

6. ENGINE REMOVAL/INSTALLATION

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SERVICE INFORMATION

GENERAL SAFETY



NOTE

- Use a jack to remove or install the engine. Support the motorcycle with a jack firmly, taking precautions not to damage the frame, engine, cable or harness.
- Attach tape to the frame to protect it during the engine removal or installation.

6

The following works can be carried out without removing the engine from the vehicle body.

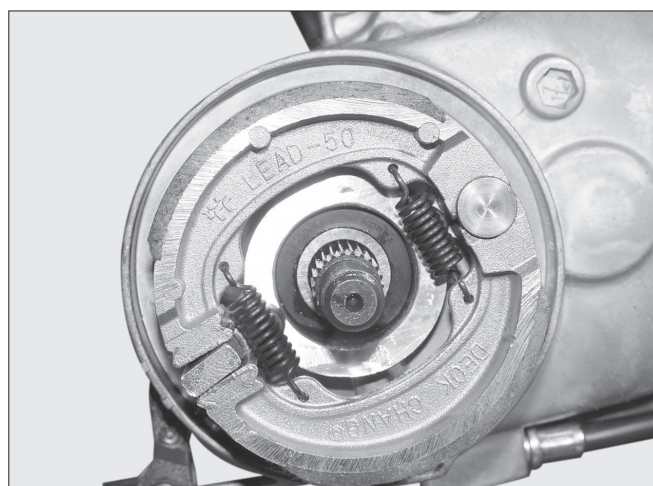
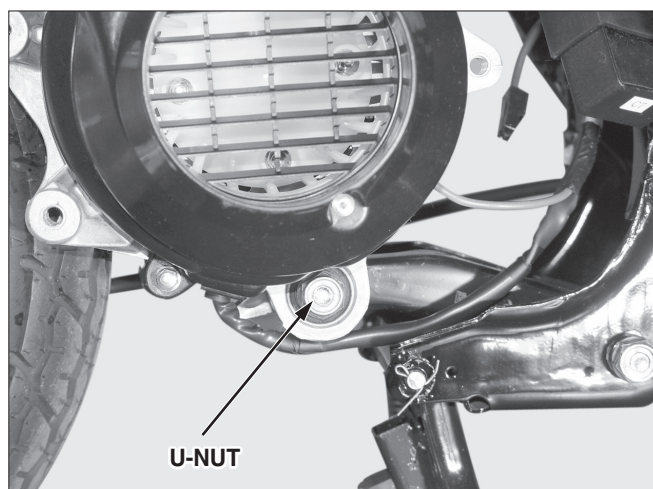
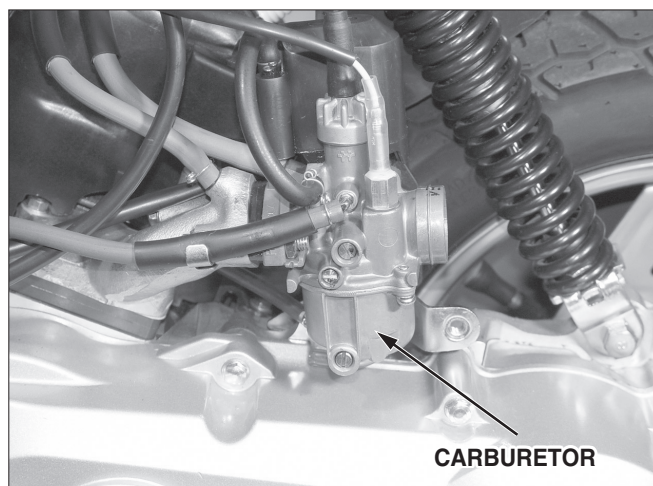
- TRANSMISSION (⇒SECTION 9)
- A.C. GENERATOR (⇒SECTION 13)
- KICK STARTER/ CONTINUOUSLY VARIABLE TRANSMISSION (⇒SECTION 7)
- CYLINDER HEAD/ CYLINDER/ PISTON (⇒SECTION 8)
- CARBURETOR (⇒SECTION 5)
- OIL PUMP (⇒SECTION 4)

Items to be worked after removing engine

- CRANKSHAFT, CRANKSHAFT BEARING, CRANK CASE BEARING.

TORQUE VALUES :

ENGINE HANGER BOLT (ENGINE) : 5.0kgf · m
(FRAME) : 7.3kgf · m



ENGINE REMOVAL/INSTALLATION

Remove the luggage box. (⇒3-3)
Remove the plug maintenance cover. (⇒3-3)
Remove the center cover. (⇒3-3)
Disconnect the AC generator coupler. (⇒13-7)
Disconnect the carburetor auto bystarter coupler.
Remove the spark plug cap.
Remove the oil pump cable.
Remove the oil tube connected to the oil pump.
Remove the negative pressure tube connected to the inlet pipe.
Remove the fuel tube connected to the carburetor and the auto cock.

Loosen the carburetor cap top, remove the throttle valve.

Loosen the rear brake adjust nut, remove the brake arm joint B and rear brake cable.

Loosen the under bolt at the end of rear cushion.

Loosen the engine hanger U-nut.
Loosen the engine hanger flange bolt.
Remove the engine. (with the muffler and rear wheel attached)

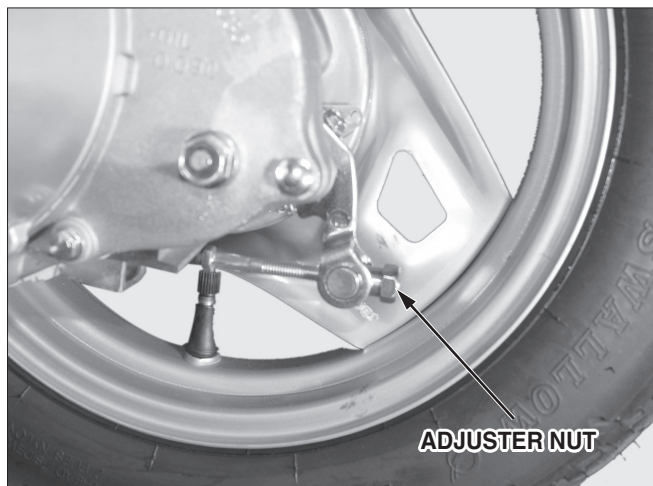
NOTE

- Take action to prevent oil from leaking (Install the clip in the oil tube)
- Take precautions not to damage the engine when removing the engine from the chassis.

Remove the muffler. (⇒3-7)
Remove the rear wheel. (⇒11-3)
Install in the reverse order of removal.

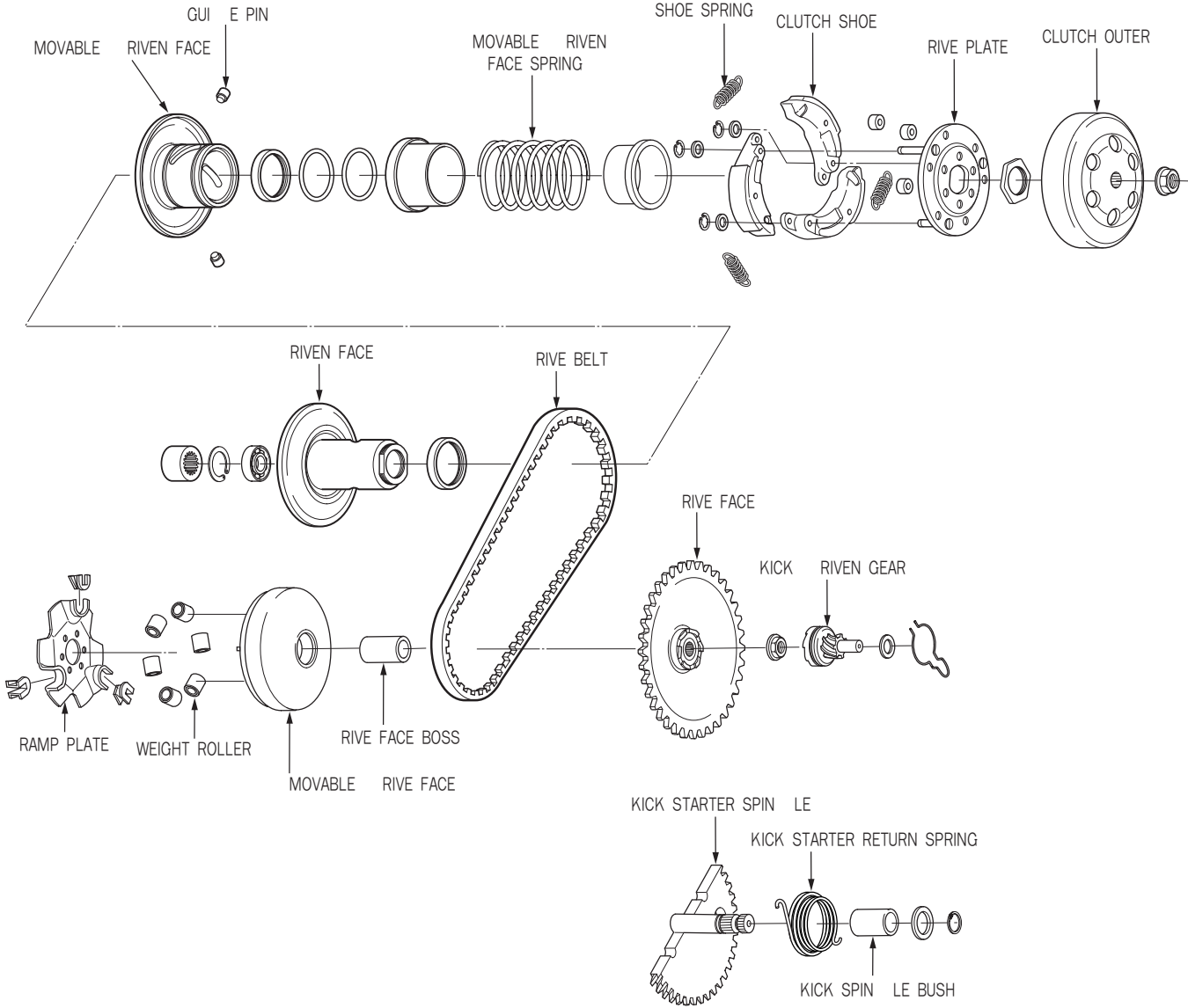
NOTE

- Take precautions not to damage wiring and cable.
- Take precautions not to damage the threaded part of bolts.
- Arrange the cable, tubes and wiring in the right positions.



Check the following after the engine is assembled.

- Electric systems.
- Adjust of the rear brake free play.
- Inspection of the throttle cable operation.
- Inspection of the oil pump cable operation.



7. KICK STARTER/CONTINUOUSLY VARIABLE TRANSMISSION

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SERVICE INFORMATION

GENERAL SAFETY

Do not allow oil to contact the drive belt or the pulley face. The transmission rate of driving force is reduced with oil contact.
Do not operate starter motor while the L. crank case front cover is removed.

NOTE

- Take precautions not to apply the grease oil to the movable drive face or weight roller.

SPECIFICATIONS

ITEM	STANDARD	SERVICE LIMIT
MOVABLE DRIVE FACE BUSHING INNER DIAMETER	20.035-20.085mm	20.60mm
DRIVE FACE BOSS OUTER DIAMETER	20.011-20.025mm	19.97mm
DRIVE BELT WIDTH	17.5mm	16.50mm
WEIGHT ROLLER OUTER DIAMETER	15.920-16.080mm	15.40mm
CLUTCH OUTER AND INNER DIAMETER	107.0-107.2mm	107.50mm
DRIVEN FACE SPRING PLAY	98.1mm	32.80mm
DRIVEN FACE OUTER DIAMETER	33.965-33.985mm	33.94mm
DRIVEN FACE INNER DIAMETER	34.000-34.025mm	34.06mm

TROUBLESHOOTING

Engine starts but motorcycle does not work.

Drive belt worn.
Ramp plate damaged.
Clutch shoe worn or damaged.
Movable driven face spring cut.

Engine stops, or the vehicle runs suddenly, after starting.

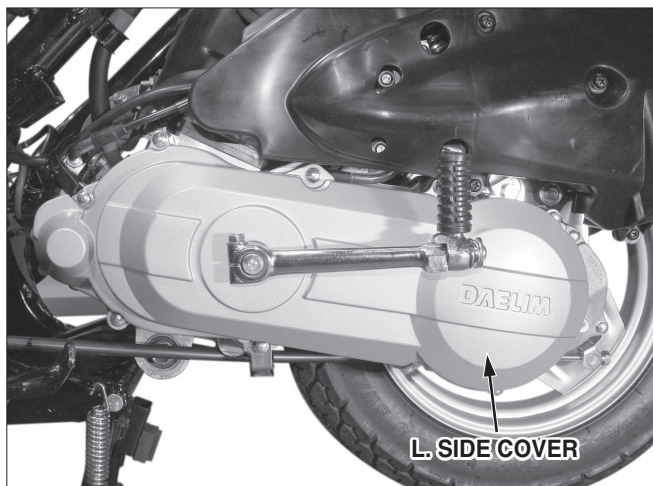
Clutch shoe spring cut.

Vehicle unable to run at the maximum speed, or lack of output

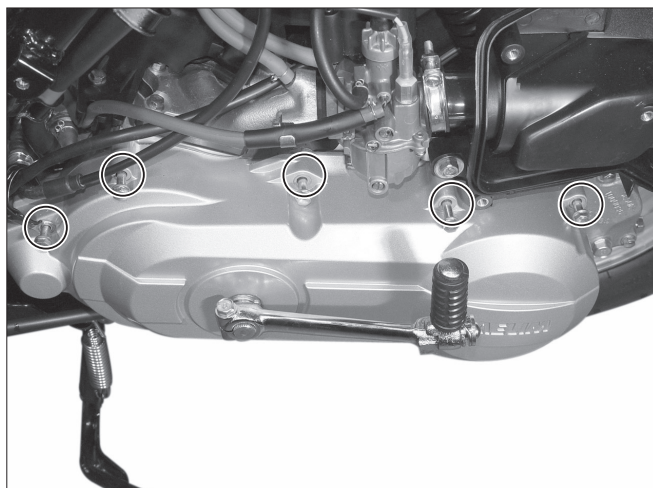
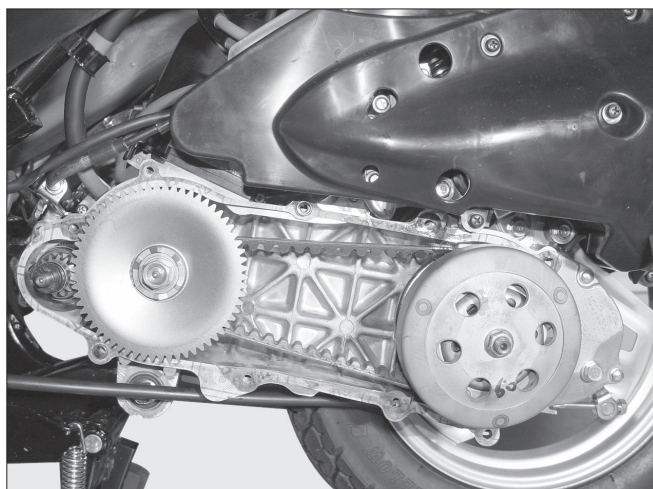
Drive belt worn.
Defective movable driven face spring.
Weight roller worn.
Pulley face contaminated.

L. SIDE COVER REMOVAL

Remove the rear brake cable.
Remove the 9 flange bolts securing LH. side cover.
Remove the LH. side cover.



Remove the gasket and the dowel pin.



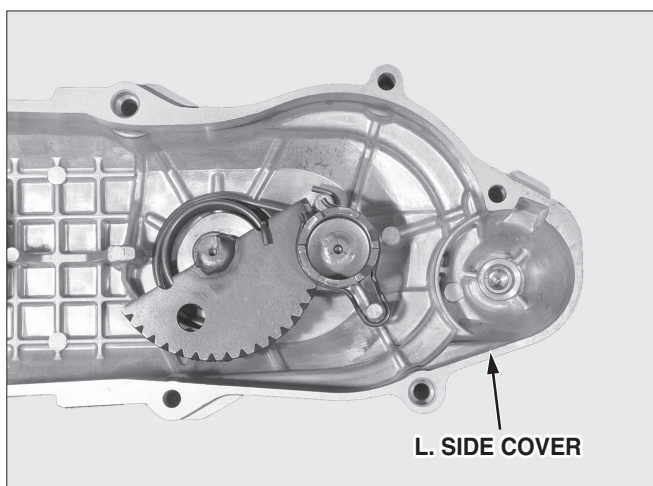
NOTE

- Install the new gasket and dowel pin after removing the gasket of the crankcase surface.
- Align the bolts to uniform the tightening location before tightening then when you don't know the bolt length.
- Tighten the bolts diagonally with specified tightening torque.

TORQUE : 1.0kgf · m

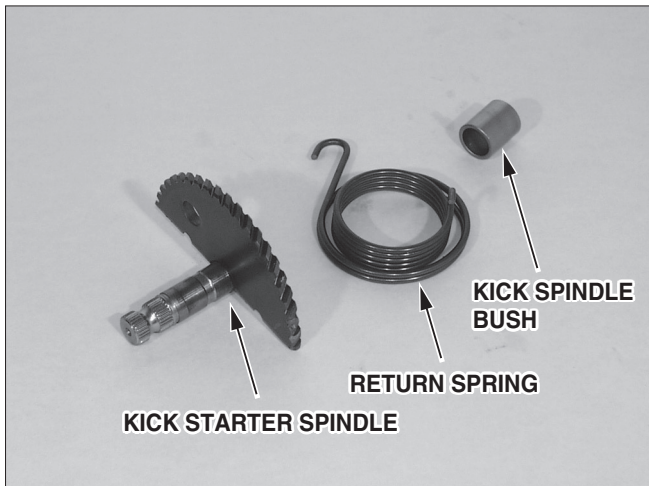
KICK STARTER REMOVAL

Remove the L. side cover.
Remove the kick starter ratchet and the thrust washer while rotating the kick starter arm.
Loosen the flange bolt securing the kick starter arm, remove the kick starter arm.
Remove the 14mm external circlip.
Remove the kick spindle washer.
Remove the kick starter spindle.
Remove the kick spindle spring, bush.



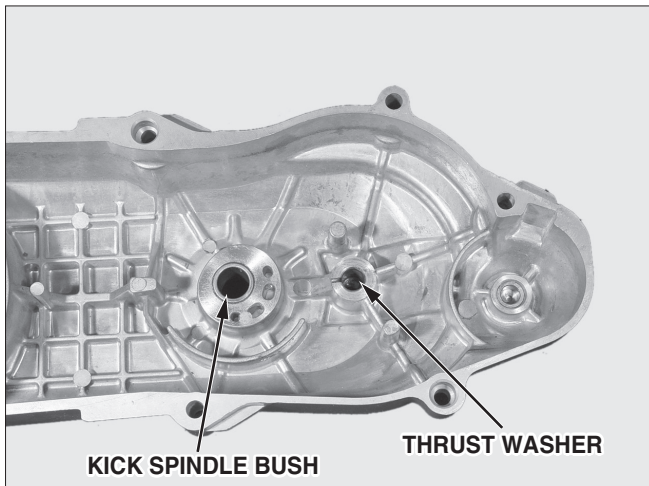
INSPECTION

- Inspect wear and damage of the kick starter spindle and gear portion.
- Inspect damage to return spring.
- Inspect defects and damage of the kick starter spindle bushing.
- Inspect wear and damage of the kick starter ratchet.
- Inspect damage to friction spring.



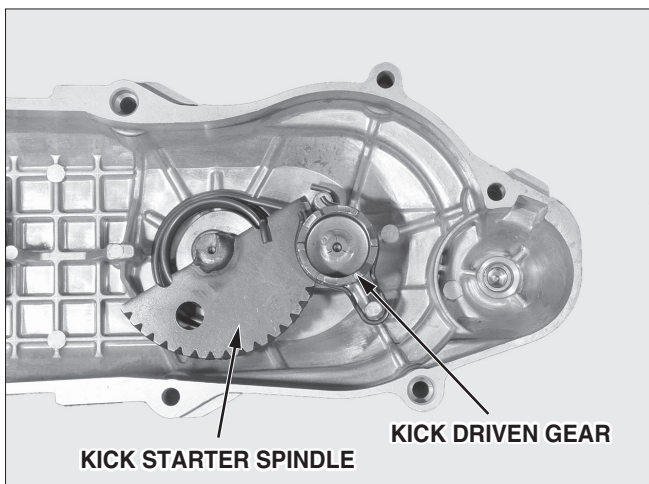
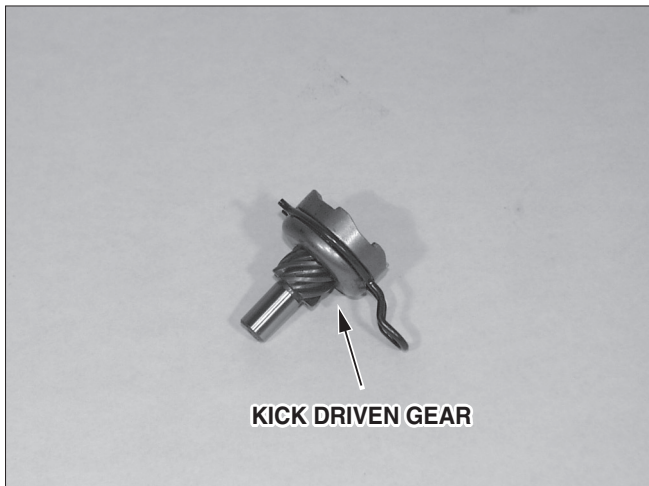
KICK STARTER INSTALLATION

- Install the kick spindle bush, spring in the L. side cover.
- Install the kick starter spindle in the L. side cover.
- Install the kick starter spindle washer.
- Install the 14mm external circlip in the L. side cover.
- Install the kick starter arm.
- Install the kick spindle spring in the groove of the L. side cover.
- Install the thrust washer.

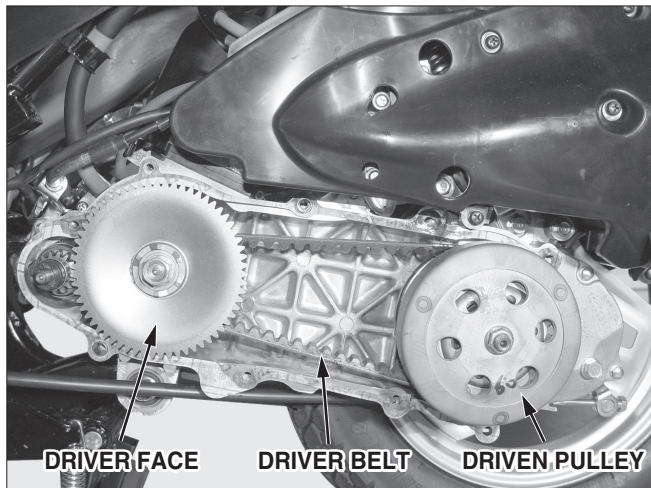


NOTE

- When installing the 14mm external circlip, keep holding the spindle manually and install the circlip in the groove correctly.
- Apply the grease to the kick starter ratchet groove and gear.
- Check the kick starter ratchet and the kick starter spindle for smooth operation after installation.



Rotate the kick starter spindle using the kick starter arm, draw the spindle to the L. side cover and assemble the kick starter ratchet.

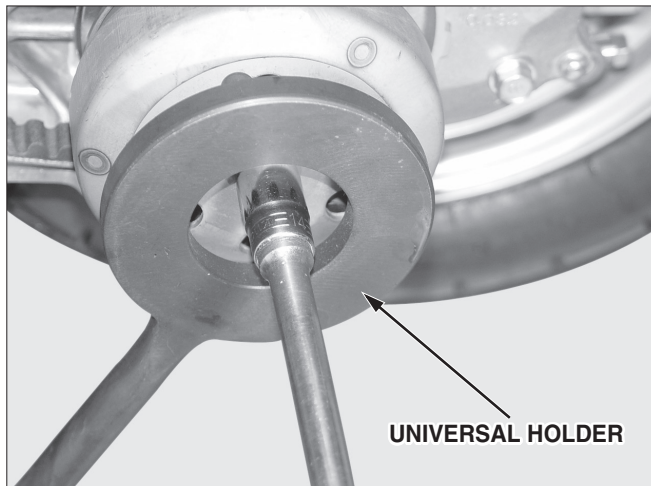


DRIVE BELT REMOVAL

Remove the LH. side cover.
Remove the 2 dowel pins and gasket.
Remove the start pinion ass.y.

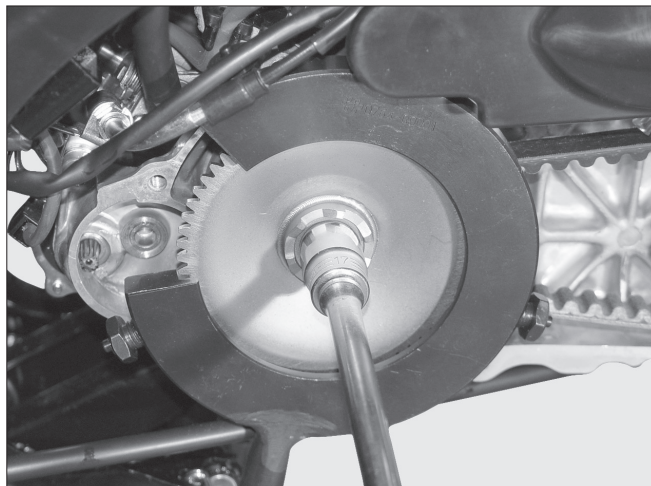
CAUTION

- Use the special tool when loosening the lock nut. Holding the rear wheel or rear brake will damage the final reduction system.



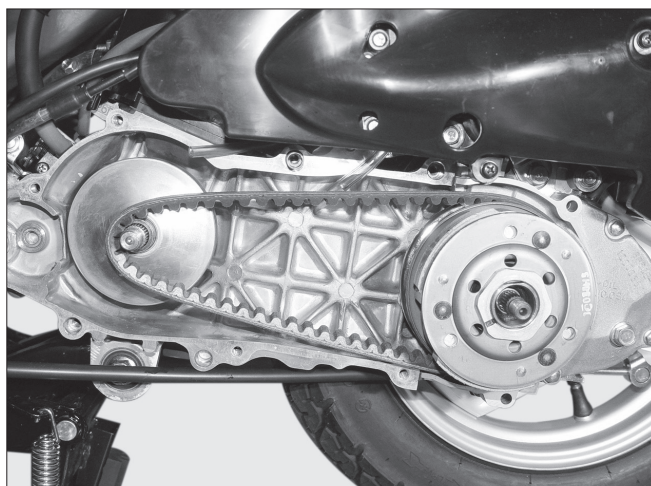
Hold the clutch outer using the universal holder and remove the nut.
Remove the clutch outer.

TOOL: UNIVERSAL HOLDER



Loosen the drive face setting nut 12mm with the clutch center holder.
Remove the drive face.

TOOL: CLUTCH CENTER HOLDER



Remove the driven pulley/ clutch with the drive belt in place.
Remove the drive belt from the driven pulley groove and drive pulley groove.

DRIVE BELT INSPECTION

Check the drive belt for cracks, pry separation and wear; replace as necessary.

Measure the width of the drive belt as shown.

Replace the belt if the service limit is exceeded.

SERVICE LIMIT : 15.5mm

NOTE

- Use only a genuine DAELIM replacement drive belt.
- Do not get oil or grease on the drive belt or pulley faces. Clean off any grease or oil before reinstalling.

DRIVE BELT INSTALLATION

Temporarily install the driven pulley/clutch assembly on the drive shaft.

Turn the pulley clockwise and spread the faces apart while installing the drive belt.

Remove the pulley assembly once with the drive belt installed.

NOTE

- Hold the pulley faces apart preventing them from closing.

