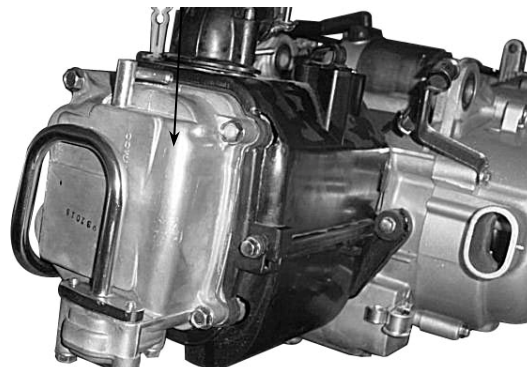


7. CYLINDER HEAD/VALVES

CAMSHAFT REMOVAL

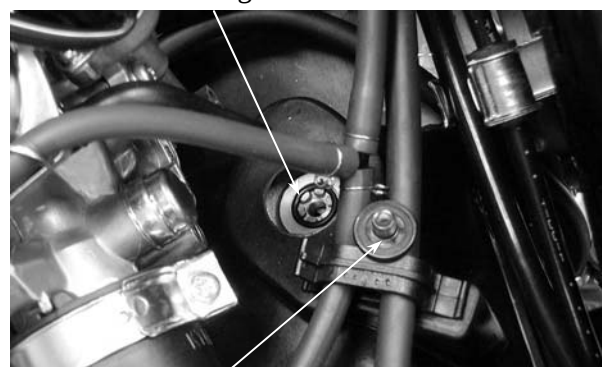
Remove the center cover.
Remove the four cylinder head cover bolts to remove the cylinder head cover.
Remove the two nuts attaching the secondary air inlet tube.

Cylinder Head Cover



Remove the cam chain tensioner cap screw and the O-ring.

O-ring



Screw

Turn the cam chain tensioner screw clockwise to tighten it.



Tensioner Screw

Turn the flywheel counterclockwise so that the "T" mark on the flywheel aligns with the index mark on the crankcase to bring the round hole on the camshaft gear facing up to the top dead center on the compression stroke.

Camshaft Gear



Round Hole

Punch Marks

7. CYLINDER HEAD/VALVES

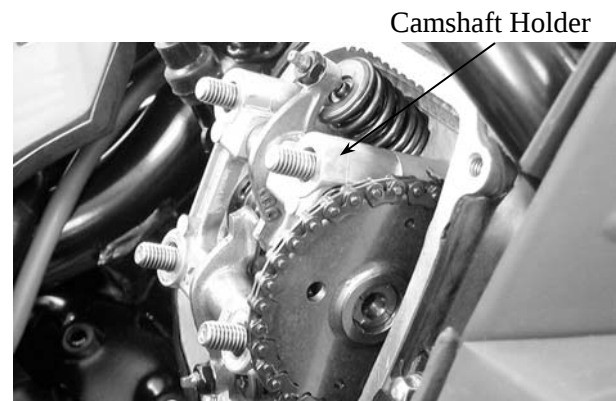
Remove the two cylinder head bolts.
Remove the four cylinder head nuts and washers.

* Diagonally loosen the cylinder head nuts in 2 or 3 times.

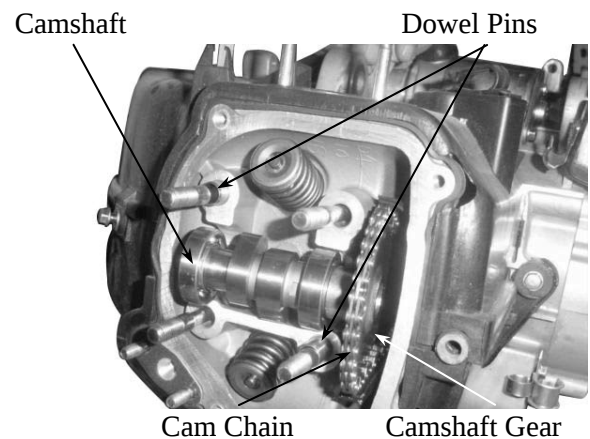


Washer

Remove the camshaft holder and dowel pins.



Remove the camshaft gear from the cam chain and remove the camshaft.



CAMSHAFT INSPECTION

Check each cam lobe for wear or damage.
Measure the cam lobe height.

Service Limits:

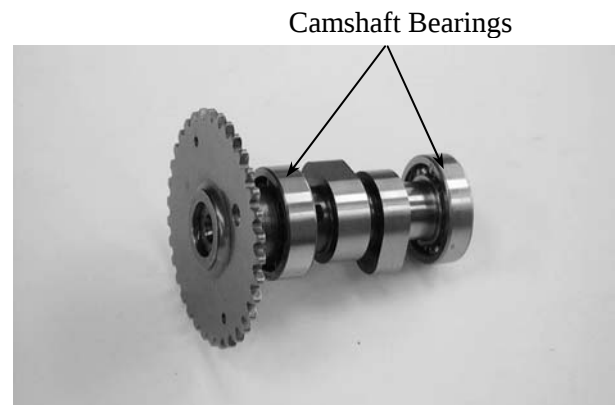
IN : 29.40mm replace if below

EX: 29.16mm replace if below



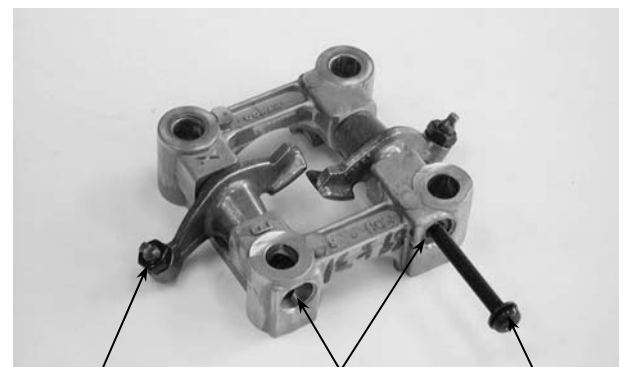
7. CYLINDER HEAD/VALVES

Check each camshaft bearing for play or damage. Replace the camshaft assembly with a new one if the bearings are noisy or have excessive play.



CAMSHAFT HOLDER DISASSEMBLY

Take out the valve rocker arm shafts using a 5mm bolt.
Remove the valve rocker arms.

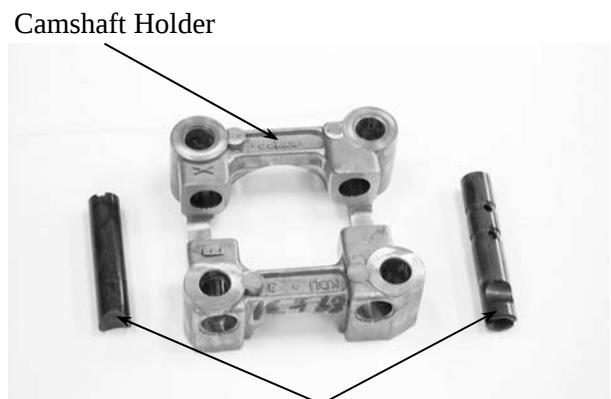


Rocker Arm Rocker Arm Shaft 5mm Bolt

CAMSHAFT HOLDER INSPECTION

Inspect the camshaft holder, valve rocker arms and rocker arm shafts for wear or damage.

* If the valve rocker arm contact surface is worn, check each cam lobe for wear or damage.



Rocker Arm Shafts

Measure the I.D. of each valve rocker arm.

Service Limits:

IN: 10.10mm replace if over

EX: 10.10mm replace if over

Measure each rocker arm shaft O.D.

Service Limits:

IN: 9.91mm replace if over

EX: 9.91mm replace if over



7. CYLINDER HEAD/VALVES

CYLINDER HEAD REMOVE

Remove the camshaft.
Remove the carburetor.
Remove the exhaust muffler.
Remove the carburetor intake manifold.
Remove the cooling fan cover.
Remove the engine cover bolts and screws.
Separate the engine cover joint claws.

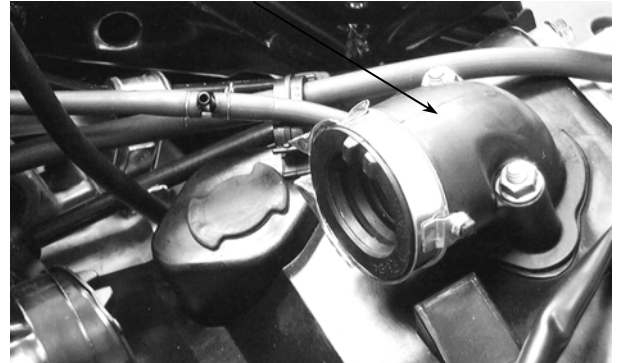
Remove the cylinder head.

Remove the dowel pins and cylinder head gasket.
Remove the cam chain guide.

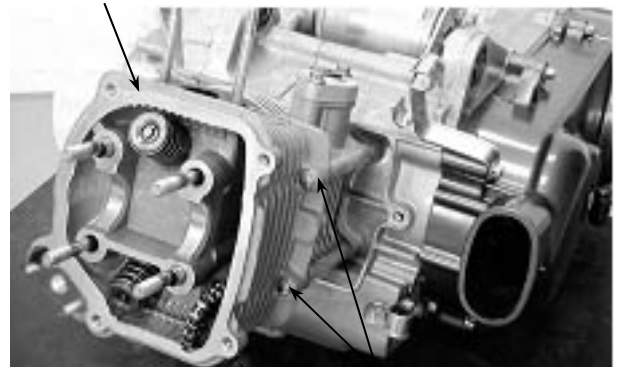
Remove all gasket material from the cylinder mating surface.

- * Avoid damaging the cylinder mating surface.
- * Be careful not to drop any gasket material into the engine.

Intake Manifold



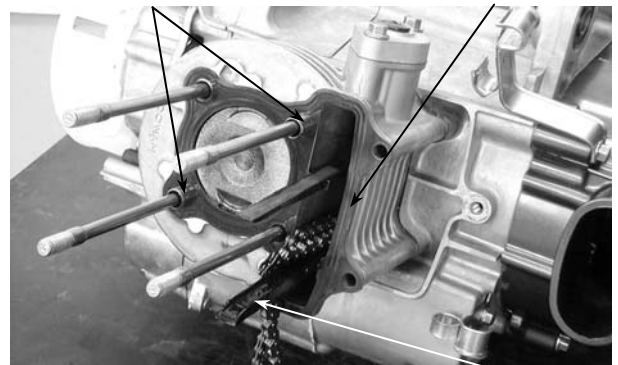
Cylinder Head



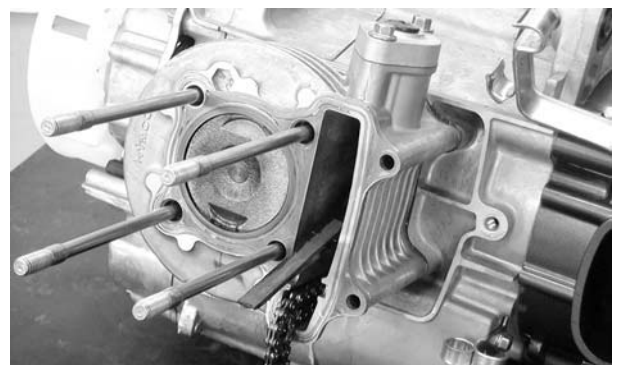
Bolts

Dowel Pins

Cylinder Head Gasket



Cam Chain Guide



7. CYLINDER HEAD/VALVES

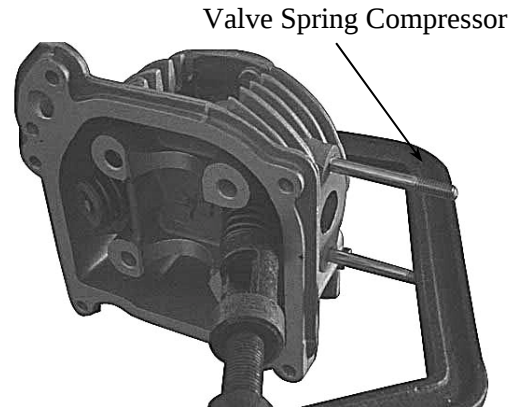
CYLINDER HEAD DISASSEMBLY

Remove the valve spring cotters, retainers, springs, spring seats and valve stem seals using a valve spring compressor.

- * Be sure to compress the valve springs with a valve spring compressor.
- * Mark all disassembled parts to ensure correct reassembly.

Special

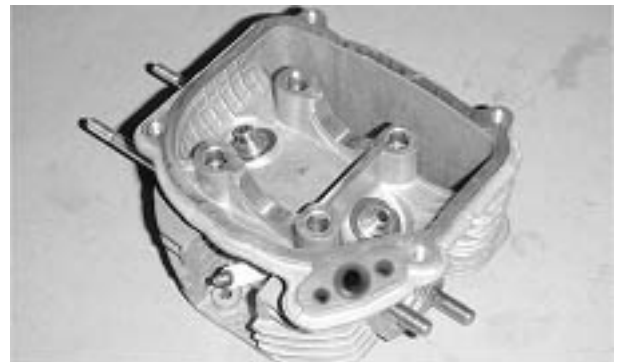
Valve Spring Compressor



Remove carbon deposits from the combustion chamber.

Clean off any gasket material from the cylinder head mating surface.

- * Be careful not to damage the cylinder head mating surface.



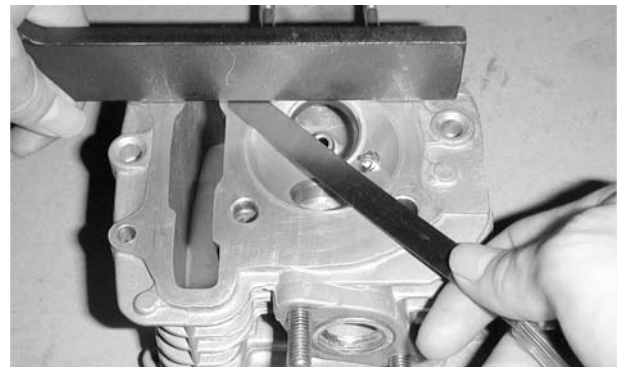
INSPECTION

CYLINDER HEAD

Check the spark plug hole and valve areas for cracks.

Check the cylinder head for warpage with a straight edge and feeler gauge.

Service Limit: 0.05mm repair or replace if over



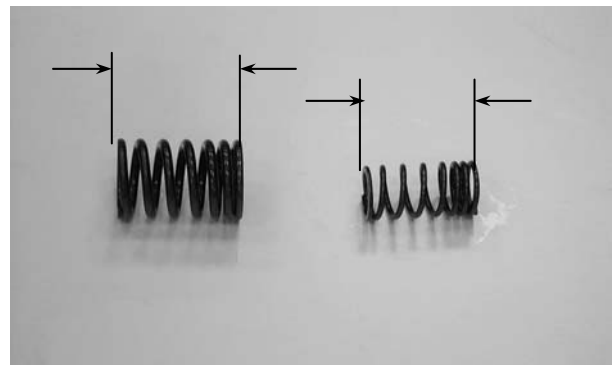
VALVE SPRING FREE LENGTH

Measure the free length of the inner and outer valve springs.

Service Limits:

Inner : 32.3mm replace if below

Outer : 35.0mm replace if below



7. CYLINDER HEAD/VALVES

VALVE /VALVE GUIDE

Inspect each valve for bending, burning, scratches or abnormal stem wear.

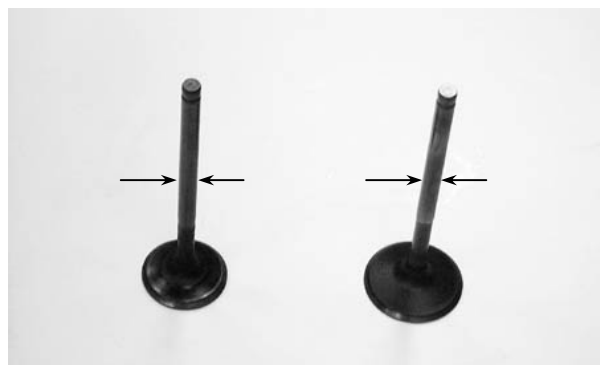
Check valve movement in the guide.

