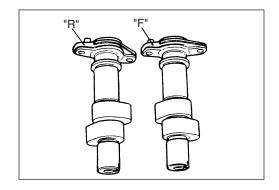
CAMSHAFT

The camshafts should be checked for wear and also for runout of cams and journals if the engine has been noted to produce abnormal noise or vibration or to lack output power. Any of these malconditions could be caused by a worn camshafts.

The camshaft can be distinguished by the embossed-letters, "F" and "R", on the camshaft.

"F": Front (No. 2) camshaft "R": Rear (No. 1) camshaft



CAMSHAFT CAM WEAR

Worn-down cams are often the cause of mistimed valve operation resulting in reduced output power. The limit of cam wear is specified for both intake and exhaust cams in terms of cam height \oplus , which is to be measured with a micrometer. Replace camshafts if found worn down to the limit.

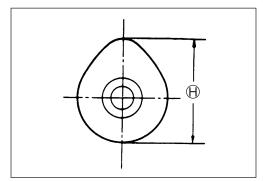
DATA Cam height Θ

Service Limit: Front (IN): 35.65 mm (1.404 in)

(EX): 36.62 mm (1.442 in)

Rear (IN): 35.20 mm (1.386 in) (EX): 36.28 mm (1.428 in)

09900-20202: Micrometer (25 – 50 mm)



CAMSHAFT JOURNAL WEAR

Determine whether each journal is worn down to the limit or not by measuring camshaft journal oil clearance with the camshaft installed. Use plastigauge to read the clearance, which is specified as follows:

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

09900-22302: Plastigauge

NOTE:

To properly measure the oil clearance with plastigauge, all gasket material must be removed from fitting surfaces of cylinder head and cover. Do not apply SUZUKI BOND "1216B" until after the oil clearance has been determined.

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

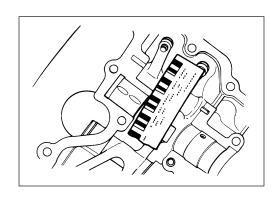
Cylinder head cover bolts

(M6): 10 N·m (1.0 kgf·m, 7.3 lb-ft) (M8): 24.5 N·m (2.45 kgf·m, 18.0 lb-ft)

NOTE:

Do not rotate the camshafts with the plastigauge in place.

Remove the cylinder head cover, and read the width of the compressed plastigauge with envelop scale. This measurement should be taken at the widest part.



If the camshaft journal oil clearance measured exceeds the limit, measure the outside diameter of camshaft.

Replace either the cylinder head set or the camshaft if the clearance is incorrect.

DATA Camshaft journal O.D.

(Sprocket side): 24.959 - 24.980 mm

(0.9826 - 0.9835 in)

(Other side) : 19.959 - 19.980 mm

(0.7858 - 0.7866 in)

09900-20205: Micrometer (0 – 25 mm)

CAMSHAFT RUNOUT

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

DATA Camshaft runout (IN & EX)

Service Limit: 0.10 mm (0.004 in)

09900-20606: Dial gauge (1/100, 10 mm)

09900-20701: Magnetic stand 09900-21304: V-block (100 mm)

CAM CHAIN TENSIONER AND GUIDE

CAM CHAIN TENSIONER

For driving the camshafts, two cam chain tensioners are used on the respective cam drive chains. Unlock the ratchet mechanism, and move the push rod in place to see if it slides smoothly. If any stickiness is noted or ratchet mechanism is faulty, replace the cam chain tensioner assembly with a new one.

The cam chain tensioner can be distinguished by the embossedletters, "F" and "R", on the cam chain tensioners.

"F": Front (No. 2) cam chain tensioner

"R": Rear (No. 1) cam chain tensioner

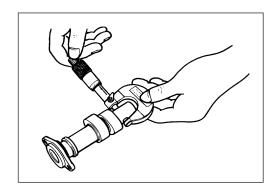
CAM CHAIN GUIDE

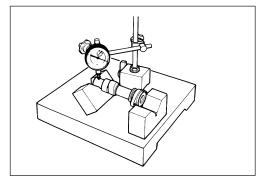
Check the contacting surface of the cam chain guide for wear and damage. If it is found to be damaged, replace it with a new one.

Two kinds of cam chain guide are used on the respective cam drive chains.

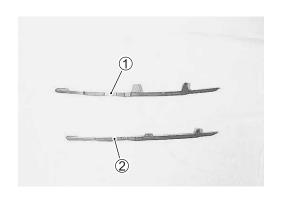
1: For front cylinder

2: For rear cylinder









CYLINDER HEAD

VALVE AND VALVE SPRING DISASSEMBLY

• Using special tools, compress the valve springs and remove the two cotter halves ① from valve stem.

