



**2-STROKE**

250 / 300



***Rideability***



**2026**  
OWNERS MANUAL



## **RX 2 Strokes**

Thanks for your preference, and have a good time! This handbook contains the information you need to properly operate and maintain your motorcycle.

The data, specifications and images shown in this manual does not constitute an engagement on the part of BETAMOTOR S.p.A. BETAMOTOR reserves the right to make any changes and improvements to its models at any moment and without notice.

Cod. 050.44.000.83.00

## IMPORTANT

We recommend you to check all the tightenings after the first one or two hours' ride over rough ground. Special attention should be paid to the following parts:

- rear sprocket
- ensure that the footrests are properly fixed
- front/rear brake levers/calipers/discs
- check that the plastics are properly fastened
- engine bolts
- shock absorber bolts/swingarm
- wheel hubs/spokes
- rear frame
- pipe connections
- tensioning the chain

## IMPORTANT

In the event of interventions on the vehicle, contact Betamotor after-sales service.

The operations specified in the maintenance schedule must be performed exclusively at an authorised Betamotor workshop and must be registered on the Betanet portal. Failure to register will result in rendering the warranty null and void.

Use of the vehicle in heavy-duty conditions, for example, on sand, circuits/off-road tracks with wet, dusty or muddy terrain, can result in above-average wear of components such as the drive system, brake system, air filter or suspension parts. Therefore, inspection or replacement of the components may be necessary even before the first service is due.

<b>CONTENTS</b>	
Operating instructions.....	5
Symbols.....	5
Riding safety .....	6
<b>CHAPTER 1 GENERAL INFORMATION .....</b>	<b>7</b>
Vehicle identification data .....	8
Tools kit .....	8
Familiarizing with the vehicle.....	9
Specifications .....	10
Fuses .....	16
Recommended lubricants and liquid .....	16
<b>CHAPTER 2 OPERATION .....</b>	<b>17</b>
Main parts .....	18
Checks before and after use .....	21
Breaking in.....	21
Refuelling .....	22
Starting the engine .....	23
Engine shut-down .....	23
<b>CHAPTER 3 ADJUSTMENTS.....</b>	<b>25</b>
Key to symbols.....	26
Brakes .....	26
Clutch.....	27
Adjustment of gas clearance.....	27
Adjusting the idle speed.....	27
Exhaust valve control adjustment .....	30
Handlebar adjustment .....	30
Shock absorber.....	32
Adjusting fork .....	32
Engine mapping adjustment .....	34
<b>CHAPTER 4 CHECKS AND MAINTENANCE .....</b>	<b>35</b>
Key to symbols.....	36
Engine oil.....	36
Liquid coolant.....	38
Air filter .....	40
Spark plug .....	43
Carburettor .....	44

Front brake.....	46
Rear brake .....	49
Clutch control .....	52
Check and adjusting of steering PLAY .....	54
Fork.....	55
Front wheel .....	55
Tyres.....	56
Rear suspension leverage.....	56
Chain .....	57
Battery.....	59
Fuses .....	61
Cleaning the vehicle.....	62
Prolonged inactivity.....	63
Scheduled maintenance vehicle .....	64
Tightening torque overview .....	66
<b>CHAPTER 5 REMOVING AND INSTALLING SUPERSTRUCTURES .....</b>	<b>67</b>
Removing and installing of the saddle.....	68
Removing and installing air filter side panel.....	69
Removing and installing of the complete tank.....	70
Removing and installing side panels and rear mudguard .....	71
Removing and installing the front mask .....	73
<b>CHAPTER 6 TROUBLESHOOTING .....</b>	<b>75</b>
Troubleshooting .....	76

## OPERATING INSTRUCTIONS

- To protect your safety and that of others, always drive carefully and with your helmet.
- Do not start the engine in closed places.

### WARNING

Any modifications and tampering with the vehicle during the warranty period exempt the manufacturer from all responsibility and invalidate warranty.

## SYMBOLS



### SAFETY/ATTENTION

Failure to respect information marked with this symbol can entail a personal hazard.



### INTEGRITY OF THE VEHICLE

Failure to respect information marked with this symbol can entail serious damage to the vehicle and termination of the warranty.



### FLAMMABLE LIQUID HAZARD



Read the use and maintenance manual carefully.



### MANDATORY TO WEAR PROTECTIVE CLOTHING

Use of the vehicle is subject to wearing specific protective clothing and safety footwear.



### PROTECTIVE GLOVES MANDATORY

To perform the operations described, it is mandatory to wear protective gloves.



FORBIDDEN TO USE NAKED FLAMES OR POSSIBLE UNCONTROLLED IGNITION SOURCES



NO SMOKING



DO NOT USE MOBILE PHONE



### CORROSIVE SUBSTANCES HAZARD

Liquids marked with this symbol are highly corrosive: handle with care



POISONING HAZARD

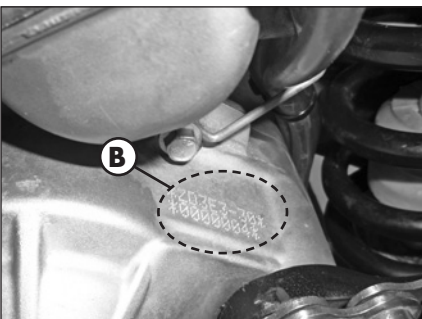
## **RIDING SAFETY**

- Ride only on track, on-road use is not allowed.
- Always wear approved personal protective equipment.
- Always keep the crash helmet visor clean.
- Do not keep sharp or brittle objects in your pockets while riding.
- Always keep a safe distance from other vehicles.
- Do not start off while the vehicle is on its stand.
- Always apply both brakes on dry roads with no gravel and sand. Using one brake may be dangerous and cause uncontrolled skidding.
- To reduce the braking distance, always apply both brakes.

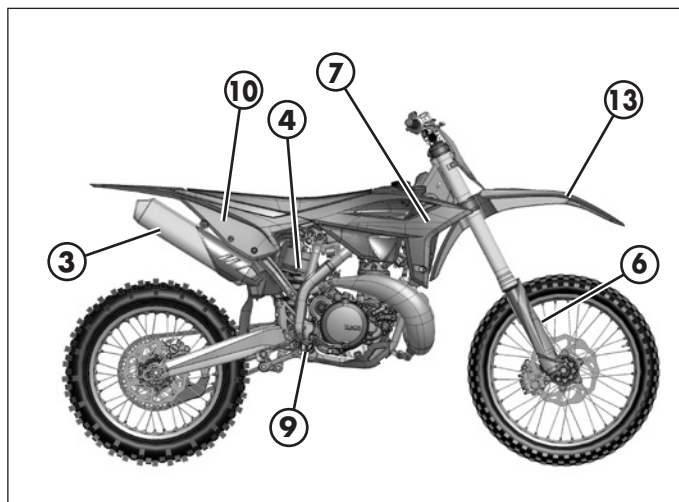
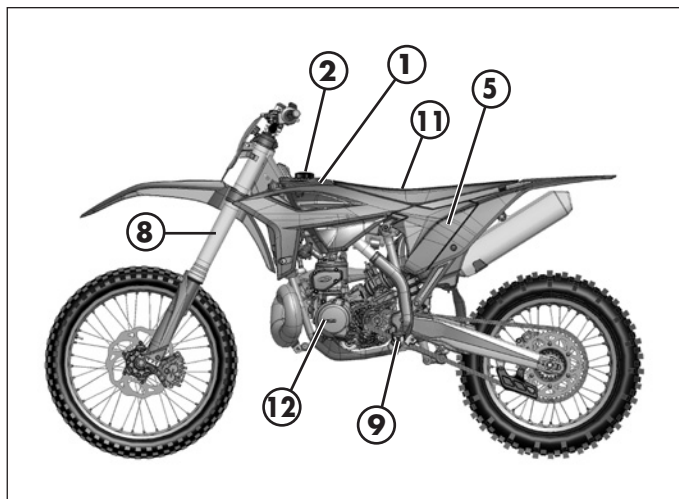
**CHAPTER 1 GENERAL INFORMATION****CONTENTS**

Vehicle identification data .....	8
Frame identification .....	8
Engine identification .....	8
Tools kit .....	8
Familiarizing with the vehicle.....	9
Main parts:.....	9
Specifications .....	10
Weight.....	10
Dimensions .....	10
Tyres .....	10
Capacities .....	11
Front suspension.....	11
Rear suspension .....	11
Engine .....	12
Front brake.....	12
Rear brake .....	12
Electrical system.....	14
Electrical diagram RX 250.....	14
Legend electrical diagram .....	15
Electrical diagram RX 250.....	16
Legend electrical diagram .....	17
Fuses .....	18
Recommended lubricants and liquid .....	18





## FAMILIARIZING WITH THE VEHICLE



### MAIN PARTS:

- |                                 |                       |
|---------------------------------|-----------------------|
| 1 - Fuel tank                   | 9 - Rider's footrests |
| 2 - Tank cap                    | 10 - Rear side panel  |
| 3 - Silencer                    | 11 - Saddle           |
| 4 - Rear shock absorber         | 12 - Engine           |
| 5 - Side panel air filter cover | 13 - Front mudguard   |
| 6 - Fork covers                 |                       |
| 7 - Front side panel            |                       |
| 8 - Fork                        |                       |

## SPECIFICATIONS

### WEIGHT

Weight in running order without fuel and optional:

RX 250-350 ..... 100kg (front 48kg; rear 52kg)

### DIMENSIONS

Version	RX 250	RX 350
Maximum length [mm]	2177	
Maximum width [mm]	830	
Overall height [mm]	1260	
Wheelbase [mm]	1482	
Saddle height [mm]	945	
Ground clearance [mm]	340	
Footrest height [mm]	422	

FRAME ..... molybdenum steel with double cradle split above exhaust port

### TYRES

Version	Dimensions		Pressure [Bar]	
	Front tyre	Rear tyre	Front tyre	Rear tyre
RX 250-350	80/100-21	110/90-19	1	1

front rim ..... 21x1,6 - 36 holes

rear rim ..... 19x2,15 - 36 holes

## CAPACITIES

Version	RX 250-350
Fuel tank * [l]	7
Coolant circuit [ml]	1300
Gear oil [ml] (following normal maintenance work)	800
Gear oil [ml] (following a complete engine review)	850

\* Such data is referred to a conditioned and arranged tank

## FRONT SUSPENSION

Closed cartridge hydraulic upside-down fork (Ø48 mm shafts)

Version	RX 250-350
Spring (K - [N/mm])	4,4
Oil type	KHL 15-11
Oil quantity # [g]	495
Wheel stroke [mm]	310
Compression clicks (from completely closed)	12
Rebound clicks (from completely open)	14

# Overall: sleeve + cartridge, for a completely dry fork

## REAR SUSPENSION

Single shock absorber with compound lever

Version	RX 250-350
Spring (K - [daN/mm])	5,2
Static sag load - SAG [mm]	38
Shock absorber travel [mm]	133
Wheel stroke [mm]	300
Compression clicks, high speeds (from completely closed)	2
Compression clicks, low speeds (from completely closed)	14±1/2
Rebound clicks (from completely closed)	18±1/2

**FRONT BRAKE**

Ø 260 mm disc and dual-piston floating caliper

**REAR BRAKE**

Ø240 mm disc and single-piston floating caliper

**ENGINE**

Version	RX 250	RX 350
Type	Single-cylinder, 2-stroke, liquid cooled and electric start	
Bore x stroke [mm]	66,4X72	78X73,6
Displacement [cm <sup>3</sup> ]	249,3	351,7
Compression ratio	14,6:1	12,45:1

Fuel system..... carburetor

Carburetor

Version	RX 250	RX350
Main jet	190	180
Slow jet	48	45
Start jet	85	85
Needle	NOZI	NOZD
Needle position (from top)	3°	3°
Air screw turns (from all closed)	1 + 1/2	1 + 1/2

Cooling system ..... forced liquid circulation by pump

Spark plug

Version	RX 250	RX 350
Type	NGK BR8ECM	NGK MR7CI8

Clutch ..... wet, multidisc

Gearchange

Version	RX 250	RX 350
Primary drive	27/72	27/72
Gear ratio 1st gear	14/29	14/29
Gear ratio 2nd gear	16/27	16/27
Gear ratio 3rd gear	19/27	19/27
Gear ratio 4th gear	20/24	20/24
Gear ratio 5th gear	27/27	27/27
Final drive	13/50	14/47

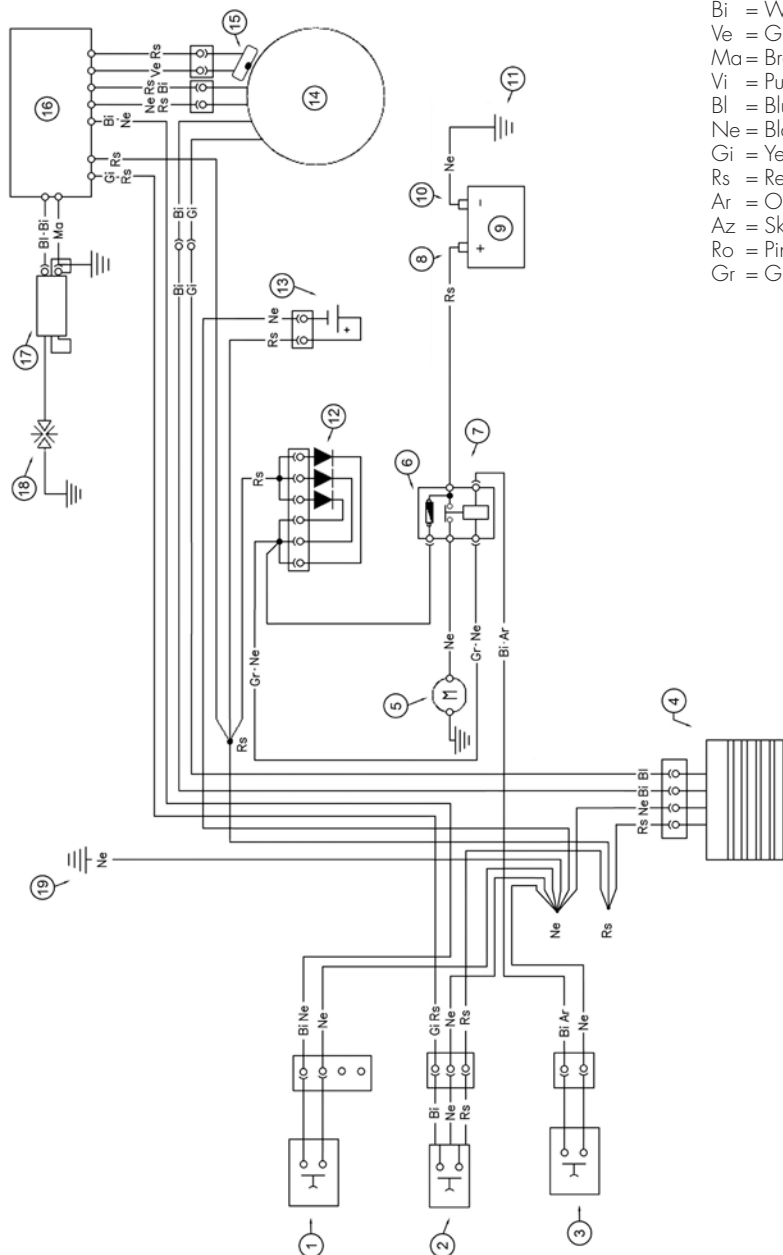
Exhaust valve ..... centrifugal operation with reaction springs

