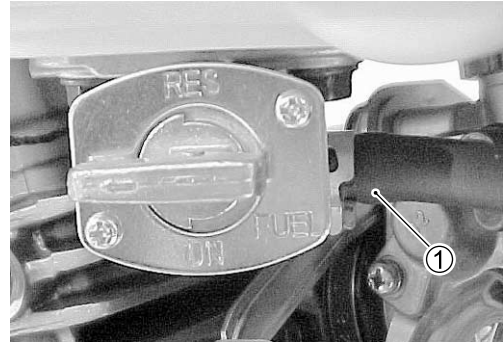
## CONTENTS

<b>FUEL TANK .....</b>	<b>4- 2</b>
<b>FUEL TANK REMOVAL .....</b>	<b>4- 2</b>
<b>FUEL VALVE .....</b>	<b>4- 3</b>
<b>FUEL VALVE/FUEL FILTER REMOVAL .....</b>	<b>4- 3</b>
<b>FUEL FILTER INSPECTION AND CLEANING .....</b>	<b>4- 3</b>
<b>FUEL HOSE INSPECTION .....</b>	<b>4- 3</b>
<b>CARBURETOR .....</b>	<b>4- 4</b>
<b>CONSTRUCTION .....</b>	<b>4- 4</b>
<b>SPECIFICATIONS .....</b>	<b>4- 5</b>
<b>I.D. NO. LOCATION .....</b>	<b>4- 5</b>
<b>REMOVAL .....</b>	<b>4- 5</b>
<b>DISASSEMBLY .....</b>	<b>4- 6</b>
<b>CLEANING .....</b>	<b>4- 8</b>
<b>INSPECTION .....</b>	<b>4- 9</b>
<b>REASSEMBLY AND REMOUNTING .....</b>	<b>4- 9</b>
<b>ENGINE LUBRICATION SYSTEM .....</b>	<b>4-10</b>
<b>ENGINE LUBRICATION SYSTEM CHART .....</b>	<b>4-10</b>
<b>OIL PRESSURE .....</b>	<b>4-11</b>
<b>OIL FILTER .....</b>	<b>4-11</b>
<b>OIL SUMP FILTER .....</b>	<b>4-11</b>

## FUEL TANK

### FUEL TANK REMOVAL

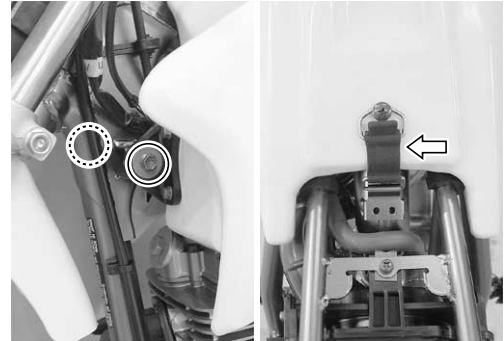
- Remove the frame covers and seat. (☞ 5-2)
- Turn the fuel valve to “OFF” position and disconnect the fuel hose ① from the fuel valve.



- Remove the fuel tank.

#### **⚠ WARNING**

**Gasoline is highly flammable and explosive. Keep heat, spark and flame away.**



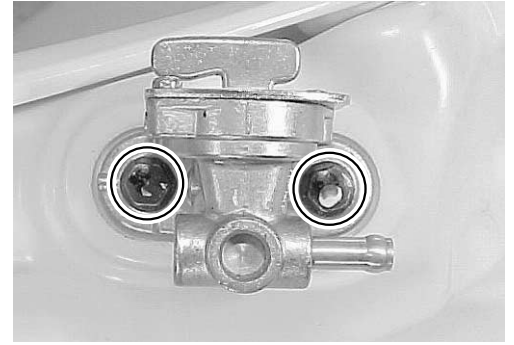
## FUEL VALVE

### FUEL VALVE/FUEL FILTER REMOVAL

- Remove the seat. (☞ 5-2)
- Remove the fuel tank. (☞ 4-2)
- Remove the fuel valve by removing the mounting bolts.

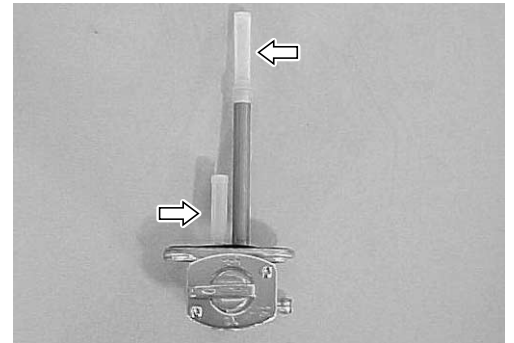
#### ⚠ WARNING

**Gasoline is very explosive. Extreme care must be taken. Gasket and O-ring must be replaced with new ones to prevent fuel leakage.**



### FUEL FILTER INSPECTION AND CLEANING

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.



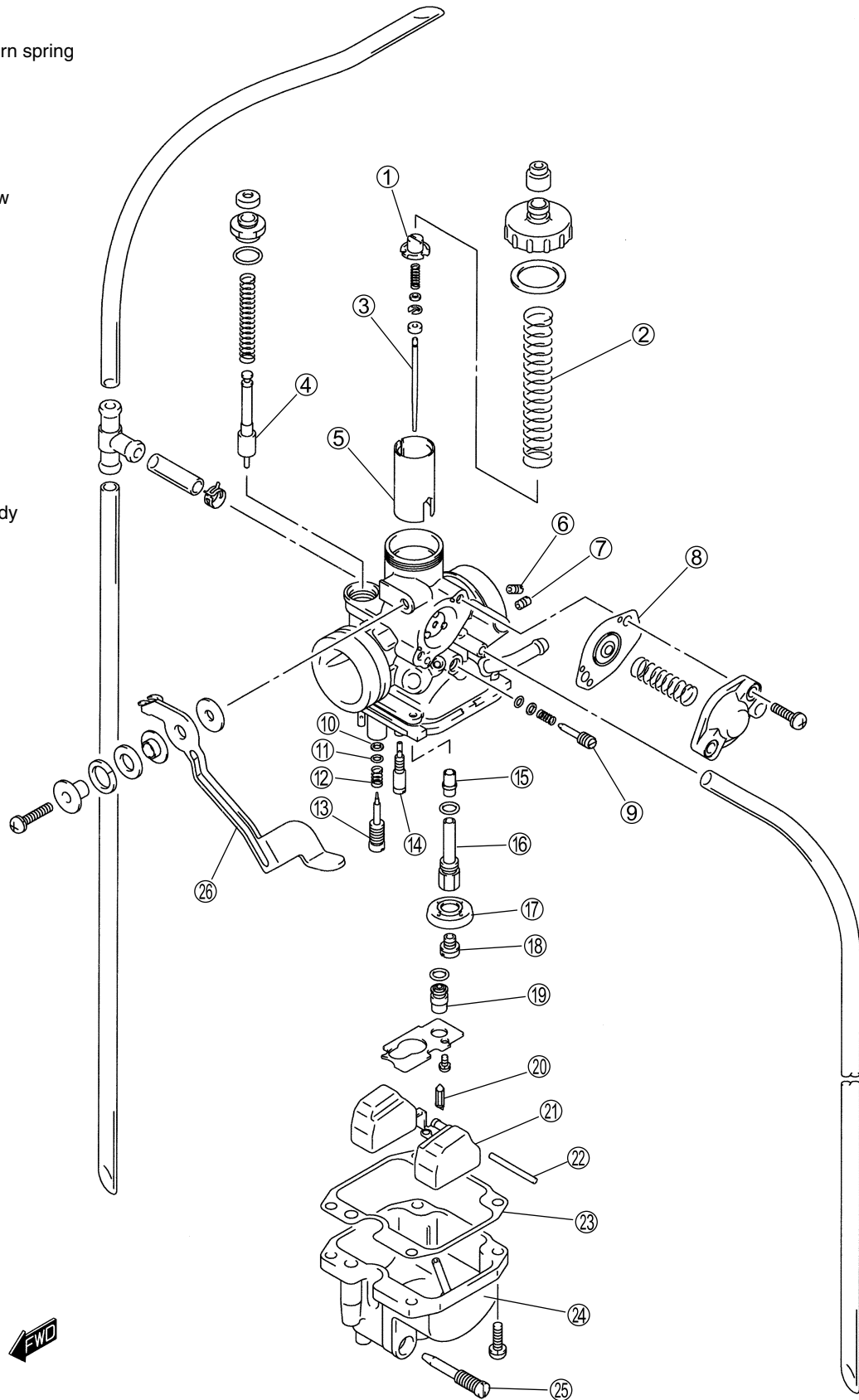
### FUEL HOSE INSPECTION

Visually inspect the fuel hose for damage and fuel leakage. If it is found to be damaged, replace it with a new one.



# CARBURETOR CONSTRUCTION

- ① Plate
- ② Throttle valve return spring
- ③ Jet needle
- ④ Starter plunger
- ⑤ Throttle valve
- ⑥ Main air jet
- ⑦ Pilot air jet
- ⑧ Diaphragm
- ⑨ Throttle stop screw
- ⑩ O-ring
- ⑪ Washer
- ⑫ Spring
- ⑬ Pilot screw
- ⑭ Pilot jet
- ⑮ Needle jet
- ⑯ Main jet holder
- ⑰ Plate
- ⑱ Main jet
- ⑲ Valve seat
- ⑳ Needle valve
- ㉑ Float
- ㉒ Float pin
- ㉓ Gasket
- ㉔ Float chamber body
- ㉕ Drain screw
- ㉖ Starter lever



## SPECIFICATIONS

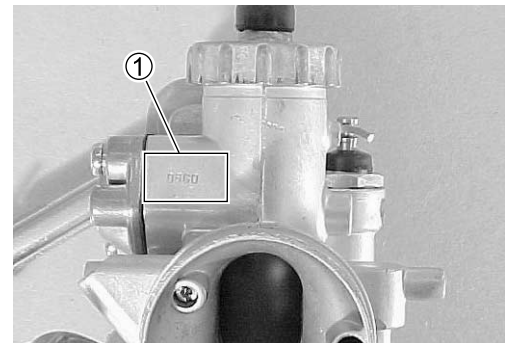
ITEM	SPECIFICATION	
	E-03, 28	
Carburetor type	MIKUNI VM20SS	
Bore size	20.0 mm (0.79 in)	
I.D. No.	08G0	
Idle r/min.	1 700 ± 100 r/min.	
Float height	18.9 ± 1.0 mm (0.74 ± 0.04 in)	
Main jet (M.J.)	#102.5	
Jet needle (J.N.)	5HGM74-1	
Needle jet (N.J.)	N-6M	
Throttle valve (C.A.)	#2.5	
Pilot jet (P.J.)	#17.5	
Pilot screw (P.S.)	PRE-SET (2-¼ turns back)	
Throttle cable play (pulling cable)	2.0 – 4.0 mm (0.08 – 0.16 in)	

E-03: USA

E-28: Canada

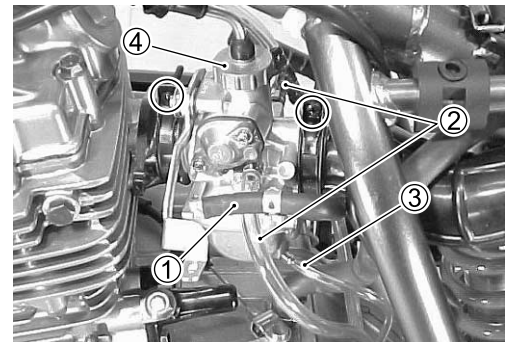
## I.D. NO. LOCATION

Carburetor has I.D. Number ① printed on the carburetor body according to its specification.



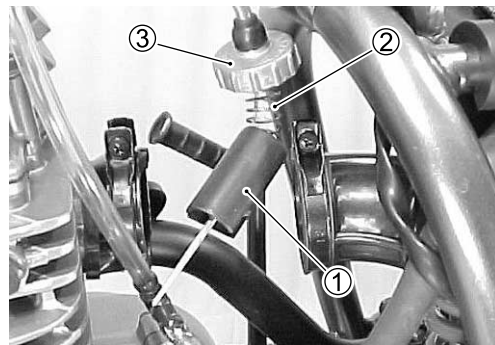
## REMOVAL

- Remove the seat. (☞ 5-2)
- Turn the fuel valve to “OFF” position.
- Remove the fuel tank. (☞ 4-2)
- Disconnect the fuel hose ①, air vent hose ② and carburetor overflow hose ③.
- Remove the clamps.
- Remove the carburetor top cap ④.
- Remove the carburetor.

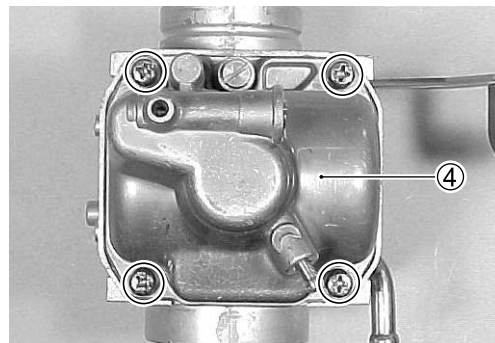


## DISASSEMBLY

- Remove the throttle valve ① and spring ②.
- Remove the carburetor top cap ③.



- Remove the float chamber body ④.



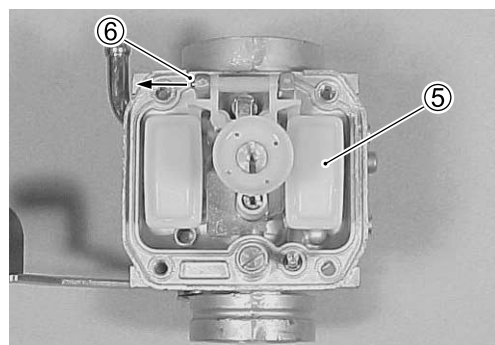
- Remove the float assembly ⑤ by removing the float pin ⑥.

**NOTE:**

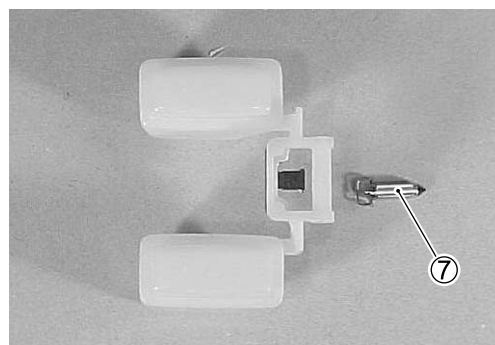
*Remove the float assembly together with the needle valve.*

**CAUTION**

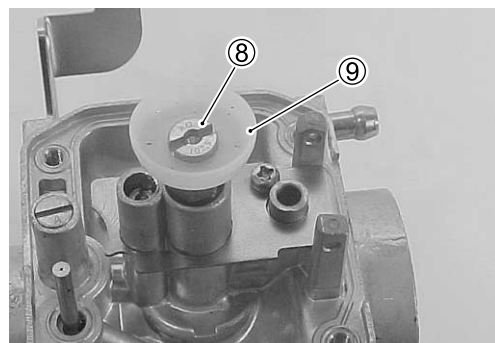
**When removing the float pin, be careful not to damage the carburetor body.**



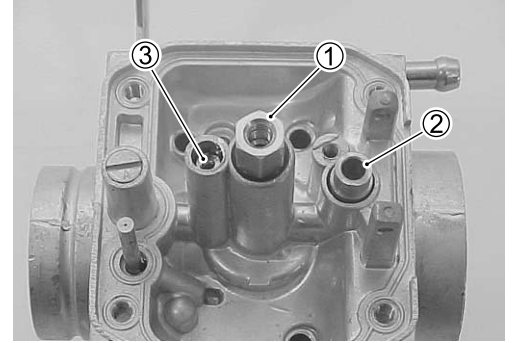
- Remove the needle valve ⑦.



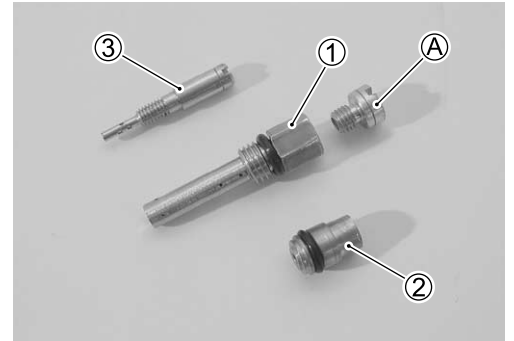
- Remove the main jet ⑧ and plate ⑨.



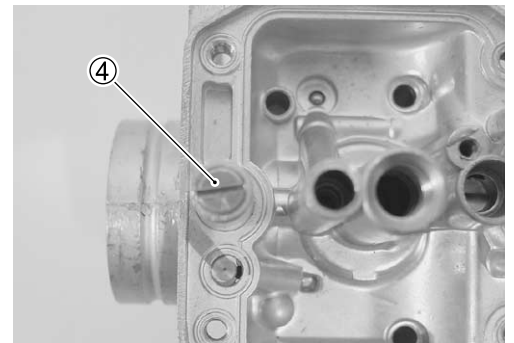
- Remove the main jet holder ①, valve seat ② and pilot jet ③.



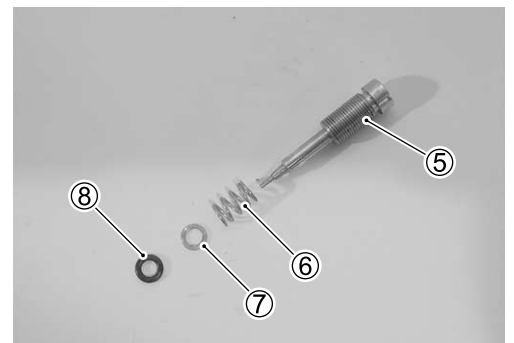
- Ⓐ Main jet
- ① Main jet holder
- ② Valve seat
- ③ Pilot jet



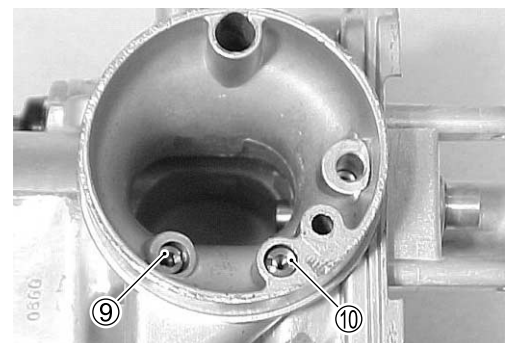
- Slowly turn the pilot screw ④ in clockwise and count the number of turns until the screw is lightly seated. Make a note of how many turns were made so the screw can be reset correctly after cleaning.



- Remove the pilot screw ⑤ with the spring ⑥, washer ⑦ and O-ring ⑧.



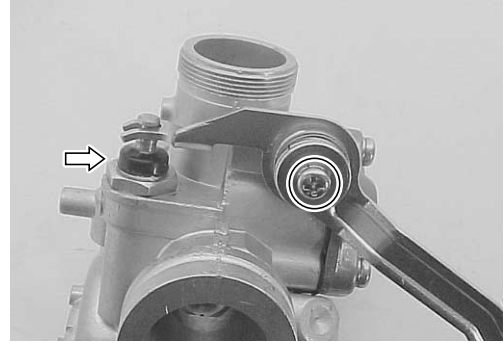
- Remove the main air jet ⑨ and pilot air jet ⑩.



- Remove the starter plunger.

**CAUTION**

**Do not attempt to remove the four screws of the carburetor body.**



## CLEANING

**⚠ WARNING**

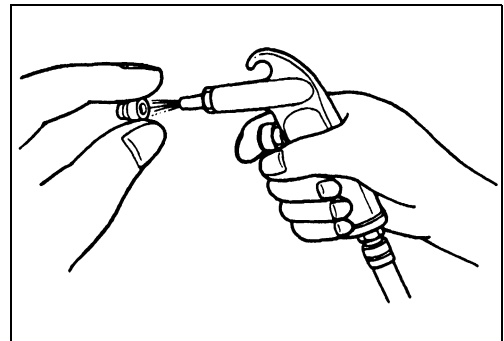
**Some carburetor cleaning chemicals, especially dip-type soaking solutions, are very corrosive and must be handled carefully. Always follow the chemical manufacturer's instructions on proper use, handling and storage.**

- Clean all jets with a spray-type carburetor cleaner and blow dry with 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 with compressed air.

**CAUTION**

**Do not use wire to clean jets or passageways. Wire can damage 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. Reinstall the pilot screw to the original factory setting with a new O-ring seal.





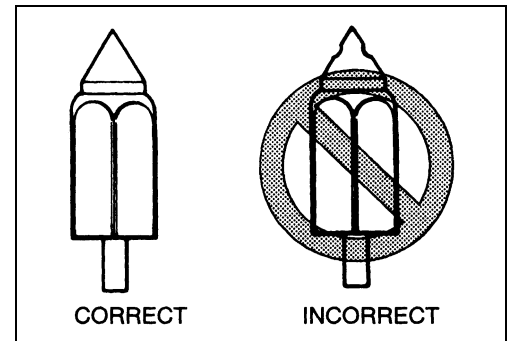
## INSPECTION

Check following items for any damage or clogging.

- \* Pilot jet
- \* Main jet
- \* Main air jet
- \* Pilot air jet
- \* Needle jet air bleeding hole
- \* Needle valve
- \* Gasket and O-ring
- \* Throttle valve
- \* Pilot outlet and by-pass

### NEEDLE VALVE INSPECTION

If foreign matter is caught between the valve seat and the needle, the gasoline will continue flowing and cause it to overflow. If the seat and needle are worn beyond the permissible limits, similar trouble will occur. Conversely, if the needle sticks, the gasoline will not flow into the float chamber. Clean the float chamber and float parts with gasoline. If the needle is worn as shown in the illustration, replace it together with a valve seat. Clean the fuel passage of the mixing chamber with compressed air.



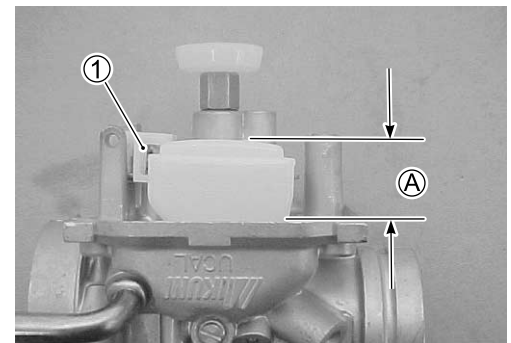
### FLOAT HEIGHT ADJUSTMENT

To check the float height, invert the carburetor body, with the float arm kept free, measure the height **A** while float arm is just in contact with needle valve by using calipers.

Bend the tongue **1** as necessary to bring the height **A** to this value.

**DATA** Float height **A**:  $18.9 \pm 1.0$  mm ( $0.74 \pm 0.04$  in)

**TOOL** 09900-20102: Venier calipers

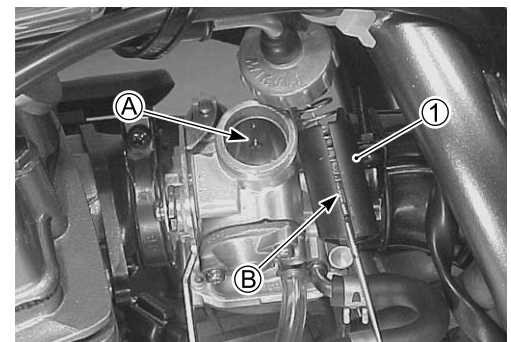


## REASSEMBLY AND REMOUNTING

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

Pay attention to the following points:

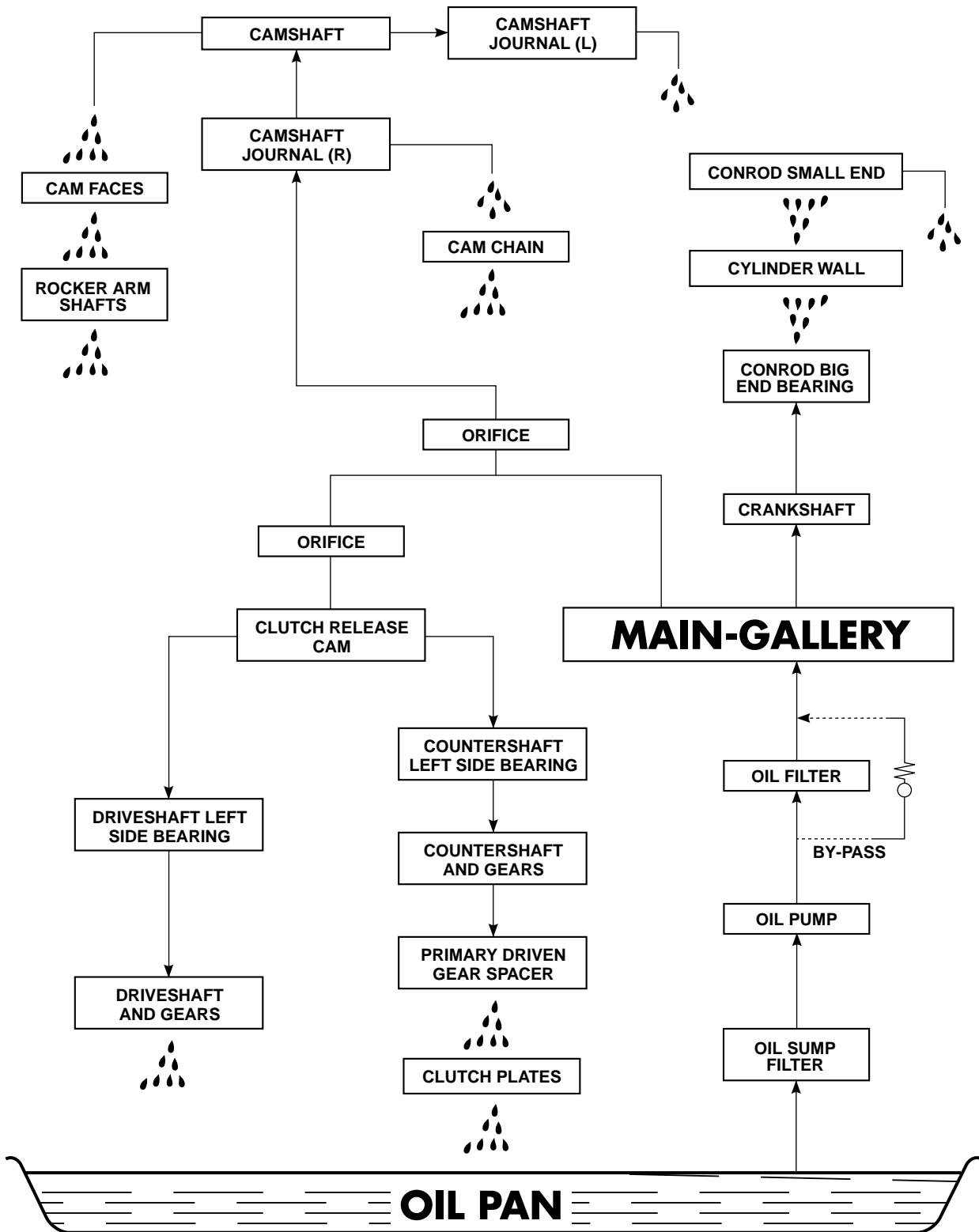
- Align the projection **A** on the carburetor body with the slit **B** of the throttle valve **1**.




- Adjust the following items to the specification.
  - \*Engine idle speed ..... 2-8
  - \*Throttle cable play ..... 2-8

# ENGINE LUBRICATION SYSTEM


## ENGINE LUBRICATION SYSTEM CHART




## OIL PRESSURE

( 2-23)

## OIL FILTER

( 2-10)

## OIL SUMP FILTER

( 3-41)

### NOTE:

*When separating the crankcase, wash the oil sump filter with cleaning solvent, and then blow compressed air through it to dry off solvent.*

# CHASSIS

## CONTENTS

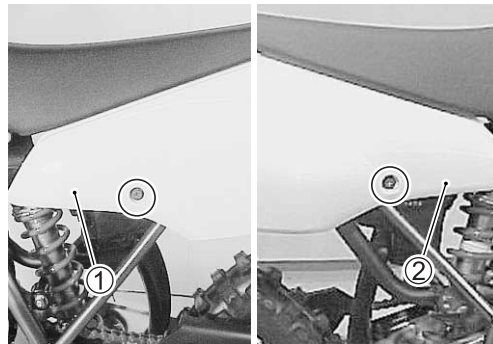
<b>EXTERIOR PARTS .....</b>	<b>5- 2</b>
<b>REMOVAL .....</b>	<b>5- 2</b>
<b>REMOUNTING .....</b>	<b>5- 2</b>
<b>FRONT WHEEL AND FRONT BRAKE (DR-Z125) .....</b>	<b>5- 3</b>
<b>REMOVAL .....</b>	<b>5- 3</b>
<b>INSPECTION AND DISASSEMBLY .....</b>	<b>5- 5</b>
<b>REASSEMBLY .....</b>	<b>5- 6</b>
<b>REMOUNTING .....</b>	<b>5- 7</b>
<b>FRONT WHEEL (DR-Z125L) .....</b>	<b>5- 8</b>
<b>REMOVAL .....</b>	<b>5- 8</b>
<b>INSPECTION AND DISASSEMBLY .....</b>	<b>5- 9</b>
<b>REASSEMBLY AND REMOUNTING .....</b>	<b>5- 9</b>
<b>FRONT BRAKE (DR-Z125L) .....</b>	<b>5-10</b>
<b>BRAKE PAD REPLACEMENT .....</b>	<b>5-11</b>
<b>BRAKE FLUID REPLACEMENT .....</b>	<b>5-12</b>
<b>BRAKE CALIPER REMOVAL AND DISASSEMBLY .....</b>	<b>5-12</b>
<b>BRAKE CALIPER INSPECTION .....</b>	<b>5-13</b>
<b>BRAKE CALIPER REASSEMBLY AND REMOUNTING .....</b>	<b>5-14</b>
<b>BRAKE DISC INSPECTION .....</b>	<b>5-15</b>
<b>MASTER CYLINDER REMOVAL AND DISASSEMBLY .....</b>	<b>5-16</b>
<b>MASTER CYLINDER INSPECTION .....</b>	<b>5-17</b>
<b>MASTER CYLINDER REASSEMBLY AND REMOUNTING .....</b>	<b>5-17</b>
<b>FRONT FORK .....</b>	<b>5-19</b>
<b>REMOVAL AND DISASSEMBLY .....</b>	<b>5-19</b>
<b>INSPECTION .....</b>	<b>5-22</b>
<b>REASSEMBLY AND REMOUNTING .....</b>	<b>5-22</b>
<b>STEERING .....</b>	<b>5-25</b>
<b>REMOVAL AND DISASSEMBLY .....</b>	<b>5-25</b>
<b>INSPECTION .....</b>	<b>5-27</b>
<b>REASSEMBLY AND REMOUNTING .....</b>	<b>5-27</b>
<b>REAR WHEEL AND REAR BRAKE .....</b>	<b>5-31</b>
<b>REMOVAL .....</b>	<b>5-31</b>
<b>INSPECTION AND DISASSEMBLY .....</b>	<b>5-33</b>
<b>REASSEMBLY AND REMOUNTING .....</b>	<b>5-33</b>
<b>REAR SWINGARM AND SUSPENSION .....</b>	<b>5-35</b>
<b>REMOVAL .....</b>	<b>5-36</b>
<b>INSPECTION AND DISASSEMBLY .....</b>	<b>5-37</b>
<b>REASSEMBLY AND REMOUNTING .....</b>	<b>5-40</b>
<b>SUSPENSION SETTING .....</b>	<b>5-42</b>
<b>REAR SHOCK ABSORBER DISPOSAL .....</b>	<b>5-43</b>

## EXTERIOR PARTS

### REMOVAL

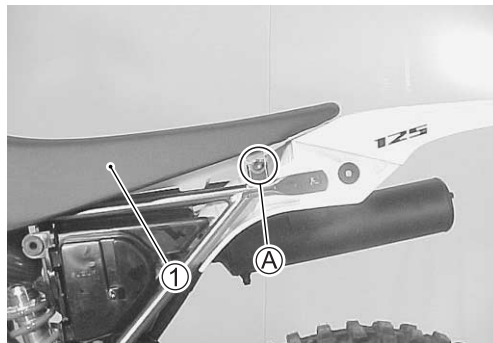
#### FRAME COVERS

- Remove the frame covers ① and ②.



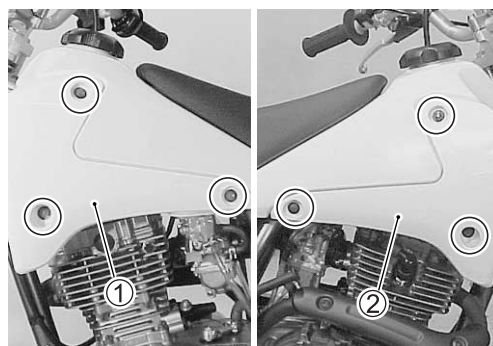
#### SEAT

- Remove the frame covers.
- Remove the bolts (A) (left and right).
- Remove the seat ①.



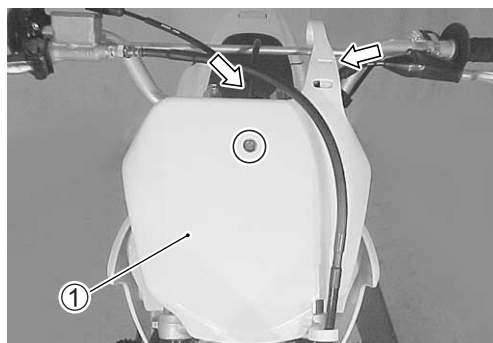
#### FUEL TANK COVERS

- Remove the tank covers ① and ②.



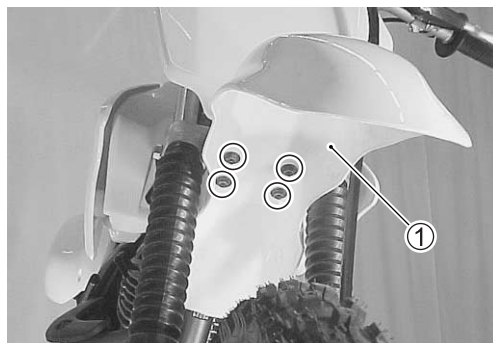
#### FRONT NUMBER PLATE

- Pull out the fuel vent hose and untie the belt.
- Remove the front number plate ①.



#### FRONT FENDER

- Remove the front fender ①.

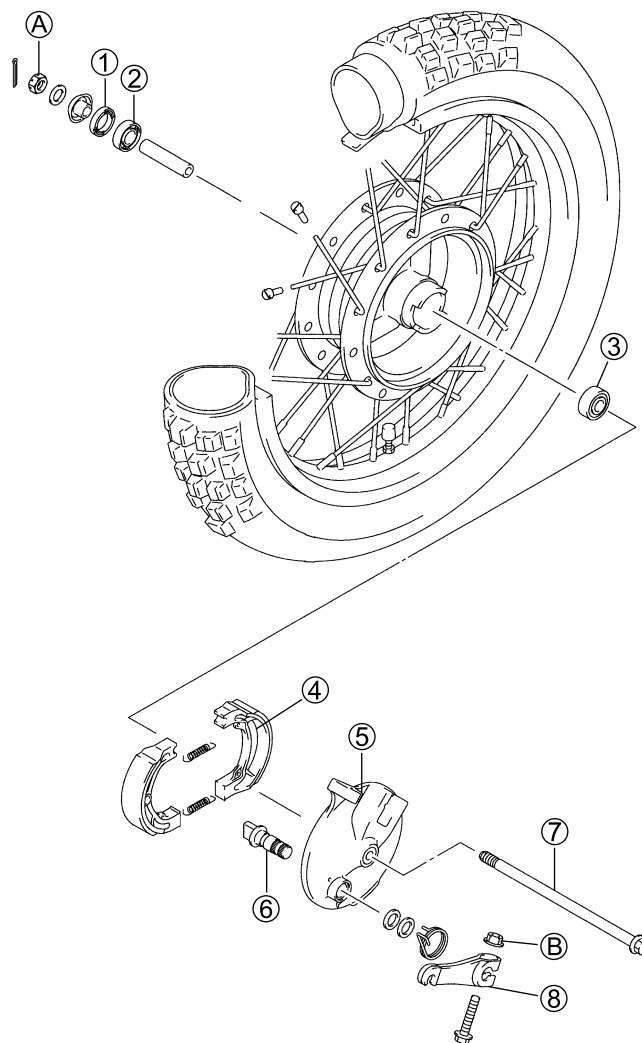


### REMOUNTING

Remount the exterior parts in the reverse order of removal.

## FRONT WHEEL AND FRONT BRAKE (DR-Z125)

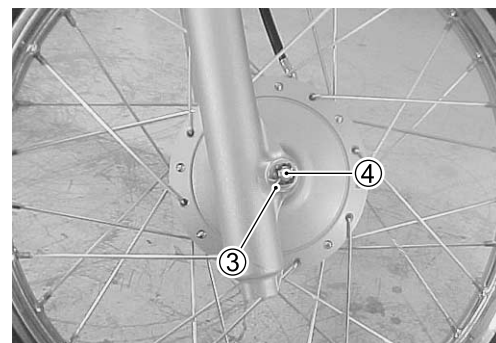
- ① Dust seal
  - ② Bearing
  - ③ Bearing
  - ④ Brake shoe
  - ⑤ Brake panel
  - ⑥ Brake camshaft
  - ⑦ Front axle
  - ⑧ Brake cam lever
- Ⓐ Front axle nut  
Ⓑ Brake cam lever nut



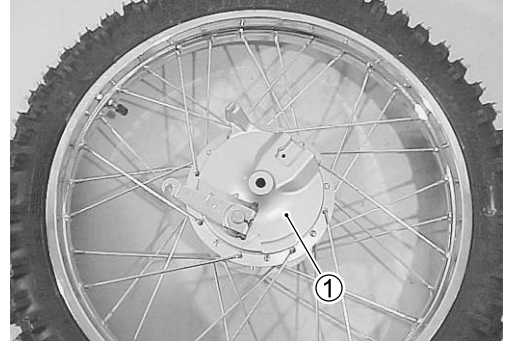
ITEM	N-m	kgf-m	lb-ft
Ⓐ	35	3.5	25.5
Ⓑ	11	1.1	8.0

### REMOVAL

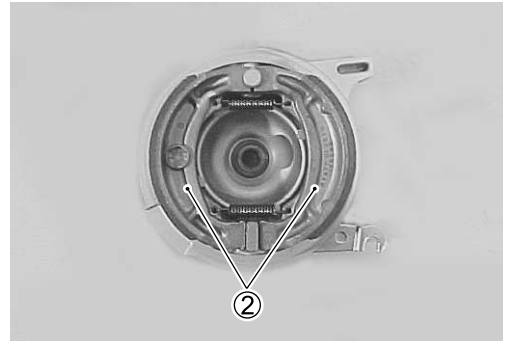
- Loosen the front brake adjusting nut ①.
  - Remove the front brake cable ②.
- 
- Remove the cotter pin ③ and front axle nut ④.
  - Raise the front wheel off the ground with a jack or wooden block.
  - Remove the front wheel with the front brake panel by removing the front axle shaft.