09916-14510: Valve spring compressor

09916-14910: Valve spring compressor attachment

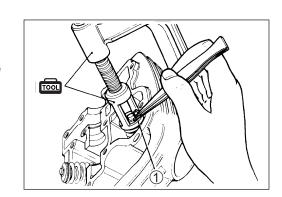
09916-84511: Tweezers

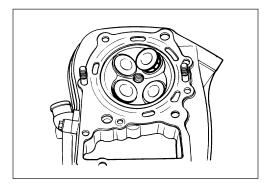


- Pull out the valve from the other side.
- · Remove the valve stem seal and valve spring seat.

NOTE:

Removal of valves completes ordinary disassembling work. If valve guides have to be removed for replacement after inspecting related parts, carry out the steps shown in valve guide servicing. (3-27)

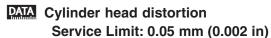




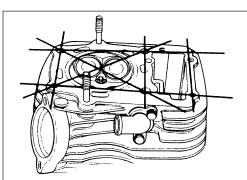
CYLINDER HEAD DISTORTION

Decarbonize the combustion chambers.

Check the gasketed surface of the cylinder head for distortion with a straightedge and thickness gauge, taking a clearance reading at several places indicated. If the largest reading at any position of the straightedge exceeds the limit, replace the cylinder head.



09900-20803: Thickness gauge



VALVE FACE WEAR

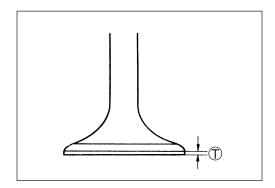
Visually inspect each valve for wear of its seating face. Replace any valve with an abnormally worn face.

The thickness ① decreases as the wear of the face advances. Measure the thickness and, if the thickness is found to have been reduced to the limit, replace it.

DATA Valve head thickness

Service Limit ①: 0.5 mm (0.02 in)

09900-20102: Vernier calipers



VALVE STEM RUNOUT

Support the valve with "V" blocks, as shown, and check its runout with a dial gauge.

The valve must be replaced if the runout exceeds the limit.

PATA Valve stem runout

Service Limit: 0.05 mm (0.002 in)

09900-20701: Magnetic stand

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

09900-21304: V-block

VALVE HEAD RADIAL RUNOUT

Place the dial gauge at right angles to the valve head face, and measure the valve head radial runout.

If it measures more than limit, replace the valve.

DATA Valve head radial runout

Service Limit: 0.03 mm (0.001 in)

09900-20701: Magnetic stand

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

09900-21304: V-block

VALVE STEM DEFLECTION

Lift the valve about 10 mm (0.39 in) from the valve seat. Measure the valve stem deflection in two directions, "X" and "Y", perpendicular to each other, by positioning the dial gauge as shown. If the deflection measured exceeds the limit, (see below) then determine whether the valve or the guide should be replaced with a new one.

Valve stem deflection (IN & EX)
Service Limit: 0.35 mm (0.14 in)

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

09900-20701: Magnetic stand

VALVE STEM WEAR

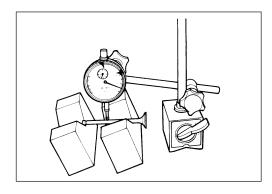
If the valve stem is worn down to the limit, as measured with a micrometer, where the clearance is found to be in excess of the limit indicated replace the valve, if the stem is within the limit, then replace the guide. After replacing valve or guide, be sure to re-check the clearance.

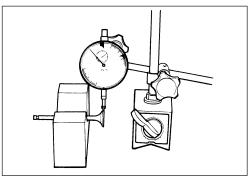
DATA Valve stem O.D.

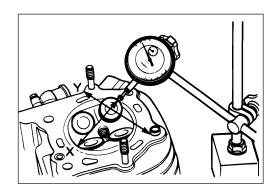
Standard (IN): 5.475 – 5.490 mm (0.2156 – 0.2161 in)

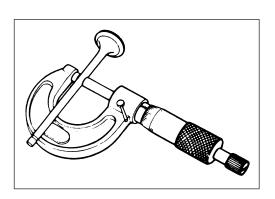
(EX): 5.455 - 5.470 mm (0.2148 - 0.2154 in)

09900-20205: Micrometer (0 – 25 mm)









VALVE GUIDE SERVICING

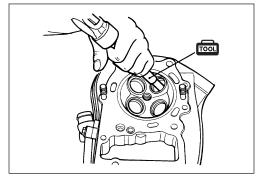
 Using the valve guide remover, drive the valve guide out toward the intake or exhaust rocker arm side.

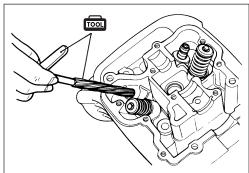


NOTE:

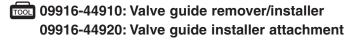
- * Discard the removed valve guide subassemblies.
- * Only oversized valve guides are available as replacement parts. (Part No. 11115-38A71)
- Re-finish the valve guide holes in cylinder head with a 10.8 mm reamer and handle.