DRIVE FACE

REMOVAL

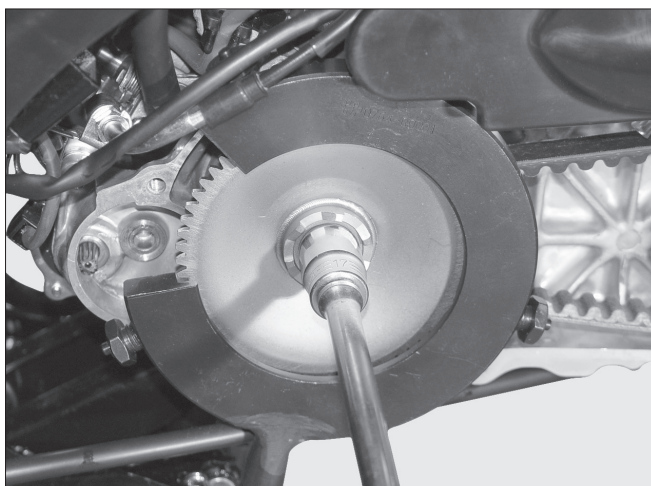
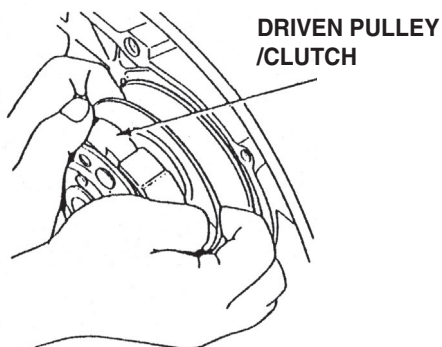
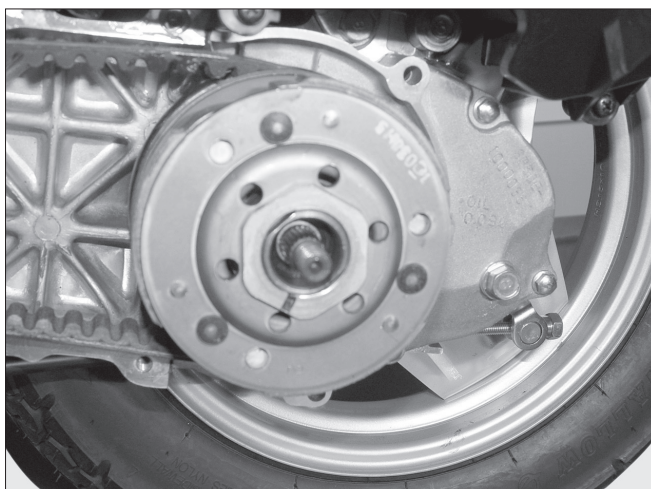
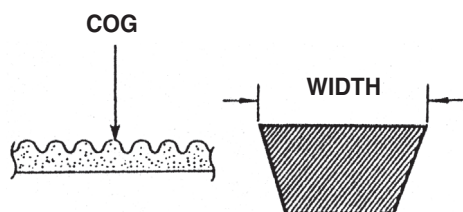
Remove the L. side cover. (⇒7-2)

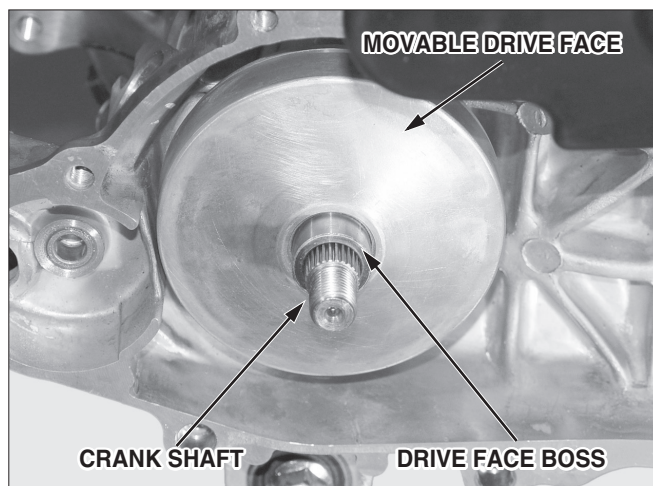
Hold the drive face using the clutch center holder and remove the nut and washer.

TOOL : CLUTCH CENTER HOLDER

Remove the drive face.

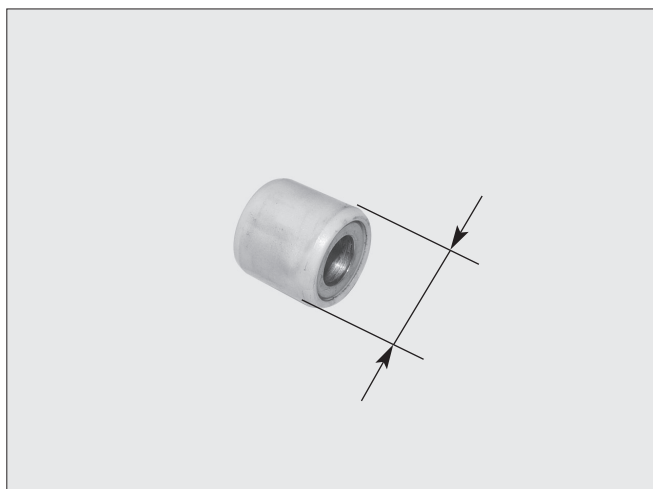
Remove the flange nut, washer drive face from crank shaft.





MOVABLE DRIVE FACE DISASSEMBLY

Remove the drive face. (⇒7-6)
Remove the movable drive face.



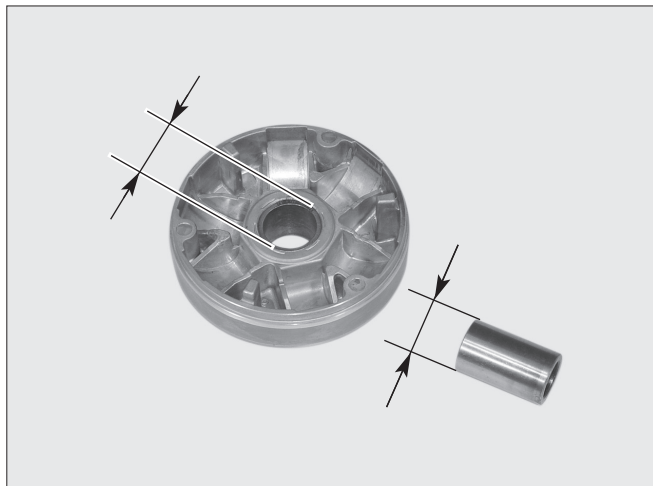
MOVABLE DRIVE FACE INSPECTION

The weight rollers push on the movable drive pulley face (by centrifugal force); worn or damaged weight rollers will interfere with this force.

Check the rollers for wear or damage and replace as necessary.

Measure the O.D. of each roller, replace if the service limit is exceeded.

SERVICE LIMIT : 15.4mm



Check the drive face boss for wear or damage and replace as necessary.

Measure the O.D of the drive face boss. Replace the boss if the service limit is exceeded.

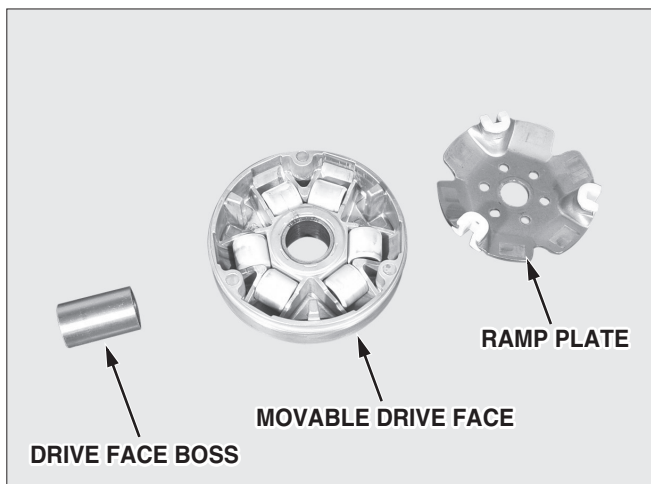
Measure the I.D. of the drive face. Replace it if the service limit is exceeded.

Movable drive face boss outer diameter

SERVICE LIMIT : 19.97mm

Movable drive face inner diameter

SERVICE LIMIT : 20.6mm



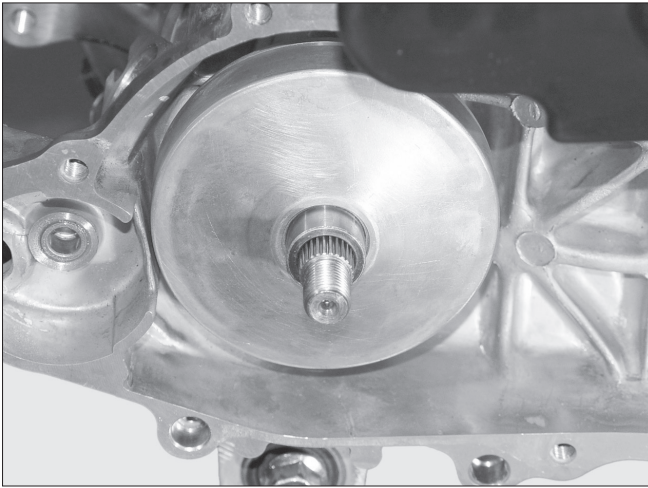
MOVABLE DRIVE FACE ASSEMBLY/INSTALLATION

Install the weight roller on the movable drive face.

Install the ramp plate.

Pack the inside of the movable drive face with the specified amount of grease.

Install the movable drive face boss.



NOTE

- Do not get the grease on the pulley face. Remove any misplaced grease with a degreasing agent.

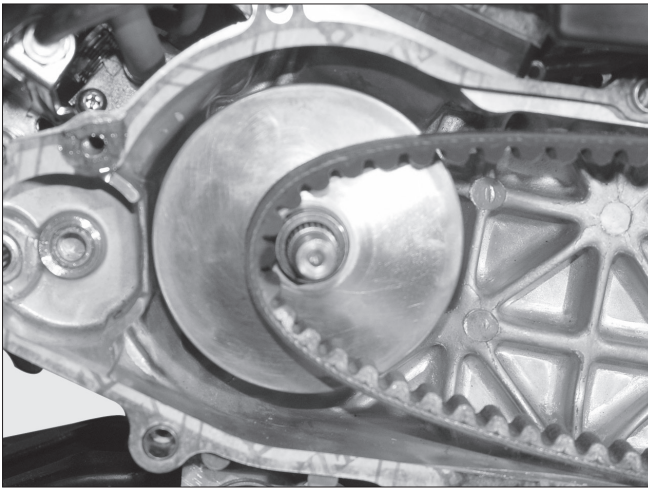
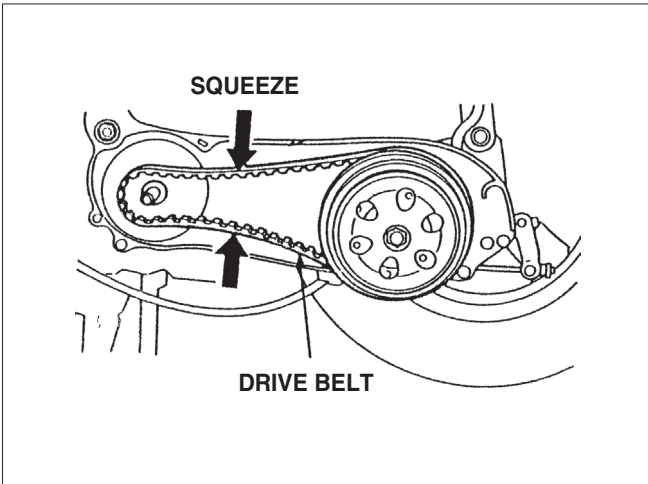
Install the movable face assembly on the crankshaft.

DRIVE FACE INSTALLATION

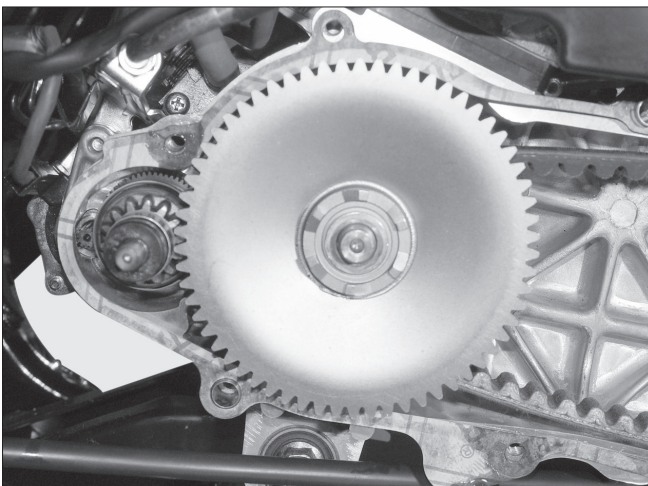
Squeeze the drive belt into the pulley groove and pull the drive belt over the drive face shaft.

Refer to drive belt assembly method.

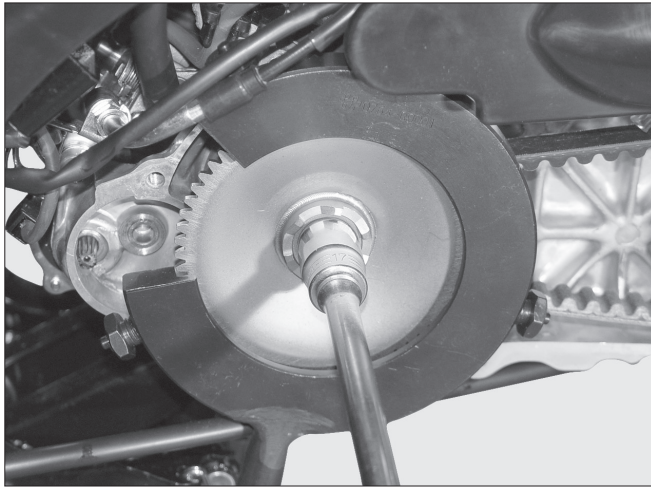
Install drive face, washer, drive pulley nut on the crank shaft.



Install the drive belt on the movable drive face.



Install the drive face on the crank shaft serration.
Install the washer and install flange nut.



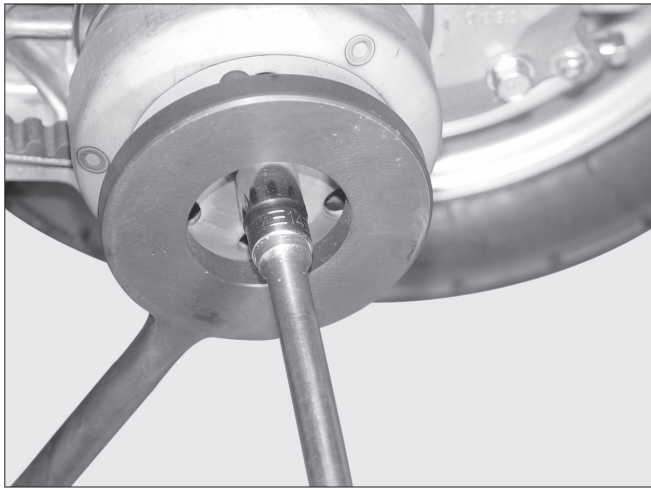
Tighten the drive pulley nut to the specified torque.

TORQUE VALUE : 5.5kgf · m

TOOL : CLUTCH CENTER HOLDER

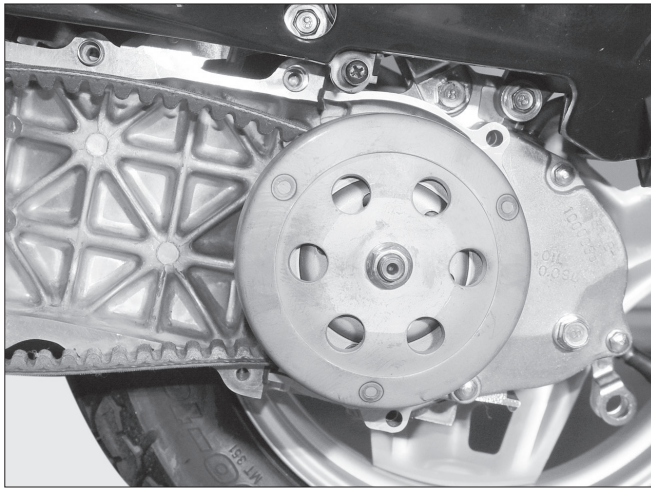
⚠ NOTE

- Correctly match the drive pulley face and crank shaft serration when assembling.
- If the universal holder cannot be used, remove the cooling fan and hold the flywheel with the universal holder.



Install the driven pulley outer.

Tighten the driven pulley outer to the specified torque with universal holder.

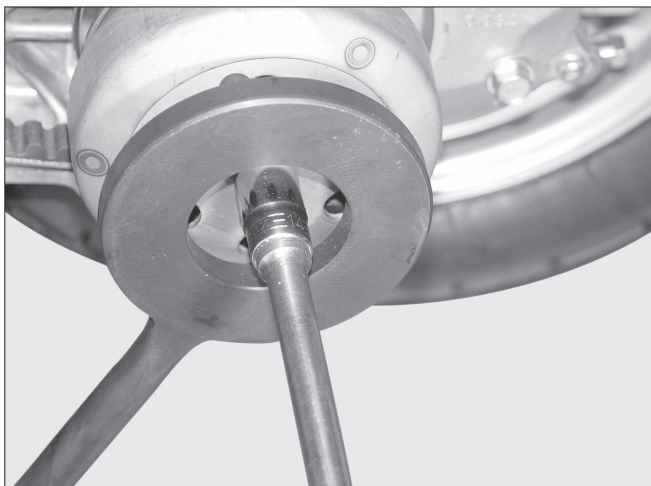


CLUTCH/DRIVEN PULLEY

DISASSEMBLY

Remove the L.side cover. (⇒7-2)

Remove the drive face. (⇒7-9)



Hold the clutch outer using the universal holder and remove the flange nut, then remove the clutch outer.

Remove the drive belt.

Remove the driven pulley.

Install in the reverse order of removal.

DRIVEN PULLEY SUB ASS'Y

DISASSEMBLY

The clutch/driven face are assembled toward the clutch spring compressor.

CAUTION

- Make sure that the boss portions of the clutch/driven face are matched with the clutch spring compressor hole.

TOOL : CLUTCH SPRING COMPRESSOR

Fix the clutch spring compressor with a vice, etc. Disassemble the 28mm special nut with a socket wrench. Disassemble the clutch driven face from the clutch spring compressor.

TOOL : CLUTCH SPRING COMPRESSOR SOCKET WRENCH 39 × 41mm

Assembly is done in the reverse order of disassembly.

Remove the seal collar from the driven pulley. Remove the guide pins and guide pin rollers and the movable driven pulley face.

NOTE

- Some guide pin can be separated to the roller and the pin.

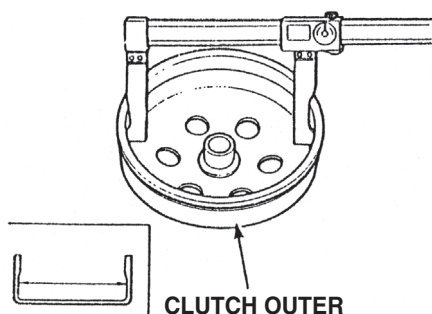
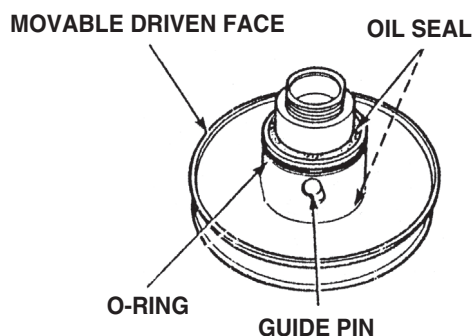
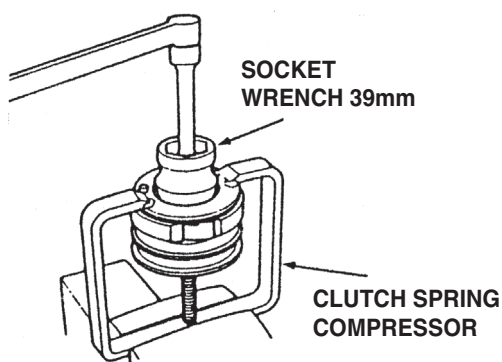
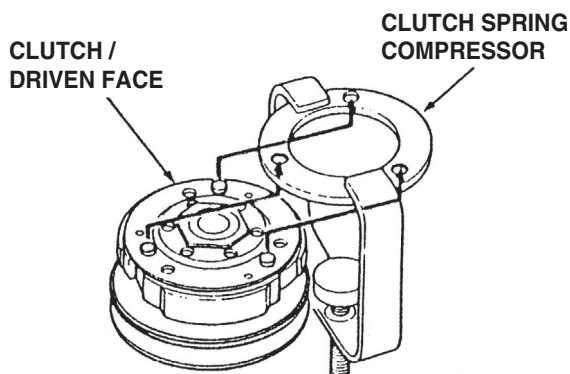
Remove the O-ring and oil seals from the movable driven face.

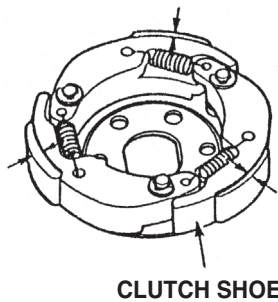
INSPECTION

Clutch outer

Measure the I.D. at shoe contact surface of the clutch outer. Replace the outer if the service limit is exceeded.

SERVICE LIMIT : 107.5mm



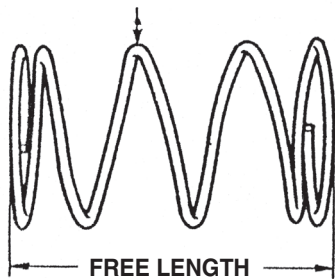


Clutch Shoe Inspection

Measure the thickness of each shoe ; replace if the service limit is exceeded.

SERVICE LIMIT : 2.0mm

MOVABLE DRIVEN FACE SPRING

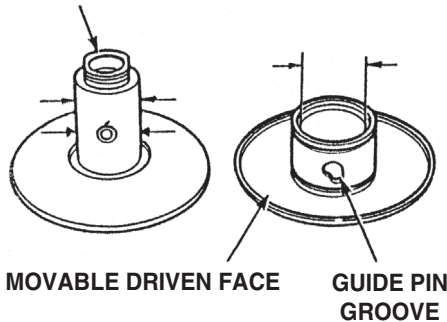


Movable Driven Face Spring Inspection

Measure the free length of the driven pulley spring and replace if the service limit is exceeded.

SERVICE LIMIT : 92.8mm

DRIVEN FACE



Driven Face Inspection

Check the following;

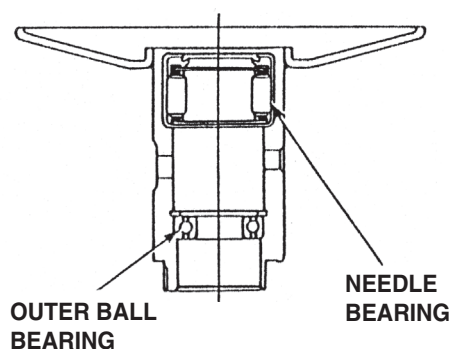
- Both faces for damage or excessive wear.
- Guide pin groove for damage or deformation.

Replace damaged or worn parts as necessary.

Measure the O.D. of the driven face and the I.D. of the movable driven face. Replace either part if the service limit is exceeded.

Driven face outer diameter service limit : 33.94mm

Movable driven face inner diameter service limit : 34.06mm



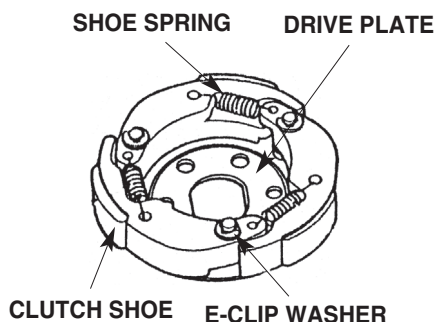
Driven Face Bearing Inspection

Check the inner bearing oil seal (if installed) for damage; replace as necessary.

Check the needle bearing for damage or excessive play and replace as necessary.

Turn the inner race of the outer bearing with your finger. Check that the bearing turns smoothly and quietly, and that the bearing outer race fits securely. Replace the bearing if necessary.

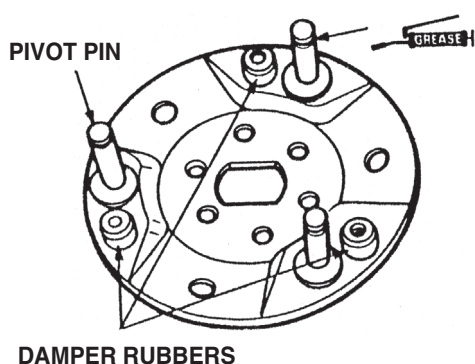
CLUTCH SHOE REPLACEMENT



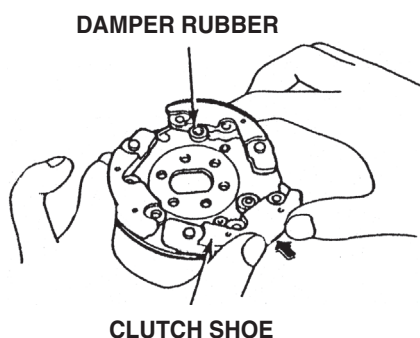
NOTE

- Some models use one retainer plate instead of three washers.

Check the shoe springs for damage or loss of tension.



Check the damper rubbers and shoe springs for damage or deformation; replace as necessary. Apply a small amount of grease on the pivot pins.

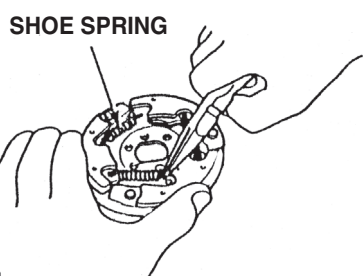


Install new clutch shoes on the pivot pins and push them into place.

Use a small amount of grease on the pivot pin and keep grease off of the brake shoes. Replace the brake shoes if there is any grease on them.

CAUTION

- Grease or oil damages clutch shoes and can lead to a loss of engaging ability.



Use pliers to hook the springs to the shoes.

Install the E-clip and washers or retainer plate into the pivot pins.

NOTE

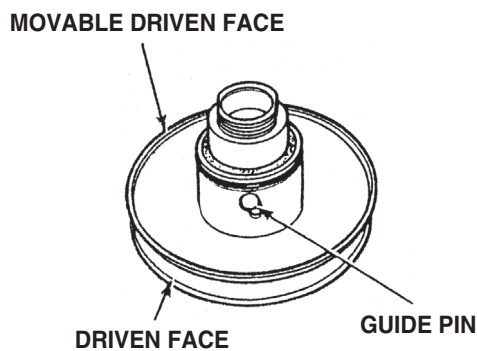
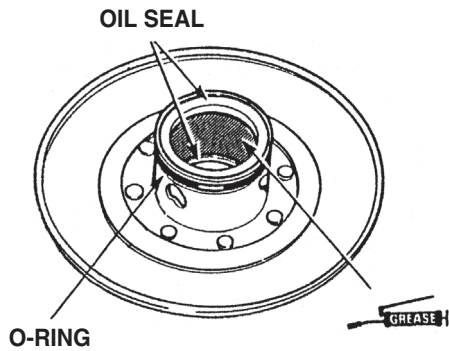
- Apply only to the belt type gearless transmission.
- Wipe the grease came out from the pivot pin thoroughly.

CLUTCH/DRIVEN PULLEY ASSEMBLY

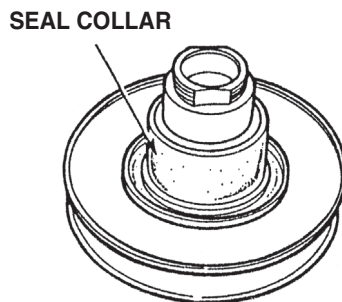
Install new oil seals and O-rings on the movable driven pulley face.

Lubricate the inside of the movable face with the specified amount of grease.

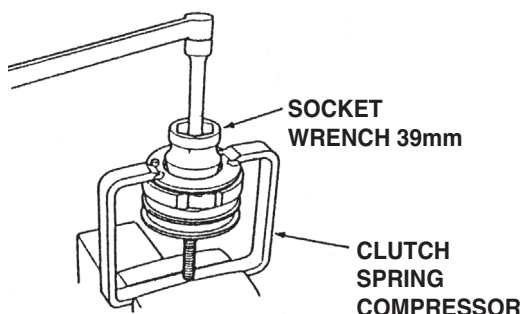
GREASE APPLICATION : 5.0~5.5g



Install the movable face on the driven pulley face.
Install the guide pins, or guide pins and guide pin rollers.



Install the seal collar.



Assemble the driven pulley, spring and clutch in the clutch spring compressor. Compress the assembly by turning the tool handle until the lock nut can be installed.

Clamp the clutch spring compressor in a vise and tighten the lock nut to the specified torque using the lock nut wrench.

TORQUE VALUE : 4.0kgf · m

Remove the spring compressor.
Install the clutch/driven pulley and drive belt onto the drive shaft.