Measure each valve stem O.D.

Service Limits:

IN : 4.90mm replace if below

EX: 4.90mm replace if below



Measure each valve guide I.D.

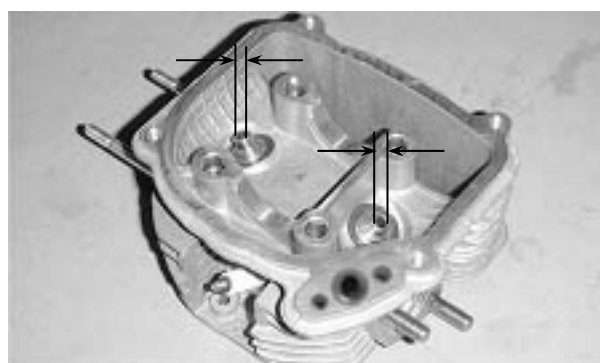
Service Limits: IN : 5.03mm replace if over

EX: 5.03mm replace if over

Subtract each valve stem O.D. from the corresponding guide I.D. to obtain the stem-to-guide clearance.

Service Limits: IN : 0.08mm replace if over

EX: 0.10mm replace if over



- * If the stem-to-guide clearance exceeds the service limits, replace the cylinder head as necessary.

CYLINDER HEAD ASSEMBLY

Install the valve spring seats and valve stem seals.

- * Be sure to install new valve stem seals.

Lubricate each valve stem with engine oil and insert the valves into the valve guides. Install the valve springs and retainers.

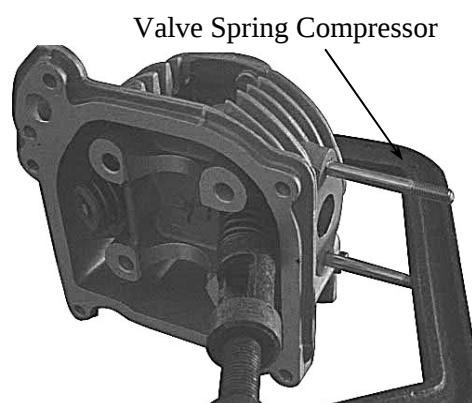


Compress the valve springs using the valve spring compressor, then install the valve cotters.

- * • When assembling, a valve spring compressor must be used.
• Install the cotters with the pointed ends facing down from the upper side of the cylinder head.

Special

Valve Spring Compressor



7. CYLINDER HEAD/VALVES

Tap the valve stems gently with a plastic hammer for 2~3 times to firmly seat the cotters.

* Be careful not to damage the valves.



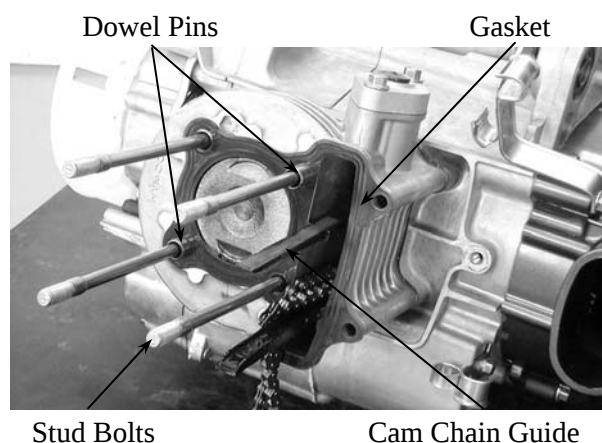
CYLINDER HEAD INSTALLATION

Tighten the four stud bolts.

Install the dowel pins and a new cylinder head gasket.

Install the cam chain guide.

Torque: Stud Bolts :0.7~1.1kg-m



Install the cylinder head.



Cylinder Head

CAMSHAFT HOLDER ASSEMBLY

Install the exhaust valve rocker arm to the "EX" mark side of the camshaft holder.

Install the intake valve rocker arm and the rocker arm shafts.

- * • Align the cutout on the front end of the intake valve rocker arm shaft with the bolt of the camshaft holder.
• Align the cross cutout on the exhaust valve rocker arm shaft with the bolt of the camshaft holder.

Camshaft Holder



Valve Rocker Arm

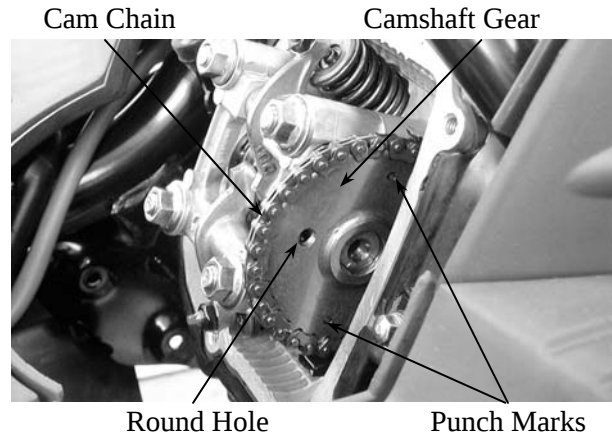
7. CYLINDER HEAD/VALVES

CAMSHAFT INSTALLATION

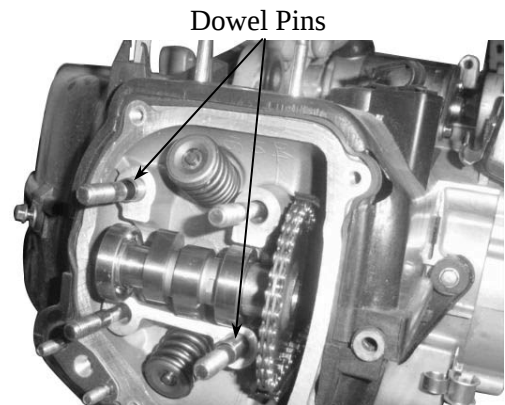
Turn the flywheel so that the “T” mark on the flywheel aligns with the index mark on the crankcase.

Keep the round hole on the camshaft gear facing up and align the punch marks on the camshaft gear with the cylinder head surface (Position the intake and exhaust cam lobes down.) and install the camshaft onto the cylinder head.

Install the cam chain over the camshaft gear.



Install the dowel pins.

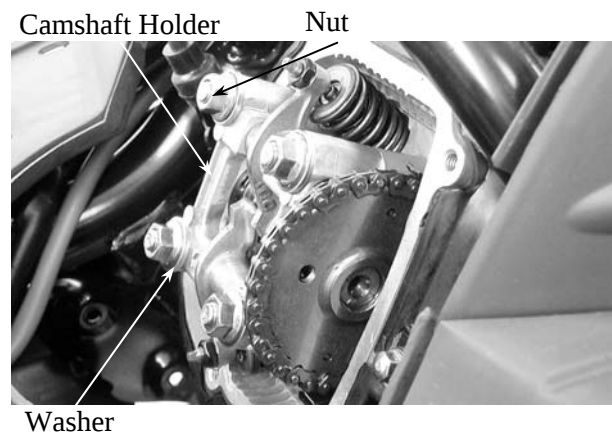


Install the camshaft holder, washers and nuts on the cylinder head.

Tighten the four cylinder head nuts and two bolts.

Torque: Cylinder head nut: 2.0kg-m

- * • Apply engine oil to the threads of the cylinder head nuts.
- Diagonally tighten the cylinder head nuts in 2~3 times.



Adjust the valve clearance.

Turn the cam chain tensioner screw counter-clockwise to release it.

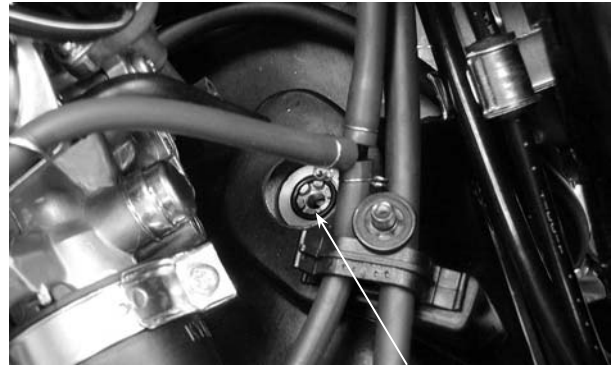


7. CYLINDER HEAD/VALVES

Apply engine oil to a new O-ring and install it.

Tighten the cam chain tensioner cap screw.

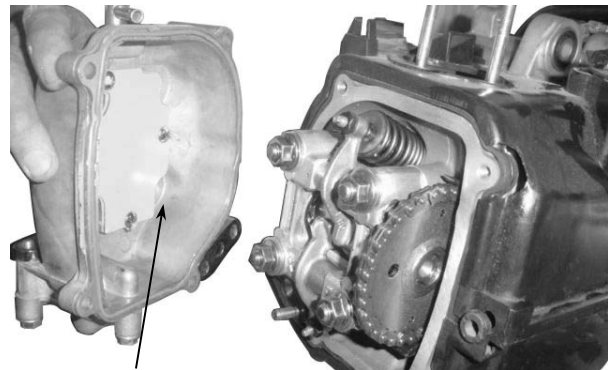
- * Be sure to install the O-ring into the groove properly.



O-ring

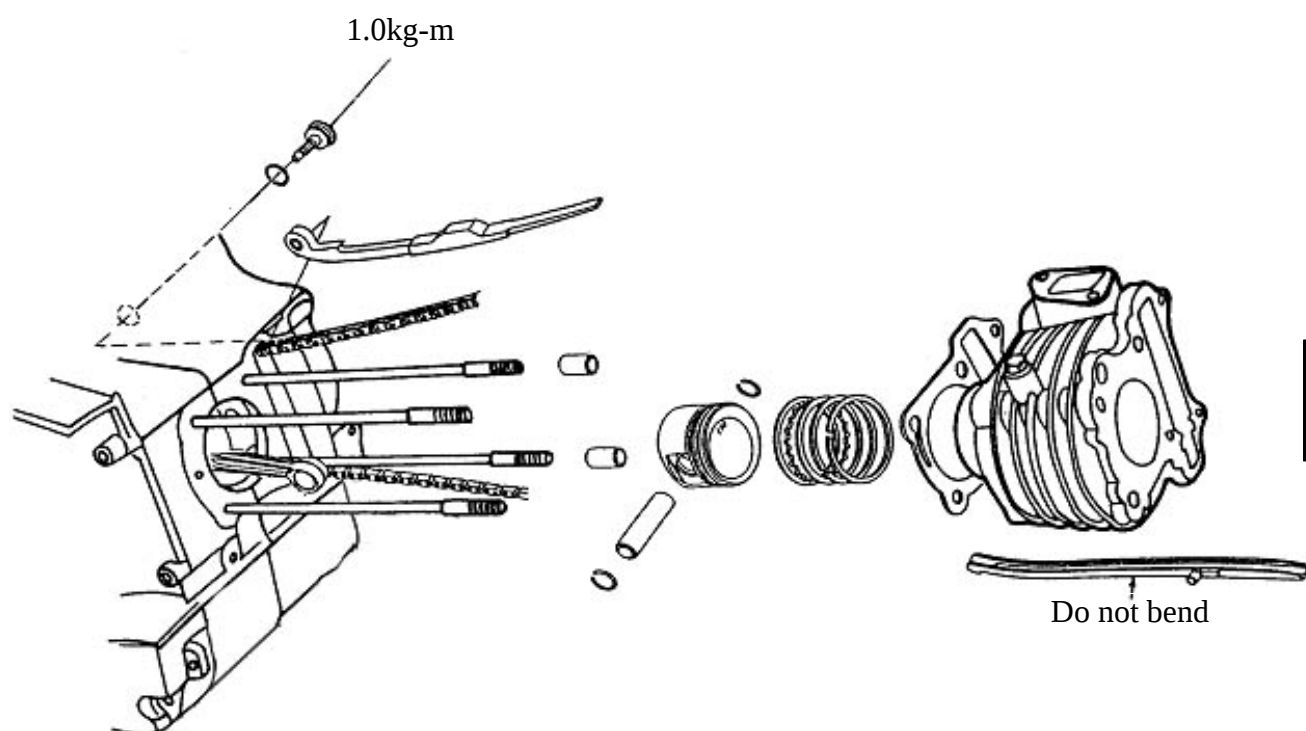
Install a new cylinder head cover O-ring and install the cylinder head cover.
Install and tighten the cylinder head cover bolts.

- * Be sure to install the O-ring into the groove properly.



Cylinder Head Cover

8. CYLINDER/PISTON



8

8. CYLINDER/PISTON

SERVICE INFORMATION.....8-1	PISTON REMOVAL.....8-2
TROUBLESHOOTING.....8-1	PISTON INSTALLATION.....8-6
CYLINDER REMOVAL8-2	CYLINDER INSTALLATION8-6

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- The cylinder and piston can be serviced with the engine installed in the frame.
- After disassembly, clean the removed parts and dry them with compressed air before inspection.

SPECIFICATIONS

Item			Standard (mm)	Service Limit (mm)
Cylinder	I.D.		52.4~52.410	52.50
	Warpage		—	0.05
	Cylindricity		—	0.05
	True roundness		—	0.05
Piston, piston ring	Ring-to-groove clearance	Top	0.015~0.055	0.09
		Second	0.015~0.055	0.09
	Ring end gap	Top	0.10~0.25	0.5
		Second	0.10~0.25	0.5
		Oil side rail	0.2~0.7	—
	Piston O.D.		52.370~52.390	52.3
	Piston O.D. measuring position		9mm from bottom of skirt	—
	Piston-to-cylinder clearance		0.010~0.040	0.1
	Piston pin hole I.D.		15.002~15.008	15.04
Piston pin O.D			14.994~15.000	14.96
Piston-to-piston pin clearance			0.002~0.014	0.02
Connecting rod small end I.D. bore			15.016~15.034	15.06

TROUBLESHOOTING

- When hard starting or poor performance at low speed occurs, check the crankcase breather for white smoke. If white smoke is found, it means that the piston rings are worn, stuck or broken.

Compression too low or uneven compression

- Worn, stuck or broken piston rings
- Worn or damaged cylinder and piston

Compression too high

- Excessive carbon build-up in combustion chamber or on piston head

Excessive smoke from exhaust muffler

- Worn or damaged piston rings
- Worn or damaged cylinder and piston

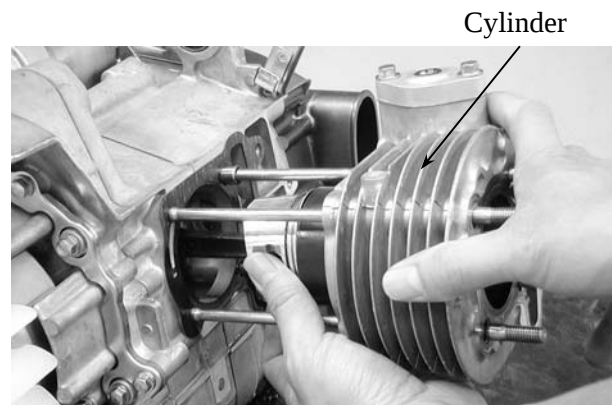
Abnormal noisy piston

- Worn cylinder, piston and piston rings
- Worn piston pin hole and piston pin

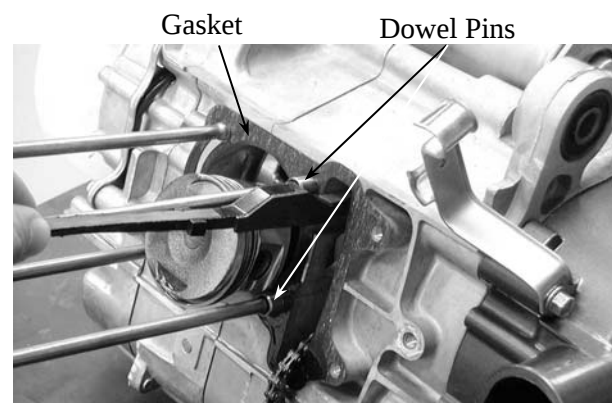
8. CYLINDER/PISTON

CYLINDER REMOVAL

Remove the cylinder head.
Remove the cam chain guide.
Remove the cylinder base bolts.
Remove the cylinder.