09916-34580: Valve guide hole reamer 09916-34542: Reamer handle





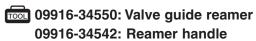
 Oil the stem hole, too, of each valve guide and drive the guide into the guide hole with the valve guide installer and attachment.



A CAUTION

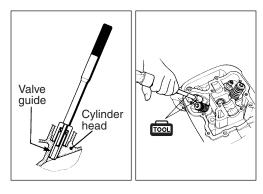
Failure to oil the valve guide hole before driving the new guide into place may result in a damage guide or head.

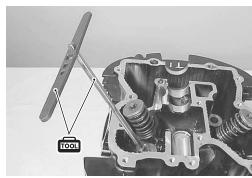
 After fitting all valve guides, re-finish their guiding bores with a 5.5 mm reamer. Be sure to clean and oil the guide after reaming.



NOTE:

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





VALVE SEAT WIDTH

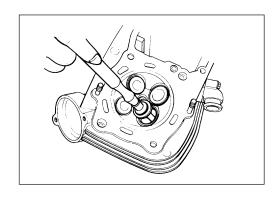
- · Coat the valve seat with prussian blue uniformly. Fit the valve and tap the coated seat with the valve face in a rotating manner, in order to obtain a clear impression of the seating contact. In this operation, use the valve lapper to hold the valve head.
- The ring-like dye impression left on the valve face must be continuous - without any break. In addition, the width of the dye ring, which is the visualized seat "width", must be within the following specification:

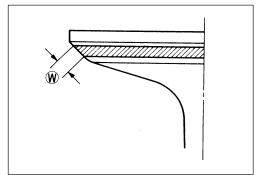


Standard: 0.9 - 1.1 mm (0.035 - 0.043 in)

09916-10911: Valve lapper set

If either requirement is not met, correct the seat by servicing it as follows:

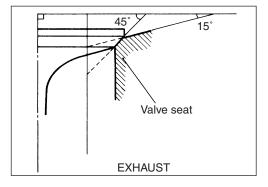




VALVE SEAT SERVICING

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

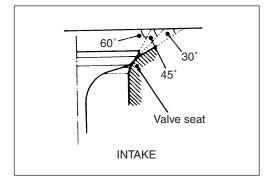
	INTAKE	EXHAUST
15°		N-121
30°	N-128	
45°	N-128	N-122
60°	N-111	

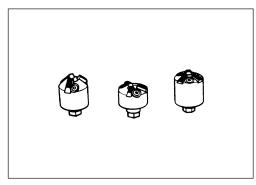


NOTE:

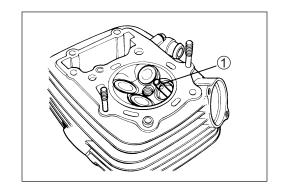
The valve seat contact area must be inspected after each cut.

09916-21111: Valve seat cutter set 09916-22430: Valve seat cutter (N-128)



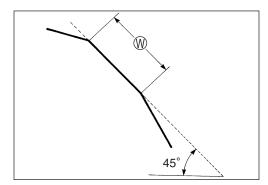


 Insert the solid pilot ① (09916-24450: N-100-5.52) with a slight rotation. Seat the pilot snugly. Install the 45° cutter, attachment and T-handle.



INITIAL SEAT CUT

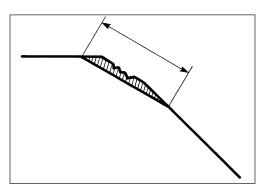
- Using the 45° cutter, descale and clean up the seat. Rotate the cutter one or two turns.



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

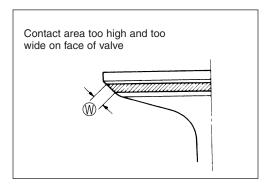
NOTE:

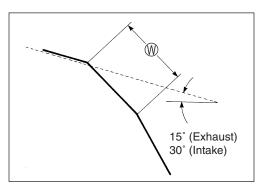
Cut only the minimum amount necessary from the seat to prevent the possibility of the valve stem becoming too close to the camshaft.



TOP NARROWING CUT

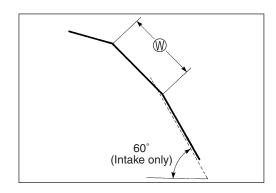
If the contact area (w) is too high on the valve, or if it is too wide, use the 15° (for the exhaust side) and the 30° (for the intake side) to lower and narrow the contact area.





BOTTOM NARROWING CUT

 If the contact area (w) is too wide or too low, use the 60° (intake side only) to narrow and raise the contact area.

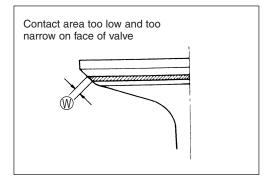


FINAL SEAT CUT

• If the contact area (1) is too low or too narrow, use the 45° cutter to raise and widen the contact area.

