

UPGRADE BOOK

APRILIA SXV 450-550
Replica VAN DEN BOSCH
MY 08



ENGLISH VERSION



CONTENTS

SUMMARY TABLE OF TECHNICAL DATA	3
VEHICLE START-UP	4
REMOTE ADJUSTMENT OF THE POSITION OF THE FRONT BRAKE LEVER	5
CHANGING ECU MAPPING	5
ACTIVATION/DEACTIVATION OF THE ELECTRONIC TRASMISSION	6
STARTING DEVICE	6
ASYMMETRIC CHAIN TENSIONER PADS	7
FRONT FORK	8
REAR MONO SHOCK ABSORBER	13
SADDLE SUPPORT CHASSIS	14
STM SLIPPERING CLUTCH	15



SUMMARY TABLE OF TECHNICAL DATA

FRONT FORK	
Type	Marzocchi Shiver 50
Travel	267 mm
Std. adjustment hydraulic brake under compression	20 clicks from all closed
Std. adjustment hydraulic brake under extension	20 clicks from all closed
Steering angle with centred bushings	25°
Steering angle with eccentric bushings	24° - 26°
Fork offset with centred bushings	14 mm
Fork offset with eccentric bushings	11 mm - 17 mm

REAR SHOCK ABSORBER	
Type	Mono Sachs racing
Travel	120 mm
Std. spring elasticity (K)	6 kgf/mm
Std. adjustment hydraulic brake under compression at high speed	7 clicks from all closed
Std. adjustment of the hydraulic brake under compression at low speed	12 clicks from all closed
Std. adjustment hydraulic brake under extension	15 clicks from all closed

STM CLUTCH	
Calibration of primary standard spring SXV VDB 450 (wet race)	120 kg
Calibration of primary supplied spring SXV VDB 450	130 kg
Calibration of secondary standard spring SXV VDB 450 (wet race)	30 kg
Calibration of secondary supplied spring SXV VDB 450	40 kg
Calibration of primary standard spring SXV VDB 550 (wet race)	130 kg
Calibration of primary supplied spring SXV VDB 550	140 kg
Calibration of secondary standard spring SXV VDB 550 (wet race)	30 kg
Calibration of secondary supplied spring SXV VDB 550	40 kg
Wear limit clutch pack	35 mm

FRONT / REAR CHAIN SPROCKETS	
Standard pinion SXV VDB 450	z=14
Supplied pinion SXV VDB 450	z=15
Standard sprocket SXV VDB 450	z=45
Supplied sprocket SXV VDB 450	z=44, z=46
Standard pinion SXV VDB 550	z=16
Supplied pinion SXV VDB 550	z=15
Standard sprocket SXV VDB 550	z=46
Supplied sprocket SXV VDB 550	z=45, z=47



VEHICLE START-UP

This vehicle, having been designed for exclusive use in competitions, is equipped with a small and lightweight battery, sufficient for amperages needed during warm start-up and for the normal operation of the engine.

For cold start it is necessary to use the external battery that comes with as an accessory to the vehicle.

Remove the saddle.

Disconnect the jack from the regular battery and connect it to the external battery.



Feed the injection circuit of the vehicle by connecting the key jack on the handlebar.



Start the engine using the ignition button on the right side of the handlebar.



With the engine running, disconnect the external battery and reconnect the installed battery.

To turn off the vehicle just press the off button on the left side of the handlebar.



WARNING

After use the key jack has to be disconnected.



REMOTE ADJUSTMENT OF THE POSITION OF THE FRONT BRAKE LEVER

The vehicle is prearranged for a remote adjustment of the distance of the front brake lever from the handlebar.

Use the adjustment knob on the left handlebar until the desired distance is obtained.



CHANGING ECU MAPPING

The vehicle offers the possibility of choosing between two different mappings of the control unit.

The mapping change can be accomplished while the vehicle is in motion.

Push the button on the left side of the handlebar to chose between HARD and SOFT modes.



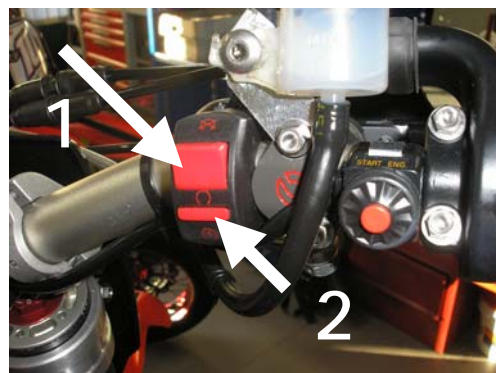


ACTIVATION/DEACTIVATION OF THE ELECTRONIC TRASMISSION

The vehicle is supplied with an electronic control mechanism for the gear ratio. With the electronic control mechanism activated, it is possible to change the ratio upward without the aid of friction and while keeping the throttle control open.