Remove the cylinder gasket and dowel pins.
Clean any gasket material from the cylinder surface.



PISTON REMOVAL

Remove the piston pin clip.

* Place a clean shop towel in the crankcase to keep the piston pin clip from falling into the crankcase.

Press the piston pin out of the piston and remove the piston.



Piston Rings Piston

8. CYLINDER/PISTON

Inspect the piston, piston pin and piston rings.
Remove the piston rings.

- * Take care not to damage or break the piston rings during removal.

Clean carbon deposits from the piston ring grooves.



Install the piston rings onto the piston and measure the piston ring-to-groove clearance.

Service Limits:

Top: 0.09mm replace if over

2nd: 0.09mm replace if over

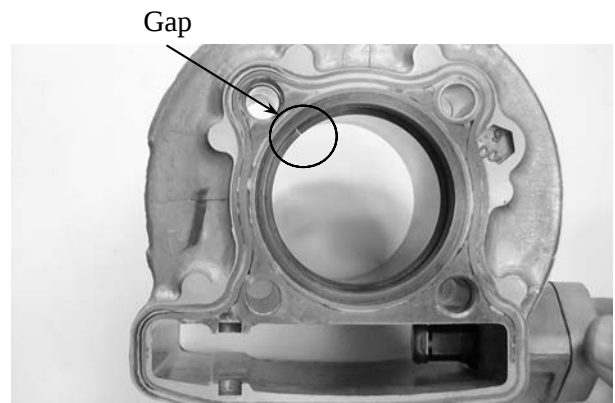


Remove the piston rings and insert each piston ring into the cylinder bottom.

- * Use the piston head to push each piston ring into the cylinder.

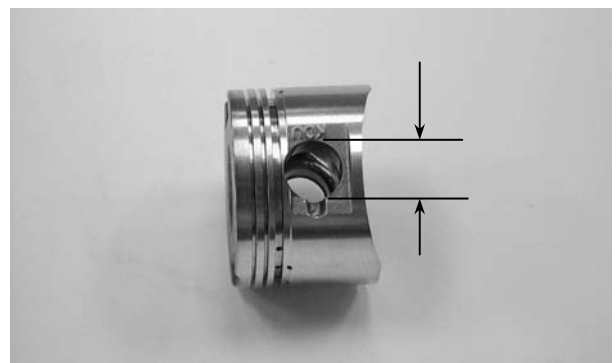
Measure the piston ring end gap.

Service Limit: 0.5mm replace if over



Measure the piston pin hole I.D.

Service Limit: 15.04mm replace if over



8. CYLINDER/PISTON

AGILITY 125

Measure the piston pin O.D.

Service Limit: 14.996mm replace if below



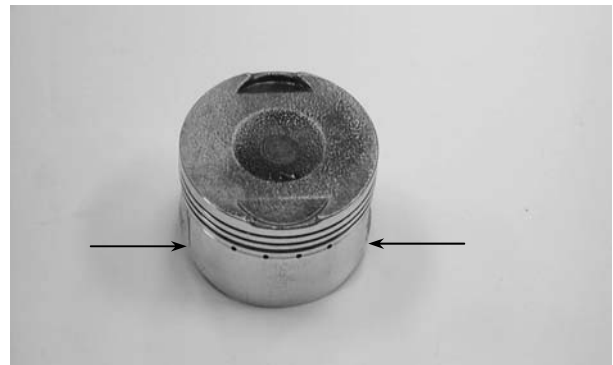
Measure the piston O.D.

* Take measurement at 9mm from the bottom and 90° to the piston pin hole.

Service Limit: 52.3mm replace if below

Measure the piston-to-piston pin clearance.

Service Limit: 0.02mm replace if over



CYLINDER INSPECTION

Inspect the cylinder bore for wear or damage. Measure the cylinder I.D. at three levels of top, middle and bottom at 90° to the piston pin (in both X and Y directions).

Service Limit: 52.50mm repair or replace if over

Measure the cylinder-to-piston clearance.

Service Limit: 0.1mm repair or replace if over

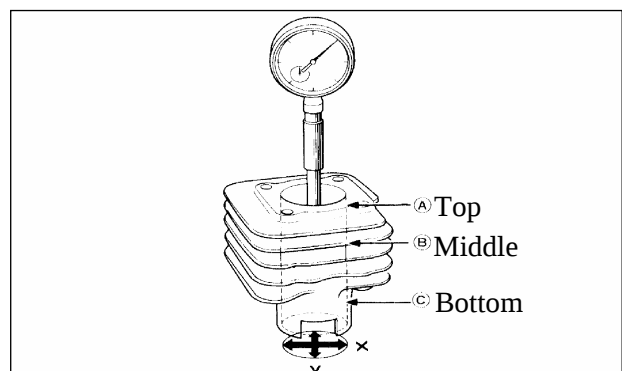


The true roundness is the difference between the values measured in X and Y directions. The cylindricity (difference between the values measured at the three levels) is subject to the maximum value calculated.

Service Limits:

True Roundness: 0.05mm repair or replace if over

Cylindricity: 0.05mm repair or replace if over



8. CYLINDER/PISTON

Inspect the top of the cylinder for warpage.

Service Limit:

0.05mm repair or replace if over



Measure the connecting rod small end I.D.

Service Limit: 15.06mm replace if over

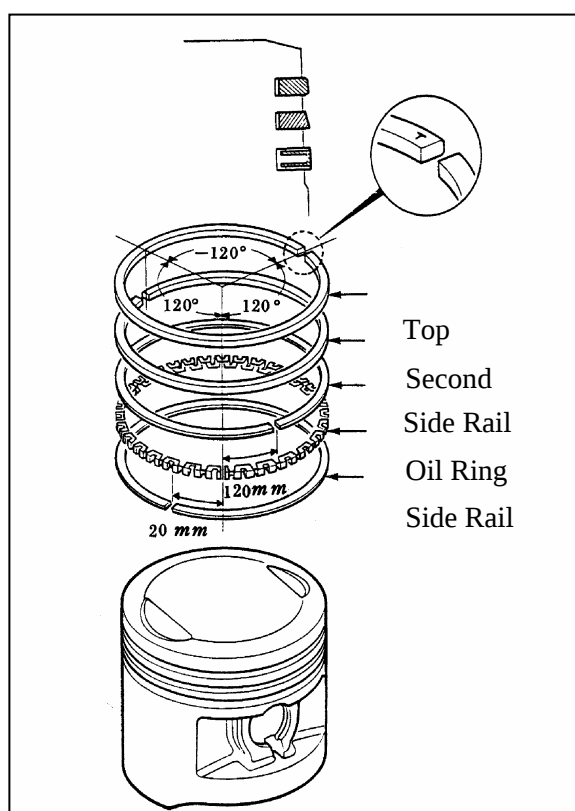


PISTON RING INSTALLATION

Install the piston rings onto the piston.
Apply engine oil to each piston ring.

*

- Be careful not to damage or break the piston and piston rings.
- All rings should be installed with the markings facing up.
- After installing the rings, they should rotate freely without sticking.

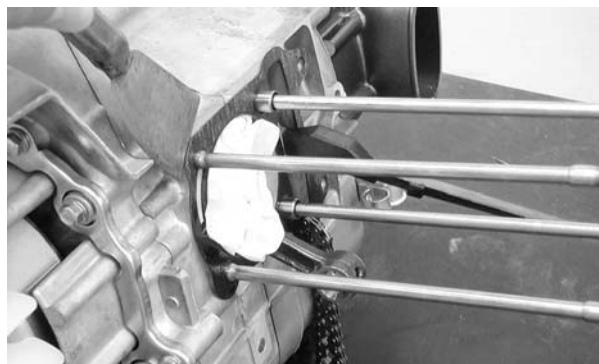


8. CYLINDER/PISTON

PISTON INSTALLATION

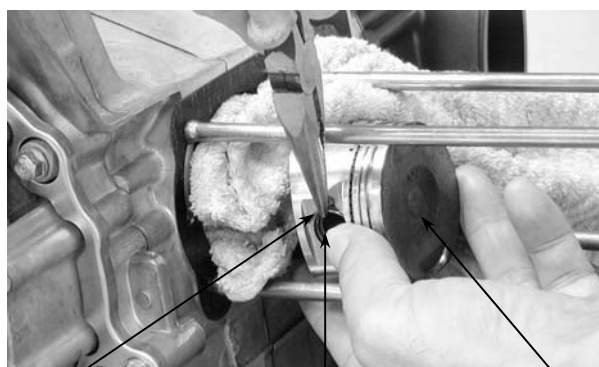
Remove any gasket material from the crankcase surface.

- * Be careful not to drop foreign matters into the crankcase.



Install the piston, piston pin and a new piston pin clip.

- *
 - Position the piston “IN” mark on the intake valve side.
 - Place a clean shop towel in the crankcase to keep the piston pin clip from falling into the crankcase.



Piston Pin Clip

Piston Pin

Piston

CYLINDER INSTALLATION

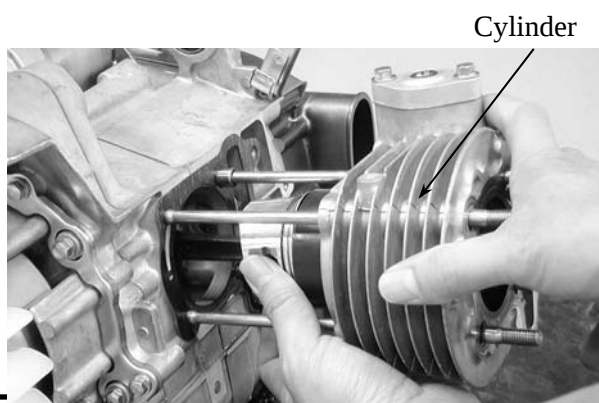
Install the dowel pins and a new cylinder gasket on the crankcase.



Gasket

Coat the cylinder bore, piston and piston rings with clean engine oil. Carefully lower the cylinder over the piston by compressing the piston rings.

- *
 - Be careful not to damage or break the piston rings.
 - Stagger the ring end gaps at 120° to the piston pin.



Cylinder

8. CYLINDER/PISTON

Loosely install the cylinder base bolts.



Cam Chain Guide

Install the cam chain guide.

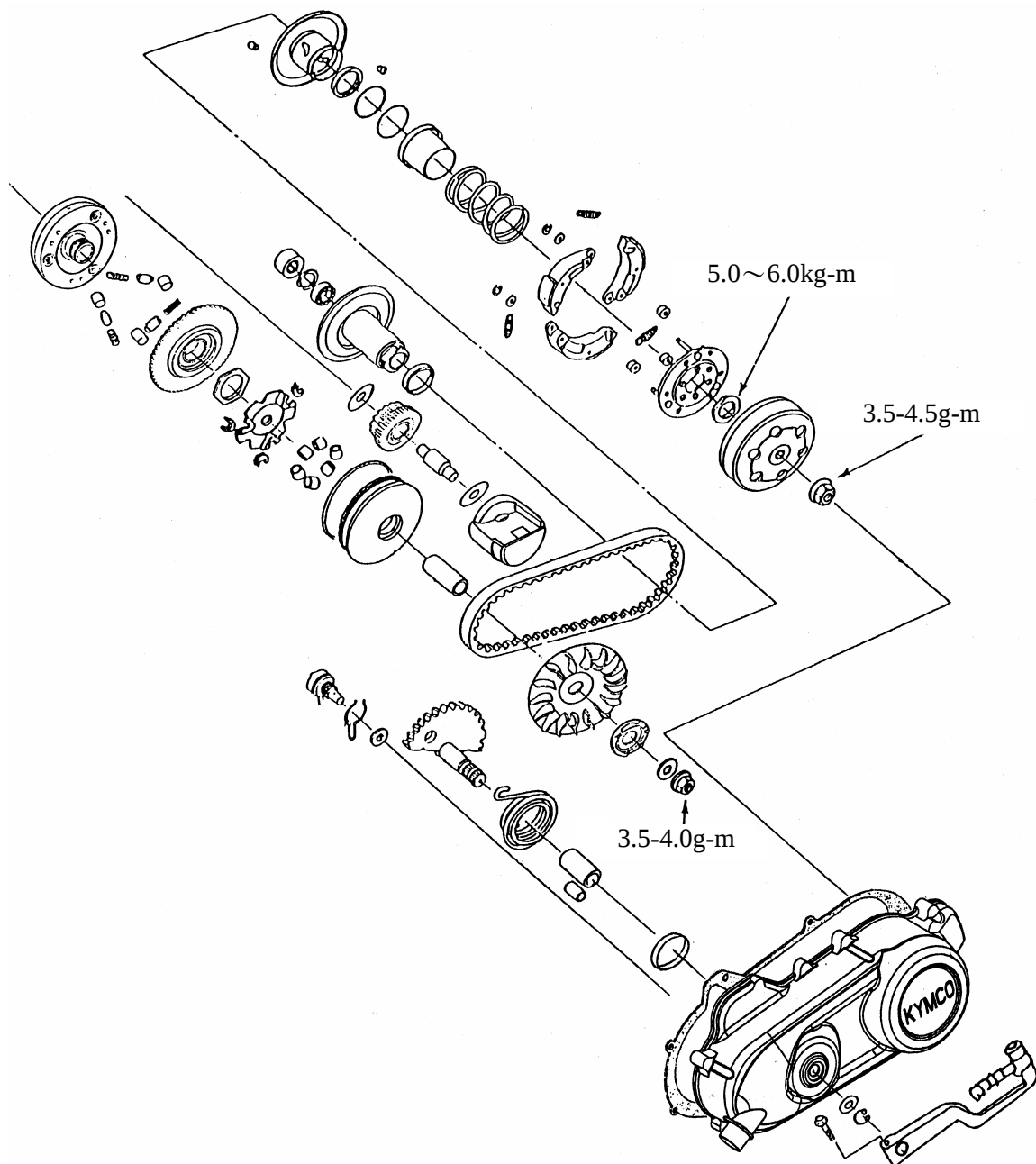
- * Insert the tab on the cam chain guide into the cylinder groove.

Install the cylinder head.
Tighten the cylinder base bolts.



Cylinder Base Bolt

9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER



9

9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER



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SERVICE INFORMATION.....9-1	DRIVE BELT9-5
TROUBLESHOOTING.....9-1	DRIVE PULLEY9-6
LEFT CRANKCASE COVER9-2	CLUTCH/DRIVEN PULLEY9-9
KICK STARTER.....9-2	

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- The drive pulley, clutch and driven pulley can be serviced with the engine installed.
- Avoid getting grease and oil on the drive belt and pulley faces. Remove any oil or grease from them to minimize the slipping of drive belt and drive pulley.