NOTE:

After cutting the 15°, 30° and 60° angles, it is possible that the valve seat (45°) is too narrow. If so, re-cut the valve seat to the correct width.



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



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

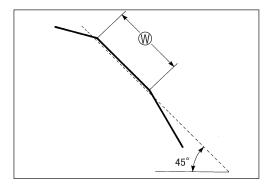
NOTE:

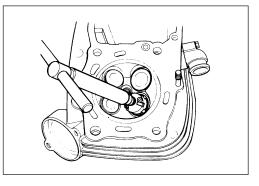
After servicing the valve seats, be sure to check the valve clearance after the cylinder head has been reinstalled. (2-6)

- Clean and assemble the head and valve components. Fill the intake and exhaust ports with gasoline to check for leaks.
- If any leaks occur, inspect the valve seat and face for burrs or other things that could prevent the valve from sealing.



Always use extreme caution when handling gasoline.







VALVE STEM END CONDITION

Inspect the valve stem end face for pitting and wear. If pitting or wear of the stem end face are present, the valve stem end may be resurfaced, providing that the length ① will not be reduced to less than the service limit. If this length becomes less than the service limit, the valve must be replaced.

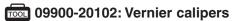
DATA Valve stem end length

Service Limit: 3.1 mm (0.12 in)



The force of the coil spring keeps the valve seat tight. Weakened spring result in reduced engine power output, and often account for the chattering noise coming from the valve mechanism.

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



DATA Valve spring free length (IN & EX)

Service Limit INNER: 38.3 mm (1.51 in)

OUTER: 40.1 mm (1.58 in)

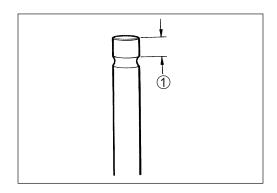
PATA Valve spring tension (IN & EX)

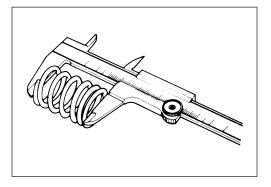
Standard INNER: 6.51 - 7.49 kgf/32.5 mm

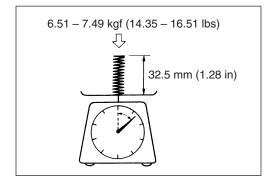
(14.35 - 16.51 lbs/1.28 in)

OUTER: 12.09 - 13.91 kgf/36.0 mm

(26.65 - 30.67 lbs/1.42 in)







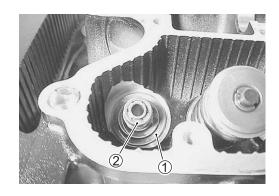
VALVE AND VALVE SPRING REASSEMBLY

- Fit the valve spring lower seats ①.
- Oil each oil seal, and press-fit the oil seal ② into position with the valve guide installer.





Do not reuse the oil seal.



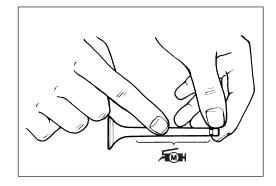
 Insert the valves, with their stems coated with high quality molybdenum disulfide lubricant (SUZUKI MOLY PASTE) all around and along the full stem length without any break.

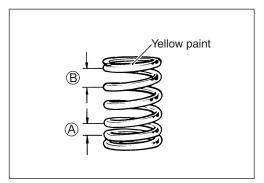
1 99000-25140: SUZUKI MOLY PASTE

A CAUTION

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

- Install the valve springs with the small-pitch portion A facing cylinder head.
 - B: Large-pitch portion.





· Put on the valve spring retainer using the valve spring compressor, press down the spring, fit the two cotter halves to the stem end, and release the compressor to allow the cotter 1 to wedge in between seat and stem. Be sure that the rounded lip ② of the cotter fits snugly into the groove ③ in the stem end.



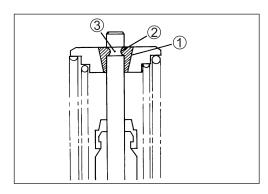
09916-14510: Valve spring compressor

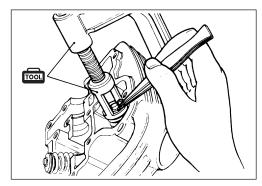
09916-14910: Valve spring compressor attachment

09916-84511: Tweezers



Be sure to restore each spring, valve and spring retainer to their original positions.





CYLINDER

CYLINDER DISTORTION

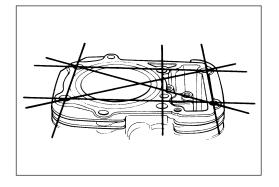
Check the gasketed surface of the cylinder for distortion with a straightedge and thickness gauge, taking a clearance reading at several places as indicated. If the largest reading at any position of the straightedge exceeds the limit, replace the cylinder.