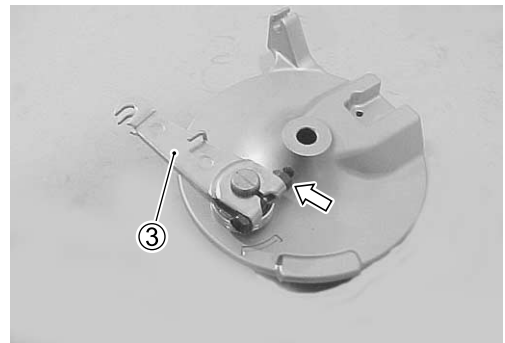
- Remove the front brake panel ①.



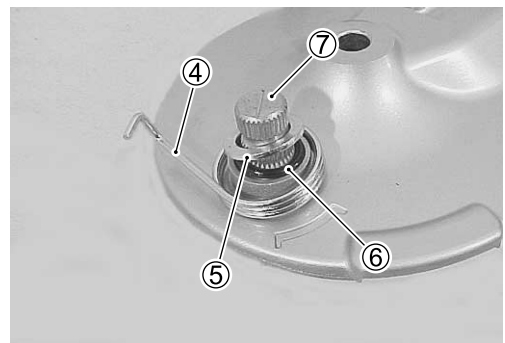
- Remove the brake shoes ② from the brake panel.





- Remove the brake cam lever bolt and nut.
- Remove the brake cam lever ③.



- Remove the spring ④, washer ⑤, O-ring ⑥ and brake cam-shaft ⑦.

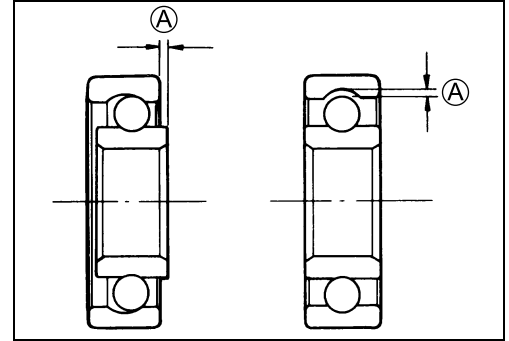


## INSPECTION AND DISASSEMBLY

TIRE .....  2-17  
SPOKE NIPPLES.....  2-18


### WHEEL BEARINGS

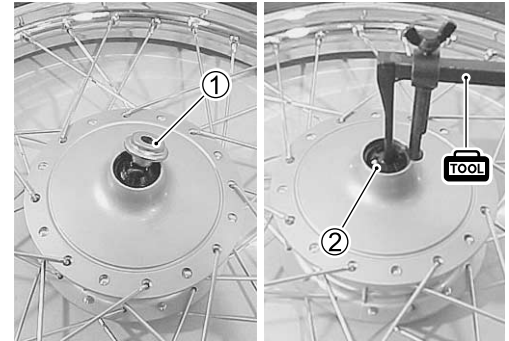
Inspect the play  $\textcircled{A}$  of the wheel bearings by hand while they are in the wheel. Rotate the inner race by hand to inspect it for abnormal noise and smooth rotation. Replace the wheel bearings if there is anything unusual.



Remove the wheel bearings as follows:

- Remove the spacer  $\textcircled{1}$  and dust seal  $\textcircled{2}$  by using the special tool.

 **09913-50121: Oil seal remover**



Remove the wheel bearings by using the special tool.

 **09921-20240: Bearing remover set**


#### CAUTION


Replace the removed bearing with new ones.

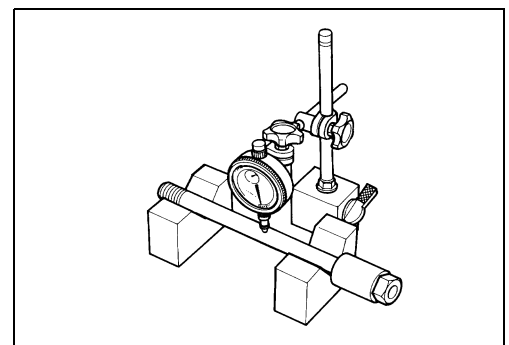


### AXLE SHAFT

Measure the front axle runout using the dial gauge. If the runout exceeds the service limit, replace the front axle.

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

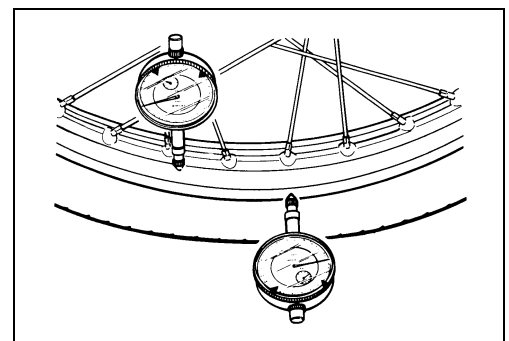
 **Front axle runout**  
**Service Limit: 0.25 mm (0.010 in)**



### WHEEL

Make sure that the wheel rim runout (axial and radial) does not exceed the service limit when checked as shown. An excessive amount of runout is usually due to worn or loose wheel bearings and can be corrected by replacing the bearings. If bearing replacement fails to reduce the runout, replace the wheel.


 **Wheel rim runout**  
**Service Limit (axial and radial): 2.0 mm (0.08 in)**





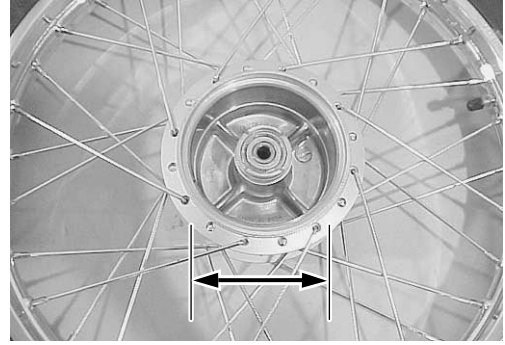
**BRAKE DRUM**

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 value of this limit is indicated inside the brake drum.

 **09900-20102: Venier calipers**

 **Brake drum I.D.**

**Service Limit: 110.7 mm (4.36 in)**

**BRAKE SHOES**

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

**CAUTION**

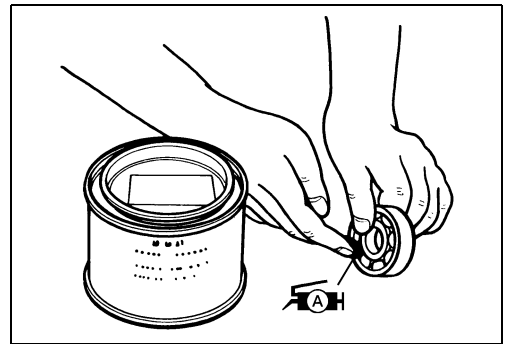
Replace the brake shoes as a set, otherwise braking performance will be adversely affected.

**REASSEMBLY****WHEEL BEARINGS**

- Apply SUZUKI SUPER GREASE "A" to the bearings before installing.

 **99000-25030: SUZUKI SUPER GREASE "A" (USA)**

**99000-25010: SUZUKI SUPER GREASE "A" (Others)**

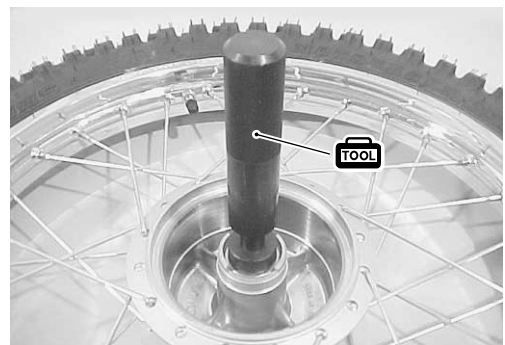


- Install the wheel bearings by using the special tool.

 **09913-70210: Bearing installer set**

**CAUTION**

First, install the left wheel bearing, and then install the right wheel bearing.

**FRONT BRAKE**

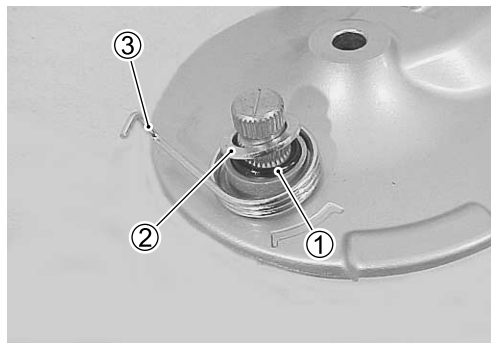
- When installing the brake camshaft, apply SUZUKI SUPER GREASE "A" to the camshaft.

 **99000-25030: SUZUKI SUPER GREASE "A" (USA)**


**99000-25010: SUZUKI SUPER GREASE "A" (Others)**



- Install the new O-ring ①, washer ② and spring ③.



- Install the brake cam lever as shown.
- Tighten the brake cam lever nut to the specified torque.

 **Brake cam lever nut: 11 N·m (1.1 kgf-m, 8.0 lb-ft)**

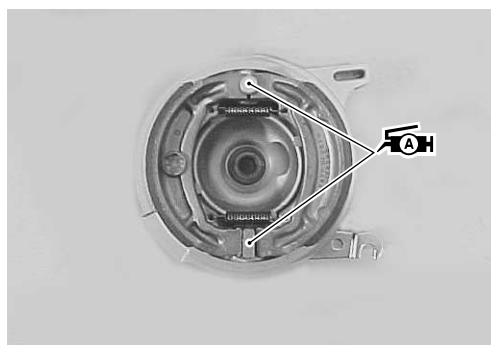


- Apply SUZUKI SUPER GREASE “A” to the brake cam and pin, and install the brake shoes.

 **99000-25030: SUZUKI SUPER GREASE “A” (USA)**  
**99000-25010: SUZUKI SUPER GREASE “A” (Others)**

#### **WARNING**

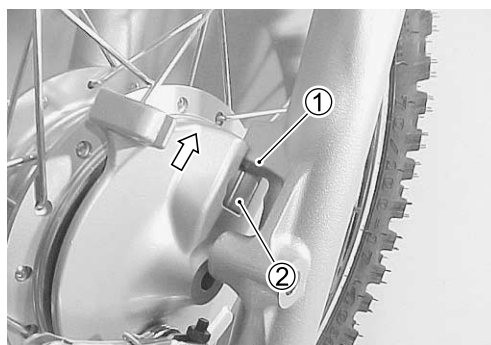
Be careful not to apply too much grease to the cam and pin. If grease gets on the lining, brake slippage will result.



## REMountING

Remount the front wheel in the reverse order of removal. Pay attention to the following points:


- Align the rib ① on the left fork leg with the slot ② on the brake panel.



## FRONT AXLE

- Tighten the front axle nut to the specified torque.

 **Front axle nut: 35 N·m (3.5 kgf-m, 25.5 lb-ft)**

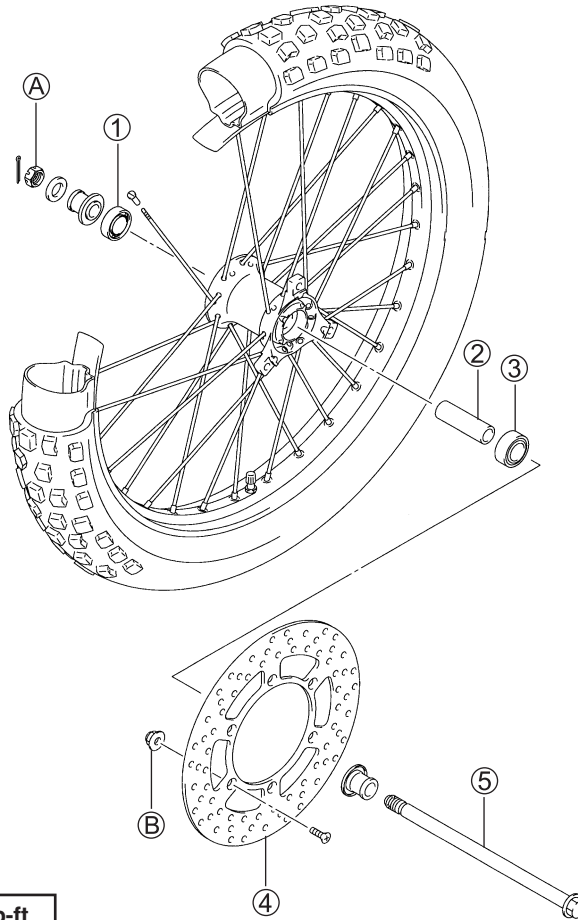
- Install the new cotter pin.
- Adjust the front brake lever play. ( 2-14)



## FRONT WHEEL (DR-Z125L)

- ① Bearing
- ② Spacer
- ③ Bearing
- ④ Brake disc
- ⑤ Front axle

- Ⓐ Front axle nut
- Ⓑ Brake disc mounting nut



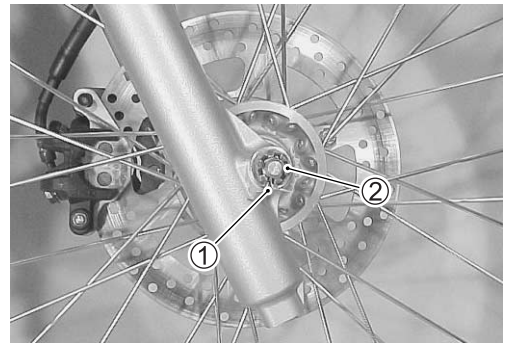
ITEM	N·m	kgf·m	lb·ft
Ⓐ	44	4.4	32.0
Ⓑ	8.5	0.85	6.0

### REMOVAL






- Remove the cotter pin ①.
- Remove the front axle nut ②.
- Raise the front wheel off the ground with a jack or wooden block.
- Remove the front axle shaft and front wheel.

### CAUTION

Do not operate the brake lever after front wheel removal.




## INSPECTION AND DISASSEMBLY

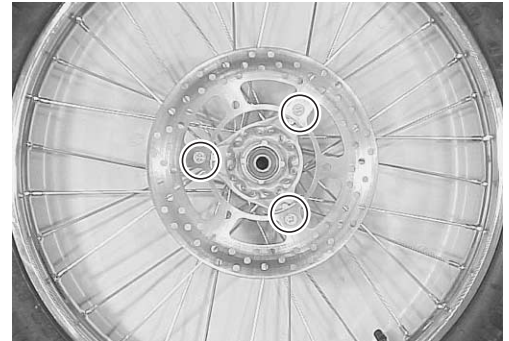
TIRE .....	 2-17
SPOKE NIPPLES.....	 2-18
WHEEL BEARINGS.....	 5- 5
AXLE SHAFT .....	 5- 5
WHEEL .....	 5- 5

### BRAKE DISC

Inspect the brake disc for wear or damage. If any abnormal wear is found, replace the brake disc with a new one.

BRAKE DISC INSPECTION.....  5-15

- Remove the brake disc.



## REASSEMBLY AND REMOUNTING

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

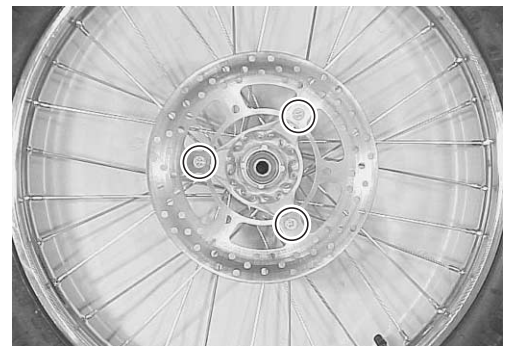
WHEEL BEARINGS .....

 5-5

### BRAKE DISC


- Tighten the brake disc nuts to the specified torque.

 **Brake disc nut: 8.5 N·m (0.85 kgf-m, 6.0 lb-ft)**



### FRONT AXLE

- Tighten the front axle nut to the specified torque.

 **Front axle: 44 N·m (4.4 kgf-m, 32.0 lb-ft)**

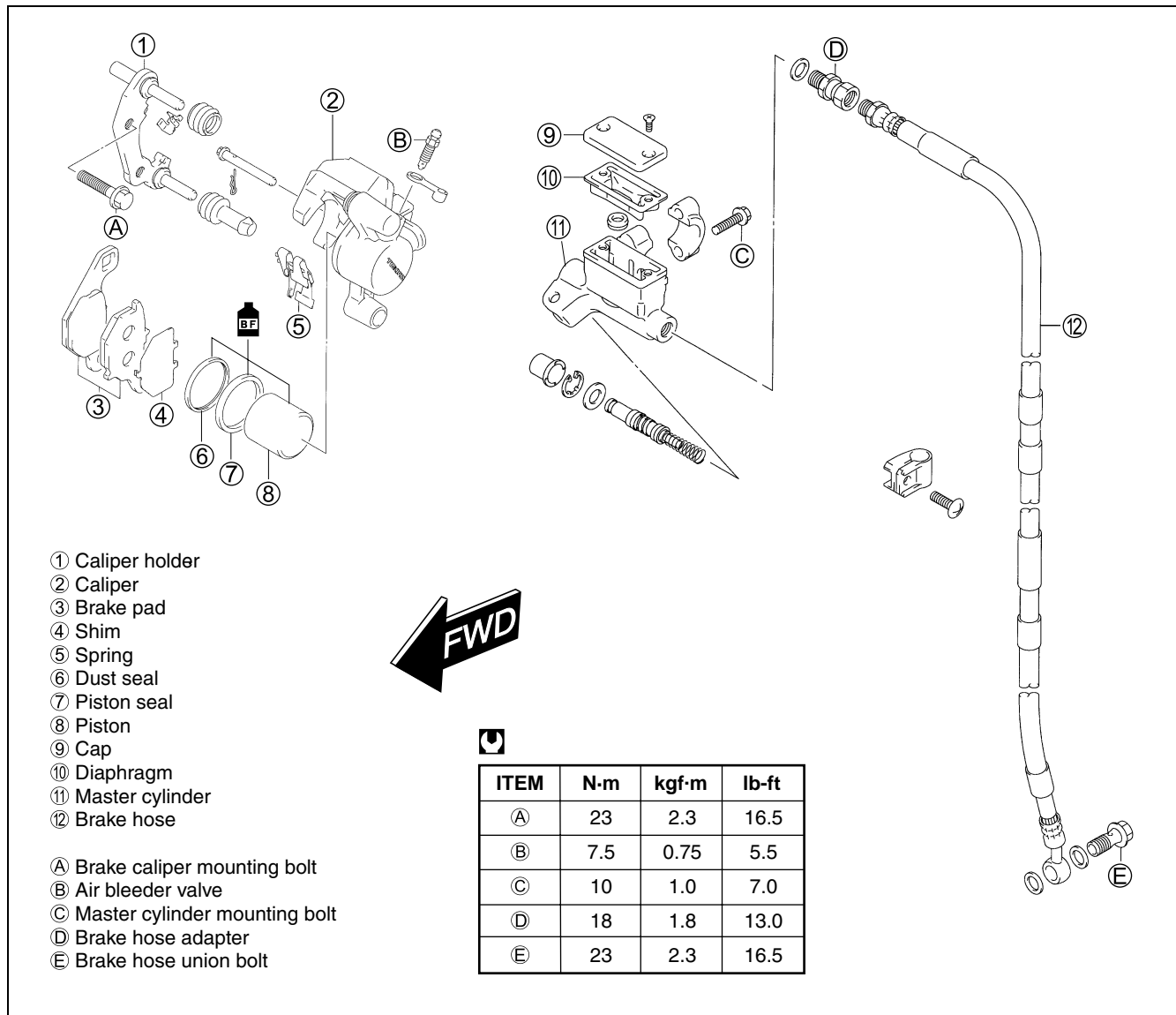
#### NOTE:

*After remounting the front wheel, pump the brake lever a few times to check for proper brake operation.*

- Install the new cotter pin.



## FRONT BRAKE (DR-Z125L)



### ⚠ WARNING

- \* The brake system is filled with an glycol-based brake fluid, which is classified DOT 4. Do not use or mix other types of brake fluid, such as silicone-based and petroleum-based brake fluids when refilling the brake system, otherwise serious damage to the brake system will result.
- \* Do not use any brake fluid taken from old, used, or unsealed containers.
- \* Do not reuse brake fluid left over from the last servicing or which has been stored for a long period of time.
- \* When storing brake fluid, make sure to seal the container completely and keep it out of the reach of children.
- \* When replenishing brake fluid, make sure not to get any dust or other foreign materials in the fluid.
- \* When washing brake components, always use new brake fluid. Do not use cleaning solvent.
- \* A contaminated brake disc or brake pad reduces braking performance. Discard contaminated pads and clean the brake disc with high-quality brake cleaner or a neutral detergent.

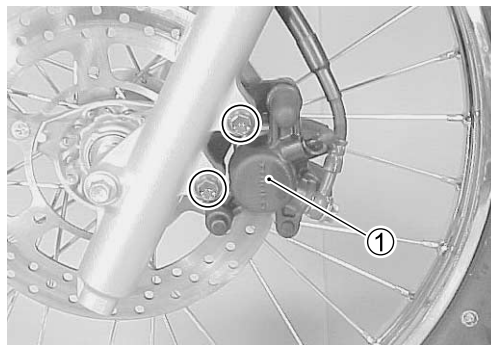
### CAUTION

Handle brake fluid with care: the fluid reacts chemically with paint, plastics, rubber material, etc.

## BRAKE PAD REPLACEMENT

### REMOVAL

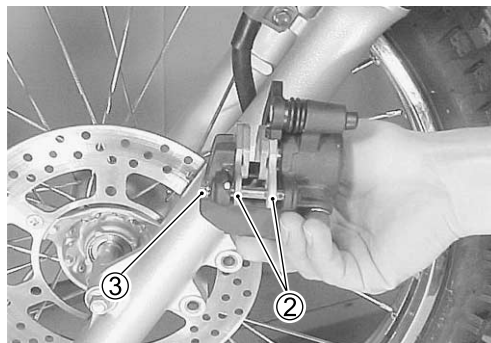
- Remove the brake caliper ①.



- Remove the brake pads ② and shim by removing the brake pad mounting pin ③.

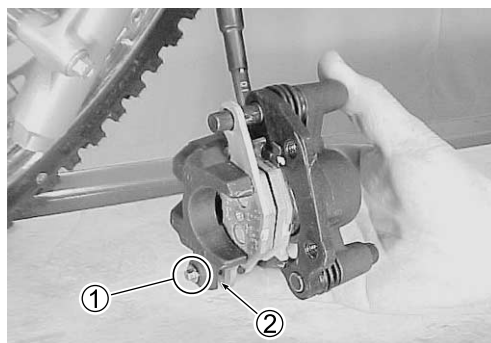
### CAUTION

- \* Do not operate the brake lever after brake pad removal.
- \* Replace the brake pad as a set, otherwise braking performance will be adversely affected.



### INSTALLATION

- Remont the brake pad mounting pin ①.
- Install the pin ②.



- Tighten the brake caliper mounting bolts to the specified torque.

### Brake caliper mounting bolt:

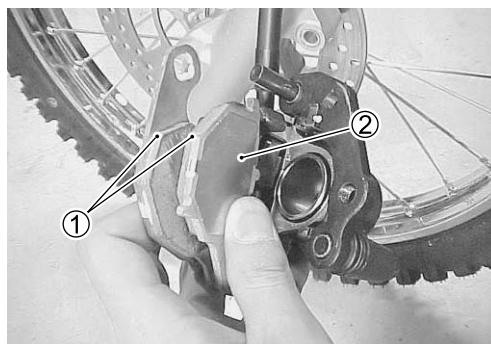
**23 N·m (2.3 kgf·m, 16.5 lb-ft)**

### NOTE:

*After replacing the brake pads, pump the brake lever a few times to check for proper brake operation and then check the brake fluid level.*



- Install the new brake pads ① and shim ②.



## BRAKE FLUID REPLACEMENT

- Place the motorcycle on a level surface and keep the handlebars straight.
- Remove the master cylinder reservoir cap and diaphragm.
- Remove as much old brake fluid as possible.
- Fill the reservoir with new brake fluid.

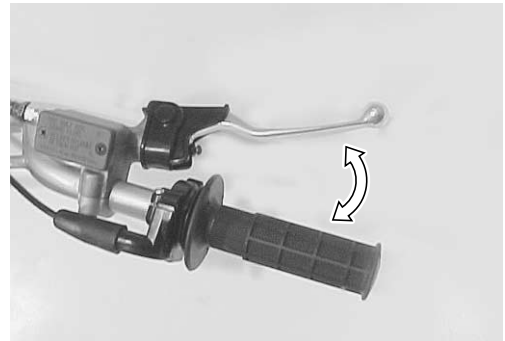
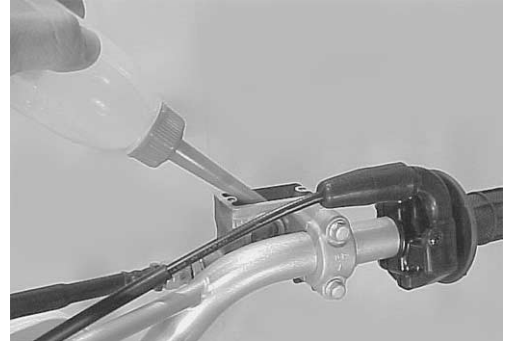
 **Specification and classification: DOT4**

- Connect a clear hose to the air bleeder valve and insert the other end of the hose into a receptacle.
- Loosen the air bleeder valve and pump the brake lever until the old brake fluid is completely out of the brake system.
- Close the air bleeder valve and disconnect a clear hose. Fill the reservoir with new brake fluid to the upper end of the inspection window.

### CAUTION

**Bleed air from the brake system. (👉 2-15)**

 **Air bleeder valve: 7.5 N·m (0.75 kgf·m, 5.5 lb-ft)**

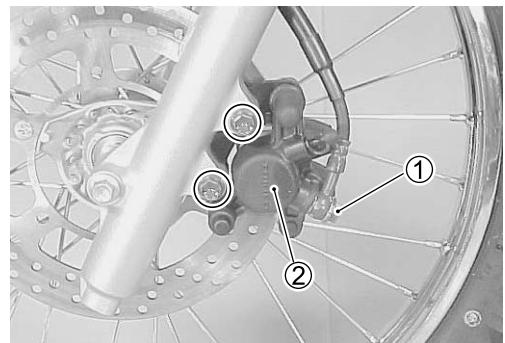


## BRAKE CALIPER REMOVAL AND DISASSEMBLY

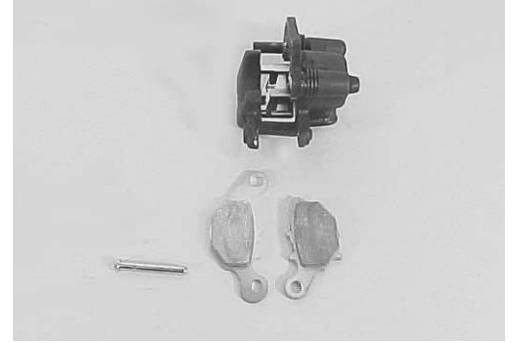
- Remove the brake hose union bolt ① and allow the brake fluid to drain into a suitable receptacle.
- Remove the brake caliper ②.

### ⚠ WARNING

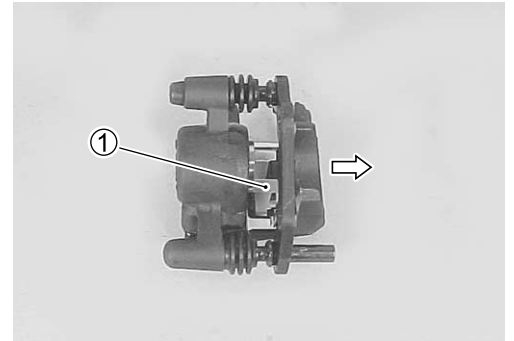
- \* **Never reuse the brake fluid left over from previous servicing or which has been stored for long period of time, otherwise serious damage to the brake system will result.**
- \* **Brake fluid, if it leaks, will interfere with safe running and discolor painted surfaces. Check the brake hose and hose joints for cracks and oil leakage.**



- Remove the brake pads and shim. (👉 5-11)



- Remove the brake caliper holder.
- Remove the spring ①.



- Place a rag over the brake caliper piston to prevent it from popping out, and then force out the piston using compressed air.

#### CAUTION

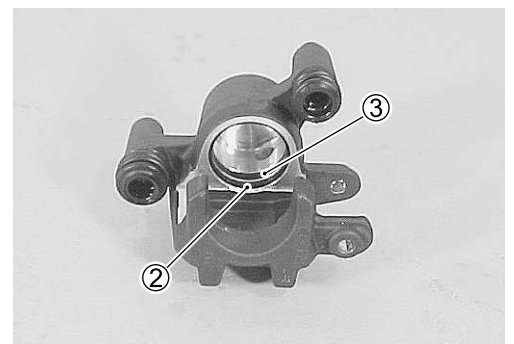
**Do not use extremely high pressure air to remove the brake caliper piston, otherwise damage to the piston will result.**



- Remove the dust seal ② and piston seal ③.

#### CAUTION

**Do not reuse the dust seal and piston seal to prevent fluid leakage.**



## BRAKE CALIPER INSPECTION

### BRAKE CALIPER

Inspect each brake caliper cylinder wall for nicks, scratches or other damage. If any damages are found, replace the brake caliper with a new one.

### BRAKE CALIPER PISTON

Inspect the brake caliper piston for any scratches or other damage. If any damages are found, replace the piston with a new one.





## BRAKE CALIPER REASSEMBLY AND REMOUNTING

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

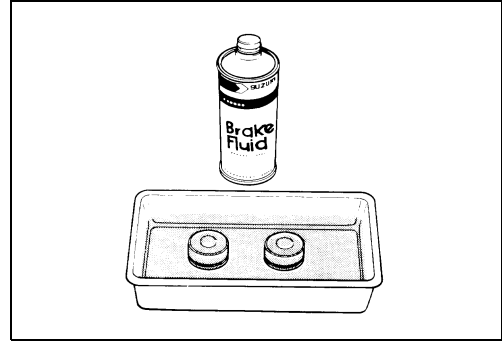
- Wash the caliper bore and piston with the specified brake fluid. Thoroughly wash the dust seal groove and piston seal groove.



**Specification and classification: DOT4**

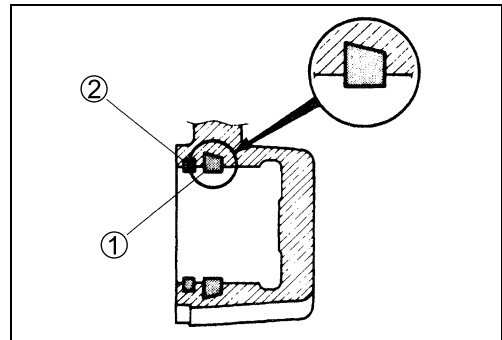
### CAUTION

- \* Wash the brake caliper components with new brake fluid before reassembly.
- \* Do not wipe the brake fluid off after washing the components.
- \* When washing the components, use the specified brake fluid. Never use different types of fluid or cleaning solvents such as gasoline, kerosine, etc.
- \* Replace the removed piston seals and dust seals with new ones.
- \* Apply brake fluid to all of the seals, brake caliper bores and pistons before reassembly.



### PISTON SEALS

- Install the piston seal ① and dust seal ② as shown.



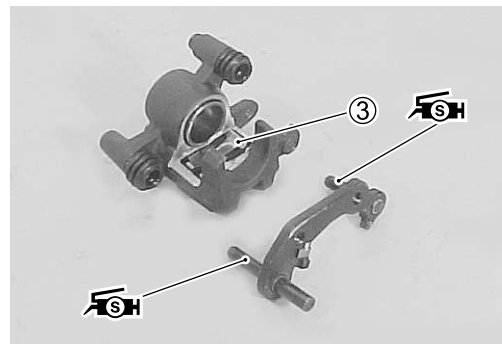
### BRAKE CALIPER HOLDER

- Apply SUZUKI SILICON GREASE to the brake caliper holder.



**99000-25100: SUZUKI SILICON GREASE**

- Install the spring ③.



- Install the brake pads and shim. (☞ 5-11)
- Tighten the brake caliper mounting bolts ①, brake hose union bolt ② to the specified torque.

**🔧 Brake caliper mounting bolt:**

**23 N·m (2.3 kgf-m, 16.5 lb-ft)**

**Brake hose union bolt: 23 N·m (2.3 kgf-m, 16.5 lb-ft)**

**NOTE:**

*Before remounting the brake caliper, push the brake caliper piston all the way into the caliper.*

**CAUTION**

**Bleed air from the system after reassembling the brake caliper. (☞ 2-15)**



## BRAKE DISC INSPECTION

Check the brake disc for cracks or damage and measure the thickness using the micrometer. If any damages are found or if the thickness is less than the service limit, replace the brake disc with a new one.

**🔧 09900-20205: Micrometer (0 – 25 mm)**

**📊 Brake disc thickness**

**Service Limit: 3.0 mm (0.12 in)**

Measure the runout using the dial gauge. If the runout exceeds the service limit, replace the brake disc with a new one.

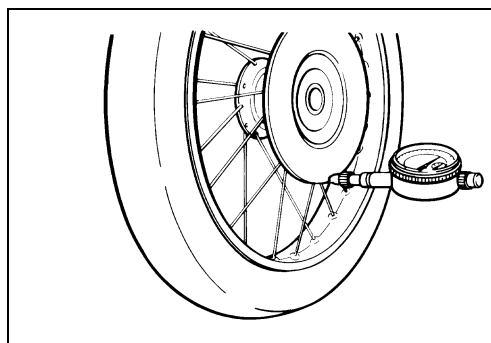
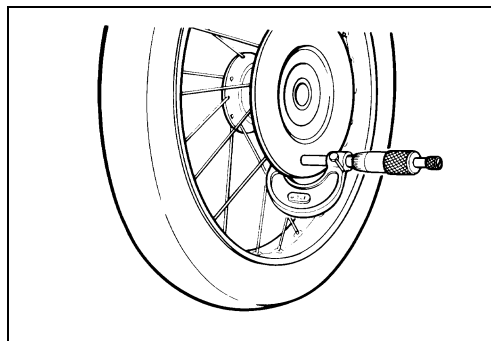
**📊 Brake disc runout**

**Service Limit: 3.0 mm (0.012 in)**

**🔧 09900-20607: Dial gauge (1/100 mm)**

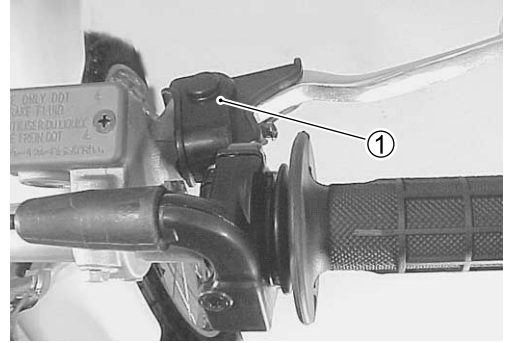
**09900-20701: Magnetic stand**

- If either measurement exceeds the service limit, replace the brake disc with a new one. (☞ 5-9)

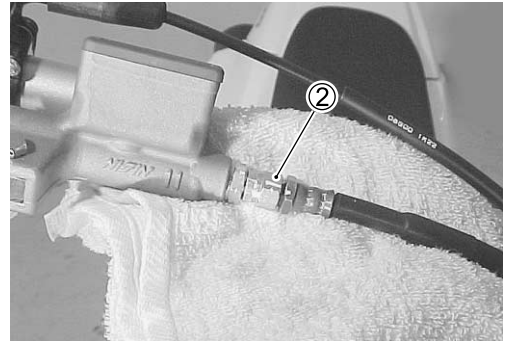


## MASTER CYLINDER REMOVAL AND DISASSEMBLY

- Remove the brake lever cover ①.



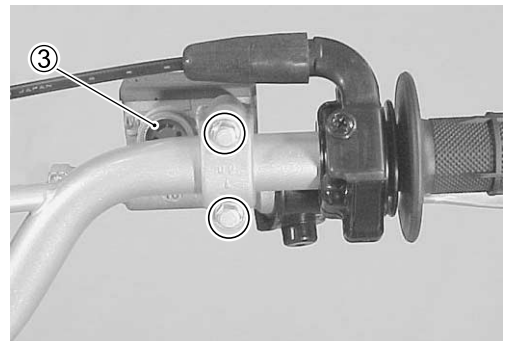
- Place a rag underneath the brake hose union bolt ② on the master cylinder to catch any spilt brake fluid. Loosen the brake hose union bolt and disconnect the brake hose.



### CAUTION

Immediately wipe off any brake fluid contacting any part of the motorcycle. The brake fluid reacts chemically with paint, plastics, rubber materials, etc., and will damage them severely.

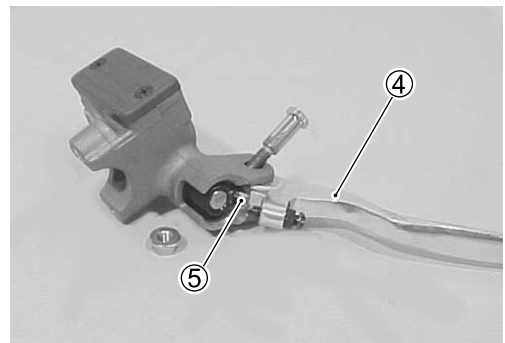
- Remove the master cylinder assembly ③.



