

54mm Stroke-Up Crank Shaft Kit 124cc (2B) Instruction manual

(124cc/54x54)

Crank shaft kit	Crank shaft kit (a single item)	Crank shaft applicable models and frame Nos	
01-10-8032	01-10-0081	6V Monkey/Gorilla (Z50J-1323947 ~ 1510400) (L/G Crank)	(Z50J-1600008 ~ 1805927)
01-10-8042	01-10-0091	Monkey/Gorilla (Z50J-2000001 ~) (AB27-1000001 ~ 1899999)	XR50R (AE03-1000001 ~) CRF50F (AE03-1400001 ~)
		Monkey BAJA (Z50J-1700001 ~)	XR70R (DE02-1000001 ~)
		Monkey R/RT (AB22-1000017 ~)	CRF70F (DE02-1700001 ~)

Applicable cylinder head	
01-10-8032	(Old-type) Super Head / R-Stage+D Head / 17R-Stage+D Head / Super Head+R head / Super Head 4Valve+R Head
01-10-8042	DOHC 4V+D Head / DESMO Head

Thank you very much for purchasing our products.

Thank you so you will comply with the following matters at the time of use. Before installation, please check your always kit contents. If there is a point of notice event, Please contact us the dealer of purchase.

⊙ If the description, such as photos or illustration different with this part.

☆ Please read carefully before use ☆

- ⊙ The use of ignoring the instructions that are written in the instruction manual, if an accident or damage has occurred, we can not assume any responsibility for compensation.
- ⊙ This product installation and use, when a problem occurs to after market goods, guarantee other than this product, also can not assume any in any such matters.
- ⊙ If it was the case or mounting that has been processed like a product, it will not be covered under warranty.
- ⊙ It is not possible to inquire of the combination of other manufacturers.
- ⊙ This product is the above-mentioned vehicle exclusive goods. Is not possible attached to the other vehicle. Please note.
- ⊙ Installation of this product requires removal and installation of an engine, and disassembly of a crankcase. Please prepare service manual for an above-mentioned applicable vehicle, and work with enough care following the instructions in the service manual. Besides, this instruction manual, as well as service manual, is prepared for persons who have acquired basic skill and knowledge in tuning. We recommend those who are technically inexperienced or without right tools to ask a technically-trustworthy specialist shop to do the work.
- ⊙ This part is a product that was developed for the closed competition, please do not use public roads.
- ⊙ Always use new bolts, nuts, dowel pins and packings. Never reuse severely worn-out or damaged ones.
- ⊙ Use liquid packings at the specified points only, and never use them at unspecified points. Otherwise, the packings may oppilate oil passages; it may break the engine in the worst case.
- ⊙ Be sure to always use premium unleaded petrol. And make sure to check what kind of gasoline is remaining in the fuel tank. Whenever regular gasoline is left in the fuel tank, always replace it with high-octane gasoline.
- ⊙ Never use this kit on the point-ignition system motorcycle.
- ⊙ Please be informed that what we can safely say is that the ignition system of this kit is compatible with ours and stock ignition systems, because no data is available with us on the compatibility with other ignition systems. Therefore, please never use other ignition systems, which may cause technical troubles.
- ⊙ Need to use the C.D.I. magnet kit. For 6V Monkey / Gorilla (Z50J-1323947 ~ 1510400) (Z50J-1600008 ~ 1805927). When using the C.D.I. magnet kit, it will be a competition-only (Racing) parts that will not charge the battery and the lighting accessories will not function.
6V's Monkey / Gorilla Crankshaft and various Twin Spark Cylinder Heads cannot be installed with this parts at the same time.
- ⊙ Output performance is improved by installing this product. Along with that, if you use it for a long period of time with a stock crankcase, the strength will be insufficient. We recommend to use our reinforced crankcase with this kit.
- ⊙ Install an oil filter outside.
- ⊙ Install an oil cooler whenever necessary.
- ⊙ Engine oil must be API SF or higher class, such as SAE 10W-40 / 15W-50, which are our recommendations.
- ⊙ The upper limit of the engine revolutions is 12,000 rpm. Please install a tachometer to ensure that you drive at revolutions below 12,000 rpm.
- ⊙ Change the sprocket with the one which meets the output and specifications.
- ⊙ This kit cannot perform on its own.
- ⊙ This kit is only compatible with those engine parts recommended by us. So, please replace the engine parts not recommended by us with those of our recommendations.
- ⊙ The installation of this kit entails crankcase boring process. For the details, please refer to the attached sheet.
- ⊙ Stock cylinder head cannot be used with this kit.
- ⊙ Caution: Must be used with our applicable cylinder head kit and cylinder kit 124cc (54x54). Cannot be combined with non-applicable cylinder heads and only work with 124cc (54x54)