Service Limit: 0.05 mm (0.002 in)



09900-20803: Thickness gauge



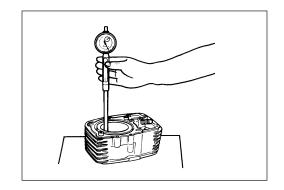
CYLINDER BORE

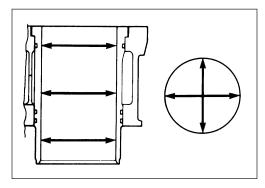
Measure the cylinder bore diameter at six places. If any one of the measurements exceeds the limit, overhaul the cylinder and replace the piston with an oversize, or replace the cylinder. Once the reboring is done on any one cylinder which measurements is beyond the limit, the remaining cylinders must be also rebored accordingly. Otherwise the imbalance might cause excess vibration.

DATA Cylinder bore

Service Limit: 83.085 mm (3.2711 in)

09900-20508: Cylinder gauge set



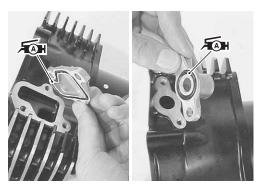


NOTE:

When installing the water union to the cylinder, apply grease to the new O-rings.

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

(For the others)





PISTON

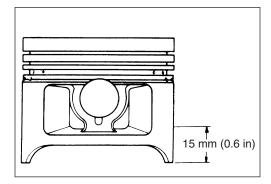
PISTON DIAMETER

Using a micrometer, measure the piston outside diameter at the place shown in Fig. If the measurement is less than the limit, replace the piston.

PATA Piston diameter

Service Limit: 82.880 mm (3.2630 in)

09900-20204: Micrometer (75 – 100 mm)

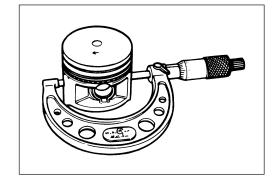


PISTON-TO-CYLINDER CLEARANCE

As a result of the aforesaid measurement, if the piston to cylinder clearance exceeds the following limit, overhaul the cylinder and use an oversize piston, or replace both cylinder and piston.

PATA Piston to cylinder clearance

Service Limit: 0.12 mm (0.0047 in) Piston oversize: 0.5, 1.0 mm



PISTON RING TO GROOVE CLEARANCE

Using a thickness gauge, measure the side clearances of the 1st and 2nd rings. If any of the clearances exceeds the limit, replace both piston and piston rings.

PATA Piston ring-groove clearance

Service Limit (1st): 0.18 mm (0.0071 in) (2nd): 0.15 mm (0.0059 in)

PATA Piston ring groove width

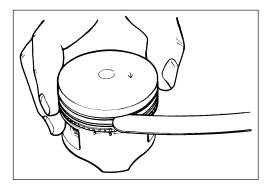
Standard (1st): 1.01 - 1.03 mm (0.0398 - 0.0406 in) (2nd): 1.21 - 1.23 mm (0.0476 - 0.0484 in) (Oil): 2.51 - 2.53 mm (0.0988 - 0.0996 in)

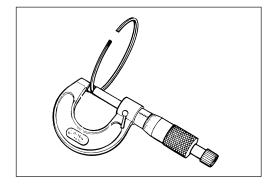
DATA Piston ring thickness

Standard (1st): 0.970 - 0.990 mm (0.0382 - 0.0390 in) (2nd): 1.170 - 1.190 mm (0.0461 - 0.0469 in)

09900-20803: Thickness gauge

09900-20205: Micrometer (0 – 25 mm)





PISTON RING FREE END GAP AND END GAP

Before installing piston rings, measure the free end gap of each ring using vernier calipers. Next, fit the ring in the cylinder, and measure each ring end gap using a thickness gauge.

If any ring has an excess end gap, replace the ring.

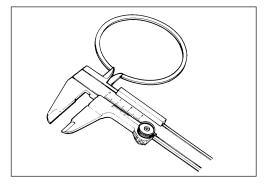
DATA Piston ring free end gap

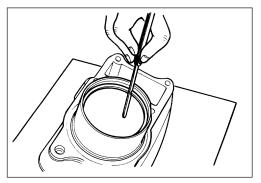
Service Limit (1st): 7.7 mm (0.30 in) (2nd): 9.4 mm (0.37 in)

PATA Piston ring end gap

Service Limit(1st): 0.70 mm (0.028 in) (2nd): 0.70 mm (0.028 in)

09900-20102: Vernier calipers 09900-20803: Thickness gauge





Oversize piston ring

The following two types of oversize piston rings are used. They bear the following identification numbers.

SIZE	1st	2nd
0.5 mm O.S.	50	50
1.0 mm O.S.	100	100

Oversize oil ring

The following two types of oversize oil rings are available as optional parts. They bear the following identification marks.