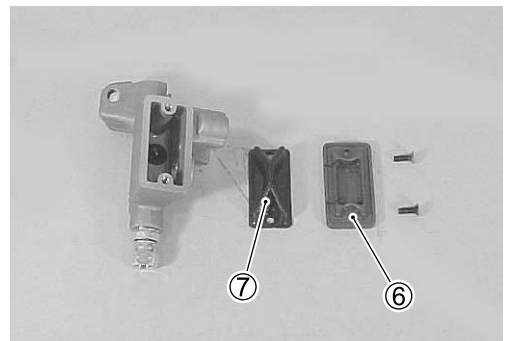
- Remove the brake lever ④.

### NOTE:

Do not loosen the brake lever spring ⑤.

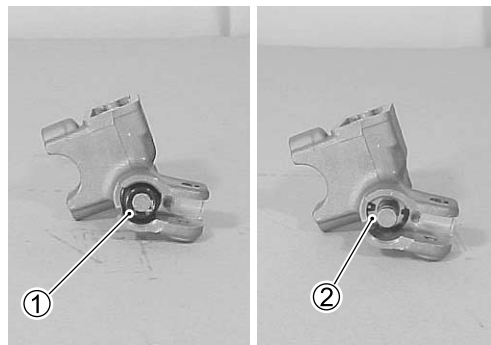


- Remove the reservoir cap ⑥ and diaphragm ⑦.
- Drain the brake fluid.

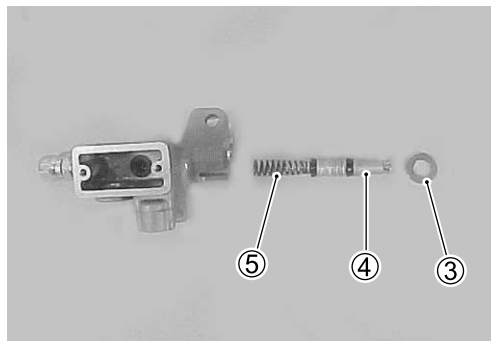


- Pull out the dust seal boot ① and remove the snap ring ②.

**TOOL** 09900-06108: Snap ring pliers



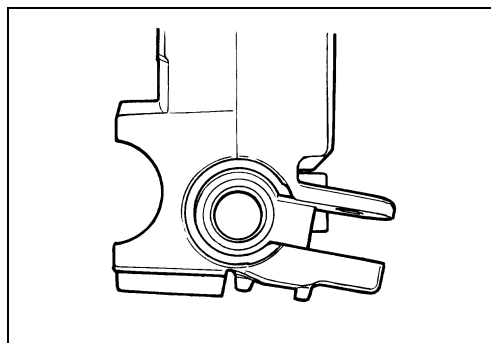
- Remove the washer (3), piston (4) and spring (5).



## MASTER CYLINDER INSPECTION

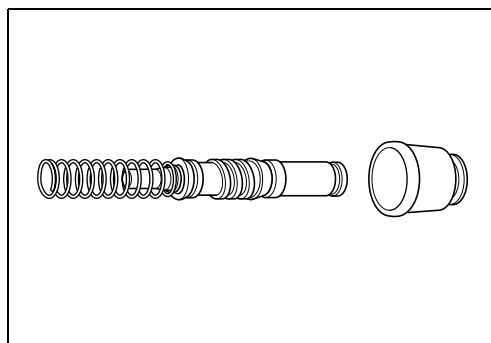
### MASTER CYLINDER

Inspect the master cylinder bore for any scratches or damage. If any damages are found, replace the master cylinder with a new one.



### PISTON AND RUBBER PARTS

Inspect the piston surface, primary/secondary cup, and dust seal boot for any scratches, wear or damage. If any damages are found, replace the piston set with a new one.



## MASTER CYLINDER REASSEMBLY AND REMOUNTING

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

**CAUTION**

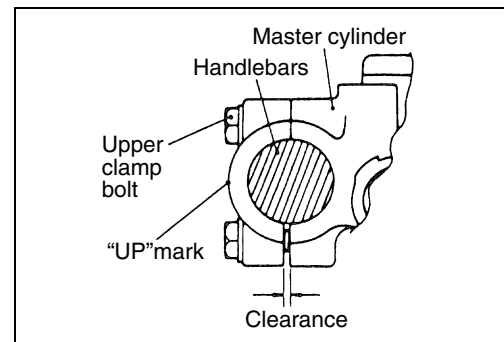
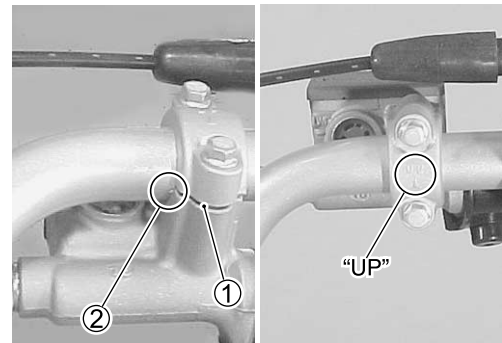
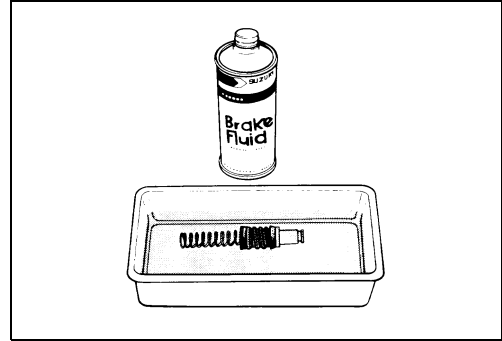
- \* Wash the master cylinder components with new brake fluid before reassembly.
- \* Do not wipe the brake fluid off after washing the components.
- \* When washing the components, use the specified brake fluid. Never use different types of fluid or cleaning solvents such as gasoline, kerosine, etc.
- \* Apply brake fluid to the master cylinder bore and all of the master cylinder components before reassembly.

**Specification and classification: DOT4**

- When remounting the master cylinder on the handlebars, align the master cylinder holder's mating surface ① with the punched mark ② on the handlebars, and then tighten the upper clamp bolt first.

**Master cylinder mounting bolt:**

**23 N·m (2.3 kgf·m, 16.5 lb-ft)**

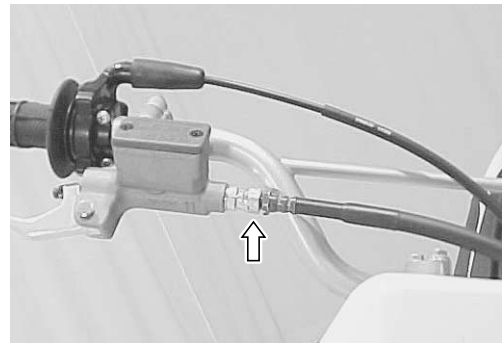


- Tighten the brake hose union bolt to the specified torque.

**Brake hose adapter: 18 N·m (1.8 kgf·m, 13.0 lb-ft)****⚠ WARNING**

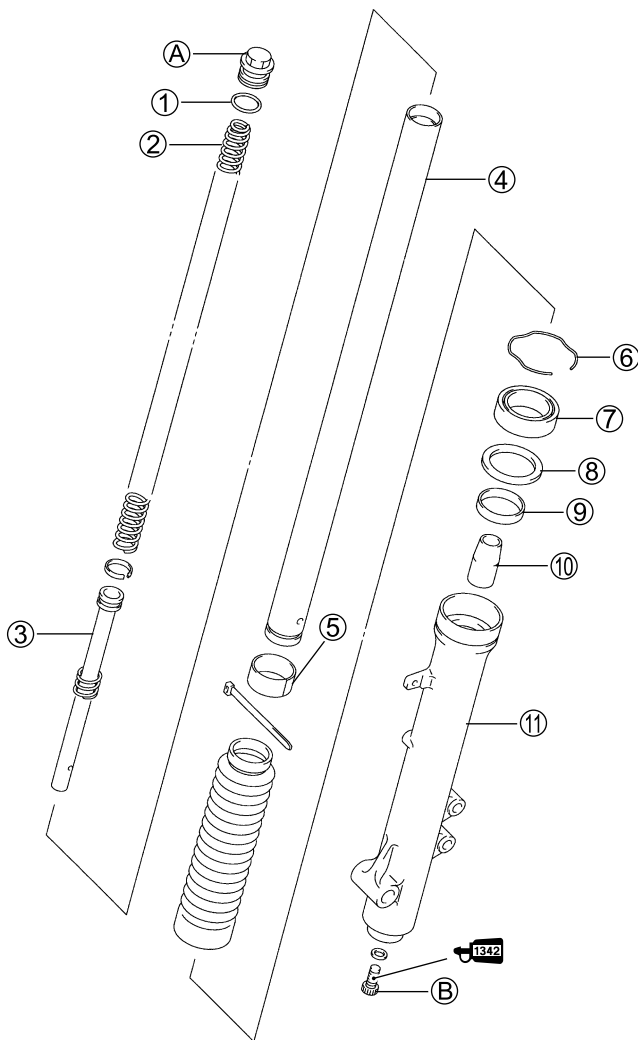
**Bleed air from the brake system after reassembling the master cylinder. (👉 2-15)**

- Install the brake lever cover.
- Adjust the brake lever play. (👉 2-16)



## FRONT FORK

- ① O-ring
  - ② Front fork spring
  - ③ Damper rod
  - ④ Inner tube
  - ⑤ Slide metal
  - ⑥ Oil seal stopper ring
  - ⑦ Oil seal
  - ⑧ Oil seal retainer
  - ⑨ Outer tube slide metal
  - ⑩ Oil lock piece
  - ⑪ Outer tube
- A Front fork cap bolt  
B Damper rod bolt



ITEM	N-m	kgf-m	lb-ft
A	23	2.3	16.5
B	20	2.0	14.5

## REMOVAL AND DISASSEMBLY

- Remove the front brake cable. (DR-Z125)
- Remove the brake caliper. (DR-Z125L)
- Remove the front wheel. (👉 5-3 or -8)

### CAUTION

Hang the caliper from the frame by using the string, etc. taking care not to bend the brake hose.

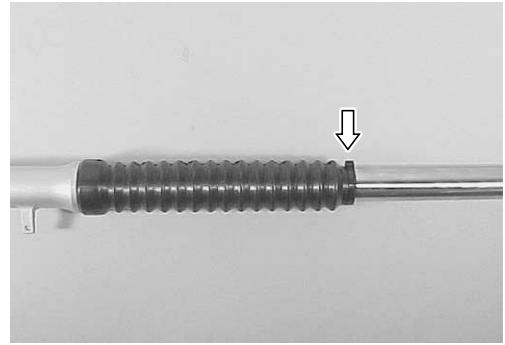
- Loosen the upper and lower clamp bolts.
- Pull down the front fork assembly.



- Remove the boot.

**CAUTION**

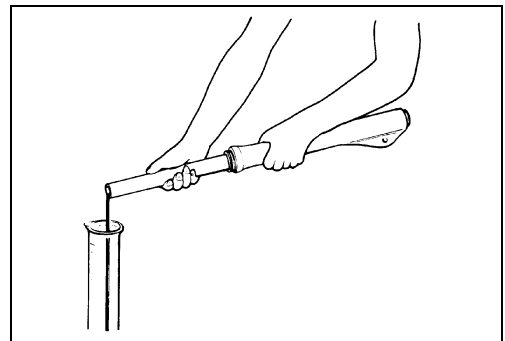
Replace the removed boot clamp with a new one.



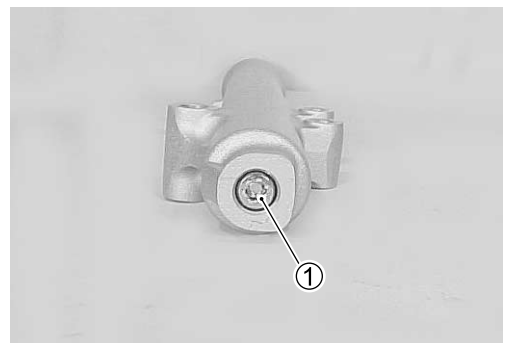
- Remove the cap bolt and spring.



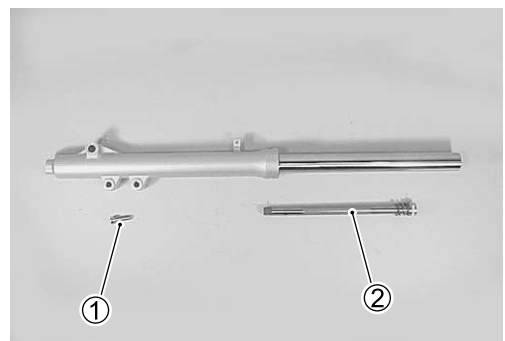
- Invert the fork and stroke it several times to drain out the fork oil. Under this condition (inverted condition), hold the fork for a few minutes.



- Remove the damper rod bolt ①.



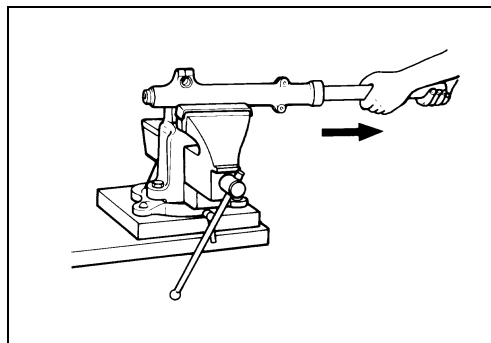
- Remove the damper rod ②.



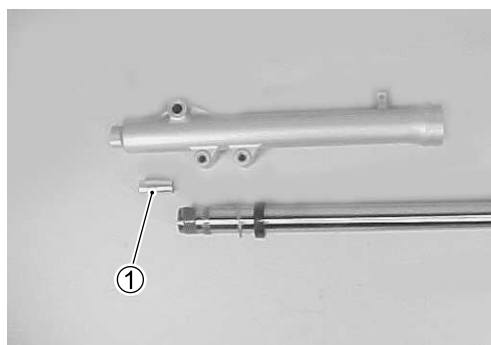
- Remove the oil seal stopper ring.



- Slowly pull out the inner tube.



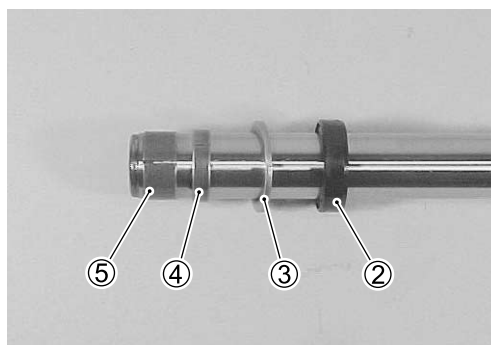
- Remove the oil lock piece ①.



- Remove the oil seal ②, oil seal retainer ③, outer tube antifric-tion metal ④ and inner tube antifric-tion metal ⑤.

**CAUTION**

The outer and inner tube's antifric-tion metals must be replaced along with the oil seal and dust seal when assembling the front fork.



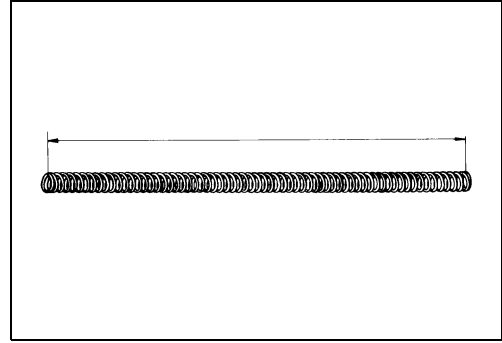


## INSPECTION

### FORK SPRING

Measure the fork spring free length. If the fork spring free length is shorter than the service limit, replace the fork spring with a new one.

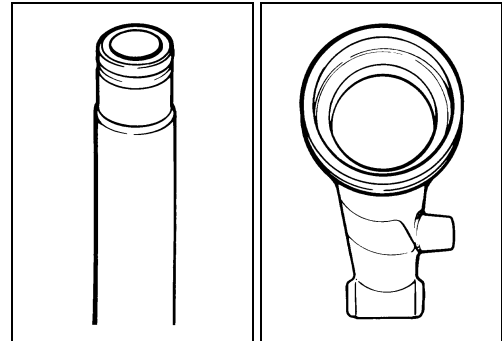
**DATA** Front fork spring free length  
Service limit: 587 mm (23.1 in)



### INNER AND OUTER TUBE

Inspect the inner tube sliding surface and outer tube sliding surface for any scuffing or damage.

If any damages are found, replace the inner tube and outer tube with new ones.



## REASSEMBLY AND REMOUNTING

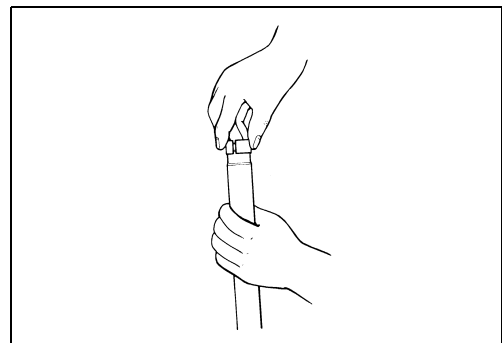
Reassemble and remount the front fork in the reverse order of removal and disassembly. Pay attention to the following points:

### ANTIFRICTION METALS, OIL SEAL AND DUST SEAL

- Hold the inner tube vertically, clean the metal groove, and install the inner tube slide metal by hand.

#### CAUTION

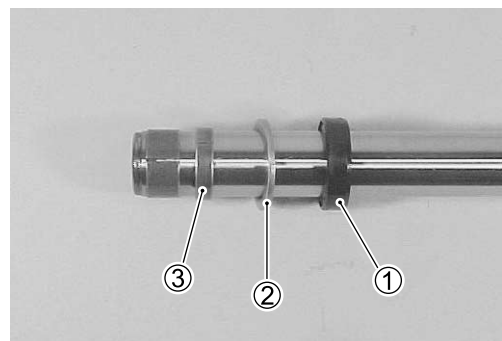
- \* Do not damage the Teflon coated surface of the inner tube antifriction metal when mounting the inner tube.
- \* Apply front fork oil to the inner tube and outer tube antifriction metals.



- Apply front fork oil to the lip of oil seal lightly before installing it.

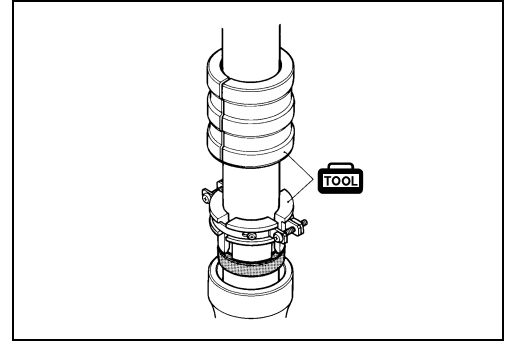
**FORK** 99000-99001-SS8: SUZUKI FORK OIL SS-08 (#10)  
or an equivalent fork oil

- Install the oil seal ①, oil seal retainer ② and outer tube antifriction metal ③ onto the inner tube.



- Insert the oil lock piece, inner tube and damper rod into the outer tube and install the oil seal by using the special tool.

**TOOL** 09940-52861: Front fork oil seal installer set



- Install the oil seal stopper ring.

**CAUTION**

Make sure that the oil seal stopper ring is fitted securely.



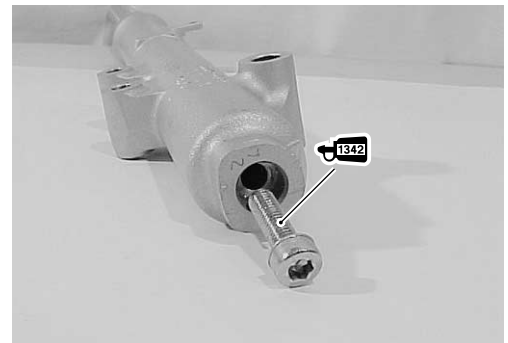
**DAMPER ROD BOLT**

- Apply a small quantity of THREAD LOCK 1342 to the threads of the damper rod bolt.

**1342** 99000-32050: THREAD LOCK "1342"

- Tighten the damper rod bolt to the specified torque.

**D** Damper rod bolt: 20 N·m (2.0 kgf·m, 14.5 lb-ft)

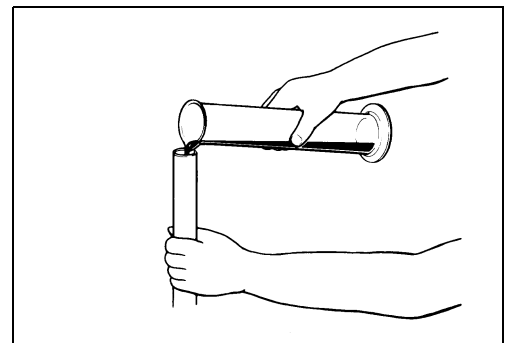


**FORK OIL**

- Pour the specified fork oil into the inner tube.

**DATA** Front fork oil capacity (each leg): 172 ml  
(4.3/4.5 US/Imp oz)

**FORK** 99000-99001-SS8: SUZUKI FORK OIL SS-08 (#10)  
or an equivalent fork oil



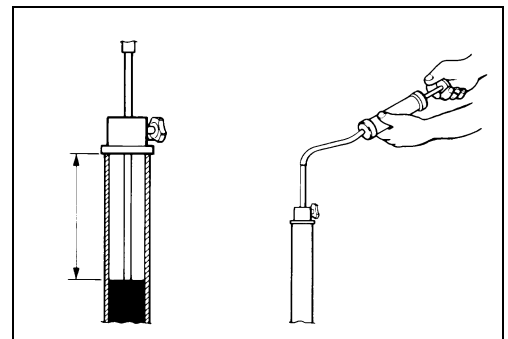
- Hold the front fork leg in a vertical position and adjust the fork oil level by using the special tool.

**DATA** Front fork oil level: 173.0 mm (6.81 in)

**TOOL** 09943-74111: Fork oil level gauge

**NOTE:**

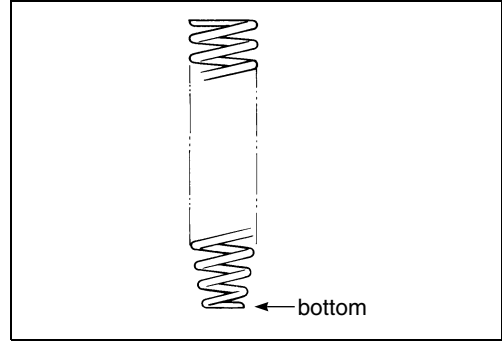
When adjusting the oil level, remove the fork spring and compress the inner tube fully.



- Install the spring as shown.
- Tighten the front fork cap bolt to the specified torque.

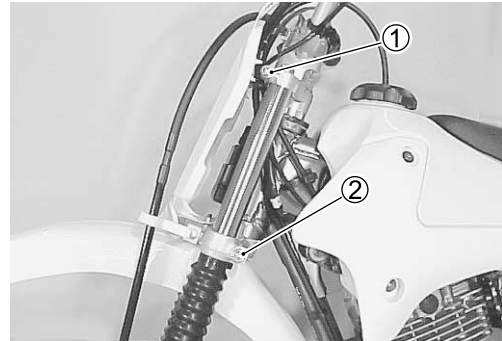
 **Front fork cap bolt: 23 N·m (2.3 kgf·m, 16.5 lb-ft)**

- Install the boot.



- Tighten the upper clamp bolt ① to the specified torque.
- Tighten the lower clamp bolt ② to the specified torque.

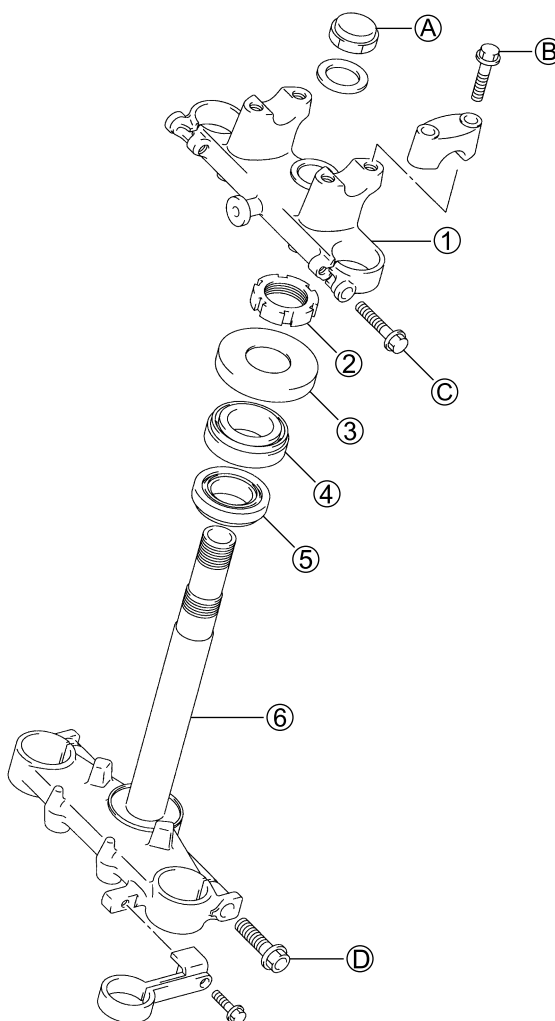
 **Front fork upper clamp bolt: 23 N·m (2.3 kgf·m, 16.5 lb-ft)**  
**Front fork lower clamp bolt: 33 N·m (3.3 kgf·m, 24.0 lb-ft)**



## STEERING

- ① Steering stem upper bracket
- ② Steering stem nut
- ③ Dust seal
- ④ Steering stem upper bearing
- ⑤ Steering stem lower bearing
- ⑥ Steering stem

- A Steering stem head nut
- B Handlebar clamp bolt
- C Front fork upper clamp bolt
- D Front fork lower clamp bolt



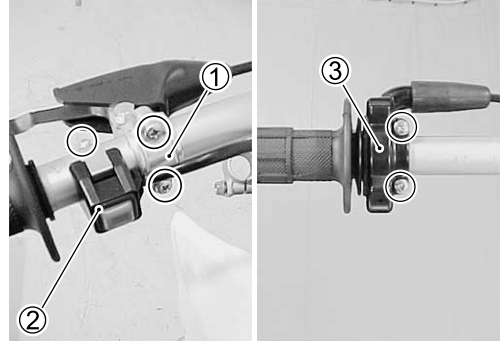
ITEM	N-m	kgf-m	lb-ft
A	90	9.0	65.0
B	23	2.3	16.5
C	23	2.3	16.5
D	33	3.3	24.0

## REMOVAL AND DISASSEMBLY

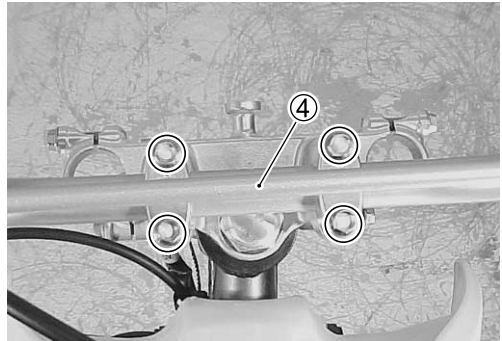
- Remove the front number plate. (☞ 5-2)
- Remove the front fender. (☞ 5-2)
- Remove the front wheel. (☞ 5-3 or -8)
- Remove the front brake lever. (DR-Z125)
- Remove the front brake master cylinder and brake caliper. (DR-Z125L)
- Remove the front forks. (☞ 5-19)
  
- Remove the bolt ①.



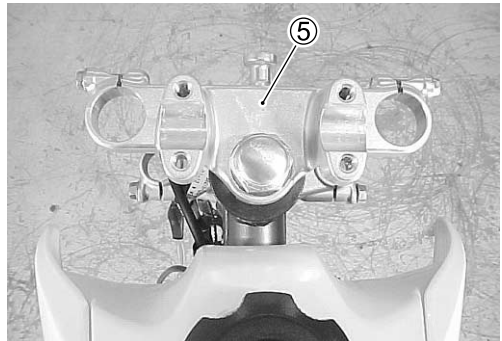
- Remove the clutch lever holder ① and engine stop button ②.
- Remove the throttle grip case ③ and grip.



- Remove the handlebars ④.



- Remove the steering stem upper bracket ⑤ by removing the steering stem head nut.



- Remove the steering stem nut ⑥ by using the special tool.

**TOOL** 09940-14930: Steering stem nut socket wrench

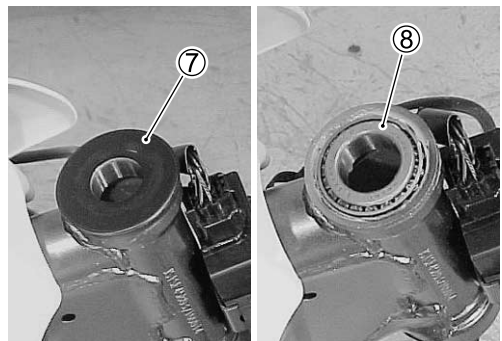
- Remove the steering stem lower bracket.

**NOTE:**

*Hold the steering stem bracket by hand to prevent it from falling.*



- Remove the dust seal ⑦.
- Remove the steering stem upper bearing ⑧.



## INSPECTION

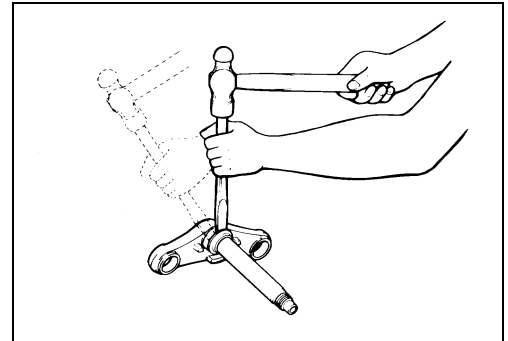
Inspect the removed parts for the following abnormalities. If any damages are found, replace the respective part with a new one.

- \* Steering race wear and brinelling
- \* Bearing wear or damage
- \* Abnormal bearing noise
- \* Distortion of steering stem or handlebars

- Remove the steering stem lower bearing using a chisel.

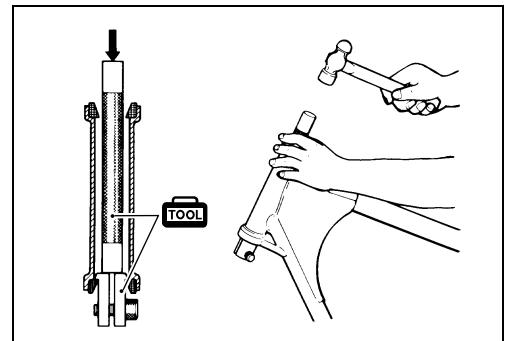
### CAUTION

Replace the removed bearing with a new one.



- Drive out the steering stem upper and lower bearing races by using the special tools.

-  **09941-54911: Bearing outer race remover**
- 09941-74911: Steering bearing remover**



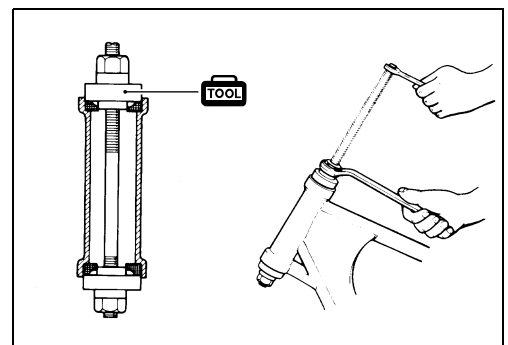
## REASSEMBLY AND REMOUNTING

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

### OUTER RACES

- Press in the upper and lower bearing races by using the special tool.

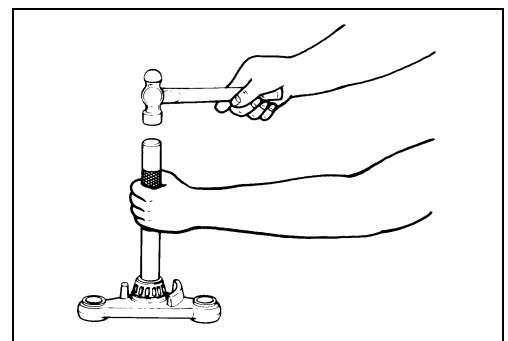
-  **09941-34513: Steering outer race installer**



### BEARINGS

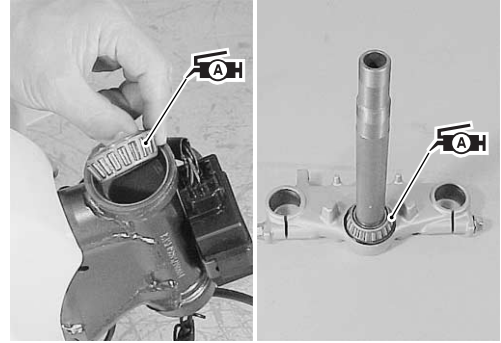
- Press in the steering stem lower bearing using the special tool.

-  **09925-18011: Steering bearing installer**



- Apply SUZUKI SUPER GREASE “A” to the steering stem upper and lower bearings.

 **99000-25030: SUZUKI SUPER GREASE “A” (USA)**  
**99000-25010: SUZUKI SUPER GREASE “A” (Others)**




### STEERING STEM NUT

- Tighten the steering stem nut to the specified torque by using the special tools.

 **09940-14930: Steering stem nut socket wrench**

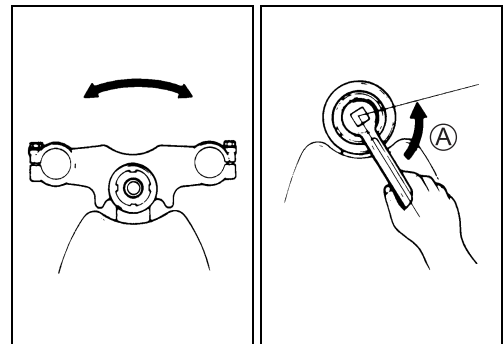
 **Steering stem nut: 65 N·m (6.5 kgf·m, 47.0 lb·ft)**





- Turn the steering stem bracket about five or six times to the left and right so that the bearings seat properly.
- Loosen the steering stem nut 1/4 - 1/2 of a turn .

**NOTE:**

*This adjustment will vary from motorcycle to motorcycle.*



- Install the front forks. ( 5-24)
- Tighten the steering stem head nut to the specified torque.





 **Steering stem head nut: 90 N·m (9.0 kgf·m, 65.0 lb·ft)**

**NOTE:**

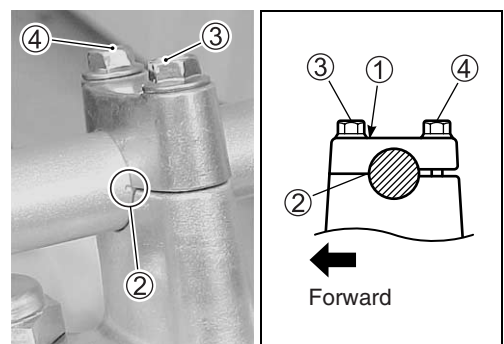
- *Before tightening the steering stem head nut, temporarily install the front forks.*




### HANDLEBARS

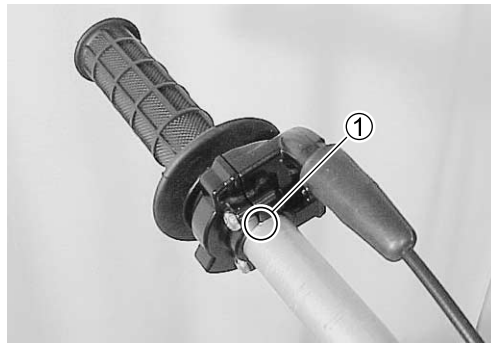
- When setting the handlebar clamp to the handlebar holder of the steering upper bracket, face the punched mark  on its clamp forward.
- Set the handlebars to match its punched mark  to the mating face of the handlebar clamp.
- First, tighten the handlebar clamp bolts , and then tighten the handlebar clamp bolts  to the specified torque.

 **Handlebar clamp bolt: 23 N·m (2.3 kgf·m, 16.5 lb·ft)**

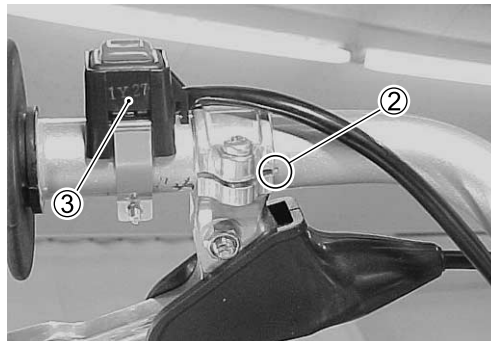


- Set the throttle grip case to match its mating face to the punched mark ① on the handlebars.
- Apply SUZUKI SUPER GREASE "A" to the end of throttle cables.

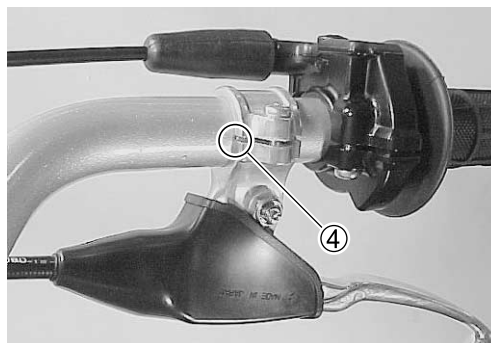
 **99000-25030: SUZUKI SUPER GREASE "A" (USA)**  
**99000-25010: SUZUKI SUPER GREASE "A" (Others)**



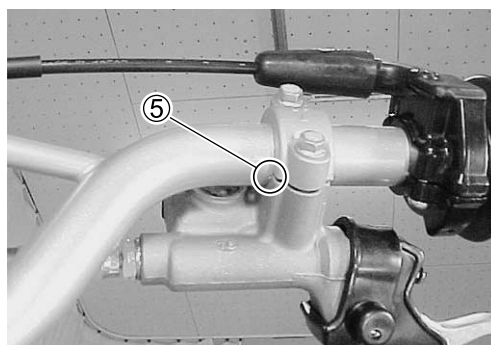
- Set the clutch lever holder to match its mating face to the punched mark ② on the handlebars.
- Install the engine stop button ③.