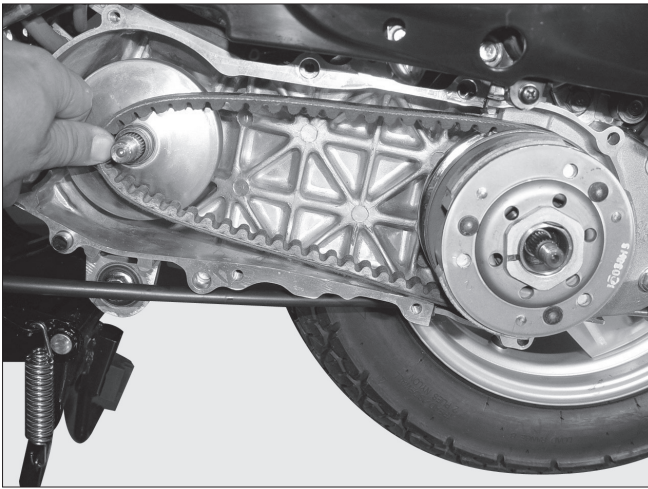
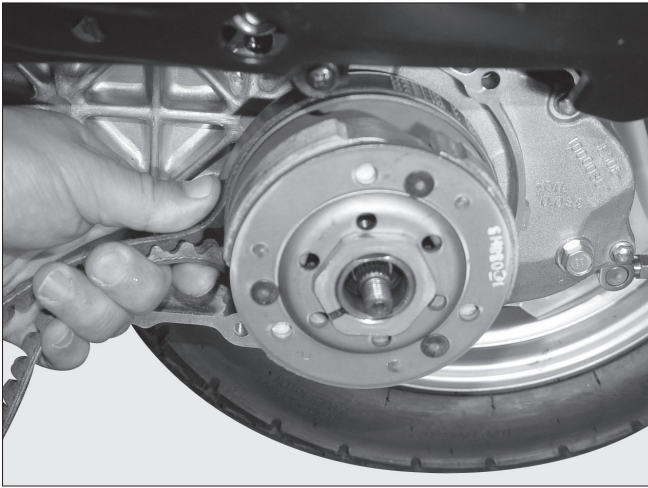
**TOOL : CLUTCH SPRING COMPRESSOR
SOCKET WRENCH 39mm**

DRIVEN PULLEY ASSEMBLY

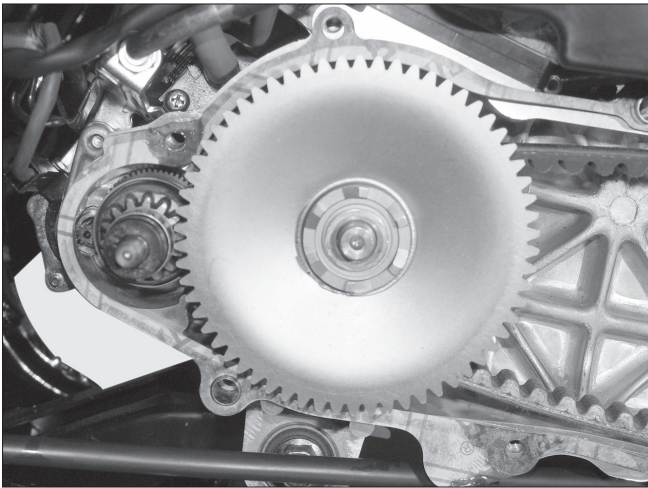
INSTALLMENT

Rotate the driven pully ass'y to the right side and enlarge the belt groove.

Install the drive belt on the driven pully subass'y and mount on to the drive shaft.

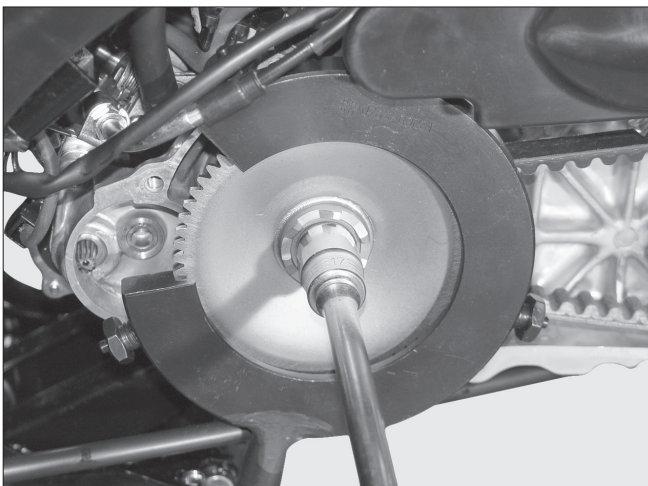


Install the drive belt on the assembling area of the movable drive face.



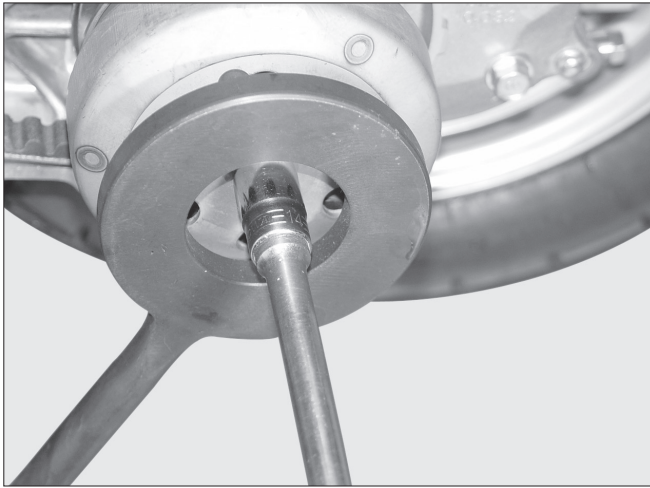
After assembling the drive face in serration area of the L.H. crank shaft.

Install the drive pully nut temporarily.



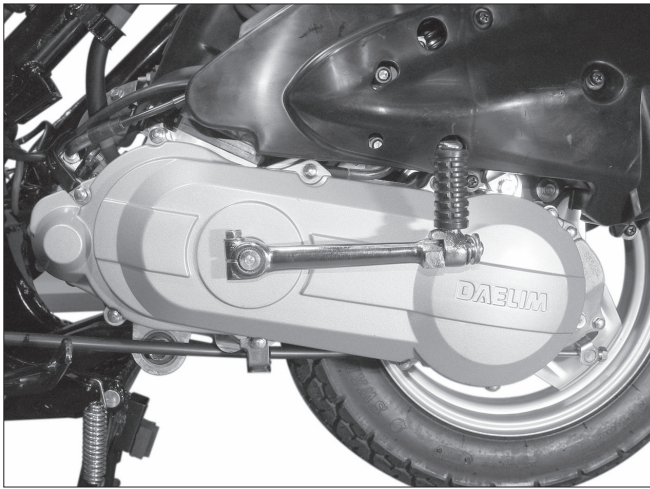
Tighten the starter driven gear with standard torque.

STANDARD TORQUE : 5.5kgf · m



After assembling the clutch outer, install the flange nut temporarily.
Fix the clutch outer with the universal holder, tighten the flange nut with standard torque.

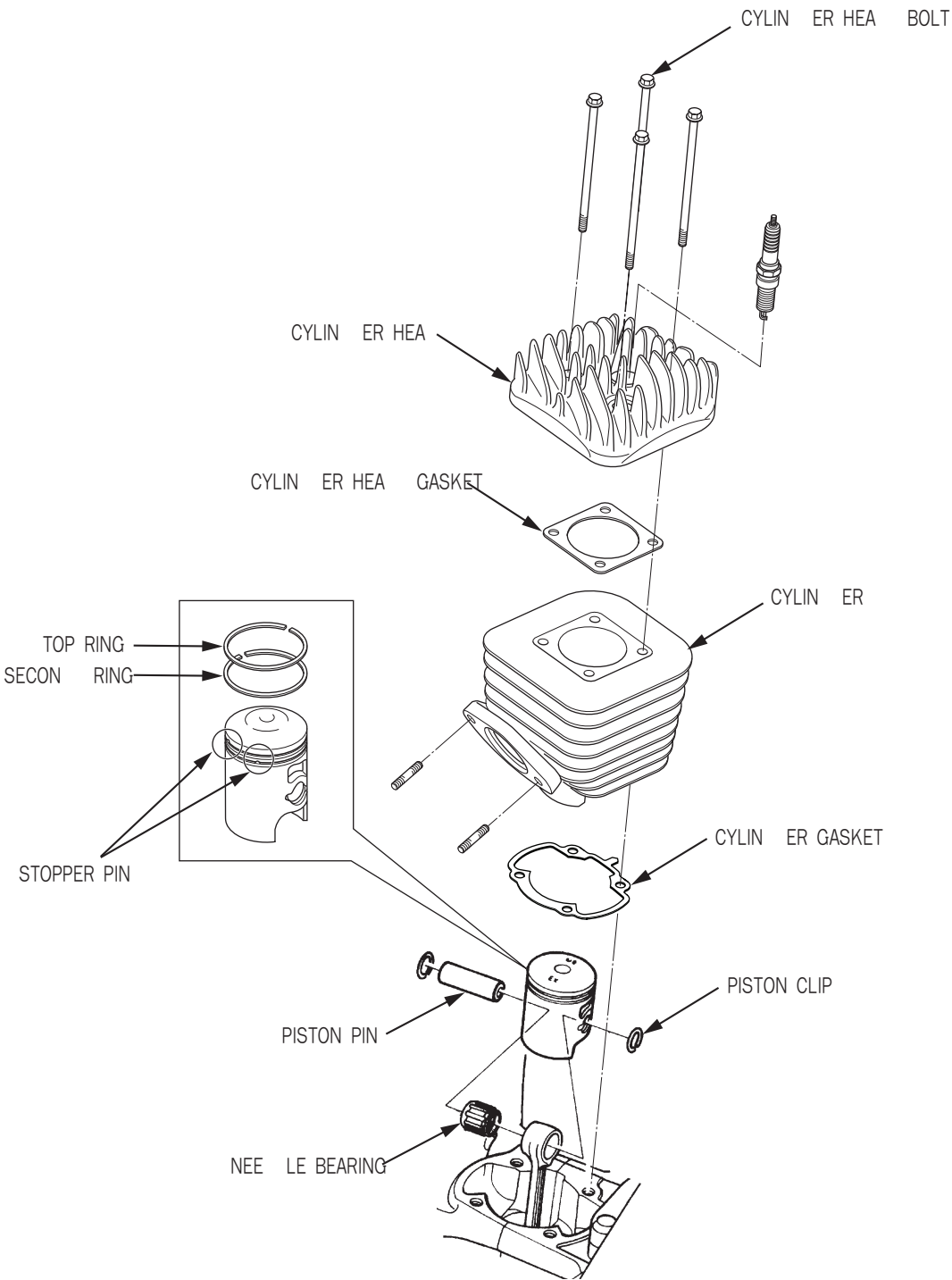
STANDARD TORQUE : 4.0kgf · m



Install the LH. crank case cover and tighten the bolts.

MEMO

CYLINDER HEAD / CYLINDER / PISTON



8. CYLINDER HEAD/CYLINDER/PISTON

SERVICES INFORMATION	8-1
TROUBLESHOOTING	8-1
FAN COVER, SHROUD REMOVAL	8-2
CYLINDER HEAD/ CYLINDER/ PISTON . .	8-2

SERVICE INFORMATION

GENERAL SAFETY

Take precautions not to damage the joint part with a driver when removing the cylinder, or not to damage the cooling pin by striking the cylinder too hard.

Take precautions not to damage the inside of the cylinder or the exterior part of the piston.

Check parts after disassembling, and clean and dry with an air hose prior to taking measurements.

SPECIFICATIONS

Unit : mm(in)

ITEM		STANDARD VALUE	SERVICE LIMIT
CYLINDER	Inner diameter	φ 40.005~40.010mm	40.05mm
	Cylindricity	-	0.10mm
	Out of roundness	-	0.10mm
PISTON, PISTON PIN, PISTON RING	Piston skirt outer diameter	39.955~39.970mm	39.90mm
	Piston pin hole inner diameter	12.002~12.008mm	12.03mm
	Piston pin outer diameter	11.994~12.000mm	11.98mm
CYLINDER TO PISTON CLEARANCE		0.040~0.055mm	0.13mm

TROUBLESHOOTING

Comperssion low

Worn cylinder or piston rings

Leaking valve seats

Excessive smoke

Worn cylinder or piston

Improper installation of piston rings

Scored or scratched piston or cylinder wall

Overheating

Excessive carbon build-up on the piston combustion

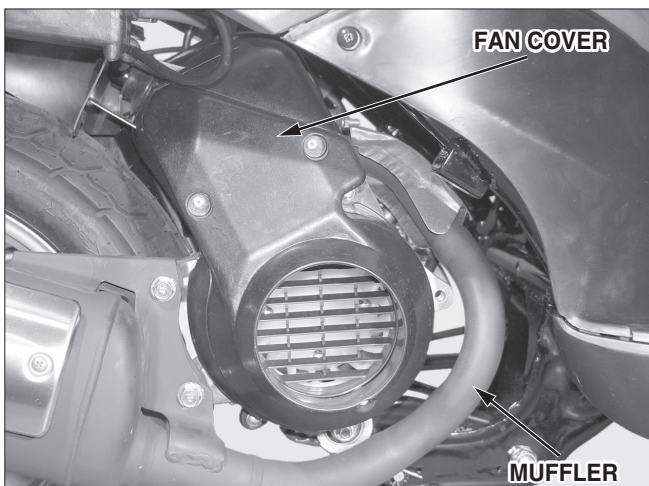
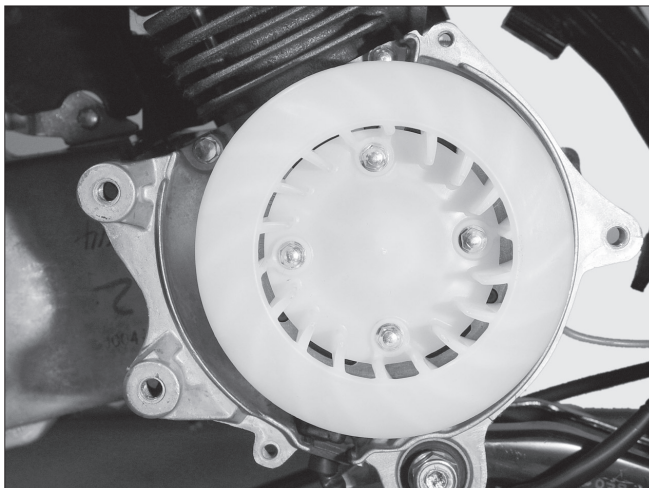
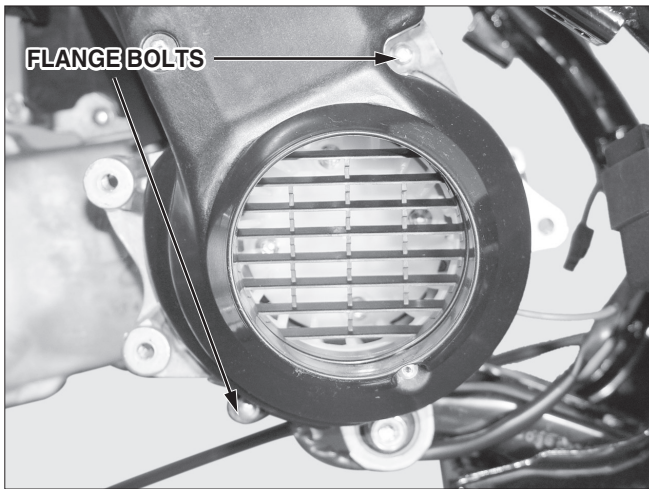
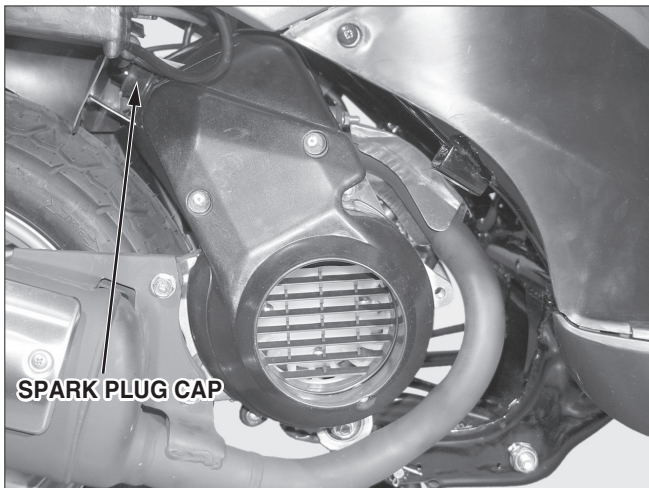
Incorrect spark plug

Knocking or abnormal noise

Worn piston and cylinder

Excessive carbon build-up

Low octane fuel



FAN COVER, SHROUD REMOVAL

Remove the luggage box. (⇒3-3)

Remove the plug maintenance cover. (⇒3-3)

Loosen the 2 fan cover flange bolts.
Loosen the 2 left shroud flange bolts.
Remove the left shroud.

NOTE

- Pay attention not to damage certain part when removing
- Remove according to the working procedure.

Install in the reverse order of removal.

CYLINDER HEAD/ CYLINDER/ PISTON

REMOVAL

Remove the luggage box. (⇒3-3)

Remove the the battery maintenance lid. (⇒3-3)

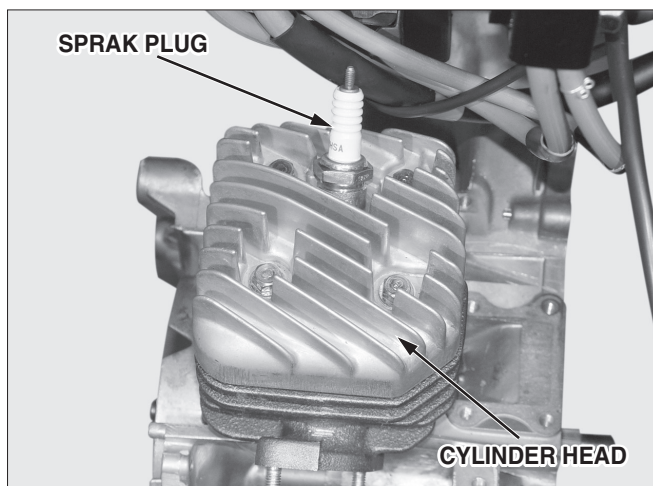
Remove the center cover. (⇒3-3)

Remove the floor side cover. (⇒3-4)

Remove the floor panel. (⇒3-4)

Remove the exhaust muffler assembly. (⇒3-7)

Remove the fan cover shroud.



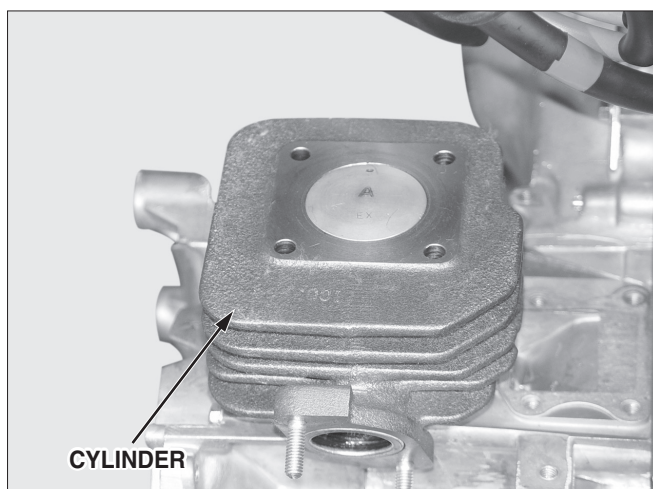
Cylinder Head

Loosen the 4 cylinder head bolts.

NOTE

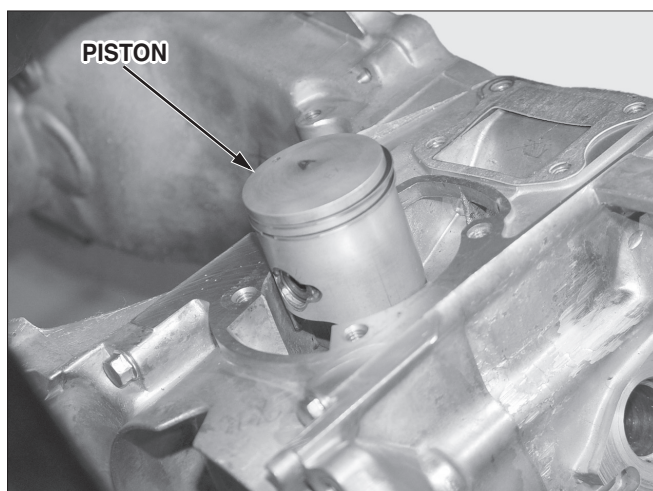
- Bolts are loosened by rotating 2~3 times and alternating to a diagonal bolt.

Remove the cylinder head.
Remove the cylinder head gasket.



Cylinder

Remove the cylinder.

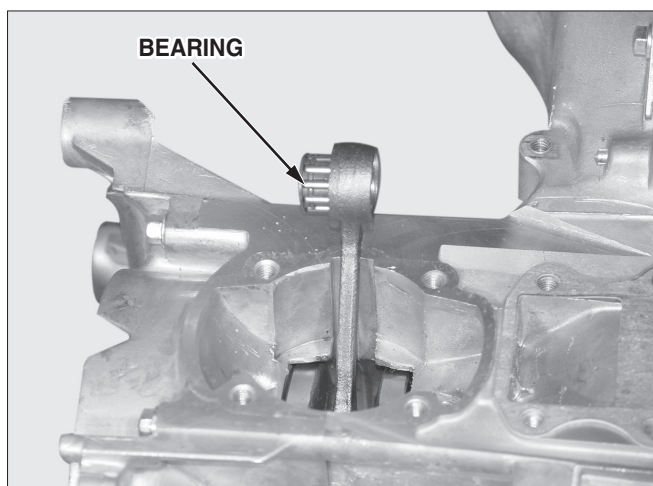


Piston/Piston Ring

Remove the piston pin clip.
Remove the piston pin.

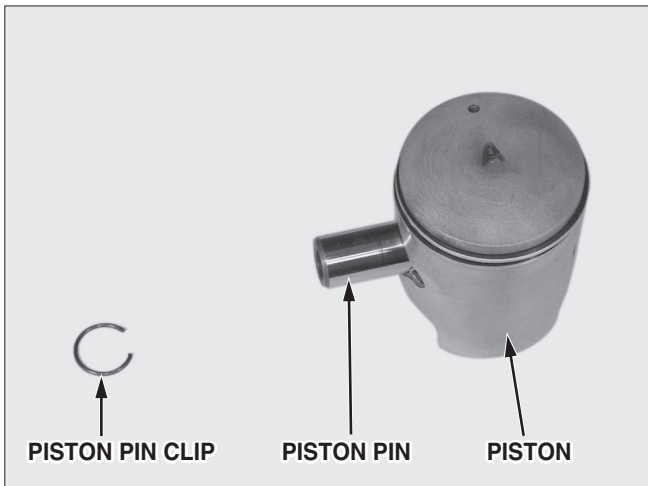
NOTE

- Be careful not to bend pins.
- Be careful not to damage the cylinder and crankcase gasket face when cleaning.



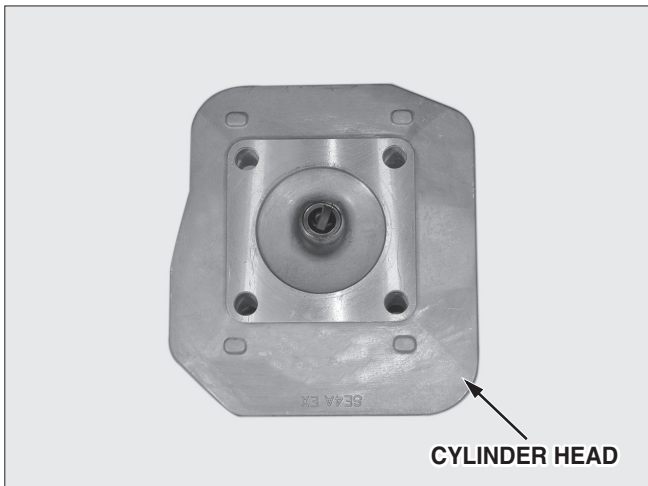
Remove the piston.
Remove the needle bearing from the small end of the connecting rod.

CYLINDER HEAD / CYLINDER / PISTON



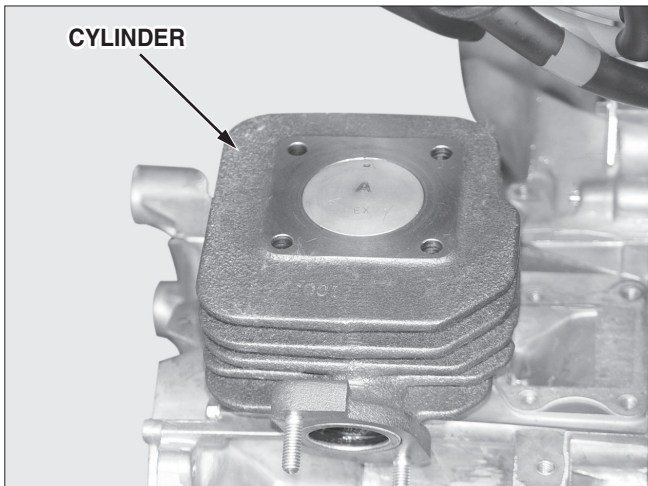
NOTE

- Do not damage or scratch the piston.
- Do not apply side force to the connecting rod.
- Do not let the clip fall into the crankcase.
- Mark and store the pistons and piston pins so that they can be reinstalled in their original positions.



INSPECTION

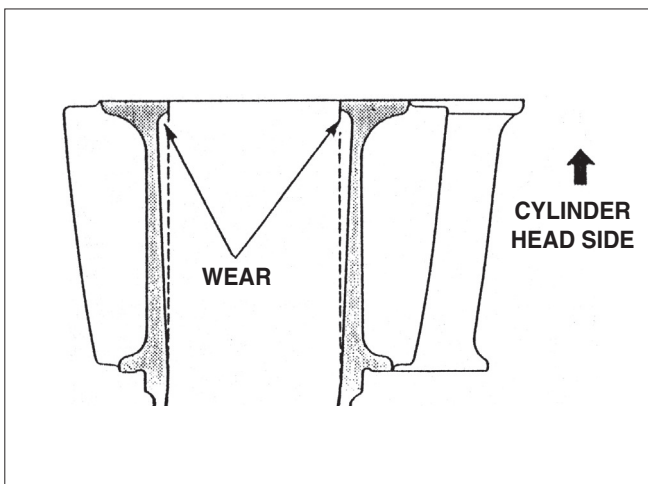
There is more carbon deposit within the engine in case of 2 cycle engine than 4 cycle engine because the engine oil is burnt in the 2 cycle engine. Excessive carbon deposit may cause self-ignition by the overheating of the carbon in the combustion chamber and the piston head and may damage the engine. Carbon deposit in the exhaust gas port disturbs exhaust gas flow and causes decrease of the output. Remove the carbon deposit periodically.



CAUTION

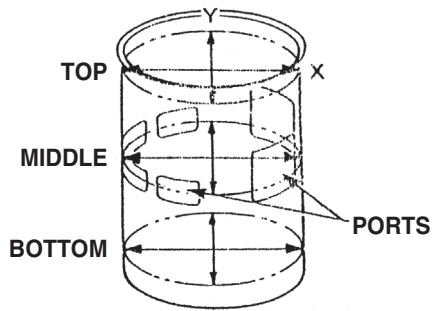
- Pay attention not to damage the combustion chamber, the piston and the cylinder when removing the carbon.

Remove the cylinder head and remove the carbon with the piston being in the top dead center. Dismount the cylinder, remove the carbon deposited in the exhaust gas port and clean the remaining carbon in the cylinder.



Cylinder Wear Inspection

Inspect the cylinder wall for scratches and wear. Inspect the area near T.D.C (Top Dead Center) carefully. This area is especially subject to wear due to the possibility of borderline lubrication from heat and top ring compression.



Measure and record the cylinder I.D. at the three levels in both an X and Y axis.

Take the maximum reading to determine the cylinder wear.

NOTE

- Avoid the intake and exhaust ports when measuring.

Measure the piston O.D.