Push the button on the right side of the handlebar to activate or deactivate the electronic control mechanism:

- 1 - Device OFF
- 2 - Device ON



STARTING DEVICE

FITTING

The distance between two components should be:

$$D = 11 \text{ mm}$$

$$D_{\text{MAX}} = 13 \text{ mm}$$



USE

The vehicle is set up for locking the fork under compression as a launch control.

Press the fork all the way.

Press on the locking pin.

Release the fork so that the pin engages on the slot of the ring mounted on the fork.

Release the pin.





ASYMMETRIC CHAIN TENSIONER PADS

The vehicle is provided with two different chain sprockets.

It is possible to replace the chain sprocket and to rotate the chain tensioner pads without having to adjust the slack of the chain again.

Mount the chain tensioner pads in the direction indicated when installing the sprocket with more teeth.

Mount the chain tensioner pads in the direction indicated when installing the sprocket with less teeth.



WARNING

Changing the direction of the chain tensioner pads corresponds to 1 tooth of the sprocket.





FRONT FORK

ADJUSTMENT OF THE HYDRAULIC BRAKE

In order to adjust the hydraulic brake under compression operate on the screw shown to the side.



In order to adjust the hydraulic brake in extension operate on the screw shown to the side.



DE-AERATION OF THE FRONT FORK

To extract the air from the clutch stem, remove the dust cap on each one of the fork legs.



With the help of a screwdriver open the bleed valve until the air inside is completely expelled.





ADJUSTMENT OF THE STEERING ANGLE



WARNING

To adjust the steering angle the eccentric bushings must be first assembled.

Loosen the headstock nut.

Loosen the screw that closes the upper plate.

By operating on both fork legs, loosen the tightening screws on the upper plate.

Slightly lift the upper plate, by pulling it out by a few millimetres from the fork legs.





Using a hook spanner, loosen the bearings preload ring nut.

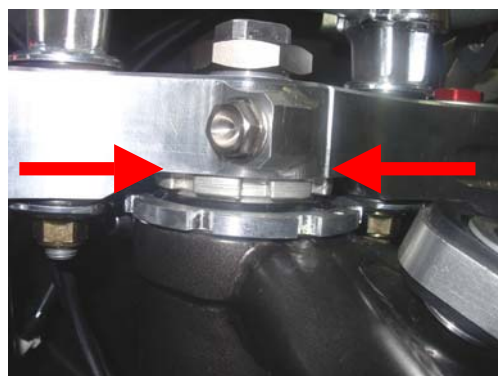


The ring nut to work on is the upper one, immediately below the steering plate.



WARNING

At this stage do not work on the ring nut for adjusting the steering angle, located immediately under the bearings preload ring gear.



Loosen the screw that locks the lower eccentric ring nut.



Loosen the screw that locks the upper eccentric ring nut.





Using a hook spanner, turn the upper eccentric ring nut by 180°.



WARNING

Accurately line up the notch on the ring nut with the point where the tubes of the frame meet (vehicle axis).

Restore the vehicle following, in reverse, the procedure just described.



FORK OFFSET ADJUSTMENT

Loosen the headstock nut.



Loosen the screw that closes the upper plate.



Loosen the screw that closes the lower plate.





Operating on the square drive nut, turn the headstock strut by 180°.



Minimum offset reference.



WARNING

Precisely line up the notch on the eccentric bushing with the reference on the steering plate.

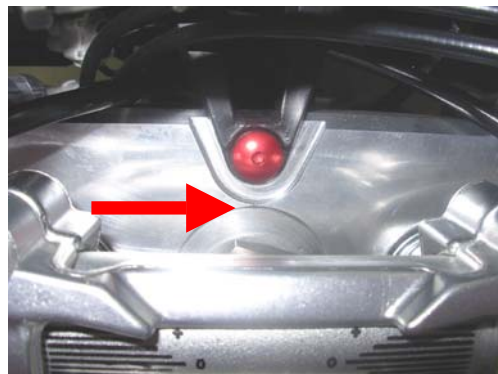


Maximum offset reference.



WARNING

Precisely line up the notch on the eccentric bushing with the reference on the steering plate.