SPECIFICATIONS

Item	Standard (mm)	Service Limit (mm)
Movable drive face bushing I.D.	23.989~24.025	24.06
Drive face collar O.D.	23.960~23.974	23.94
Drive belt width	17.5	16.5
Clutch lining thickness	—	1.5
Clutch outer I.D.	125.2-125.7	125.5
Driven face spring free length	—	147.6
Driven face O.D.	33.965-33.485	33.94
Movable driven face I.D.	34.0-34.025	34.06
Weight roller O.D.	15.920~16.080	15.4

TORQUE VALUES

Drive face nut	5.5~6.5kgf-m
Clutch outer nut	3.5~4.5kgf-m
Clutch drive plate nut	5.0-6.0kg-m

SPECIAL TOOLS

Universal holder

Clutch spring compressor

TROUBLESHOOTING

Engine starts but motorcycle won't move

- Worn drive belt
- Broken ramp plate
- Worn or damaged clutch lining
- Broken driven face spring

Engine stalls or motorcycle creeps

- Broken clutch weight spring

Lack of power

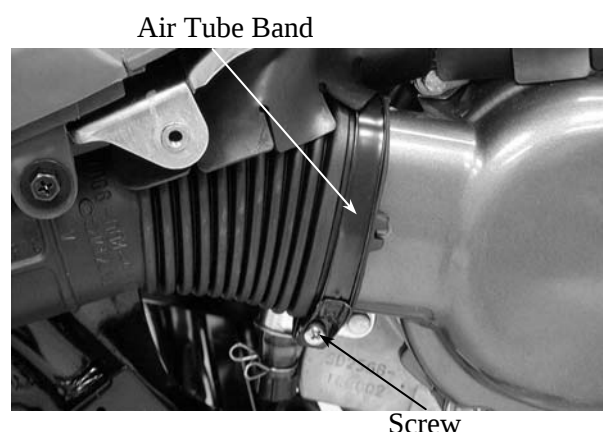
- Worn drive belt
- Weak driven face spring
- Worn weight roller
- Fouled drive face

9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

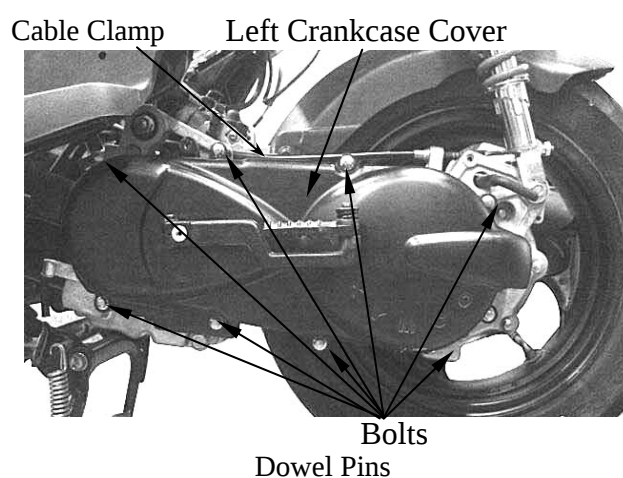
LEFT CRANKCASE COVER

REMOVAL

Loosen the drive belt air tube band screw.

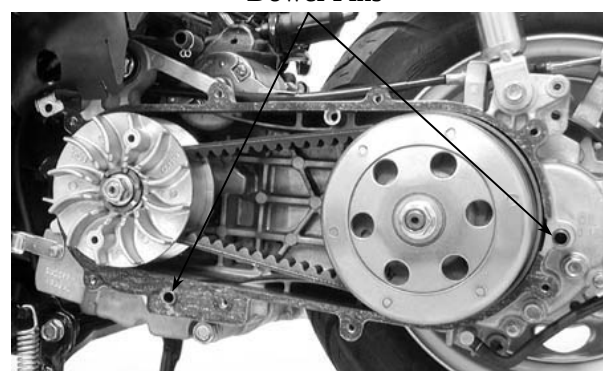


Remove the left crankcase cover bolts and cable clamp.
Remove the seal rubber and dowel pins.

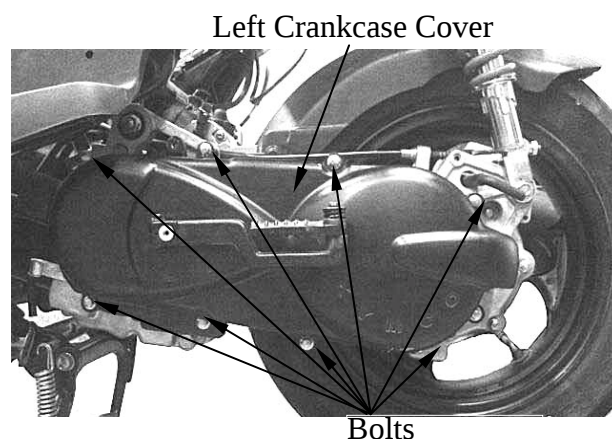


INSTALLATION

Install the dowel pins and gasket.



Install the left crankcase cover and tighten the left crankcase cover bolts.
Install the cable clamp to the specified location and tighten the bolt.



9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

Install the drive belt air tube and tighten the tube band screw.

DRIVE PULLEY

REMOVAL

Remove the left crankcase cover.
Hold the drive pulley using an universal holder and remove the drive face nut and starting ratchet.
Remove the drive pulley face.

Special

Flywheel Holder

Hold the clutch outer with the universal holder and remove the clutch outer nut.
Remove the clutch/driven pulley and drive belt.

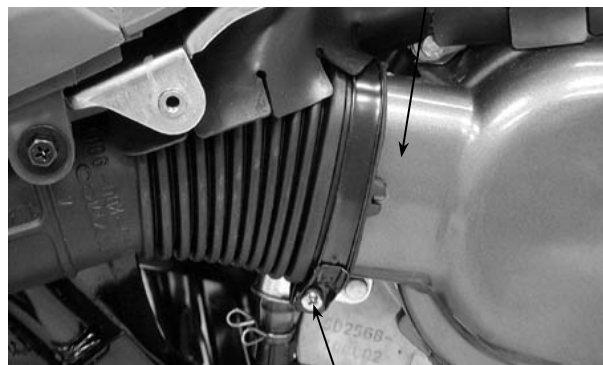
INSPECTION

Check the drive belt for cracks, separation or abnormal or excessive wear.
Measure the drive belt width.

Service Limit: 17.0mm replace if below

* Use specified genuine parts for replace-ment.

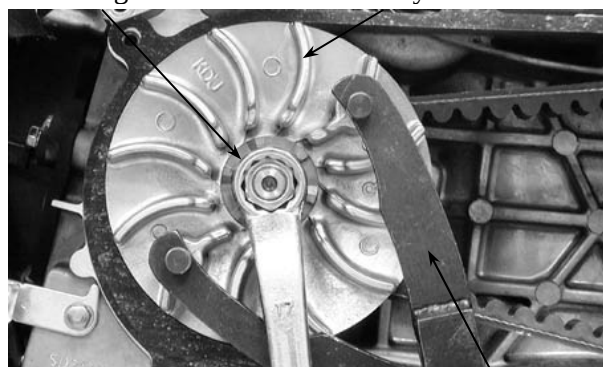
Intake Cover



Tube Band Screw

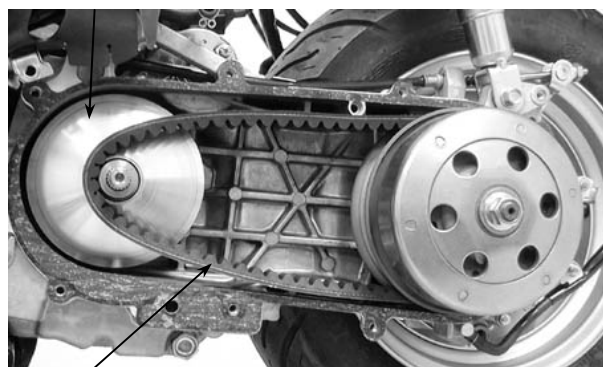
Starting Ratchet

Drive Pulley Face

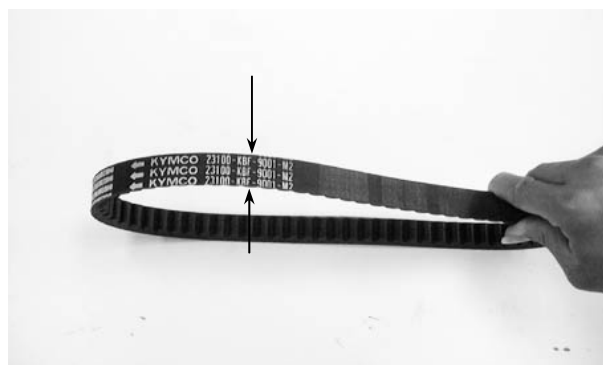


Flywheel Holder

Movable Drive Face



Drive Belt



9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

Remove the movable drive face assembly.
Remove the drive pulley collar.

Drive Pulley Collar



Movable Drive Face Assembly

DISASSEMBLY

Remove the ramp plate.

Ramp Plate



Remove the weight rollers.



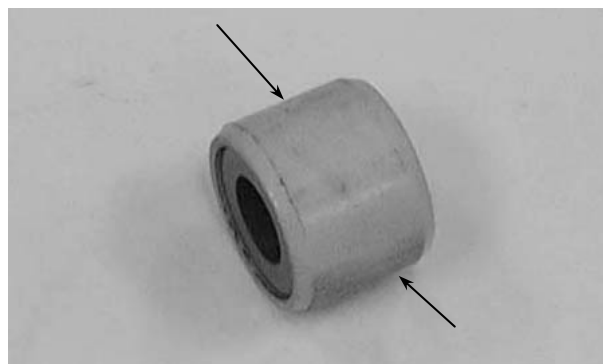
Weight Roller

INSPECTION

Check each weight roller for wear or damage.

Measure each weight roller O.D.

Service Limit: 15.4mm replace if below



9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

Measure the movable drive face bushing I.D.

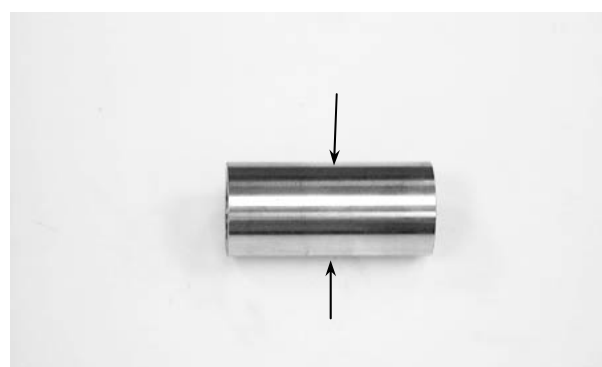
Service Limit: 24.06mm replace if over



Check the drive pulley collar for wear or damage.

Measure the O.D. of the drive pulley collar sliding surface.

Service Limit: 23.94mm replace if below



ASSEMBLY

Install the weight rollers into the movable drive face.



Weight Roller

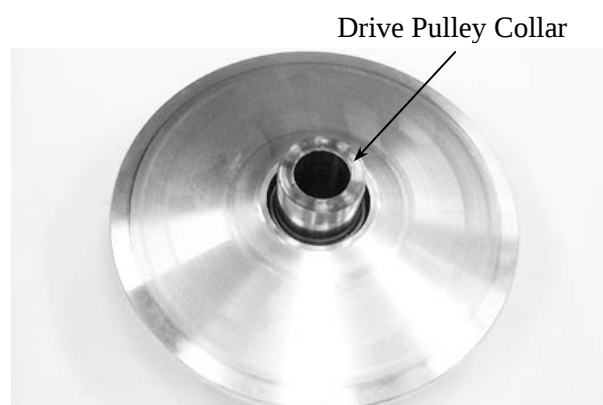
Install the ramp plate.



Ramp Plate

9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

Insert the drive pulley collar into the movable drive face.



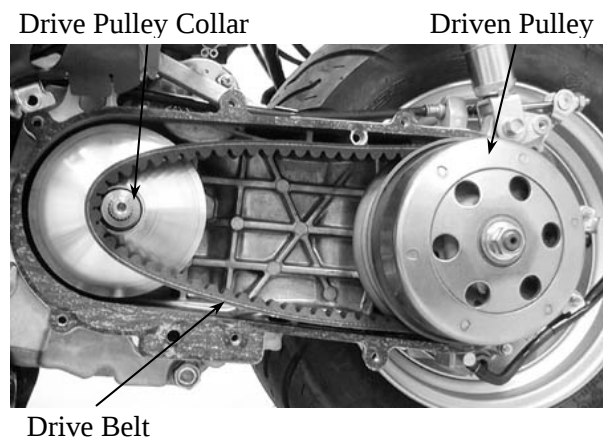
INSTALLATION

Install the movable drive face onto the crankshaft.



Movable Drive Face Assembly

Lay the drive belt on the driven pulley.
Set the drive belt on the drive pulley collar.



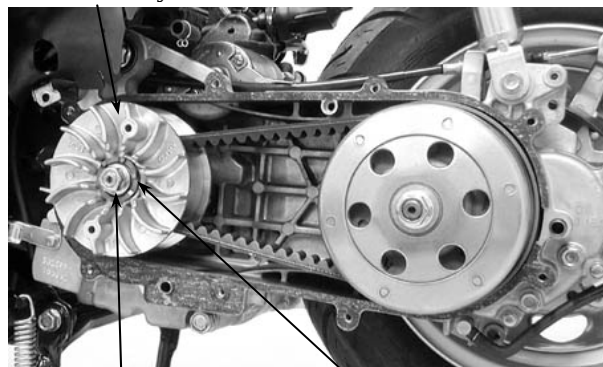
Drive Belt

9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

Install the drive pulley face, starting ratchet and drive face nut.

- * When installing the drive pulley face, compress it to let the drive belt move downward to the lowest position so that the drive pulley can be tightened.
- Install the starting ratchet by aligning the starting ratchet teeth with the crankshaft teeth.

Drive Pulley Face



Drive Face Nut Starting Ratchet

Hold the drive pulley with the universal holder and tighten the drive face nut.

Torque: 5.5kg-m

Special

Flywheel Holder

- * Do not get oil or grease on the drive belt or pulley faces.

Drive Pulley



Flywheel Holder

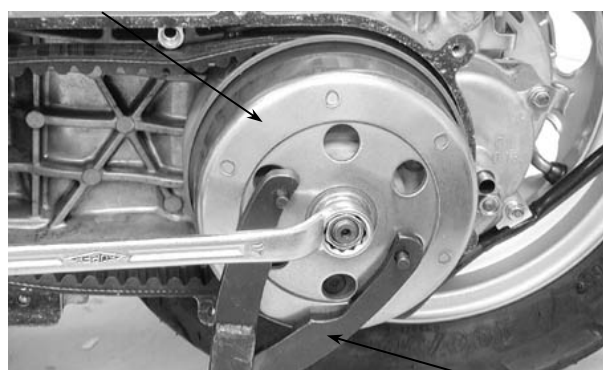
CLUTCH/DRIVEN PULLEY

Remove the left crankcase cover.
Remove the drive pulley and drive belt.
Hold the clutch outer with the universal holder and remove the clutch outer nut.

Special

Flywheel Holder

Clutch Outer



Flywheel Holder

INSPECTION

Inspect the clutch outer for wear or damage.
Measure the clutch outer I.D.

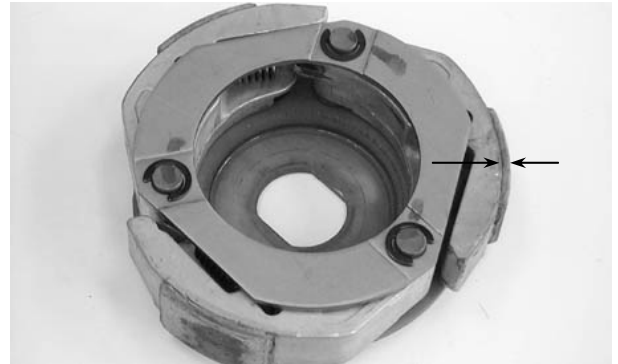
Service Limit: 125.5mm replace if over



9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

Check the clutch shoes for wear or damage.
Measure the clutch lining thickness.

Service Limit: 1.5mm replace if below



CLUTCH/DRIVEN PULLEY DISASSEMBLY

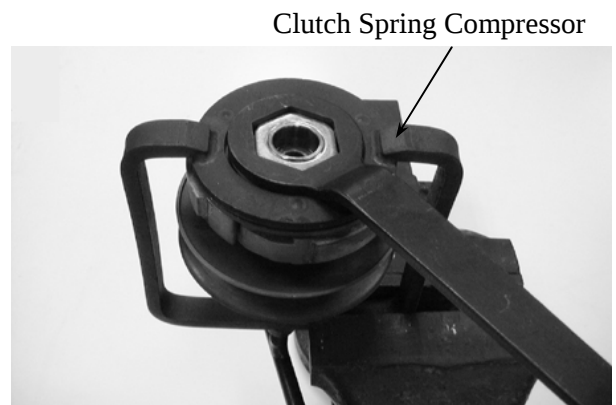


Hold the clutch/driven pulley assembly with
the clutch spring compressor.