Ignition ..... CDI without trembler,  
with digital variable spark advance

Starting ..... electric starter

## ELECTRICAL SYSTEM

### ELECTRICAL DIAGRAM RX 250



Key to colours

Bi = White

Ve = Green

Ma = Brown

Vi = Purple

Bl = Blue

Ne = Black

Gi = Yellow

Rs = Red

Ar = Orange

Az = Sky-blue

Ro = Pink

Gr = Grey

**LEGEND ELECTRICAL DIAGRAM**

- 1) ENGINE STOP BUTTON
- 2) SECOND MAP SWITCH
- 3) START BUTTON
- 4) VOLTAGE REGULATOR
- 5) STARTER MOTOR
- 6) 10A FUSE
- 7) STARTER RELAY
- 8) BATTERY POSITIVE TERMINAL
- 9) LITHIUM 12V 2,5AH BATTERY
- 10) BATTERY NEGATIVE TERMINAL
- 11) ENGINE MASS CABLE
- 12) DIODES GROUP
- 13) CONDENSATOR 4700  $\mu$ F
- 14) GENERATOR
- 15) PICK-UP SENSOR
- 16) ELECTRONIC CONTROL UNIT
- 17) IGNITION COIL
- 18) SPARK PLUG
- 19) FRAME EARTH



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- 17) IGNITION COIL
- 18) SPARK PLUG
- 19) IGNITION COIL
- 20) SPARK PLUG
- 21) FRAME EARTH

## FUSES

Two, one of them spare ..... 10A

## RECOMMENDED LUBRICANTS AND LIQUID

To maximize the vehicle's performance and ensure many years of trouble-free operation, we recommend using the following products:

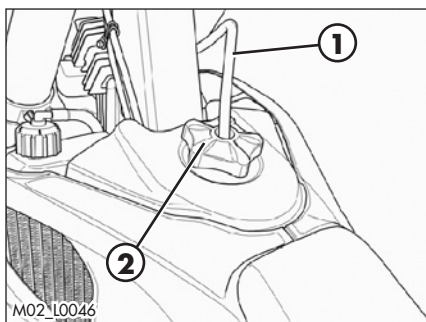
PRODUCT TYPE	SPECIFICATIONS
FUEL	GASOLINE  95 RON
MIXTURE OIL	LIQUI MOLY MOTORBIKE 2T SYNTH OFFROAD RACE
GEAR AND CLUTCH OIL	LIQUI MOLY RACING 10W-50
BRAKE OIL	LIQUI MOLY BRAKE FLUID DOT 5.1
CLUTCH ACTUATOR OIL	LIQUI MOLY BRAKE FLUID DOT 5.1
FORK OIL	KHL 15-11
TIE ROD GREASE	LIQUI MOLY SCHMIERFIX
LIQUID COOLANT	LIQUI MOLY COOLANT READY MIX RAF12 PLUS

Note:

It is essential that all renewals should be performed with the products listed in the table above.

**CHAPTER 2 OPERATION****CONTENTS**

Main parts .....	20
Fuel tank cap .....	20
Fuel cock .....	20
Starter .....	20
Clutch lever .....	21
LH switch .....	21
RH switch .....	21
Front brake lever and gas control .....	22
Gear change lever .....	22
Brake pedal .....	22
Checks before and after use .....	23
Breaking in .....	23
Refuelling .....	24
Starting the engine .....	25
Engine shut-down .....	25



## MAIN PARTS

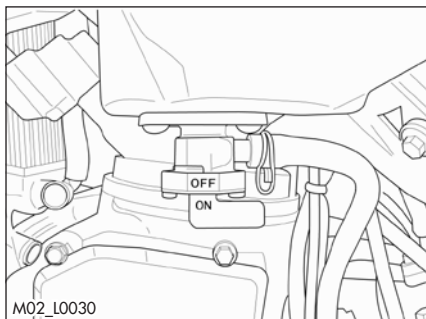
### FUEL TANK CAP

Use unleaded petrol (gasoline).

Disconnect the ventilation pipe **1**.

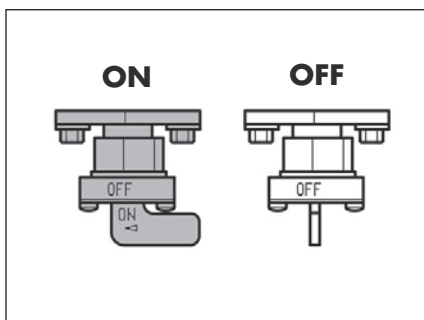
To open the tank turn the cap **2** anticlockwise.

To close the fuel tank's cap, set it on the tank and crew it clockwise.



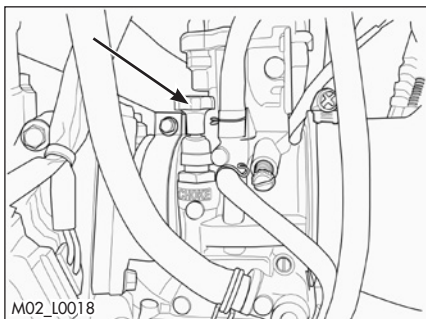
### FUEL COCK

Fuel cock has two positions:



OFF: fuel supply closed. Fuel cannot pass from the tank to the carburettor.

ON: fuel supply enabled. Fuel flows from the tank to the carburettor.



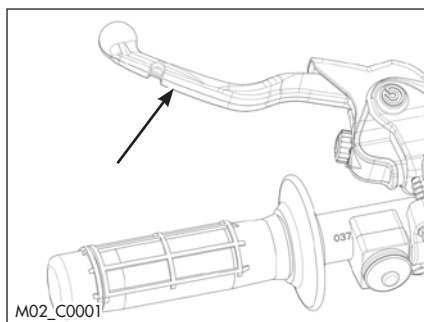
### STARTER

The starter lever is located on the carburettor.

To operate the choke pull it upward.

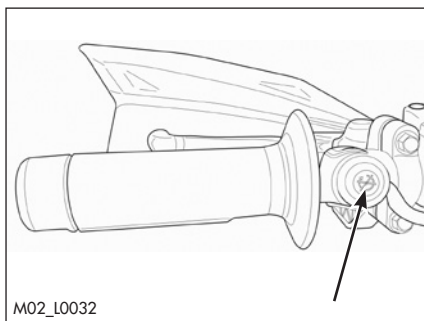
## CLUTCH LEVER

Clutch lever is fitted to the left-hand side of the handlebars.



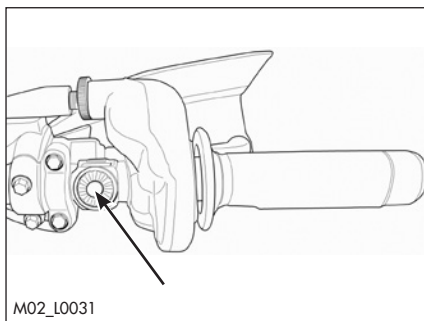
## LH SWITCH

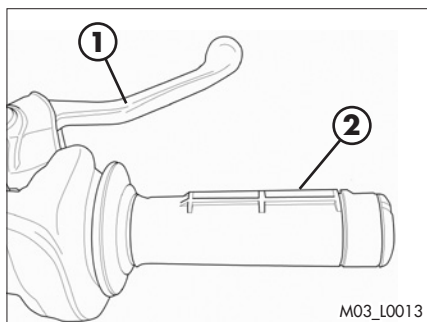
The button turns off the engine.



## RH SWITCH

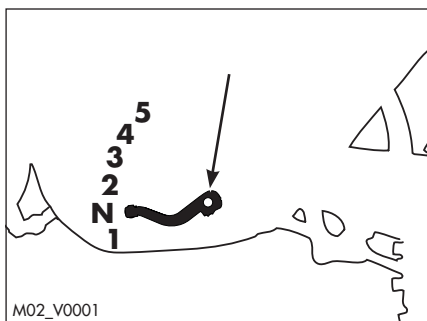
Starter button is located on the right-hand side of the handlebars and operate the electric engine starter. For startup, refer to page 25. Do not press the button while the engine is running.





## FRONT BRAKE LEVER AND GAS CONTROL

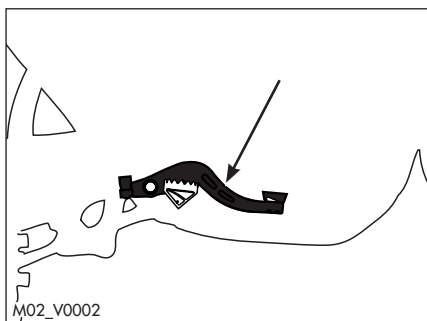
The front brake lever **1** and the gas throttle **2** are located on the right side of the handlebar.



## GEAR CHANGE LEVER

Gear change lever is fitted to the left side of the engine.

The positions corresponding to the different gears are shown in the figure.



## BRAKE PEDAL

Brake pedal is located in front of the right-hand footrest.

The rear brake is operated by pressing down the pedal.

## CHECKS BEFORE AND AFTER USE

For safe driving and long vehicle life you should:

- 1 Check all fluid levels.
- 2 Check the correct operation of the brakes and brake pad wear (page 52).
- 3 Check pressure, general condition and thickness of tread (page 60).
- 4 Check that the spokes are properly tightened.
- 5 Check the tensioning of the chain (page 59).
- 6 Check the adjustment and the operation of all the cable controls.
- 7 Inspect all the nuts and bolts.
- 8 Wash the motorcycle thoroughly after off-road use (page 66).

## BREAKING IN

The running-in period lasts approximately 5 hours, during which it is advisable to:

- 1 Make the first refuelling with a mixture of:

RX 250-350
2,8%

- 2 Use the oil indicated on page 18 in the "Recommended lubricants and liquids" table.
- 3 During the first 3 hours of operation the engine should only be used to approximately 70 percent of its power. In addition, the engine speed should not exceed 11,000 rpm.
- 4 For the next 2 hours of operation the engine should only be used to about 90 percent of its power.
- 5 Use the vehicle after properly warming up the engine.
- 6 Avoid travelling at constant speed (changing the speed causes the different components to bed in evenly and more quickly).

This procedure should be followed each time piston, piston rings, cylinder, crankshaft or crankshaft bearings are replaced.

### WARNING

Replace the transmission oil after the first 3 hours or after 15 l. of mixture.



## 2 REFUELLING

See page 18 for the fuel specifications.

Fuel tank capacity is shown on page 11.

To refuel open the tank cap (page 20).

After refuelling, screw the cap back and tighten securely.

Mix the fuel with oil according to the percentages listed in the table. Use the oil indicated on page 18 in the "Recommended lubricants and liquids" table.

RX 250-350
2,5%

### WARNING

The refuelling should be performed with the engine off.



WARNING:

Fire hazard. Fuel is highly flammable.



Always stop the engine when refuelling and keep open flames and lighted cigarettes away.



Do not top up fuel while using a mobile phone.

Refuel in an open well ventilated area.

Pay special attention so that the fuel does not come into contact with hot parts of the vehicle. Immediately clean up any spilled fuel.



WARNING: Risk of poisoning.

Fuel is poisonous liquid and a health hazard.



Fuel must not come into contact with the skin, eyes, and clothing. Do not breathe in the fuel vapours. If contact occurs with the eyes, rinse immediately with plenty of water and seek medical advice. If contact occurs with skin, immediately clean contaminated areas with soap and water. If fuel is swallowed, contact a doctor immediately. Change clothing that is contaminated with fuel.

WARNING: Environmental pollution hazard.

The fuel must not contaminate the ground water, the ground, or the sewage system.

## STARTING THE ENGINE

Move the fuel tank valve in ON position (page 20).

Check that the gears are in neutral (page 22).

Pull the clutch lever (page 21).

### WHIT ELECTRIC STARTER:

Press the startup button for a max of 3 seconds (page 21). If the vehicle does not startup, wait 30 seconds before attempting a new startup.

### NOTE

Pauses are needed to diffuse the generated heat and to avoid damaging the battery. If the battery is at a temperature below 15°C, the electric startup will be weak, not because the battery is deteriorated but because it needs to be warmed up. Therefore, with temperatures below 15°C, several startup attempts may be necessary to heat the battery and thereby increase the battery power provided by the battery.

Do not press the button while the engine is running.

### COLD STARTING:

Operate the starter (page 20), start the vehicle as described above, wait a few seconds, then move the starter back to its starting position.

## ENGINE SHUT-DOWN

To shut-down the engine press the button  on the handlebar (page 21).

### NOTE:

With the engine off, make sure the fuel cock is set to OFF (page 20).



**CHAPTER 3 ADJUSTMENTS****CONTENTS**

Key to symbols.....	28
Brakes .....	28
Front brake .....	28
Rear brake .....	28
Clutch.....	29
Adjustment of gas clearance.....	29
Adjusting the idle speed.....	29
Carburetor settings according to the working conditions.....	30
Exhaust valve control adjustment .....	33
Handlebar adjustment .....	33
U-bolt position adjustment.....	33
Adjustment of the handlebar position .....	34
Adjusting fork.....	35
Adjusting the rebound damper .....	35
Adjusting the compression damper .....	35
Shock absorber.....	35
Adjusting the rebound damper .....	35
Adjusting the spring preload.....	36
Adjusting the hydraulic compression damper (high and low speeds) .....	36
Static sag load test .....	37
Engine mapping adjustment .....	37

## KEY TO SYMBOLS



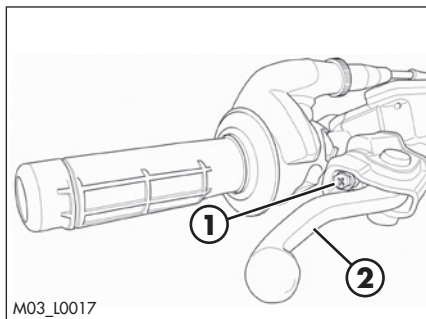
Tightening torque



Threadlocker Medium



Grease

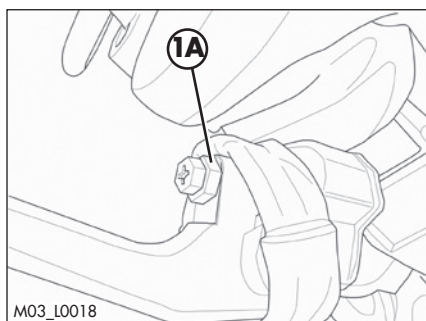


## BRAKES

### FRONT BRAKE

The front brake is disk type with hydraulic control.