SERVICE LIMIT : 40.05mm

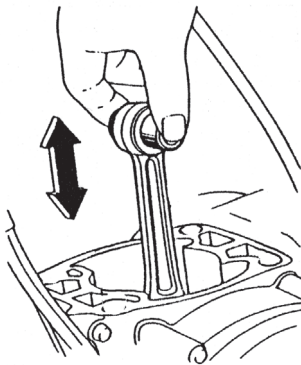
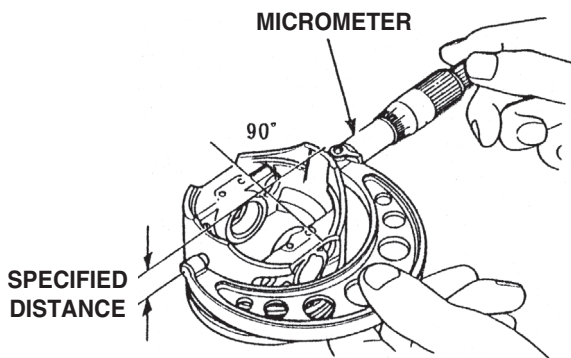
Calculate the piston-to-cylinder clearance. Take the maximum reading to determine the clearance.

Piston Outer Diameter Inspection

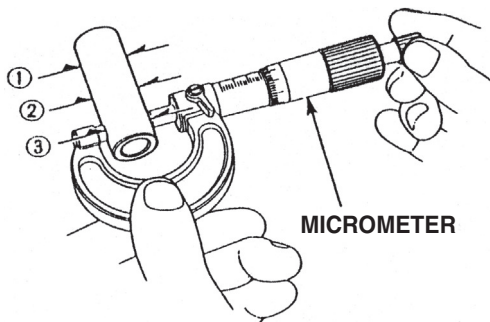
Measure and record the piston O.D. 90° to the piston pin bore and at the point specified in the Model Specific manual, near the bottom of the piston skirt. Replace the piston if the service limit is exceeded.

SERVICE LIMIT : 39.90mm

Calculate the piston-to-cylinder clearance



Install the needle bearing and piston pin in the connecting rod small end and check for excessive play.

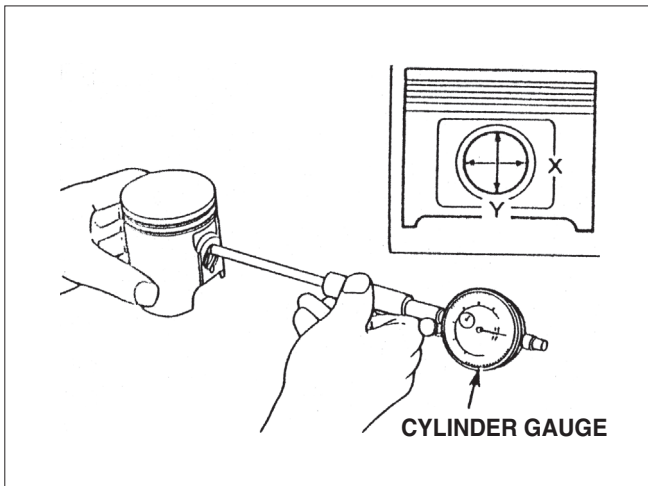


Piston Pin Inspection

Measure the piston pin O.D. at three points.

Replace the piston pin if the service limit is exceeded.

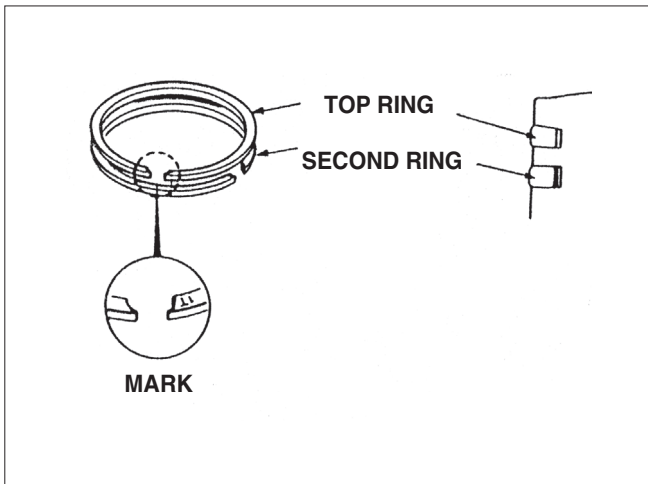
SERVICE LIMIT : 11.98mm



Piston Pin Bore Inspection

Measure the piston pin bore I.D. in an X and Y axis.
Take the maximum reading to determine the I.D.
Replace the piston if the I.D. is over the service limit.

SERVICE LIMIT : 12.03mm



PISTON/PISTON RING INSTALLATION

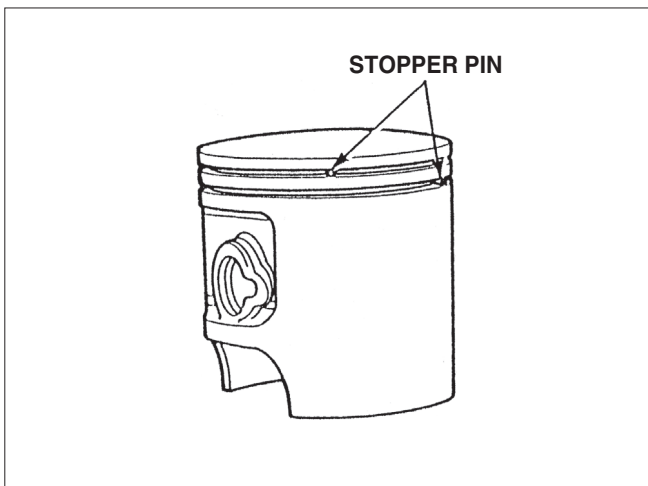
Clean the piston ring grooves.

Lubricate the piston rings and ring grooves with clean 2-stroke oil.

Install the piston rings on the piston with the marks facing up.

NOTE

- Do not confuse the top and second rings. Be sure to install them in the proper grooves.
- Some 2-stroke engines use an expander ring behind the second ring.

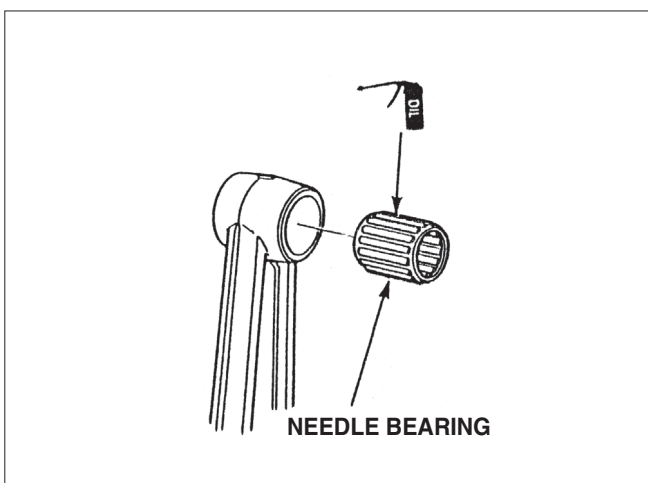


In 2-stroke engines, the piston has stopper pins that hold the piston rings away from the intake and exhaust ports.

Align the piston ring end gaps with the stopper pins.

Check the fit of each ring in the groove by pressing the ring into the groove. Make sure that it is flush with the piston at several points around the ring.

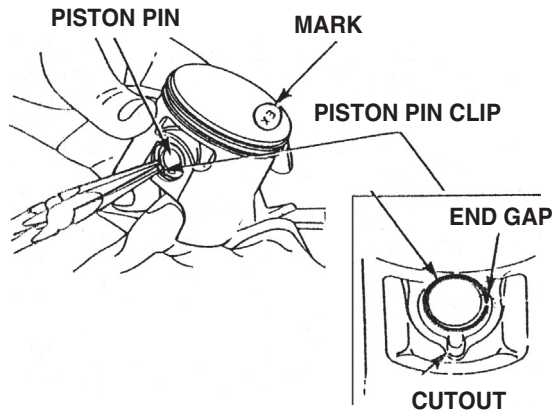
If the ring rides on the stopper pin, it is damaged during assembly.



Coat the needle bearing (2-stroke engine only) and piston pin with the recommended oil. Lubricate the piston pin

Install the needle bearing into the connecting rod.

Install the piston and insert the piston pin.



NOTE

- The mark that is stamped on the piston head should be facing the correct direction.
 - “●” MARK : TO INTAKE SIDE
 - “EX” MARK : TO EXHAUST SIDE
 - “ ” MARK : TO ONGOING SIDE
 - “↓” MARK : TO INTAKE SIDE

Install the new piston pin clips.

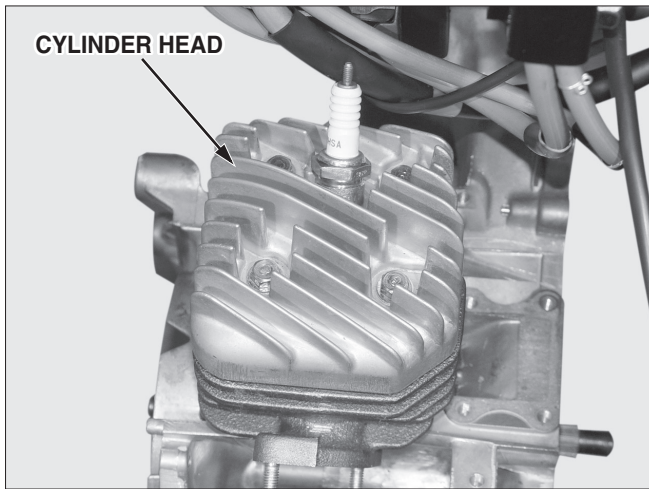
CAUTION

- Take care not to drop the piston pin clip into the crankcase.
- Make sure to set the piston pin clip in the groove properly.
- Do not align the clip's end gap with the piston cutout.

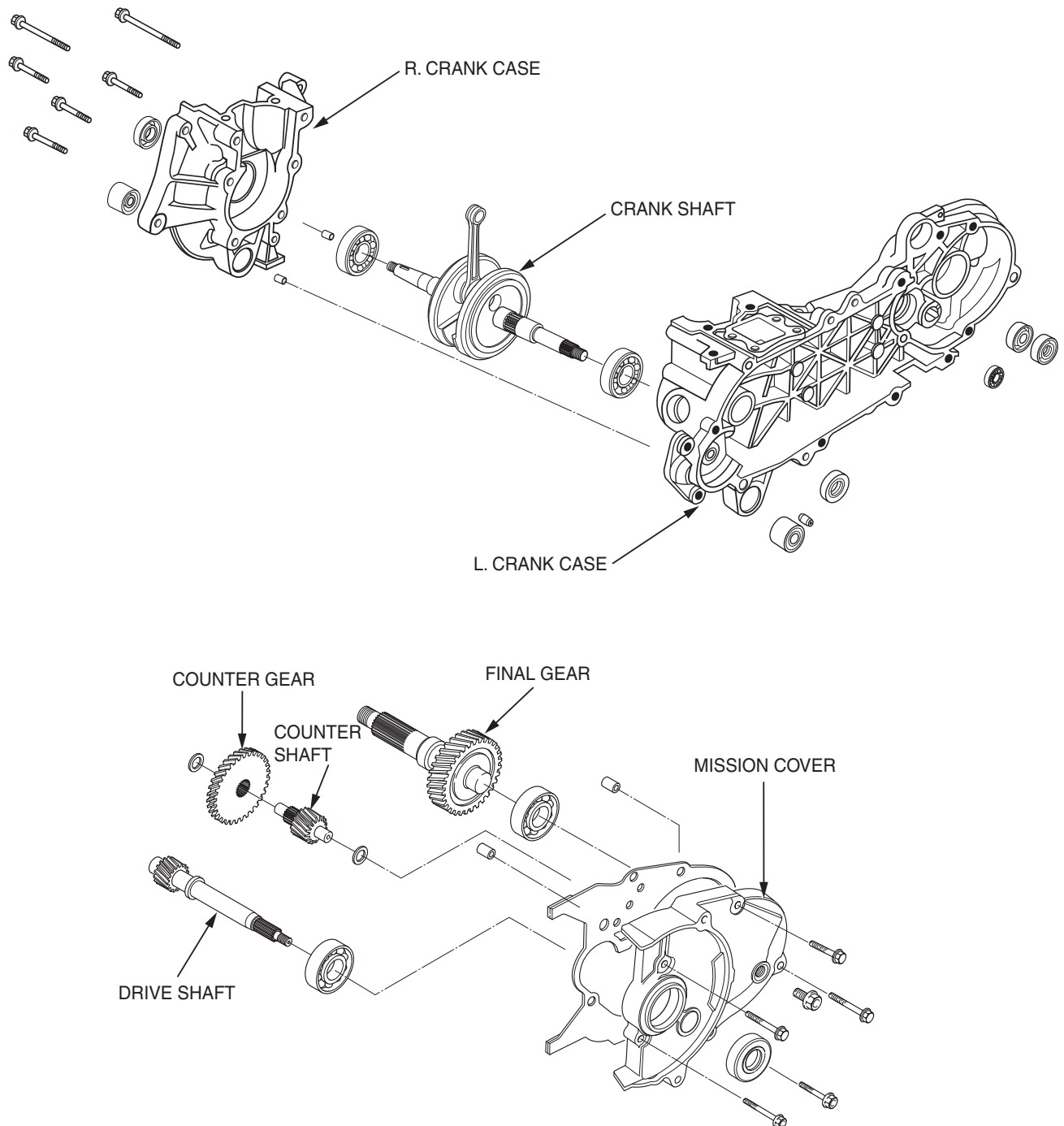
CYLINDER/ CYLINDER HEAD INSTALLATION

Apply the engine oil inside of cylinder piston ring and install them.

Install the new piston pin clip.



TRANSMISSION/CRANKSHAFT/CRANKCASE



9. TRANSMISSION/CRANKSHAFT/CRANKCASE

SERVICE INFORMATION	9-1	CRANKSHAFT REMOVAL	9-5
SERVICE STANDARD	9-1	CRANKSHAFT BEARING REMOVAL .	9-5
TRANSMISSION/CRANKSHAFT/ CRANKCASE	9-2	CRANKCASE BEARING REMOVAL .	9-6
		CRANKSHAFT INSTALLATION . .	9-7

SERVICE INFORMATION

GENERAL SAFETY

This section describes how to remove the crank case and to maintain the transmission and the crankshaft.

Always use special tools to change the drive shaft. Fix the bearing inner race, andn install the shaft.

The following parts must be removed prior to removing the crank case. Follow the removal procedure specified in each section.

- OIL PUMP (⇒SECTION 4)
- CARBURETOR (⇒SECTION 5)
- ENGINE (⇒SECTION 6)
- CYLINDER HEAD/ CYLINDER/ PISTON (⇒SECTION 8)
- AC GENERATOR (⇒SECTION 13)
- DRIVE PULLEY (⇒SECTION 7)
- CLUTCH/DRIVEN PULLEY (⇒SECTION 7)
- REED VALVE (⇒SECTION 5)

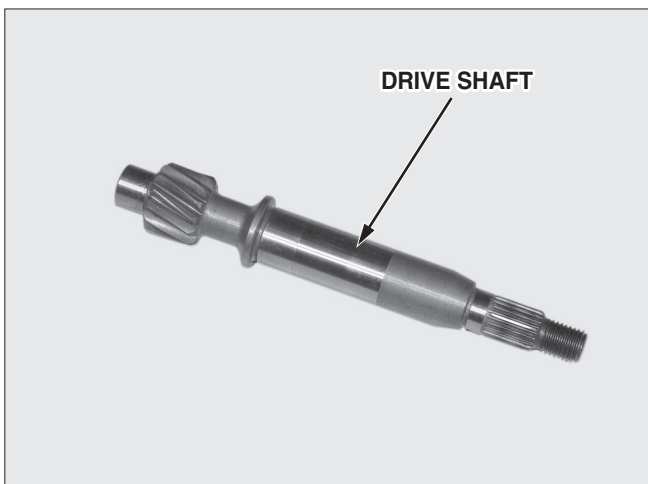
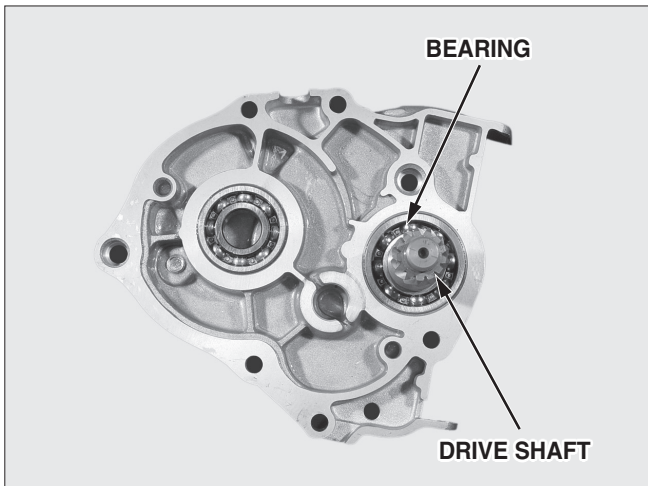
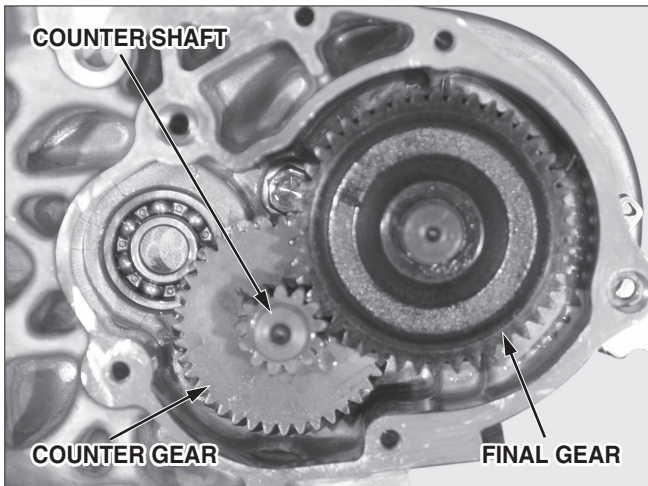
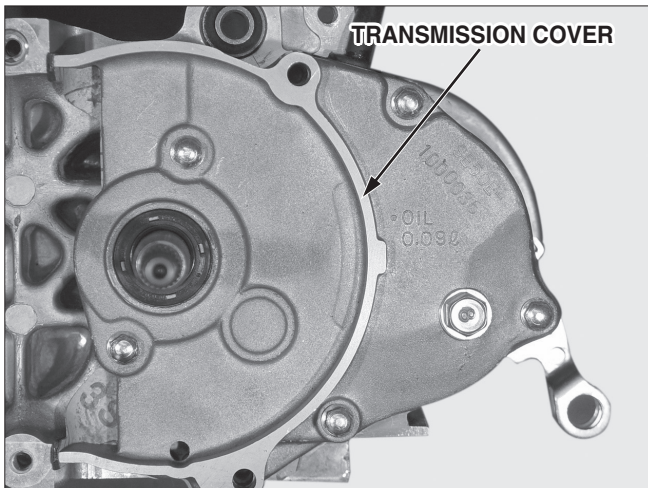
The following parts must be removed prior to changing the L. crank case. Follow the removal procedure specified in each section.

- TRANSMISSION (⇒SECTION 9)
- REAR BRAKE (⇒SECTION 12)

To assemble the crank case and crankshaft, set the special tool to the inner race of the crankshaft bearing, and push and assemble. Remove the bearing from the crankshaft during disassembling work, and insert a new bearing in the case. Install the oil seal after the case is assembled.

SERVICE STANDARD

ITEM			STANDARD VALUE	SERVICE LIMIT
CRANK SHAFT	Large end side clearance		0.15~0.55mm	0.60mm
	Connecting rod large end right angle direction clearance		0.010~0.02mm	0.04mm
	Crank shaft shaking	Right	0.03mm	0.15mm
		Left	0.05mm	0.10mm



TRANSMISSION/CRANKSHAFT/ CRANKCASE

DISASSEMBLY

Remove the L. side cover. (⇒7-2)
Remove the continuously variable transmission.
(⇒SECTION 7)
Remove the exhaust muffler. (⇒3-7)
Remove the rear wheel. (⇒11-3)
Install the oil sump under the cover of transmission.
Loosen the 5 transmission cover flange bolts.
Remove the transmission cover.

Remove the final shaft gear.
Remove the thrust washer.
Remove the countershaft.
Remove the counter shaft gear.
Remove the side washer.

Remove the drive shaft from transmission cover with the press.

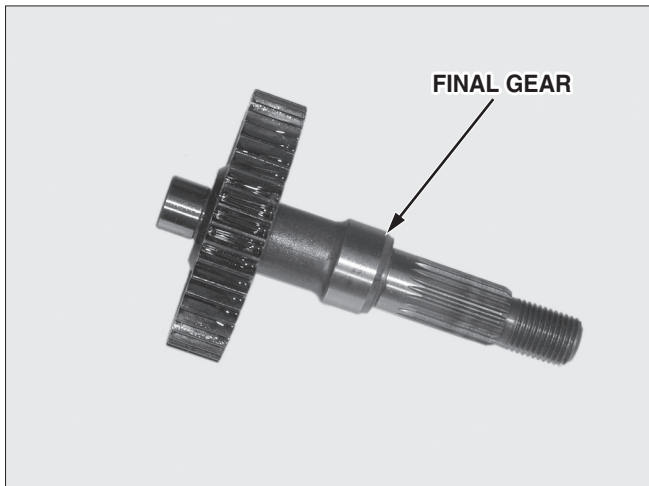
⚠ NOTE

- Take precautions not to damage the cover joints.

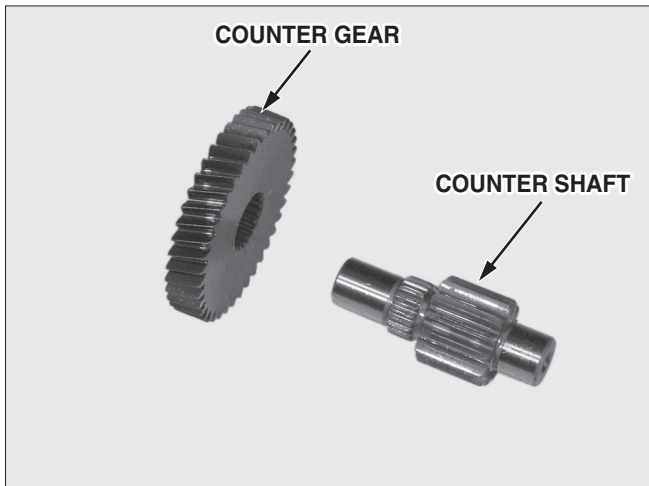
Remove the oil seal of the drive shaft.

INSPECTION

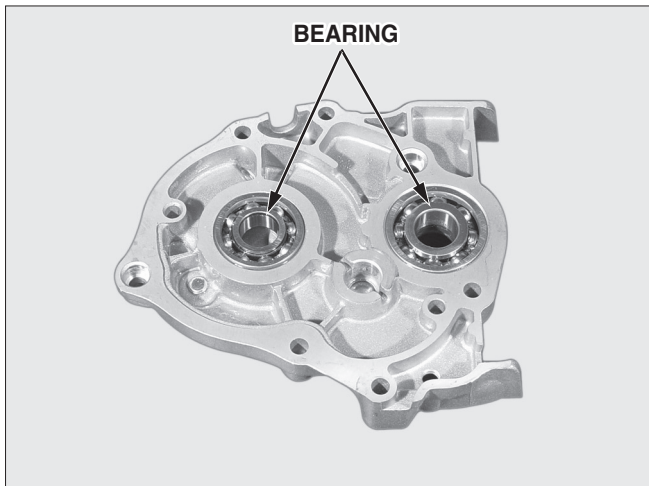
Inspect the drive shaft for wear or damage.



Inspect the final shaft for wear or damage.



Inspect the countershaft for wear or damage.



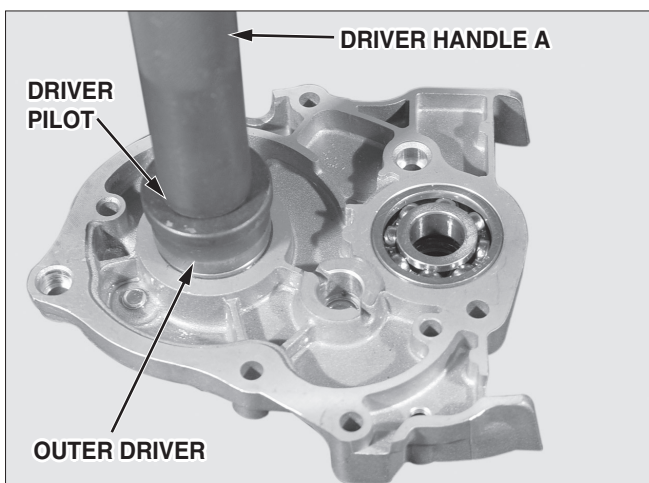
Bearing Inspection

Manually turn the bearing inner race installed inside the transmission cover, and check if the race is turning smoothly.

Verify the outer race is accurately installed in the case. Replace the bearing, if necessary.

NOTE

- Install the bearing with the carved mark directing to the outside.



Use special tools to push in the bearing into the case.

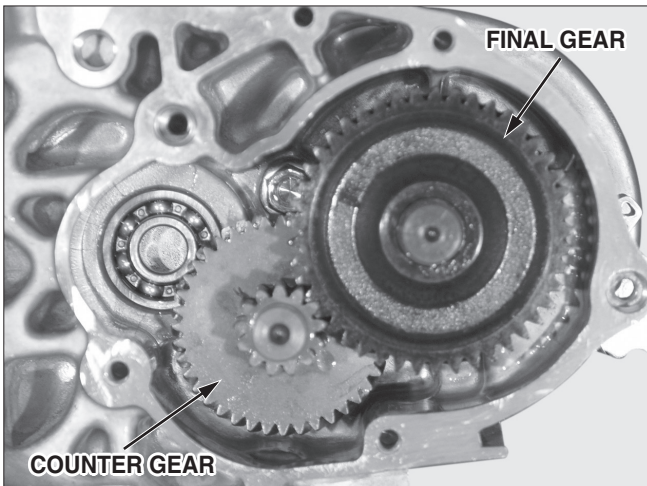
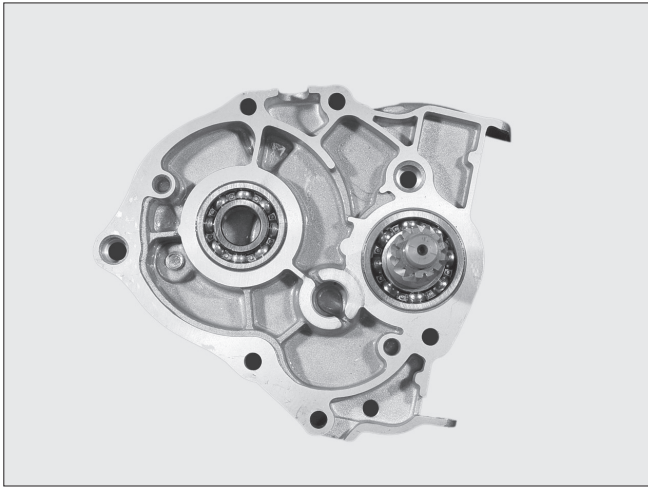
TOOLS : DRIVER HANDLE A
OUTER DRIVER 52X55mm
DRIVER PILOT 20mm

Check the L. crank case oil seal for wear or damage.

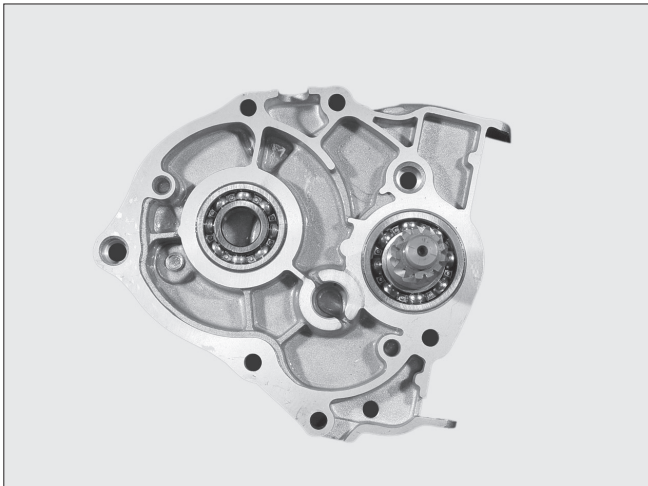
TRANSMISSION ASSEMBLY

Install the drive shaft on the transmission cover.
Install a new drive shaft oil seal.