SIZE	COLOR
STD	NIL
0.5 mm O.S.	Painted Red
1.0 mm O.S.	Painted Yellow

Oversize side rail

Just measure outside diameter to identify the side rail as there is no mark or numbers on it.

PISTON PIN AND PIN BORE

Using a small bore gauge, measure the piston pin bore inside diameter, and using a micrometer, measure the piston pin outside diameter. If the reading exceeds following limit, replace both piston and piston pin.

Piston pin bore I.D.

Service Limit: 20.030 mm (0.7886 in)

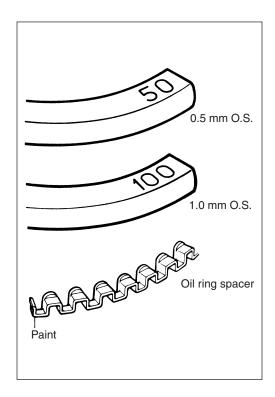
09900-20602: Dial gauge (1/1000 mm, 1 mm) 09900-22403: Small bore gauge (18 – 35 mm)

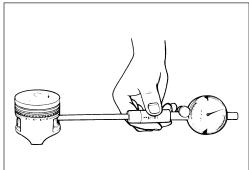
Using a micrometer, measure the piston pin outside diameter at three positions.

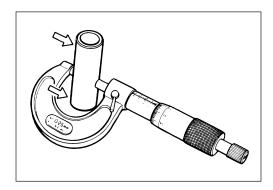
PATA Piston pin O.D.

Service Limit: 19.980 mm (0.7866 in)

09900-20205: Micrometer (0 – 25 mm)







PISTON RING REASSEMBLY

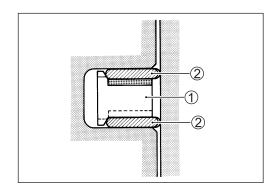
- Install the piston rings in the order of oil ring, 2nd ring and 1st ring.
- The first member to go into the oil ring groove is a spacer ①. After placing the spacer, fit the two side rails ②.

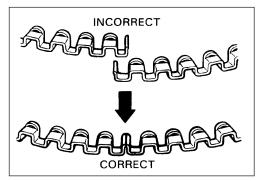
NOTE:

Side designations, top and bottom, are not applied to the spacer and side rails: you can position each either way.

▲ CAUTION

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

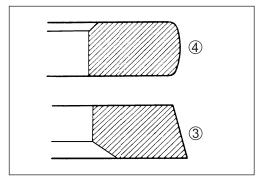




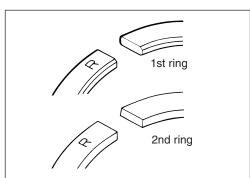
• Install the 2nd ring ③ and the 1st ring ④.

NOTE:

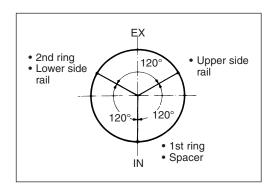
1st ring and 2nd ring differ in shape.



• 1st ring and 2nd ring have letter "R" marked on the side. Be sure to bring the marked side to the top when fitting them to the piston.



 Position the gaps of the three rings as shown. Before inserting each piston into the cylinder, check that the gaps are so located.



CONROD/CRANKSHAFT

CONROD SMALL END I.D.

Using a small bore gauge, measure the conrod small end inside diameter.

DATA Conrod small end I.D.

Service Limit: 20.040 mm (0.7890 in)

09900-20602: Dial gauge (1/1000 mm, 1 mm) 09900-22403: Small bore gauge (18 – 35 mm)

If the conrod small end inside diameter exceeds the above mentioned limit, replace the conrod.

CONROD BIG END SIDE CLEARANCE

Check the conrod thrust clearance by using a thickness gauge. If the clearance exceeds the limit, replace conrod or crankshaft.

Conrod big end side clearance Service Limit: 0.30 mm (0.012 in)

09900-20803: Thickness gauge

DATA Conrod big end width

Standard: 21.95 - 22.00 mm (0.864 - 0.866 in)

DATA Crank pin width

Standard: 22.10 - 22.15 mm (0.870 - 0.872 in)

09900-20205: Micrometer (0 – 25 mm) 09900-20605: Dial calipers (10 – 34 mm)

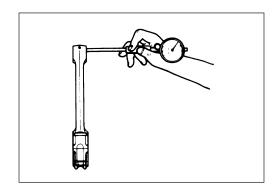
CONROD-CRANK PIN BEARING SELECTION

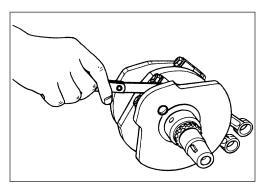
• Loosen the bearing cap nuts and tap the bolt end lightly with plastic hammer to remove the bearing cap.