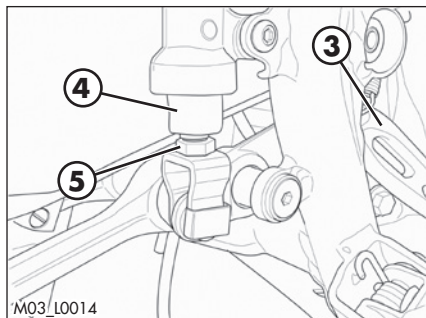
The home position of brake lever **2** can be adjusted by means of screw **1**.



Warning! Once the adjustment has been made, tighten the locknut **1A**.



Warning! Do not remove the locknut for any reason **1A**.

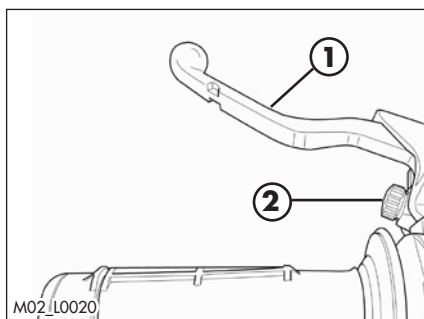


### REAR BRAKE

The home position of brake pedal **3** can be altered by turning adjusting screw **5** after loosening the locknut located under dust cap **4**. Loosen the locknut and turn the adjusting screw until the desired height is obtained. Retighten the locknut after completing the operation.

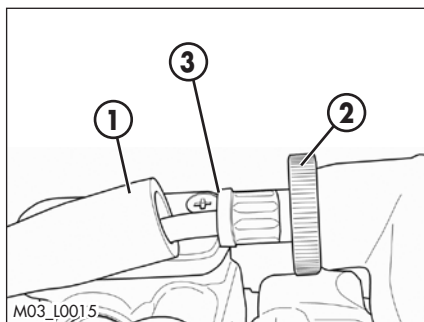
## CLUTCH

The adjustment screw **1** allows adjustment of the distance of lever **2** from the knob. The empty run is recovered automatically.



## ADJUSTMENT OF GAS CLEARANCE

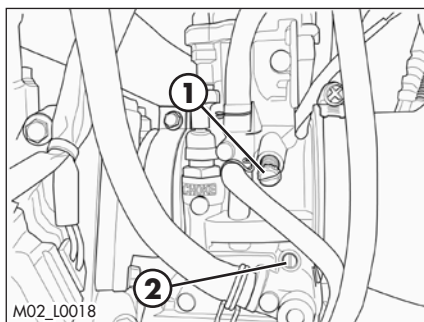
The throttle control cable should always have a 3-5 mm of clearance. In addition, the idle speed should not change when the handlebar is fully rotated to the left or right. Push back protective cap **1**. Loosen counternut **2** and turn adjusting screw **3**. Tighten the locknut and check that the throttle twist grip turns smoothly.



## ADJUSTING THE IDLE SPEED

Idling adjustment greatly affects the appropriate start-up and the accelerator response.

Idling is adjusted through adjustment screw **1** and air adjustment screw **2**. Adjustment screw **1** adjusts the basis position of the gas valve. Turn the screw clockwise to increase the rotation conditions and counterclockwise to diminish it. The air adjustment screw **2** adjusts the quantity of which is mixed to the fuel for idling. If the screw is turned counterclockwise, the quantity of air increases (thin mix), if turned clockwise, the quantity of air diminishes (fat mix).



To properly adjust the idle speed, follow these steps:

- Tighten the air adjustment screw no. **2** fully and then loosen it up to the value described in the carburetor setting table (page 12).
- Warm the engine for approx. 5 minutes, until the operational temperature is attained.
- Slowly turn the air adjustment screw **2** clockwise, until idling starts diminishing.
- Mark the position, then slowly turn the air adjustment screw no. **2** counterclockwise, until idling decreases again.
- Adjust the screw between these two positions, at the highest idling point.

If a remarkable increase in the rpm occurred during the adjustment above, idling is to be reduced and taken back to the normal level, and then execute the above procedure.

If no satisfactory results are obtained after the procedure, this may be due to an incorrect slow-running jet.

If the air adjustment screw has been thoroughly tightened, but the rpm have not varied, a lower size slow-running jet is to be used.

Execute the adjustment procedure again after replacing the jet.

NOTE:

The correct idling should be between 1800 and 1900 rpm.






## CARBURETOR SETTINGS ACCORDING TO THE WORKING CONDITIONS

See the following tables to adjust the carburetor settings according to ambient temperature and altitude.

Legend:

SJM	Above sea level
AVA	Air screw opening (from all closed)
Gm	Pilot jet
SPL	Needle
POS	Clip position (from top)
GM	Main jet
VLV	Valve

 Standard settings

Version RX 250 carb. PWK 385							
Altitude (SLM)	Carburetor setting	Ambient temperature					
		-20°C ÷ ÷-7°C	-6°C ÷ 5°C	6°C ÷ 15°C	16°C ÷ 24°C	25°C ÷ 36°C	37°C ÷ 49°C
		-2°F ÷ 20°F	19°F ÷ 41°F	42°F ÷ 60°F	61°F ÷ 78°F	79°F ÷ 98°F	99°F ÷ 120°F
3000 m	AVA	1,5	2	2	2,5	2,5	
10000 ft	Gm	48	45	45	42	42	
	GM	192	190	188	185	182	
	SPL	NOZI	NOZI	NOZJ	NOZJ	NOZJ	
2301 m	POS	3	3	3	2	2	
7501 ft	VLV	6,5	6,5	6,5	6,5	6,5	
2300 m	AVA	1,5	1,5	2	2	2,5	2,5
7500 ft	Gm	48	48	48	48	48	48
	GM	195	192	190	188	185	182
	SPL	NOZI	NOZI	NOZI	NOZJ	NOZJ	NOZJ
1501 m	POS	3	3	3	3	2	2
5001 ft	VLV	6,5	6,5	6,5	6,5	6,5	6,5
1500 m	AVA	1,5	1,5	1,5	2	2	2,5
5000 ft	Gm	50	48	48	48	48	48
	GM	198	195	192	190	188	185
	SPL	NOZH	NOZI	NOZI	NOZI	NOZJ	NOZJ
751 m	POS	4	3	3	3	3	2
2501 ft	VLV	6,5	6,5	6,5	6,5	6,5	6,5
750 m	AVA	1,5	1,5	1,5	1,5	2	2
2500 ft	Gm	50	50	48	48	48	48
	GM	198	195	192	190	190	188
	SPL	NOZH	NOZH	NOZI	NOZI	NOZI	NOZJ
301 m	POS	5	4	3	3	3	3
1001 ft	VLV	6,5	6,5	6,5	6,5	6,5	6,5
300 m	AVA	1	1,5	1,5	1,5	1,5	2
1000 ft	Gm	52	50	50	48	48	48
	GM	202	200	198	195	192	190
	SPL	NOZG	NOZH	NOZH	NOZI	NOZI	NOZI
0 m	POS	5	5	4	3	3	3
0 ft	VLV	6,5	6,5	6,5	6,5	6,5	6,5

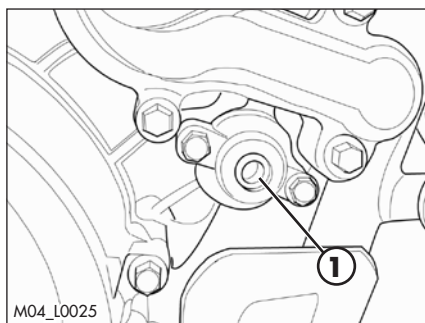


Version RX 350 carb. PWK 385							
Altitude (SLM)	Carburetor setting	Ambient temperature					
		-20°C ÷ ÷ -7°C	-6°C ÷ 5°C	6°C ÷ 15°C	16°C ÷ 24°C	25°C ÷ 36°C	37°C ÷ 49°C
		-2°F ÷ 20°F	19°F ÷ 41°F	42°F ÷ 60°F	61°F ÷ 78°F	79°F ÷ 98°F	99°F ÷ 120°F
3000 m	AVA	1,5	2	2	2,5	2,5	
10000 ft	Gm	45	45	45	42	42	
↑	GM	180	178	175	172	170	
	SPL	NOZD	NOZE	NOZE	NOZF	NOZF	
2301 m	POS	3	3	3	2	2	
7501 ft	VLV	6,5	6,5	6,5	6,5	6,5	
2300 m	AVA	1,5	1,5	2	2	2,5	2,5
7500 ft	Gm	45	45	45	42	42	42
↑	GM	182	180	178	175	172	170
	SPL	NOZD	NOZD	NOZE	NOZE	NOZF	NOZF
1501 m	POS	3	3	3	3	2	2
5001 ft	VLV	6,5	6,5	6,5	6,5	6,5	6,5
1500 m	AVA	1,5	1,5	1,5	2	2	2,5
5000 ft	Gm	45	45	45	45	45	42
↑	GM	185	182	180	178	175	172
	SPL	NOZC	NOZD	NOZD	NOZE	NOZE	NOZF
751 m	POS	4	3	3	3	3	2
2501 ft	VLV	6,5	6,5	6,5	6,5	6,5	6,5
750 m	AVA	1,5	1,5	1,5	1,5	2	2
2500 ft	Gm	48	45	45	45	45	45
↑	GM	188	185	182	180	178	175
	SPL	NOZC	NOZC	NOZD	NOZD	NOZE	NOZE
301 m	POS	5	4	3	3	3	3
1001 ft	VLV	6,5	6,5	6,5	6,5	6,5	6,5
300 m	AVA	1	1,5	1,5	1,5	1,5	2
1000 ft	Gm	48	48	45	45	45	45
↑	GM	190	188	185	182	180	178
	SPL	NOZB	NOZC	NOZC	NOZD	NOZD	NOZE
0 m	POS	5	5	4	3	3	3
0 ft	VLV	6,5	6,5	6,5	6,5	6,5	6,5

## EXHAUST VALVE CONTROL ADJUSTMENT

ATTENTION! The vehicle is provided with an exhaust valve whose fine tuning is performed during the final try-out of the engine. The position of adjustment valve **1** must not be modified for any reason.

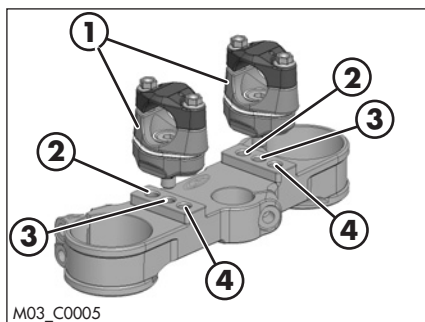
For any adjusting, please contact Betamotor's Authorized Service Network.



## HANDLEBAR ADJUSTMENT

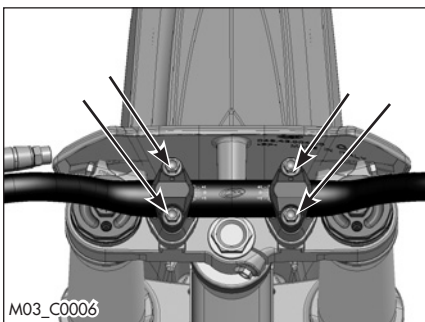
### U-BOLT POSITION ADJUSTMENT

The lower bracket **1** can be mounted in correspondence of the holes nr. **2**, **3** or **4** respectively.



To adjust the position of the u-bolt remove the screws shown in the figure.

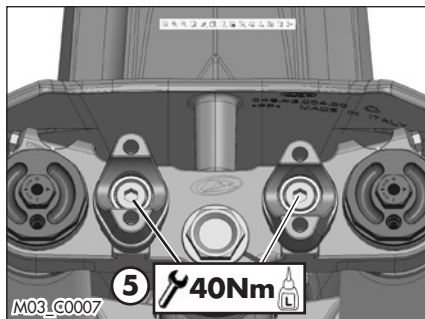
Remove the handlebar.

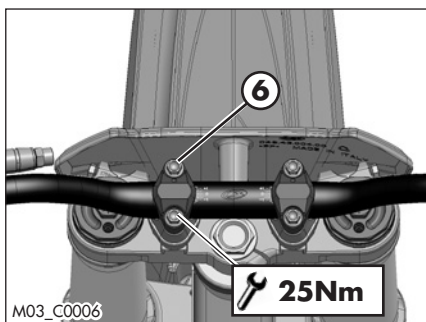


Remove the screws **5**.

Position the U-bolt according to requirements.

At the end refit the screws **5** after the application of thread lock fluid and tighten to the torque indicated.



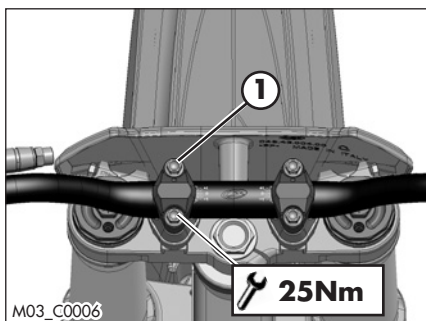


Apply the handlebar.

Apply the top u-bolt.

Refit the screws **6**. Tighten to the torque indicated.

NOTE: First, position the side of the U-bolt indicated with a dot and tighten to the specified torque. Then, perform the tightening on the other side as well.



### ADJUSTMENT OF THE HANDLEBAR POSITION

The handlebar can be adjusted by rotating it back and forth.

To adjust the handlebar loosen screws **1**.

Position the handlebar according to requirements.

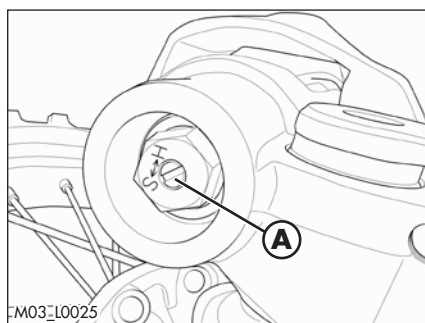
Tighten to the torque indicated.

## ADJUSTING FORK

### ADJUSTING THE REBOUND DAMPER

Extension adjuster **A** manages the fork return speed after each compression. The adjuster closes by moving the control towards the **H sign**, thus increasing the braking effect; the adjuster opens by moving the control towards the **S sign**, thus decreasing the braking effect.

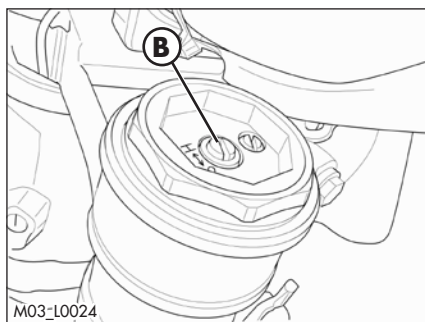
For standard calibration, refer to page 11.



### ADJUSTING THE COMPRESSION DAMPER

Hydraulic compression adjuster **B** is used to manage the ability of the fork to absorb a shock. The adjuster closes by moving the control towards the **H sign**, thus increasing the braking effect; the adjuster opens by moving the control towards the **S sign**, thus decreasing the braking effect.

For standard calibration, refer to page 11.