Jump-Starting and Sudden Acceleration

Idling, sudden acceleration, and sudden engine braking will put a heavy load on the engine, which please note may result in crank shaft damage and engine breakage in the worst case.

~ Features ~

- The combined use of this kit with the cylinder kit of our own make will have a remarkable effect, increasing the engine displacement to 124 cc.
- The crank shaft is made light in weight via the introduction of the balance cut aimed at reducing wagging.

SPECIAL PARTS
TAKEGAWA

CONTACT Address : 3-5-16 Nishikirohigashi Tondabayashi Osaka JAPAN
TEL: +81-721-25-1357 FAX: +81-721-24-5059 e-mail: english@takegawa.co.jp URL http://www.takegawa.co.jp
Please contact with your name and country name provided. (Only English please)

Caution When the handling of ignoring this display, property damage and human shows the assumption of what injury.

- Since this kit is designed and developed for driving in closed races, do not use the kit for running on public roads. Always try to drive your motorcycle at a legal speed, abiding by the laws.
- Work only when the engine and the muffler are cool. (Otherwise, you will burn yourself.)
- Prepare right tools for the work, and do the work in the proper and right way. (Otherwise, improper work could cause breakage of parts or injuries to yourself.)
- Always use a torque wrench to screw bolts and nuts tight and securely to the specified torque. (Improper torque could cause these parts to get damaged or fall off.)
- As some products and frames have sharp edges or protruding portions, please work with your hands protected. (Otherwise, you will suffer injuries.)
- Before riding, always check every section for slack in parts like screws. If you find slack ones, screw them securely up to the specified torque. (Or improper torque may cause parts to come off.)
- Always use new gasket and packing. In case you continue using these parts, carefully check them for wear or damage, and in case wear or damage is detected, always replace those worn or damaged parts with new ones.

Warning When the handling of ignoring this display people died, shows the contents of the serious injury possibility is assumed.

- Always start the engine in a well-ventilated place, and do not turn the engine on in an airtight place. (Otherwise, you will suffer from carbon monoxide poisoning.)
- When you notice something abnormal with your motorcycle while riding down a road, stop riding immediately and park your motorcycle in a safe place. (Otherwise, the abnormality could lead to an accident.)
- Before doing work, place the motorcycle on level ground to secure it for safety's sake. (Otherwise, your motorcycle could overturn and injure you while you are working.)
- Check or perform maintenance of parts correctly according to the procedures in the instruction manual or a service manual. (Improper checking or maintenance could lead to an accident.)
- If you find damaged parts when checking and performing maintenance of your motorcycle, do not use these parts any longer, and replace them with new ones. (The continued use of these damaged parts as they are could lead to an accident.)
- As gasoline is highly flammable, never place it close to fire. Make sure that nothing flammable is near the gasoline. Since vaporized accumulation of gasoline is at high risk of explosion, work in a well-ventilated place.

- ⊙ Please note. Performance up, the design change, the product and the price in the cost up, etc. are subject to change without notice.
- ⊙ Please be informed that we shall be held harmless against any claim against us whatsoever arising out of use of the products in racing and the like.
- ⊙ Keep this manual stored until this product is discarded.