* Be sure to use a clutch spring
compressor to avoid spring damage.

Special

Clutch Spring Compressor



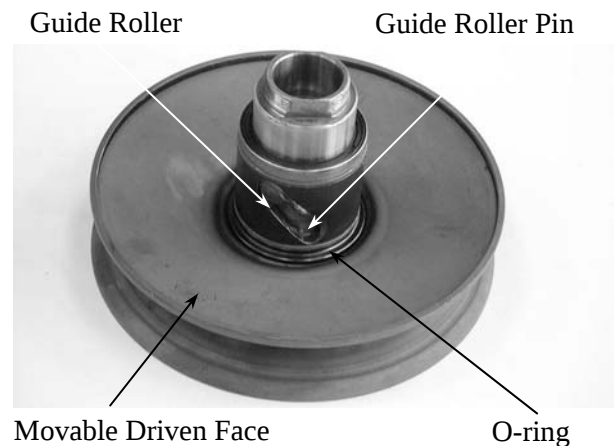
Set the clutch spring compressor in a vise
and remove the clutch drive plate nut.

Loosen the clutch spring compressor and
disassemble the clutch/driven pulley
assembly.
Remove the seal collar.



9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

Pull out the guide roller pins and guide rollers. Remove the movable driven face from the driven face.



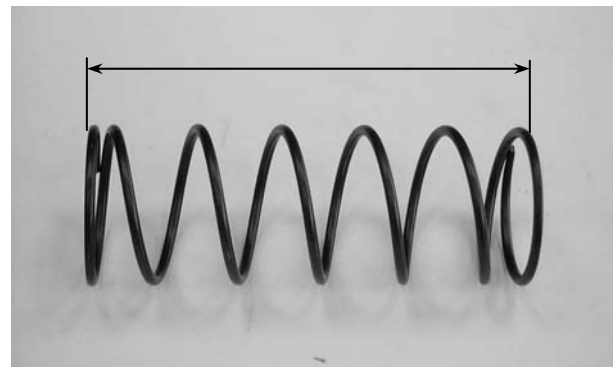
Remove the oil seal from the movable driven face.



INSPECTION

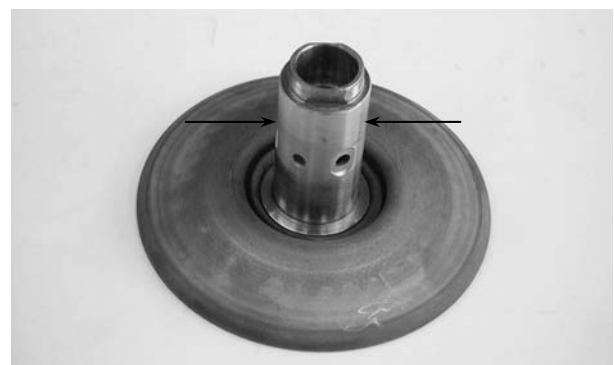
Measure the driven face spring free length.

Service Limit: 147.6mm replace if below



Check the driven face for wear or damage. Measure the driven face O.D.

Service Limit: 33.94mm replace if below

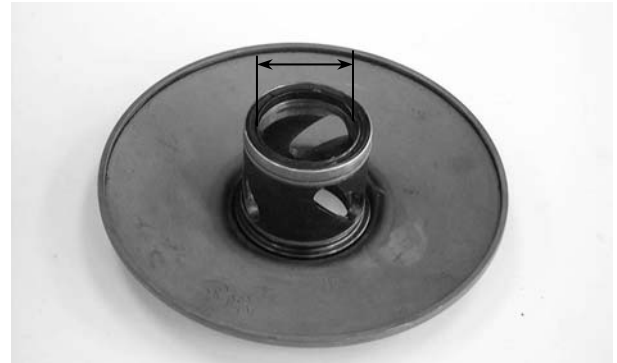


9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

Check the movable driven face for wear or damage.

Measure the movable driven face I.D.

Service Limit: 34.06mm replace if over



DRIVEN PULLEY FACE BEARING REPLACEMENT

Drive the inner needle bearing out of the driven pulley face.

- * Discard the removed bearing and replace with a new one.

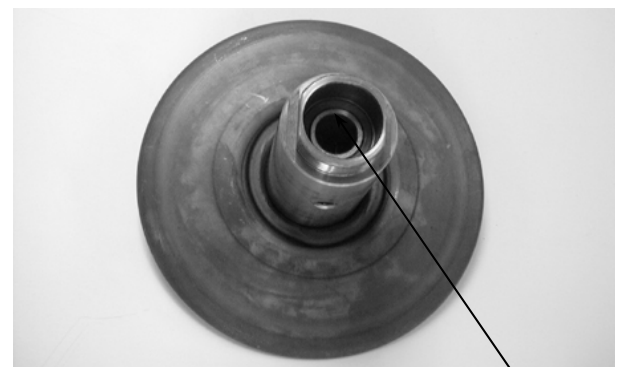


Inner Bearing

Remove the drive the outer bearing out of the driven face.

- * Discard the removed bearing and replace with a new one.

Apply grease to the outer bearing.
Drive a new outer bearing into the driven face with the sealed end facing up.



Outer Bearing

Apply grease to the driven face bore areas.

- * Pack all bearing cavities with 9~9.5g grease.
Specified grease: Heat resistance 230°C



9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

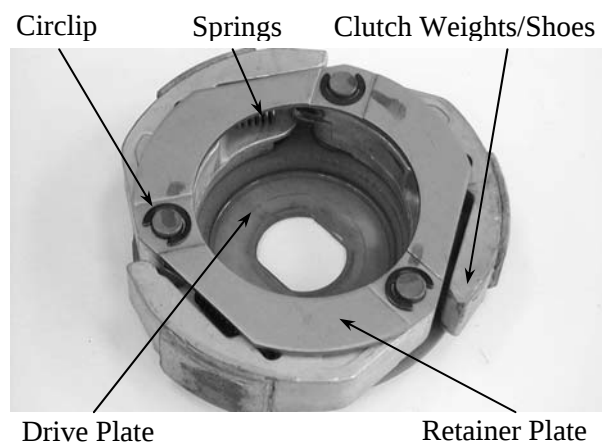
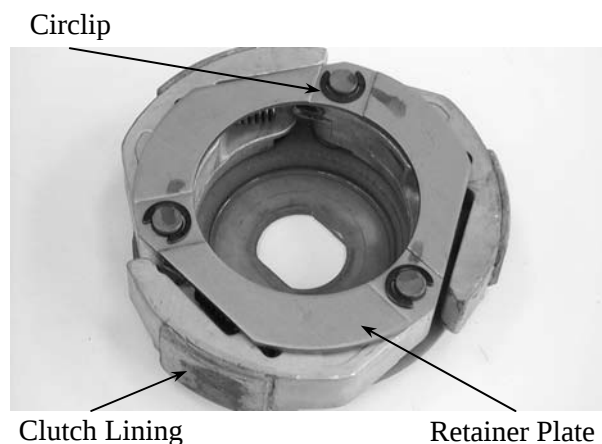
Press a new needle bearing into the driven face.



CLUTCH DISASSEMBLY

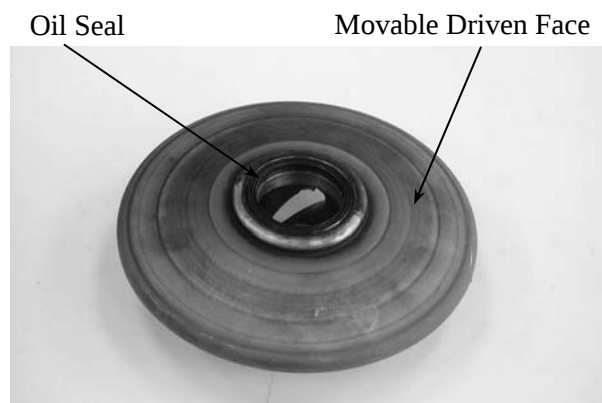
Remove the circlips and retainer plate to disassemble the clutch.

* Keep grease off the clutch linings.



CLUTCH ASSEMBLY

Install the damper rubbers on the drive plate pins.
Install the clutch weights/shoes and clutch springs onto the drive plate.
Install the retainer plate and secure with the circlips.



CLUTCH/DRIVEN PULLEY ASSEMBLY

Clean the driven pulley faces and remove any grease from them.
Install the oil seal onto the moveable driven face.
Apply grease to the O-rings and install them onto the moveable driven face.

9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

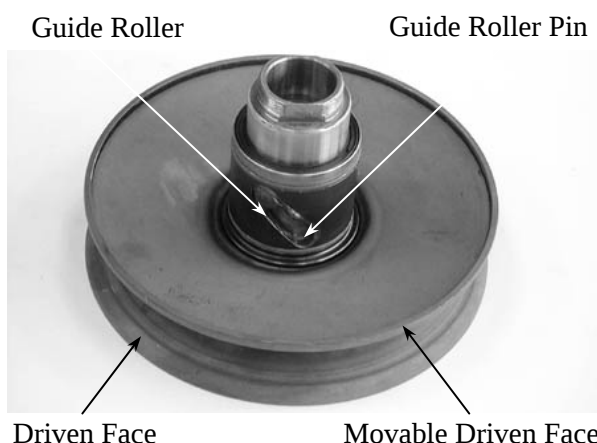
Install the movable driven face onto the driven face.

Apply grease to the guide rollers and guide roller pins and then install them into the holes of the driven face.

Install the seal collar.

Remove any excessive grease.

- * Be sure to clean the driven face off any grease.



Set the driven pulley assembly, driven face spring and clutch assembly onto the clutch spring compressor.

- * Align the flat surface of the driven face with the flat on the clutch drive plate.



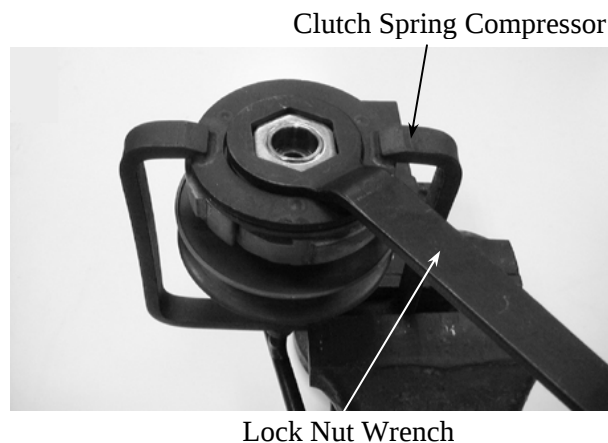
Compress the clutch spring compressor and install the drive plate nut. Set the clutch spring compressor in a vise and tighten the drive plate nut to the specified torque.

Torque: 5.5kg-m

- * Be sure to use a clutch spring compressor to avoid spring damage.

Special

Clutch Spring Compressor



INSTALLATION

Install the clutch/driven pulley onto the drive shaft.

- * Keep grease off the drive shaft.



Clutch/Driven Pulley

9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

Install the clutch outer.
Hold the clutch outer with the universal
holder.

Install and tighten the clutch outer nut.

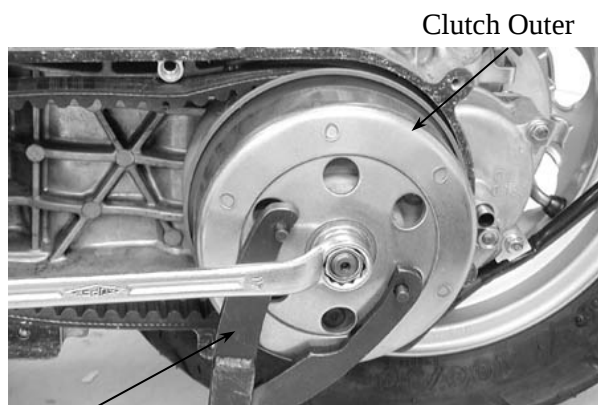
Torque: 5.5kg-m

Special

Flywheel Holder

Install the drive belt.

Install the left crankcase cover.



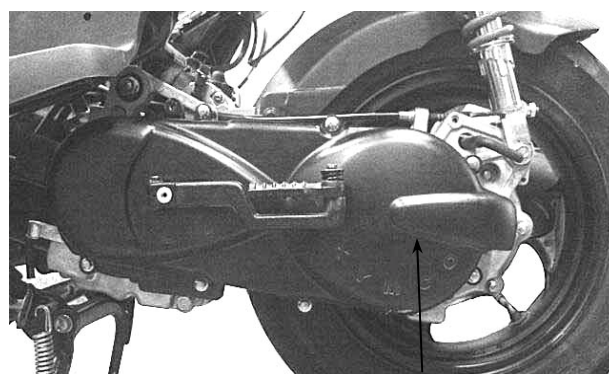
Flywheel Holder

KICK STARTER

REMOVAL

Remove the left crankcase cover.

Remove the seal rubber and dowel pins.



Left Crankcase Cover

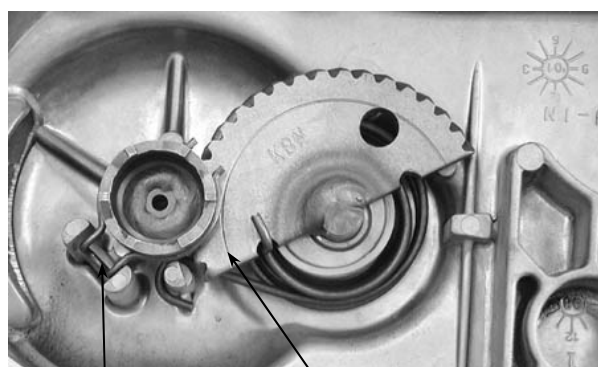
Remove the kick lever.

Remove the circlip and washer from the kick
starter spindle.



Circlip

Gently turn the kick starter spindle to remove
the starter driven gear together with the
friction spring.



Friction Spring Starter Driven Gear

9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

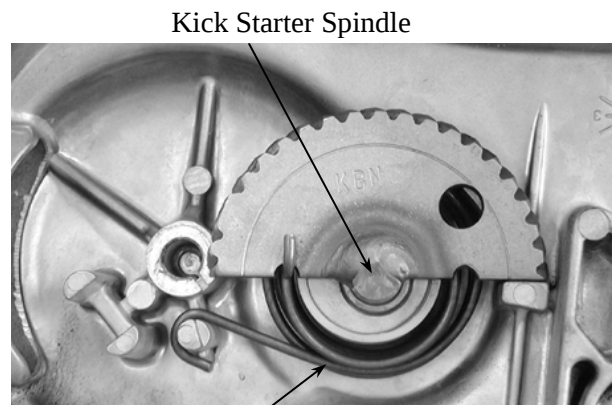
Remove the kick starter spindle and return spring from the left crankcase cover.
Remove the kick starter spindle bushing.

INSPECTION

Inspect the kick starter spindle and gear for wear or damage.
Inspect the return spring for weakness or damage.
Inspect the kick starter spindle bushings for wear or damage.

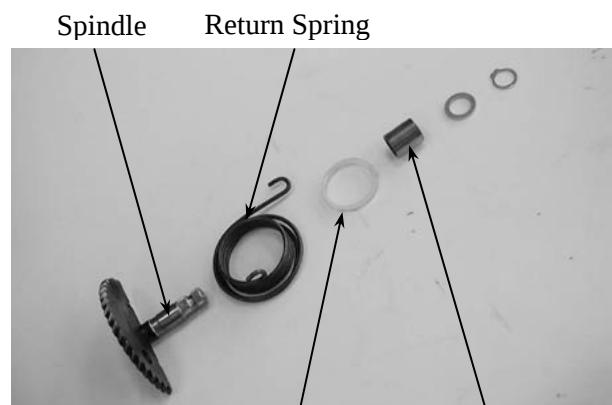
Inspect the starter driven gear for wear or damage.
Inspect the friction spring for wear or damage.