- Set the front brake lever to match its mating face to the punched mark ④ on the handlebars. (DR-Z125)



- Set the front brake master cylinder to match its mating face to the punched mark ⑤ on the handlebars. (DR-Z125L)



- Install the front fender. ( 5-2)
- Install the front wheel. ( 5-7 or -9)
- Install the front number plate. ( 5-2)



**NOTE:**

*Hold the front fork legs, move them back and forth and make sure that the steering is not loose.*

**CAUTION**

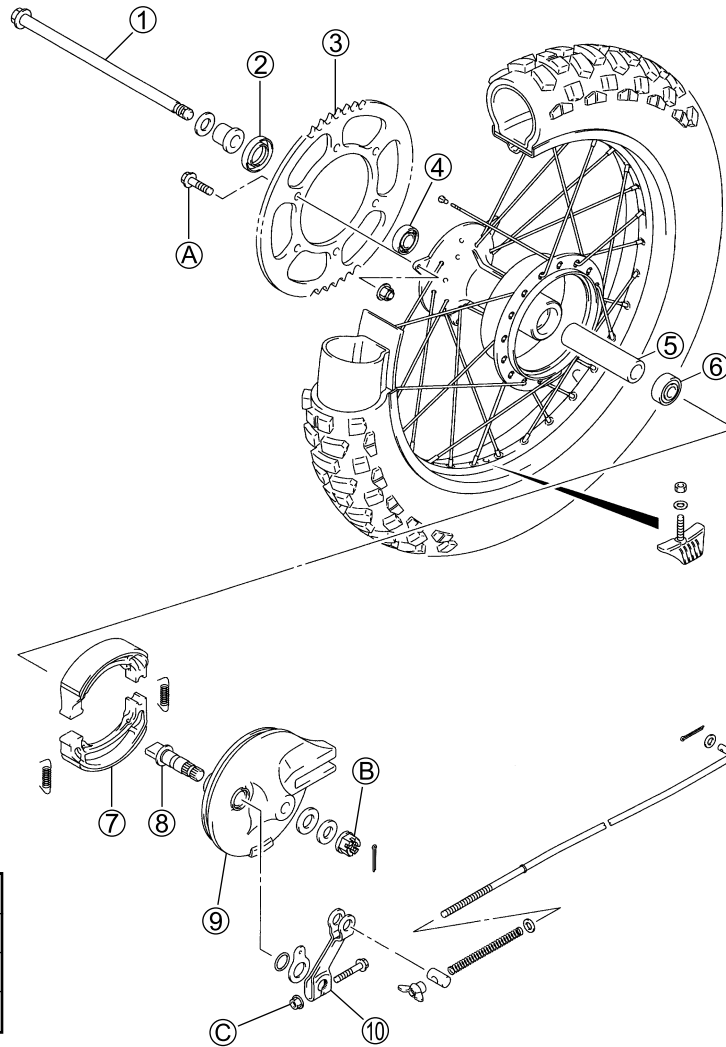
After performing the adjustment and installing the handlebars, “rock” the front wheel assembly forward and backward to ensure that there is no play and that the procedure was accomplished correctly. Finally, check to make sure that the steering stem moves freely from left to right with its own weight. If play or stiffness is noticeable, re-adjust the steering stem nut.



## REAR WHEEL AND REAR BRAKE

- ① Rear axle
- ② Dust seal
- ③ Rear sprocket
- ④ Bearing
- ⑤ Spacer
- ⑥ Bearing
- ⑦ Brake shoe
- ⑧ Brake camshaft
- ⑨ Brake panel
- ⑩ Brake cam lever

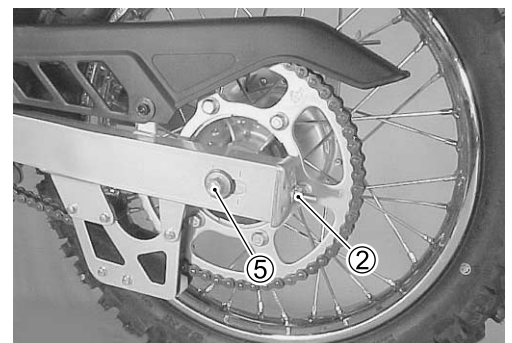
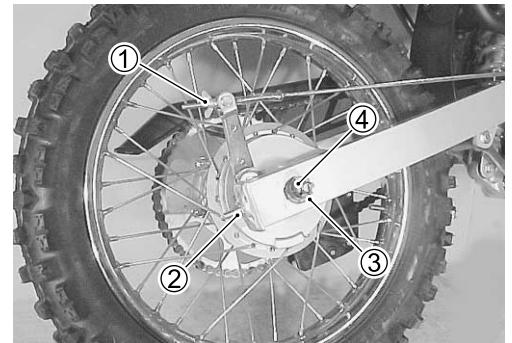
- Ⓐ Rear sprocket mounting bolt
- Ⓑ Rear axle nut
- Ⓒ Rear brake cam lever nut



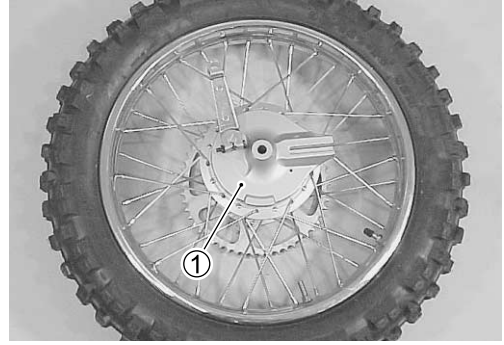
ITEM	N-m	kgf-m	lb-ft
Ⓐ	27	2.7	19.5
Ⓑ	45	4.5	32.5
Ⓒ	11	1.1	8.0

### REMOVAL

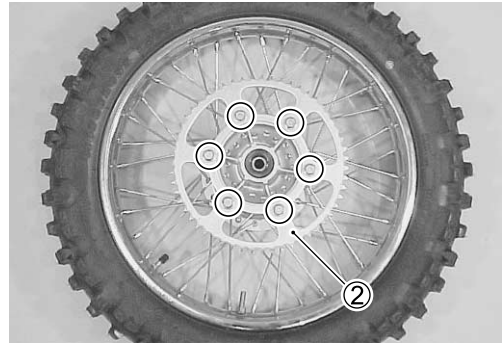
- Remove the rear brake adjusting nut ①.
  - Loosen the chain adjuster nuts ② (right and left).
  - Remove the cotter pin ③ and the rear axle nut ④.
- 
- Raise the rear wheel off the ground with a jack or wooden block.
  - Remove the rear axle ⑤.
  - Disengage the drive chain from the rear sprocket.
  - Remove the rear wheel together with the rear brake panel.



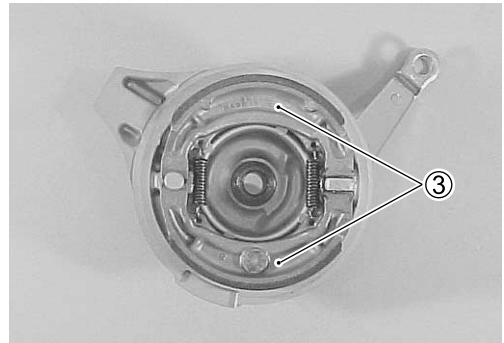
- Remove the rear brake panel ①.



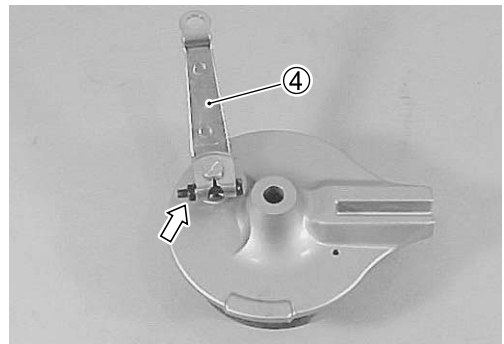
- Remove the rear sprocket ②.



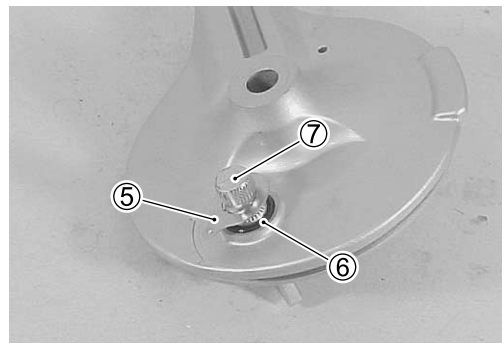
- Remove the brake shoes ③ from the brake panel.










- Remove the brake cam lever ④.



- Remove the washer ⑤, O-ring ⑥ and brake camshaft ⑦.

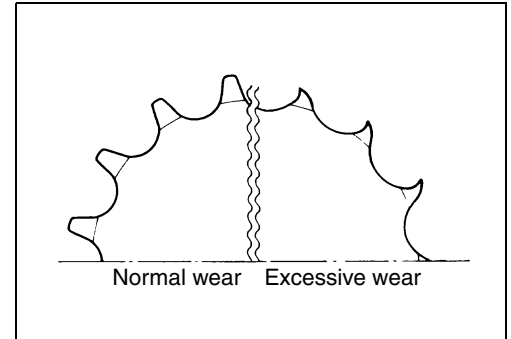


## INSPECTION AND DISASSEMBLY

TIRE .....	 2-17
SPOKE NIPPLES .....	 2-18
WHEEL BEARINGS.....	 5- 5
AXLE SHAFT .....	 5- 5
WHEEL .....	 5- 5
BRAKE DRUM .....	 5- 6
BRAKE SHOES .....	 5- 6

### REAR SPROCKET

Inspect the rear sprocket teeth for wear. If they are worn, replace the sprocket and drive chain.



## REASSEMBLY AND REMOUNTING

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


WHEEL BEARINGS.....	 5-5
---------------------	---

### REAR SPROCKET

- Tighten the sprocket mounting nuts to the specified torque.

 **Rear sprocket mounting nut:**  
**27 N·m (2.7 kgf-m, 19.5 lb-ft)**

#### NOTE:

The stamped mark  on the rear sprocket should face to the outside.





### REAR WHEEL

- Tighten the rear axle nut to the specified torque.

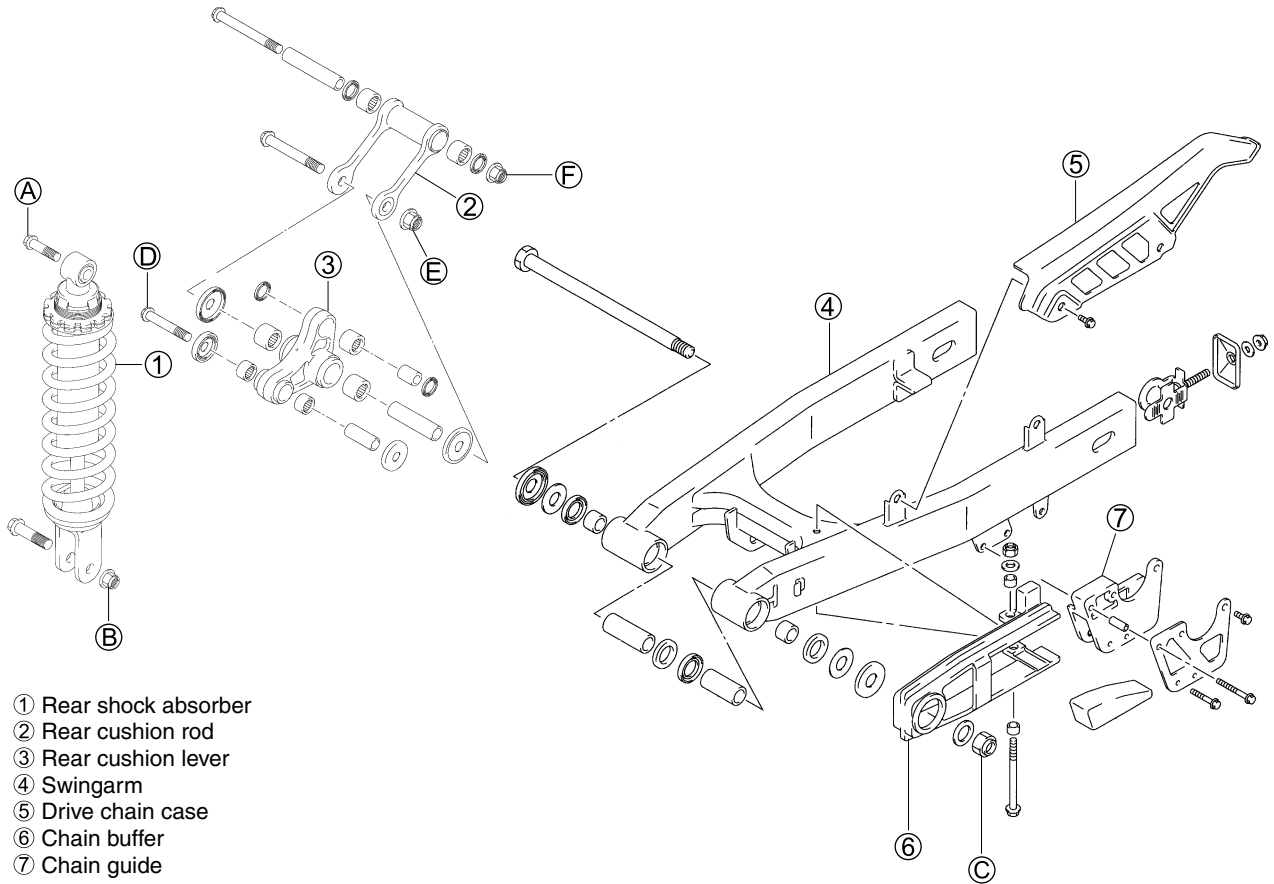
 **Rear axle nut: 45 N·m (4.5 kgf·m, 32.5 lb-ft)**

- Install the new cotter pin.



- Adjust the drive chain slack after installing the rear wheel. ( 2-12)
- Adjust the rear brake pedal free travel. ( 2-16)

# REAR SWINGARM AND SUSPENSION



- ① Rear shock absorber
- ② Rear cushion rod
- ③ Rear cushion lever
- ④ Swingarm
- ⑤ Drive chain case
- ⑥ Chain buffer
- ⑦ Chain guide

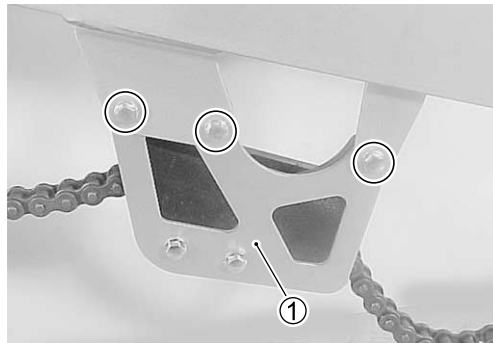
- Ⓐ Rear shock absorber mounting bolt
- Ⓑ Rear shock absorber mounting nut
- Ⓒ Swingarm pivot nut
- Ⓓ Cushion lever bolt (Front)
- Ⓔ Cushion lever nut (Center)
- Ⓕ Cushion rod nut



ITEM	N-m	kgf-m	lb-ft
Ⓐ	60	6.0	43.5
Ⓑ	60	6.0	43.5
Ⓒ	65	6.5	47.0
Ⓓ	55	5.5	40.0
Ⓔ	80	8.0	58.0
Ⓕ	80	8.0	58.0

## REMOVAL

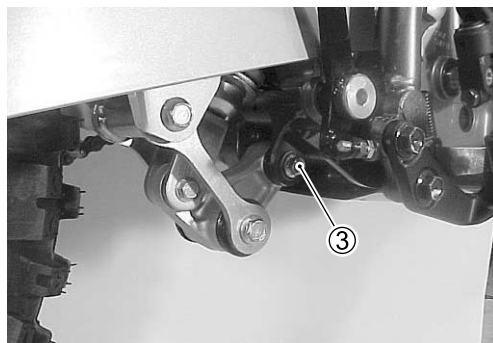
- Remove the rear wheel. (➡ 5-31)
- Remove the chain guide ①.



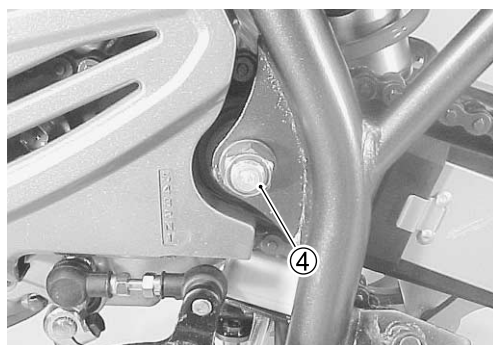
- Remove the right frame cover. (➡ 5-2)
- Remove the rear shock absorber upper mounting bolt ②.



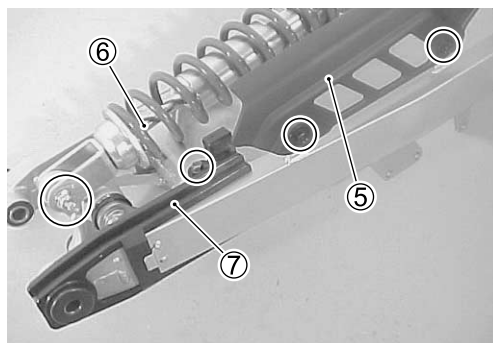
- Remove the cushion lever nut ③ and bolt.



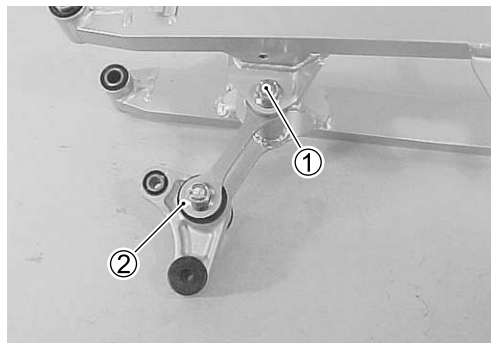
- Remove the swingarm pivot nut ④ and shaft.
- Remove the swingarm assembly.



- Remove the drive chain case ⑤.
- Remove the rear suspension ⑥.
- Remove the chain buffer ⑦.



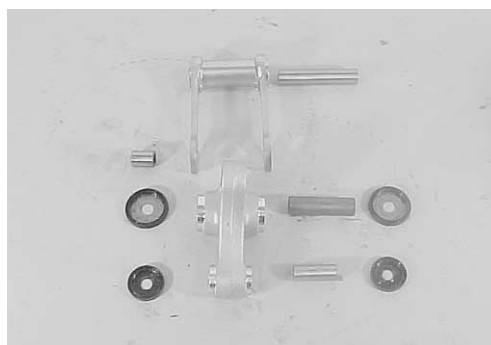
- Remove the cushion rod nut ① and bolt.
- Remove the cushion lever nut ② and bolt.



## INSPECTION AND DISASSEMBLY SPACERS

- Remove the dust seal covers, washers and spacers from the swingarm, cushion lever and cushion rod.

Inspect the spacers for any flaws or other damage. If any damages are found, replace the spacers with new ones.



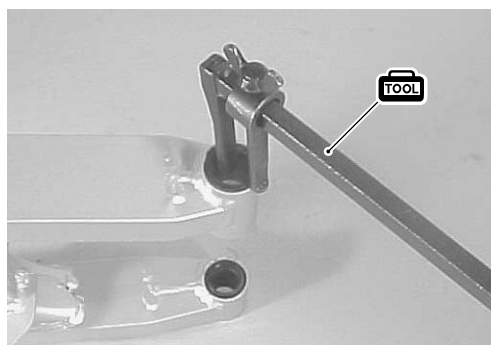
## SWINGARM BUSHING

- Remove the dust seals.

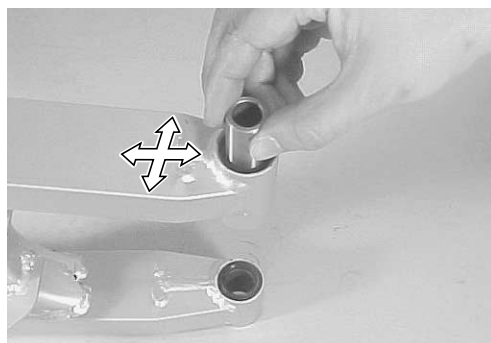
**TOOL** 09913-50121: Oil seal remover

### CAUTION

The removed dust seals must be replaced with new ones.



Insert the spacers into the swingarm bushings, move the spacer up and down and check for any play. If there is excessive play, replace the bushings with new ones.



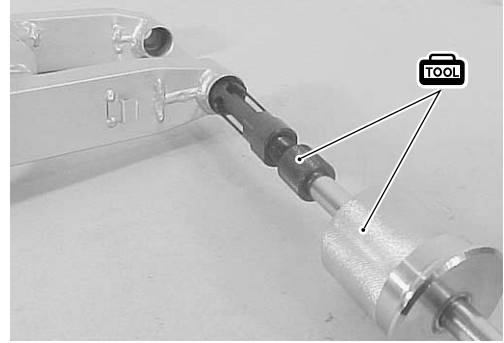


- Remove the swingarm bushings by using the special tools.

**TOOL** 09923-74510: Bearing remover  
09930-30102: Sliding shaft

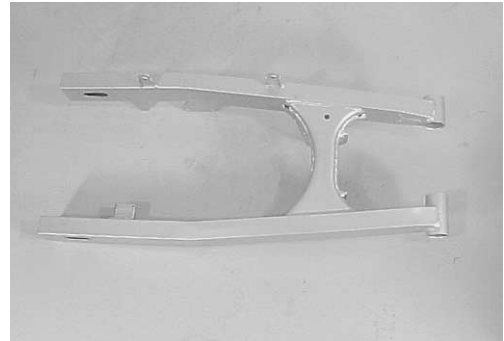
**CAUTION**

Replace the removed bushings with new ones.



**SWINGARM**

Inspect the swingarm for damage. If any damages are found, replace the swingarm with a new one.



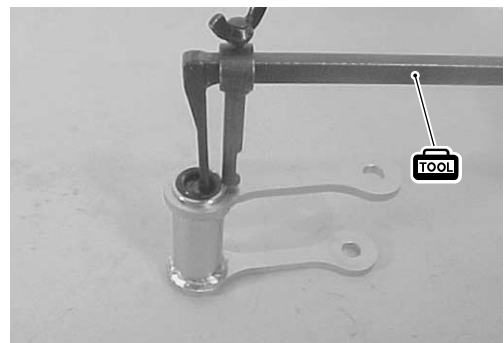
**NEEDLE BEARINGS**

- Remove the dust seals.

**TOOL** 09913-50121: Oil seal remover

**CAUTION**

The removed dust seals must be replaced with new ones.



Insert the spacers into the needle bearings, move the spacer up and down check for any play. If there is excessive play, replace the bearing with new ones.

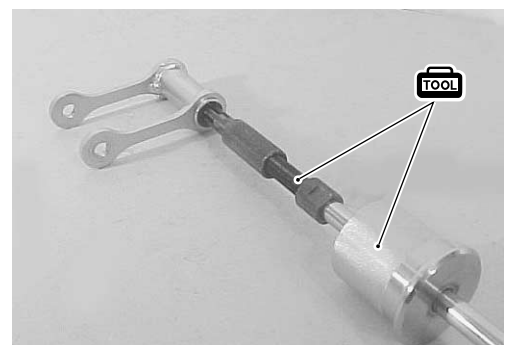
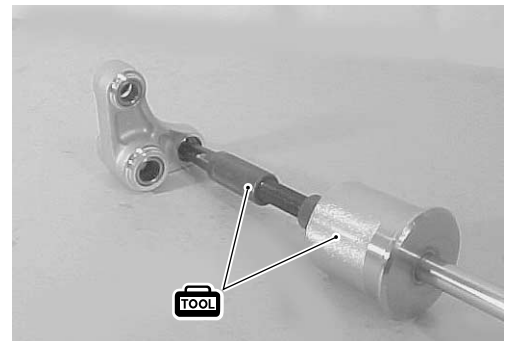


- Remove the needle bearings by using the special tools.

**TOOL** 09923-73210: Bearing remover  
09930-30102: Sliding shaft

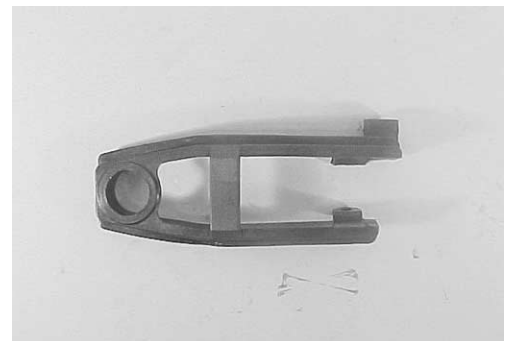
**CAUTION**

Replace the removed needle bearings with new ones.



**CHAIN BUFFER**

Inspect the chain buffer for damage. If any damages are found, replace the chain buffer with a new one.



## REAR SHOCK ABSORBER

Inspect the rear shock absorber and bushing for damage and oil leakage. If any damages are found, replace the rear shock absorber with a new one.

### CAUTION

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

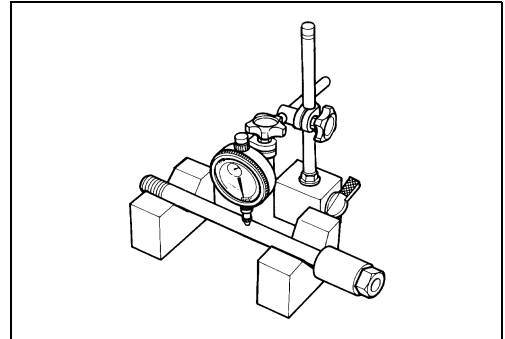


## SWINGARM PIVOT SHAFT

Measure the pivot shaft runout using the dial gauge. If the runout exceeds the service limit, replace the pivot shaft.

- TOOL** 09900-20607: Dial gauge
- 09900-20701: Magnetic stand
- 09900-21304: V-block

**DATA** Swingarm pivot shaft runout  
Service limit: 0.6 mm (0.02 in)



## REASSEMBLY AND REMOUNTING

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

## SWINGARM BUSHING

- Apply SUZUKI SUPER GREASE “A” to the spacers, dust seals and swingarm bushings before installing.

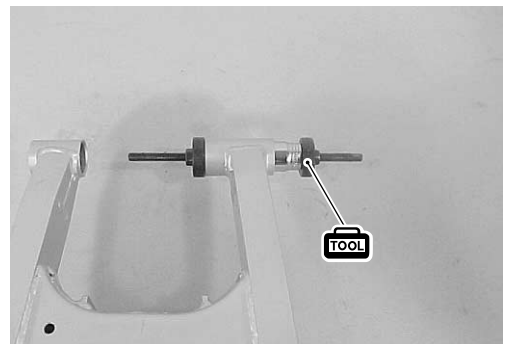
- TOOL** 99000-25030: SUZUKI SUPER GREASE “A” (USA)
- 99000-25010: SUZUKI SUPER GREASE “A” (Others)

- Press the swingarm bushings into the swingarm pivot by using the special tool and suitable size socket wrench.

**TOOL** 09924-84521: Bearing installer

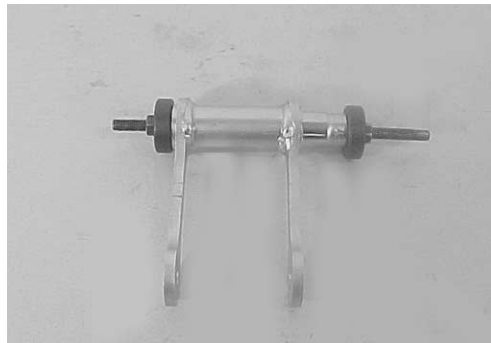
### NOTE:

Press the swingarm bushings at 8 mm (0.3 in) depth from the swingarm edge.



**NOTE:**


Press the bearing at 4.0 mm (0.16 in) depth from the cushion lever and rod edge.

**NEEDLE BEARINGS**

- Apply SUZUKI SUPER GREASE "A" to the spacers and needle bearings before installing.


 **99000-25030: SUZUKI SUPER GREASE "A" (USA)**  
**99000-25010: SUZUKI SUPER GREASE "A" (Others)**

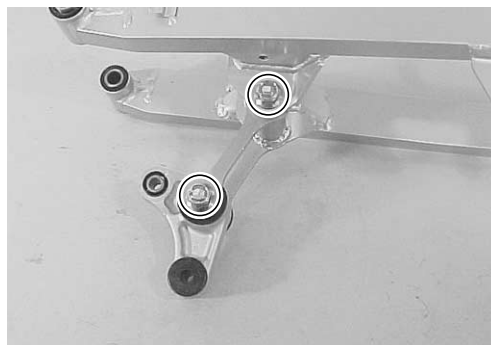
- Press the needle bearing into the cushion lever and rod by using the special tool and suitable socket wrench.

 **09924-84521: Bearing installer**


**REAR SUSPENSION**

- Tighten the cushion lever and rod nuts to the specified torque.

 **Cushion lever nut (CTR): 80 N·m (8.0 kgf-m, 58.0 lb-ft)**  
**Cushion rod nut: 80 N·m (8.0 kgf-m, 58.0 lb-ft)**




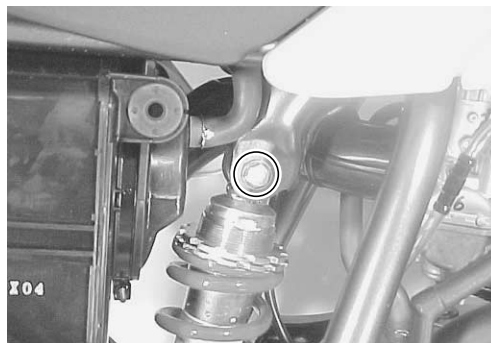
- Tighten the rear shock absorber lower mounting bolt to the specified torque.

 **Rear shock absorber lower bolt:**  
**60 N·m (6.0 kgf-m, 43.5 lb-ft)**



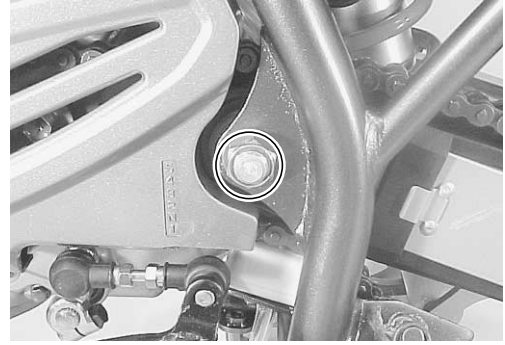
- Tighten the rear shock absorber upper mounting bolt to the specified torque.

 **Rear shock absorber upper bolt:**  
**60 N·m (6.0 kgf-m, 43.5 lb-ft)**



- Tighten the swingarm pivot nut to the specified torque.

 **Swingarm pivot nut: 65 N·m (6.5 kgf·m, 47.0 lb-ft)**



After installing the rear wheel, adjust the following before riding.

DRIVE CHAIN.....  2-12

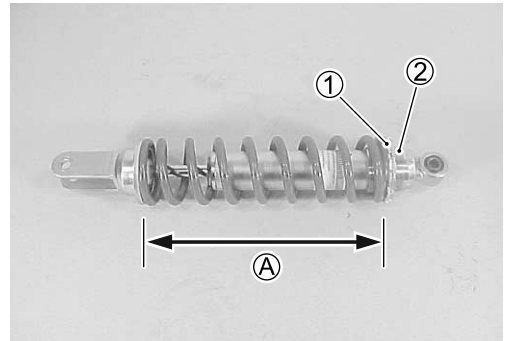
TIRE.....  2-17

## SUSPENSION SETTING

### REAR SHOCK ABSORBER SPRING SETTING

- Turn the adjuster ① to obtain the spring length ④ of 269.4 mm (10.6 in).
- Tighten the lock ring ② to the specified torque.

 **Rear shock absorber lock ring:**  
**45 N·m (4.5 kgf·m, 32.5 lb-ft)**



### SPRING SETTING TABLE

	Spring preset length ④	
	DR-Z125	DR-Z125/L
Soft	263.7 mm (10.4 in)	261.1 mm (10.3 in)
<b>Standard</b>	<b>240.5 mm (9.47 in)</b>	<b>241.1 mm (9.49 in)</b>
Hard	228.3 mm (9.0 in)	234.2 mm (9.2 in)

## REAR SHOCK ABSORBER DISPOSAL

### ⚠ WARNING

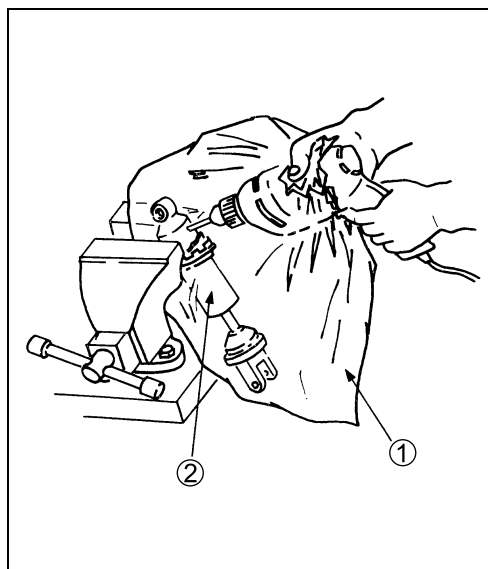
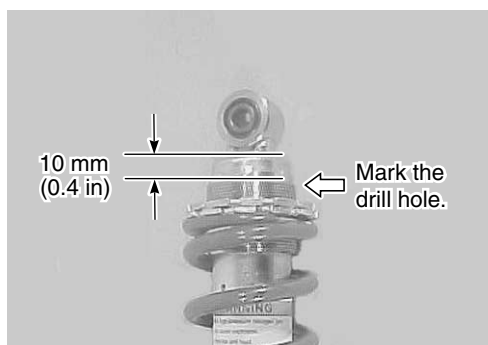
- \* The rear shock absorber unit contains high-pressure nitrogen gas.
- \* Mishandling can cause explosion.
- \* Keep away from fire and heat. High gas pressure caused by heat can cause an explosion.
- \* Release gas pressure before disposing.

### GAS PRESSURE RELEASE

- Mark the drill hole with a center punch.
- Cover the rear shock absorber with a transparent plastic bag ①.
- Hold the shock absorber ② with a vice.
- Make a hole with a drill.

### ⚠ WARNING

Be sure to always wear eye protection when performing this procedure.



# ***ELECTRICAL SYSTEM***

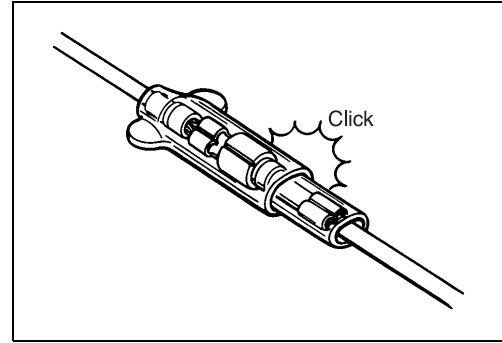
## **CONTENTS**

<b><i>CAUTIONS IN SERVICING</i></b> .....	<b>6- 2</b>
<b><i>CONNECTORS</i></b> .....	<b>6- 2</b>
<b><i>COUPLERS</i></b> .....	<b>6- 2</b>
<b><i>CLAMPS</i></b> .....	<b>6- 2</b>
<b><i>SEMI-CONDUCTOR EQUIPPED PARTS</i></b> .....	<b>6- 2</b>
<b><i>WIRING PROCEDURE</i></b> .....	<b>6- 2</b>
<b><i>USING THE MULTI CIRCUIT TESTER</i></b> .....	<b>6- 3</b>
<b><i>IGNITION SYSTEM</i></b> .....	<b>6- 4</b>
<b><i>DESCRIPTION</i></b> .....	<b>6- 4</b>
<b><i>TROUBLESHOOTING</i></b> .....	<b>6- 4</b>
<b><i>INSPECTION</i></b> .....	<b>6- 5</b>

## CAUTIONS IN SERVICING

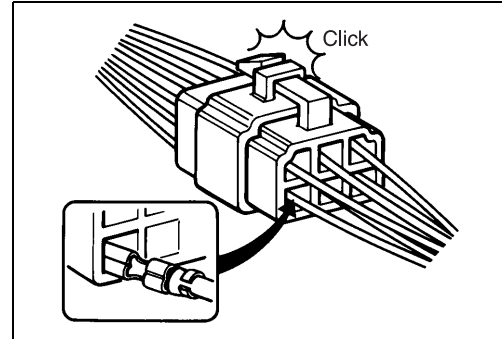
### CONNECTORS

- 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.
- Avoid applying grease or other similar material to connector/coupler terminals to prevent electric trouble.



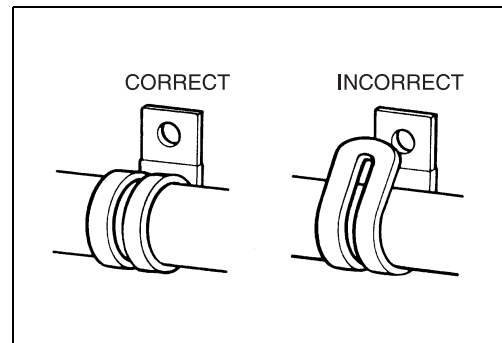
### COUPLERS

- With a lock-type coupler, be sure to release the lock before disconnecting it. When connecting a coupler, push it in until the lock clicks shut.
- When disconnecting a coupler, be sure to hold the coupler; do not pull the lead wires.
- Inspect each terminal on the coupler for looseness or bends.
- Inspect each terminal for corrosion and contamination.



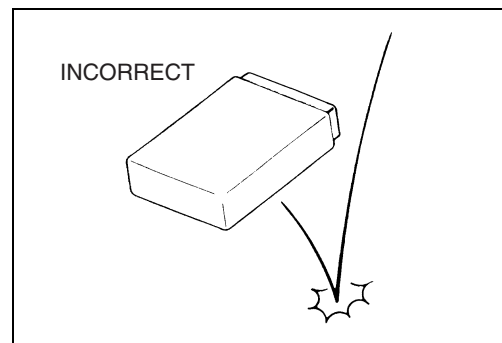
### CLAMPS

- Refer to the "WIRE CABLE AND HOSE ROUTING" section for proper clamping procedures. (7-10 and -11)
- 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 substitutes for the band-type clamp.



### SEMI-CONDUCTOR EQUIPPED PARTS

- Do not drop any part that contains a semi-conductor (e.g., CDI unit).
- When inspecting the part, follow the inspection instructions carefully. Neglecting proper procedures may cause this part to be damaged.