● Cautions before riding

- ① On fuel to use
Whenever regular gasoline is remaining in the fuel tank, always replace it with high-octane gasoline.
- ② On sprocket change
◇ The installation of this kit will increase the power of your vehicle. So use of a stock sprocket will result in severe wears of parts because of the too low gear, not only adversely affecting the engine life, but also breaking the engine in the worst case. Please get your sprocket high-geared.

● Engine parts of our recommendation

※ This kit is compatible with the engine parts of our recommendations only. Therefore, please replace the engine parts not recommended by us with those of our recommendations. Also, it cannot be combined with pistons / cylinders other than 124cc (54x54). Be careful.

	Recommended parts
Applicable cylinder head (Displacement)	R-Stage+D Head (124cc)
	17R-Stage+D Head (124cc)
	(Old-type)Super Head (124cc)
	Super Head+R Head (124cc)
	Super Head 4Valve+R Head (124cc)
	DOHC 4V+D Head (124cc)
Clutch	Our Special clutch
	Our Dry-type clutch
Ignition system (12V)	Stock + Stock C.D.I.
	Stock + Hyper C.D.I.
	C.D.I. magnet kit
	Super street outer rotor kit
Ignition system (6V)	C.D.I. magnet kit

For details, please refer to our parts catalog or website.
Please purchase the recommended parts described in the cylinder head kit.
URL : <http://www.takegawa.co.jp>

○ Our products that cannot be used

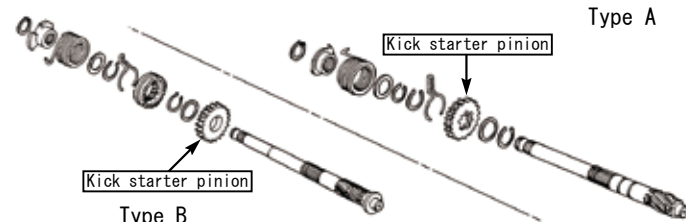
- ◇ On the use of old-type inner rotar C.D.I.



Please never use an old-type unusable base plate, because the use of it as it is is at high risk of causing troubles. So, change it with the one of our recommendations.

● About the case of using 5-speed transmission

- ◇ In case you install a 5-speed transmission kit and your kick starter spindle is type A, make sure to change the spindle to type B spindle. This will improve the efficiency in transmitting the torque at the time of kick start and reduce the load on the gear which will lead to the prevention of gear breakage.
- ◇ It is necessary to change a kick starter pinion as well at the time of changing the kick-starter spindle type B. Change it with the right one with the number of teeth to match the transmission kit. Please take note that the kick starter pinion type A is unusable.



Parts Name	Item No.
Kick starter spindle kit (Type-B)	02-04-0011
Kick starter pinion (25T/Type-B)	00-02-0105

The ignition systems with faster ignition timing than our settings are excluded. So please never use ignition systems in combination with other manufacturers', which may cause technical troubles.

● Others

① Oil cooler

The installation of this product increases the heat release value of the engine, set off by the increase in power. For a long-time and high load running, we recommend you to install an oil cooler kit which keeps oil at appropriate temperatures and prevents such troubles as oil film shortage at high temperatures.