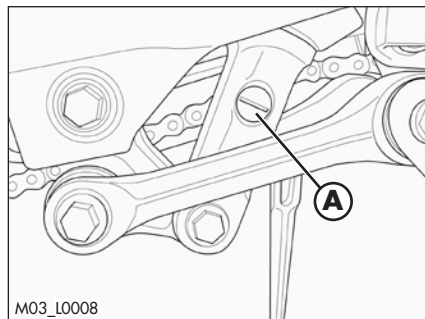
## SHOCK ABSORBER

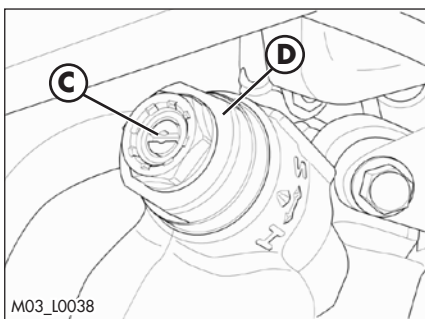
### ADJUSTING THE REBOUND DAMPER

Turn screw **A** to adjust the hydraulic rebound damper.

Turning the screw anticlockwise (out) decreases the damping effect.

For standard setting, refer to page 11.





### ADJUSTING THE HYDRAULIC COMPRESSION DAMPER (HIGH AND LOW SPEEDS)

Adjustment for low compression speed:

- Using a screwdriver, loosen screw **C** by turning it clockwise to increase the hydraulic compression damper.

For standard setting, refer to page 11.

Adjustment for high compression speed:

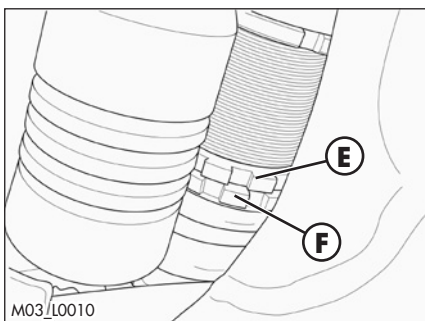
- Turn knob **D** anticlockwise to decrease the hydraulic compression damper.

For standard setting, refer to page 11.

#### WARNING:

Starting from the standard position, turn the knob anticlockwise (with a closing action), the center screw will have an integral movement, then will rotate with the knob.

For standard setting, refer to page 11.



### ADJUSTING THE SPRING PRELOAD

Loosen counter-ring **E**, rotate ring **F** clockwise to increase the spring preload (and consequently the shock absorber preload) or anticlockwise to decrease it. After obtaining the desired preload, turn counter-ring **E** until it stops against adjusting ring **F**.

For standard setting, refer to page 11.

NOTE: for the handling of ring nuts use the specific wrench provided in the standard tool kit shown in the figure.

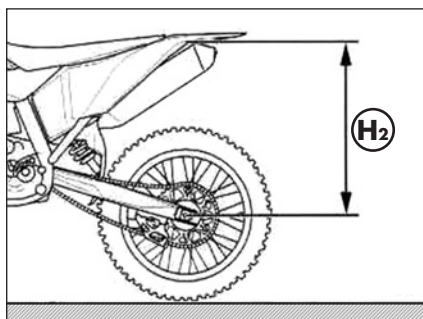
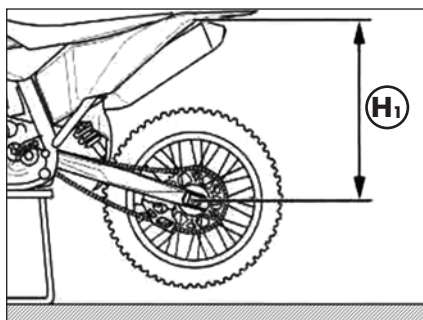


## STATIC SAG LOAD TEST

To verify the static sag of the shock absorber proceed as follows:

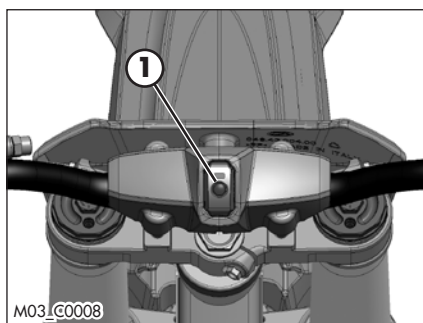
- Place the motorcycle on the work stand.
- Measure the vertical distance between the rear wheel axle and a reference point on the rear fairings.
- Write down the dimension  $H_1$ .
- Remove the work stand.
- Keep the motorcycle in vertical position and measure again the distance between the wheel axle and the reference point previously established.
- Write down the dimension  $H_2$ .

Verify that the value of the static compression  $X = H_1 - H_2$  matches the one shown on page 11. Otherwise, perform the adjustment of the spring preload as described above.



## ENGINE MAPPING ADJUSTMENT

- The button **1** is the engine adjustment map switch: map white light for wet ground, map blue light for dry ground.



M03\_C0008



## CHAPTER 4 CHECKS AND MAINTENANCE

### CONTENTS

Key to symbols.....	40
Engine oil.....	40
Check the level .....	40
Replacement .....	41
Liquid coolant.....	42
Check the level .....	42
Replacement .....	43
Air filter .....	44
Removing and installing air filter .....	44
Air filter cleaning.....	45
Spark plug .....	47
Carburettor .....	48
Draining the carburettor float chamber.....	48
Checking the float level .....	49
Front brake.....	50
Check the level of the front brake fluid .....	50
Restoring the level of the front brake fluid .....	50
Bleeding the front brake .....	51
Front brake lining control .....	52
Brake disc thickness control .....	52
Rear brake .....	53
Check the level of the rear brake fluid.....	53
Restoring the level of the rear brake fluid.....	53
Bleeding the rear brake .....	54
Rear brake lining control .....	55
Brake disc thickness control .....	55
Clutch control .....	56
Check the level .....	56
Bleeding .....	57
Check and adjusting of steering PLAY .....	58
Fork.....	59
Front wheel .....	59
Tightening .....	59
Tyres.....	60
Rear suspension leverage.....	60
Chain .....	61
Check and adjust tightening chain.....	61
Check for chain wear .....	62
Battery .....	63
Battery removal.....	63
Inactivity .....	64
Battery assembly .....	64
Charging the battery .....	65
Fuses .....	65
Cleaning the vehicle.....	66
General precautions .....	66
Prolonged inactivity .....	67
Scheduled maintenance vehicle .....	68
Tightening torque overview .....	70



## KEY TO SYMBOLS



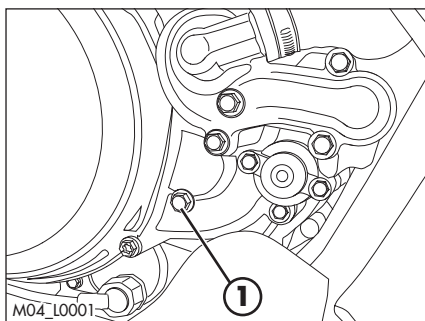
Tightening torque



Threadlocker Medium



Grease



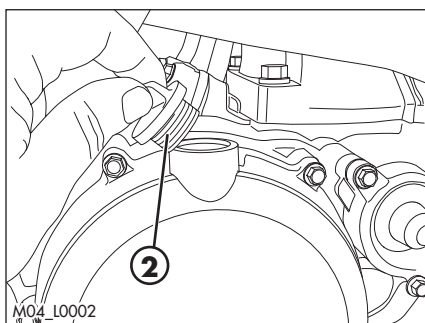
## ENGINE OIL

## CHECK THE LEVEL

Hold the vehicle upright.  
Position the drive on a flat base ensuring stability.

Remove the inspection cap **1**.

The oil level must arrive to the lower edge of check hole.

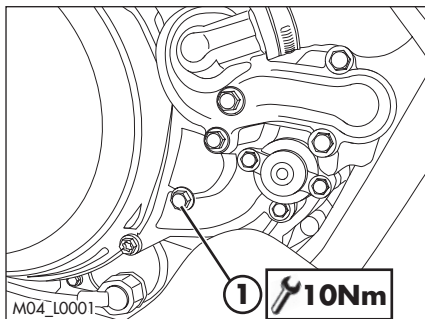


Otherwise restore the oil level through plug **2**.

## WARNING

The inspection cap is **ONLY** to check the oil level. For the oil drain, refer to the paragraph "REPLACEMENT" on page 41.

Use the oil indicated on page 18 in the "Recommended lubricants and liquids" table.



## REPLACEMENT

Always perform the replacement when engine is hot:

- Position the drive on a flat base ensuring stability.
- Place a container under the engine.



**WARNING:**

Hot oil can cause severe burns!  
Screw on filler cap **1** again.

- Unscrew filler plug **1** and drain plug **2**.
- Drain all the oil from the crankcase.
- Place the cap **2** and tighten to specified torque.

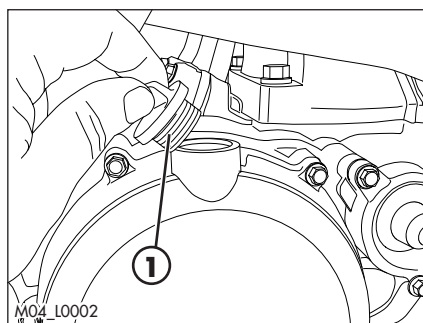
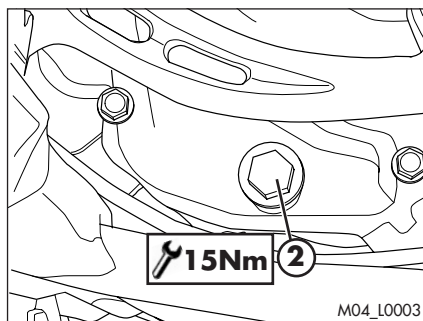
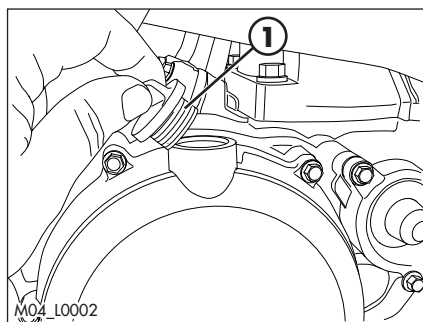
Pour in the quantity of liquid indicated on page 11.

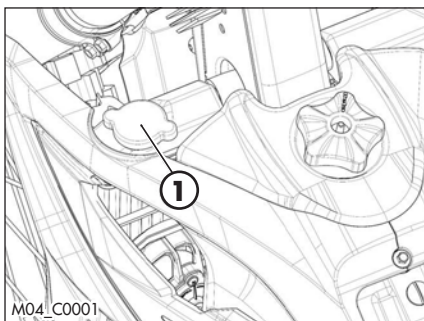
Use the oil indicated on page 18 in the "Recommended lubricants and liquids" table.

Screw on filler cap **1** again.

**WARNING:**

Dispose of used oil in compliance with the regulations in force.





M04\_C0001

## LIQUID COOLANT

### CHECK THE LEVEL



**WARNING:** Never unscrew the filler cap of the radiator when the engine is hot. Danger of burning!

Keep the vehicle in vertical position relative to the ground.

The level of the coolant must be checked when the engine is cold. Use the following procedure:

- Unscrew cap **1** and ensure that the liquid is visible in the lower portion of the loading tube.
- In the case in which the liquid is not visible proceed topping up.
- At the end of operation refit the filler cap.

Use the liquid coolant indicated on page 18 in the "Recommended lubricants and liquids" table.



**WARNING:** Never unscrew the filler cap of the radiator when the engine is hot. Danger of burning!



**WARNING:**  
Wear appropriate protective clothing and protection gloves.



Keep coolant out of reach of children.



Avoid any direct contact of the coolant with skin, eyes or clothing. If this happens:

- with the eyes, rinse immediately with plenty of water and seek medical advice;
- with skin, Immediately clean contaminated areas with soap and water Change clothing that is contaminated with coolant.

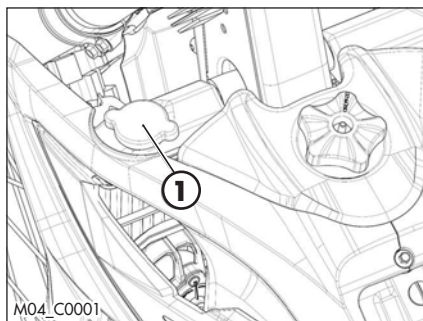
If coolant is swallowed, contact a doctor immediately.

## REPLACEMENT

Keep the vehicle in vertical position relative to the ground.

Replacement of the coolant must take place when the engine is cold.

- Unscrew cap **1**.



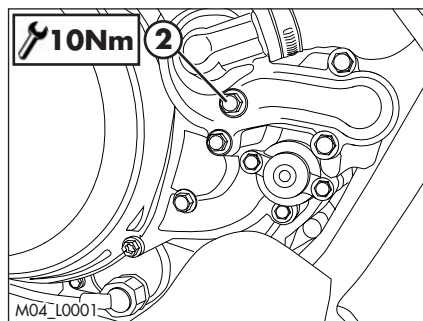
- Place a container under screw **2**.

- Unscrew the screw **2**.

- Drain the liquid.

- Tighten screw **2** applying the specific washer.

- Proceed to filling.



The amounts of liquid are shown on page 11.

Use the liquid indicated on page 18 in the "Recommended lubricants and liquids" table.



**WARNING:**

Never unscrew the filler cap of the radiator when the engine is hot.  
Danger of burning!



**WARNING:**

Wear appropriate protective clothing and protection gloves.



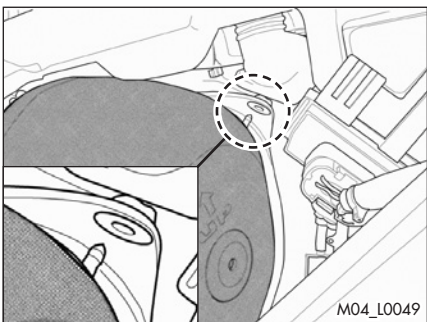
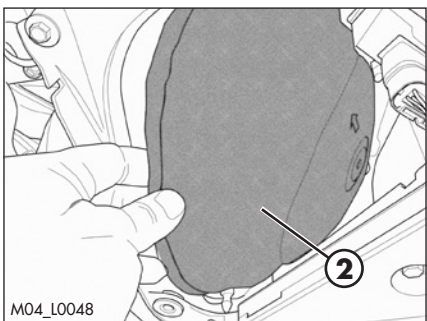
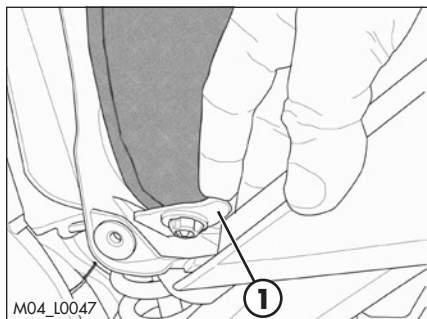
Keep coolant out of reach of children.



Avoid any direct contact of the coolant with skin, eyes or clothing. If this happens:

- with the eyes, rinse immediately with plenty of water and seek medical advice;
- with skin, Immediately clean contaminated areas with soap and water Change clothing that is contaminated with coolant.