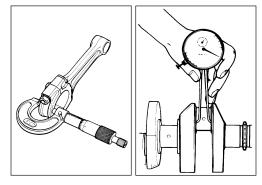
- Remove the rods and mark them to identify the cylinder position
- Inspect the bearing surfaces for any sign of fusion, pitting, burn, or flaws. If any, replace them with a specified set of bearings.

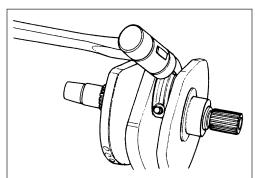
NOTE:

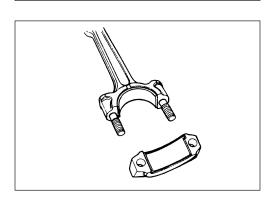
Never try to remove or loosen the conrod cap bolts due to their possible loosening in the rod. Once displaced, the bearing cap will not be fitted properly.











- Place plastigauge axially on the crank pin avoiding the oil hole, at TDC or BDC side as shown.
- Tighten the bearing cap with two-step torque values.

NOTE:

When fitting the bearing cap to crank pin, be sure to discriminate between its two ends, I.D. code side and the other.

I.D. code always faces intake valve side.

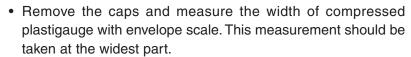
Conrod nut

Initial tightening torque: 25 N·m (2.5 kgf·m, 18.0 lb-ft) Final tightening torque: 51 N·m (5.1 kgf·m, 37.0 lb-ft)

09900-22302: Plastigauge

NOTE:

Never rotate the crankshaft or conrod when a piece of plastigauge is in the clearance.



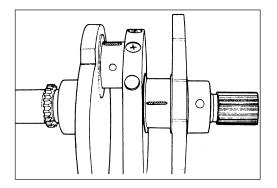
DATA Conrod big end oil clearance

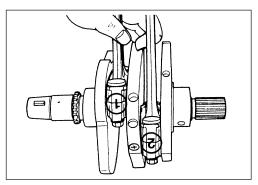
Standard: 0.024 - 0.042 mm (0.0009 - 0.0017 in) Service Limit: 0.080 mm (0.0031 in)

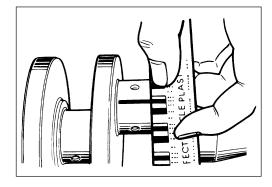
- If oil clearance exceeds the service limit, select the specified bearings from the following table.
- Check the corresponding conrod I.D. code number ① , "1", "2" or "3"
- Check the corresponding crank pin O.D. code number @ , "1", "2" or "3".
- The crank pin O.D. code number ②, "1", "2" or "3" which are stamped on the left crank web.

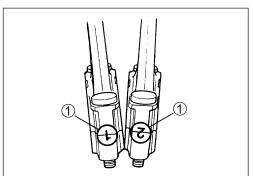
Bearing selection table

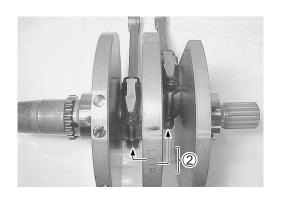
		Crank pin O.D. ②		
	Code	1	2	3
Conrod	1	Green	Black	Brown
I.D. code	2	Black	Brown	Yellow
2	3	Brown	Yellow	Blue











Conrod I.D. specification

Code ①	I.D. specification
1	44.000 – 44.006 mm (1.7323 – 1.7325 in)
2	44.006 – 44.012 mm (1.7325 – 1.7328 in)
3	44.012 – 44.018 mm (1.7328 – 1.7330 in)

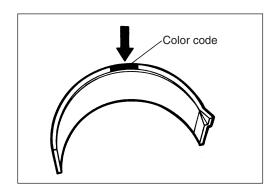
Crank pin O.D. specification

Code ②	O.D. specification
1	40.994 – 41.000 mm (1.6139 – 1.6142 in)
2	40.988 – 40.994 mm (1.6137 – 1.6139 in)
3	40.982 – 40.988 mm (1.6135 – 1.6137 in)

09900-20202: Micrometer (25 – 50 mm)

Bearing thickness specification

Color (Part No.)	Thickness
Green	1.485 – 1.488 mm
(12164-38E00-0A0)	(0.0585 – 0.0586 in)
Black	1.488 – 1.491 mm
(12164-38E00-0B0)	(0.0586 – 0.0587 in)
Brown	1.491 – 1.494 mm
(12164-38E00-0C0)	(0.0587 – 0.0588 in)
Yellow	1.494 – 1.497 mm
(12164-38E00-0D0)	(0.0588 – 0.0589 in)
Blue	1.497 – 1.500 mm
(12164-38E00-0E0)	(0.0589 - 0.0591 in)

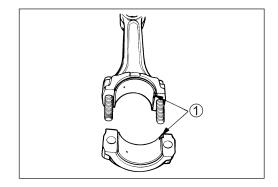


▲ CAUTION

The bearings should be replaced as a set.

