

INTRODUCTION

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1.2. GENERAL RULES

1.2.1. BASIC SAFETY RULES

CARBON MONOXIDE

Should it be necessary to perform some operations with the vehicle running, make sure to work outdoors or in a well-aerated room.

Avoid starting the engine indoors.

In case you are working indoors, use a gas exhaust system.



DANGER

Exhaust gases contain carbon monoxide, which is extremely toxic if inhaled and may cause loss of consciousness or even lead to death.

FUEL



DANGER

The fuel used to operate engines is highly flammable and becomes explosive under particular conditions.

Refuelling and engine service should take place in a well-ventilated area with the engine stopped.

Do not smoke when refuelling or in the proximity of sources of fuel vapours, avoid flames, sparks and any element that could ignite fuel or provoke explosions.

DO NOT DISPOSE OF FUEL IN THE ENVIRONMENT.

KEEP AWAY FROM CHILDREN.

HIGH-TEMPERATURE COMPONENTS

The engine and the components of the exhaust system become very hot and remain hot for some time after the engine has been stopped.

Before handling these components, wear insulating gloves or wait until the engine and the exhaust system have cooled down.

USED GEARBOX AND FORK FLUIDS



DANGER

Wear latex gloves when servicing.

Gearbox fluid may cause serious damage to the skin if handled daily and for long periods.

Wash your hands carefully after use.

Take it to the filling station where you usually buy it or to an oil salvage centre.

Wear latex gloves when servicing.

DO NOT DISPOSE OF FLUID IN THE ENVIRONMENT

KEEP AWAY FROM CHILDREN.

BRAKE FLUID



WARNING

When handling the brake fluid, take care not to spill it on the plastic, rubber or painted parts, since it can damage them. When carrying out the maintenance operations on the braking system, use a clean cloth to cover these parts.

Always wear safety goggles when working on the braking system.

The brake fluid is highly irritant. Avoid contact with your eyes.

If the brake fluid gets in contact with your eyes, carefully wash them with fresh water and immediately seek medical advice.

KEEP AWAY FROM CHILDREN.

COOLANT

Coolant contains ethylene glycol that is flammable, under certain conditions. When ignited, ethylene glycol produces invisible flames that might cause burns.

2.1. TECHNICAL INFORMATION

2.1.1. TECHNICAL DATA

ENGINE 450	
ENGINE	
Model (SXV 450)	45SX
Model (RXV 450)	45RX
Type	Twin-cylinder, 4-stroke with 4 valves, single overhead camshaft
Number of cylinders	2
Total displacement	449 cu. cm (27.40 cu in).
Bore/stroke	76 mm x 49.5 mm (2.99 in x 1.95 in)
Compression ratio	(13 ÷ 1) ± 0.5
Idling speed	(1800 ÷ 2000) ± 100 rpm
Valve timing (SXV 450)	
Intake opens at	18° BTDC
Intake closes at	48° ABDC
Exhaust opens at	49° BBDC
Exhaust closes at	15° ATDC
Valve timing (RXV 450)	
Intake opens at	18° BTDC
Intake closes at	30° ABDC
Exhaust opens at	31° BBDC
Exhaust closes at	19° ATDC
Intake valve clearance	0.07 ÷ 0.12 mm (0.0027 ÷ 0.0047 in)
Exhaust valve clearance	0.17 ÷ 0.22 mm (0.0067 ÷ 0.0087 in)
Ignition	Digital, electronic
Starting	Electric starter
Spark advance	Variable, controlled by CDI
Air filter	With dry filter cartridge
Clutch	
Type	Multiplate, wet clutch with control on the left side of the handlebar
Driving plates 1	# plates: 2
	Thickness: 1.5 mm (0.059 in)
Driving plates 2	# plates: 5
	Thickness: 2 mm (0.079 in)
Clutch plates	# plates: 8
	Thickness: 2.75 mm (0.108 in)
Clutch springs	Uncompressed length: xxxx mm (xxx in)
	# springs: 6
Lubricating system	
Type	Gearbox splash lubrication with special fluid; engine forced lubrication with scavenge pump and external reservoir
Oil filter	Paper type
Engine oil quantity	After overhaul, 1400 cu.cm (0.37 gal) (0.31 UKgal)
	Periodic oil change: 1300 cu.cm (0.34 gal) (0.28 UKgal)
Cooling system	
Type	Liquid
Water pump	Centrifugal pump with single intake
	Reduction ratio: 44/22