If coolant is swallowed, contact a doctor immediately.



## AIR FILTER

Check after every ride.

### REMOVING AND INSTALLING AIR FILTER

To access the filter is necessary:

- Remove the air filter cover (page 73).
- Release filter fastener **1**.
- Pull out air filter **2**.

Reassemble by performing the operations in reverse order.



#### WARNING:

After every intervention, check that nothing has been left inside the filter box.



#### WARNING!

When re-inserting the filter, be careful that the pin on the filter cage is properly engaged into the specific housing.



#### NOTE:

If the filter is damaged, replace it immediately.

To replace, contact authorised Beta-motor customer service.



#### WARNING:

Never use the vehicle if the air filter is not in place. The infiltration of dust and dirt can cause damage and considerable wear.



#### WARNING:

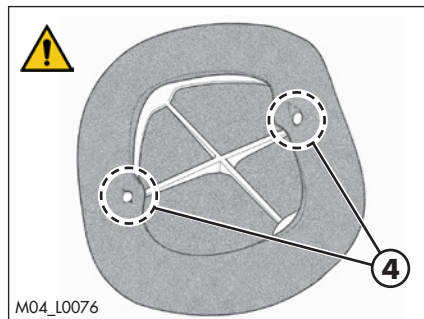
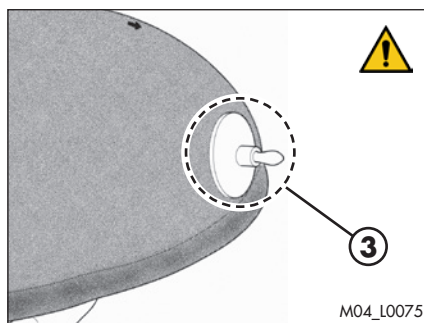
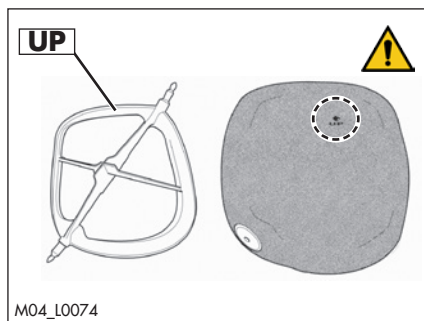
After every intervention, check that nothing has been left inside the filter box.

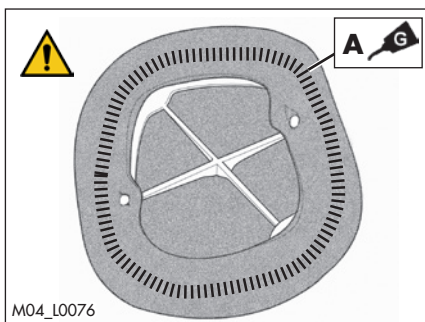
## AIR FILTER CLEANING

- Thoroughly wash the filter with water and soap.
- Dry the filter.
- Wet the filter with filter oil and then remove the excess oil to prevent it from dripping.

Apply the sponge filter element to the cage with care:

- to make to correspond the sign UP of the filter with that indicated by the cage.
- To completely insert the rungs **3** of the cage into the filter seats.
- To hook the inside edges of the filter with the correspondents grafts **4** found on the cage.





Note: before refitting the filter to the vehicle is recommended to apply a long-term grease in the area **A**.

## SPARK PLUG

Keeping the spark plug in good condition will reduce fuel consumption and increase engine performance.

To access the spark plug, it is advisable to remove the fuel tank with side fairings to make the operation easier (page 74).

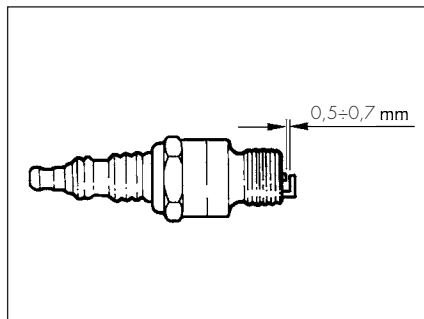
To perform the check, just extract the spark plug cap and unscrew the spark plug by means of the provided wrench.

Carefully clean the electrodes using a wire brush. Blow the spark plug with compressed air to prevent any residues from getting into the engine.

Examine the distance between the electrodes with a feeler. This distance should be from 0,5 - 0,7 mm. If it is not, it may be corrected by bending the earth electrode.

Check as well that there are no cracks in the insulation or corroded electrodes. If so, replace immediately.

Lubricate the spark plug thread, and then (when the engine is cold) screw in the spark plug by hand to its abutting end. Finally tighten the spark plug with the spanner.



**WARNING:**

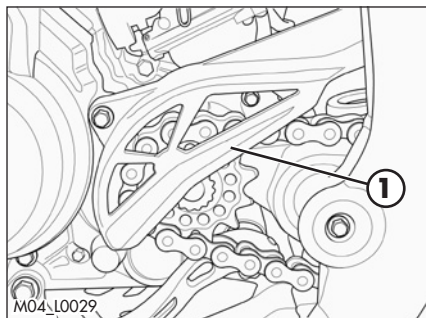
Do not check while the engine is hot.



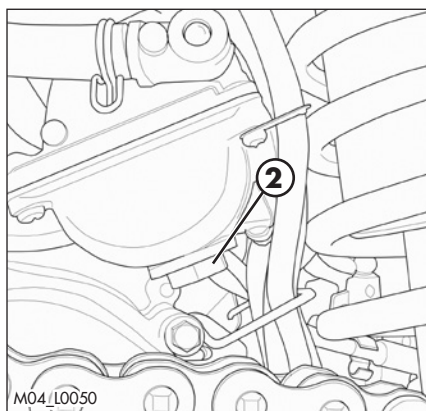
## CARBURETTOR

### DRAINING THE CARBURETTOR FLOAT CHAMBER

If the carburettor tank needs to be emptied, proceed as described.



Remove the chain protection **1**, close the tank tap and put a cloth under the carburettor, so that you can collect the running out fuel.



Open the drain screw **2** to drain the fuel. Close the drain screw.

Apply the chain protection and tighten the screws at 10Nm.



**WARNING:**

Follow action on a cold engine.



**WARNING:**

Fire hazard. Fuel is highly flammable.



Always stop the engine when refuelling and keep open flames and lighted cigarettes away.



Refuel in an open well ventilated area.



Immediately clean up any spilled fuel.


**WARNING:**

Risk of poisoning!

Fuel is poisonous liquid and a health hazard.



Wear appropriate protective clothing and protection gloves.

Fuel must not come into contact with the skin, eyes, and clothing. Do not breathe in the fuel vapours. If contact occurs with the eyes, rinse immediately with plenty of water and seek medical advice. If contact occurs with skin, immediately clean contaminated areas with soap and water. If fuel is swallowed, contact a doctor immediately. Change clothing that is contaminated with fuel.

**WARNING:**

Environmental pollution hazard!

The fuel must not contaminate the ground water, the ground, or the sewage system.

**CHECKING THE FLOAT LEVEL**

Remove the carburettor from the vehicle after following the procedure for emptying the carburettor bowl (page 48).

Remove the float chamber.

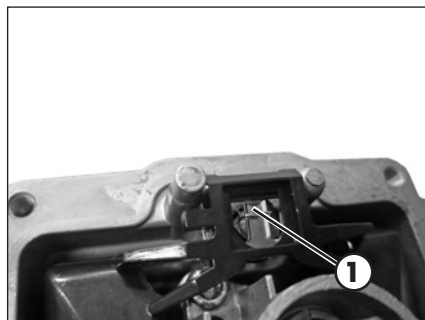
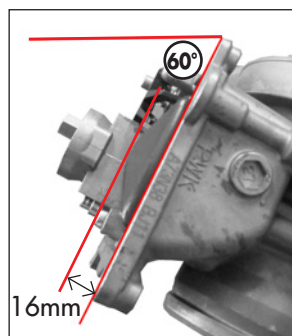
Keep the carburettor on a 60° approx. inclined, so that float leans on the needle valve without pressing it.

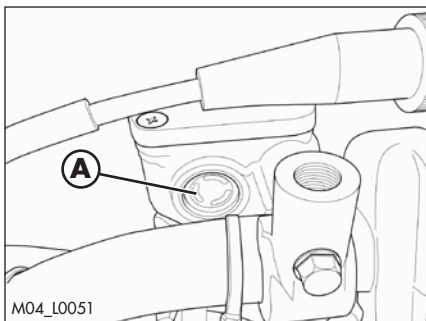
In this position the edge of the float should be at the specified height (see image).

If the float height does not correspond to the nominal value, check the float needle valve and if necessary replace it.

If the needle valve is in working order, adjust the float height by bending float lever **1**.

Assemble the carburettor tank, assemble the carburettor and check idling.





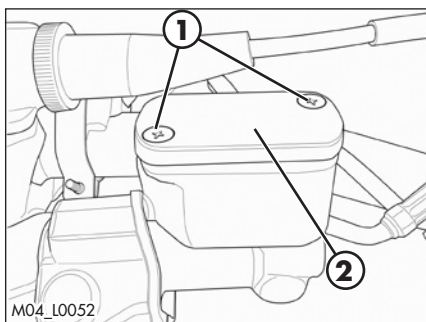
## FRONT BRAKE

### CHECK THE LEVEL OF THE FRONT BRAKE FLUID

Check the level of the brake fluid through sight **A**. The level of the fluid should never fall below the mark in the sight.

### RESTORING THE LEVEL OF THE FRONT BRAKE FLUID

To restore the level of the brake fluid, loosen the two screws **1**, lift cap **2** and add brake fluid until its level is 5 mm below the upper rim of the reservoir.



Use the liquid indicated on page 18 in the "Recommended lubricants and liquids" table.



#### WARNING:

The clutch fluid is extremely corrosive. Take care not to spill it on the paintwork.



Wear appropriate protective clothing and protection gloves.



Keep coolant out of reach of children.



**WARNING:** Avoid any direct contact of the liquid with skin, eyes or clothing. If this happens:

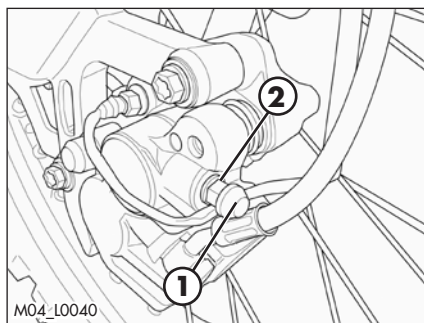
- with the eyes, rinse immediately with plenty of water and seek medical advice.
- with skin, immediately clean contaminated areas with soap and water. Change clothing that is contaminated with liquid.

If liquid is swallowed, contact a doctor immediately.

## BLEEDING THE FRONT BRAKE

To bleed air from the front brake circuit, proceed as follows:

- Remove the rubber cap **1** from the valve **2**.
- Open the sump cap.
- Place one end of a small transparent tube into the valve **2**, and the other end inside a container.
- Pump with the brake lever 2/3 times and keep the lever pressed.
- Unscrew the valve and let the oil drain.
- If air is still visible in the tube repeat above operation until obtaining a continuous outflow of oil within no air bubbles.
- Close the valve and release the lever.



### NOTE:

during this procedure, continuously top up the brake pump tank to replace the oil that is out flowing.

- Remove the tube.
- Replace the rubber cap.
- Close the oil reservoir cap.

Use the liquid indicated on page 18 in the "Recommended lubricants and liquids" table.



### WARNING:

The brake fluid is extremely corrosive. Take care not to spill it on the paintwork.



Wear appropriate protective clothing and protection gloves.



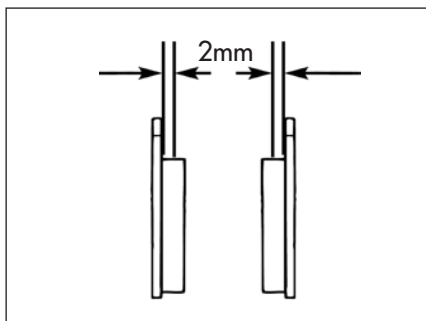
Keep coolant out of reach of children.



**WARNING:** Avoid any direct contact of the liquid with skin, eyes or clothing.  
If this happens:

- with the eyes, rinse immediately with plenty of water and seek medical advice.
- with skin, immediately clean contaminated areas with soap and water. Change clothing that is contaminated with liquid.

If liquid is swallowed, contact a doctor immediately.



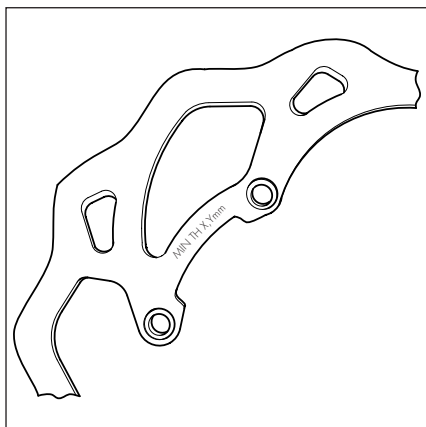
## FRONT BRAKE LINING CONTROL

In order to verify the wear condition of front brake is enough to view the caliper from the bottom, where is possible to glimpse the brake lining tails which will have to show a brake of 2 mm in thickness. If the stratum is lesser let's start replacing them.

Note:

Perform the check according to the times shown in the table on page 68.

To replace, contact authorised Betamotor customer service.



## BRAKE DISC THICKNESS CONTROL

Periodically verify disc condition. In case signs of damage, veins, or deformations are present, proceed with replacement. Verify disc thickness. The minimum thickness is engraved on the disc.

Once the limit is in proximity or has been reached, proceed with brake disc replacement.

For replacement, contact an authorised Betamotor after-sales service centre.

## REAR BRAKE

### CHECK THE LEVEL OF THE REAR BRAKE FLUID

Check the level of the brake fluid through sight **A**. The level of the fluid should never fall below the mark in the sight.

### RESTORING THE LEVEL OF THE REAR BRAKE FLUID

To restore the oil level, top up by means of oil filler cap **1**.

Use the liquid indicated on a page 18 in the "Recommended lubricants and liquids" table.



#### WARNING:

The brake fluid is extremely corrosive. Take care not to spill it on the paintwork.



Wear appropriate protective clothing and protection gloves.



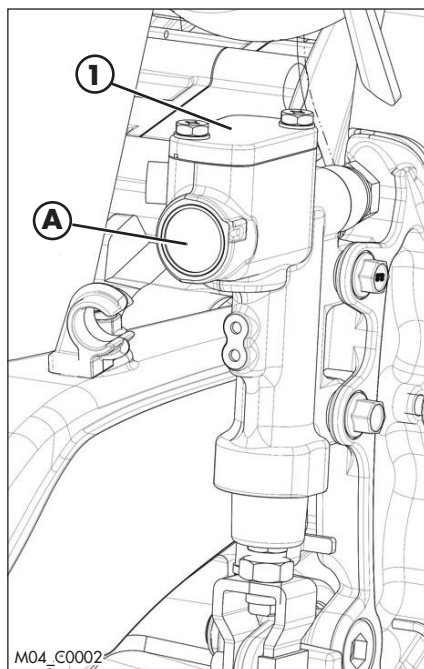
Keep coolant out of reach of children.