TOOL : CRANK ASSEMBLY



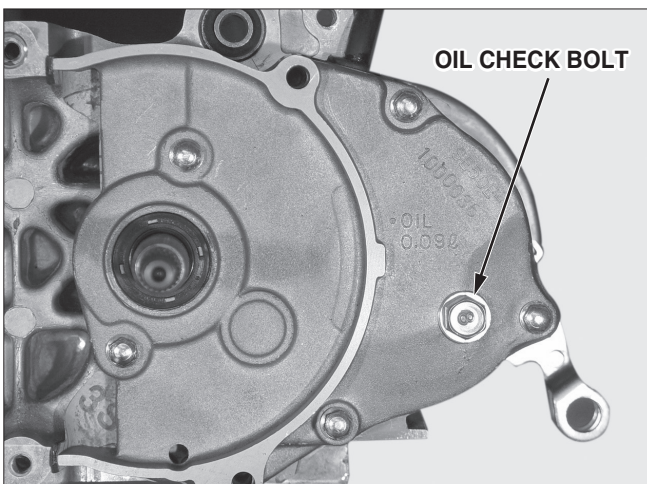
Install the thrust washer, final gear and counter gear, side washer on the L. crankcase.



Install new dowel pins.
Install a new transmission cover seal on the transmission cover.
Install the transmission cover.
Tighten the transmission cover with the flange bolts.

NOTE

- Tighten bolts diagonally and alternately and tighten with specified torque in the end.



Remove the oil check bolt, release the transmission oil filler ACG cap or the L. crankcase until the oil overflow through oil hole and fill the recommended oil slowly.

Install the oil check bolt and the cap .

RECOMMENDED OIL : SAE #80~90
TRANSMISSION OIL AMOUNT : 0.09 l

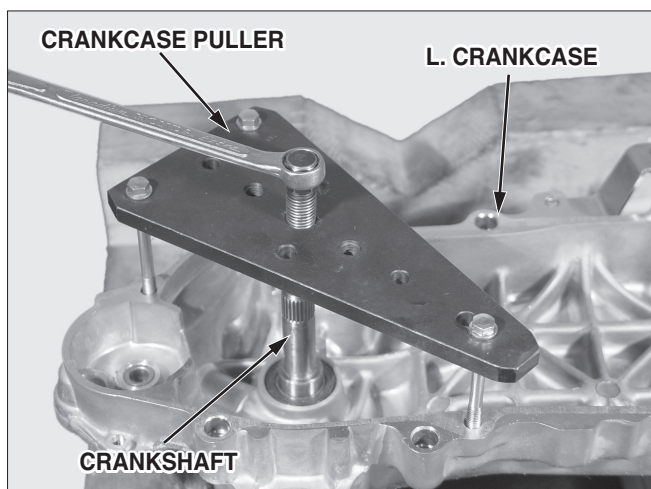
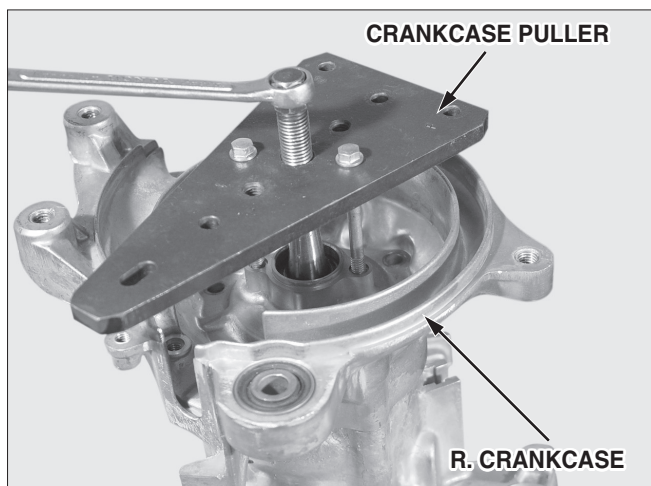
CRANKSHAFT REMOVAL

Loosen the 6 R. crankcase flange bolts.

Secure a crankcase puller on the R. crankcase and remove the R. crankcase from the L. crankcase.

TOOL : CRANKCASE PULLER (0751-00003)

Secure a crankcase puller on the L. crankcase and remove the crankshaft from the L. crankcase.



NOTE

- Be careful not to distort the mating surface of the crank case during disassembly.
- Do not force to disassemble by pounding on the crankshaft.

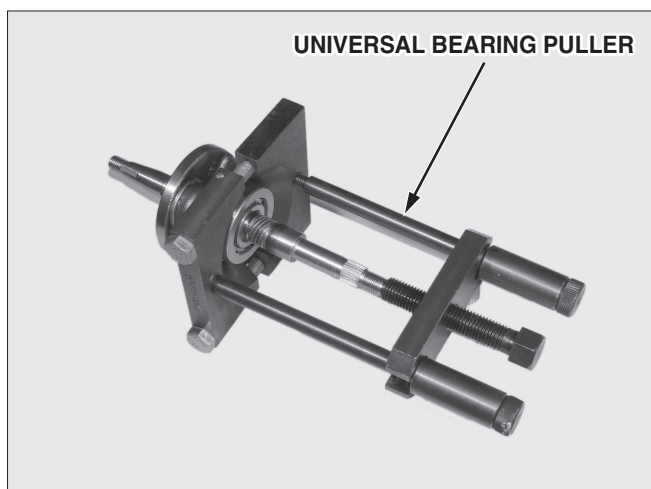
TOOL : CRANKCASE PULLER (0751-00003)

Remove the oil seal from the R. and L. crankcases.
Remove the dowel pin.

CRANKSHAFT BEARING REMOVAL

If the radial ball bearing is left on the crankshaft, remove the bearings out of the crankshaft using a bearing puller.

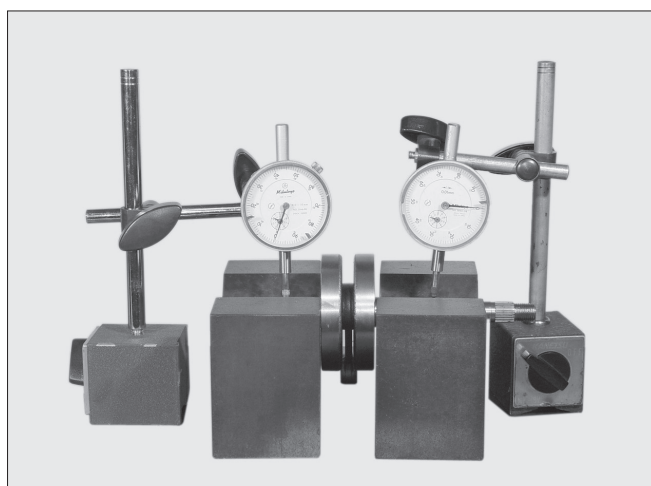
TOOL : UNIVERSAL BEARING PULLER (0755-00001)

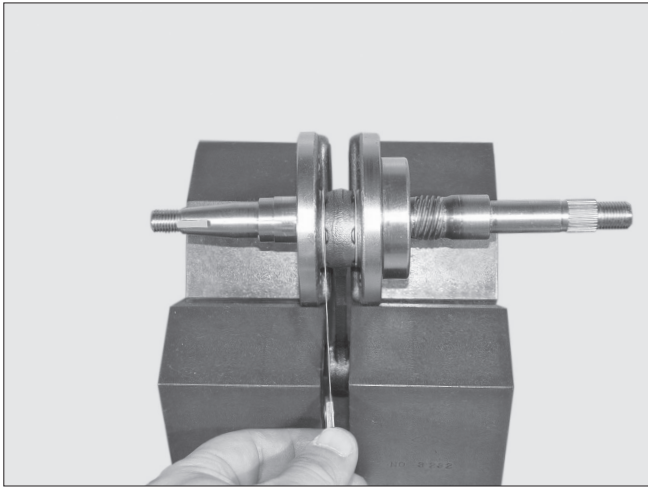


CRANKSHAFT INSPECTION

Place the crankshaft on a stand or V-block, and check the journal vibration.

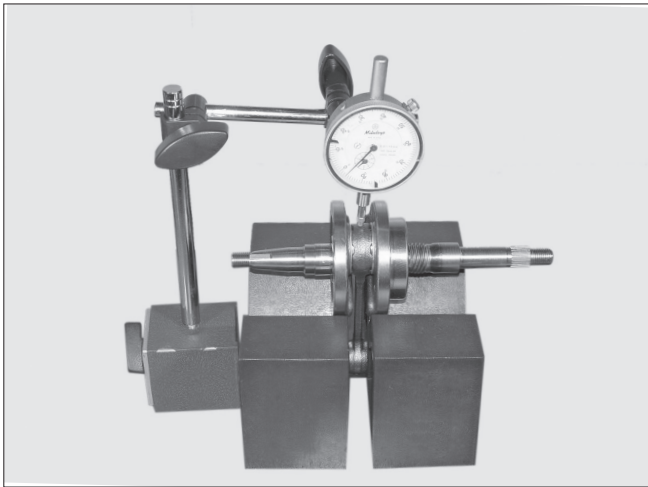
**SERVICE LIMIT : RIGHT SIDE 0.1mm
LEFT SIDE 0.15mm**





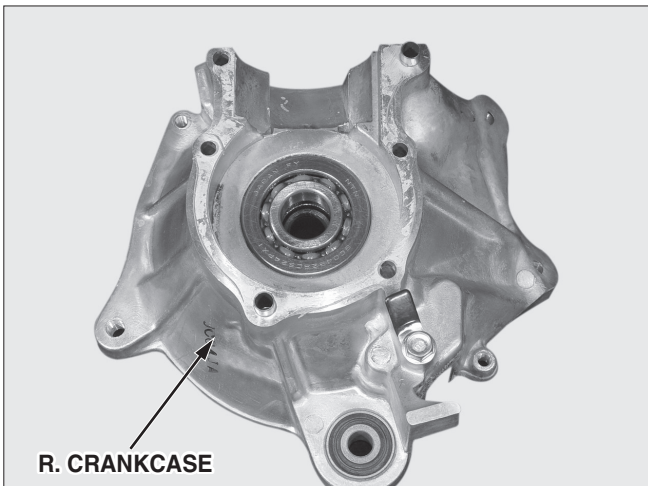
Measure the side gap between the connecting rod big end and the crank weight.

SERVICE LIMIT : 0.6mm



Check the vertical shaft play of the connecting rod big end from the X and Y direction.

SERVICE LIMIT : 0.05mm



CRANKCASE BEARING REMOVAL

Remove the transmission and crankshaft.

INSPECTION

Manually turn the bearing inner race to see if it rotates smoothly.

Check the outer race to see if it is accurately pressed into the case.

If the outer race is excessively loose, or is loosely pressed into the case, remove it and replace with a new one.

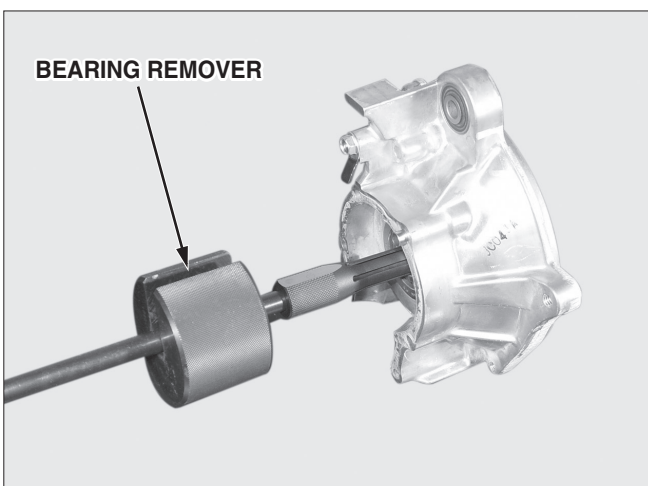
REPLACEMENT

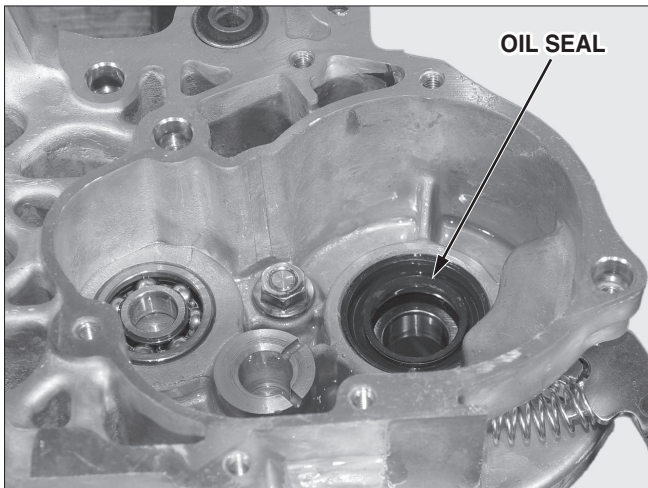
L. Crankcase

Use special tools to remove the drive shaft bearing.

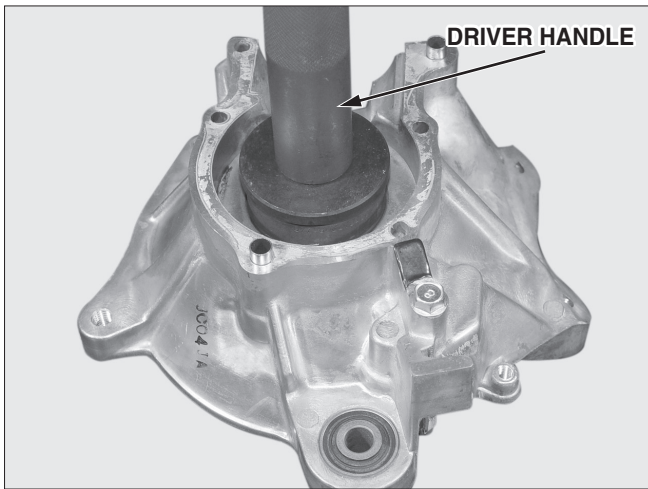
**TOOLS : BEARING REMOVER SET
REMOVER SHAFT
REMOVER HEAD**

Remove the final gear bearing and oil seal.
Remove the counter gear bearing.





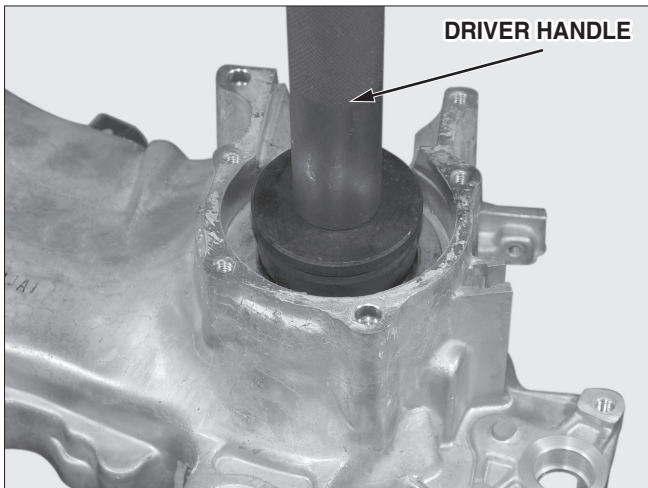
Apply clean engine oil to a new bearing, and assemble it to the crank case.
Install a new final gear oil seal.



CRANKSHAFT INSTALLATION

Apply clean engine oil to the new R. crankshaft bearing, and press in the bearing into the R. crank case.

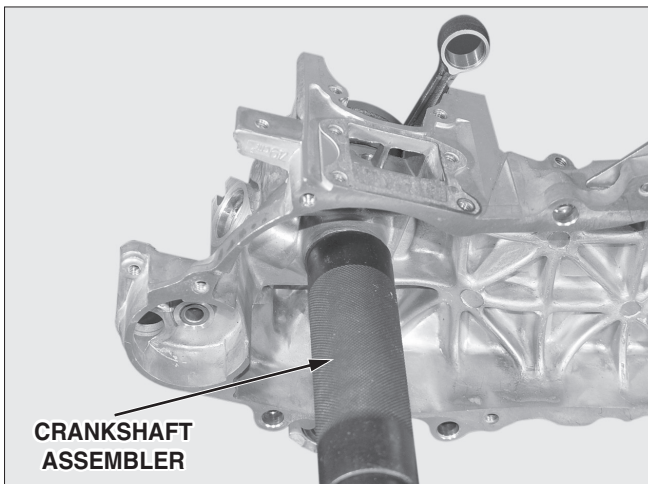
TOOLS : DRIVER HANDLE A
OUTER DRIVER 52x55mm
DRIVER PILOT 20mm



Use special tools to assemble the crankshaft bearing to the L. crank case.

TOOLS : DRIVER HANDLE A
OUTER DRIVER 52x55mm
DRIVER PILOT 20mm

Clean the crankcase using cleaning oil, and check for rack and damage to each area.



NOTE

- After removing the liquid gasket from the joining face of the crankcase, amend the scratched areas using oil ston.
- Apply 2-cycle oil to the radial ball bearings and the connecting rod large end portion.

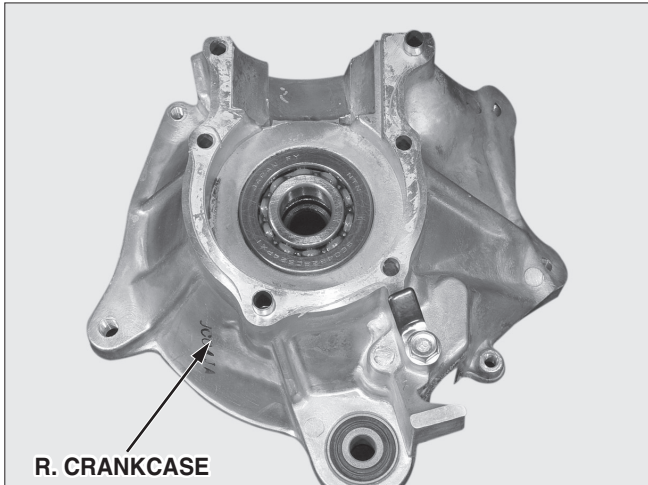
Install the crankshaft to the L. crankcase.

NOTE

- Install not to interfere with the case with being careful of connecting rod location.

TOOL : CRANKSHAFT ASSEMBLER

TRANSMISSION/CRANKSHAFT/CRANKCASE



Apply a liquid gasket to the L. crankcase joining face,
install the dowel pins.
Install the R. crankcase.
Install the 6 flange bolts.

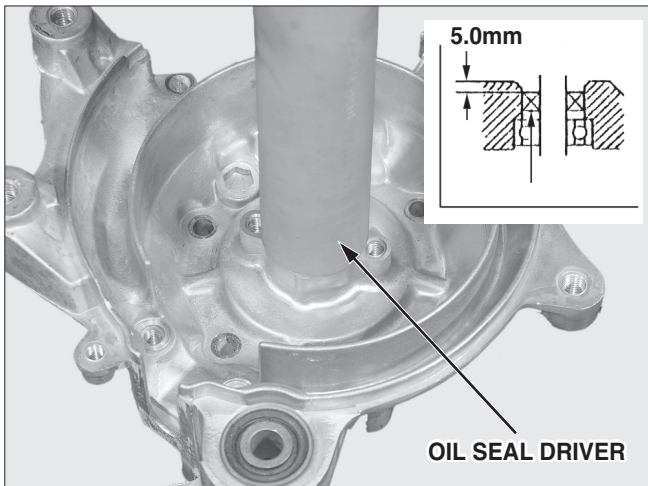
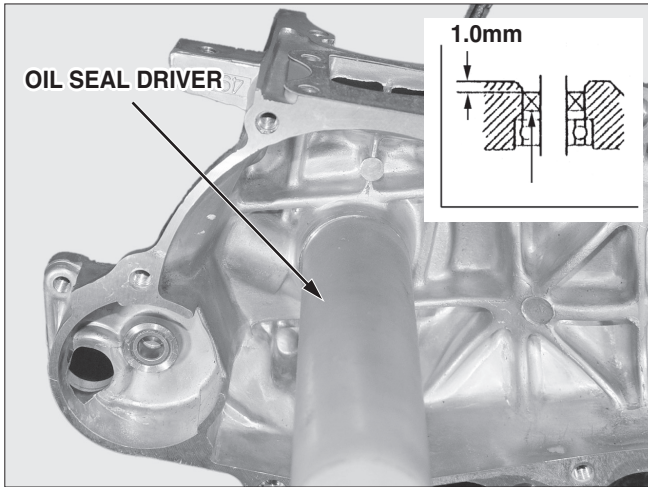
NOTE

- Make sure that there is no adhesion of gasoline to the R., L. crankcase liquid gasket face.
- Do not apply excessive liquid gasket fluid excessively.

TOOL : CRANKSHAFT ASSEMBLER

CAUTION

- Make sure that the crankshaft is rotated smoothly after installation (prior to oil seal installation).
- If the smooth rotation is not acquired, tap the crankshaft bearing part of crankcase with plastic hammer to ensure proper installation without mismatch.

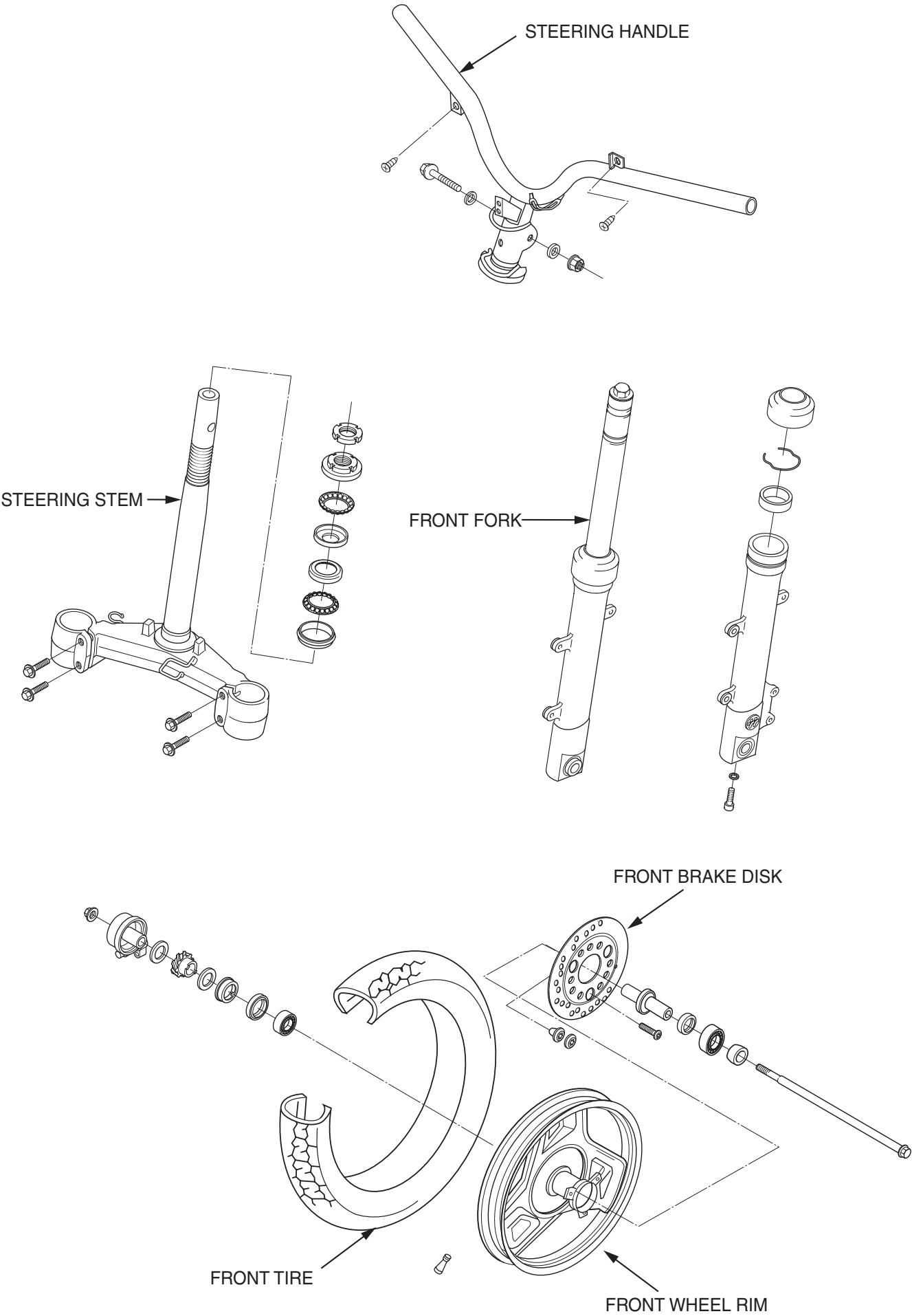


Install a new L. oil seal in the crankcase end portion at
1.0mm depth.

Install a new R. oil seal in the crankcase end portion at
5.0mm depth.

MEMO

FRONT WHEEL/FRONT FORK/STEERING



10. FRONT WHEEL/FRONT FORK/STEERING

SERVICE INFORMATION	10-1	FRONT WHEEL	10-5
SPECIFICATION	10-1	TUBELESS TIRE	10-9
TROUBLESHOOTING	10-2	FRONT FORK	10-14
STEERING HANDLE	10-3	STEERING STEM	10-19

SERVICE INFORMATION

GENERAL SAFETY



Keep oil or brake fluid off the brake disk and pad because the contaminated brake disk and pad reduces the braking performance. If contaminated, replace the pad with a new one, and clean the disk.

Use special tire levers and rim protectors to remove or assemble tires to protect the rim from being damaged.

This section describes how to remove and maintain front wheels, front fork and steering system. For information on the front brake system, refer to section 10.

Place a jack underneath the engine to support the 2-wheeled vehicle.

SPECIFICATIONS

ITEM		STANDARD VALUE	SERVICE LIMIT
FRONT AXLE DEFLECTION		-	0.2mm
FRONT WHEEL RIM RUNOUT	RADICAL	-	2.0mm
	AXIAL	-	2.0mm
FRONT FORK TUBE DEFLECTION		-	0.2mm
FRONT FORK OIL LEVEL		58	-
FORK SPRING FREE LENGTH		263.5mm	-

TORQUE VALUES

STEERING STEM LOCK NUT	7.0kg · m
BRAKE DISK BOLT	3.9kgf · m
FRONT AXLE NUT	6.0kgf · m

TROUBLESHOOTING

Hard steering

- Steering bearing adjustment nut too tight.
- Faulty steering stem bearings.
- Damaged steering stem bearings.
- Insufficient tire pressure.

Steers to one side or does not track straight

- Unevenly adjusted right and left shock absorbers.
- Bent front forks.
- Bent front axle : wheel installed incorrectly.

Front wheel wobbling

- Bent rim.
- Worn front wheel bearings.
- Faulty tire.
- Axle nut not tightened properly.
- Wheel out of balance.

Soft suspension

- Weak fork springs.
- Insufficient fluid in front forks.

Hard suspension

- Incorrect fluid weight in front forks.
- Front fork air pressure incorrect.
- Bent fork tubes.
- Clogged fluid passage.
- Clogged anti-dive orifice.

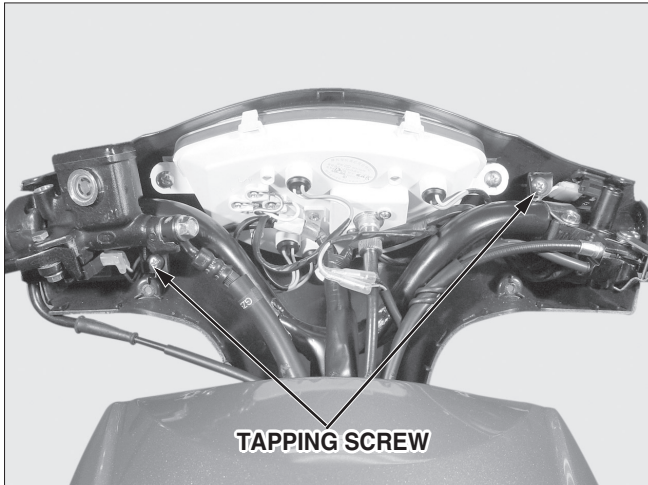
Front suspension noise

- Worn slider or guide bushings.
- Insufficient fluid in forks.
- Loose front fork fasteners.
- Lack of grease in speedometer gear box.