2.1.7. COUPLING: MAIN BEARINGS - CONNECTING ROD

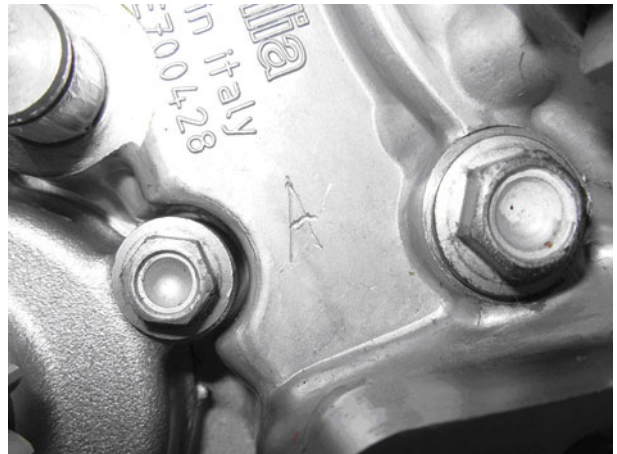
Before selecting the right spare bearing, please verify the relevant class of original parts and check the correct bearing on the table.

Part classes are laser-printed the component.



WARNING

Crankcase class is printed on both crankcase halves.



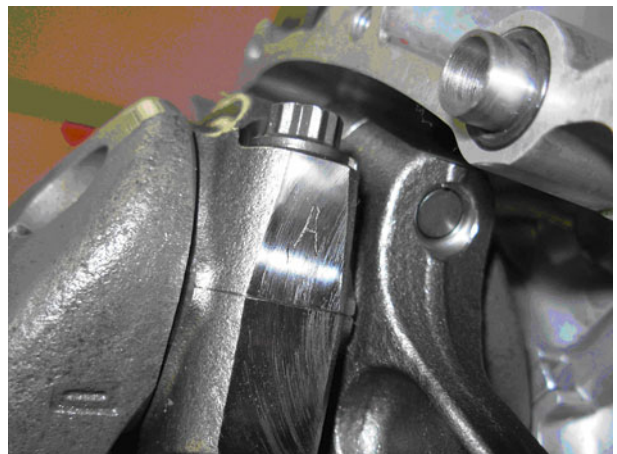
CONNECTING ROD - CRANKSHAFT

		CONNECTING ROD CLASS	
		A 38.000 – 38.012	B 38.013 – 38.025
CRANKSHAFT CLASS	A 34.984 – 34.991	BLUE	YELLOW
	B 34.992 – 35.000	GREEN	BLUE



CRANKCASE / CRANKSHAFT

		CRANKCASE CLASS	
		A 41.000 – 41.007	B 41.008 – 41.016
CRANKSHAFT CLASS	A 37.984 – 34.991	BLUE	YELLOW
	B 37.992 – 38.000	GREEN	BLUE



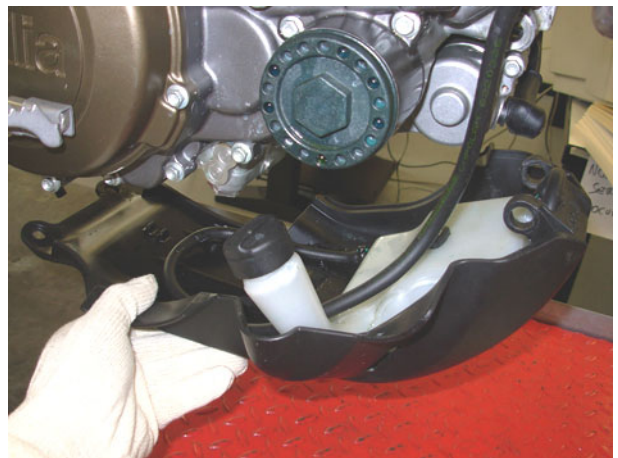
3.1. REMOVING AND REFITTING THE ENGINE

3.1.1. REMOVING THE ENGINE

- Set the engine support stand.
- Working on either side, loosen and remove the three side body panel screws.
- Remove the side body panels.