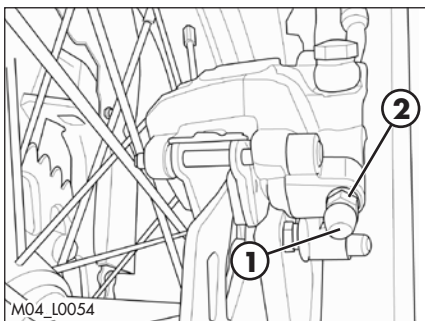


WARNING: Avoid any direct contact of the liquid with skin, eyes or clothing. If this happens:

- with the eyes, rinse immediately with plenty of water and seek medical advice.
- with skin, immediately clean contaminated areas with soap and water. Change clothing that is contaminated with liquid.

If liquid is swallowed, contact a doctor immediately.





## BLEEDING THE REAR BRAKE

To bleed air from the rear brake circuit, proceed as follows:

- Remove the rubber cap **1** from the valve **2**.
- Open the sump cap.
- Place one end of a small transparent tube into the valve **2**, and the other end inside a container.
- Pump with the brake lever 2/3 times and keep the pedal pressed.
- Unscrew the valve and let the oil drain.
- If air is still visible in the tube repeat above operation until obtaining a continuous outflow of oil without any air bubbles.
- Close the valve and release the lever.

### NOTE:

During this procedure, continuously top up the brake pump tank to replace the oil that is out flowing.

- Remove the tube.
- Replace the rubber cap.
- Close the oil reservoir cap.

Use the liquid indicated on page 18 in the "Recommended lubricants and liquids" table.



### WARNING:

The brake fluid is extremely corrosive. Take care not to spill it on the paintwork.



Wear appropriate protective clothing and protection gloves.



Keep coolant out of reach of children.



**WARNING:** Avoid any direct contact of the liquid with skin, eyes or clothing.  
If this happens:

- with the eyes, rinse immediately with plenty of water and seek medical advice.
- with skin, immediately clean contaminated areas with soap and water. Change clothing that is contaminated with liquid.

If liquid is swallowed, contact a doctor immediately.

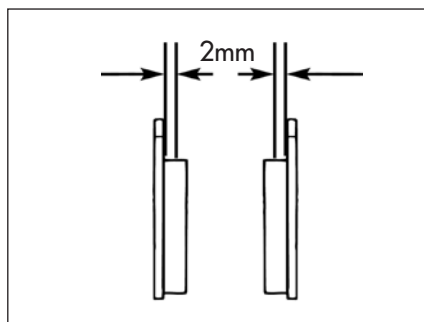
## REAR BRAKE LINING CONTROL

In order to verify the wear condition of rear brake is enough to view the caliper from above, where is possible to glimpse the brake lining tails which will have to show a brake of 2 mm in thickness. If the stratum is lesser let's start replacing them.

Note:

Perform the check according to the times shown in the table on page 68.

To replace, contact authorised Betamotor customer service.

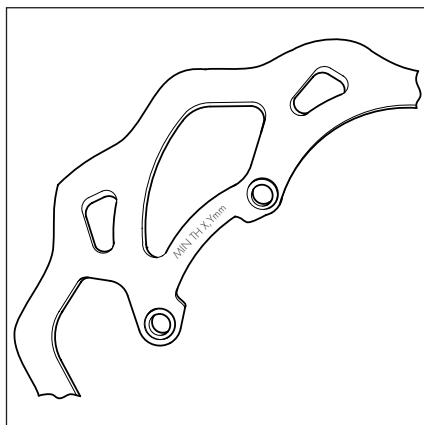


## BRAKE DISC THICKNESS CONTROL

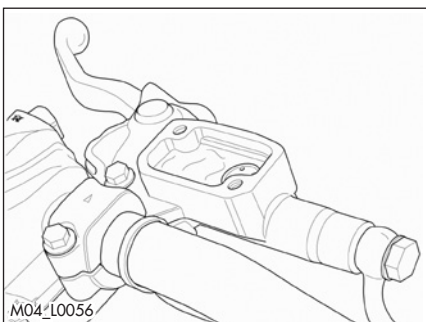
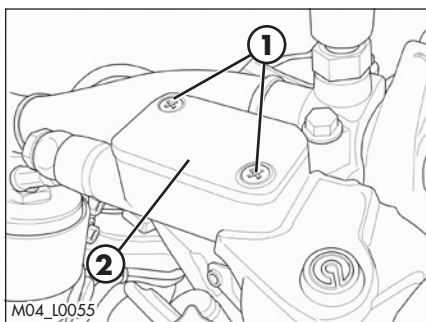
Periodically verify disc condition. In case signs of damage, veins, or deformations are present, proceed with replacement. Verify disc thickness. The minimum thickness is engraved on the disc.

Once the limit is in proximity or has been reached, proceed with brake disc replacement.

For replacement, contact an authorised Betamotor after-sales service centre.







## CLUTCH CONTROL

### CHECK THE LEVEL

To check the oil level in the clutch pump, first remove cover **2**.

Remove the two screws **1** and take off cover **1** together with the rubber bellows. With the clutch pump in a horizontal position, the level of the oil should be 5 mm below the upper rim.

In the case where the level is lower than specified top up.

Use the liquid indicated on page 18 in the "Recommended lubricants and liquids" table.



**WARNING:**

The clutch fluid is extremely corrosive. Take care not to spill it on the paintwork.



Wear appropriate protective clothing and protection gloves.



Keep coolant out of reach of children



**WARNING:** Avoid any direct contact of the liquid with skin, eyes or clothing. If this happens:

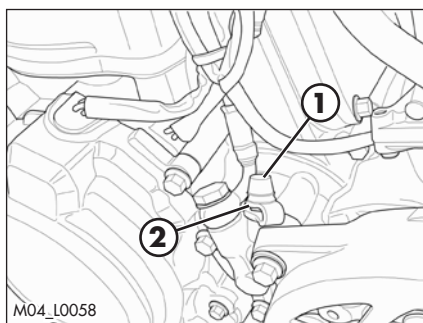
- with the eyes, rinse immediately with plenty of water and seek medical advice.
- with skin, immediately clean contaminated areas with soap and water. Change clothing that is contaminated with liquid.

If liquid is swallowed, contact a doctor immediately.

## BLEEDING

To bleed air from the clutch pump, proceed as follows:

- Remove the rubber cap **1** from the valve **2**.
- Open the sump cap.
- Place one end of a small transparent tube into the valve **2**, and the other end inside a container.
- Pump with the clutch lever 2/3 times and keep the lever pressed.
- Unscrew the valve and let the oil drain.
- If air is still visible in the tube repeat above operation until obtaining a continuous outflow of oil within no air bubbles.
- Close the valve and release the lever.



### NOTE:

During this procedure, continuously top up the pump tank to replace the liquid that is out flowing.

- Remove the tube.
- Replace the rubber cap.

Use the liquid indicated on page 18 in the "Recommended lubricants and liquids" table.



### WARNING:

The clutch fluid is extremely corrosive. Take care not to spill it on the paintwork.



Wear appropriate protective clothing and protection gloves.



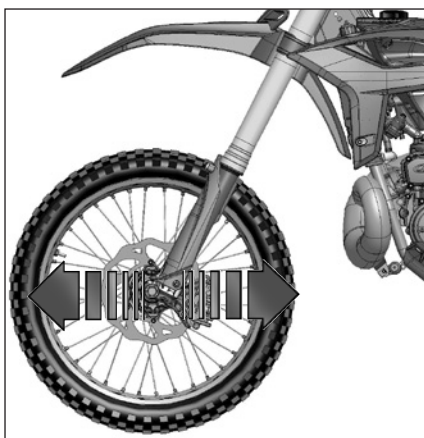
Keep coolant out of reach of children.



**WARNING:** Avoid any direct contact of the liquid with skin, eyes or clothing. If this happens:

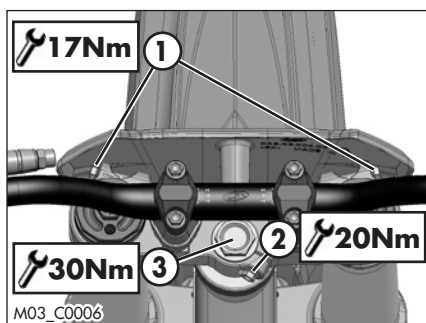
- with the eyes, rinse immediately with plenty of water and seek medical advice.
- with skin, immediately clean contaminated areas with soap and water. Change clothing that is contaminated with liquid.

If liquid is swallowed, contact a doctor immediately.



## CHECK AND ADJUSTING OF STEERING PLAY

Periodically check the play in the steering sleeve by moving the fork back and forth as shown in the figure. Whenever you feel clearance, adjust as described below:



- Loosen the screws **1**
  - Loosen the screw **2**
  - Reduce the play by turning nut **3**
- Tighten the screws to the prescribed torque values.



### WARNING:

Tightening of the screws should be carried out by adjusting the torque wrench to the stability torque with repeated tightening until stability torque has been achieved.

## FORK

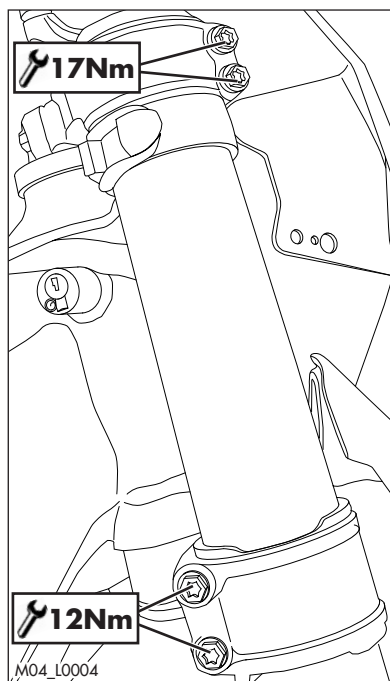
To maintenance refer at an authorized service centre Betamotor.

To check the tightening torques see as shown in the figure.



### WARNING:

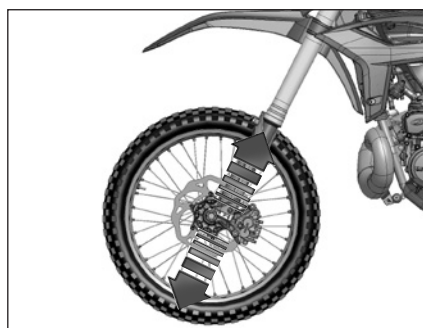
Tightening of the screws should be carried out by adjusting the torque wrench to the stability torque with repeated tightening until stability torque has been achieved.



## FRONT WHEEL

### TIGHTENING

Following removal of the wheel:  
compress and release the fork 3-4 times.

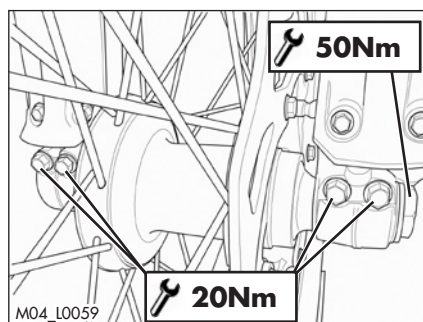


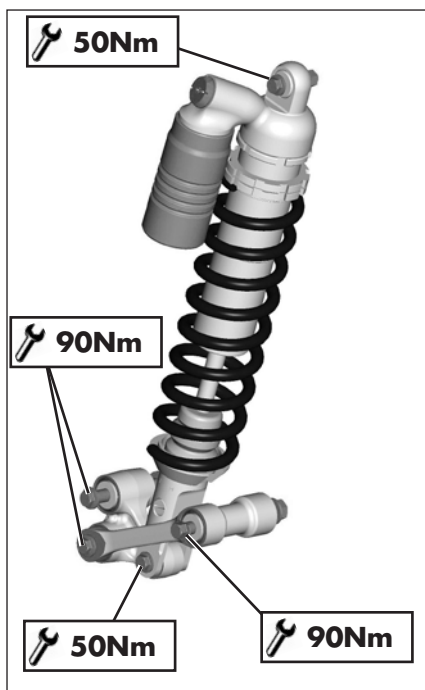
Tighten the wheel bolt and the screws of the footleg.



### WARNING:

Tightening of the screws should be carried out by adjusting the torque wrench to the stability torque with repeated tightening until stability torque has been achieved.





## REAR SUSPENSION LEVERAGE

In order to guarantee optimal operation and duration over time of the progressive leverage of the rear suspension, it is recommended to periodically check correct tightness of nuts and bolts.

Verify that suspension nuts and bolts are at the indicated torque.

## TYRES

Only fit tyres approved by BETAMOTOR.

Unsuitable tyres can adversely affect the road holding of the vehicle.

- To protect your safety, immediately replace any damaged tyres.
- Slick tyres adversely affect the road holding of the vehicle, especially on wet roads and in off-road riding.
- Insufficient pressure results in abnormal wear and overheating of the tyres.
- The front and rear tyres must have the same tread design.
- Always measure the inflating pressures when the tyres are cold.
- Keep the tyre pressures within the prescribed range.

## CHAIN

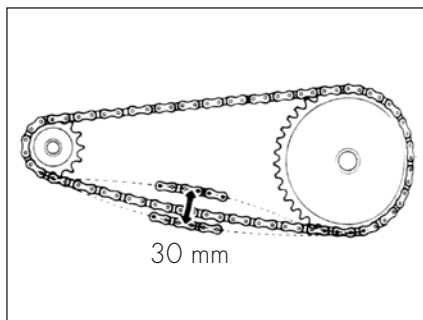
Checking the drive chain periodically to ensure longer chain life. Always keep it lubricated and clean of deposited dirt.

Take special care in preventing the lubricant from coming into contact with the rear tyre or brake disc, otherwise the tyre grip and the action of the brake would be greatly reduced, making it very difficult to control the vehicle.

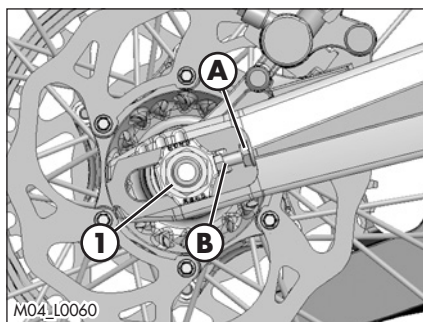
### CHECK AND ADJUST TIGHTENING CHAIN

Hold the vehicle upright on the ground on a flat base ensuring stability.

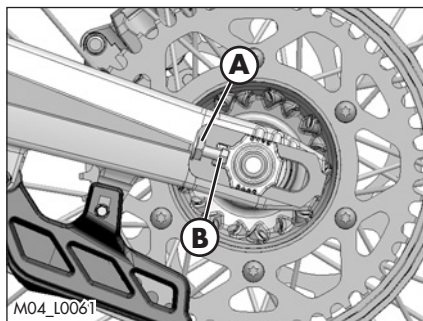
The chain clearance must comply with the measure indicated. Tension the chain if the clearance exceeds the indicated value.