### WIRING PROCEDURE

- Properly route the wire harness according to the "WIRE ROUTING" section. (7-10)

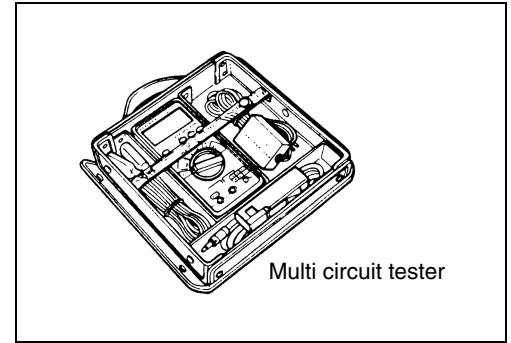


## USING THE MULTI CIRCUIT TESTER

- Properly use the multi circuit tester  $\oplus$  and  $\ominus$  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 no voltage is applied. If voltage is applied, the tester will be damaged.
- After using the tester, be sure to turn the switch to the OFF position.

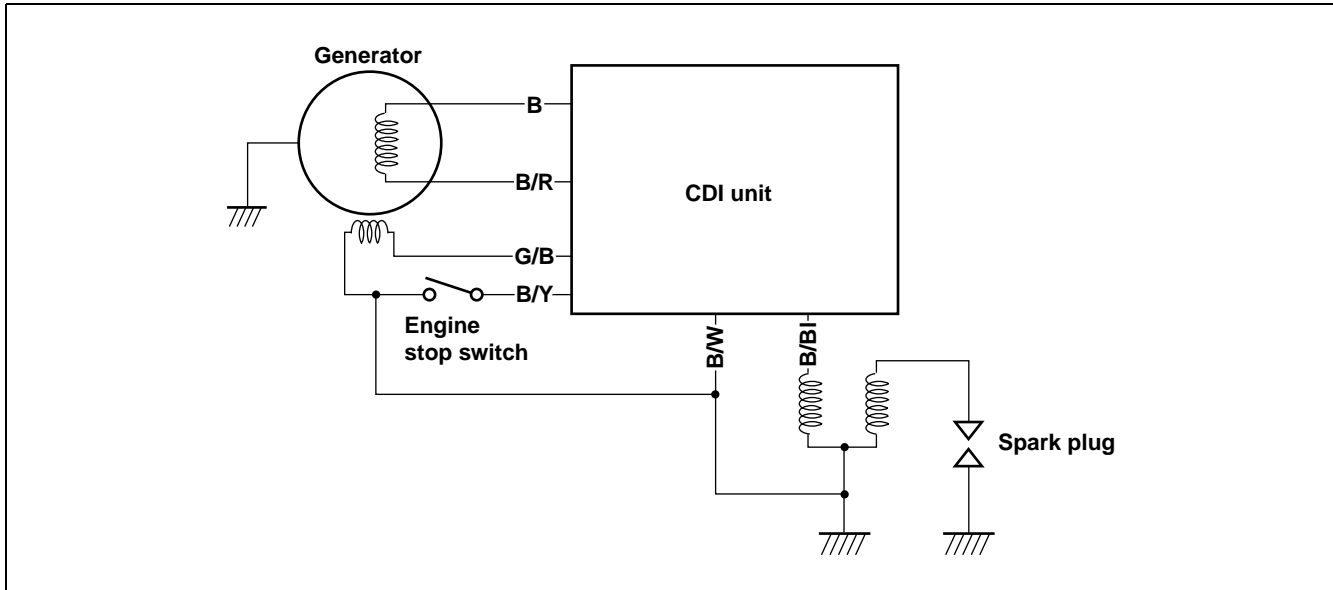
### CAUTION

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

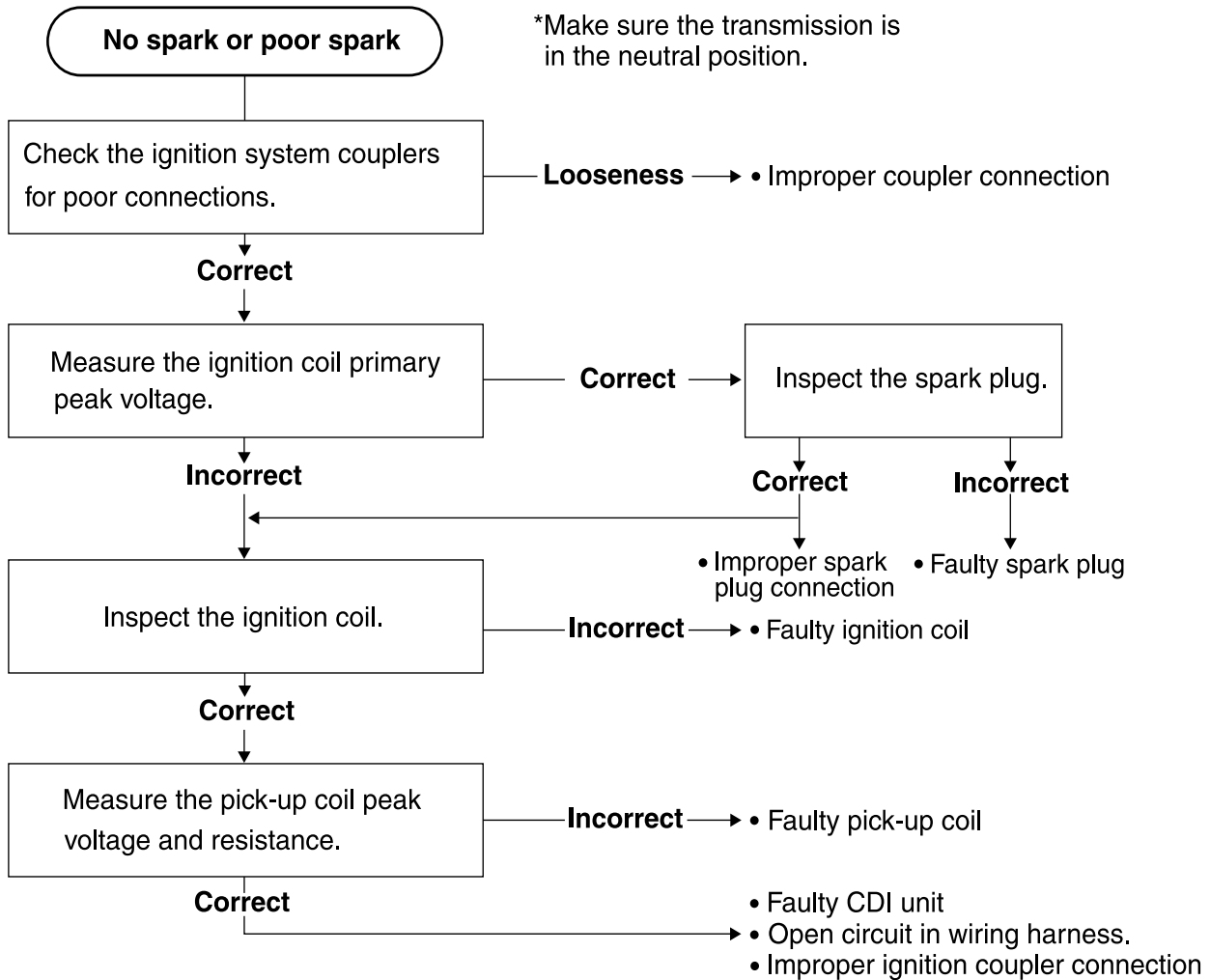


# IGNITION SYSTEM DESCRIPTION

The ignition system is shown in the diagram below.



## TROUBLESHOOTING





- Shift the transmission into neutral.
- Kick the kick starter lever and allow the engine to crank for a 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.

**NOTE:**

- \* Be sure to remove the spark plug, first, and then kick the kick starter lever.
- \* Kick the kick starter lever as usual.

**DATA** Ignition coil primary peak voltage: More than 150 V  
**TESTER** Tester knob indication: Voltage (---)

**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 standard values, inspect the ignition coil.

**IGNITION COIL RESISTANCE**

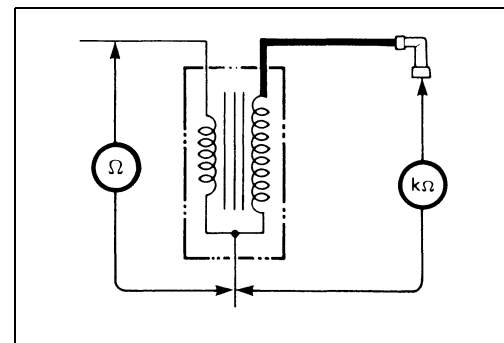
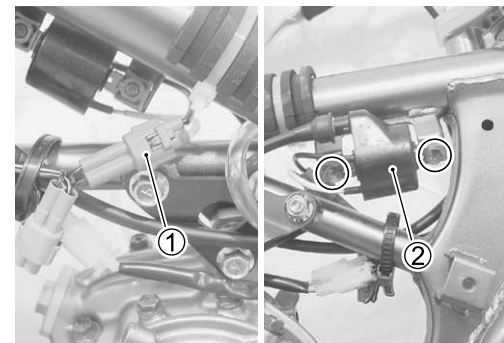
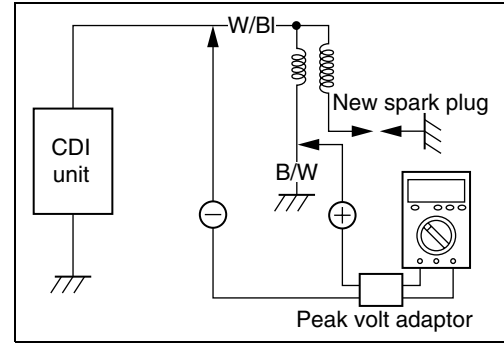
- Remove the fuel tank. (4-2)
- Disconnect the spark plug cap.
- Disconnect the ignition coil lead wire coupler ①, and then remove the ignition oil.

Measure the ignition coil resistance in both the primary and secondary windings using the multi circuit tester. If the resistance in both the primary and secondary windings is close to the specified values, the windings are in sound condition.

**DATA** Ignition coil resistance  
 Primary : 0.1 – 0.8 Ω (W/BI – B/W)  
 Secondary : 13 – 18 kΩ (W/BI – spark plug cap)

**TESTER** Tester knob indication: Resistance (Ω)

**TOOL** 09900-25008: Multi circuit tester set



### PICK-UP COIL PEAK VOLTAGE

#### NOTE:

Make sure all of the couplers are connected properly.

- Disconnect the wire harness coupler ①.

Measure the pick-up coil peak voltage in the following procedure.

- Connect the multi circuit tester with the peak volt adaptor as follows.

Pick-up coil: Green (+ probe) – Black/White (– probe)

 **09900-25008: Multi circuit tester set**

#### CAUTION

When using the multi circuit tester and peak volt adaptor, refer to the appropriate instruction manual.

- Shift the transmission into neutral.
- Kick the kick starter lever and allow the engine to turn for a few times, and then measure the pick-up coil peak voltage.
- Repeat the above procedure a few times and measure the highest pick-up coil peak voltage.

 **Pick-up coil peak voltage: More than 2.0 V**

 **Tester knob indication: Voltage (V)**

### PICK-UP COIL RESISTANCE

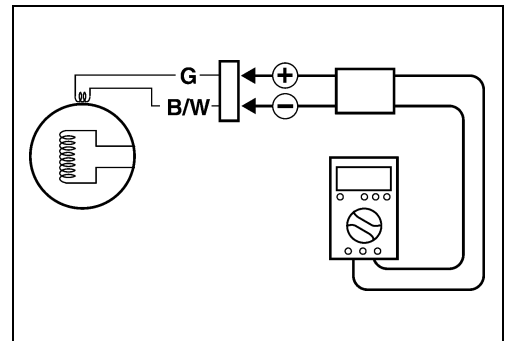
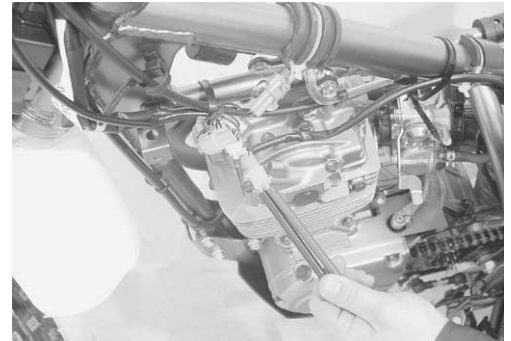
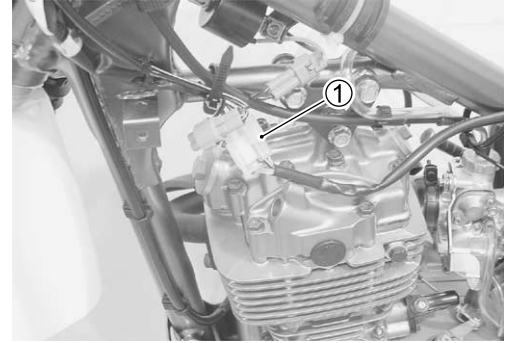
- Disconnect the generator coupler ①.

Measure the resistance between the lead wires using the multi circuit tester. If the resistance is not within the specified value, stator coil must be replaced.

 **Pick-up coil resistance: 140 – 230 Ω (B/G – B/W)**

 **Tester knob indication: Resistance (Ω)**

 **09900-25008: Multi circuit tester set**



### STATOR COIL RESISTANCE

- Remove the fuel tank.
- Disconnect the stator coil lead wire coupler ①.

Measure the resistance between the two lead wires using the multi circuit tester. If the resistance is not within the specified value, replace the stator coil with a new one.

Also, check that the generator core is insulated.

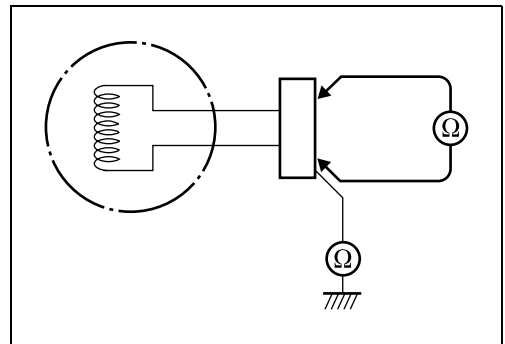
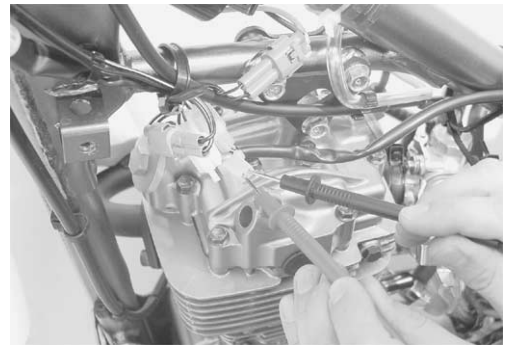
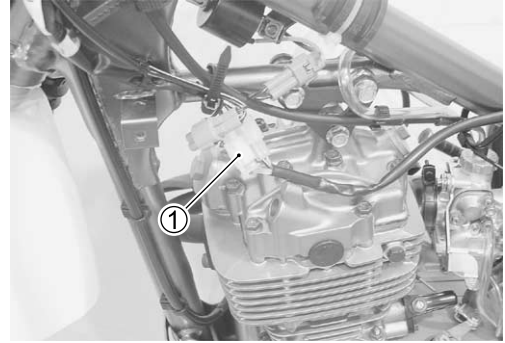
**DATA** Stator coil resistance:

Standard: 13 – 22  $\Omega$  (Yellow – Yellow/Red)

$\infty$   $\Omega$  (Yellow – Ground)

 Tester knob indication: Resistance ( $\Omega$ )

 09900-25008: Multi circuit tester set



# SERVICING INFORMATION

## CONTENTS

<b>TROUBLESHOOTING .....</b>	<b>7- 2</b>
<b>ENGINE .....</b>	<b>7- 2</b>
<b>CARBURETOR .....</b>	<b>7- 5</b>
<b>CHASSIS .....</b>	<b>7- 6</b>
<b>BRAKES .....</b>	<b>7- 7</b>
<b>ELECTRICAL .....</b>	<b>7- 8</b>
<b>WIRING DIAGRAM .....</b>	<b>7- 9</b>
<b>WIRE, CABLE AND HOSE ROUTING .....</b>	<b>7-10</b>
<b>WIRE ROUTING .....</b>	<b>7-10</b>
<b>CABLE ROUTING .....</b>	<b>7-12</b>
<b>FRONT BRAKE HOSE ROUTING .....</b>	<b>7-13</b>
<b>FUEL HOSE AND FUEL TANK MOUNTING .....</b>	<b>7-14</b>
<b>SIDE STAND SET-UP .....</b>	<b>7-15</b>
<b>CARBURETOR INSTALLATION/HOSE ROUTING .....</b>	<b>7-16</b>
<b>SPECIAL TOOLS .....</b>	<b>7-17</b>
<b>TIGHTENING TORQUE .....</b>	<b>7-20</b>
<b>ENGINE .....</b>	<b>7-20</b>
<b>CHASSIS .....</b>	<b>7-21</b>
<b>TIGHTENING TORQUE CHART .....</b>	<b>7-22</b>
<b>SERVICE DATA .....</b>	<b>7-23</b>

## TROUBLESHOOTING ENGINE

Complaint	Symptom and possible causes	Remedy
<b>Engine will not start or is hard to start.</b>	<p><b>Compression too low</b></p> <ol style="list-style-type: none"> <li>1. Worn cylinder.</li> <li>2. Worn piston ring.</li> <li>3. Worn valve guide or improper valve seating.</li> <li>4. Loose spark plug.</li> <li>5. Broken, cracked, or damaged piston.</li> <li>6. Mistimed valves.</li> <li>7. Valve clearance out of adjustment.</li> </ol> <p><b>Spark plug not sparking</b></p> <ol style="list-style-type: none"> <li>1. Damaged spark plug.</li> <li>2. Damaged spark plug cap.</li> <li>3. Fouled spark plug.</li> <li>4. Wet spark plug.</li> <li>5. Defective ignition coil.</li> <li>6. Open or short in high-tension cord.</li> <li>7. Defective generator.</li> <li>8. Defective CDI unit.</li> </ol> <p><b>No fuel reaching the carburetor</b></p> <ol style="list-style-type: none"> <li>1. Clogged fuel tank vent hose.</li> <li>2. Clogged or defective fuel valve.</li> <li>3. Defective carburetor needle valve.</li> <li>4. Clogged fuel hose.</li> <li>5. Clogged fuel filter.</li> </ol>	<p>Replace. Replace. Repair or replace. Tighten. Replace. Adjust. Adjust.</p> <p>Replace. Replace. Clean or replace. Clean and dry or replace. Replace. Replace. Replace. Replace.</p> <p>Clean or replace. Clean or replace. Replace. Clean or replace. Clean or replace.</p>
<b>Engine stalls easily.</b>	<ol style="list-style-type: none"> <li>1. Fouled spark plug.</li> <li>2. Defective generator.</li> <li>3. Defective CDI unit.</li> <li>4. Clogged or defective fuel valve.</li> <li>5. Clogged carburetor jet.</li> <li>6. Valve clearance out of adjustment.</li> </ol>	<p>Clean or replace. Replace. Replace. Clean or replace. Clean. Adjust.</p>



Complaint	Symptom and possible causes	Remedy
<b>Engine is noisy.</b>	<p><b>Excessive valve chatter</b></p> <ol style="list-style-type: none"> <li>1. Excessive valve clearance.</li> <li>2. Weak or broken valve spring.</li> <li>3. Worn camshaft.</li> <li>4. Worn or burnt camshaft journal.</li> </ol> <p><b>Noise seems to come from the piston</b></p> <ol style="list-style-type: none"> <li>1. Worn piston.</li> <li>2. Worn cylinder.</li> <li>3. Carbon build-up in combustion chamber.</li> <li>4. Worn piston pin or piston pin bore.</li> <li>5. Worn piston ring or ring groove.</li> </ol> <p><b>Noise seems to come from the cam chain</b></p> <ol style="list-style-type: none"> <li>1. Stretched cam chain.</li> <li>2. Worn cam chain sprocket.</li> <li>3. Improperly working cam chain tensioner.</li> </ol> <p><b>Noise seems to come from the clutch</b></p> <ol style="list-style-type: none"> <li>1. Worn crankshaft spline.</li> <li>2. Worn clutch hub spline.</li> <li>3. Worn clutch plate teeth.</li> <li>4. Distorted clutch plate.</li> <li>5. Weak clutch damper.</li> <li>6. Weak clutch spring.</li> </ol> <p><b>Noise seems to come from the crankshaft</b></p> <ol style="list-style-type: none"> <li>1. Rattling bearing.</li> <li>2. Worn or burnt crank pin bearing.</li> <li>3. Worn or burnt journal bearing.</li> </ol> <p><b>Noise seems to come from transmission</b></p> <ol style="list-style-type: none"> <li>1. Worn or rubbing gear.</li> <li>2. Worn countershaft spline.</li> <li>3. Worn driveshaft spline.</li> <li>4. Worn or rubbing primary gear.</li> <li>5. Worn bearing.</li> </ol>	<p>Adjust. Replace. Replace. Replace.</p> <p>Replace. Replace. Clean. Replace. Replace.</p> <p>Replace cam chain and sprockets. Replace cam chain and sprockets. Repair or replace.</p> <p>Replace countershaft. Replace clutch hub. Replace clutch plate. Replace. Replace primary driven gear. Replace.</p> <p>Replace. Replace. Replace.</p> <p>Replace. Replace countershaft. Replace driveshaft. Replace. Replace.</p>
<b>Clutch slips.</b>	<ol style="list-style-type: none"> <li>1. Clutch cable out of adjustment.</li> <li>2. Weak or broken clutch spring.</li> <li>3. Worn or distorted clutch pressure plate.</li> <li>4. Distorted clutch plate.</li> </ol>	<p>Adjust. Replace. Replace. Replace.</p>
<b>Clutch drags.</b>	<ol style="list-style-type: none"> <li>1. Clutch out of adjustment.</li> <li>2. Some clutch springs are weak, while others are not.</li> <li>3. Worn or distorted clutch pressure plate.</li> <li>4. Distorted clutch plate.</li> </ol>	<p>Adjust. Replace. Replace. Replace.</p>
<b>Transmission will not shift.</b>	<ol style="list-style-type: none"> <li>1. Broken gearshift cam.</li> <li>2. Distorted gearshift fork.</li> <li>3. Worn gearshift pawl.</li> </ol>	<p>Replace. Replace. Replace.</p>
<b>Transfer will not shift or shift back.</b>	<ol style="list-style-type: none"> <li>1. Broken gearshift shaft return spring.</li> <li>2. Rubbing or stuck gearshift shaft.</li> <li>3. Worn or distorted gearshift fork.</li> </ol>	<p>Replace. Repair or replace. Replace.</p>

Complaint	Symptom and possible causes	Remedy
<b>Transmission jumps out of gear.</b>	<ol style="list-style-type: none"> <li>1. Worn gear.</li> <li>2. Worn or distorted gearshift fork.</li> <li>3. Weakened gearshift stopper spring.</li> <li>4. Worn gearshift pawl.</li> </ol>	Replace. Replace. Replace. Replace.
<b>Engine idles poorly.</b>	<ol style="list-style-type: none"> <li>1. Valve clearance out of adjustment.</li> <li>2. Improper valve seating.</li> <li>3. Worn valve guide.</li> <li>4. Worn camshaft.</li> <li>5. Excessive spark plug gap.</li> <li>6. Defective ignition coil.</li> <li>7. Defective generator.</li> <li>8. Defective CDI unit.</li> <li>9. Incorrect float chamber fuel level.</li> <li>10. Clogged carburetor jet.</li> </ol>	Adjust. Repair or replace. Replace. Replace. Adjust or replace. Replace. Replace. Replace. Adjust float height. Clean.
<b>Engine runs poorly in high-speed range.</b>	<ol style="list-style-type: none"> <li>1. Weak valve spring.</li> <li>2. Worn camshaft.</li> <li>3. Insufficient spark plug gap.</li> <li>4. Mistimed valves.</li> <li>5. Ignition not advanced sufficiently due to poorly working timing advance circuit.</li> <li>6. Defective ignition coil.</li> <li>7. Defective generator.</li> <li>8. Defective CDI unit.</li> <li>9. Low float chamber fuel level.</li> <li>10. Dirty air cleaner element.</li> <li>11. Clogged fuel hose, resulting in inadequate fuel supply to carburetor.</li> </ol>	Replace. Replace. Regap or replace. Adjust. Replace CDI unit.  Replace. Replace. Replace. Adjust float height. Clean or replace. Clean and prime.
<b>Exhaust smoke is dirty or thick.</b>	<ol style="list-style-type: none"> <li>1. Excessive amount of engine oil.</li> <li>2. Worn cylinder.</li> <li>3. Worn piston ring.</li> <li>4. Worn valve guide.</li> <li>5. Scored or scuffed cylinder wall.</li> <li>6. Worn valve stem.</li> <li>7. Defective valve stem oil seal.</li> <li>8. Worn oil ring side rail.</li> </ol>	Check level and drain. Replace. Replace. Replace. Replace. Replace valve. Replace. Replace oil ring.
<b>Engine lacks power.</b>	<ol style="list-style-type: none"> <li>1. Insufficient valve clearance.</li> <li>2. Weak valve spring.</li> <li>3. Mistimed valves.</li> <li>4. Worn cylinder.</li> <li>5. Worn piston ring.</li> <li>6. Improper valve seating.</li> <li>7. Fouled spark plug.</li> <li>8. Incorrect spark plug.</li> <li>9. Clogged carburetor jet.</li> <li>10. Incorrect float chamber fuel level.</li> <li>11. Dirty air cleaner element.</li> <li>12. Air leakage from intake pipe.</li> <li>13. Excessive amount of engine oil.</li> </ol>	Adjust. Replace. Adjust. Replace. Replace. Repair or replace. Clean or replace. Replace. Clean. Adjust float height. Clean or replace. Tighten or replace. Check level and drain.

Complaint	Symptom and possible causes	Remedy
<b>Engine overheats.</b>	<ol style="list-style-type: none"> <li>1. Carbon buildup on piston crown.</li> <li>2. Insufficient amount of engine oil.</li> <li>3. Defective oil pump.</li> <li>4. Clogged oil circuit.</li> <li>5. Float chamber fuel level too low.</li> <li>6. Air leakage from intake pipe.</li> <li>7. Incorrect engine oil.</li> </ol>	<p>Clean. Check level and add. Replace. Clean. Adjust float height. Tighten or replace. Change.</p>

## CARBURETOR

Complaint	Symptom and possible causes	Remedy
<b>Starting difficulty.</b>	<ol style="list-style-type: none"> <li>1. Clogged starter jet.</li> <li>2. Clogged starter jet passage.</li> <li>3. Air leaking from joint between starter body and carburetor.</li> <li>4. Air leaking from carburetor joint or vacuum hose joint.</li> <li>5. Improperly working starter (enricher) plunger.</li> </ol>	<p>Clean. Clean. Tighten, adjust, or replace gasket. Tighten or replace defective part. Adjust.</p>
<b>Idling or low-speed trouble.</b>	<ol style="list-style-type: none"> <li>1. Clogged or loose pilot jet.</li> <li>2. Clogged or loose pilot air jet.</li> <li>3. Air leaking from carburetor joint.</li> <li>4. Clogged pilot outlet port.</li> <li>5. Clogged bypass port.</li> <li>6. Starter (enricher) plunger not fully closed.</li> </ol>	<p>Clean or tighten. Clean or tighten. Tighten or replace defective part. Clean. Clean. Adjust.</p>
<b>Medium or high-speed trouble.</b>	<ol style="list-style-type: none"> <li>1. Clogged main jet.</li> <li>2. Clogged main air jet.</li> <li>3. Clogged needle jet.</li> <li>4. Improperly working throttle valve.</li> <li>5. Clogged fuel filter.</li> </ol>	<p>Clean. Clean. Clean. Adjust. Clean or replace.</p>
<b>Overflow and fuel level fluctuations.</b>	<ol style="list-style-type: none"> <li>1. Worn or damaged needle valve.</li> <li>2. Broken needle valve spring.</li> <li>3. Improperly working float.</li> <li>4. Foreign matter on the needle valve.</li> <li>5. Incorrect float chamber fuel level.</li> </ol>	<p>Replace. Replace. Adjust or replace. Clean or replace with needle valve seat. Adjust float height.</p>

## CHASSIS

Complaint	Symptom and possible causes	Remedy
<b>Steering is heavy.</b>	<ol style="list-style-type: none"> <li>1. Overtightened steering stem nut.</li> <li>2. Broken bearing in steering stem.</li> <li>3. Distorted steering stem.</li> <li>4. Low tire pressure.</li> </ol>	Adjust. Replace. Replace. Regulate.
<b>Handlebar wobbles.</b>	<ol style="list-style-type: none"> <li>1. Loss of balance between right and left front forks.</li> <li>2. Distorted front fork.</li> <li>3. Distorted front axle.</li> <li>4. Twisted tire.</li> </ol>	Adjust or replace. Repair or replace. Replace. Replace.
<b>Front wheel wobbles.</b>	<ol style="list-style-type: none"> <li>1. Distorted wheel rim.</li> <li>2. Worn front wheel bearing.</li> <li>3. Defective or incorrect tire.</li> <li>4. Loose front axle nut.</li> <li>5. Incorrect fork oil level.</li> </ol>	Replace. Replace. Replace. Tighten. Adjust.
<b>Front suspension too soft.</b>	<ol style="list-style-type: none"> <li>1. Weak spring.</li> <li>2. Insufficient fork oil.</li> <li>3. Improper suspension setting.</li> </ol>	Replace. Check level and add. Adjust.
<b>Front suspension too stiff.</b>	<ol style="list-style-type: none"> <li>1. Excessively viscous fork oil.</li> <li>2. Excessive fork oil.</li> <li>3. Improper suspension setting.</li> </ol>	Replace. Check level and drain. Adjust.
<b>Front suspension too noisy.</b>	<ol style="list-style-type: none"> <li>1. Insufficient fork oil.</li> <li>2. Loose front suspension fastener.</li> </ol>	Check level and add. Tighten.
<b>Rear wheel wobbles.</b>	<ol style="list-style-type: none"> <li>1. Distorted wheel rim.</li> <li>2. Worn rear wheel bearing.</li> <li>3. Defective or incorrect tire.</li> <li>4. Worn swingarm bearing.</li> <li>5. Loose rear axle nut.</li> <li>6. Loose rear suspension fastener.</li> </ol>	Replace. Replace. Replace. Replace. Tighten. Tighten.
<b>Rear suspension too soft.</b>	<ol style="list-style-type: none"> <li>1. Weak rear shock absorber spring.</li> <li>2. Rear shock absorber leaks oil.</li> <li>3. Improper suspension setting.</li> </ol>	Replace. Replace. Adjust.
<b>Rear suspension too stiff.</b>	<ol style="list-style-type: none"> <li>1. Improper suspension setting.</li> <li>2. Bent rear shock absorber shaft.</li> <li>3. Worn swingarm bearing and rear suspension related bearing.</li> </ol>	Adjust. Replace. Replace.
<b>Rear suspension too noisy.</b>	<ol style="list-style-type: none"> <li>1. Loose rear suspension fastener.</li> <li>2. Worn swingarm bearing and rear suspension related bearing.</li> </ol>	Tighten. Replace.

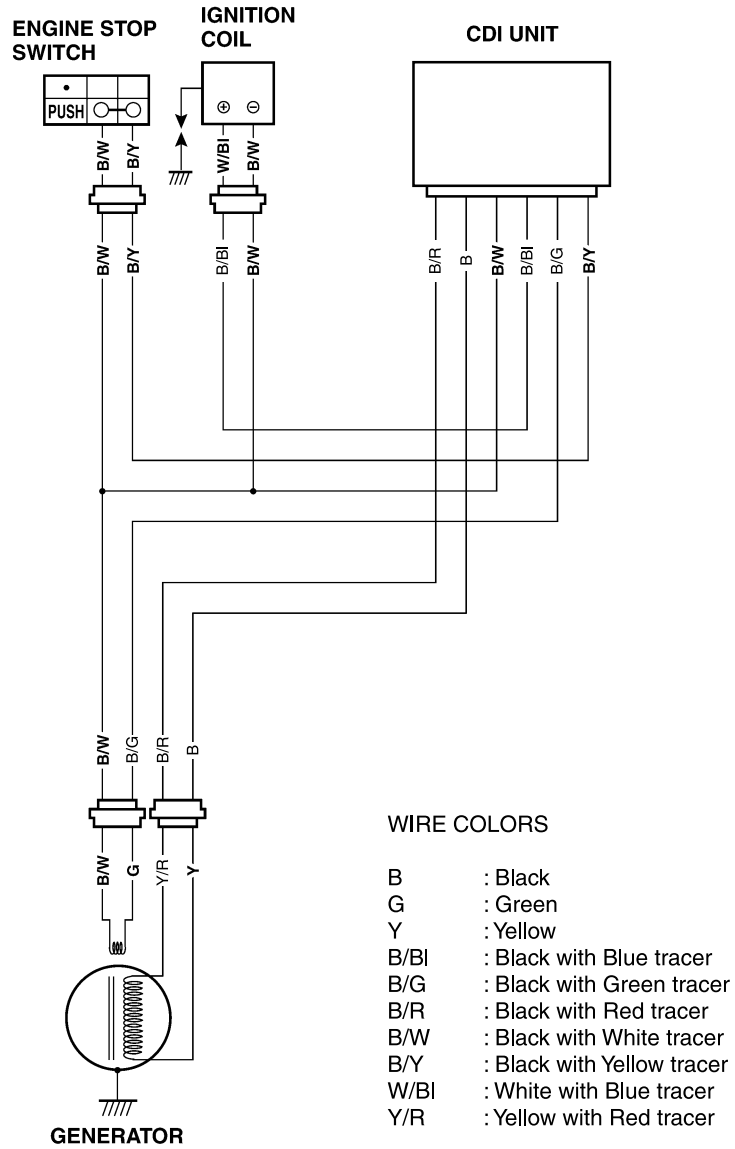
## BRAKES

Complaint	Symptom and possible causes	Remedy
<b>Brake power insufficient.</b>	<ol style="list-style-type: none"> <li>1. Worn brake shoe.</li> <li>2. Oil in brake shoe surfaces.</li> <li>3. Excessively worn brake drum.</li> <li>4. Excessive brake lever/pedal play.</li> </ol>	Replace. Clean. Replace. Adjust.
<b>Brake power insufficient. (DR-Z125L)</b>	<ol style="list-style-type: none"> <li>1. Leakage of brake fluid.</li> <li>2. Worn brake pad.</li> <li>3. Oil on brake pad surface.</li> <li>4. Worn brake disc.</li> <li>5. Air in hydraulic system.</li> </ol>	Repair or replace. Replace. Clean brake disc and brake pads. Replace. Bleed.
<b>Brake squeaks.</b>	<ol style="list-style-type: none"> <li>1. Damaged wheel bearing.</li> <li>2. Brake shoe surface glazed.</li> <li>3. Loose front axle nut or rear axle nut.</li> <li>4. Worn brake shoe.</li> </ol>	Replace. Clean surface with sandpaper. Tighten to the specified torque. Replace.
<b>Brake squeaks. (DR-Z125L)</b>	<ol style="list-style-type: none"> <li>1. Carbon adhesion on brake pad surface.</li> <li>2. Tilted brake pad.</li> <li>3. Damaged wheel bearing.</li> <li>4. Worn brake pad.</li> <li>5. Foreign material in brake fluid.</li> <li>6. Clogged return port of master cylinder.</li> <li>7. Loose front or rear axle nut.</li> </ol>	Clean surface with sandpaper. Readjust brake pad position or replace. Replace. Replace. Change brake fluid. Disassemble and clean master cylinder. Tighten.
<b>Brake lever or pedal stroke excessive.</b>	<ol style="list-style-type: none"> <li>1. Worn brake camshaft.</li> <li>2. Excessively worn brake shoes and/or brake drum.</li> </ol>	Replace. Replace.
<b>Brake lever stroke excessive. (DR-Z125L)</b>	<ol style="list-style-type: none"> <li>1. Air in hydraulic system.</li> <li>2. Insufficient brake fluid.</li> <li>3. Improper quality of brake fluid.</li> </ol>	Bleed. Replenish fluid to specified level and bleed air. Replace with correct fluid.
<b>Brake fluid leaks. (DR-Z125L)</b>	<ol style="list-style-type: none"> <li>1. Loose connection joint.</li> <li>2. Cracked hose.</li> <li>3. Worn piston seal.</li> <li>4. Worn secondary cup.</li> </ol>	Tighten. Replace. Replace. Replace.
<b>Brake drags.</b>	<ol style="list-style-type: none"> <li>1. Rusty part.</li> <li>2. Insufficient brake lever or brake pedal pivot lubrication.</li> </ol>	Clean and lubricate. Lubricate.