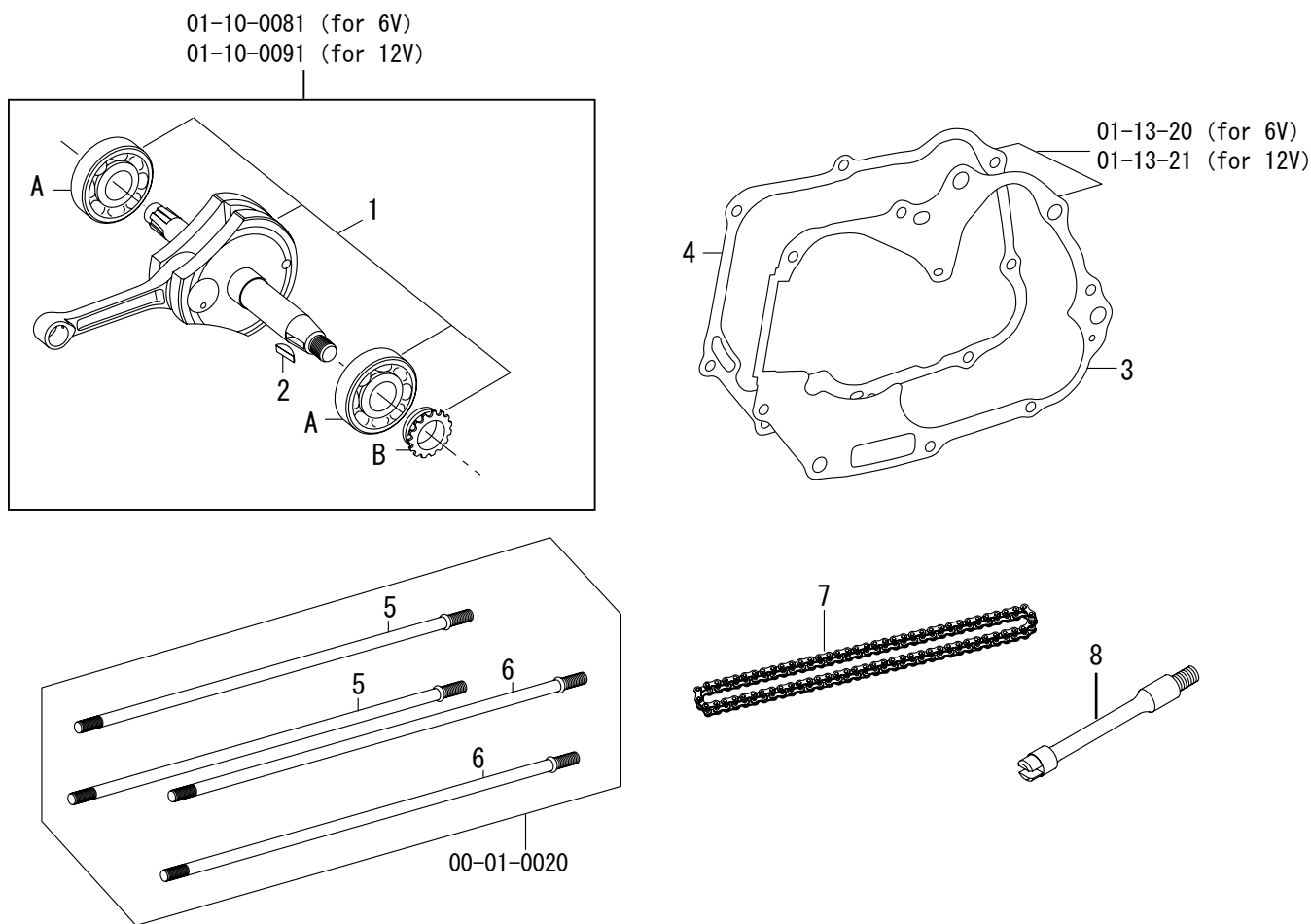
② Thermometer

It is advisable to use a thermometer to control the oil temperatures. For details, please refer to our parts catalog or website.
URL : <http://www.takegawa.co.jp>

● Number of revolutions

- ◇ The upper limit of revolutions varies depending on the installed cam shafts, cylinder heads, etc. Please install a revolution counter to make sure that you drive the engine at revolutions below the upper limit, following the instructions for a cam shaft or cylinder head. (Upper limit 12000rpm)
- ◇ Take note that idling and sudden acceleration in the 1st and the 2nd gear particularly tend to exceed the the upper limit. Over revolutions will result in nonsmooth revolutions of the engine, not only adversely affecting the engine life, but also breaking the engine in the worst case.