Inspect the kick starter spindle and starter driven gear forcing parts for wear or damage.



Kick Starter Spindle

Return Spring



Spindle

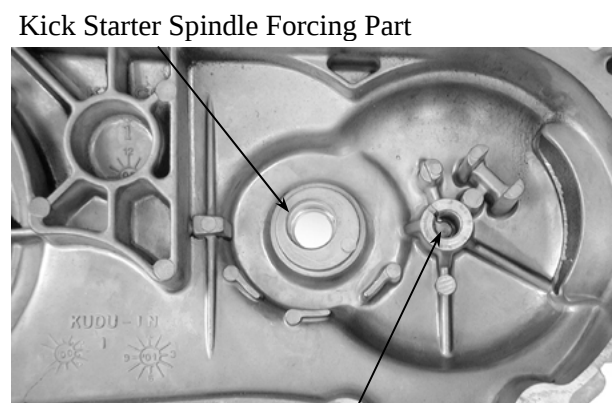
Return Spring

Plastic Bushing Spindle Bushing

Friction Spring



Starter Driven Gear



Kick Starter Spindle Forcing Part

Starter Driven Gear Shaft Forcing Part

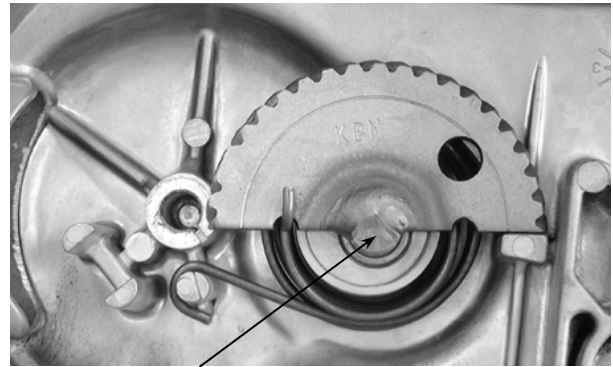
9. DRIVE AND DRIVEN PULLEYS/ KICK STARTER

INSTALLATION

Install the kick starter spindle bushings and return spring onto the left crankcase cover.

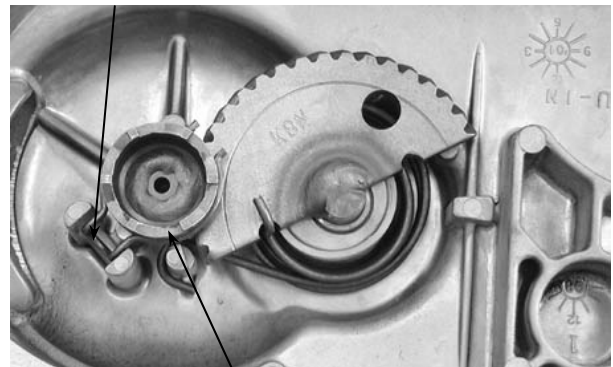
- * When installing the return spring, use a screw driver to press the inward and outward return spring hooks into their original positions respectively.

Install the starter driven gear and friction spring as the figure shown.



Kick Starter Spindle

Friction Spring

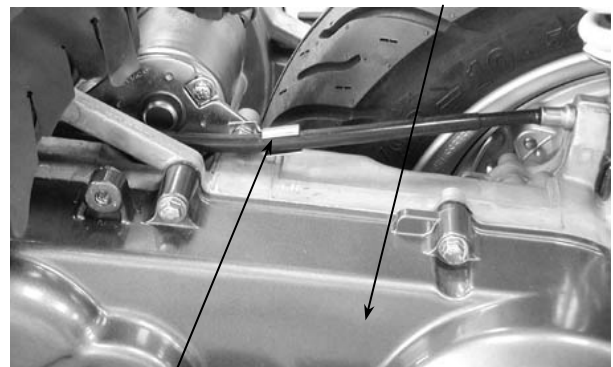


Starting Ratchet

Left Crankcase Cover

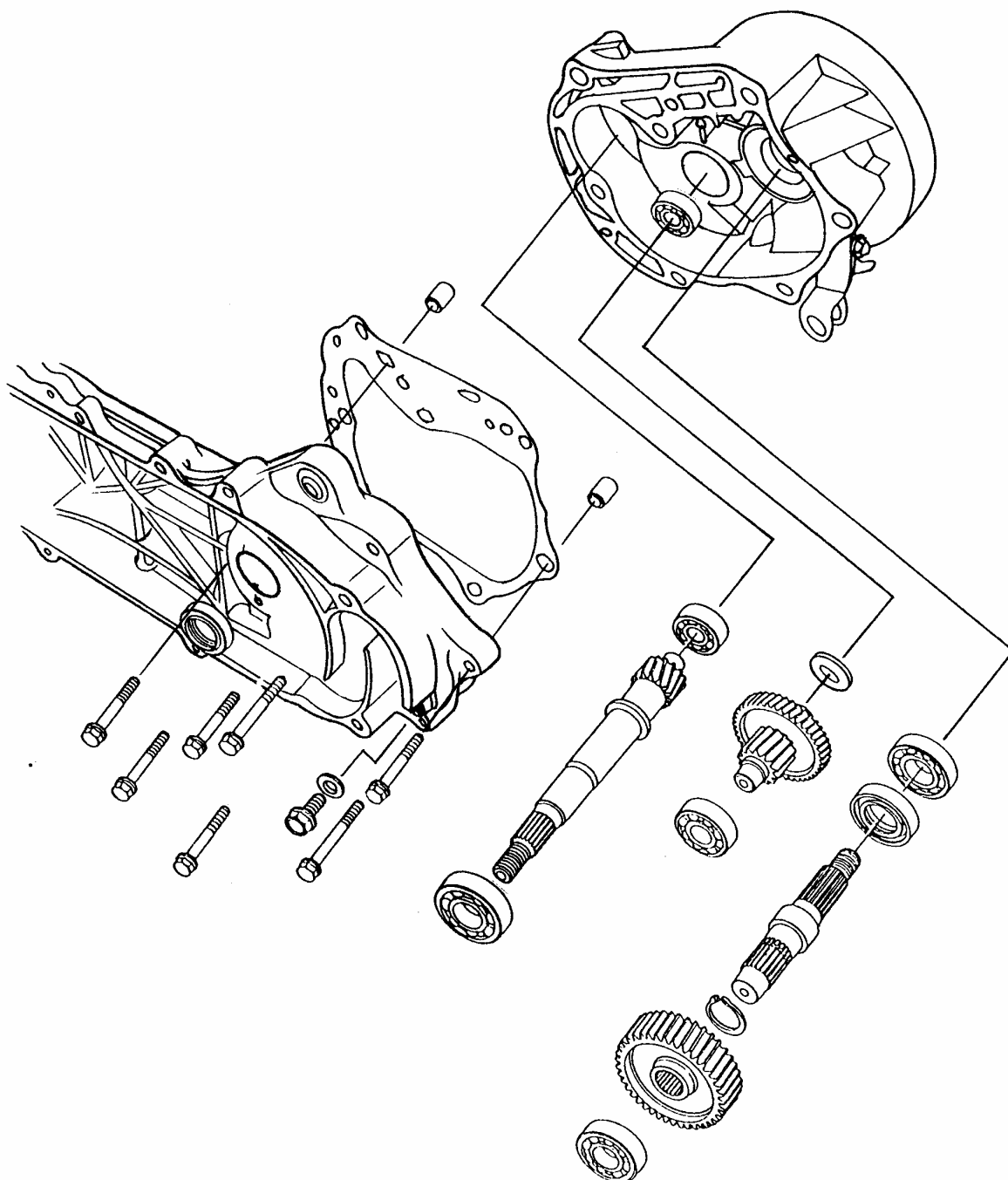
Install the kick lever.
Install the left crankcase cover and tighten the cover bolts diagonally.
Connect the drive belt air tube and tighten the band screw.

- * For drum brake, be sure to install the rear brake cable clamp to the specified location and install the brake cable into the brake cable holder.



Rear Brake Cable Clamp

10. FINAL REDUCTION



10. FINAL REDUCTION

SERVICE INFORMATION.....	10-1	FINAL REDUCTION INSPECTION.....	10-2
TROUBLESHOOTING.....	10-1	BEARING REPLACEMENT.....	10-3
FINAL REDUCTION DISASSEMBLY	10-2	FINAL REDUCTION ASSEMBLY.....	10-4

SERVICE INFORMATION

SPECIFICATIONS

Specified Oil: GEAR OIL SAE 90#

Oil Capacity: At disassembly : 0.2 liter
 At change : 0.19 liter

SPECIAL TOOLS

Bearing puller, 10,12,15,18mm

TROUBLESHOOTING

Engine starts but motorcycle won't move

- Damaged transmission
- Seized or burnt transmission
- Faulty drive belt
- Faulty clutch

Abnormal noise

- Worn, seized or chipped gears
- Worn bearing

Oil leaks

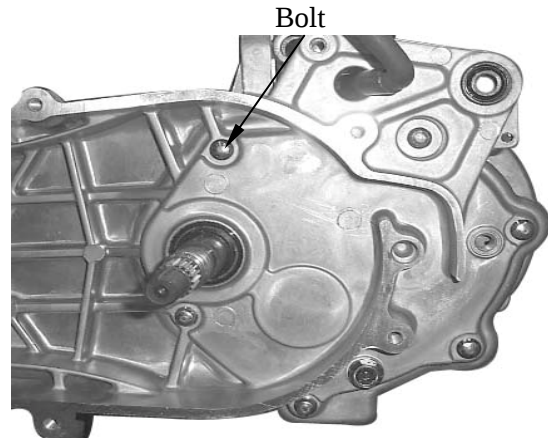
- Oil level too high
- Worn or damaged oil seal

10. FINAL REDUCTION

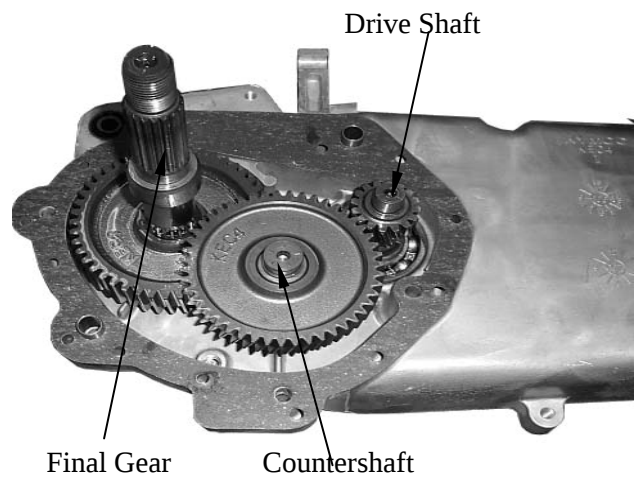
AGILITY 125

FINAL REDUCTION DISASSEMBLY

Remove the rear brake cable. (⇒13-3)
 Remove the rear wheel. (⇒13-2)
 Remove the left crankcase cover. (⇒9-2)
 Remove the clutch/driven pulley. (⇒9-10)
 Drain the transmission gear oil into a clean container.
 Remove the transmission case cover attaching bolts.
 Remove the transmission case cover.
 Remove the gasket and dowel pins.

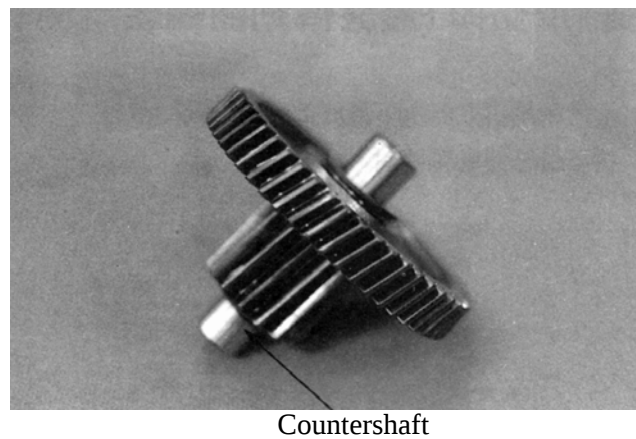


Remove the final gear and countershaft.

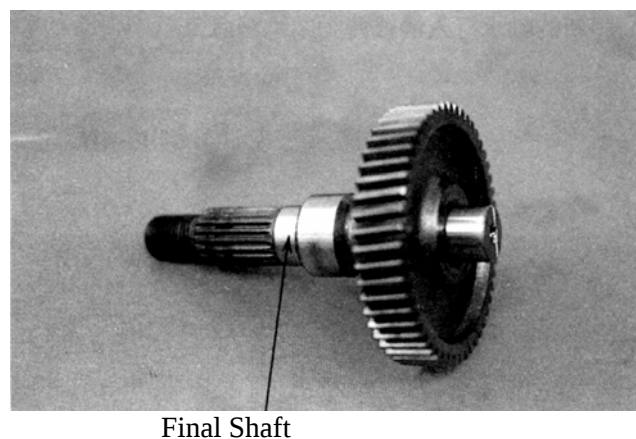


FINAL REDUCTION INSPECTION

Inspect the countershaft and gear for wear or damage.

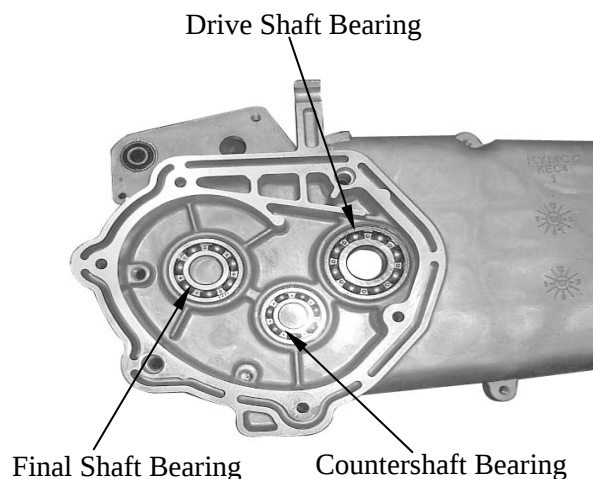


Inspect the final gear and final shaft for wear, damage or seizure.



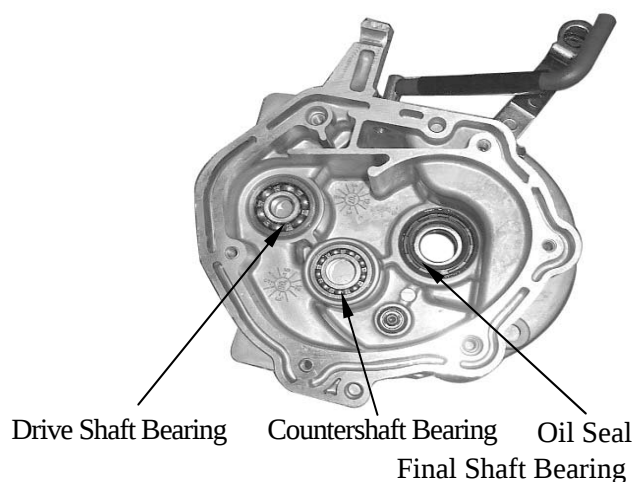
10. FINAL REDUCTION

Check the left crankcase bearings for excessive play and inspect the oil seal for wear or damage.



Inspect the drive shaft and gear for wear or damage.
Check the transmission case cover bearings for excessive play and inspect the final shaft bearing oil seal for wear or damage.

* Do not remove the transmission case cover except for necessary part replacement. When replacing the drive shaft, also replace the bearing and



BEARING REPLACEMENT (TRANSMISSION CASE COVER)

Remove the transmission case cover bearings using a bearing puller.
Remove the final shaft oil seal.

Special

Bearing Puller



Bearing Puller

Drive new bearings into the transmission case cover.