**ELECTRICAL**

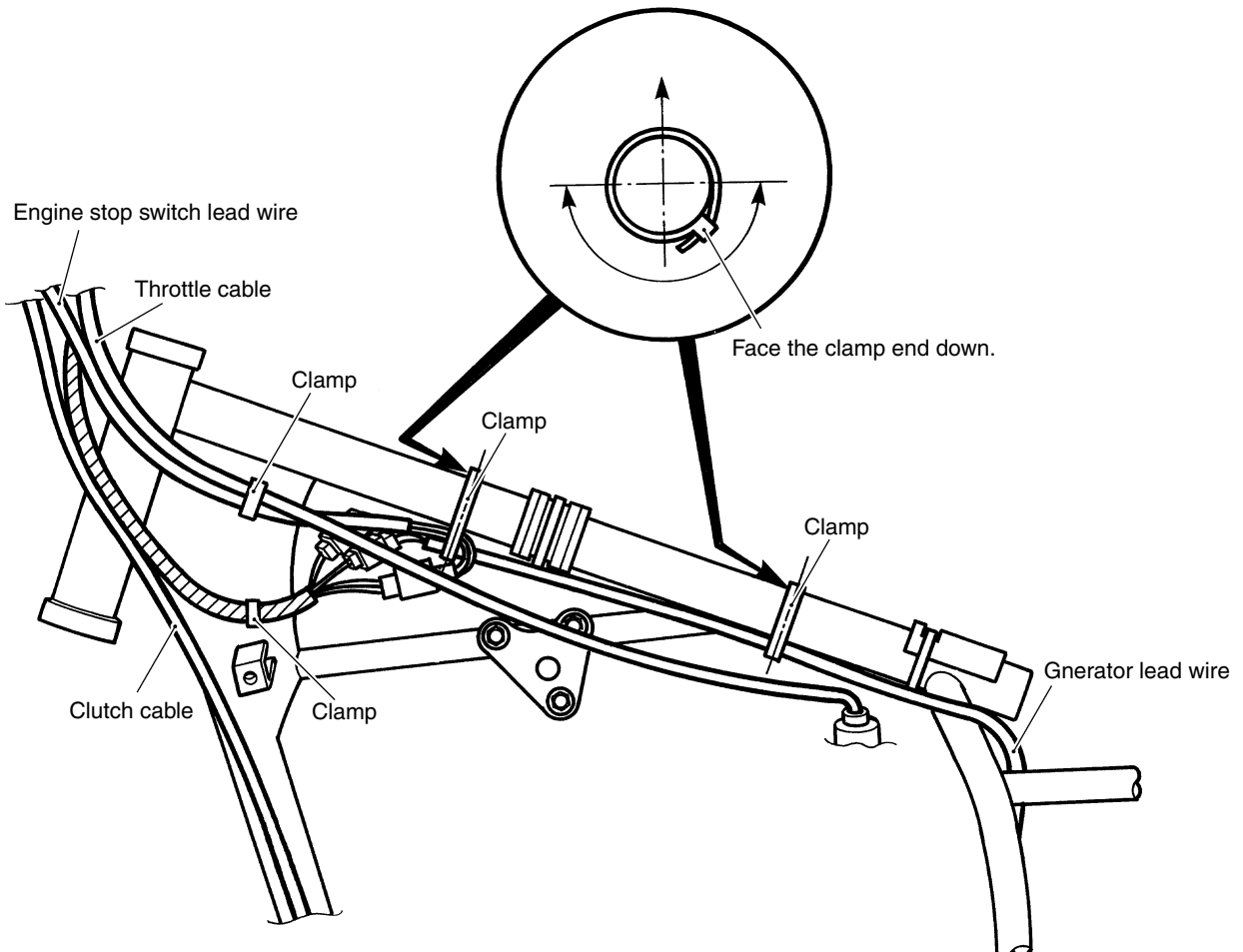
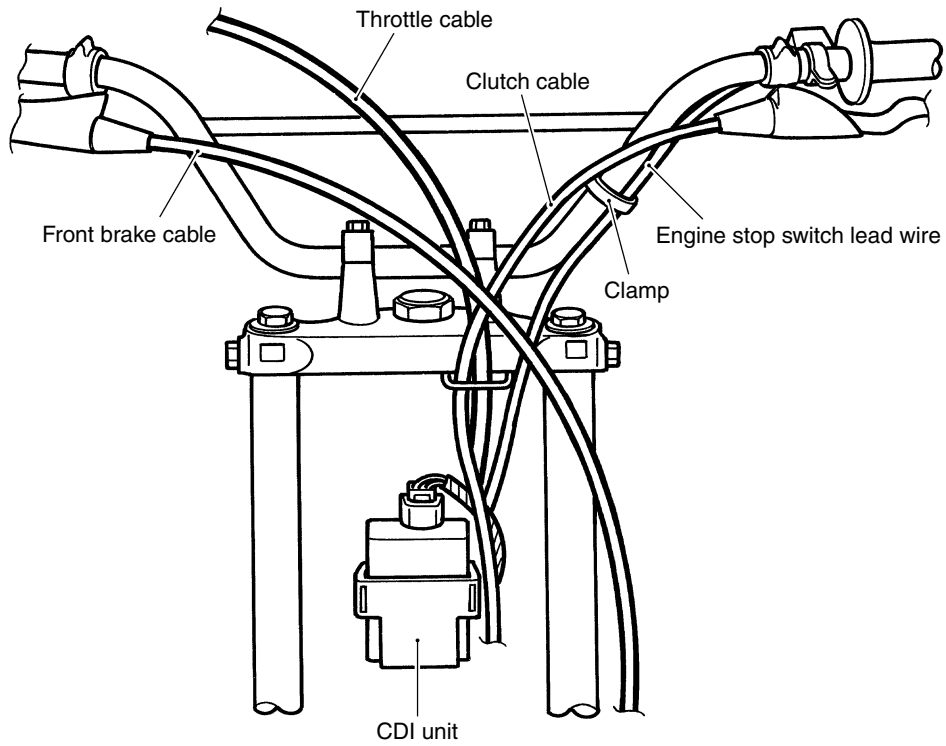
<b>Complaint</b>	<b>Symptom and possible causes</b>	<b>Remedy</b>
<b>No sparking or poor sparking.</b>	<ol style="list-style-type: none"> <li>1. Defective ignition coil.</li> <li>2. Defective spark plug.</li> <li>3. Defective generator.</li> <li>4. Defective CDI unit.</li> </ol>	Replace. Replace. Replace. Replace.
<b>Spark plug is wet or quickly becomes fouled with carbon.</b>	<ol style="list-style-type: none"> <li>1. Excessively rich air/fuel mixture.</li> <li>2. Excessively high idling speed.</li> <li>3. Incorrect gasoline.</li> <li>4. Dirty air cleaner element.</li> <li>5. Incorrect spark plug (cold type).</li> </ol>	Adjust carburetor. Adjust carburetor. Change. Clean or replace. Change to standard spark plug.
<b>Spark plug quickly becomes fouled with oil or carbon.</b>	<ol style="list-style-type: none"> <li>1. Worn piston ring.</li> <li>2. Worn piston.</li> <li>3. Worn cylinder.</li> <li>4. Excessive valve-stem-to-valve-guide clearance.</li> <li>5. Worn valve stem oil seal.</li> </ol>	Replace. Replace. Replace. Replace. Replace.
<b>Spark plug electrodes overheat or burn.</b>	<ol style="list-style-type: none"> <li>1. Incorrect spark plug (hot type).</li> <li>2. Overheated engine.</li> <li>3. Loose spark plug.</li> <li>4. Excessively lean air/fuel mixture.</li> </ol>	Change to cold type spark plug. Turn-up. Tighten. Adjust carburetor.

# WIRING DIAGRAM

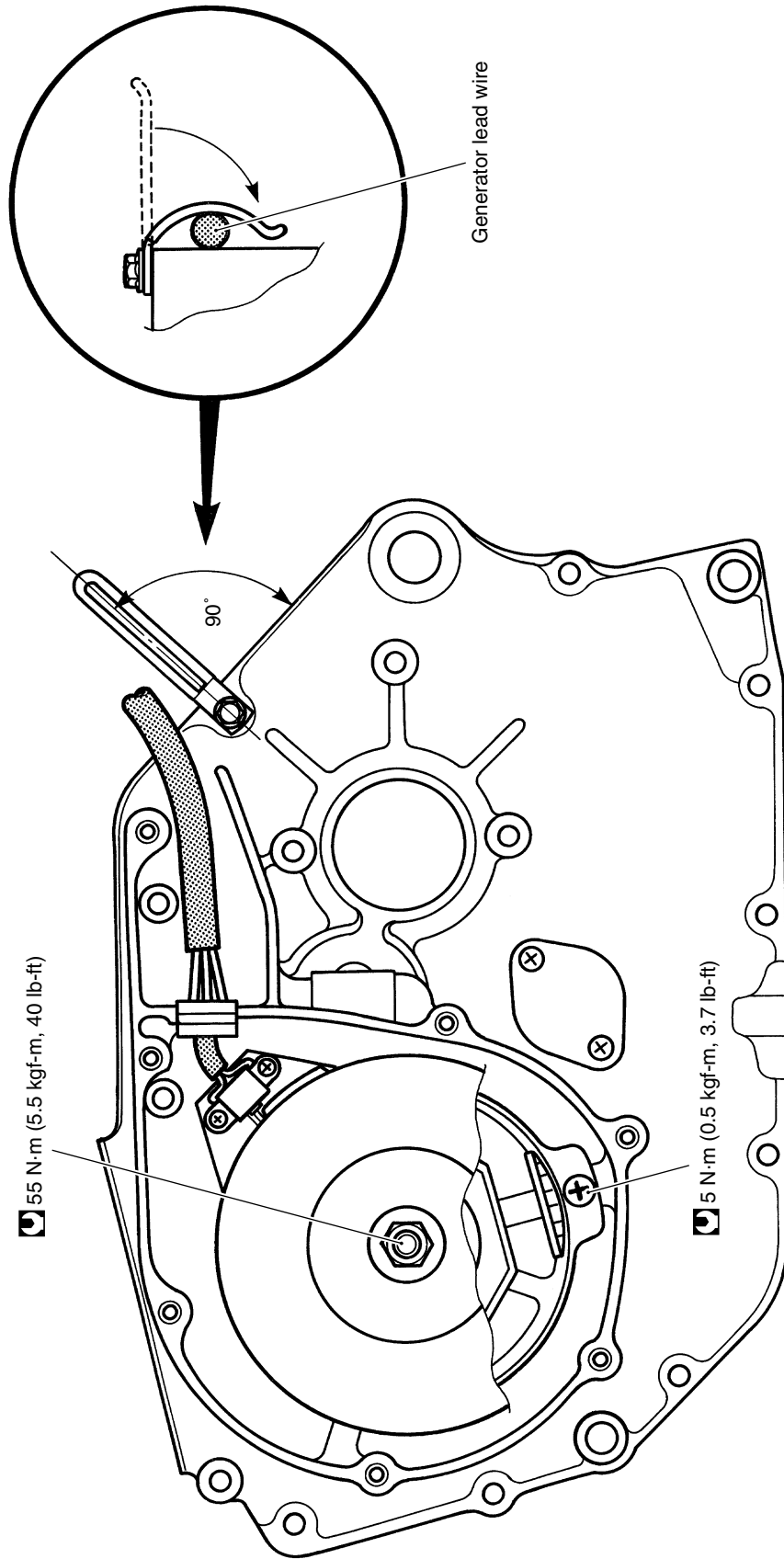


# WIRE, CABLE AND HOSE ROUTING

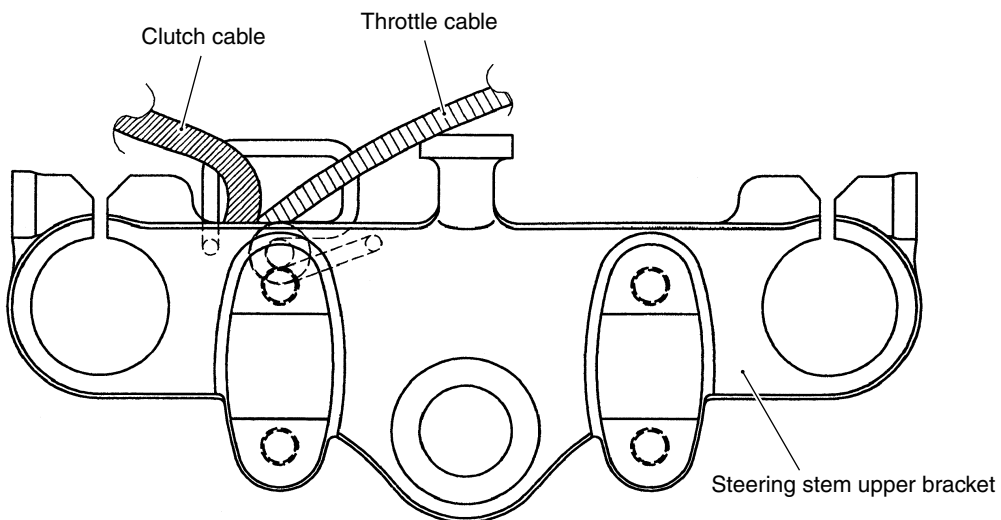
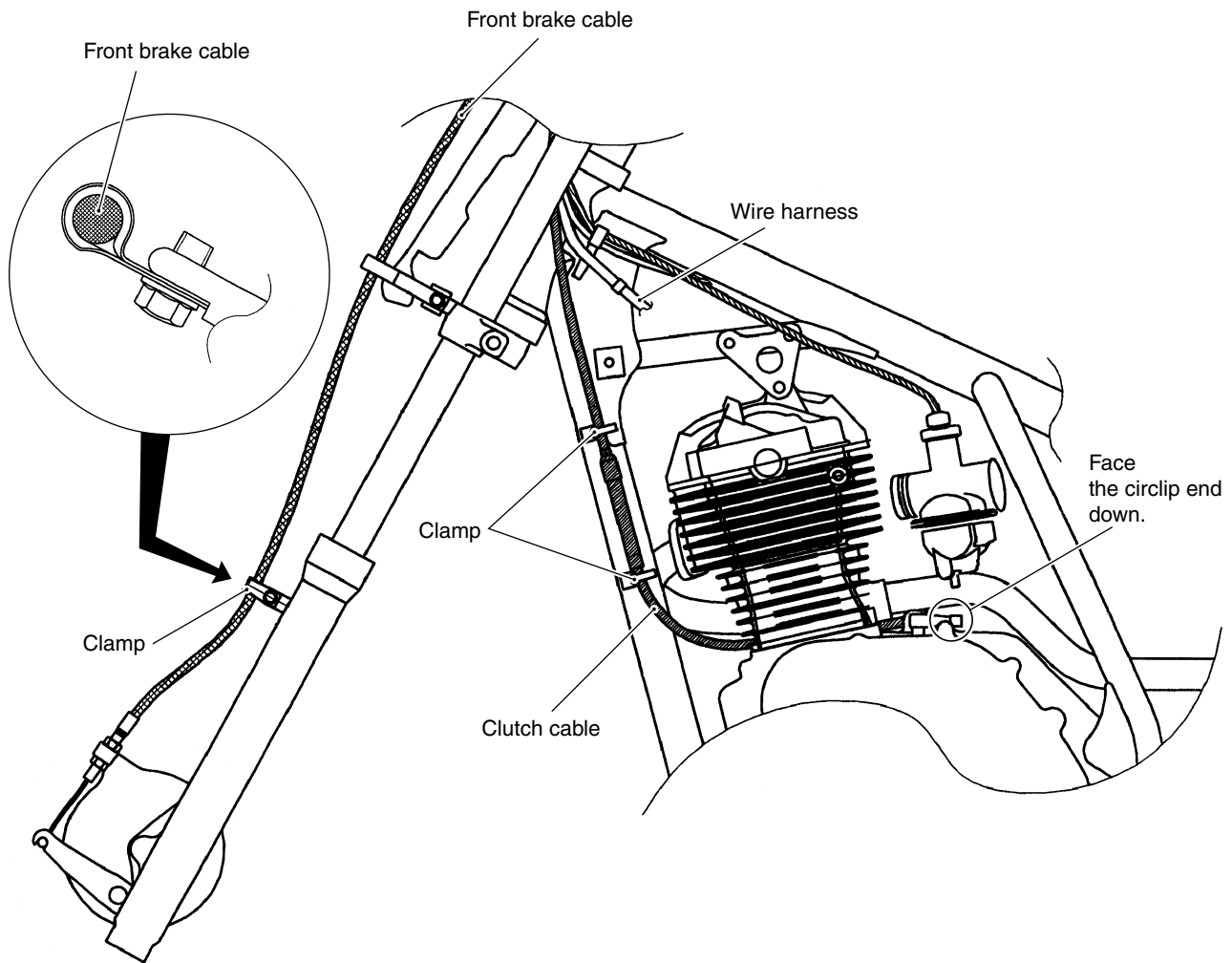
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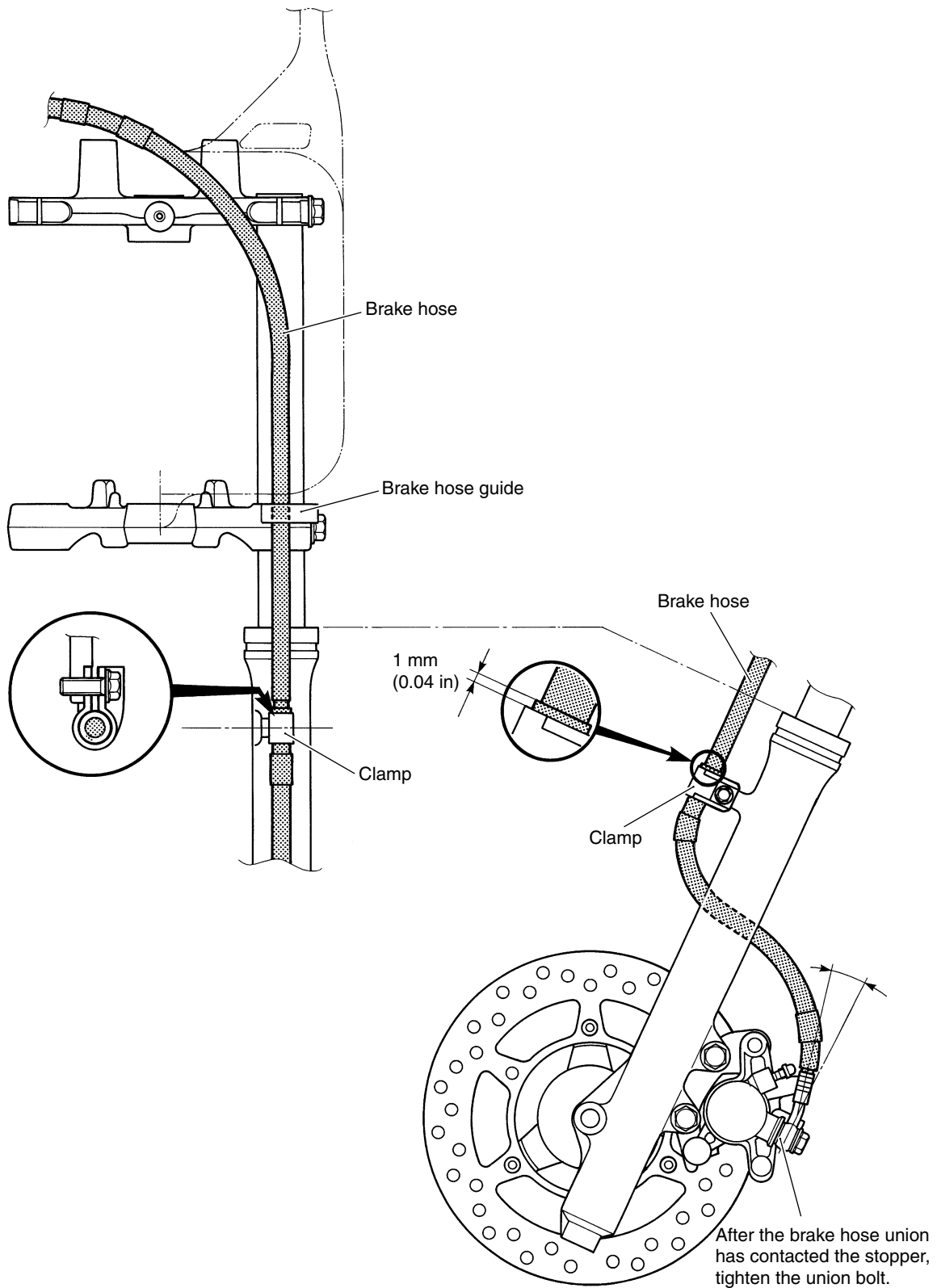




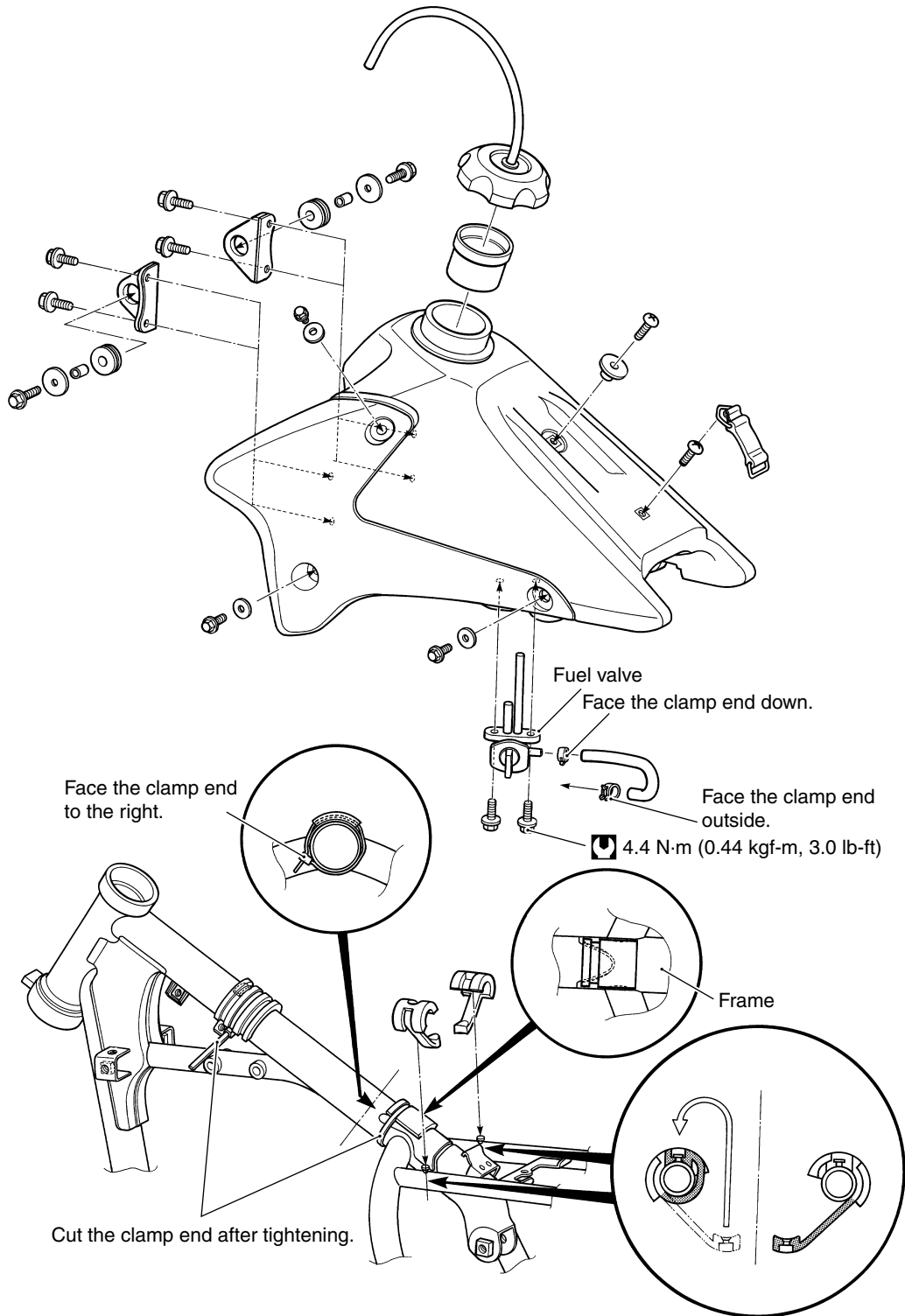
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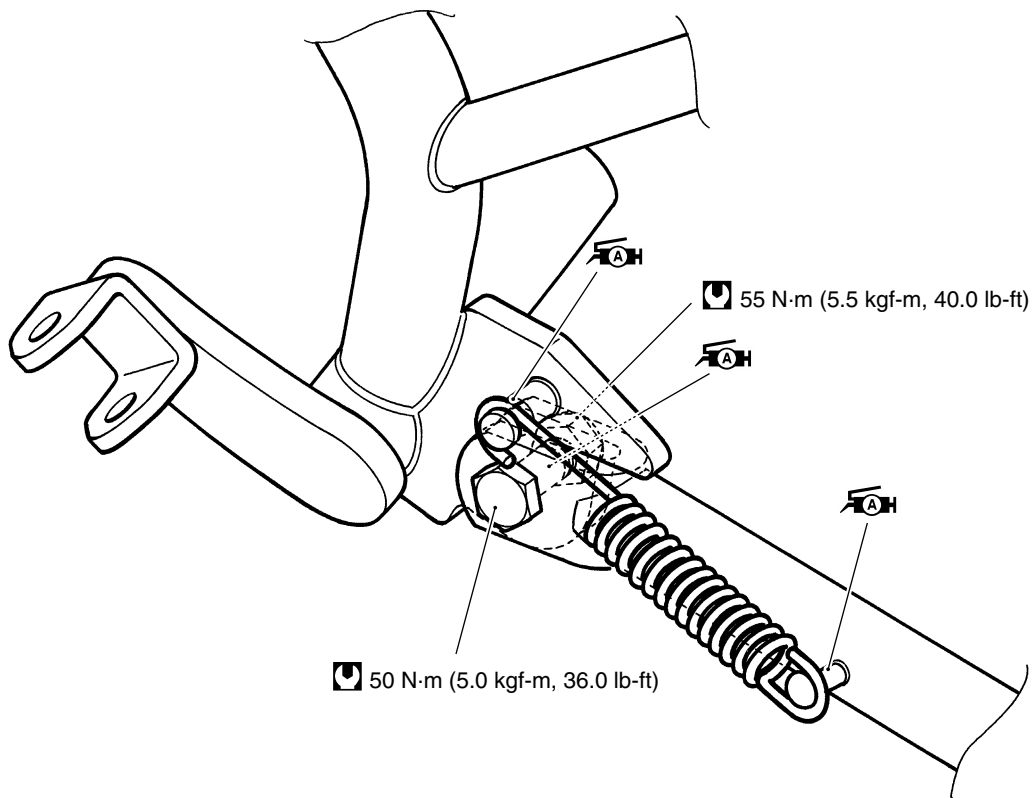
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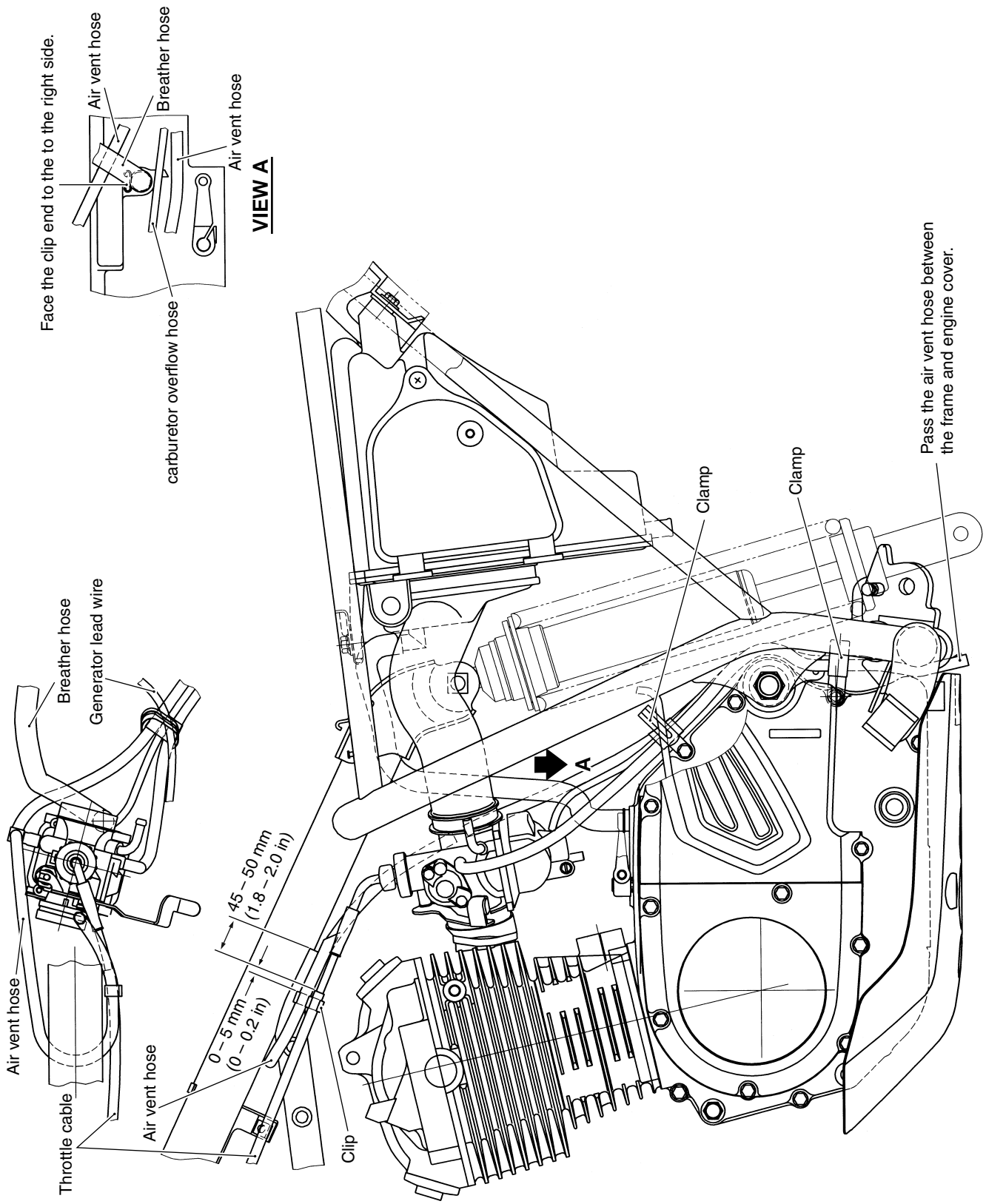
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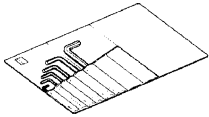
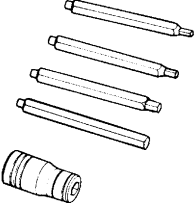
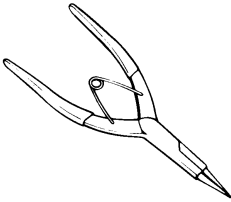
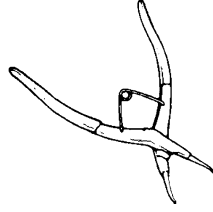
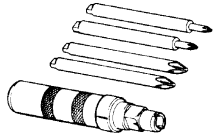
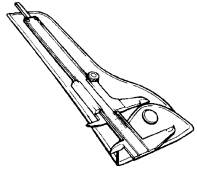
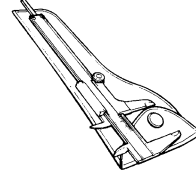
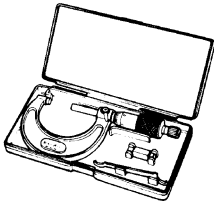
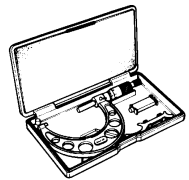
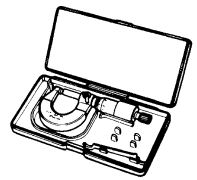
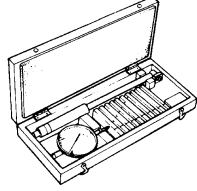
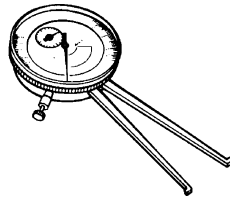

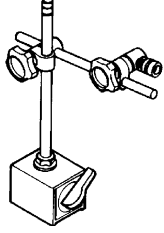
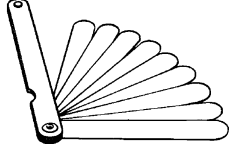
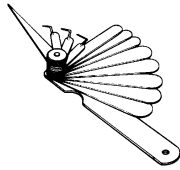
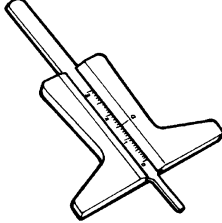
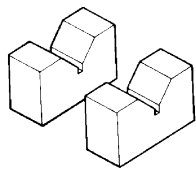
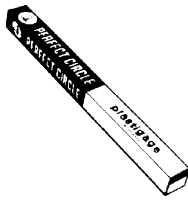
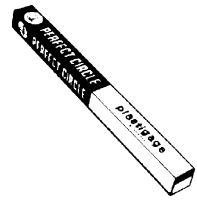
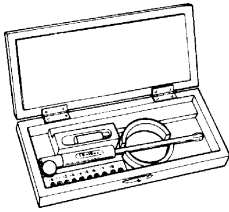
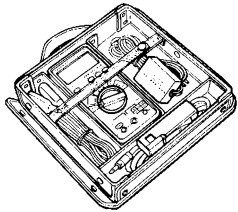
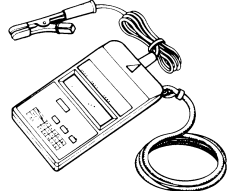
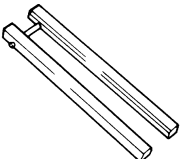
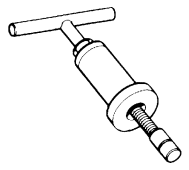
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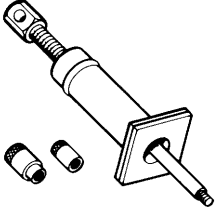
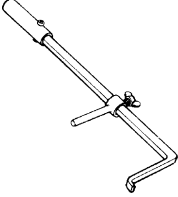
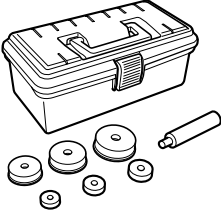
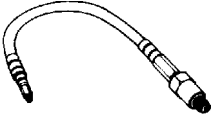

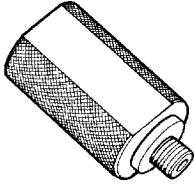
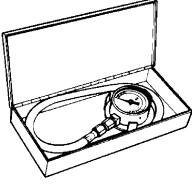
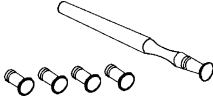
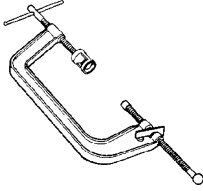
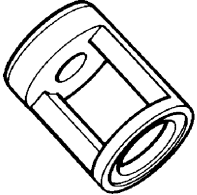
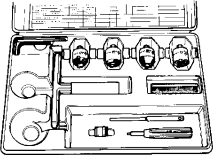
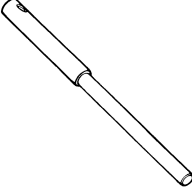
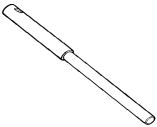
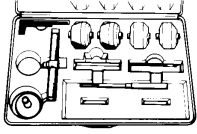
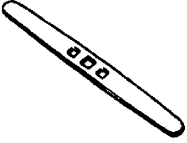

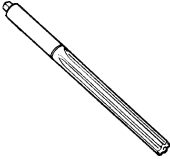


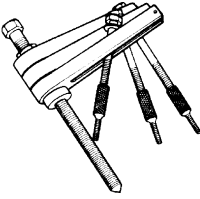
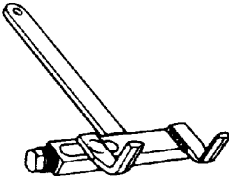
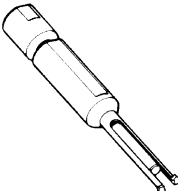
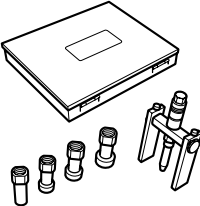
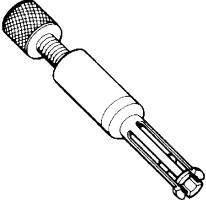
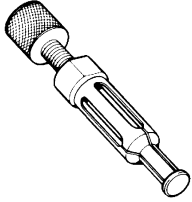


# CARBURETOR INSTALLATION/HOSE ROUTING

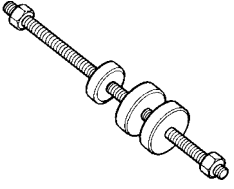

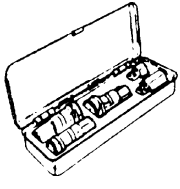
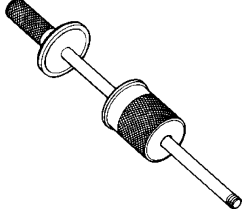
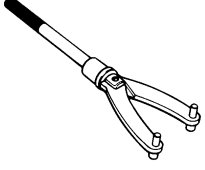
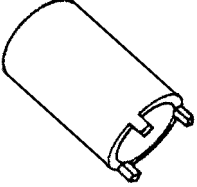
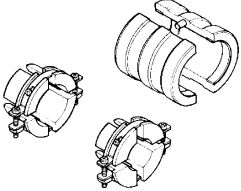
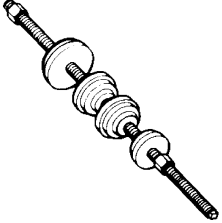
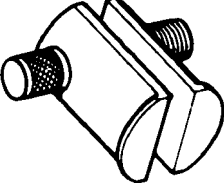

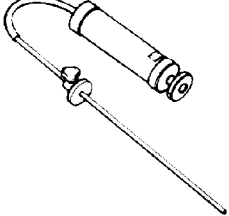


# SPECIAL TOOLS

 <p><b>09900-00401</b> Hexagon wrench set</p>	 <p><b>09900-00410</b> Hexagon wrench set</p>	 <p><b>09900-06107</b> Snap ring pliers</p>	 <p><b>09900-06108</b> Snap ring pliers</p>	 <p><b>09900-09004</b> Impact driver set</p>
 <p><b>09900-20101</b> Vernier calipers</p>	 <p><b>09900-20102</b> Vernier calipers</p>	 <p><b>09900-20202</b> Micrometer (25 – 50 mm)</p>	 <p><b>09900-20203</b> Micrometer (50 – 75 mm)</p>	 <p><b>09900-20205</b> Micrometer (0 – 25 mm)</p>
 <p><b>09900-20508</b> Cylinder gauge set</p>	 <p><b>09900-20605</b> Dial calipers (1/100 mm, 10 – 34 mm)</p>	 <p><b>09900-20607</b> Dial gauge (1/100 mm)</p>	 <p><b>09900-20701</b> Magnetic stand</p>	 <p><b>09900-20803</b> Thickness gauge</p>
 <p><b>09900-20804</b> Thickness gauge</p>	 <p><b>09900-20805</b> Tire depth gauge</p>	 <p><b>09900-21304</b> V-block set (100 mm)</p>	 <p><b>09900-22301</b> Plastigauge</p>	 <p><b>09900-22302</b> Plastigauge</p>
 <p><b>09900-22403</b> Small bore gauge (18 – 35 mm)</p>	 <p><b>09900-25008</b> Multi circuit tester set</p>	 <p><b>09900-26006</b> Tachometer</p>	 <p><b>09910-20116</b> Conrod holder</p>	 <p><b>09910-32812</b> Crankshaft installer</p>