Product content



※ Please order in the repair parts are always repair part number.

If it is not the part number order, you may not be able to order. Please be forewarned. It should be noted, In the case of parts that can not be separately shipment, please order a set part number.

01-10-8032 (for 6V)

Number	Product content	Quantity	Item Number
1	54mm Crank shaft ASSY.	1	
2	Woodruff key, 3x5	1	00-01-0055
3	Crank case gasket (6V)	1	00-01-1032
4	Right-side crank case cover gasket	1	00-01-0095
5	Stud bolt A, 6x202	2	00-01-0020
6	Stud bolt A, 6x194.5	2	
7	Dai-Hard α Cam chain (84L)	1	01-14-0003
8	Cam chain guide sprocket spindle	1	14675-035-T00

01-10-8042 (for 12V)

Number	Product content	Quantity	Item Number
1	54mm Crank shaft ASSY.	1	
2	Woodruff key, 4mm	1	00-01-0011
3	Crank case gasket (12V)	1	00-01-0096
4	Right-side crank case cover gasket	1	00-01-0095
5	Stud bolt A, 6x202	2	00-01-0020
6	Stud bolt A, 6x194.5	2	
7	Dai-Hard α Cam chain (84L)	1	01-14-0003

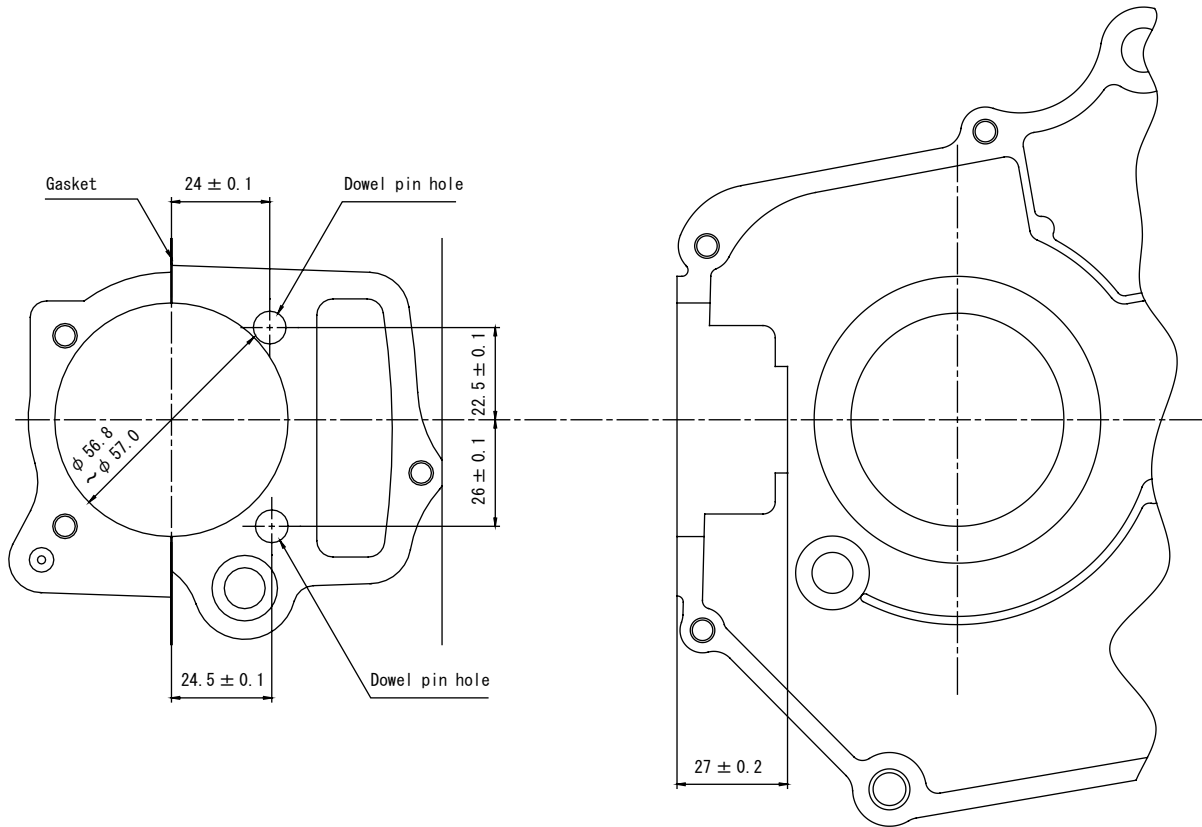
Number	Product content	Quantity	Item Number
A	Crank side bearing	2	00-01-0045
B	Timing sprocket, 14T	1	00-01-0293