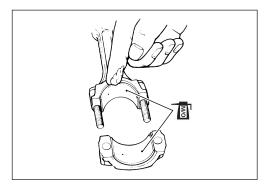
CONROD/CRANK PIN BEARING ASSEMBLY

• When fitting the bearing to the bearing cap and conrod, be sure to fix the stopper part ① first and press in the other end.



 Apply molybdenum oil solution to the crank pin and bearing surface.

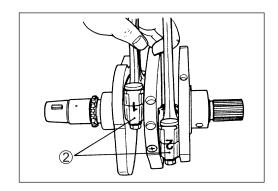
1 99000-25140: SUZUKI MOLY PASTE



- When mounting the conrod on the crankshaft, make sure that I.D. code ② of the conrod faces rearward.
- Tighten the conrod fitting nuts with specified torque after applying engine oil to the nut thread.
- Conrod nut

Initial tightening torque: 25 N·m (2.5 kgf·m, 18.0 lb-ft) Final tightening torque: 51 N·m (5.1 kgf·m, 37.0 lb-ft)

• Check the conrod movement for smooth turning.



CRANKCASE/CRANKSHAFT BEARING SELECTION

 Inspect the crankshaft and crankshaft journal bearings for any damage.

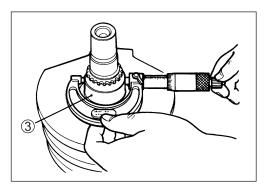


 Measure the crankshaft journal O.D. 3 by using the special tool.

DATA Crankshaft journal O.D. 3

Standard: 47.965 - 47.980 mm (1.8884 - 1.8890 in)

09900-20202: Micrometer (25 – 50 mm)



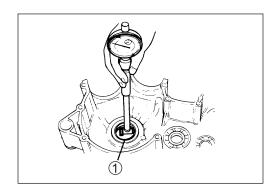
 Measure the crankshaft journal bearing I.D. ① by using the special tool.

Crankshaft journal bearing I.D. ①

Standard: 48.000 - 48.015 mm (1.8898 - 1.8904 in)

09900-20508: Cylinder gauge set

If each crankshaft journal bearing I.D. is not within the standard range, replace them with new ones.





- Remove the crankshaft bearing with taking care not to damage the crankcase journal bearing hole.
- Inspect the journal bearing hole of crankcase for any sign of pitting or flaw.
 - If any, repair it with emery paper.
- Install the new journal bearings into the crankcases by hydraulic press.
- Hone the new journal bearings with the specified value by honing machine.



When honing the new journal bearings, be sure to mate the left and right crankcases.



CRANKSHAFT THRUST CLEARANCE

Install the crankshaft in the right crankcase half after installing the thrust shim on the crankshaft.

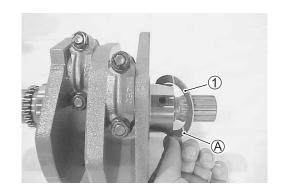
NOTE:

The oil grooved face (A) of thrust shim (1) is faced to crankshaft web side.

• Place the thrust washer, camshaft drive sprocket and primary drive gear on the right end of the crankshaft and tighten primary drive gear bolt to the specified torque. (\$\subset\$3-59\$)

09930-40113: Rotor holder

Primary drive gear bolt: 95 N·m (9.5 kgf·m, 68.5 lb-ft)



• Use a thickness gauge to measure the thrust clearance between right cankcase and thrust washer.

DATA Crankshaft thrust clearance

Standard: 0.05 - 0.10 mm (0.002 - 0.004 in)

09900-20803: Thickness gauge

If the thrust clearance exceeds the standard range, adjust the thrust clearance by the following procedures:

- Remove the thrust shim, and measure its thickness with a micrometer.
- Change the thrust shim with the other shim if the thrust clearance is incorrect.
- Perform the thrust clearance measurement described above once again.

09900-20205: Micrometer (0 – 25 mm)

Checking to make sure it is within standard

Unit: mm (in)

	· ·
Part number	Thrust shim thickness
09160-48001	1.925 - 1.950 (0.0758 - 0.0768)
09160-48002	1.950 – 1.975 (0.0768 – 0.0778)
09160-48003	1.975 – 2.000 (0.0778 – 0.0787)
09160-48004	2.000 - 2.025 (0.0787 - 0.0797)
09160-48005	2.025 - 2.050 (0.0797 - 0.0807)
09160-48006	2.050 - 2.075 (0.0807 - 0,0817)
09160-48007	2.075 - 2.100 (0.0817 - 0.0827)
09160-48008	2.100 - 2.125 (0.0827 - 0.0837)
09160-48009	2.125 - 2.150 (0.0837 - 0.0846)
09160-48010	2.150 - 2.175 (0.0846 - 0.0856)