 <p><b>09910-34510</b> Piston pin puller</p>	 <p><b>09913-50121</b> Oil seal remover</p>	 <p><b>09913-70210</b> Bearing installer set</p>	 <p><b>09915-63310</b> Adaptor</p>	 <p><b>09915-64510</b> Compression gauge set</p>
 <p><b>09915-70610</b> Adaptor</p>	 <p><b>09915-74510</b> Oil pressure gauge set</p>	 <p><b>09916-10911</b> Valve lapper set</p>	 <p><b>09916-14510</b> Valve lifter</p>	 <p><b>09916-14910</b> Attachment</p>
 <p><b>09916-21111</b> Valve seat cutter set</p>	 <p><b>09916-24450</b> Solid pilot (N-100-5.52)</p>	 <p><b>09916-24480</b> Solid pilot (N-140-5.5)</p>	 <p><b>09916-24900</b> Valve seat cutter set</p>	 <p><b>09916-34542</b> Reamer handle</p>
 <p><b>9916-34550</b> Valve guide reamer (5.5 mm)</p>	 <p><b>09916-34561</b> Valve guide reamer (11.3 mm)</p>	 <p><b>09916-44910</b> Valve guide remover/installer</p>	 <p><b>09916-84511</b> Tweezers</p>	 <p><b>09920-13120</b> Crankcase separating tool</p>
 <p><b>09920-13120</b> Clutch sleeve hub holder</p>	 <p><b>09921-20210</b> Bearing puller</p>	 <p><b>09921-20240</b> Bearing remover set</p>	 <p><b>09923-73210</b> Bearing remover</p>	 <p><b>09923-74510</b> Bearing remover</p>



 <p><b>09924-84521</b> Bearing installer set</p>	 <p><b>09925-18011</b> Steering bearing installer</p>	 <p><b>09930-10121</b> Spark plug wrench set</p>	 <p><b>09930-30102</b> Sliding shaft</p>	 <p><b>09930-40113</b> Rotor holder</p>
 <p><b>09940-14930</b> Steering stem nut socket wrench</p>	 <p><b>09940-52861</b> Front fork oil seal installer</p>	 <p><b>09941-34513</b> Bearing installer</p>	 <p><b>09941-54911</b> Bearing outer race remover</p>	 <p><b>09941-74911</b> Bearing installer</p>
 <p><b>09943-74111</b> Fork oil level gauge</p>				

**NOTE:**

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

## TIGHTENING TORQUE

### ENGINE

ITEM	N·m	kgf·m	lb·ft
Cylinder head cover bolt	10	1.0	7.0
Spark plug	11	1.1	8.0
Cylinder head bolt	Initial	10	7.0
	Final	27	19.5
Cylinder nut	10	1.0	7.0
Primary drive gear nut	50	5.0	36.0
Generator rotor nut	55	5.5	40.0
Clutch sleeve hub nut	50	5.0	36.0
Cam chain tension adjuster mounting bolt	10	1.0	7.0
Engine oil drain plug	28	2.8	20.5
Crankcase bolt	10	1.0	7.0
Engine mounting nut	40	4.0	29.0
Engine mounting bracket nut	40	4.0	29.0
Exhaust pipe bolt	23	2.3	16.5
Muffler connecting bolt	23	2.3	16.5
Muffler mounting bolt	23	2.3	16.5
Engine sprocket bolt	25	2.5	18.0
Fuel valve mounting bolt	4.4	0.44	3.0
Camshaft sprocket bolt	11	1.1	8.0
Camshaft tension adjuster lock nut	12	1.2	8.5

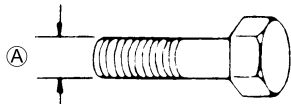
**CHASSIS**

ITEM	N·m	kgf-m	lb-ft
Front axle nut (DR-Z125)	35	3.5	25.5
(DR-Z125L)	44	4.4	32.0
Front fork cap bolt	23	2.3	16.5
Front fork damper rod bolt	20	2.0	14.5
Front fork lower clamp bolt	33	3.3	24.0
Front fork upper clamp bolt	29	2.9	21.0
Steering stem head nut	90	9.0	65.0
Handlebar clamp bolt	23	2.3	16.5
Front brake master cylinder mounting bolt (DR-Z125L)	10	1.0	7.0
Front brake caliper mounting bolt (DR-Z125L)	23	2.3	16.5
Front brake hose union bolt (DR-Z125L)	23	2.3	16.5
Air bleeder valve (DR-Z125L)	7.5	0.75	5.5
Brake disc mounting nut (DR-Z125L)	8.5	0.85	6.0
Front footrest bolt	55	5.5	40.0
Brake pedal boss nut/bolt	29	2.9	21.0
Swingarm pivot nut	65	6.5	47.0
Rear shock absorber mounting bolt/nut (Upper & Lower)	60	6.0	43.5
Rear cushion lever bolt (Front)	55	5.5	40.0
Rear cushion lever nut (Center)	80	8.0	58.0
Rear cushion rod nut	80	8.0	58.0
Rear axle nut	45	4.5	32.5
Rear sprocket mounting nut	27	2.7	19.5
Brake cam lever nut	11	1.1	8.0
Spoke nipple	4.5	0.45	3.0
Side stand bolt	50	5.0	36.0
Side stand nut	55	5.5	40.0

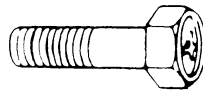
## TIGHTENING TORQUE CHART

For other nuts and bolts not listed in the preceding page, refer to this chart:

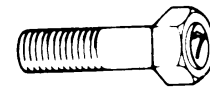
Bolt Diameter Ⓐ (mm)	Conventional or "4" marked bolt			"7" marked bolt		
	N·m	kgf·m	lb·ft	N·m	kgf·m	lb·ft
4	1.5	0.15	1.0	2.3	0.23	1.5
5	3	0.3	2.0	4.5	0.45	3.0
6	5.5	0.55	4.0	10	1.0	7.0
8	13	1.3	9.5	23	2.3	16.5
10	29	2.9	21.0	50	5.0	36.0
12	45	4.5	32.5	85	8.5	61.5
14	65	6.5	47.0	135	13.5	97.5
16	105	10.5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

## 4 STROKE

### VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30 (1.2)	—
	EX.	26 (1.0)	—
Valve clearance (when cold)	IN.	0.08 – 0.13 (0.003 – 0.005)	—
	EX.	0.13 – 0.18 (0.005 – 0.007)	—
Valve guide to valve stem clearance	IN.	0.010 – 0.037 (0.0004 – 0.0015)	—
	EX.	0.030 – 0.057 (0.0012 – 0.0022)	—
Valve guide I.D.	IN. & EX.	5.500 – 5.512 (0.2156 – 0.2161)	—
Valve stem O.D.	IN.	5.475 – 5.490 (0.2156 – 0.2161)	—
	EX.	5.455 – 5.470 (0.2148 – 0.2154)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	2.5 (0.10)
Valve seat width	IN. & EX.	0.9 – 1.1 (0.035 – 0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	36.0 (1.42)
	OUTER	—	39.3 (1.55)
Valve spring tension (IN. & EX.)	INNER	76 – 90 N (7.8 – 9.2 kgf, 17.2 – 20.3 lbs) at length 32.5 mm (1.28 in)	—
	OUTER	186 – 219 N (18.9 – 22.3 kgf, 41.7 – 49.2 lbs) at length 36.0 mm (1.42 in)	—

**CAMSHAFT + CYLINDER HEAD**

Unit: mm (in)

ITEM		STANDARD	LIMIT
Cam height	IN. & EX.	33.13 – 33.17 (1.304 – 1.306)	32.83 (1.293)
Camshaft journal oil clearance	IN. & EX.	0.032 – 0.066 (0.0013 – 0.0026)	0.150 (0.0059)
Camshaft journal holder I.D.	IN. & EX.	22.012 – 22.025 (0.8666 – 0.8671)	—
Camshaft journal O.D.	IN. & EX.	21.959 – 21.980 (0.8645 – 0.8654)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000 – 12.018 (0.4724 – 0.4731)	—
Rocker arm shaft O.D.	IN. & EX.	11.977 – 11.995 (0.4715 – 0.4722)	—
Cylinder head distortion		—	0.05 (0.002)
Cylinder head cover distortion		—	0.05 (0.002)

**CYLINDER + PISTON + PISTON RING**

Unit: mm (in)

ITEM	STANDARD		LIMIT
Compression pressure	1 200 – 1 600 kPa (12 – 16 kgf/cm <sup>2</sup> , 171 – 228 psi)		1 000 kPa (10 kgf/cm <sup>2</sup> , 142 psi)
Piston-to-cylinder clearance	0.020 – 0.030 (0.0008 – 0.0012)		0.120 (0.0047)
Cylinder bore	57.000 – 57.015 (2.2440 – 2.2447)		57.110 (2.2484)
Piston diam.	56.975 – 56.990 (2.2431 – 2.2437) Measure at 12 mm (0.5 in) from the skirt end.		56.880 (2.2394)
Cylinder distortion	—		0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 7.0 (0.28)
	2nd	R	Approx. 8.5 (0.33)
Piston ring end gap	1st		0.10 – 0.25 (0.004 – 0.010)
	2nd		0.10 – 0.25 (0.004 – 0.010)
Piston ring to groove clearance	1st		— (0.007)
	2nd		— (0.006)
Piston ring groove width	1st		1.21 – 1.23 (0.047 – 0.048)
	2nd		1.21 – 1.23 (0.047 – 0.048)
	Oil		2.51 – 2.53 (0.099 – 0.100)
Piston ring thickness	1st		1.175 – 1.190 (0.0463 – 0.0469)
	2nd		1.170 – 1.190 (0.0461 – 0.0469)
Piston pin bore	14.002 – 14.008 (0.5513 – 0.5515)		14.030 (0.5524)
Piston pin O.D.	13.994 – 14.002 (0.5509 – 0.5513)		13.980 (0.5504)

**CONROD + CRANKSHAFT**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	14.004 – 14.012 (0.5513 – 0.5517)	14.040 (0.5528)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10 – 0.45 (0.004 – 0.018)	1.0 (0.04)
Conrod big end width	15.95 – 16.00 (0.628 – 0.630)	—
Crank web to web width	53.0 ± 0.1 (2.09 ± 0.004)	—
Crankshaft runout	—	0.08 (0.003)

**OIL PUMP**

ITEM	STANDARD	LIMIT
Oil pressure (at 60°C, 140°F)	Above 15 kPa (0.15 kgf/cm <sup>2</sup> , 2.1 psi) Below 35 kPa (0.35 kgf/cm <sup>2</sup> , 4.9 psi) at 3 000 r/min.	—

**CLUTCH**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10 – 15 (0.4 – 0.6)	—
Drive plate thickness	2.90 – 3.10 (0.114 – 0.122)	2.60 (0.102)
Drive plate claw width	11.8 – 12.0 (0.46 – 0.47)	11.5 (0.45)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	32.6 (1.28)	31.0 (1.22)



**DRIVE TRAIN + DRIVE CHAIN**

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.470 (59/17)		—
Final reduction ratio		DR-Z125	3.642 (51/14)	—
		DR-Z125L	4.071 (57/14)	—
Gear ratios	Low	3.000 (33/11)		—
	2nd	1.857 (26/14)		—
	3rd	1.368 (26/19)		—
	4th	1.095 (23/21)		—
	Top	0.923 (24/26)		—
Shift fork to groove clearance		0.10 – 0.30 (0.004 – 0.012)		0.50 (0.02)
Shift fork groove width		No.1	5.0 – 5.1 (0.196 – 0.201)	—
		No.2	5.5 – 5.6 (0.217 – 0.224)	—
Shift fork thickness		No.1	4.8 – 4.9 (0.189 – 0.193)	—
		No.2	5.3 – 5.4 (0.209 – 0.213)	—
Countershaft length (Low to 2nd)		88.0 <sup>+0.1</sup> <sub>0</sub> (3.46 <sup>+0.004</sup> <sub>0</sub> )		—
Drive chain	Type	DID 428HG		—
	Links	DR-Z125	122	—
		DR-Z125L	130	—
20-pitch length	—		259.0 (10.20)	
Drive chain slack		35 – 45 (1.4 – 1.8)		—
Gearshift lever height		-5 – 5 (-0.2 – 0.2)		—

**CARBURETOR**

ITEM	SPECIFICATION
Carburetor type	MIKUNI VM20SS
Bore size	20 mm (0.8 in)
I.D. No	08G
Idle r/min.	1 700 ± 100 r/min.
Float height	18.9 ± 1.0 mm (0.74 ± 0.04 in)

ITEM		SPECIFICATION
		E-03, 28
Main jet	(M.J.)	#102.5
Jet needle	(J.N.)	5HGM74-1
Needle jet	(N.J.)	N-6M
Throttle valve	(Th.V.)	#2.5
Pilot jet	(P.J.)	#17.5
Pilot screw	(P.S.)	PRE-SET (2 ¼ turns back)
Throttle cable play		2.0 – 4.0 mm (0.08 – 0.16 in)

## ELECTRICAL

ITEM	SPECIFICATION		NOTE
	Type		
Spark plug	Type	DENSO: X24ESR-U NGK: DR8EA	
	Gap	0.6 – 0.8 mm (0.024 – 0.031 in)	
Spark performance	Over 8 mm (0.3 in) at 1 atm.		
Ignition coil resistance	Primary	0.1 – 0.8 $\Omega$	W/BI – B/W
	Secondary	13 – 18 k $\Omega$	Plug cap – W/BI
Generator coil resistance	Charging	13 – 22 $\Omega$	Y – Y/R
	Pick-up coil	140 – 230 $\Omega$	G – B/W
Pick-up coil peak voltage	More than 2.0 V		⊕: G, ⊖: B/W
Ignition coil primary peak voltage	More than 150 V		⊕: B/W, ⊖: W/BI

**BRAKE + WHEEL**

Unit: mm (in)

ITEM		STANDARD/SPECIFICATION		LIMIT	
Brake lever play		DR-Z125	15 – 25 (0.6 – 1.0)	—	
		DR-Z125L	0.1 – 0.3 (0.004 – 0.012)	—	
Rear brake pedal free travel		20 – 30 (0.8 – 1.2)		—	
Rear brake pedal height		-10 – 0 (-0.4 – 0)		—	
Brake drum I.D.		Rear	—	110.7 (4.36)	
Brake disc thickness		Front	3.5 ± 0.2 (0.14 ± 0.008)	3.0 (0.12)	
Brake disc runout		Front	—	0.30 (0.012)	
Master cylinder bore		Front	11.000 – 11.043 (0.4331 – 0.4348)	—	
Master cylinder piston diam.		Front	10.957– 10.984 (0.4314 – 0.4324)	—	
Brake caliper cylinder bore		Front	30.230 – 30.306 (1.1902 – 1.1931)	—	
Brake caliper piston diam.		Front	30.150 – 30.200 (1.1870 – 1.1890)	—	
Brake fluid type		DOT 4		—	
Wheel rim runout		Axial	—	2.0 (0.08)	
		Radial	—	2.0 (0.08)	
Wheel axle runout		Front	—	0.25 (0.010)	
		Rear	—	0.25 (0.010)	
Wheel rim size		Front	DR-Z125	J17 × 1.40	—
			DR-Z125L	J19 × 1.40	—
		Rear	DR-Z125	J14 × 1.60	—
			DR-Z125L	J16 × 1.60	—
Tire size		Front	DR-Z125	70/100-17 40M	—
			DR-Z125L	70/100-19 42M	—
		Rear	DR-Z125	90/100-14 49M	—
			DR-Z125L	90/100-16 52M	—
Tire tread depth		Front	—	4.0 (0.16)	
		Rear	—	4.0 (0.16)	

**SUSPENSION**

Unit: mm (in)

ITEM	STANDARD/SPECIFICATION		LIMIT
Front fork stroke	180 (7.1)		—
Front fork spring free length	—		587 (23.1)
Front fork oil level	173.0 (6.81)		—
Front fork oil type	SUZUKI FORK OIL SS-08 (#10) or an equivalent fork oli		—
Front fork oil capacity (each leg)	172 ml (4.3/4.5 US/lmp oz)		—
Rear shock absorber spring pre-set length	DR-Z125	240.5 (9.47)	—
	DR-Z125L	241.1 (9.49)	—
Rear wheel travel	DR-Z125	160 (6.3)	—
	DR-Z125L	170 (6.7)	—
Swingarm pivot shaft runout	—		0.6 (0.02)

**TIRE PRESSURE**

COLD INFLATION TIRE PRESSURE	kPa	kgf/cm <sup>2</sup>	psi
FRONT	100	1.0	14
REAR	100	1.0	14

**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.		
Fuel tank including	reserve	6.6 L (1.7/1.5 US/lmp qt)	
	reserve	1.7 L (0.4/0.4 US/lmp qt)	
Engine oil type	SAE 10W-40, API SF or SG		
Engine oil capacity	Change	850 ml (0.9/0.7 US/lmp qt)	
	Filter change	950 ml (1.0/0.8 US/lmp qt)	
	Overhaul	1 100 ml (1.2/1.0 US/lmp qt)	

# **DR-Z125/LK4 ('04-MODEL)**

# **DR-Z125/LK5 ('05-MODEL)**

*This chapter describes service specifications, service data and servicing procedures which differ from those of the DR-Z125/LK3 ('03-MODEL).*

**NOTE:**

*\* Any differences between the DR-Z125/LK3 ('03-model) and DR-Z125/LK4 ('04-model), DR-Z125/LK5 ('05-model) in specifications and service data are indicated with an asterisk mark (\*).*

*\* Please refer to the chapter 1 through 7 for details which are not given in this chapter.*

## **CONTENTS**

<b>SPECIFICATIONS .....</b>	<b>8- 2</b>
<b>SERVICE DATA .....</b>	<b>8- 3</b>
<b>TIGHTENING TORQUE .....</b>	<b>8-11</b>

# SPECIFICATIONS

## DIMENSIONS AND DRY MASS

Overall length .....	1 835 mm (72.2 in)
Overall width .....	1 885 mm (74.2 in).....Large wheel
Overall height .....	770 mm (30.3 in)
Wheelbase .....	1 060 mm (41.7 in)
Ground clearance.....	1 095 mm (43.1 in).....Large wheel
Seat height.....	1 245 mm (49.0 in)
Dry mass.....*	1 270 mm (50.0 in).....Large wheel
	260 mm (10.2 in)
	290 mm (11.4 in).....Large wheel
	775 mm (30.5 in)
	805 mm (32.0 in).....Large wheel
	79 kg (174 lbs)
	* 80 kg (176 lbs).....Large wheel

## ENGINE

Type.....	Four-stroke, air-cooled, OHC
Number of cylinders .....	1
Bore .....	57.0 mm (2.244 in)
Stroke.....	48.8 mm (1.921 in)
Displacement .....	124 cm <sup>3</sup> (7.6 cu. in)
Compression ratio.....	9.5 : 1
Carburetor .....	MIKUNI VM20SS
Air cleaner.....	Polyurethane foam element
Starter system.....	Primary Kick
Lubrication system.....	Wet sump
Idle speed .....	1 700 ± 100 r/min

## DRIVE TRAIN

Clutch.....	Wet multi-plate type
Transmission .....	5-speed constant mesh
Gearshift pattern .....	1-down, 4-up
Primary reduction ratio.....	3.470 (59/17)
Gear ratios, Low.....	3.000 (33/11)
2nd .....	1.857 (26/14)
3rd .....	1.368 (26/19)
4th .....	1.095 (23/21)
Top .....	0.923 (24/26)
Final reduction ratio.....	3.642 (51/14)
Drive chain .....	4.071 (57/14).....Large wheel
	D.I.D.428HG, 122 links
	D.I.D.428HG, 130 links...Large wheel

## CHASSIS

Front suspension.....	Telescopic, coil spring, oil damped
Rear suspension .....	Link type, coil spring, oil damped
Front suspension stroke.....	180 mm (7.1 in)
Rear wheel travel .....	160 mm (6.3 in)
Caster .....	170 mm (6.7 in).....Large wheel
Trail.....	28°
	27° 30'.....Large wheel
Steering angle.....	88 mm (3.46 in)
Turning radius .....	99 mm (3.90 in).....Large wheel
Front brake .....	45° (right & left)
	1.9 m (6.2 ft)
	2.0 m (6.6 ft).....Large wheel
Rear brake .....	Drum brake
Front tire size .....	Disc brake.....Large wheel
	Drum brake
Rear tire size .....	70/100-17 40M, tube type
	70/100-19 42M, tube type..... Large wheel
	90/100-14 49M, tube type
	90/100-16 52M, tube type..... Large wheel

## ELECTRICAL

Ignition type.....	Electronic ignition (CDI)
Ignition timing.....	13° B.T.D.C. at 1 700 r/min
Spark plug .....	NGK DR8EA or DENSO X24ESR-U
Generator.....	Single-phase A.C. generator

## CAPACITIE

Fuel tank, including reserve.....	6.6 L (1.7/1.5 US/Imp gal)
Reserve .....	1.7 L (0.4/0.4 US/Imp gal)
Engine oil, oil change.....	850 ml (0.9/0.7 US/Imp qt)
with filter change .....	950 ml (1.0/0.8 US/Imp qt)
overhaul .....	1 100 ml (1.2/1.0 US/Imp qt)

**SERVICE DATA****VALVE + GUIDE**

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30 (1.2)	—
	EX.	26 (1.0)	—
Valve clearance (when cold)	IN.	0.08 – 0.13 (0.003 – 0.005)	—
	EX.	0.13 – 0.18 (0.005 – 0.007)	—
Valve guide to valve stem clearance	IN.	0.010 – 0.037 (0.0004 – 0.0015)	—
	EX.	0.030 – 0.057 (0.0012 – 0.0022)	—
Valve guide I.D.	IN. & EX.	5.500 – 5.512 (0.2165 – 0.2170)	—
Valve stem O.D.	IN.	5.475 – 5.490 (0.2156 – 0.2161)	—
	EX.	5.455 – 5.470 (0.2148 – 0.2154)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.014)
Valve stem end length	IN. & EX.	—	2.5 (0.10)
Valve seat width	IN. & EX.	0.9 – 1.1 (0.035 – 0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	36.0 (1.42)
	OUTER	—	39.3 (1.55)
Valve spring tension (IN. & EX.)	INNER	76 – 90 N (7.8 – 9.2 kgf, 17.2 – 20.3 lbs) at length 32.5 mm (1.28 in)	—
	OUTER	186 – 219 N (18.9 – 22.3 kgf, 41.7 – 49.2 lbs) at length 36.0 mm (1.42 in)	—

**CAMSHAFT + CYLINDER HEAD**

Unit: mm (in)

ITEM		STANDARD	LIMIT
Cam height	IN. & EX.	33.13 – 33.17 (1.304 – 1.306)	32.83 (1.29)
Camshaft journal oil clearance	IN. & EX.	0.032 – 0.066 (0.0013 – 0.0026)	0.150 (0.0059)
Camshaft journal holder I.D.	IN. & EX.	22.012 – 22.025 (0.8666 – 0.8671)	—
Camshaft journal O.D.	IN. & EX.	21.959 – 21.980 (0.8645 – 0.8654)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000 – 12.018 (0.4724 – 0.4731)	—
Rocker arm shaft O.D.	IN. & EX.	11.977 – 11.995 (0.4715 – 0.4722)	—
Cylinder head distortion		—	0.05 (0.002)
Cylinder head cover distortion		—	0.05 (0.002)



**CYLINDER + PISTON + PISTON RING**

Unit: mm (in)

ITEM	STANDARD		LIMIT	
Compression pressure	1 200 – 1 600 kPa (12 – 16 kgf/cm <sup>2</sup> , 171 – 228 psi)		1 000 kPa (10 kgf/cm <sup>2</sup> , 142 psi)	
Piston to cylinder clearance	0.020 – 0.030 (0.0008 – 0.0012)		0.120 (0.0047)	
Cylinder bore	57.000 – 57.015 (2.2440 – 2.2447)		57.110 (2.2484)	
Piston diam.	56.975 – 56.990 (2.2431 – 2.2437) Measure at 12 mm (0.5 in) from the skirt end.		56.880 (2.2394)	
Cylinder distortion	—		0.05 (0.002)	
Piston ring free end gap	1st	R	Approx. 7.0 (0.28)	5.6 (0.22)
	2nd	R	Approx. 8.5 (0.33)	6.8 (0.27)
Piston ring end gap	1st		0.10 – 0.25 (0.004 – 0.010)	0.5 (0.02)
	2nd		0.10 – 0.25 (0.004 – 0.010)	0.5 (0.02)
Piston ring to groove clearance	1st		—	0.18 (0.007)
	2nd		—	0.15 (0.006)
Piston ring groove width	1st		1.21 – 1.23 (0.047 – 0.048)	—
	2nd		1.21 – 1.23 (0.047 – 0.048)	—
	Oil		2.51 – 2.53 (0.099 – 0.100)	—
Piston ring thickness	1st		1.175 – 1.190 (0.0463 – 0.0469)	—
	2nd		1.170 – 1.190 (0.0461 – 0.0469)	—
Piston pin bore	14.002 – 14.008 (0.5513 – 0.5515)		14.030 (0.5524)	
Piston pin O.D.	13.994 – 14.002 (0.5509 – 0.5513)		13.980 (0.5504)	

**CONROD + CRANKSHAFT**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	14.004 – 14.012 (0.5513 – 0.5517)	14.040 (0.5528)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10 – 0.45 (0.004 – 0.018)	1.0 (0.04)
Conrod big end width	15.95 – 16.00 (0.628 – 0.630)	—
Crank web to web width	53.0 ± 0.1 (2.09 ± 0.004)	—
Crankshaft runout	—	0.08 (0.003)

**OIL PUMP**

ITEM	STANDARD	LIMIT
Oil pressure (at 60 °C, 140 °F)	Above 15 kPa (0.15 kgf/cm <sup>2</sup> , 2.1 psi) Below 35 kPa (0.35 kgf/cm <sup>2</sup> , 4.9 psi) at 3 000 r/min	—

**CLUTCH**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10 – 15 (0.4 – 0.6)	—
Drive plate thickness	2.90 – 3.10 (0.114 – 0.122)	2.60 (0.102)
Drive plate claw width	11.8 – 12.0 (0.46 – 0.47)	11.5 (0.45)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	32.6 (1.28)	31.0 (1.22)

**DRIVE TRAIN + DRIVE CHAIN**

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.470 (59/17)		—
Final reduction ratio		DR-Z125	3.642 (51/14)	—
		DR-Z125L	4.071 (57/14)	—
Gear ratios	Low	3.000 (33/11)		—
	2nd	1.857 (26/14)		—
	3rd	1.368 (26/19)		—
	4th	1.095 (23/21)		—
	Top	0.923 (24/26)		—
Shift fork to groove clearance		0.10 – 0.30 (0.004 – 0.012)		0.50 (0.02)
Shift fork groove width		No.1	5.0 – 5.1 (0.196 – 0.201)	—
		No.2	5.5 – 5.6 (0.217 – 0.224)	—
Shift fork thickness		No.1	4.8 – 4.9 (0.189 – 0.193)	—
		No.2	5.3 – 5.4 (0.209 – 0.213)	—
Countershaft length (Low to 2nd)		88.0 <sup>+0.1</sup> <sub>0</sub> (3.46 <sup>+0.004</sup> <sub>0</sub> )		—
Drive chain	Type	DID 428HG		—
	Links	DR-Z125	122	—
		DR-Z125L	130	—
	20-pitch length	—		259.0 (10.20)
Drive chain slack	25 – 40	35 – 45 (1.4 – 1.8)		—
Gearshift lever height		–5 – 5 (–0.2 – 0.2)		—

**CARBURETOR**

ITEM	SPECIFICATION	
		E-33, 28
Carburetor type	MIKUNI VM20SS	
Bore size	20 mm (0.8 in)	
I.D. No.	08G	
Idle r/min	1 700 ± 100 r/min	
Float height	18.9 ± 1.0 mm (0.74 ± 0.04 in)	

ITEM	SPECIFICATION	
	E-03, 28	
Main jet (M.J.)	#102.5	
Jet needle (J.N.)	5HGM74-1	
Needle jet (N.J.)	N-6M	
Throttle valve (Th.V.)	#2.5	
Pilot jet (P.J.)	#17.5	
Pilot screw (P.S.)	PRE-SET (2 and 1/4 turns back)	
Throttle cable play	2.0 – 4.0 mm (0.08 – 0.16 in)	

## ELECTRICAL

ITEM	SPECIFICATION		NOTE
Spark plug	Type	DENSO: X24ESR-U NGK: DR8EA	
	Gap	0.6 – 0.8 mm (0.024 – 0.031 in)	
Spark performance	Over 8 mm (0.3 in) at 1 atm.		
Ignition coil resistance	Primary	0.1 – 0.8 $\Omega$	W/BI – B/W
	Secondary	13 – 18 k $\Omega$	Plug cap – W/BI
Generator coil resistance	Charging	13 – 22 $\Omega$	Y – Y/R
	Pick-up coil	140 – 230 $\Omega$	G – B/W
Pick-up coil peak voltage	More than 2.0 V		⊕: G, ⊖: B/W
Ignition coil primary peak voltage	More than 150 V		⊕: B/W, ⊖: W/BI

**BRAKE + WHEEL**

Unit: mm (in)

ITEM		STANDARD/SPECIFICATION		LIMIT	
Brake lever play		DR-Z125	15 – 25 (0.6 – 1.0)	—	
		DR-Z125	0.1 – 0.3 (0.004 – 0.012)	—	
Rear brake pedal free travel		20 – 30 (0.8 – 1.2)		—	
Rear brake pedal height		-10 – 0 (-0.4 – 0)		—	
Brake drum I.D.		Rear	—	110.7	
Brake disc thickness		Front	3.5 ± 0.2 (0.14 ± 0.008)	3.0 (0.12)	
Brake disc runout		Front	—	0.30 (0.012)	
Master cylinder bore		Front	11.000 – 11.043 (0.4331 – 0.4348)	—	
Master cylinder piston diam.		Front	10.957 – 10.984 (0.4314 – 0.4324)	—	
Brake caliper cylinder bore		Front	30.230 – 30.306 (1.1902 – 1.1931)	—	
Brake caliper piston diam.		Front	30.150 – 30.200 (1.1870 – 1.1890)	—	
Brake fluid type		DOT 4		—	
Wheel rim runout		Axial	—	2.0 (0.08)	
		Radial	—	2.0 (0.08)	
Wheel axle runout		Front	—	0.25 (0.010)	
		Rear	—	0.25 (0.010)	
Wheel rim size		Front	DR-Z125	J17 × 1.40	—
			DR-Z125L	J19 × 1.40	—
		Rear	DR-Z125	J14 × 1.60	—
			DR-Z125L	J16 × 1.60	—
Tire size		Front	DR-Z125	70/100-17 40M	—
			DR-Z125L	70/100-19 42M	—
		Rear	DR-Z125	90/100-14 49M	—
			DR-Z125L	90/100-16 52M	—
Tire tread depth		Front	—	4.0 (0.16)	
		Rear	—	4.0 (0.16)	

**SUSPENSION**

Unit: mm (in)

ITEM	STANDARD/SPECIFICATION		LIMIT
Front fork stroke	180 (7.1)		—
Front fork spring free length	—		587 (23.1)
Front fork oil level	173.0 (6.81)		—
Front fork oil type	SUZUKI FORK OIL SS-08 (#10) or an equivalent fork oli		
Front fork oil capacity (each leg)	172 ml (4.3/4.5 US/lmp oz)		—
Rear shock absorber spring pre-set length	DR-Z125	240.5 (9.47)	—
	DR-Z125L	241.1 (9.49)	—
Rear wheel travel	DR-Z125	160 (6.3)	—
	DR-Z125L	170 (6.7)	—
Swingarm pivot shaft runout	—		0.6 (0.02)

**TIRE PRESSURE**

COLD INFLATION TIRE PRESSURE	kPa	kgf/cm <sup>2</sup>	psi
FRONT	100	1.0	14
REAR	105	1.0	14

**FUEL + OIL**

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane (R/2 + M/2) or 91 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Bu tyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.		
Fuel tank capacity	including reserve	6.6 L (1.7/1.5 US/lmp qt)	
	reserve	1.7 L (0.4/0.4 US/lmp qt)	
Engine oil type	SAE 10W-40, API SF or SG		
Engine oil capacity	Change	850 ml (0.9/0.7 US/lmp qt)	
	Filter change	950 ml (1.0/0.8 US/lmp qt)	
	Overhaul	1 100 ml (1.2/1.0 US/lmp qt)	

## TIGHTENING TORQUE CHASSIS

ITEM	N·m	kgf-m	lb-ft
Front axle nut (DR-Z125)	35	3.5	25.5
(DR-Z125L)	44	4.4	32.0
Front fork cap bolt	23	2.3	16.5
Front fork damper rod bolt	20	2.0	14.5
Front fork lower clamp bolt	33	3.3	24.0
Front fork upper clamp bolt	29	2.9	21.0
Steering stem head nut	* 65	6.5	47.0
Handlebar clamp bolt	23	2.3	16.5
Front brake master cylinder mounting bolt (DR-Z125L)	10	1.0	7.0
Front brake caliper mounting bolt (DR-Z125L)	23	2.3	16.5
Front brake hose union bolt (DR-Z125L)	23	2.3	16.5
Air bleeder valve (DR-Z125L)	7.5	0.75	5.5
Brake disc mounting nut (DR-Z125L)	8.5	0.85	6.0
Front footrest bolt	55	5.5	40.0
Brake pedal boss nut/bolt	29	2.9	21.0
Swingarm pivot nut	65	6.5	47.0
Rear shock absorber mounting bolt/nut (Upper & Lower)	* 50	5.0	36.0
Rear cushion lever bolt (Front)	55	5.5	40.0
Rear cushion lever nut (Center)	80	8.0	58.0
Rear cushion rod nut	80	8.0	58.0
Rear axle nut	45	4.5	32.5
Rear sprocket mounting nut	27	2.7	19.5
Brake cam lever nut	* 7.7	0.77	5.5
Spork nipple	4.5	0.45	3.0
Side stand bolt	50	5.0	36.0
Side stand nut	55	5.5	40.0

# **DR-Z125/LK6 ('06-MODEL)**

# **DR-Z125/LK7 ('07-MODEL)**

*This chapter describes service specifications, service data and servicing procedures which differ from those of the DR-Z125/LK4 ('04-model), DR-Z125/LK5 ('05-model).*

**NOTE:**

*\* Any differences between the DR-Z125/LK4 ('04-model), DR-Z125/LK5 ('05-model) and DR-Z125/LK6 ('06-model), DR-Z125/LK7 ('07-model) in specifications and service data are indicated with an asterisk mark (\*).*

*\* Please refer to the chapter 1 through 8 for details which are not given in this chapter.*

## **CONTENTS**

<b>SPECIFICATIONS .....</b>	<b>9- 2</b>
<b>SERVICE DATA .....</b>	<b>9- 3</b>



# SPECIFICATIONS

## DIMENSIONS AND DRY MASS

Overall length .....	1 835 mm (72.2 in)
Overall width .....	1 885 mm (74.2 in)..... Large wheel
Overall height .....	770 mm (30.3 in)
Overall height .....	1 060 mm (41.7 in)
Wheelbase .....	1 095 mm (43.1 in)..... Large wheel
Ground clearance .....	1 245 mm (49.0 in)
Seat height .....	1 270 mm (50.0 in)..... Large wheel
Dry mass .....	260 mm (10.2 in)
	290 mm (11.4 in)..... Large wheel
	775 mm (30.5 in)
	805 mm (32.0 in)..... Large wheel
	79 kg (174 lbs)
	80 kg (176 lbs)..... Large wheel

## ENGINE

Type .....	Four-stroke, air-cooled, OHC
Number of cylinders .....	1
Bore .....	57.0 mm (2.244 in)
Stroke .....	48.8 mm (1.921 in)
Displacement .....	124 cm <sup>3</sup> (7.6 cu. in)
Compression ratio .....	9.5 : 1
Carburetor .....	MIKUNI VM20SS
Air cleaner .....	Polyurethane foam element
Starter system .....	Primary Kick
Lubrication system .....	Wet sump
Idle speed .....	1 700 ± 100 r/min

## DRIVE TRAIN

Clutch .....	Wet multi-plate type
Transmission .....	5-speed constant mesh
Gearshift pattern .....	1-down, 4-up
Primary reduction ratio .....	3.470 (59/17)
Gear ratios, Low .....	3.000 (33/11)
2nd .....	1.857 (26/14)
3rd .....	1.368 (26/19)
4th .....	1.095 (23/21)
Top .....	0.923 (24/26)
Final reduction ratio .....	3.642 (51/14)
Drive chain .....	4.071 (57/14)..... Large wheel
	D.I.D.428HG, 122 links
	D.I.D.428HG, 130 links..... Large wheel

## CHASSIS

Front suspension .....	Telescopic, coil spring, oil damped,
Rear suspension .....	Link type, coil spring, oil damped,
Front suspension stroke .....	180 mm (7.1 in)
Rear wheel travel .....	160 mm (6.3 in)
Caster .....	170 mm (6.7 in)..... Large wheel
	28°
Trail .....	27° 30'..... Large wheel
	88 mm (3.46 in)
Steering angle .....	99 mm (3.90 in)..... Large wheel
Turning radius .....	45° (right & left)
Front brake .....	1.9 m (6.2 ft)
	2.0 m (6.6 ft)..... Large wheel
	Drum brake
	Disc brake..... Large wheel
Rear brake .....	Drum brake
Front tire size .....	70/100-17 40M, tube type
	70/100-19 42M, tube type..... Large wheel
Rear tire size .....	90/100-14 49M, tube type
	90/100-16 52M, tube type..... Large wheel

## ELECTRICAL

Ignition type .....	Electronic ignition (CDI)
Ignition timing .....	13° B.T.D.C. at 1 700 r/min
Spark plug .....	NGK DR8EA or DENSO X24ESR-U
Generator .....	Single-phase A.C. generator