Boring of a Crankcase

◇ To those who ask other specialist shop than us to do the work

○ Joining the cylinders together, process the crankcase little by little until the size is $\phi 56.8 \sim \phi 57.0$ mm with a crankcase gasket placed in between.

※ Processing of the crankcase will thin the thickness of wall adjoining dowel pin holes. So the durability of the crankcase will be reduced, resulting in the damage of the crankcase in some cases, which please take note.



Caution

○ Since crankcase boring thins the wall thickness and reduces hardness, be careful in tightening stud bolts.

○ Please take note that in some cases the crankcase may get damaged during use.

Furthermore, please be informed that we shall assume no liability to users for compensation or damages whatsoever of any kind.

◇ Please see and ask about the crankcase modification work.

Removal

∴ Do the following work referring to the relative service manual.

- Referring to the service manual, dismount the engine from the frame.
- Referring to the service manual, disassemble the engine, detach the stator plate, and then disassemble the crankcase.



- Remove the oil pump.
- After removing the kick starter spindle, remove the transmission and the gear shift drum as they are.



- Remove the crank shaft.



- Remove each part on the cam chain tensioner and the guide roller from the crankcase.



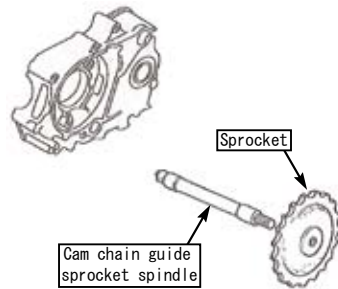
- Remove the stud bolt from the crankcase.

- Get the boring process done to the crankcase.
Get the boring process done to the crankcase, referring to the attached sheet.
- Enlarge the orifice diameter on the right-side crankcase referring to the instruction manual for Super Oil Pump.



∴ 6V vehicle

- In the case of a 6V vehicle, change spindles from a cam chain spindle to a spindle of the kit, and install it.



Installation

- Clean the crankcase.
- Install the cam chain guide sprocket and the spindle.
- Apply engine oil to the bearings in the crankcase.
- Install the transmission and the gear shift drum to the left-side crankcase with reference to the instruction manual and the service manual for the transmission.



- Install the starter spindle.



- Pour engine oil from the right side of crankshaft assembly of the kit, and let the good enough oil into the bearing at the end of the connecting rod.



- Apply engine oil to the journal bearing.



- Attach the crank shaft onto the crankcase, and fix dowel pins into the crankcase.



- Attach kit's gasket to the crankcase, and install the right side crankcase.



- After applying a little Alumi Special to the threaded portion of the crankcase bolts, install the bolts onto the crankcase and tighten them diagonally to the specified torque.

▲ Note: Be sure that you protect specified torque.
Bolt
Torque: 9.8N·m (1.0kgf·m)



- Being careful of the direction of the gear shift drum washer, tighten it to the specified torque with a hex bolt, and attach a rubber plug.

▲ Note: Be sure that you protect specified torque.
Hex bolt
Torque: 11.8N·m (1.2kgf·m)



○ Flatten the surface by cutting off the hole section of the crankcase gasket and the mating surface of the cylinder.

※ Be careful not to get any gasket chips in the crankcase.