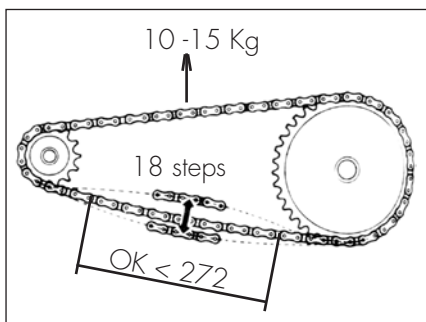
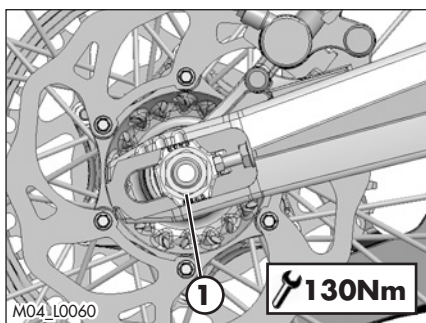


- Loosen the pin **1**.



- Loosen counter nuts **A** on either side of the fork.
- Turn adjusting screws **B** on either side until the desired chain tension is obtained.
- Tighten counter nuts **A** on either side of the fork.





- Tighten the pin **1** to the torque indicated.

### CHECK FOR CHAIN WEAR

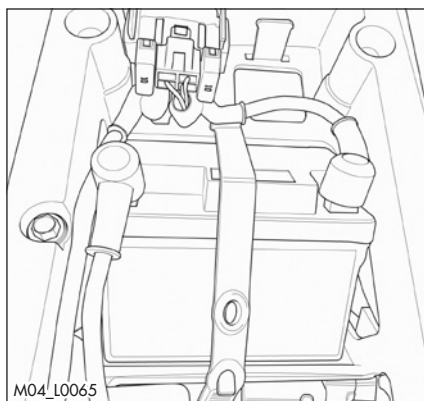
Shift into neutral, pull up the upper stretch of the chain with a force of 10 - 15 kg (see figure). Measure the length of 18 links on the lower stretch of the chain. If the length is  $\geq 272$  mm, replace the chain. Chains do not always wear evenly. For this reason it is important that the measurement is taken at different points along the chain.

When fitting a new chain, be sure to replace the chainring and sprocket as well. New chains wear more quickly if fitted on old and worn sprockets. After replacing the chain, adjust its tension as described on page 59.

## BATTERY

Battery is located under the saddle and requires no maintenance.

Keep the battery terminals clean. If necessary, protect them with a thin film of acid-free grease.



### WARNING:

The battery contains hazardous substances:

- Keep the battery out of the reach of children.



- Keep sparks and open flames away from the battery.



- Charge the battery only in well-ventilated areas, keeping it away from flammable materials. Use only chargers suitable for charging lithium-ion batteries.



- Do not attempt to charge fully exhausted batteries with a voltage lower than the minimum 9V. In this case, dispose of the battery according to applicable regulations.



- Do not remove the protections.

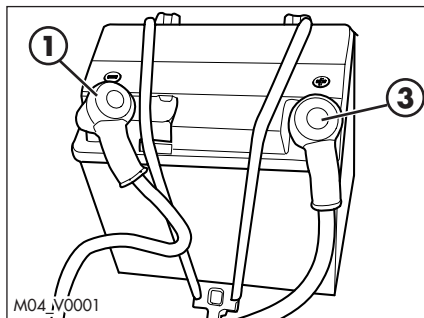
- When installing the battery, be sure to observe the polarity of the terminals.

## BATTERY REMOVAL

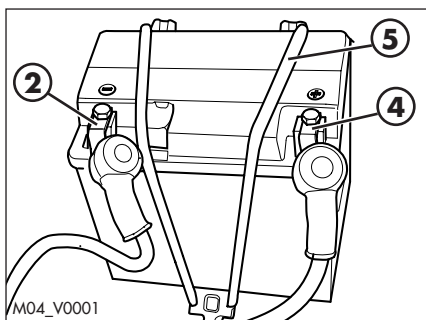
Shut off all electrical users and stop the engine.

Remove the saddle (page 72).

FIRST remove the cap **1** of the negative pole and disconnect the negative lug **2** (black) from the negative pole (-).



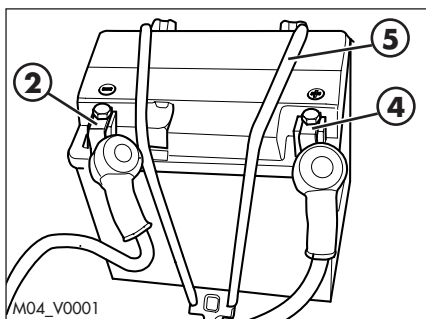




THEN remove the cap of the positive pole **3** and disconnect the positive lug **4** (red) from the positive pole (+).

Release the rubber band **5**.

Remove the battery.



## BATTERY ASSEMBLY

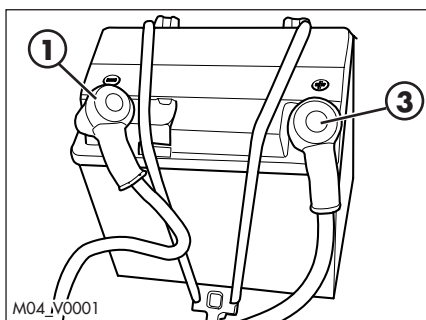
When fitting the battery, insert it with the terminals as shown in picture.

Reattach the rubber band **5**.

FIRST Connect the positive lug **4** (red) to the positive pole (+) of the battery by pushing the protective cap **3** in its position.

THEN secure the negative lug **2** (black) to the negative pole (-) of the battery by bringing the relative protective cap **1** in position.

Refit the saddle (page 72).



## INACTIVITY

If the vehicle is not going to be used for a long time:

- remove the battery (page 63)
- charge with an adequate charger (page 65)
- store the battery in a dry place. The ideal temperature for storing the lithium-ion battery is 20°C.

## CHARGING THE BATTERY

Check the battery charge using a multimeter or by pressing the "TEST" button on the battery (if it is present)

- Voltage < 9V or "LOW":
  - Do NOT charge the battery
  - Replace the battery with a new equivalent one
- Voltage < 12.4V or "MED":
  - Charge the battery



Guidelines to charge the battery:



Use **ONLY** chargers suitable for charging lithium-ion batteries.

Maximum charging voltage: 14.4V

Maximum charging current: 3.0A

Maximum charge time: 12h

Recharge the battery regularly with a specific battery charger when the vehicle is not used for more than 6 months

Ideal temperature for charging lithium ion batteries: 20 °C.

## FUSES

To access the fuse, remove the saddle (page 72).

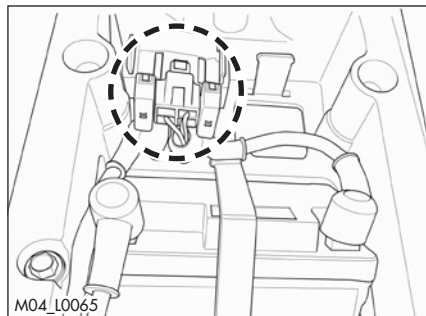
In the case of blown fuse, the vehicle will not start/stop:

Three spare fuses comes with the kit accompanying the vehicle.



A blown fuse should only be replaced with another of the same type.



Should the new fuse also burn out when fitted, immediately contact a specialized BETAMOTOR dealer.



# 4

## CLEANING THE VEHICLE

### GENERAL PRECAUTIONS

-  **WARNING:** Do not clean your vehicle with a high-pressure device with a strong jet of water. Excessive pressure can reach electrical components, connectors, flexible cables, bearings, etc and can damage or destroy them.
-  **WARNING:** Wash motorbikes frequently with cold water that are used near the sea (salty air) and on roads subject to salt spreading in winter. Cover with a film of oil or silicone spray unpainted parts and the most exposed parts such as wheels, forks and swingarm. Do not treat rubber parts and brakes.

When cleaning, avoid direct exposure to sunlight.

Close off the exhaust system to prevent water from entering.

-  Avoid directing the jet of water onto the air filter box cover and the throttle body.

### WASHING MODE



Use water jet to soften the dirt and mud accumulated on the paintwork, then remove them with a soft bodywork sponge soaked in water and shampoo. Subsequently rinse well with water, and dry with air and cloth or suede leather.

Detergents pollute water. Always wash the vehicle in areas equipped for collection and purification of the washing liquids.

### AFTER WASHING

Proceed to the emptying of the filter box using the appropriate ventilation and drying.

After cleaning, ride a short distance until the engine reaches operating temperature.

-   **WARNING:** braking effect is reduced with wet brakes. Operate the brakes cautiously to allow them to dry.

Push back the handlebar control covers, so that water can evaporate.

When the bike is completely dry and cooled down, lubricate all moving parts.

Treat all plastic and painted components with non-aggressive detergents or products that are specific for the care of the motorcycle.

## PROLONGED INACTIVITY

A few simple operations should be performed to keep the vehicle in good condition whenever it is to remain inactive for a long period (e.g. during the winter):

- Thoroughly clean the vehicle.
- Reduce the tyre pressures by approximately 30 percent, and if possible raise the tyres off the ground.
- Cover the unpainted parts, excepting the brakes and the rubber parts, with a film of oil or spray silicone.
- Protect the vehicle with a dust cover.

### AFTER PROLONGED INACTIVITY

- Restore the tyre inflating pressures.
- Check the tightening of all the screws having an important mechanical function.

# 4 SCHEDULED MAINTENANCE VEHICLE

**WARNING!** Register the maintenance operation on Betanet.

**WARNING!** After the first 3 hours of riding check the tightening of the following safety parts:

- Rear sprocket
- Brake discs
- Brake calipers
- Pinion
- Brake pedal

		End of running-in	Coupon 1 - 20 hours	Coupon 2 - 40 hours	Coupon 3 - 60 hours	Coupon 4 - 80 hours	After every ride
<b>Engine</b>	Gear and clutch oil	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	
	Engine clamping screws to the frame	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	
	Head screws	<b>T</b>		<b>C</b>		<b>C</b>	
	Gearchange lever	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	
	Spark plug	<b>C</b>		<b>S</b>		<b>S</b>	
	Spark plug cap						<b>P</b>
	Driving clutch disks		<b>C</b>	<b>S</b>	<b>C</b>	<b>S</b>	
	Clutch hub		<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	
	Clutch bell		<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	
	Clutch cup spring		<b>C</b>	<b>C</b>	<b>C</b>	<b>S</b>	
	Cylinder			<b>C</b>		<b>C</b>	
	Piston and segments			<b>S</b>		<b>S</b>	
	Connecting rod					<b>S</b>	
	Drive shaft bearings and seals					<b>S</b>	
	Surface appearance of the gearbox					<b>C</b>	
	Gearbox bearings (primary shaft)					<b>S</b>	
	Water pump oil seal			<b>S</b>		<b>S</b>	
	Exhaust valve			<b>C/P</b>		<b>C/P</b>	
	Reed valve			<b>C</b>		<b>S</b>	
	Noise-absorbing material of the silencer		<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	
<b>Carburetor</b>	Tightness	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>
	Idling setting	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>
	Fuel pipe	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>
	Breather pipe	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>
<b>Assembling groups</b>	Coolant system tightness and coolant level	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>
	Exhaust manifold tightness	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>
	Drives sliding and regulation	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>
	Liquid level clutch pump	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	
	Airbox and air filter	<b>P</b>					<b>P</b>
	Final transmission	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>
	Operation of the electric system by blowing and greasing the main connections	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	
	Check and recharge the 12V battery	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>

		End of running-in	Coupon 1 - 20 hours	Coupon 2 - 40 hours	Coupon 3 - 60 hours	Coupon 4 - 80 hours	After every ride
<b>Brakes</b>	Liquid level	C	C	C	C	C	C
	Pads thickness		C	C	C	C	C
	Disc thickness		C	C	C	C	
	Pipe tightness	C	C	C	C	C	C
	Idle travel levers and drives sliding	C	C	C	C	C	C
<b>Cycling</b>	Chassis	C	C	C	C	C	
	Swing arm	C	C	C	C	C	
	Mobile parts	C	C	C	C	C	C
	Shock absorber and telescopic fork tightness	C	C	C	C	C	
	Fork and rear shock absorber oil			S		S	
	Rear suspension linkage	C	C	C	C	C	
	Dust seal	C	C	C	C	C	
	Fuel lines	C	C	C	C	C	
	Bearings of steering	C	C	C	C	C	
	Bolts	T	T	T	T	T	C
<b>Wheels</b>	Wheel spokes and rim coaxiality	C	C	C	C	C	C
	Tyres (wear and pressure)	C	C	C	C	C	C
	Bearings clearance	C	C	C	C	C	C

Key

**C Check** (Clean, adjust, lubricate, replace as necessary)**S Replace/renew****R Adjust****P Clean****T Tighten**

WARNING:

For any service requirements, please contact Betamotor's Authorized Service Network.

# 4 TIGHTENING TORQUE OVERVIEW

Here below is an overview of the tightening torque of all pieces subject to adjustment or maintenance:

Forecarriage		
	Tightening torque [Nm]	Threadlock
Wheel pin	50	
Fork foets - wheel pin	10*	
Brake caliper - Fork	35	M
Left fork protection u-bolt	1,5	
Steering head base - fork legs	12*	
Steering head - fork legs	17*	
Stem pin on steering head	20	
Lower handlebar u-bolt - steering head	40	M
Upper handlebar u-bolt - lower handlebar u-bolt	25	
Steering head clearance adjustment nut	30	

Rear axle		
	Tightening torque [Nm]	Threadlock
Wheel pin	130	
Rear shock absorber - frame	50	M
Rear shock absorber - rocker arm	50	
Connecting rod - frame	90	
Connecting rod - rocker arm	90	
Rocker arm - swinging arm	90	

Engine		
	Tightening torque [Nm]	Threadlock
Gearbox oil drain plug	15	

Engine - Frame			
(*) Fixing	Screw	Threadlock	Tightening torque [Nm]
Engine to the frame	Special screw M10		45
Fixing head to frame tightening brakets	M8x16	M	35
Brackets to attach the head - motor	M8x60	M	35

M Medium strength threadlock



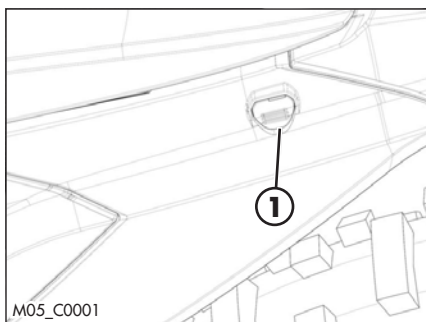
\* WARNING:

Tightening of the screws should be carried out by adjusting the torque wrench to the stability torque with repeated tightening until stability torque has been achieved.