## CAPACITIES

Fuel tank, including reserve .....	6.6 L (1.7/1.5 US/Imp gal)
Reserve .....	1.7 L (0.4/0.4 US/Imp gal)
Engine oil, oil change .....	850 ml (0.9/0.7 US/Imp qt)
with filter change .....	950 ml (1.0/0.8 US/Imp qt)
overhaul .....	1 100 ml (1.2/1.0 US/Imp qt)

# SERVICE DATA

## VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30 (1.2)	—
	EX.	26 (1.0)	—
Valve clearance (when cold)	IN.	0.08 – 0.13 (0.003 – 0.005)	—
	EX.	0.13 – 0.18 (0.005 – 0.007)	—
Valve guide to valve stem clearance	IN.	0.010 – 0.037 (0.0004 – 0.0015)	—
	EX.	0.030 – 0.057 (0.0012 – 0.0022)	—
Valve guide I.D.	IN. & EX.	5.500 – 5.512 (0.2165 – 0.2170)	—
Valve stem O.D.	IN.	5.475 – 5.490 (0.2156 – 0.2161)	—
	EX.	5.455 – 5.470 (0.2148 – 0.2154)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.014)
Valve stem end length	IN. & EX.	—	2.5 (0.10)
Valve seat width	IN. & EX.	0.9 – 1.1 (0.035 – 0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	36.0 (1.42)
	OUTER	—	39.3 (1.55)
Valve spring tension (IN. & EX.)	INNER	76 – 90 N (7.8 – 9.2 kgf, 17.2 – 20.3 lbs) at length 32.5 mm (1.28 in)	—
	OUTER	186 – 219 N (18.9 – 22.3 kgf, 41.7 – 49.2 lbs) at length 36.0 mm (1.42 in)	—

**CAMSHAFT + CYLINDER HEAD**

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN. & EX.	33.13 – 33.17 (1.304 – 1.306)	32.83 (1.29)
Camshaft journal oil clearance	IN. & EX.	0.032 – 0.066 (0.0013 – 0.0026)	0.150 (0.0059)
Camshaft journal holder I.D.	IN. & EX.	22.012 – 22.025 (0.8666 – 0.8671)	—
Camshaft journal O.D.	IN. & EX.	21.959 – 21.980 (0.8645 – 0.8654)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000 – 12.018 (0.4724 – 0.4731)	—
Rocker arm shaft O.D.	IN. & EX.	11.977 – 11.995 (0.4715 – 0.4722)	—
Cylinder head distortion	—		0.05 (0.002)
Cylinder head cover distortion	—		0.05 (0.002)

**CYLINDER + PISTON + PISTON RING**

Unit: mm (in)

ITEM	STANDARD		LIMIT	
Compression pressure	1 200 – 1 600 kPa (12 – 16 kgf/cm <sup>2</sup> , 171 – 228 psi)		1 000 kPa (10 kgf/cm <sup>2</sup> , 142 psi)	
Piston to cylinder clearance	0.020 – 0.030 (0.0008 – 0.0012)		0.120 (0.0047)	
Cylinder bore	57.000 – 57.015 (2.2440 – 2.2447)		57.110 (2.2484)	
Piston diam.	56.975 – 56.990 (2.2431 – 2.2437) Measure at 12 mm (0.5 in) from the skirt end.		56.880 (2.2394)	
Cylinder distortion	—		0.05 (0.002)	
Piston ring free end gap	1st	R	Approx. 7.0 (0.28)	5.6 (0.22)
	2nd	R	Approx. 8.5 (0.33)	6.8 (0.27)
Piston ring end gap	1st	0.10 – 0.25 (0.004 – 0.010)		0.5 (0.02)
	2nd	0.10 – 0.25 (0.004 – 0.010)		0.5 (0.02)
Piston ring to groove clearance	1st	—		0.18 (0.007)
	2nd	—		0.15 (0.006)
Piston ring groove width	1st	1.21 – 1.23 (0.047 – 0.048)		—
	2nd	1.21 – 1.23 (0.047 – 0.048)		—
	Oil	2.51 – 2.53 (0.099 – 0.100)		—

ITEM	STANDARD		LIMIT
Piston ring thickness	1st	1.175 – 1.190 (0.0463 – 0.0469)	—
	2nd	1.170 – 1.190 (0.0461 – 0.0469)	—
Piston pin bore	14.002 – 14.008 (0.5513 – 0.5515)		14.030 (0.5524)
Piston pin O.D.	13.994 – 14.002 (0.5509 – 0.5513)		13.980 (0.5504)

**CONROD + CRANKSHAFT**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	14.004 – 14.012 (0.5513 – 0.5517)	14.040 (0.5528)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10 – 0.45 (0.004 – 0.018)	1.0 (0.04)
Conrod big end width	15.95 – 16.00 (0.628 – 0.630)	—
Crank web to web width	53.0 ± 0.1 (2.09 ± 0.004)	—
Crankshaft runout	—	0.08 (0.003)

**OIL PUMP**

ITEM	STANDARD	LIMIT
Oil pressure (at 60°C, 140°F)	Above 15 kPa (0.15 kgf/cm <sup>2</sup> , 2.1 psi) Below 35 kPa (0.35 kgf/cm <sup>2</sup> , 4.9 psi) at 3 000 r/min	—

**CLUTCH**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10 – 15 (0.4 – 0.6)	—
Drive plate thickness	2.90 – 3.10 (0.114 – 0.122)	2.60 (0.102)
Drive plate claw width	11.8 – 12.0 (0.46 – 0.47)	11.5 (0.45)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	32.6 (1.28)	31.0 (1.22)

**DRIVE TRAIN + DRIVE CHAIN**

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.470 (59/17)		—
Final reduction ratio		DR-Z125	3.642 (51/14)	—
		DR-Z125L	4.071 (57/14)	—
Gear ratios	Low	3.000 (33/11)		—
	2nd	1.857 (26/14)		—
	3rd	1.368 (26/19)		—
	4th	1.095 (23/21)		—
	Top	0.923 (24/26)		—
Shift fork to groove clearance		0.10 – 0.30 (0.004 – 0.012)		0.50 (0.02)
Shift fork groove width		No. 1	5.0 – 5.1 (0.196 – 0.201)	—
		No. 2	5.5 – 5.6 (0.217 – 0.224)	—
Shift fork thickness		No. 1	4.8 – 4.9 (0.189 – 0.193)	—
		No. 2	5.3 – 5.4 (0.209 – 0.213)	—
Countershaft length (Low to 2nd)		88.0 <sup>+0.1</sup> <sub>0</sub> (3.46 <sup>+0.004</sup> <sub>0</sub> )		—
Drive chain	Type	D.I.D. 428HG		—
	Links	DR-Z125	122	—
		DR-Z125L	130	—
20-pitch length	—		259.0 (10.20)	
Drive chain slack		35 – 45 (1.4 – 1.8)		—
Gearshift lever height		5 – Above 5 (0.2 – Above 0.2)		—

**CARBURETOR**

ITEM		SPECIFICATION
Carburetor type		MIKUNI VM20SS
Bore size		20 mm (0.8 in)
I.D. No.		08G0
Idle r/min		1 700 ± 100 r/min
Float height		18.9 ± 1.0 mm (0.74 ± 0.04 in)
Main jet	(M.J.)	#102.5
Jet needle	(J.N.)	5HGM74-1
Needle jet	(N.J.)	N-6M
Pilot jet	(P.J.)	#17.5
Pilot screw	(P.S.)	PRE-SET (2 and 1/4 turns back)
Throttle cable play		2.0 – 4.0 mm (0.08 – 0.16 in)

**ELECTRICAL**

ITEM	SPECIFICATION		NOTE
Spark plug	Type	DENSO: X24ESR-U NGK: DR8EA	
	Gap	0.6 – 0.8 mm (0.024 – 0.031 in)	
Spark performance	Over 8 mm (0.3 in) at 1 atm.		
Ignition coil resistance	Primary	0.1 – 0.8 $\Omega$	W/BI – B/W
	Secondary	13 – 18 k $\Omega$	Plug cap – W/BI
Generator coil resistance	Charging	13 – 22 $\Omega$	Y – Y/R
	Pick-up coil	140 – 230 $\Omega$	G – B/W
Pick-up coil peak voltage	More than 2.0 V		⊕: G, ⊖: B/W
Ignition coil primary peak voltage	More than 150 V		⊕: B/W, ⊖: W/BI

**BRAKE + WHEEL**

Unit: mm (in)

ITEM	STANDARD/SPECIFICATION		LIMIT
Brake lever play	DR-Z125	0.1 – 0.3 (0.004 – 0.012)	—
Front brake cable play	DR-Z125	15 – 25 (0.6 – 1.0)	—
Rear brake pedal free travel	20 – 30 (0.8 – 1.2)		—
Rear brake pedal height	10 – 0 (0.4 – 0)		—
Brake drum I.D.	Front	DR-Z125	—
	Rear		—
Brake disc thickness	Front	DR-Z125L	3.5 ± 0.2 (0.14 ± 0.008)
Brake disc runout	Front	DR-Z125L	—
Master cylinder bore	Front	DR-Z125L	11.000 – 11.043 (0.4331 – 0.4348)
Master cylinder piston diam.	Front	DR-Z125L	10.957 – 10.984 (0.4314 – 0.4324)
Brake caliper cylinder bore	Front	DR-Z125L	30.230 – 30.306 (1.1902 – 1.1931)
Brake caliper piston diam.	Front	DR-Z125L	30.150 – 30.200 (1.1870 – 1.1890)
Brake fluid type	Front	DR-Z125L	DOT 4
Wheel rim runout	Axial		—
	Radial		—
Wheel axle runout	Front		—
	Rear		—

ITEM		STANDARD/SPECIFICATION		LIMIT
Wheel rim size	Front	DR-Z125	J17 × 1.40	—
		DR-Z125L	J19 × 1.40	—
	Rear	DR-Z125	J14 × 1.60	—
		DR-Z125L	J16 × 1.60	—
Tire size	Front	DR-Z125	70/100-17 40M	—
		DR-Z125L	70/100-19 42M	—
	Rear	DR-Z125	90/100-14 49M	—
		DR-Z125L	90/100-16 52M	—
Tire tread depth	Front	—		4.0 (0.16)
	Rear	—		4.0 (0.16)

**SUSPENSION**

Unit: mm (in)

ITEM	STANDARD/SPECIFICATION		LIMIT
Front fork stroke	180 (7.1)		—
Front fork spring free length	599.1 (23.59)		587 (23.1)
Front fork oil level	173 (6.8)		—
Front fork oil type	SUZUKI FORK OIL SS-08 (#10) or an equivalent fork oil		—
Front fork oil capacity (each leg)	172 ml (4.3/4.5 US/Imp oz)		—
Front fork inner tube O.D.	30 (1.2)		—
Rear shock absorber spring pre-set length	DR-Z125	240.5 (9.47)	—
	DR-Z125L	241.1 (9.49)	—
Rear wheel travel	DR-Z125	160 (6.3)	—
	DR-Z125L	170 (6.7)	—
Swingarm pivot shaft runout	—		0.6 (0.02)

**TIRE PRESSURE**

COLD INFLATION TIRE PRESSURE	kPa	kgf/cm <sup>2</sup>	psi
FRONT	100	1.0	14
REAR	100	1.0	14

**FUEL + OIL**

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane (R/2 + 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.		
Fuel tank capacity including reserve	6.6 L (1.7/1.5 US/Imp qt)		
reserve	1.7 L (0.4/0.4 US/Imp qt)		
Engine oil type	* SAE 10W-40, API SF/SG or SH/SJ with JASO MA		
Engine oil capacity	Change	850 ml (0.9/0.7 US/Imp qt)	
	Filter change	950 ml (1.0/0.8 US/Imp qt)	
	Overhaul	1 100 ml (1.2/1.0 US/Imp qt)	



# DR-Z125/LK8 ('08-MODEL)

*This chapter describes service specifications, service data and servicing procedures which differ from those of the DR-Z125/LK6 ('06-model), DR-Z125/LK7 ('07-model).*

**NOTE:**

*\* Any differences between the DR-Z125/LK6 ('06-model), DR-Z125/LK7 ('07-model) and DR-Z125/LK8 ('08-model) in specifications and service data are indicated with an asterisk mark (\*).*

*\* Please refer to the chapter 1 through 9 for details which are not given in this chapter.*

## CONTENTS

<b>SPECIFICATIONS .....</b>	<b>10- 2</b>
<b>SERVICE DATA .....</b>	<b>10- 3</b>
<b>TIGHTENING TORQUE .....</b>	<b>10-10</b>
<b>CABLE ROUTING .....</b>	<b>10-11</b>
<b>FUEL HOSE AND FUEL TANK INSTALLATION .....</b>	<b>10-12</b>

# SPECIFICATIONS

## DIMENSIONS AND DRY MASS

Overall length .....	1 835 mm (72.2 in)
Overall width .....	1 885 mm (74.2 in) ..... Large wheel
Overall height .....	770 mm (30.3 in)
Wheelbase .....	* 1 085 mm (42.7 in)
Ground clearance .....	* 1 110 mm (43.7 in) ..... Large wheel
Seat height .....	1 245 mm (49.0 in)
Dry mass .....	1 270 mm (50.0 in) ..... Large wheel
	260 mm (10.2 in)
	290 mm (11.4 in) ..... Large wheel
	775 mm (30.5 in)
	805 mm (32.0 in) ..... Large wheel
	79 kg (174 lbs)
	80 kg (176 lbs) ..... Large wheel

## ENGINE

Type .....	Four-stroke, air-cooled, OHC
Number of cylinders .....	1
Bore .....	57.0 mm (2.244 in)
Stroke .....	48.8 mm (1.921 in)
Displacement .....	124 cm <sup>3</sup> (7.6 cu. in)
Compression ratio .....	9.5 : 1
Carburetor .....	MIKUNI VM20SS
Air cleaner .....	Polyurethane foam element
Starter system .....	Primary Kick
Lubrication system .....	Wet sump
Idle speed .....	1 700 ± 100 r/min

## DRIVE TRAIN

Clutch .....	Wet multi-plate type
Transmission .....	5-speed constant mesh
Gearshift pattern .....	1-down, 4-up
Primary reduction ratio .....	3.470 (59/17)
Gear ratios, Low .....	3.000 (33/11)
2nd .....	1.857 (26/14)
3rd .....	1.368 (26/19)
4th .....	1.095 (23/21)
Top .....	0.923 (24/26)
Final reduction ratio .....	3.642 (51/14)
Drive chain .....	4.071 (57/14) ..... Large wheel
	D.I.D.428HG, 122 links
	D.I.D.428HG, 130 links ..... Large wheel

## CHASSIS

Front suspension .....	Telescopic, coil spring, oil damped
Rear suspension .....	Link type, coil spring, oil damped
Front suspension stroke .....	180 mm (7.1 in)
Rear wheel travel .....	160 mm (6.3 in)
Caster .....	170 mm (6.7 in) ..... Large wheel
	28°
	27° 30' ..... Large wheel
Trail .....	88 mm (3.46 in)
	99 mm (3.90 in) ..... Large wheel
Steering angle .....	45° (right & left)
Turning radius .....	1.9 m (6.2 ft)
	2.0 m (6.6 ft) ..... Large wheel
Front brake .....	Drum brake
	Disc brake ..... Large wheel
Rear brake .....	Drum brake
Front tire size .....	70/100-17 40M, tube type
	70/100-19 42M, tube type . Large wheel
Rear tire size .....	90/100-14 49M, tube type
	90/100-16 52M, tube type . Large wheel

## ELECTRICAL

Ignition type .....	Electronic ignition (CDI)
Ignition timing .....	13° B.T.D.C. at 1 700 r/min
Spark plug .....	NGK DR8EA or DENSO X24ESR-U
Generator .....	Single-phase A.C. generator

## CAPACITIES

Fuel tank, including reserve .....	* 4.8 L (1.3/1.1 US/Imp gal)
Reserve .....	* 1.1 L (0.3/0.3 US/Imp gal)
Engine oil, oil change .....	850 ml (0.9/0.7 US/Imp qt)
with filter change .....	950 ml (1.0/0.8 US/Imp qt)
overhaul .....	1 100 ml (1.2/1.0 US/Imp qt)

## SERVICE DATA

### VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30 (1.2)	—
	EX.	26 (1.0)	—
Valve clearance (when cold)	IN.	0.08 – 0.13 (0.003 – 0.005)	—
	EX.	0.13 – 0.18 (0.005 – 0.007)	—
Valve guide to valve stem clearance	IN.	0.010 – 0.037 (0.0004 – 0.0015)	—
	EX.	0.030 – 0.057 (0.0012 – 0.0022)	—
Valve guide I.D.	IN. & EX.	5.500 – 5.512 (0.2165 – 0.2170)	—
Valve stem O.D.	IN.	5.475 – 5.490 (0.2156 – 0.2161)	—
	EX.	5.455 – 5.470 (0.2148 – 0.2154)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.014)
Valve stem end length	IN. & EX.	—	2.5 (0.10)
Valve seat width	IN. & EX.	0.9 – 1.1 (0.035 – 0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	36.0 (1.42)
	OUTER	—	39.3 (1.55)
Valve spring tension (IN. & EX.)	INNER	76 – 90 N (7.8 – 9.2 kgf, 17.2 – 20.3 lbs) at length 32.5 mm (1.28 in)	—
	OUTER	186 – 219 N (18.9 – 22.3 kgf, 41.7 – 49.2 lbs) at length 36.0 mm (1.42 in)	—

**CAMSHAFT + CYLINDER HEAD**

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN. & EX.	33.13 – 33.17 (1.304 – 1.306)	32.83 (1.29)
Camshaft journal oil clearance	IN. & EX.	0.032 – 0.066 (0.0013 – 0.0026)	0.150 (0.0059)
Camshaft journal holder I.D.	IN. & EX.	22.012 – 22.025 (0.8666 – 0.8671)	—
Camshaft journal O.D.	IN. & EX.	21.959 – 21.980 (0.8645 – 0.8654)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Rocker arm I.D.	IN. & EX.	12.000 – 12.018 (0.4724 – 0.4731)	—
Rocker arm shaft O.D.	IN. & EX.	11.977 – 11.995 (0.4715 – 0.4722)	—
Cylinder head distortion	—		0.05 (0.002)
Cylinder head cover distortion	—		0.05 (0.002)

**CYLINDER + PISTON + PISTON RING**

Unit: mm (in)

ITEM	STANDARD		LIMIT	
Compression pressure	1 200 – 1 600 kPa (12 – 16 kgf/cm <sup>2</sup> , 171 – 228 psi)		1 000 kPa (10 kgf/cm <sup>2</sup> , 142 psi)	
Piston to cylinder clearance	0.020 – 0.030 (0.0008 – 0.0012)		0.120 (0.0047)	
Cylinder bore	57.000 – 57.015 (2.2440 – 2.2447)		57.110 (2.2484)	
Piston diam.	56.975 – 56.990 (2.2431 – 2.2437) Measure at 12 mm (0.5 in) from the skirt end.		56.880 (2.2394)	
Cylinder distortion	—		0.05 (0.002)	
Piston ring free end gap	1st	R	Approx. 7.0 (0.28)	5.6 (0.22)
	2nd	R	Approx. 8.5 (0.33)	6.8 (0.27)
Piston ring end gap	1st	0.10 – 0.25 (0.004 – 0.010)		0.5 (0.02)
	2nd	0.10 – 0.25 (0.004 – 0.010)		0.5 (0.02)
Piston ring to groove clearance	1st	—		0.18 (0.007)
	2nd	—		0.15 (0.006)
Piston ring groove width	1st	1.21 – 1.23 (0.047 – 0.048)		—
	2nd	1.21 – 1.23 (0.047 – 0.048)		—
	Oil	2.51 – 2.53 (0.099 – 0.100)		—

ITEM	STANDARD		LIMIT
Piston ring thickness	1st	1.175 – 1.190 (0.0463 – 0.0469)	—
	2nd	1.170 – 1.190 (0.0461 – 0.0469)	—
Piston pin bore	14.002 – 14.008 (0.5513 – 0.5515)		14.030 (0.5524)
Piston pin O.D.	13.994 – 14.002 (0.5509 – 0.5513)		13.980 (0.5504)

**CONROD + CRANKSHAFT**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	14.004 – 14.012 (0.5513 – 0.5517)	14.040 (0.5528)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10 – 0.45 (0.004 – 0.018)	1.0 (0.04)
Conrod big end width	15.95 – 16.00 (0.628 – 0.630)	—
Crank web to web width	53.0 ± 0.1 (2.09 ± 0.004)	—
Crankshaft runout	—	0.08 (0.003)

**OIL PUMP**

ITEM	STANDARD	LIMIT
Oil pressure (at 60°C, 140°F)	Above 15 kPa (0.15 kgf/cm <sup>2</sup> , 2.1 psi) Below 35 kPa (0.35 kgf/cm <sup>2</sup> , 4.9 psi) at 3 000 r/min	—

**CLUTCH**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10 – 15 (0.4 – 0.6)	—
Drive plate thickness	2.90 – 3.10 (0.114 – 0.122)	2.60 (0.102)
Drive plate claw width	11.8 – 12.0 (0.46 – 0.47)	11.5 (0.45)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	32.6 (1.28)	31.0 (1.22)

**DRIVE TRAIN + DRIVE CHAIN**

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.470 (59/17)		—
Final reduction ratio		DR-Z125	3.642 (51/14)	—
		DR-Z125L	4.071 (57/14)	—
Gear ratios	Low	3.000 (33/11)		—
	2nd	1.857 (26/14)		—
	3rd	1.368 (26/19)		—
	4th	1.095 (23/21)		—
	Top	0.923 (24/26)		—
Shift fork to groove clearance		0.10 – 0.30 (0.004 – 0.012)		0.50 (0.02)
Shift fork groove width		No. 1	5.0 – 5.1 (0.196 – 0.201)	—
		No. 2	5.5 – 5.6 (0.217 – 0.224)	—
Shift fork thickness		No. 1	4.8 – 4.9 (0.189 – 0.193)	—
		No. 2	5.3 – 5.4 (0.209 – 0.213)	—
Countershaft length (Low to 2nd)		88.0 <sup>+0.1</sup> <sub>-0</sub> (3.46 <sup>+0.004</sup> <sub>-0</sub> )		—
Drive chain	Type	D.I.D. 428HG		—
	Links	DR-Z125	122	—
		DR-Z125L	130	—
20-pitch length	—		259.0 (10.20)	
Drive chain slack		35 – 45 (1.4 – 1.8)		—
Gearshift lever height		5 – Above 5 (0.2 – Above 0.2)		—

**CARBURETOR**

ITEM		SPECIFICATION
Carburetor type		MIKUNI VM20SS
Bore size		20 mm (0.8 in)
I.D. No.		08G0
Idle r/min		1 700 ± 100 r/min
Float height		18.9 ± 1.0 mm (0.74 ± 0.04 in)
Main jet	(M.J.)	#102.5
Jet needle	(J.N.)	5HGM74-1
Needle jet	(N.J.)	N-6M
Pilot jet	(P.J.)	#17.5
Pilot screw	(P.S.)	PRE-SET (2 and 1/4 turns back)
Throttle cable play		2.0 – 4.0 mm (0.08 – 0.16 in)

**ELECTRICAL**

ITEM	SPECIFICATION		NOTE
Spark plug	Type	DENSO: X24ESR-U NGK: DR8EA	
	Gap	0.6 – 0.8 mm (0.024 – 0.031 in)	
Spark performance	Over 8 mm (0.3 in) at 1 atm.		
Ignition coil resistance	Primary	0.1 – 0.8 $\Omega$	W/BI – B/W
	Secondary	13 – 18 k $\Omega$	Plug cap – W/BI
Generator coil resistance	Charging	13 – 22 $\Omega$	Y – Y/R
	Pick-up coil	140 – 230 $\Omega$	G – B/W
Pick-up coil peak voltage	More than 2.0 V		⊕: G, ⊖: B/W
Ignition coil primary peak voltage	More than 150 V		⊕: B/W, ⊖: W/BI

**BRAKE + WHEEL**

Unit: mm (in)

ITEM	STANDARD/SPECIFICATION		LIMIT
Brake lever play	DR-Z125	0.1 – 0.3 (0.004 – 0.012)	—
Front brake cable play	DR-Z125	15 – 25 (0.6 – 1.0)	—
Rear brake pedal free travel	20 – 30 (0.8 – 1.2)		—
Rear brake pedal height	10 – 0 (0.4 – 0)		—
Brake drum I.D.	Front	DR-Z125	—
	Rear		—
Brake disc thickness	Front	DR-Z125L	3.5 ± 0.2 (0.14 ± 0.008)
Brake disc runout	Front	DR-Z125L	—
Master cylinder bore	Front	DR-Z125L	11.000 – 11.043 (0.4331 – 0.4348)
Master cylinder piston diam.	Front	DR-Z125L	10.957 – 10.984 (0.4314 – 0.4324)
Brake caliper cylinder bore	Front	DR-Z125L	30.230 – 30.306 (1.1902 – 1.1931)
Brake caliper piston diam.	Front	DR-Z125L	30.150 – 30.200 (1.1870 – 1.1890)
Brake fluid type	Front	DR-Z125L	DOT 4
Wheel rim runout	Axial		—
	Radial		—
Wheel axle runout	Front		—
	Rear		—

ITEM		STANDARD/SPECIFICATION		LIMIT
Wheel rim size	Front	DR-Z125	J17 × 1.40	—
		DR-Z125L	J19 × 1.40	—
	Rear	DR-Z125	J14 × 1.60	—
		DR-Z125L	J16 × 1.60	—
Tire size	Front	DR-Z125	70/100-17 40M	—
		DR-Z125L	70/100-19 42M	—
	Rear	DR-Z125	90/100-14 49M	—
		DR-Z125L	90/100-16 52M	—
Tire tread depth	Front	—		4.0 (0.16)
	Rear	—		4.0 (0.16)

## SUSPENSION

Unit: mm (in)

ITEM	STANDARD/SPECIFICATION		LIMIT
Front fork stroke	180 (7.1)		—
Front fork spring free length	599.1 (23.59)		587 (23.1)
Front fork oil level	173 (6.8)		—
Front fork oil type	SUZUKI FORK OIL SS-08 (#10) or an equivalent fork oil		—
Front fork oil capacity (each leg)	172 ml (4.3/4.5 US/Imp oz)		—
Front fork inner tube O.D.	30 (1.2)		—
Rear shock absorber spring pre-set length	DR-Z125	240.5 (9.47)	—
	DR-Z125L	241.1 (9.49)	—
Rear wheel travel	DR-Z125	160 (6.3)	—
	DR-Z125L	170 (6.7)	—
Swingarm pivot shaft runout	—		0.6 (0.02)

## TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	kPa	kgf/cm <sup>2</sup>	psi
FRONT	100	1.0	14
REAR	100	1.0	14



**FUEL + OIL**

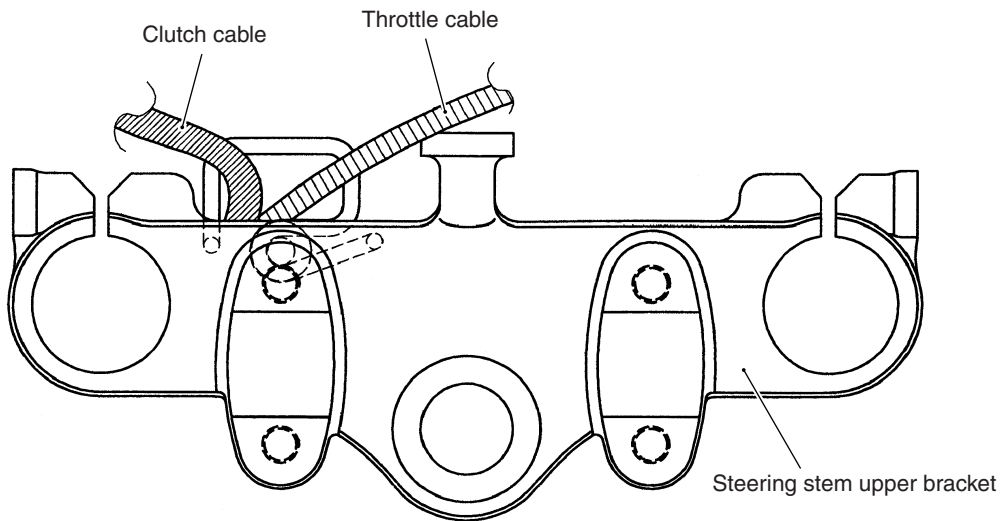
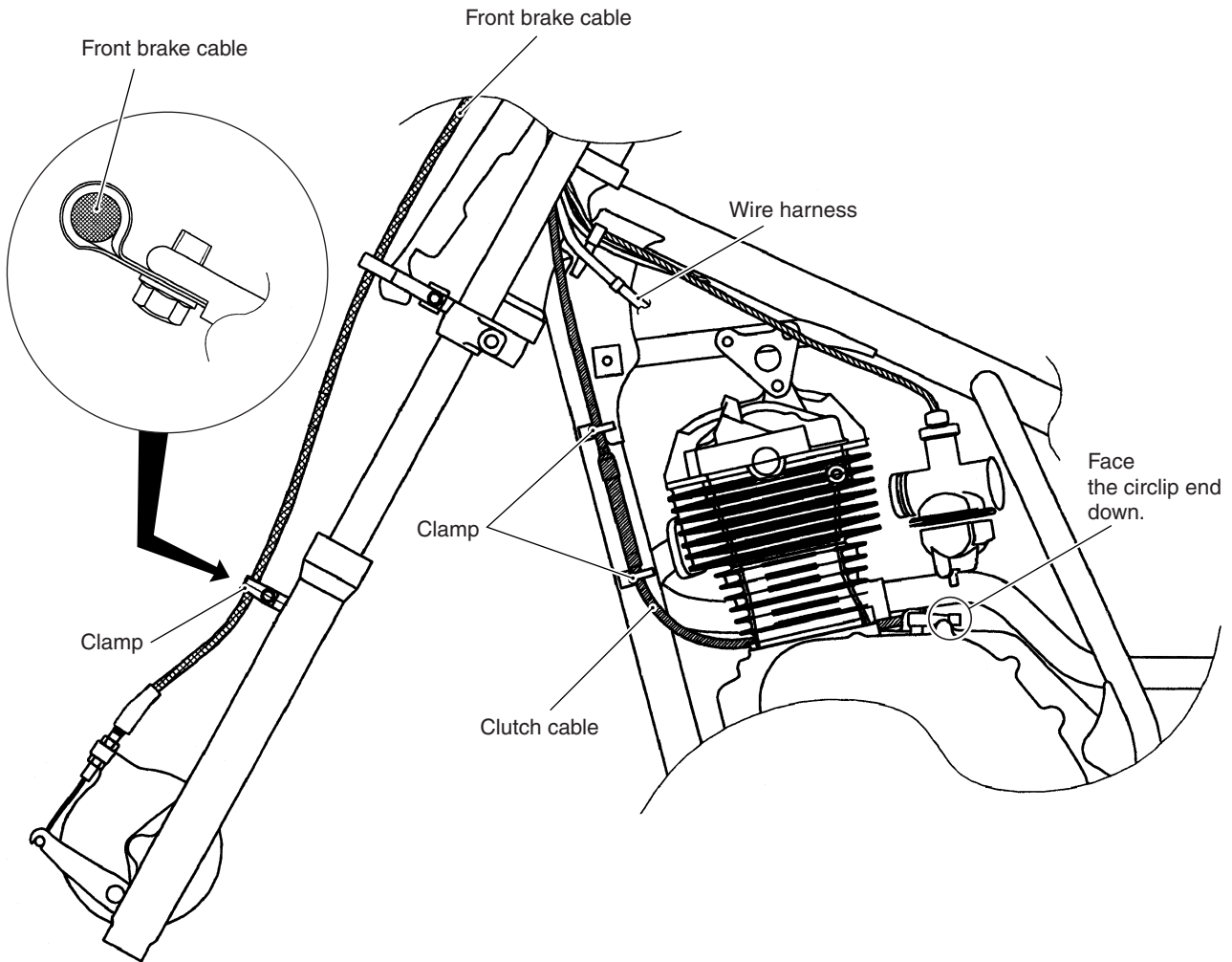
ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane (R/2 + M/2) or 91 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.		
Fuel tank capacity including reserve	* 4.8 L (1.3/1.1 US/Imp gal)		
reserve	* 1.1 L (0.3/0.3 US/Imp gal)		
Engine oil type	SAE 10W-40, API SF/SG or SH/SJ with JASO MA		
Engine oil capacity	Change	850 ml (0.9/0.7 US/Imp qt)	
	Filter change	950 ml (1.0/0.8 US/Imp qt)	
	Overhaul	1 100 ml (1.2/1.0 US/Imp qt)	

## TIGHTENING TORQUE

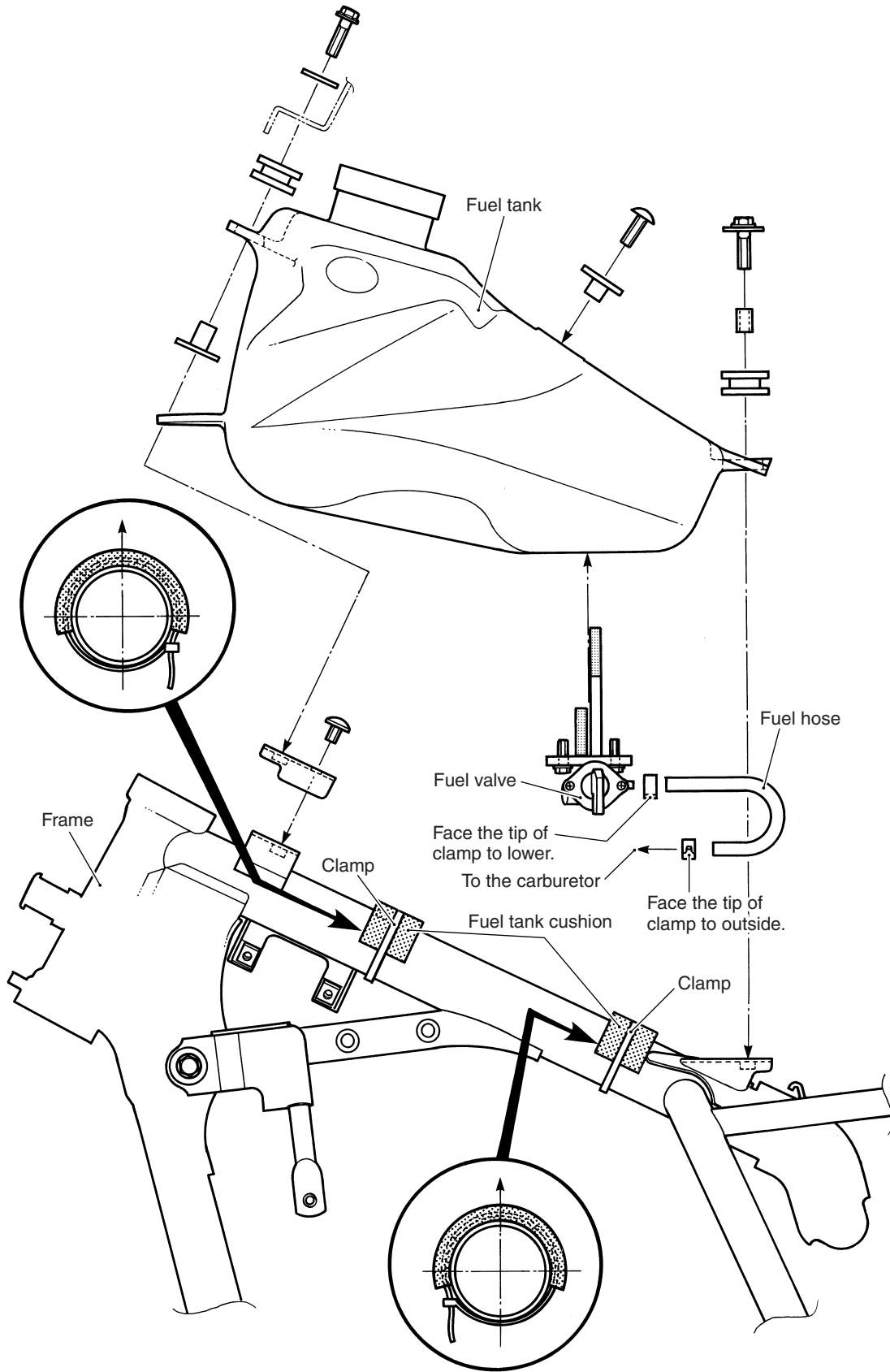
### CHASSIS

ITEM	N-m	kgf-m	lb-ft
Front axle nut (DR-Z125)	* 42	* 4.2	* 30.5
(DR-Z125L)	* 49	* 4.9	* 35.5
Front fork cap bolt	23	2.3	16.5
Front fork damper rod bolt	20	2.0	14.5
Front fork lower clamp bolt	33	3.3	24.0
Front fork upper clamp bolt	29	2.9	21.0
Steering stem head nut	65	6.5	47.0
Handlebar clamp bolt	23	2.3	16.5
Front brake master cylinder mounting bolt (DR-Z125L)	10	1.0	7.0
Front brake caliper mounting bolt (DR-Z125L)	23	2.3	16.5
Front brake hose union bolt (DR-Z125L)	23	2.3	16.5
Air bleeder valve (DR-Z125L)	7.5	0.75	5.5
Brake disc mounting nut (DR-Z125L)	8.5	0.85	6.0
Front footrest bolt	55	5.5	40.0
Brake pedal boss nut/bolt	29	2.9	21.0
Swingarm pivot nut	65	6.5	47.0
Rear shock absorber mounting bolt/nut (Upper & Lower)	50	5.0	36.0
Rear cushion lever bolt (Front)	55	5.5	40.0
Rear cushion lever nut (Center)	80	8.0	58.0
Rear cushion rod nut	80	8.0	58.0
Rear axle nut	* 54	* 5.4	* 39.0
Rear sprocket mounting nut	27	2.7	19.5
Brake cam lever nut	7.7	0.77	5.5
Spork nipple	4.5	0.45	3.0
Side stand bolt	50	5.0	36.0
Side stand nut	55	5.5	40.0

# CABLE ROUTING



# FUEL HOSE AND FUEL TANK INSTALLATION



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