○ Install the parts on the transmission with reference to the instruction manual and the service manual for the transmission.



○ Fix the oil filter screen, and install Oil Pump referring to the instruction manual.



○ Install a clutch with reference to the instruction manual for the relative clutch kit.



○ After applying Alumi Special a little to the threaded part of the stud bolts, attach stud bolts to the crankcase, and tighten them to the specified torque. Attach the short stud bolt A 6x194.5 to the R. crankcase (clutch side).
Anti-seizure agent:08-02-0042

▲ Note: Be sure that you protect specified torque.
Stud bolt
Torque : 9.8N · m (1.0kgf · m)



○ Fit a kit's Dai-Hard α cam chain in the crank shaft, and install the tensioner roller.



6V vehicle
○ Follow the instructions of our C.D.I.magnet kit to install.

12V vehicle
○ Attach O-rings to the two spots.



○ Fix a generator plate, and tighten the flat screws.



○ Fix the woodruff key to the crank shaft.

○ Degrease the tapers on the flywheel of the crank shaft, and install the flywheel.
After applying screw locking agent a little to the washers and flange nuts, tighten them to the specified torque.
Recommended: Loctite 243

▲ Note: Be sure that you protect specified torque.
Flange nut
Torque : 44N · m (4.5kgf · m)



○ Install the cylinder, following the cylinder installation procedures.

☆ Specialized Tools

● Con' rod stopper
Item No. :00-01-01



● Lock nut wrench, 20x24
Item No. :08-02-0033
12.7mm (1/2)
: 08-02-0034
9.5mm (3/8)



● Flywheel puller SET
Item No. :00-01-031



● Universal holder
Item No. :00-01-1002



INSPECTION / SERVICE LIMITS

⚠ WARNING : Since this inspection manual is prepared for those who have acquired basic skills and knowledge in tuning, those who are technically unskilled or inexperienced are required not to do the work.

Reference Value List for Cylinder head Maintenance

Item	Service limit	Remarks
Internal diameter of con'rod at small end	13.03mm	Replace
Clearance between con'rod's small end and a pin	0.035mm	Replace
Misalignment on con'rod's big end	longitudinal and transversal direction	0.05mm
	Side clearance	0.6mm
Free play on the journal bearings	in the direction of shaft	0.1mm
	in the direction of bearings	0.05mm
Crank shaft deflection	0.1mm	Replace

○ Inspection of Crank Shaft

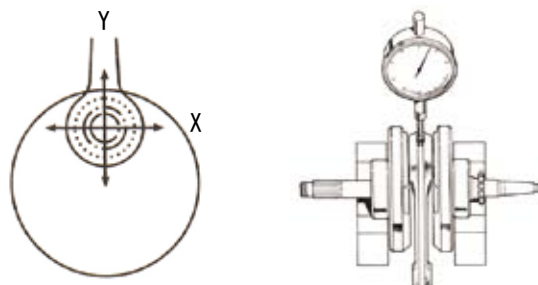
- Check the crank shaft for damages on the flywheel-mounting surface.
If there is a damage, replace the flywheel and the crank shaft.



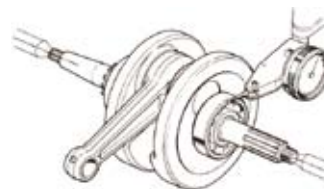
- Measure the internal diameter at the small end of the con'rod.
∴ If larger than 13.03mm, replace it.
- Measure the clearance at the big end of the con'rod in the axial direction.
∴ If larger than 0.6mm, replace it.



- Measure the misalignment at two points at the big end of the con'rod at right angles to the shaft as shown in the figure on the right.
∴ If larger than 0.05mm, replace it.



- Measure the misalignment on the journal bearing of the crank shaft.
∴ Shaft direction: If larger than 0.10 mm, replace it.
Bearing direction: If larger than 0.05 mm, replace it.



- Measure the deflection of the crank shaft.
∴ If larger than 0.10 mm, replace it.