- Remove sump guard and expansion tank.

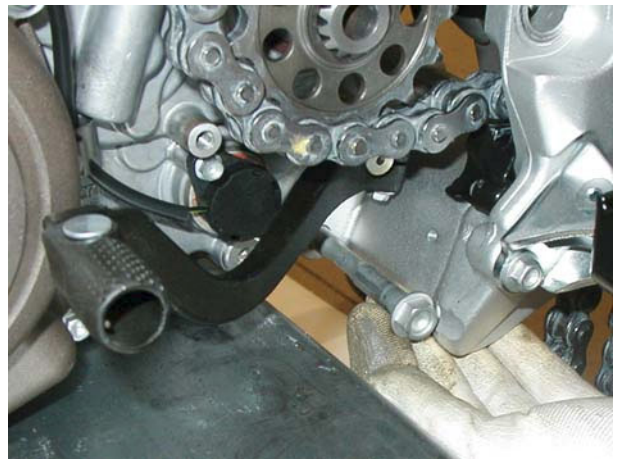


- Prepare a container of suitable capacity under the hose.
- Release the clamp.



Engine 450 - 550

- Slide off the lower rear pin.



- Loosen and remove the securing screw from the front pin.



- Remove the front pin.

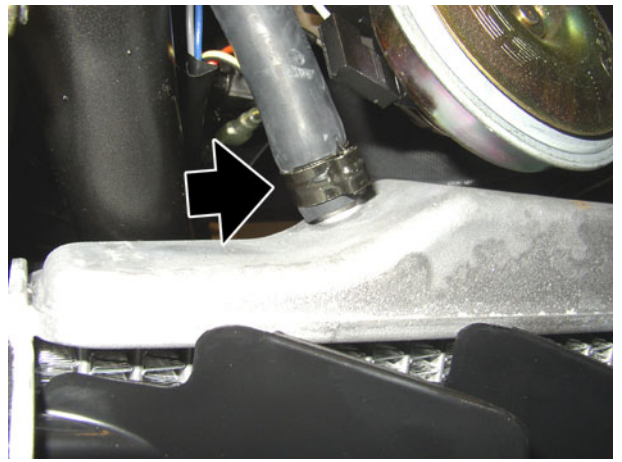


- Collect the washer.
- Move down the engine.



Engine 450 - 550

- Working on the left side, fit the hose and clamp.



- Fit delivery hoses on either side.



- Fasten tie on either side.



- Fit the hose.



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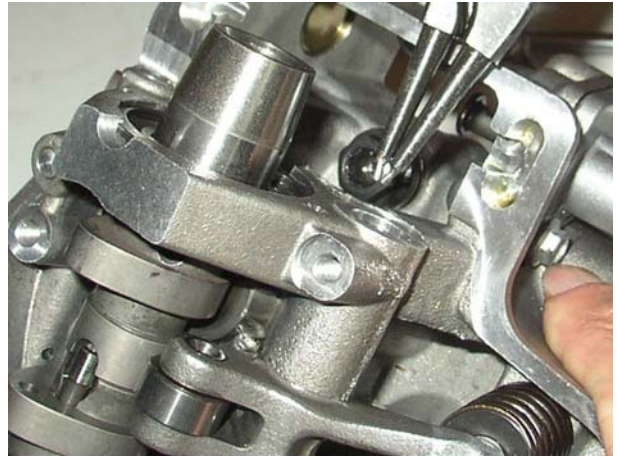


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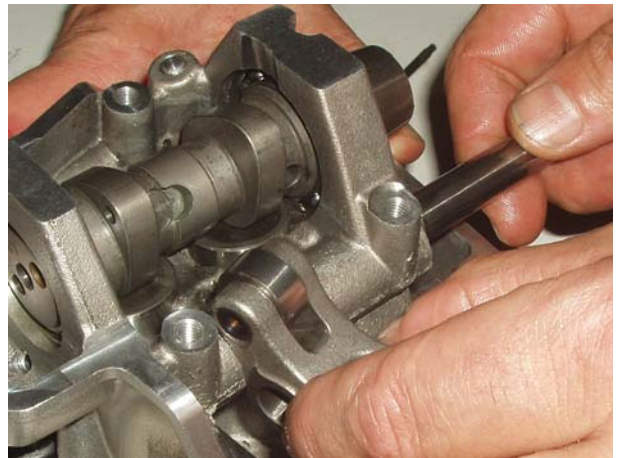
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3.3.2. REMOVING THE ROCKER ARMS AND CAMSHAFT