STEERING HANDLE

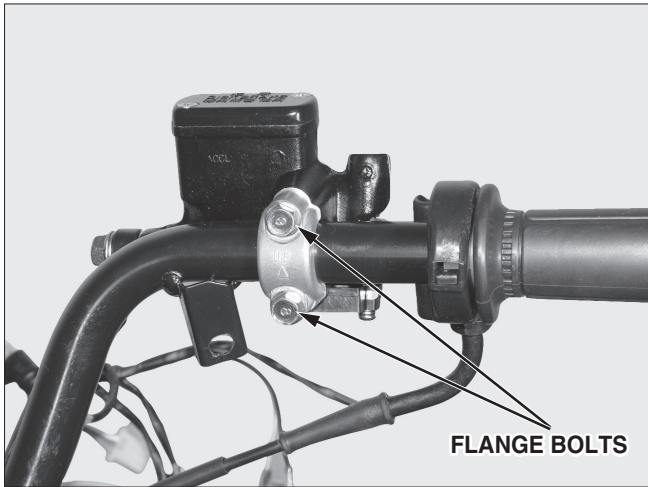
REMOVAL

- Remove the front cover. (⇒3-5)
- Remove the front handle cover. (⇒3-6)
- Remove the rear handle cover. (⇒3-6)
- Removal must be performed with the rear handle cover and the speedometer installed.
- Loosen the throttle housing fixing pin screw.
- Remove the throttle upper housing.
- Remove the throttle under housing.
- Remove the throttle grip.
- Loosen the 2 master cylinder holder bolts, remove the master cylinder.

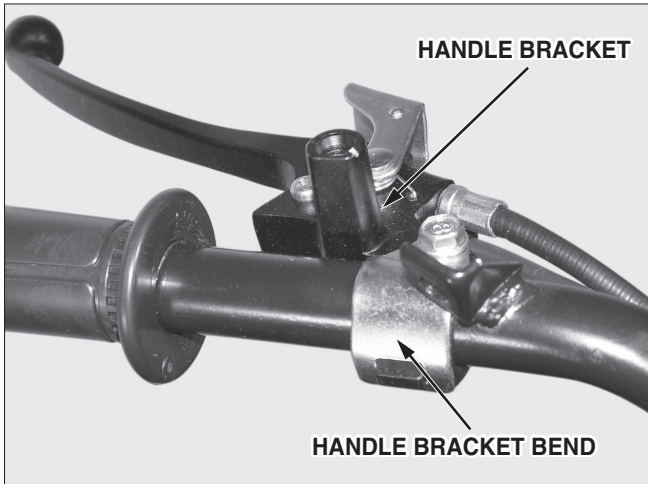


⚠ CAUTION

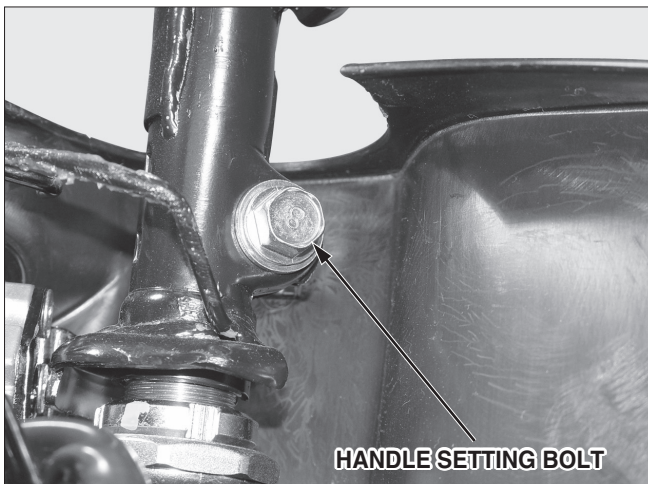
- Support master cylinder properly to prevent brake fluid from leaking.
- If the master cylinder is dropped upside down, air may enter the hydraulic system. Fix it to the vehicle while maintaining the correct assembled location.



- Loosen the handle bracket fixing washer bolt.
- Remove the handle bracket bend.
- Remove the handle bracket.
- Remove the L. handle grip.



- Loosen the handle setting U-nut, remove the handle set collar and flange bolt.
- Remove the rear brake cable, front brake hose, speedometer cable, handle cable from the guide.
- Remove the steering handle from the steering stem.



INSTALLATION

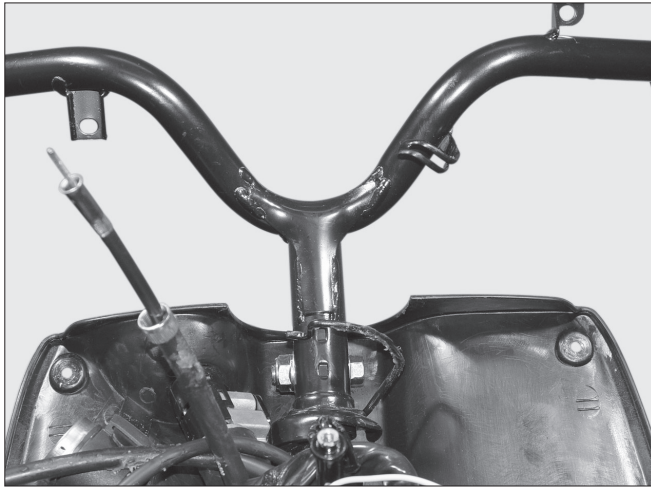
- Install steering handle to the steering stem.
- Install the handle setting bolt, U-nut, handle set collar.

⚠ NOTE

- When installing the handle setting collar, match it with the groove accurately.

TORQUE VALUE : 5.0kgf · m

FRONT WHEEL/Front FORK/STEERING



Install the rear brake cable, front brake hose, speedometer cable to the handle cable guide.

Apply DAELIM Bond A to the inside surface of the grip and to the clean surface of the left handle bar. Wait 3~6 minutes and install the grip.

(Bond A :ROYAL BOND 1300)

⚠ NOTE

- Clean the bonding surface to avoid oil, grease or gasoline from attaching.
- Leave it for minimum 1 hour until the bond is dried.
- Use the bond according to the bond manual enclosed and install the grip while rotating it before the bond is dried completely.

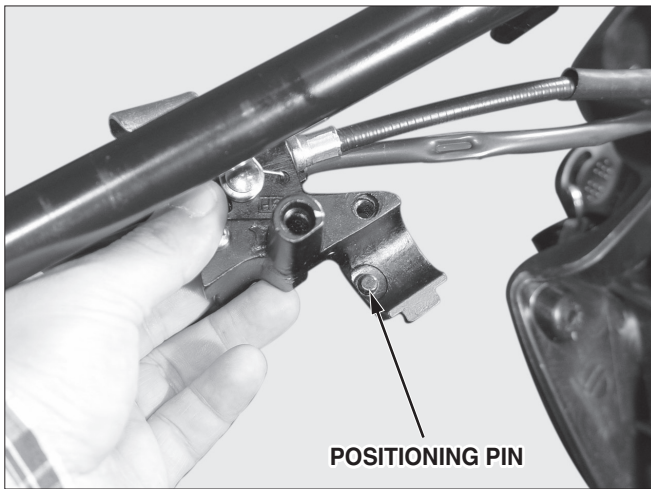
Align the positioning pin with the handle hole and install the L. handle bracket.

TORQUE : 1.2kgf · m

Clean the throttle grip surface, apply the grease and install the grip.

Connect the throttle cable to the groove of the grip.

Tighten the pin screws after assembling the under and upper throttle housings.



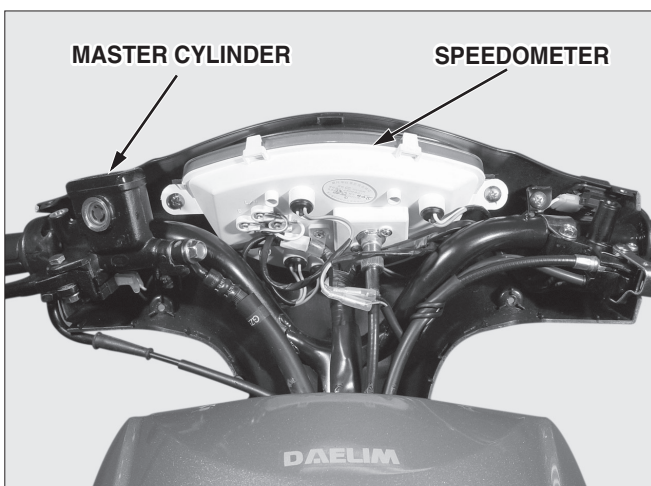
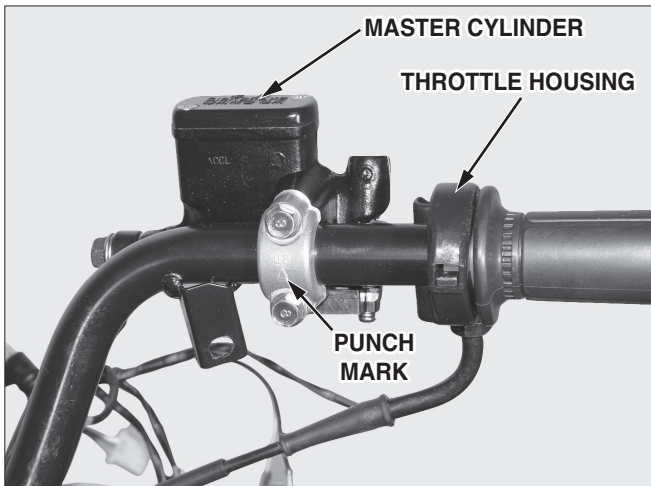
⚠ NOTE

- Check the throttle grip for smooth operation and adjust the free play to 2~6mm.

Match the master cylinder with the punch mark of the handle, install it with the mark in the master cylinder holder facing upwards or front and tighten the rear or front first.

⚠ NOTE

- Check to see if the cylinder is passing each cable and wire harness directly and make sure that there is any interference by rotating the handle to the right and left.



Install the rear handle cover. (⇒3-6)

Install the front handle cover. (⇒3-6)

Install the front cover. (⇒3-5)

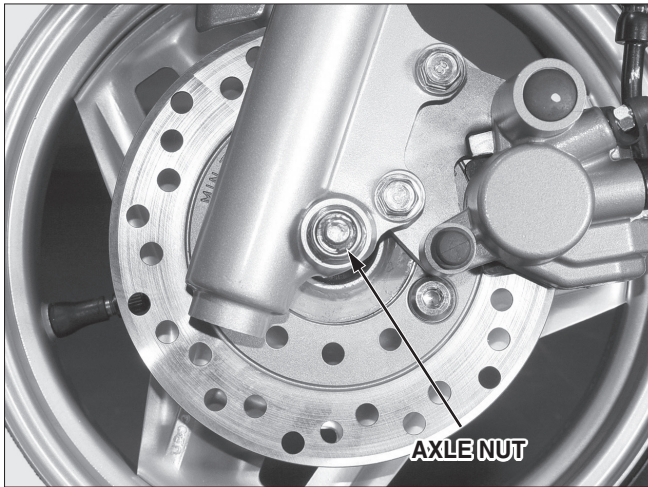
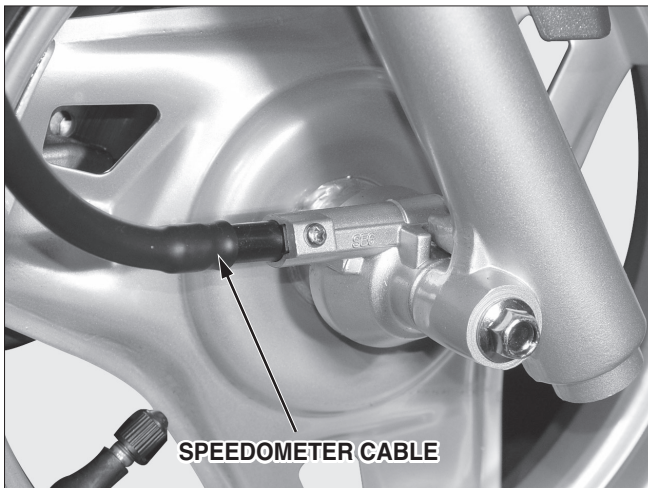
FRONT WHEEL

REMOVAL

Remove screws from the speedometer gear box, and separate the speedometer cable.

NOTE

- Loosen axle nuts. Support bottom of engine with a jack until the front wheel is lifted.



Loosen the axle nut.
Remove the front axle.
Remove the front wheel.

NOTE

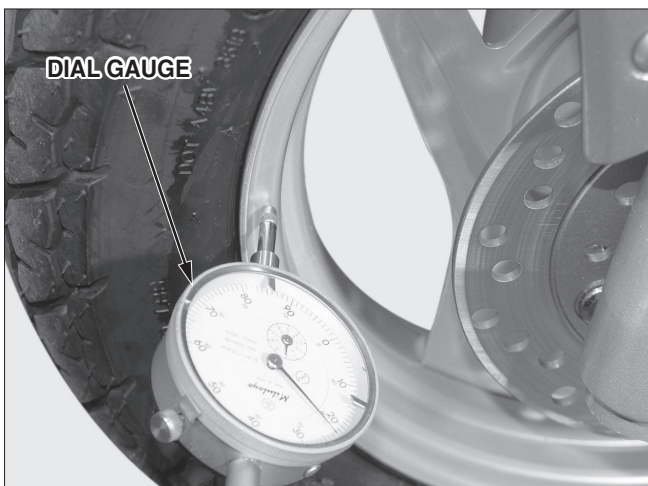
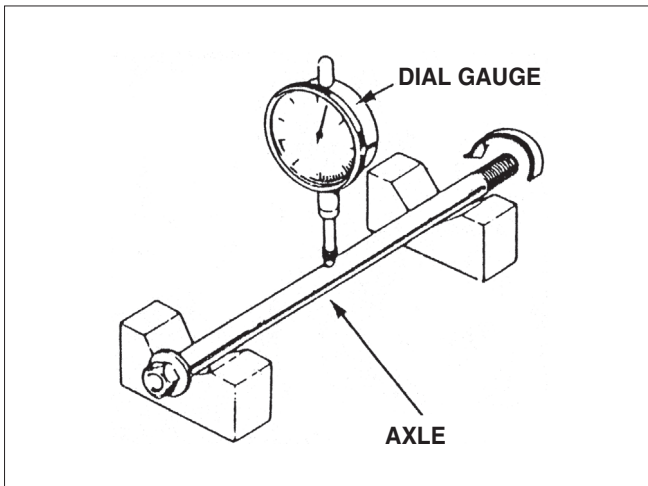
- Do not operate brake lever after the front wheel is removed.

Remove the speedometer gear box.

INSPECTION

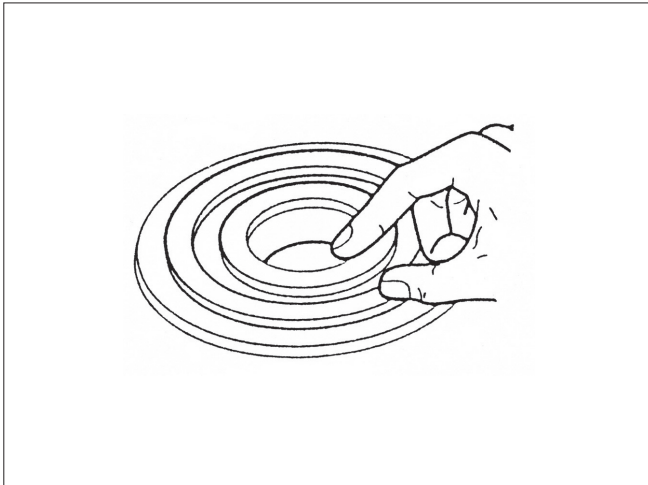
Check the front axle for deflection. Place the front axle on a V-block, and measure deflection with a dial gauge.

SERVICE LIMIT : 0.2mm



Place the front wheel on an inspection stand. Slowly turn the wheel, and check the rim runout with a dial gauge.

**SERVICE LIMIT : Radial 2.0mm
Axial 2.0mm**



Bearing Inspection

Manually turn the bearing inner race, and replace if it makes noise or is worn. Check if the bearing outer race is accurately fitted into the wheel hub, and replace worn ones.

⚠ NOTE

- Replace bearings in pairs (left and right set).

FRONT WHEEL DISASSEMBLY

Remove the speedometer gear box, dust seal, and speedometer gear retainer.



SPEEDOMETER GEAR BOX



FRONT BRAKE COLLAR A

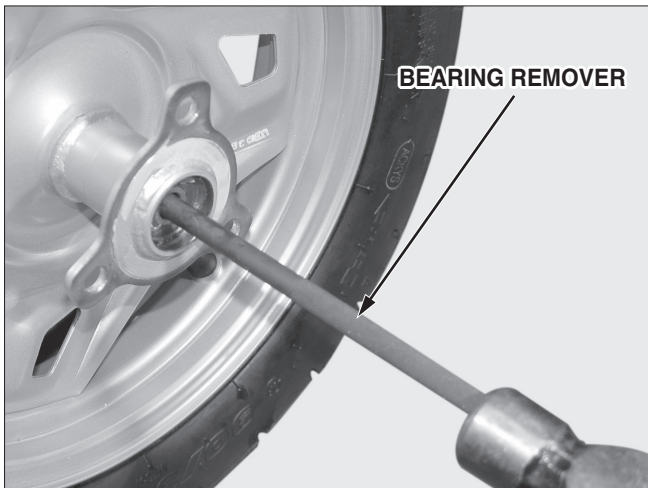
Remove the front brake collar A.



DUST SEAL

Remove the dust seal and brake disc.
Check the disc for defects.

WHEEL BEARING REPLACEMENT

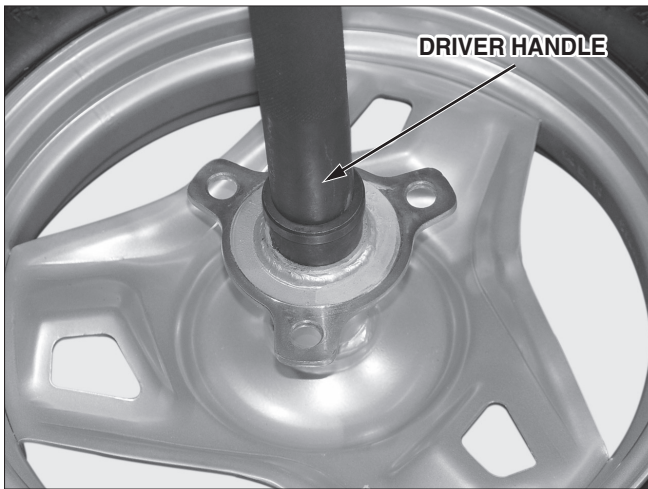


Install the bearing remover head and the remover shaft on the wheel, and remove the bearing and distance collar.

NOTE

- Always replace bearings in pairs, and never use old bearings.

TOOLS : BEARING REMOVER HEAD BEARING REMOVER

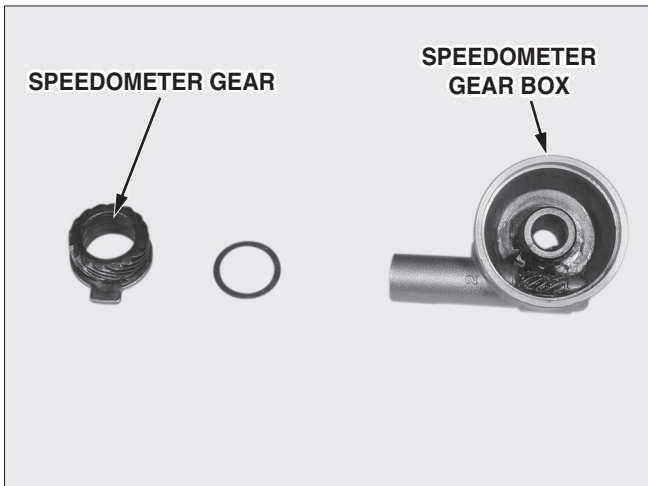


Apply sufficient amount of grease to the bearing.
Insert the right bearing with its seal surface facing outside.
Do not tilt the bearing. Insert accurately.
Upon assembling the distance collar, insert the left bearing with its seal surface facing outside.

TOOLS : DRIVER ATTACHMENT, 32x35mm PILOT, 15mm

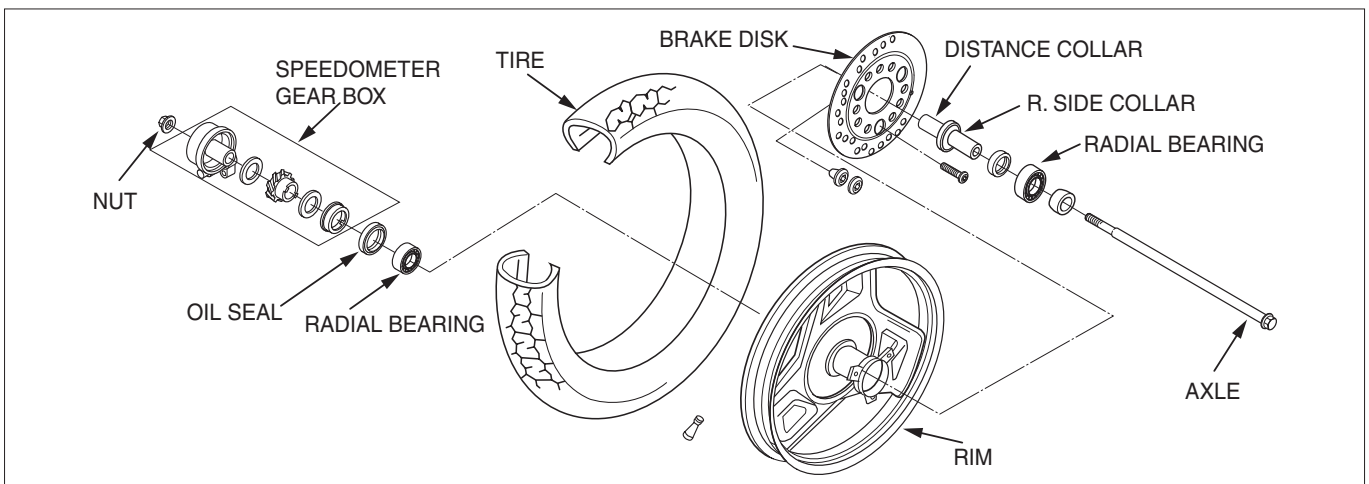
CAUTION

- The bearing inserted in the last must be inserted until it contacts with the distance collar.
- Excessively inserted bearing can cause damage the opposite side bearing.



SPEEDOMETER GEAR REPLACEMENT

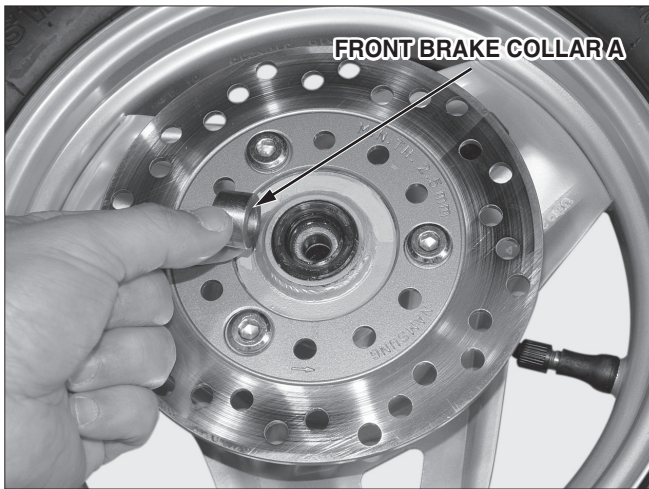
Remove the speedometer gear and washer from the speedometer gear box.
Check the gear for wear or damage.
Install the washer.
Apply grease to the speedometer gear prior to assembling.



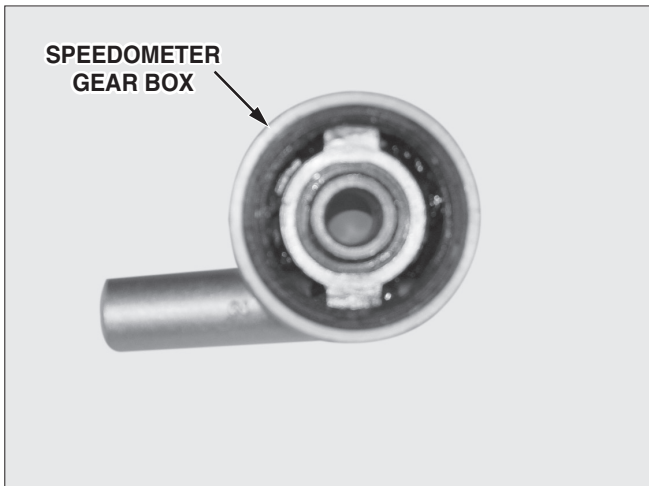
FRONT WHEEL ASSEMBLY

Apply grease to the right side dust seal rim.
Install the right side dust seal.
Install the brake disk.
Install disk bolts.

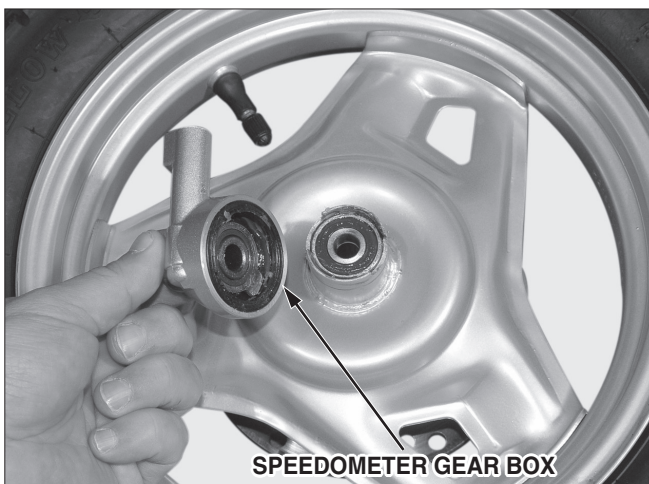
TORUE VALUE : 3.9kgf · m



Install the front brake collar A.



Install speedometer gear box seal.



Assembly speedometer gear box in speedometer gear box seal.

TUBELESS TIRE

REMOVAL

Remove the wheel.

⚠ NOTE

- Single brake disk type : To prevent damage to the disk, place the wheel on the level surface with the disk facing up.

Remove the valve cap and bleed air by pressing the valve core.

Remove the valve core after bleeding air completely. Remove the valve stem nut and push the valve stem lightly.

If a bead stopper is installed, loosen the lock nut and push the bead stopper down.

Collapse in the bead with a tire bead breaker.

If no tire bead breaker is available, step on the side wall to collapse the bead.

⚠ NOTE

- Do not step on the rim.

Collapse the bead into the rim center and slide the tire out of position.

⚠ NOTE

- Tire can be easily removed once the beads are collapsed completely.