REAR MONO SHOCK ABSORBER

DAMPING ADJUSTMENT

To set compression damping, turn the golden screw inside the light blue knob.

To set the kick-in threshold for the bypass valve (high-speed compression damping), turn the light blue knob.

To set rebound damping, turn the indicated screw.



WARNING

Do not force the screws beyond their end stops. Overtightening may damage the hydraulic system.



(NEGATIVE) SPRING PRELOAD ADJUSTMENT

Loosen the set screw of the spring preload adjusting ring nut.

Use the supplied adjusting pin to turn the ring nut until achieving the desired spring preload.

When finished, tighten the set screw.





RIDE HEIGHT ADJUSTMENT

There are three ride height settings available.

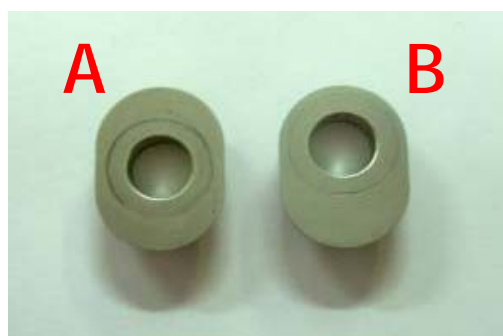
Ride height is adjusted by changing or rotating the bush shown in the picture into the desired position.



There are two bushes available:

A → Mean height bush

B → Eccentric bush for maximum or minimum height (de-pending on mounting position)



SADDLE SUPPORT CHASSIS

ADJUSTMENT OF THE SADDLE SUPPORT CHASSIS HEIGHT

To adjust the saddle support chassis, turn the set screws on both sides of the vehicle at the same time.

$\frac{1}{4}$ turn \approx 2.5 mm of movement of the rear-most point of the rear end

The maximum movement is imposed by the limits of the coupling between the discharge fitting and the muffler. Do not continue tightening the set screws when the resistance becomes excessive.





STM SLIPPERING CLUTCH

DISASSEMBLY OF THE CLUTCH FROM THE ENGINE

Remove the six screws that secure the ergal flange.



Remove the ergal flange.

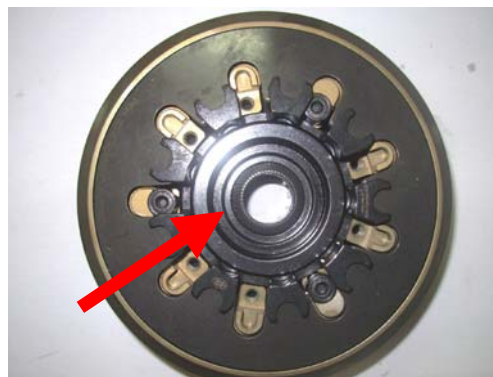


Lock the clutch with the lock wrench (provided) and remove the nut.

Pull out the clutch unit from the main shaft of the gear box and continue the disassembly on the bench.

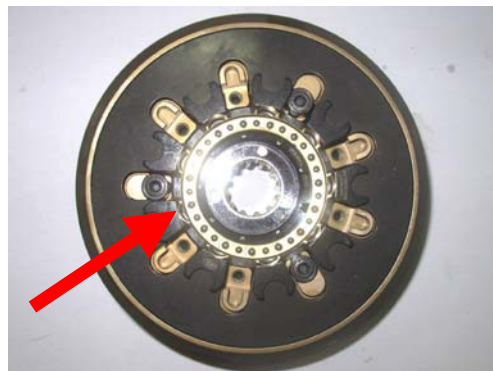


Remove the central cup.





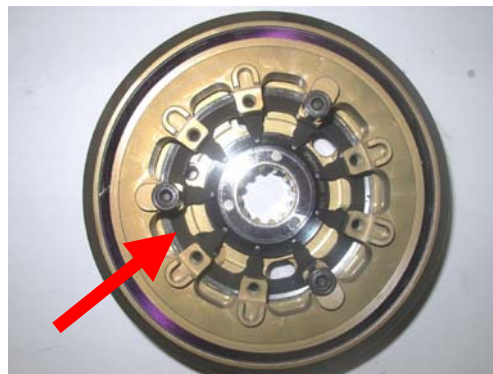
Remove the thrust ring.



Remove the outside spring.



Remove the clutch pressure plate and the complete pack of disks.



Remove the inside spring.





Remove the ring.



Remove the disc drum.



Remove the six steel balls.



WARNING

The steel balls have to be greased before reassembly.



The two springs can be replaced with springs with a different elastic constant K to adapt the response of the clutch to its requirements.