Outer Driver, 32x35mm

10. FINAL REDUCTION

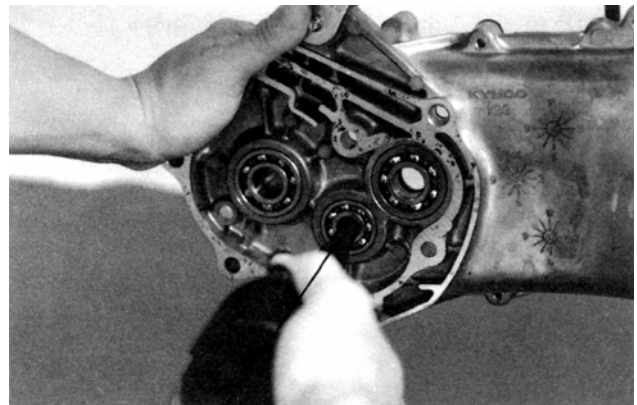
AGILITY 125

BEARING REPLACEMENT (LEFT CRANKCASE)

Remove the drive shaft.
Remove the drive shaft oil seal.
Remove the left crankcase bearings using a bearing puller.

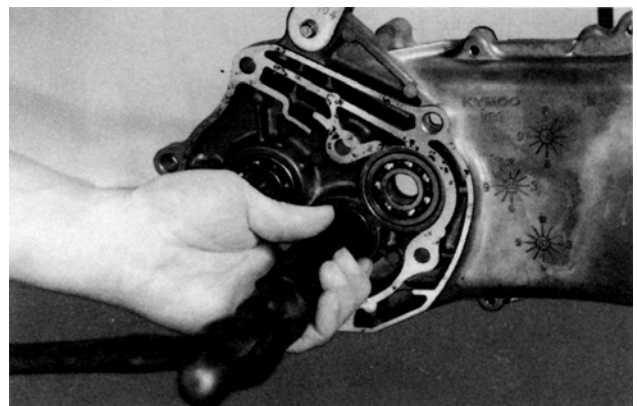
 Special

Bearing Puller



Bearing Puller, 12mm

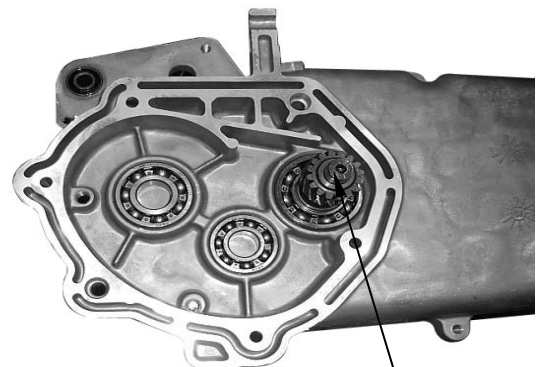
Drive new bearings into the left crankcase.
Install a new drive shaft oil seal.



Pilot

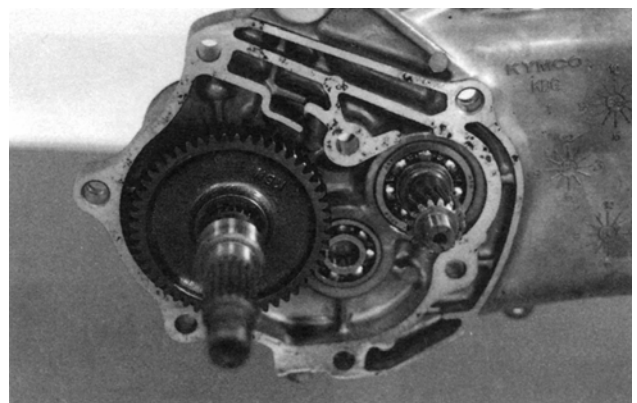
FINAL REDUCTION ASSEMBLY

Install the drive shaft into the left crankcase.



Drive Shaft

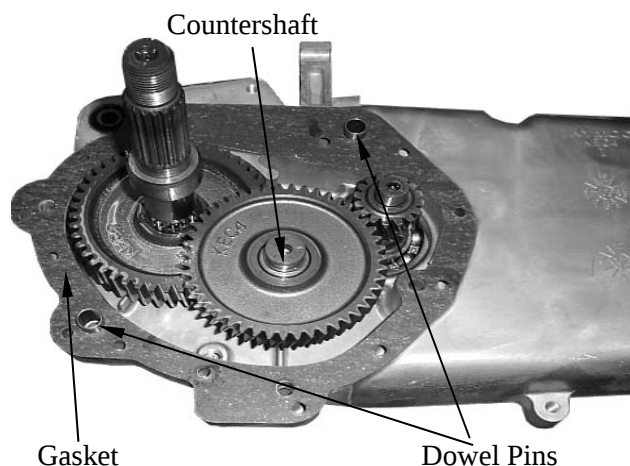
Install the final gear and final shaft into the left crankcase.



10. FINAL REDUCTION

Install the countershaft and gear into the left crankcase.

Install the dowel pins and a new gasket.



Install the transmission case cover.



Install and tighten the transmission case cover bolts.

Install the clutch/driven pulley. (⇒9-13)

After installation, fill the transmission case with the specified oil. (⇒3-7)

- Place the motorcycle on its main stand on level ground.
- Check the oil sealing washer for wear or damage.

Specified Gear Oil: SAE90#

Oil Capacity:

At disassembly : 0.2 liter

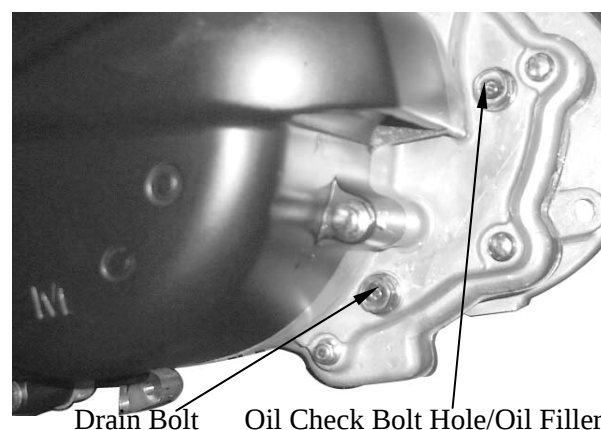
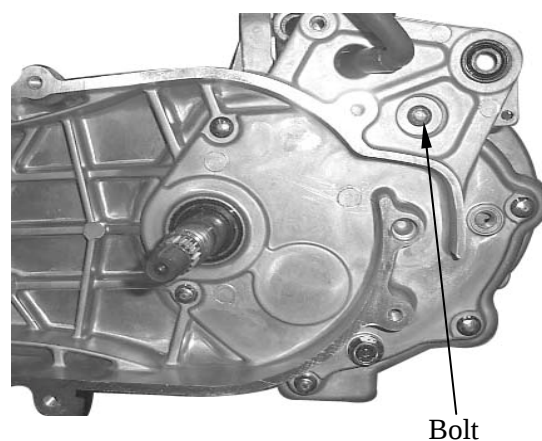
At change : 0.19 liter

Install and tighten the oil check bolt.

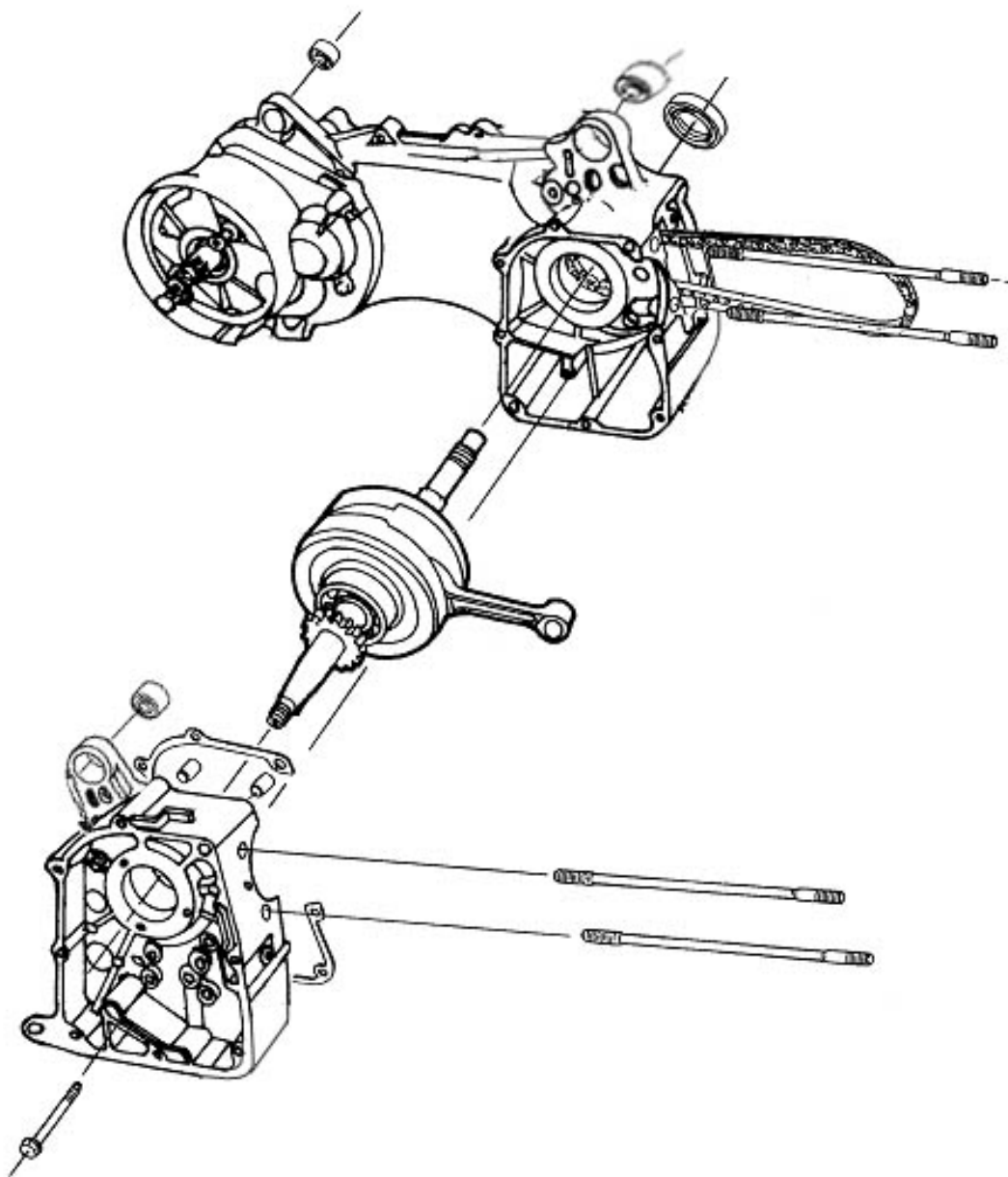
Torque: 0.8~1.2kgf-m

Start the engine and check for oil leaks.

Check the oil level from the oil check bolt hole and add the specified oil to the proper level if the oil level is low.



11. CRANKCASE/CRANKSHAFT



11

11. CRANKCASE/CRANKSHAFT

SERVICE INFORMATION.....	11-1	CRANKSHAFT	11-3
TROUBLESHOOTING	11-1	CRANKCASE ASSEMBLY	11-4
CRANKCASE SEPARATION	11-2		

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- This section covers crankcase separation to service the crankshaft. The engine must be removed for this operation.
- The following parts must be removed before separating the crankcase.
 - Cylinder head (⇒Section 7)
 - Cylinder/piston (⇒Section 8)
 - Drive and driven pulleys (⇒Section 9)
 - A.C. generator (⇒Section 14)
 - Carburetor/air cleaner (⇒Section 5)
 - Rear wheel/rear shock absorber (⇒Section 13)
 - Starter motor (⇒Section 16)
 - Oil pump (⇒Section 4)

SPECIFICATIONS

	Item	Standard (mm)	Service Limit (mm)
Crankshaft	Connecting rod big end side clearance	0.10~0.35	0.55
	Connecting rod big end radial clearance	0-0.008	0.05
	Runout	—	0.10

TORQUE VALUES

Crankcase bolt	0.8~1.2kgf-m
Cam chain tensioner slipper bolt	0.8~1.2kgf-m

TROUBLESHOOTING

Excessive engine noise

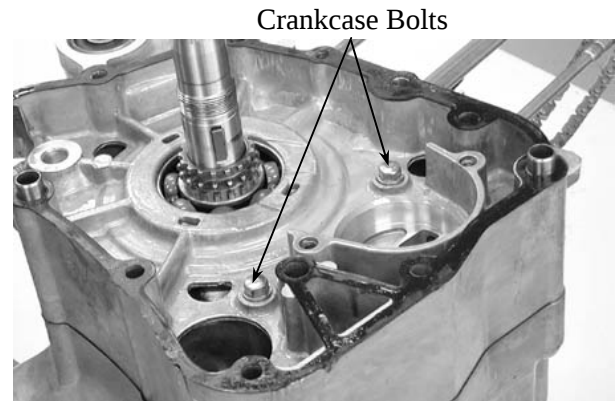
- Excessive bearing play
- Excessive crankpin bearing play

11. CRANKCASE/CRANKSHAFT

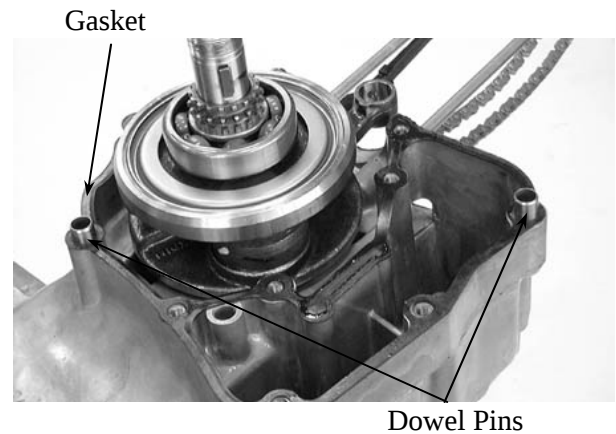
CRANKCASE SEPARATION

Remove the two crankcase attaching bolts.
Separate the left and right crankcase halves.

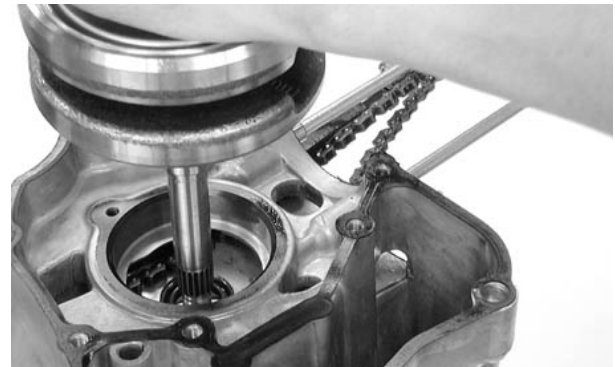
* Do not damage the crankcase gasket surface.



Remove the gasket and dowel pins.



Remove the crankshaft and cam chain from the left crankcase.



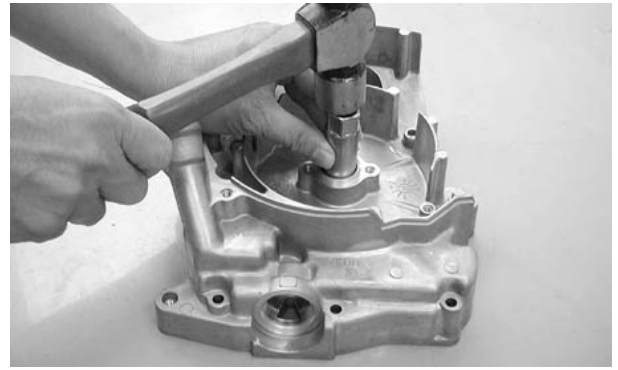
Clean off all gasket material from the crankcase mating surfaces.

* Avoid damaging the crankcase mating surfaces.



11. CRANKCASE/CRANKSHAFT

Remove the oil seal from the right crankcase.
Check the oil seal lip for wear or deterioration.
The installation sequence is the reverse of removal.