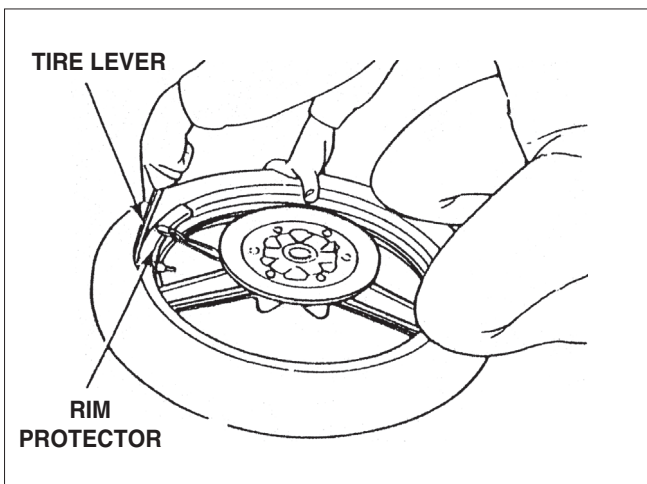
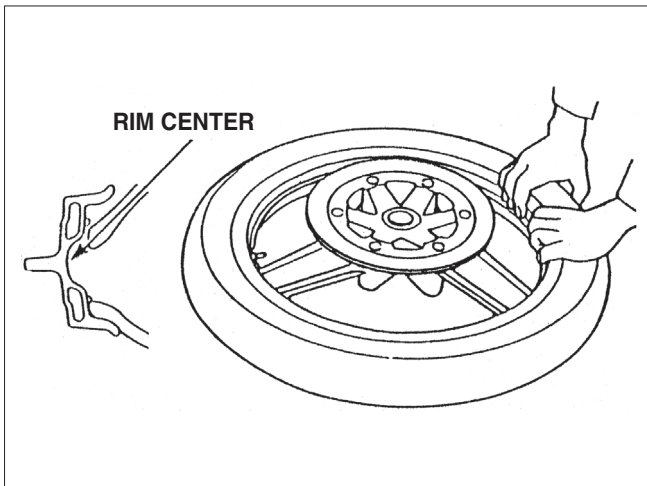
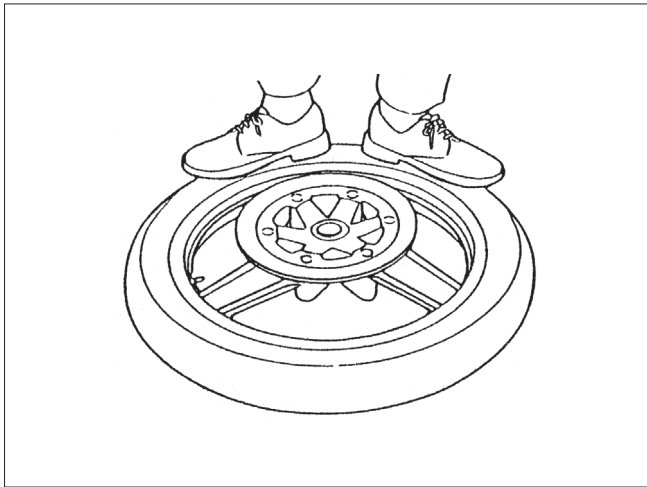
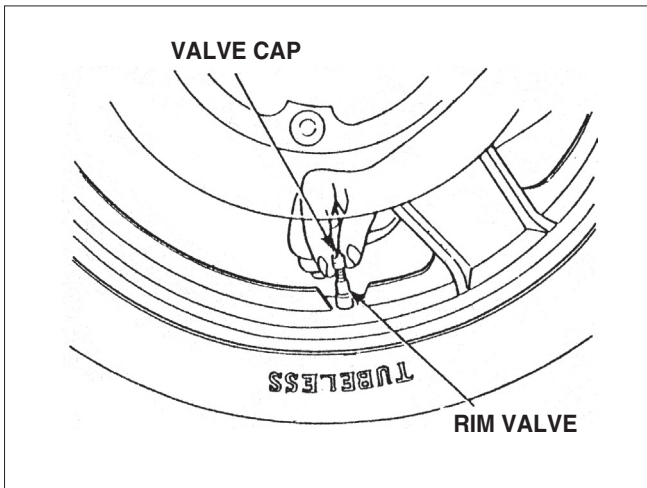
Apply a mild detergent solution to the rim and tire mating surfaces.

Be sure that the bead is completely collapsed.

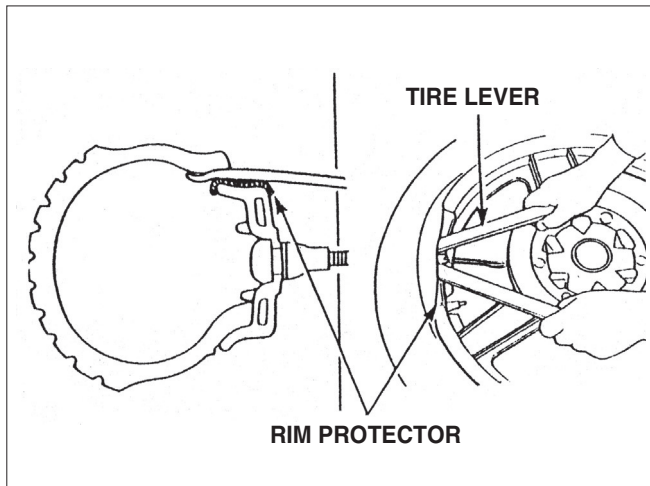
Insert the tire lever from the opposite side of the valve and raise the bead over the rim.

⚠ NOTE

- Be sure to use motorcycle tire levers.
- Do not apply the mild detergent solution to the rim and tire mating surfaces of low pressure tire. Apply water only.



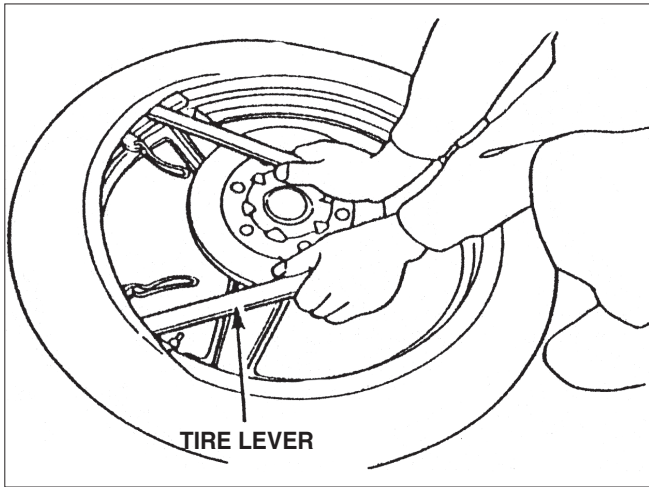
FRONT WHEEL/FRONT FORK/STEERING



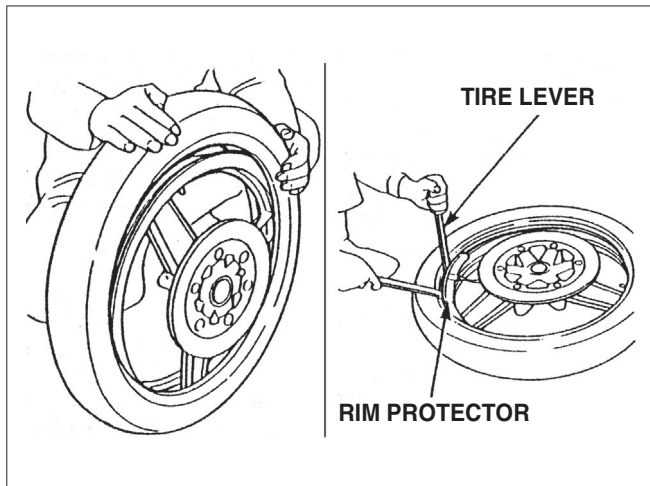
Insert another tire lever at 30~50mm from the first tire lever and remove the tire from the rim, little by little.

⚠ NOTE

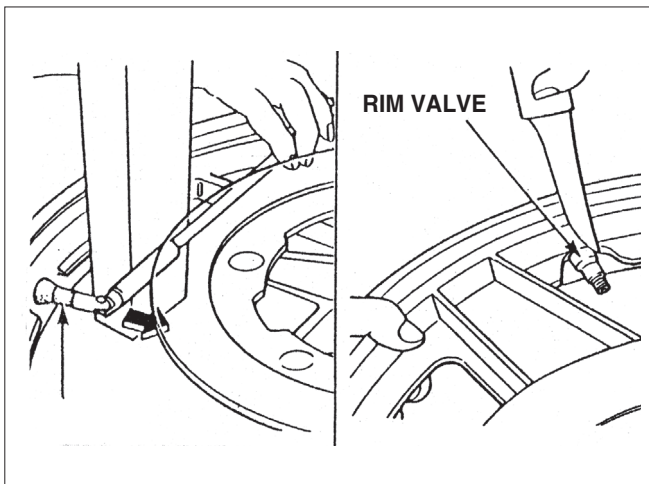
- Do not try to remove the bead too much at one time.



Repeat the above procedures until half of bead is removed. Then remove the remaining bead by hand.



Remove the another tire from the rim according to the same procedures.



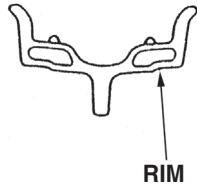
RIM VALVE REPLACEMENT

Cut off the rim valve at its base.
Apply mild detergent solution to a replacement rim valve and insert it from inside of the rim.

⚠ NOTE

- Be sure to use the recommended rim valve.
- Do not damage the valve hole.
- Replace the rim valve whenever installing a tubeless tire.

RIM INSPECTION



If using a solution (brake cleaner, gasoline, thinner) when removing the rust and dirt, wipe off the remainder when reassembling. It may damage the rubber parts.

If there is serious deformation, twist or crack, the air may be leaked. Replace the damaged parts immediately.

If there is scratch on bead contacting face more than 0.5mm in depth or 1.0mm in width, replace the damaged parts immediately.

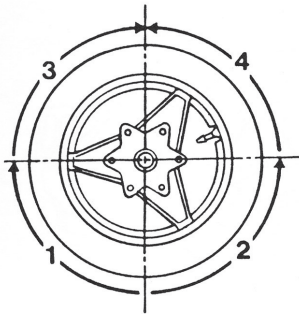
WARNING

- If the combination of tubeless tire and rim isn't proper, the tire may come off. It will cause a serious accident. Pay attention to deal it.

TUBELESS TIRE INSTALLATION

CAUTION

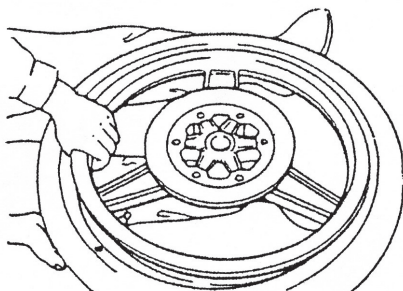
- Always use the exclusive tire lever for two-wheeled vehicles.
- Use the rim protector to prevent the scratch of rim.
- In case of low pressure tire, if vegetable soapy water is used, it may slip even after the rim and tire are installed. Only use the water.



If the tire has an light mark (yellow paint mark), install the tire with this mark aligned with the valve.

If the tire has an arrow mark, install the tire with the mark pointing in the direction of rotation.

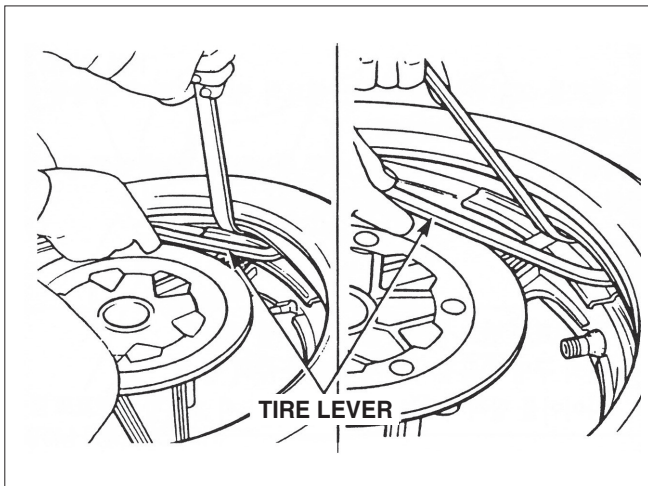
Stand the tire upright, hold it with one hand and, starting from the opposite side to the valve, install one side of the tire on the rim as much as you can by hand.



Be sure to assemble in the sequence shown.

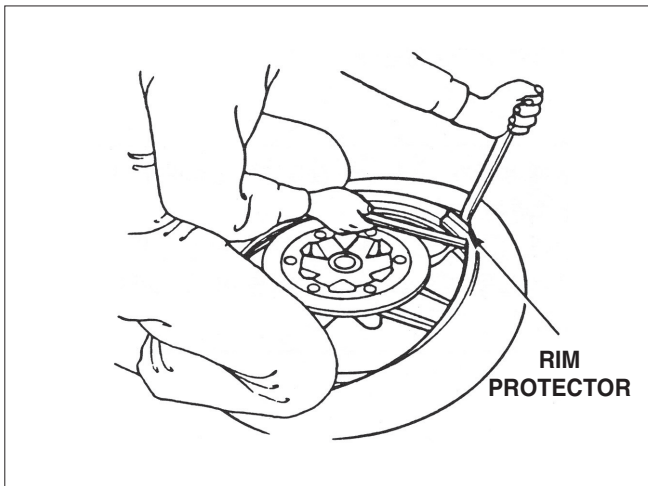
Place the wheel on the level surface and install the remaining portion of the tire using two tire levers.

FRONT WHEEL/Front FORK/STEERING



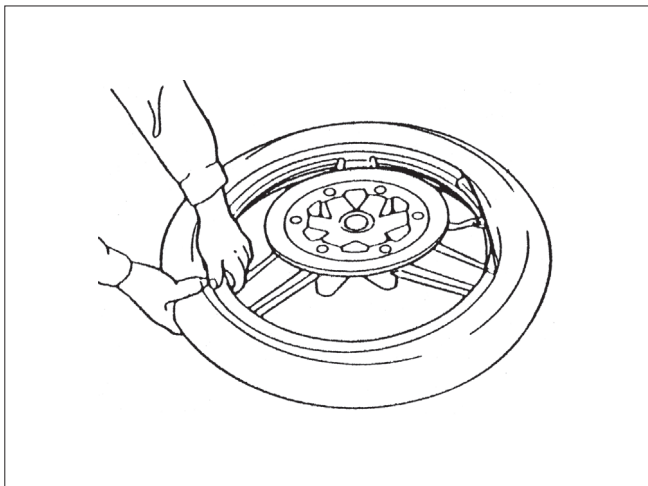
Install the other side of the bead while holding the assembled portion of the bead with your knee to prevent it from coming off.

After 1/2 of the bead has been installed, insert the two tire levers at a distance of 30~40mm to install it. Repeat this procedure until 3/4 of the bead has been installed.



! NOTE

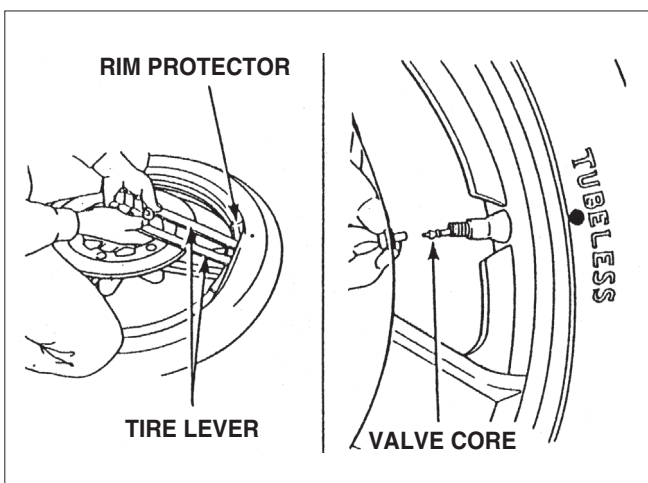
- Hold one tire lever upright to remove the other lever.



Check out whether the bead is in the center of the rim when 3/4 of the bead has been installed.

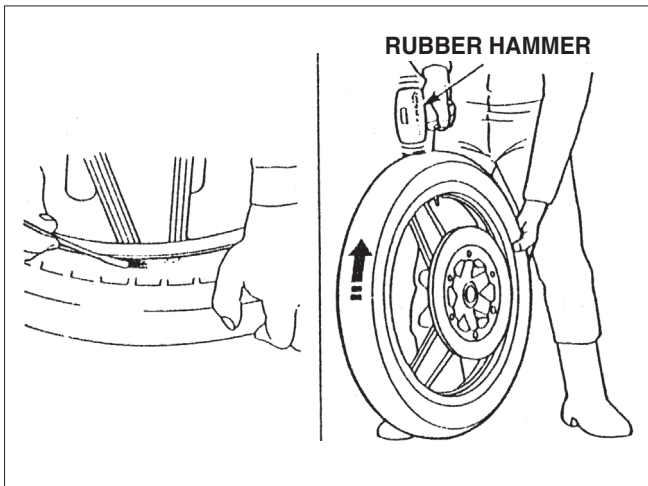
! NOTE

- The last portion of the bead is more difficult to install. The rim and bead may be damaged if the bead on the opposite side of the point where you are working is not in the rim center.



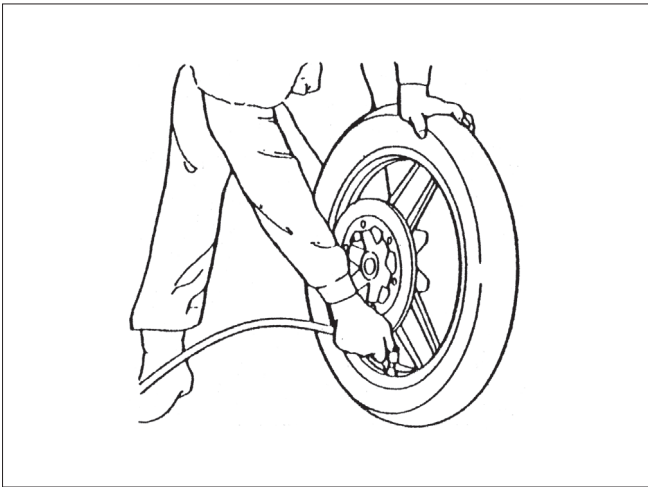
When the remaining bead is only 50~60mm, pull the two levers up and over and completely install the bead. Install the valve core.

FRONT WHEEL/FRONT FORK/STEERING



Apply a mild detergent solution to the bead again. Tap on the tire tread surface with a rubber hammer so that the tire and rim fit evenly around the circumference.

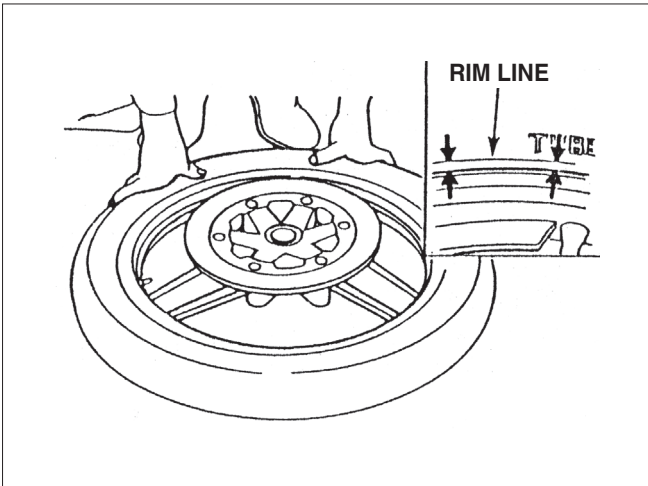
Be sure that the tire center and rim center are aligned.



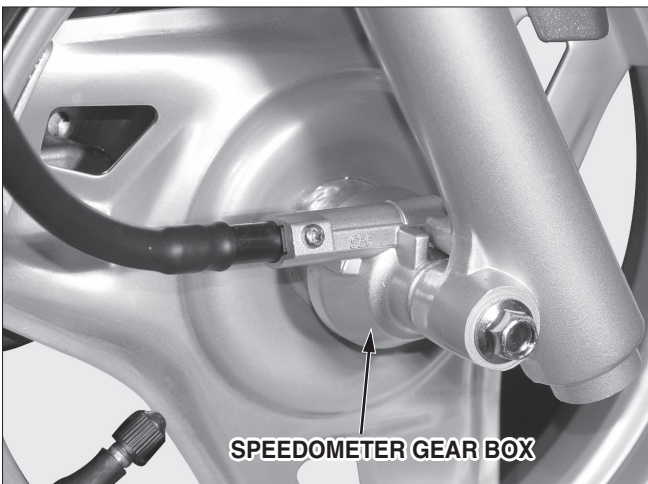
Inflate the tire to 1.5 times the standard recommended pressure to seat the bead on the rim.

⚠ NOTE

- When air charging, you may hear a loud sound as the bead seats onto the rim. This is normal.
- When air charging, if air leaks out from between the rim and bead, let the wheel stand with the valve at the bottom and put air in while pushing down on the tire.



Check that the tire bead seats on the tire rim securely and the rim line of the tire is concentric with the rim.



FRONT WHEEL INSTALLATION

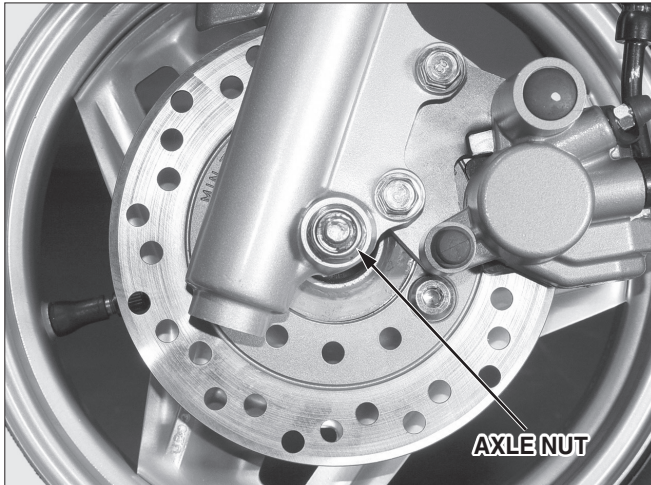
Insert the front wheel between the front forks.

Insert the disk, taking precautions not to damage the pad, and assemble the wheel.

Align the slots of the speedometer gear with the tangs of the left fork slider.

Insert the front axle into the speedometer gear box and the wheel hub.

FRONT WHEEL/FRONT FORK/STEERING

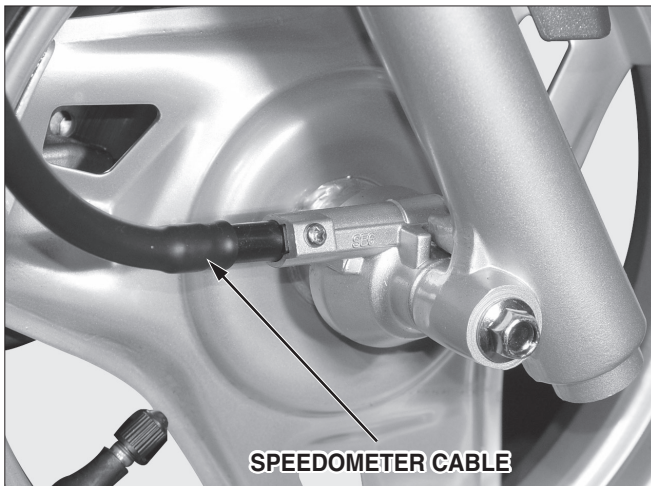


Install the axle nut.

Assemble the speedometer cable, and tighten with screws.

Place the front wheel on the ground, and tighten the axle nut to the prescribed torque.

TORQUE VALUE : 6.0kgf · m



FRONT FORK REMOVAL

Remove the front cover. (⇒3-5)

Remove the front fender. (⇒3-5)

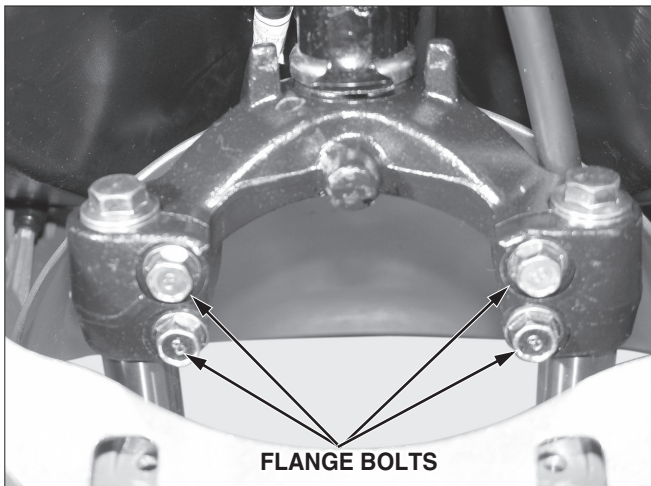
Remove the front brake caliper. (⇒12-7)

Remove the front wheel. (⇒10-5)

Loosen the front brake hose stay bolt, remove the L. fork.

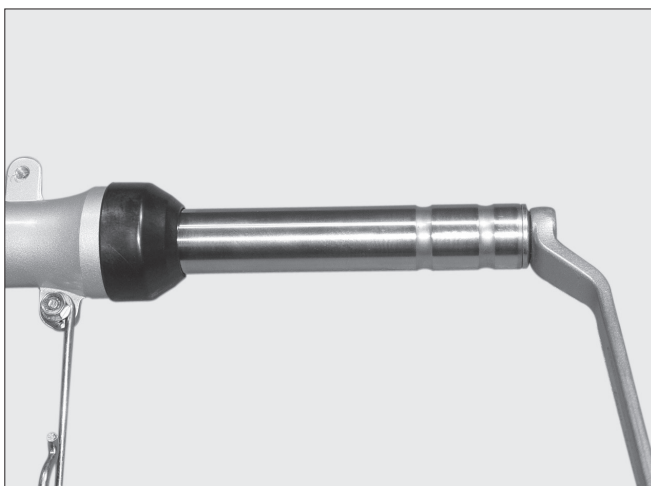
Remove the speedometer cable from R. fork speedometer cable guide.

Loosen the R. fork securing bolt, remove the speedometer cable and guide.



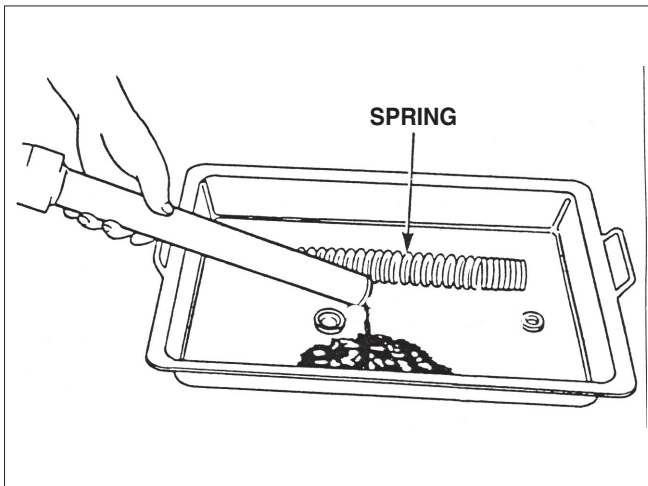
Loosen the 2 steering stem front fork R., L. stay bolts.

Remove the front fork.



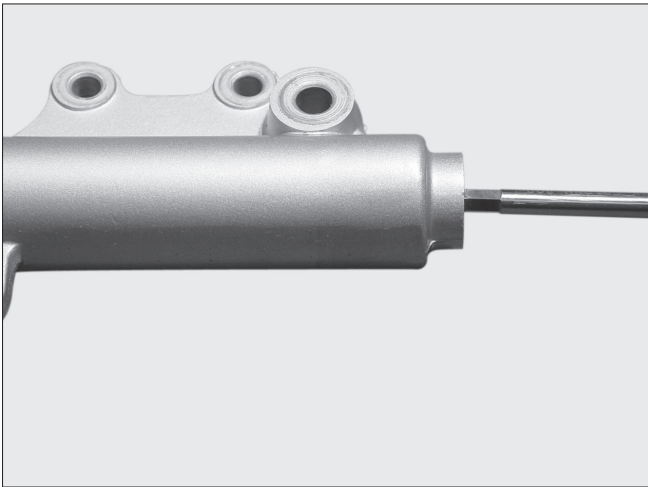
FRONT FORK DISASSEMBLY

Remove the fork tube cap bolt.

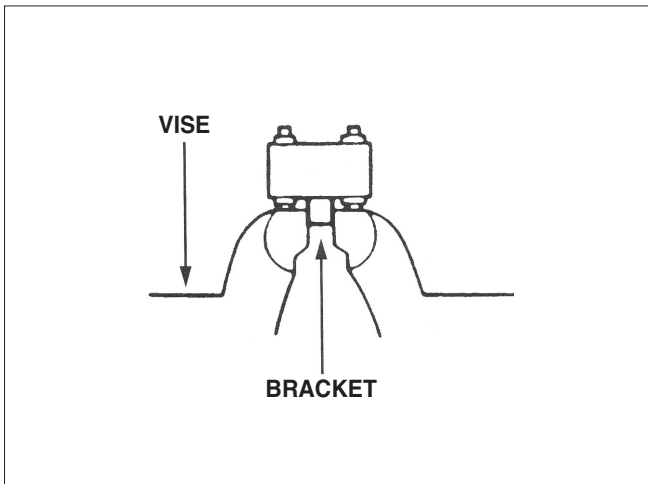


NOTE

- If the screw is completely loosened, the fork tube cap bolt may spring out by the force of the spring. Take due precautions.
- Remove the fork spring, and expand and release the fork pipe several times to drain fork oil.



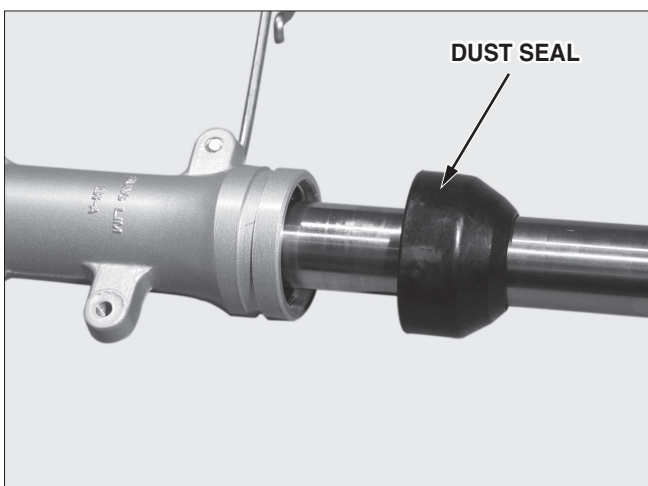
Wrap the bottom case with a piece of cloth, and remove the socket bolt.