**CHAPTER 5 REMOVING AND INSTALLING SUPERSTRUCTURES****CONTENTS**

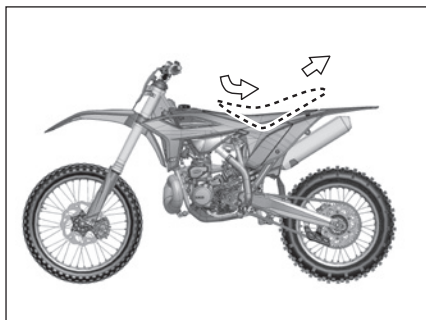
Removing and installing of the saddle.....	72
Removing and installing air filter side panel.....	73
Removing and installing of the complete tank.....	74
Removing and installing side panels and rear mudguard .....	75
Removing and installing the front mask .....	77



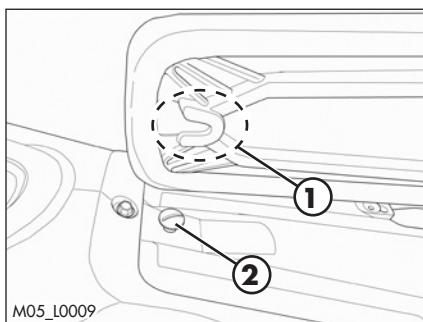


## REMOVING AND INSTALLING OF THE SADDLE

Press button **1**.

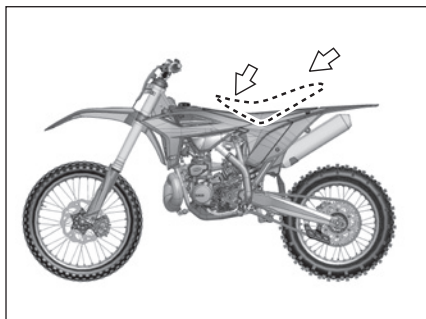


Remove the saddle towards the rear of the motorcycle.



To re-assemble:

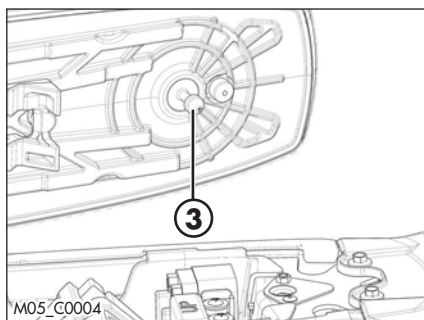
Insert the cavity **1** of the saddle in slot **2**.



Press the saddle down in the middle and at the same time, push it forwards until the bayonet joint engages in its seat.

**WARNING**

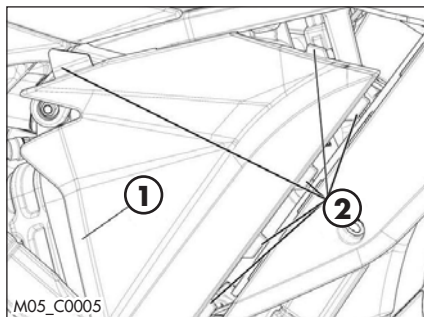
Make sure the bayonet joint **3** is firmly inserted into the button lock.

**REMOVING AND INSTALLING  
AIR FILTER SIDE PANEL**

Grab the side panel in the front side and pull out.

To refit insert the tabs **1** into their slots.

Slide the side panel toward the vehicle.



## REMOVING AND INSTALLING OF THE COMPLETE TANK

Disconnect the fuel tank vent pipe.

Turn the fuel cock to OFF position (page 20) and disconnect the fuel hose from the fuel cock.



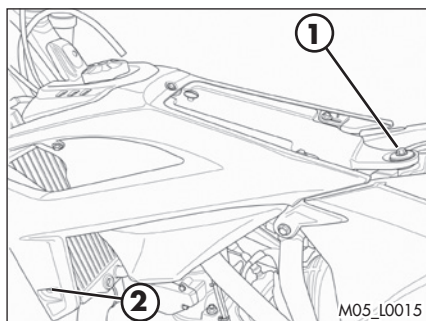
**WARNING:** Follow action on a cold engine and in a well ventilated area.



**WARNING:** Fire hazard. Fuel is highly flammable.



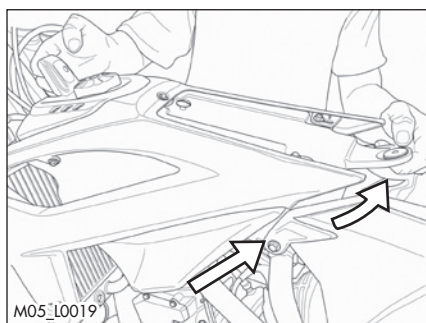
Always stop the engine when refuelling and keep open flames and lighted cigarettes away.



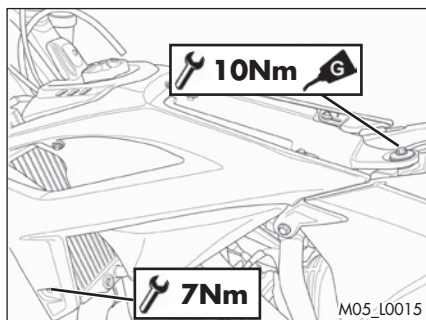
Immediately clean up any spilled fuel.

Remove the saddle (page 72).

Remove the screw **1** fastening the tank to the frame and the screws **2** (one per side) securing the fairing to the radiator.



Lift the tank backwards and remove the tank towards the rear.



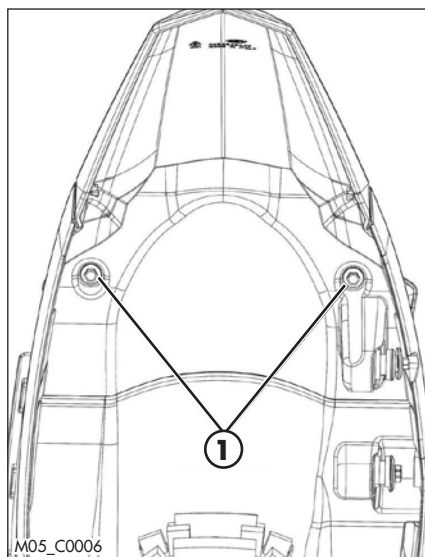
Tighten the tank screws to the torques given.

When assembly is complete, lightly pull the tube **3** so that it is stretched correctly.

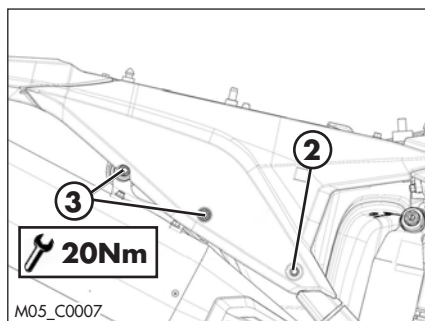
## REMOVING AND INSTALLING SIDE PANELS AND REAR MUDGUARD

To remove the rear side panels it is necessary to:

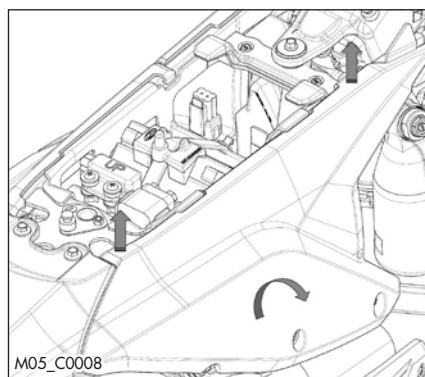
- remove the seat (page 72);
- remove screws **1** that secure the rear mudguard to the side panels.

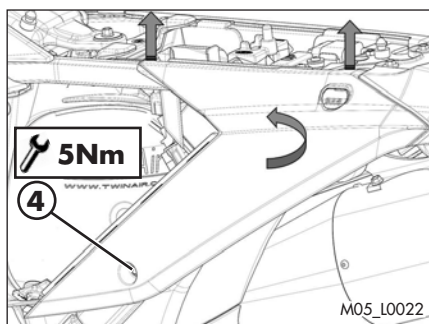


- Remove screw **2** of the right side panel.
- Remove the right front side panel to release the tab on the right rear side panel, located in the top right corner.

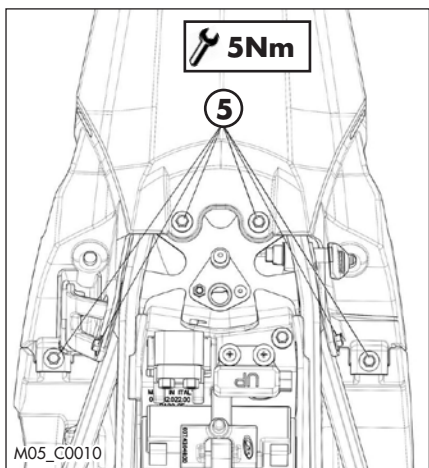


- Grasp the right side panel at the top and pull out the tabs that embrace the frame in the direction indicated by the arrows, turn the side panel clockwise as indicated and release the lower tabs and the tab at the top left.





- Remove screw **4** from the left side panel and follow the same procedure as for the right side panel by turning it anti-clockwise. Removal of the front side panel, which in this case does not secure the side panel, should be excluded.



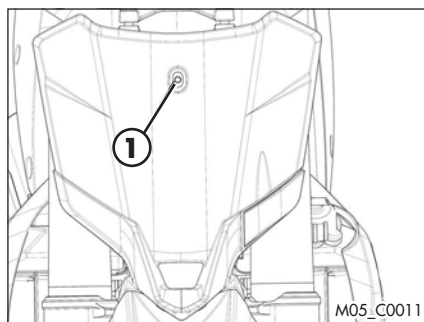
In order to remove the rear mudguard, it is necessary to:

- Remove the silencer by unscrewing screws **3**, taking care not to damage the vehicle.
- Remove screws **5** and slide the mudguard towards the rear.

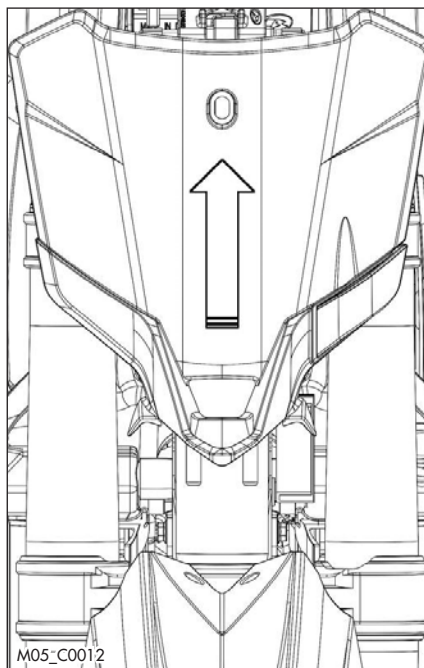
For reassembly, proceed inversely compared to the previously-described disassembly procedures. Refer to the tightening torques, where indicated.

## REMOVING AND INSTALLING THE FRONT MASK

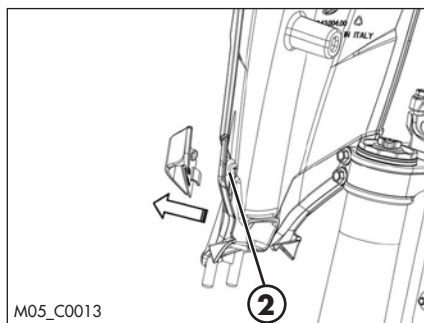
Remove the screw **1**.



Remove the front mask in the direction indicated by the arrow.



Rotate the front mask to allow easy access to screw **2** to unscrew, located behind. Then remove the cable gland.





**CHAPTER 6 TROUBLESHOOTING**

## CONTENTS

Troubleshooting .....	80
Alphabetical index .....	81



# 6 TROUBLESHOOTING

## TRUBLESHOOTING

PROBLEM	CAUSE	REMEDY
Engine does not start	-Fuel system clogged (fuel lines, fuel tank, fuel cock)	Contact authorised BETAMOTOR customer service
	-Air filter dirty	Check the air filter
	-No spark	Clean or replace the spark plug. If the problem persists, contact authorised BETAMOTOR customer service
	- Blown fuse	Check and replace the fuse on the starting relay
	-Engine flooded	Operate the electrical starter push button 2 times for 5 seconds. If the vehicle does not start, remove and dry the spark plug
	- Battery is low	Charge or replace the battery
	-Excessive spark plug gap	Check the distance between the electrodes
	-Ignition connector or coil slackened or oxidized	Clean with a spray product for electric contacts and tighten
	-Presence of water in the carburettor	Empty the carburettor tank
Engine misfires	-Excessive spark plug gap	Restore the spark gap
	-Spark plug dirty	Clean or replace the spark plug
The engine does not hold idling	-Idling air jet clogged	Contact authorised BETAMOTOR customer service
	-Adjustment screws poorly adjusted	Adjust
	-Faulty spark plug	Replace the spark plug
	-Faulty ignition system	Check the coil and the spark plug cap and/or contact authorised BETAMOTOR customer service
Engine overheats and loses power	-Silencer partly clogged	Contact authorised BETAMOTOR customer service
	-Laminar pack damaged	Contact authorised BETAMOTOR customer service
	-Fault in the ignition system	Contact authorised BETAMOTOR customer service
Excessive smoke	-Possible mixer system fault	Contact authorised BETAMOTOR customer service
Front braking poor	-Brake pads worn	Contact authorised BETAMOTOR customer service
	-Air or humidity in the hydraulic circuit	Follow the procedure described on page 51
Rear braking poor	-Brake pads worn	Contact authorised BETAMOTOR customer service
	-Air or humidity in the hydraulic circuit	Follow the procedure described on page 54

# ALPHABETICAL INDEX

Adjusting fork .....	32
Adjusting the idle speed.....	27
Adjustment of gas clearance.....	27
Air filter .....	40
Battery .....	59
Brakes .....	26
Breaking in.....	21
Carburettor .....	44
Chain .....	57
Check and adjusting of steering PLAY .....	54
Checks before and after use .....	21
Cleaning the vehicle.....	62
Clutch.....	27
Clutch control .....	52
Engine mapping adjustment .....	34
Engine oil.....	36
Engine shut-down .....	23
Exhaust valve control adjustment .....	30
Familiarizing with the vehicle.....	9
Fork.....	55
Front brake.....	46
Front wheel .....	55
Fuses .....	16
Fuses .....	61
Handlebar adjustment .....	30
Key to symbols.....	26
Key to symbols.....	36
Liquid coolant .....	38
Main parts .....	18

Operating instructions.....	5
Prolonged inactivity .....	63
Rear brake .....	49
Rear suspension leverage.....	56
Recommended lubricants and liquid .....	16
Refuelling .....	22
Removing and installing air filter side panel.....	69
Removing and installing of the complete tank.....	70
Removing and installing of the saddle.....	68
Removing and installing side panels and rear mudguard .....	71
Removing and installing the front mask .....	73
Riding safety .....	6
Scheduled maintenance vehicle .....	64
Shock absorber.....	32
Spark plug .....	43
Specifications .....	10
Starting the engine .....	23
Symbols .....	5
Tightening torque overview .....	66
Tools kit .....	8
Troubleshooting .....	76
Tyres.....	56
Vehicle identification data .....	8