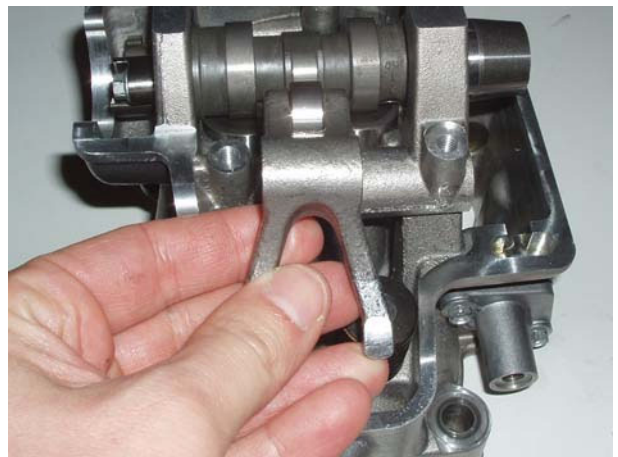
- Remove the head, see (REMOVING THE CYLINDER HEAD).
- Remove the exhaust valve rocker arm shaft snap ring.



- Remove the rocker arm shaft of exhaust valves from its seat.



- Remove the rear rocker arm.



- Lock the camshaft with 6 mm pin (0.24 in) used for cam timing, see (CAM TIMING).
- Loosen and remove the decompression chamber control retainer screw.



3.3.6. INSTALLING THE CAMSHAFT AND ROCKER ARMS

NOTE Before refitting, smear bearing with engine oil; see (LUBRICANT TABLE).

- Fit bearing onto camshaft.
- Lubricate the camshaft (1), see (LUBRICANT TABLE), the spring controlling decompression system and the decompression system itself.
- Fit the decompression system together with control spring.
- Lock the camshaft with 6 mm pin (0.24 in) used for cam timing, see (CAM TIMING).
- Tighten the screw on decompression control.

NOTE Lubricate shafts and rocker arms before installing, see (LUBRICANT TABLE).

- Install the camshaft.

NOTE Carefully insert the camshaft, paying attention to the decompression control.

- Working on timing side, fit the circlip securing camshaft bearing in place.

- Install the exhaust rocker arm.





- Remove clutch hub.

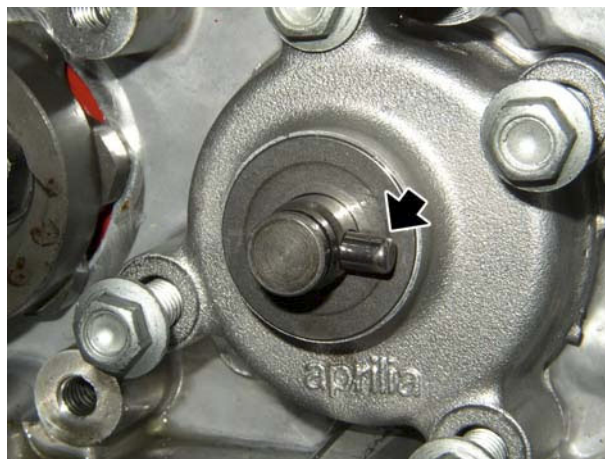


- Collect the shim.

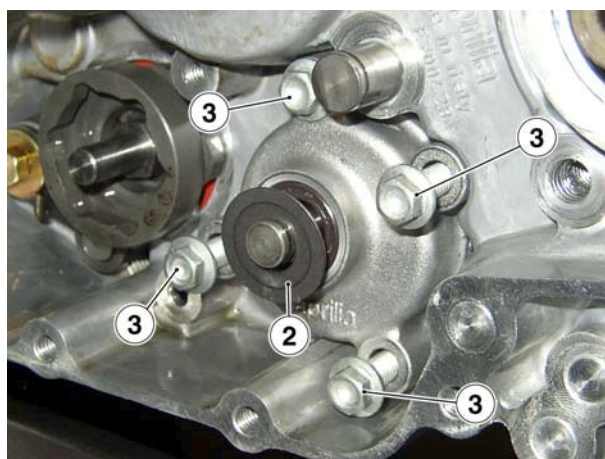


Engine 450 - 550

- Remove oil pump gear transmission roller.