NOTE

- If the socket bolt turns idle but cannot be removed, temporarily assemble the spring and the fork tube cap bolt first.
- Hold the bottom case firmly with a vise, taking precautions not to distort or damage it.

RULLER

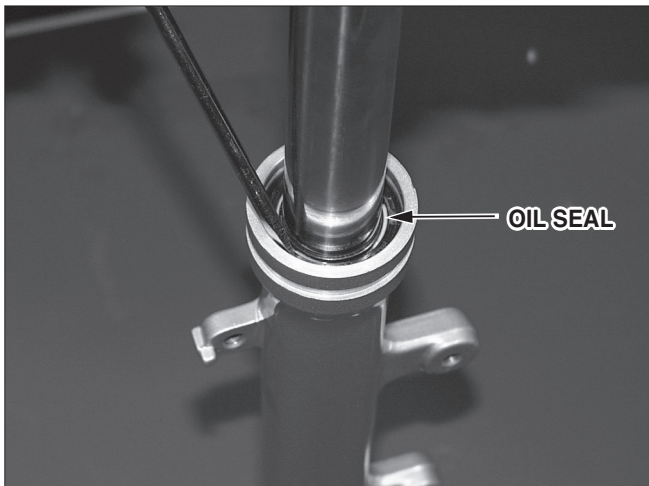


Remove the dust seal.

FRONT WHEEL/Front FORK/STEERING



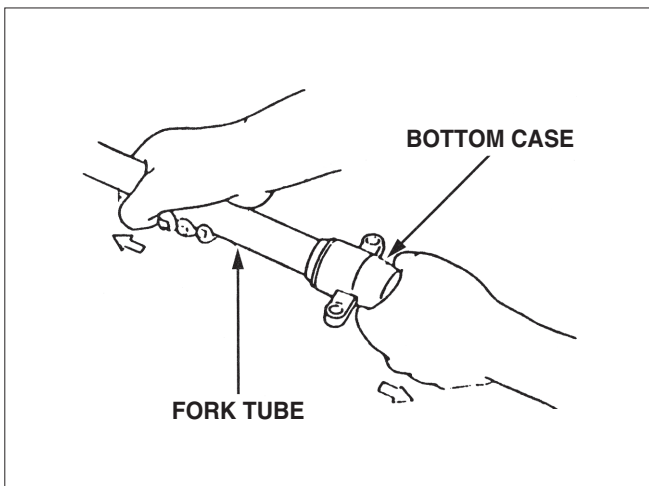
Remove the oil seal stopper ring.



Remove the oil seal.

NOTE

- Take precautions not to damage the interior and exterior rim of the bottom case.



Remove the fork tube from the bottom case.
Remove the piston and rebound spring from the fork tube.

FRONT FORK INSPECTION

Place the fork spring on a level place, and measure the free length.

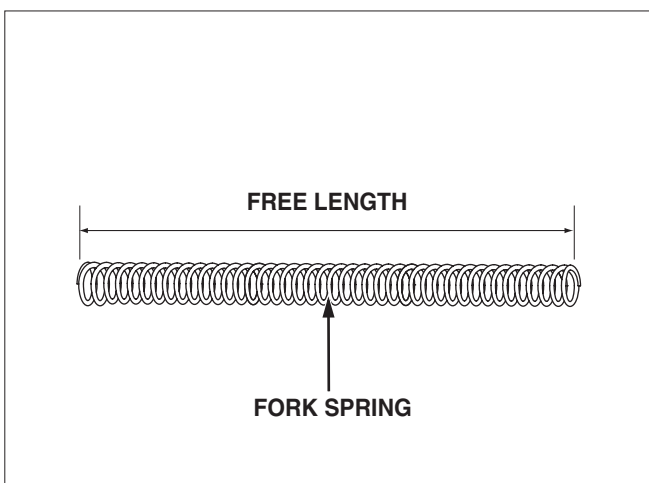
If the free length deviates from the service limit, replace the spring with a new one.

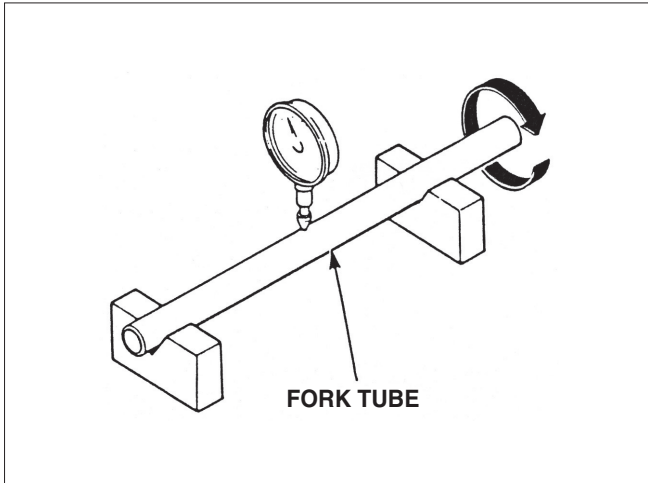
Check components for damage or abnormal wear.
Replace defective parts with new ones.

SERVICE LIMIT : 263.5mm

Place the fork tube on a V-block, and measure deflection with a dial gauge.

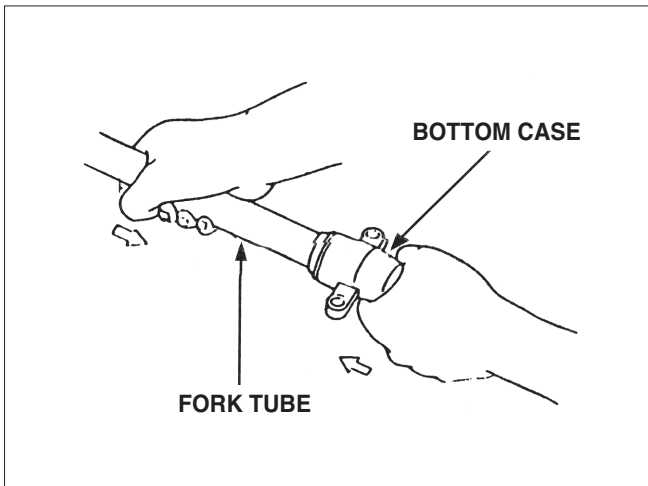
SERVICE LIMIT : Replace if the deflection is greater than 0.2mm





Check the slider bush contact face.

If the slider bush is extensively damaged, replace the bottom case.

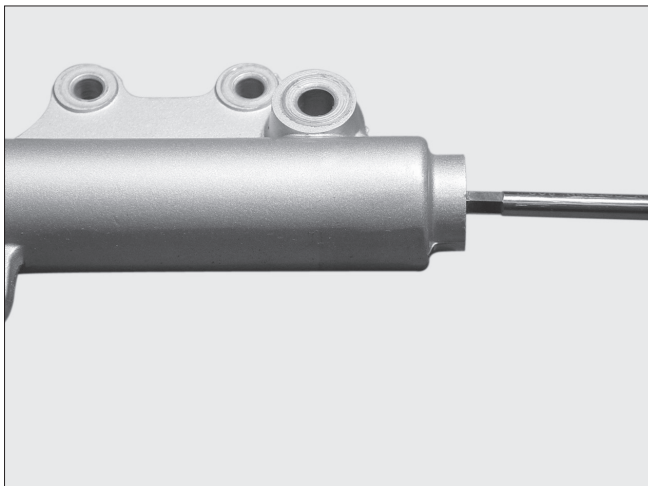


FRONT FORK ASSEMBLY

Wash parts with clean oil prior to assembling.

Assemble the rebound spring and the fork piston to the fork tube.

Assemble the fork tube to the bottom case.



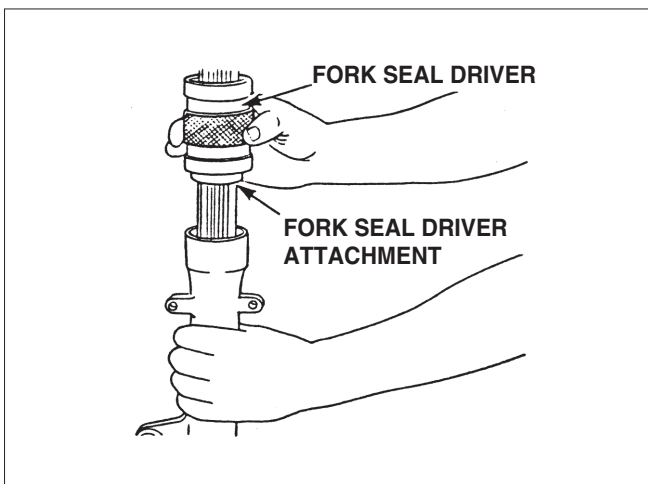
Wrap the bottom case with a piece of cloth, and fix it to the vise.

Apply screw locking agent to the socket bolt thread, and assemble the socket bolt to the fork piston.

TORQUE VALUE : 2.0kgf · m

NOTE

- When a vise is used to hold the bottom case, do not insert the case itself but insert the bracket.



Apply ATF to a new oil seal.

Assemble the oil seal to the bottom case.

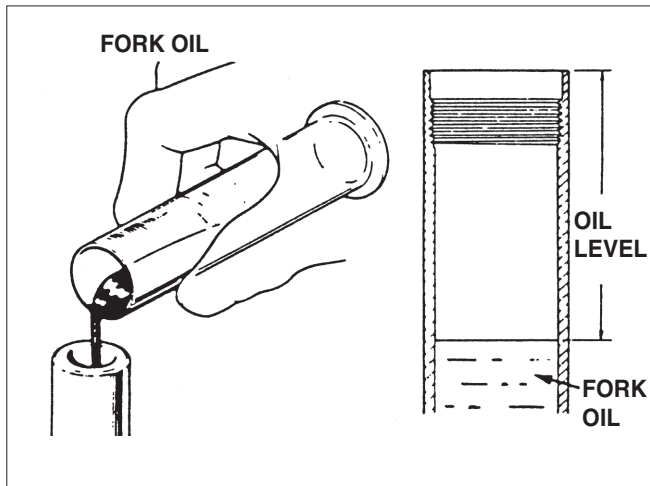
Insert the oil seal with special tools until the attachment groove of the bottom case set ring is exposed.

**TOOLS : FORK SEAL DRIVER
FORK SEAL DRIVER BODY**

Install the oil seal stopper ring

Accurately assemble the oil seal stopper ring to the bottom case.

FRONT WHEEL/Front FORK/STEERING

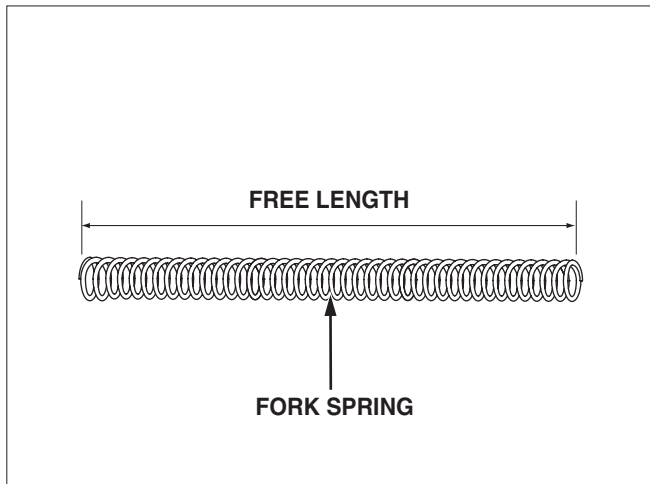


Install the dust seal.

Fill a prescribed amount of automatic transmission fluid(ATF) into the fork tube.

CAPACITY : 58cm³

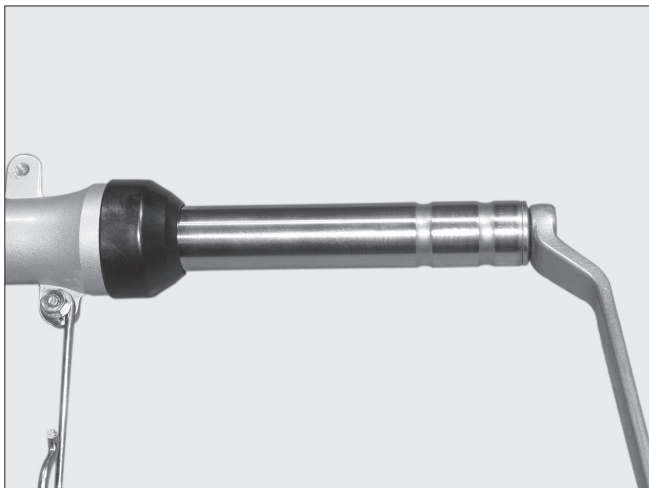
Slowly press the fork tube 2-3 times to discharge air.



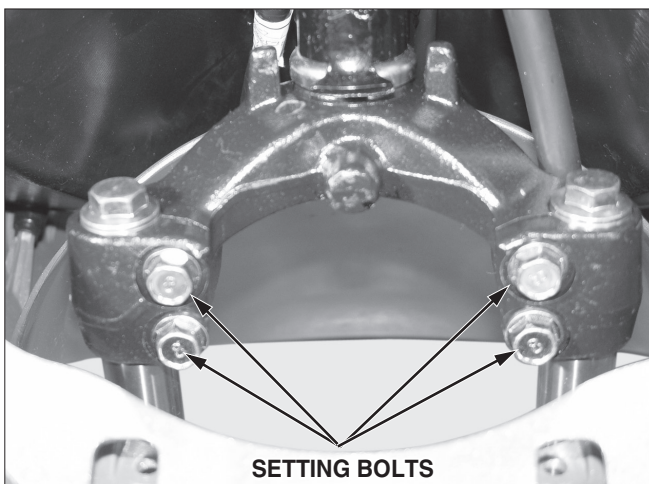
Assemble the spring to the fork pipe.

NOTE

- Install the spring with the smaller pitch side facing downward.



Assemble the fork bolt to the fork tube.

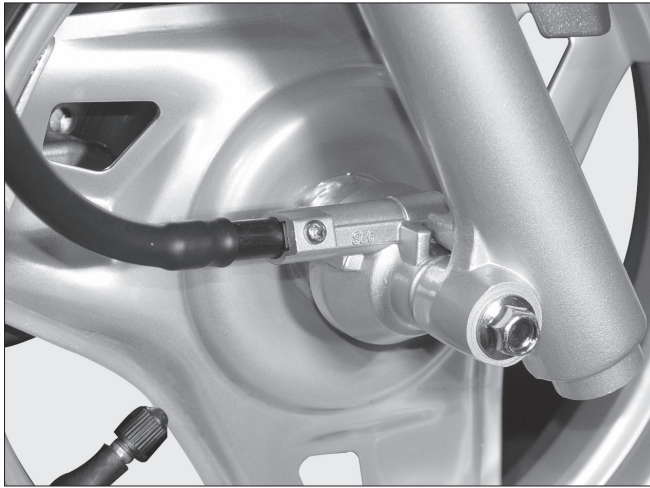


FRONT FORK INSTALLATION

Install the front fork to the steering stem.

Install the front fork setting bolt.

TORQUE VALUE : 4.0kgf · m

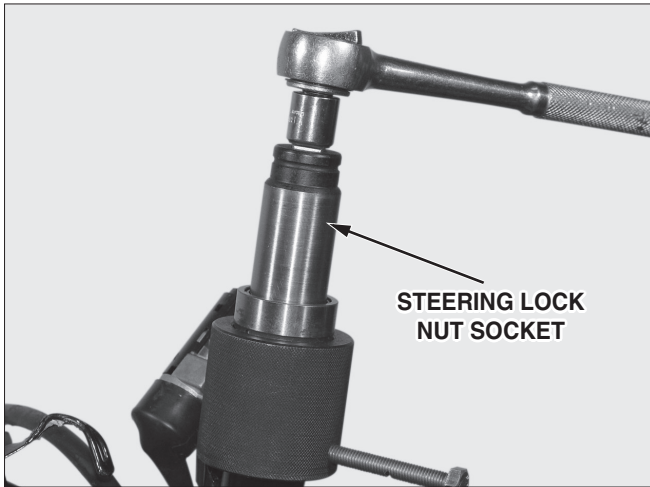


Install the following parts.

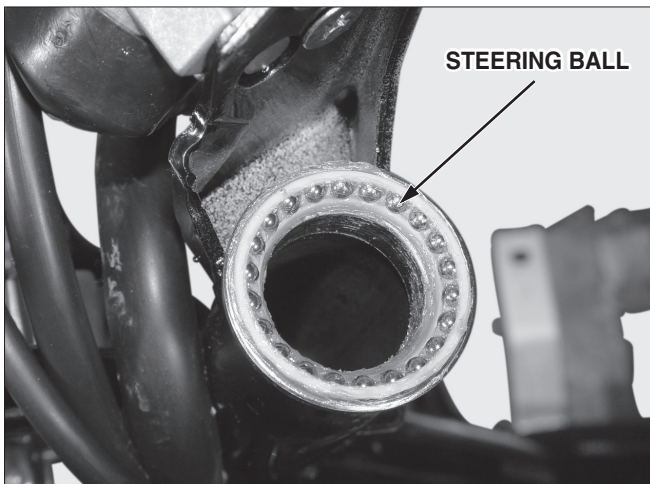
- Front wheel (⇒10-5)
- Brake caliper (⇒12-6)
- Front fender (⇒3-5)
- Front cover (⇒3-5)

STEERING STEM REMOVAL

- Front cover (⇒3-5)
- Front fender (⇒3-5)
- Front handle cover/rear handle cover (⇒3-6)
- Steering handle (⇒10-3)
- Front wheel (⇒10-5)
- Front brake caliper (⇒12-6)
- Front fork (⇒10-14)



Loosen the steering stem lock nut.
Remove the speedometer cable and front brake hose from the steering stem bracket.
Loosen the steering top cone race.
Remove the steering stem.

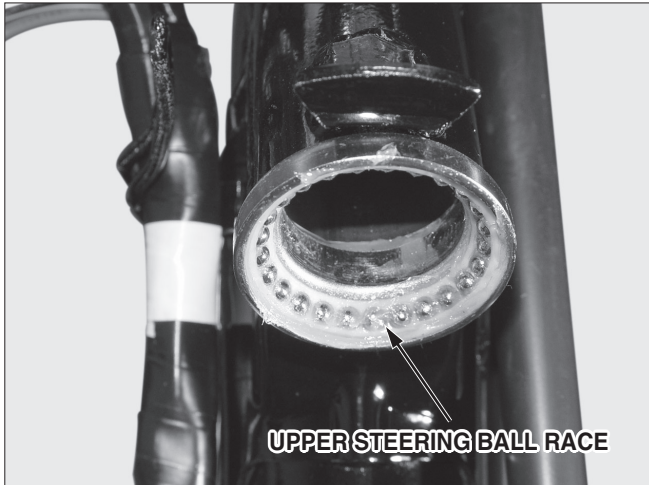


NOTE

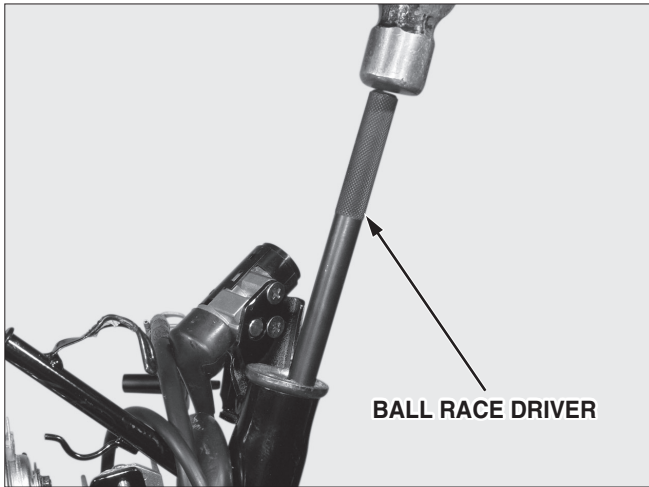
- When the bottom case fixes in the vice, use the bracket.

Check the steel ball, cone race, and ball race for wear or damage. Replace worn or damaged ones.

FRONT WHEEL/Front FORK/STEERING



Remove the steering steel ball/ upper steering ball race/ steering bottom cone race.



Remove the upper ball race/ steering bottom cone race.

TOOL : BALL RACE DRIVER

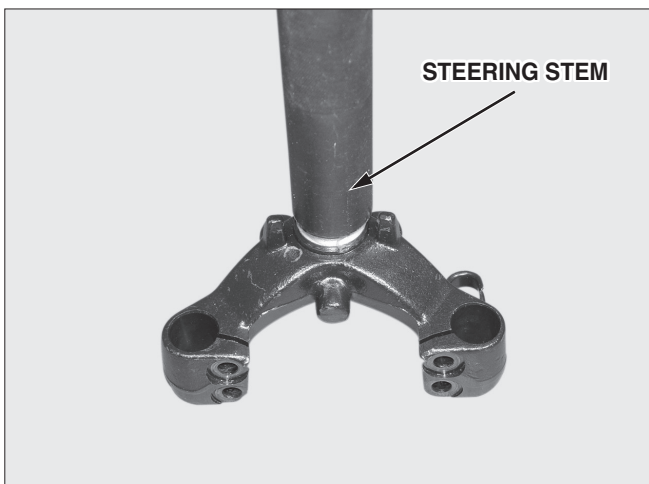
NOTE

- Check all of the races and balls for damage or abnormal wear and replace as necessary.
- If the vehicle has been involved in a collision, the steering stem may be damaged.



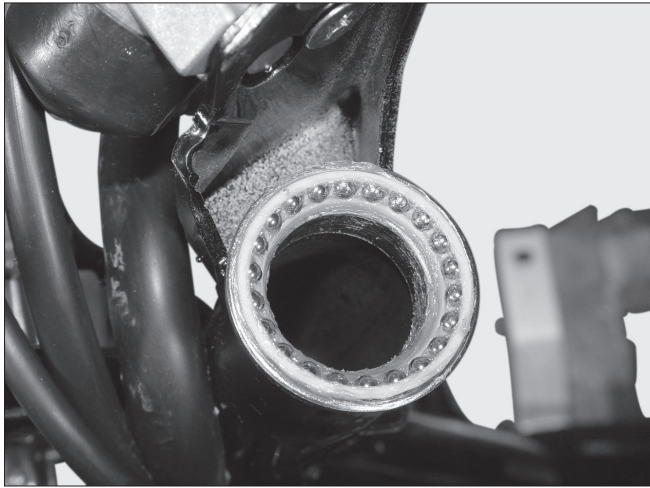
STEERING STEM INSTALLATION

Insert the upper/under ball race into the steering head pipe.

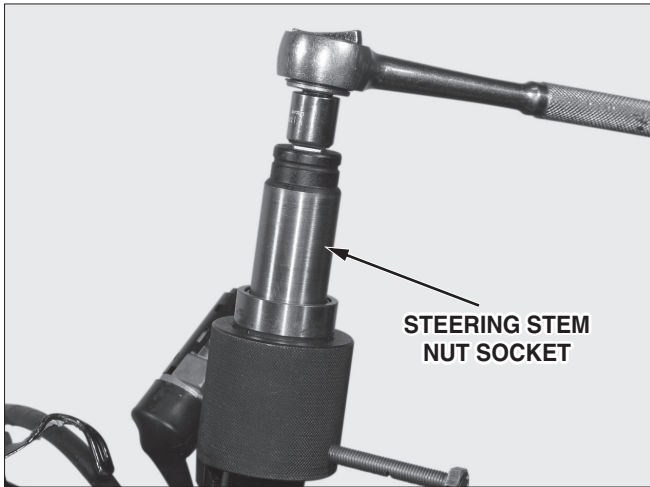


Using a steering stem driver, drive the steering stem bottom cone race into the steering stem.

FRONT WHEEL/Front FORK/STEERING



Insert the ball race after applying grease thereto.



Install the top cone race and the steering head top thread nut on the steering head.
Tighten the top thread nut completely, and loosen by 1/8 turn.

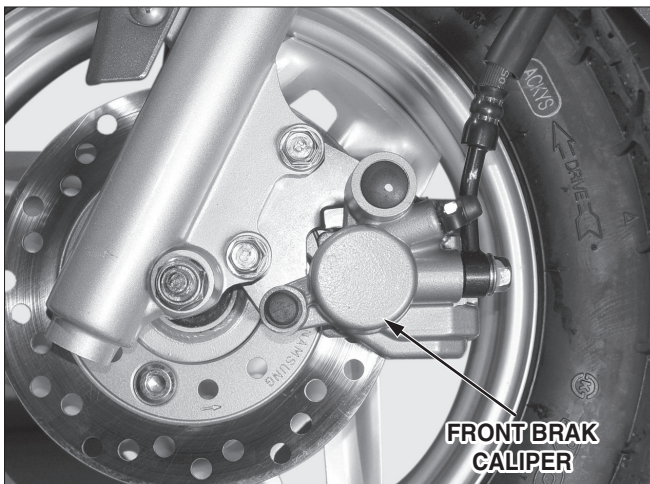
TORQUE VALUE : 1.0 kgf · m

Check the top and bottom free play, and check for smooth left and right movement.



Temporarily install the R/L front forks first, and tighten the steering stem nuts.

TORQUE VALUE : 7.0kgf · m
TOOLS : LOCK NUT WRENCH
EXTENSION BAR

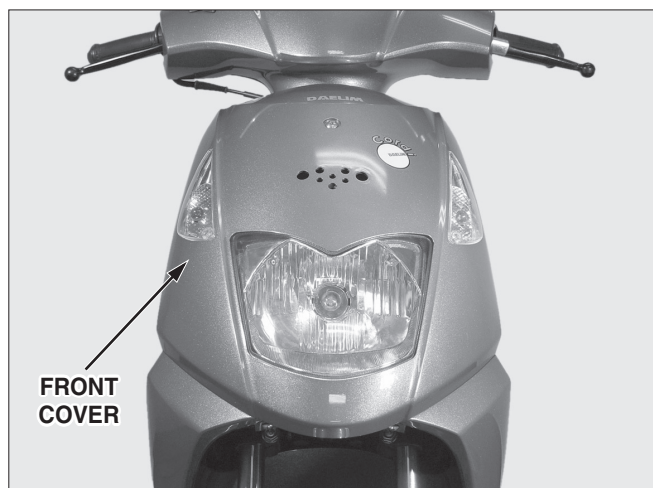


Install the front fork.

Install the following parts.

- Steering handle (⇒10-3)
- Front wheel (⇒10-5)
- Front handle cover/ rear handle cover (⇒3-6)
- Front fender (⇒3-5)
- Front brake caliper (⇒12-6)

FRONT WHEEL/Front FORK/STEERING



NOTE

- Check the cables and wiring for interference.

Install the front cover.

11. REAR WHEEL/BRAKE/SUSPENSION

SERVICE INFORMATION . . .	11-1	REAR WHEEL	11-3
SERVICE STANDARD	11-1	REAR BRAKE	11-4
TROUBLESHOOTING	11-2	REAR CUSHION	11-6

SERVICE INFORMATION

GENERAL SAFETY

If the brake drum or lining is contaminated with oil, braking power will be lost. If contaminated with oil, clean the brake drum, and replace the brake shoe.

Inhaled asbestos fibers have been found to cause respiratory disease and cancer. Never use an air hose or dry brush to clean brake assemblies. Use a brake cleaner, designed to minimize the hazard caused by airborne asbestos fibers.

SPECIFICATIONS

ITEM		STANDARD VALUE	SERVICE LIMIT
AXLE SHAFT RUN OUT		-	0.2 mm
REAR WHEEL RIM RUNOUT	RADICAL	-	2.0 mm
	AXIAL	-	2.0 mm
REAR BRAKE DRUM INNER DIAMETER		110.0~110.3mm	111.0mm
REAR BRAKE LINING THICKNESS		4.0 mm	2.0 mm
REAR CUSHION SPRING FREE LENGTH		234.8mm	-

TORQUE VALUES :

AXLE SHAFT RUN OUT	10.0~12.0kgf · m
REAR CUSHION UPPER BOLT	3.5~4.5kgf · m
REAR CUSHION LOWER BOLT	3.5~4.5kgf · m