CRANKSHAFT INSPECTION

Measure the connecting rod big end side clearance.

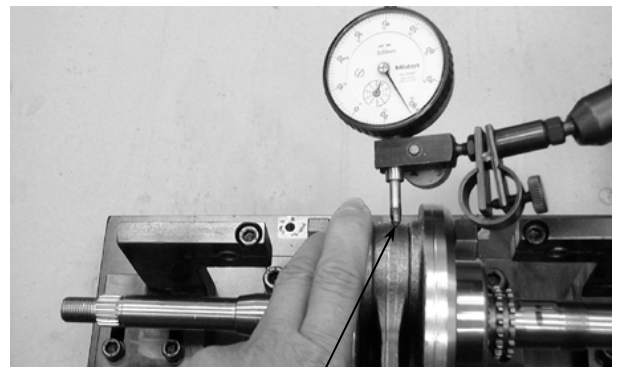
Service Limit: 0.55mm replace if over



Connecting Rod Big End

Measure the connecting rod big end radial clearance at two points at right angles to the shaft.

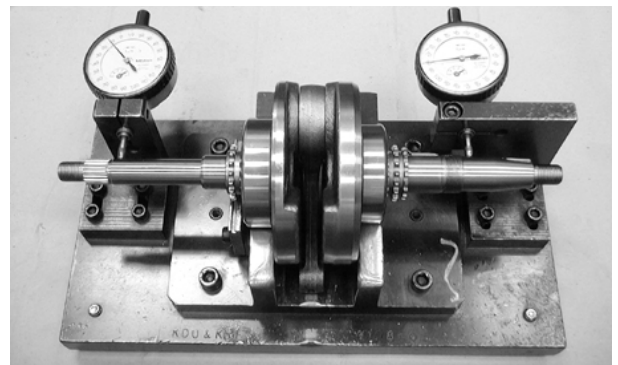
Service Limit: 0.05mm replace if over



Measuring Location

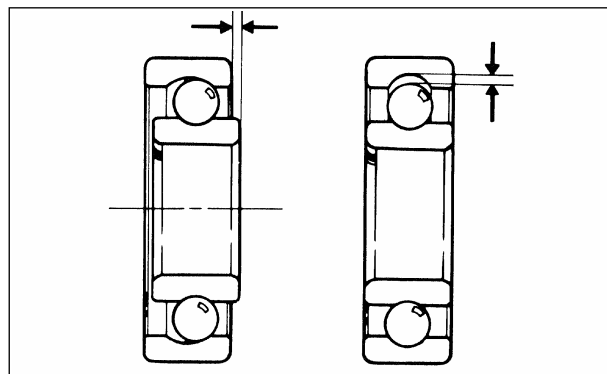
Measure the crankshaft runout.

Service Limit: 0.10mm replace if over



11. CRANKCASE/CRANKSHAFT

Turn the crankshaft bearings and check for excessive play.
If they do not turn smoothly, quietly or if they fit loosely in the crankshaft, replace the crankshaft as a set.



CRANKCASE ASSEMBLY

Install the cam chain into the left crankcase.



Cam Chain

Install the crankshaft into the left crankcase.



Install the dowel pins and a new gasket onto the left crankcase.

* Place the right crankcase over the crankshaft and onto the left crankcase.

Gasket

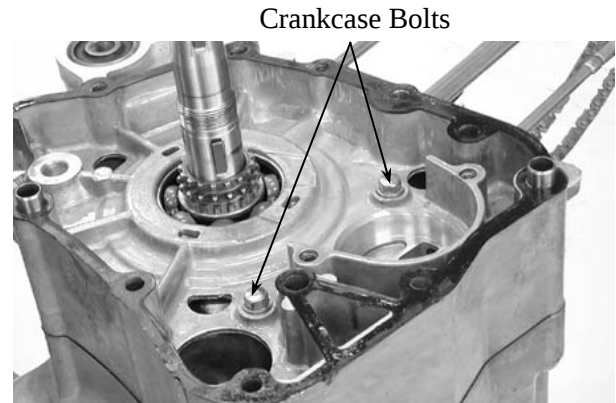


Dowel Pins

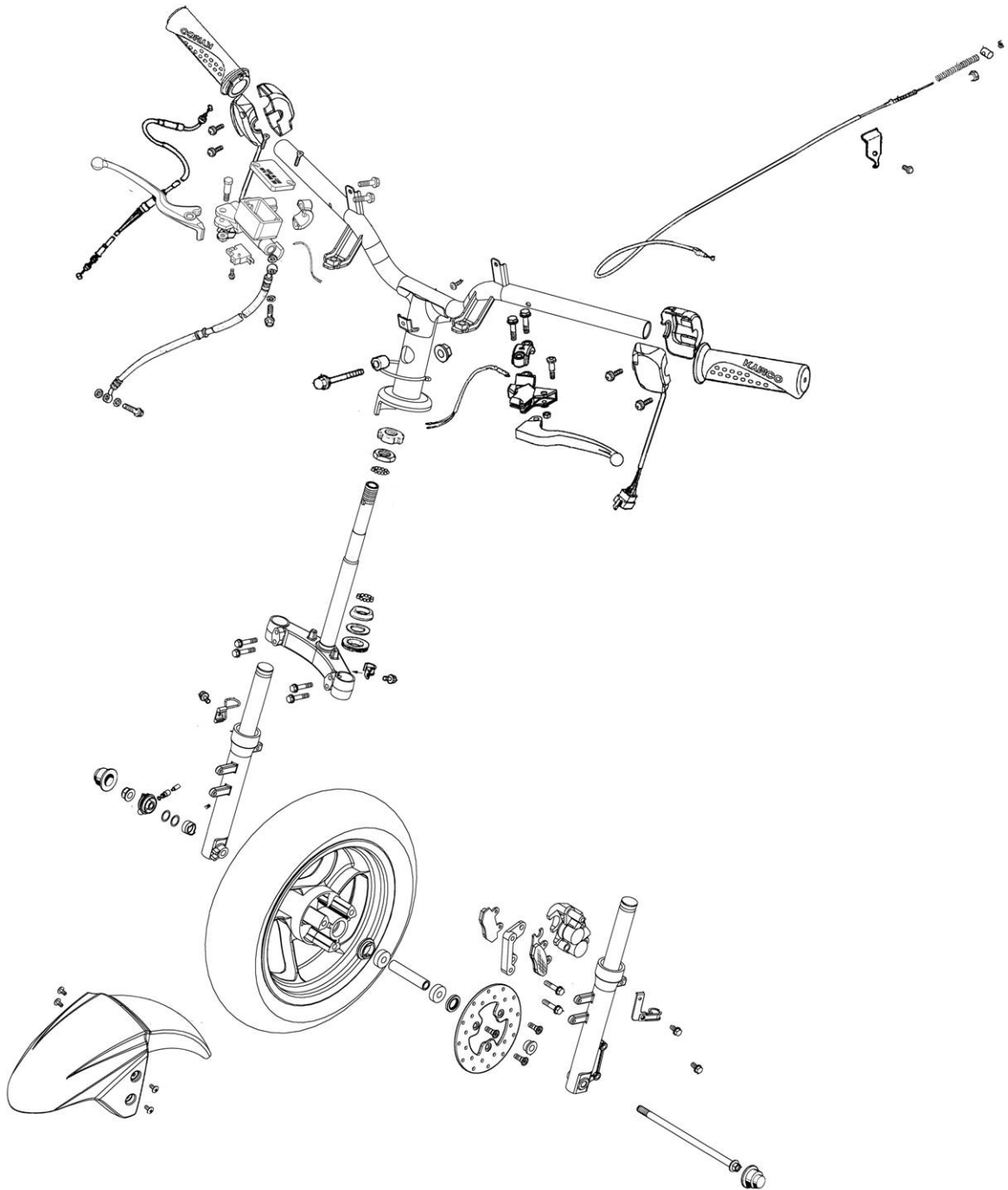
11. CRANKCASE/CRANKSHAFT

Tighten the two crankcase attaching bolts.

Torque: 0.9kg-m



12. FRONT WHEEL/FRONT BRAKE/ FRONT SUSPENSION



12

12. FRONT WHEEL/FRONT BRAKE/ FRONT SUSPENSION



AGILITY 125

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SERVICE INFORMATION

GENERAL INSTRUCTIONS

- Remove the motorcycle frame covers before removing the front wheel. Jack the motorcycle front wheel off the ground and be careful to prevent the motorcycle from falling down.
- During servicing, keep oil or grease off the brake drum and brake linings.

SPECIFICATIONS

Item		Standard (mm)	Service Limit (mm)
Axle shaft runout		—	0.2
Front wheel rim runout	Radial	—	2.0
	Axial	—	2.0
Front brake drum I.D		110(SG20AB)	111(SG20AB)
Front brake lining thickness		4.0(SG20AB)	2.0(SG20AB)
Front shock absorber spring free length		210.9	206.4

TORQUE VALUES

Handlebar bolt	4.5~5.5kgf-m
Steering stem lock nut	6.0~8.0kgf-m
Steering top cone race	0.5~1.3kgf-m
Front shock absorber bolt	3.0kgf-m
Front axle nut	5.0~7.0kgf-m
Brake arm bolt	0.8~1.2kgf-m

SPECIAL TOOLS

Long socket wrench, 32mm 8angle

TROUBLESHOOTING

Hard steering (heavy)

- Excessively tightened steering stem top cone race
- Broken steering balls
- Insufficient tire pressure

Steers to one side or does not track straight

- Uneven front shock absorbers
- Bent front fork
- Bent front axle or uneven tire

Poor brake performance

- Incorrectly adjusted brake
- Worn brake linings
- Contaminated brake lining surface
- Worn brake shoes at cam contacting area
- Worn brake drum
- Poorly connected brake arm

Front wheel wobbling

- Bent rim
- Excessive wheel bearing play
- Bent spoke plate
- Faulty tire
- Improperly tightened axle nut

Soft front shock absorber

- Weak shock springs
- Insufficient damper oil

Front shock absorber noise

- Slider bending
- Loose fork fasteners
- Lack of lubrication

12. FRONT WHEEL/FRONT BRAKE/ FRONT SUSPENSION



AGILITY 125

STEERING HANDLEBAR

REMOVAL

Remove the handlebar front and rear covers.
(⇒2-2)

Remove the two bolts attaching each of the
front and rear brake levers.

Remove the front and rear brake levers.



Bolts

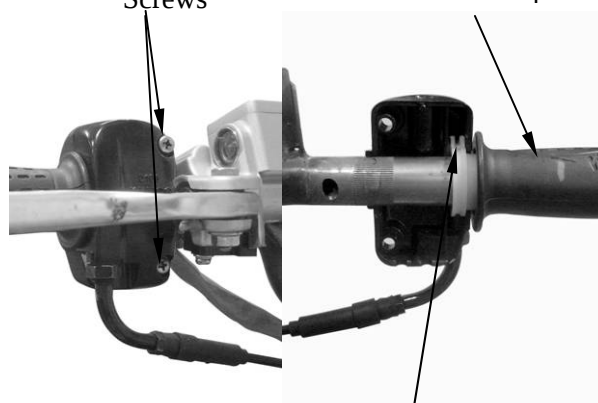
Bolts

Screws

Throttle Pipe

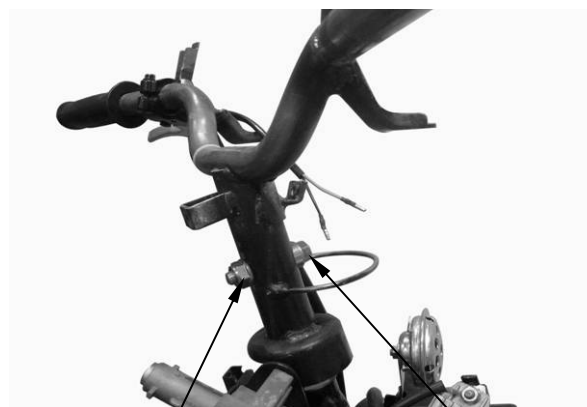
Remove the two throttle holder screws and
throttle holder.

Disconnect the throttle cable from the throttle
pipe and then remove the throttle pipe from
the handlebar.



Throttle Cable

Remove the handlebar lock nut and bolt to
remove the handlebar.



Nut

Bolt

Bolt Orifice

INSTALLATION

Install the handlebar onto the steering stem
by aligning the tab on the handlebar with the
bolt orifice on the steering stem.

Install and tighten the handlebar bolt and lock
nut.

Torque: 4.5~5.5kgf-m

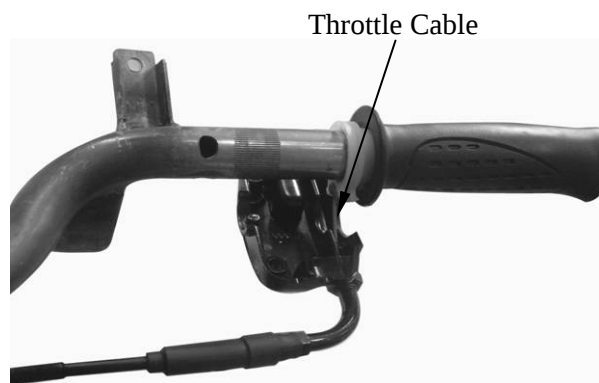


12. FRONT WHEEL/FRONT BRAKE/ FRONT SUSPENSION

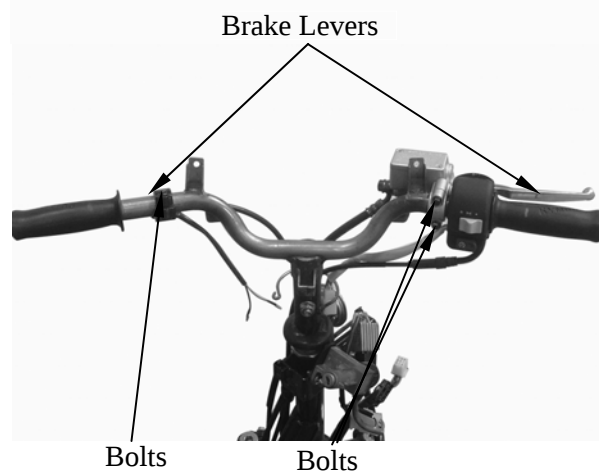


AGILITY 125

Apply grease to the tip of the throttle pipe.
Install the throttle pipe and connect the
throttle cable.



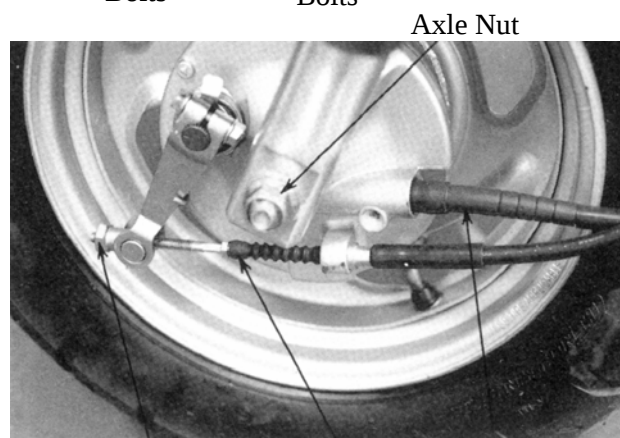
Install the front and rear brake levers in the
reverse order of removal.



FRONT WHEEL

REMOVAL

Jack the motorcycle front wheel off the
ground.
Remove the speedometer cable set screw and
disconnect the speedometer cable.
Remove the front brake cable.
Remove the front axle nut and pull out the
axle.
Remove the front wheel.
Remove the front brake panel and side collar.



Adjusting Nut Brake Cable Speedometer Cable

INSPECTION

AXLE RUNOUT

Set the axle in V blocks and measure the
runout using a dial gauge.
The actual runout is $\frac{1}{2}$ of the total indicator
reading.

Service Limit: 0.2mm replace if over