- Remove the shim (2).
- Loosen and remove the four screws (3).



- Remove the complete oil pump.



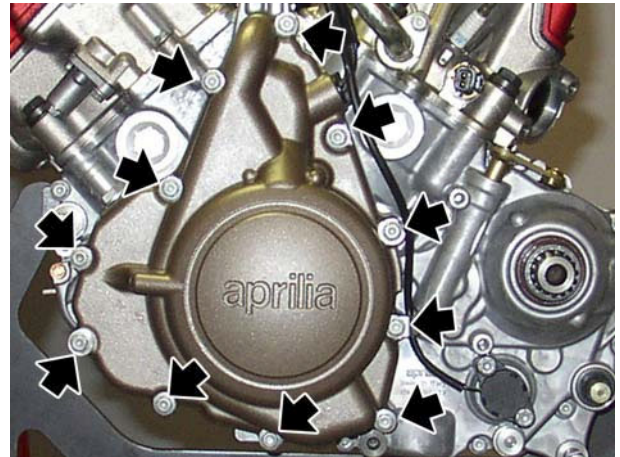
- Remove the oil pump inner transmission roller.



3.9. GENERATOR SIDE

3.9.1. REMOVAL

- Loosen and remove the eleven screws.
- Mark the screws with different length.
- Remove flywheel-side cover together with generator, keep gasket and two pilot dowels.



- Remove the two gears connecting starter motor to flywheel.



Engine 450 - 550

- Slide out the rear cylinder timing gearwheel.



- Remove the timing chain.



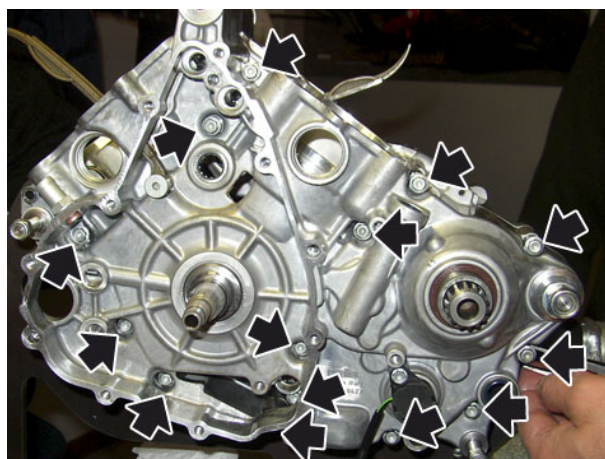
- Remove the key.
- From generator side, remove the timing lay shaft completed with front cylinder timing gearwheel.



- Loosen and remove the fifteen crankcase bolts, fourteen are on left side and one is on right side.

**WARNING**

Seven of the left side securing screws are M7 and seven are M6.



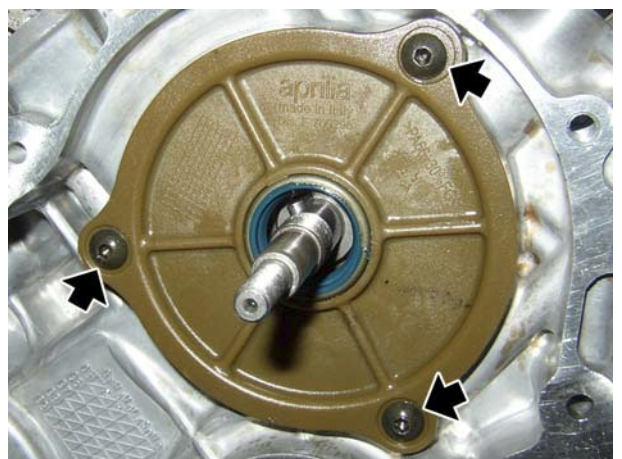
- Fit timing layshaft on generator shaft.
- Fit the key.



- Fit rear cylinder timing gear.
- Fit rear cylinder timing chain.



- Fit the timing closure flange.
- Tighten the three screws from timing closure flange.



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