



RR 50 CC ENDURO / ENDURO SPORT / RACING / MOTARD / MOTARD SPORT / TRACK

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 and specifications provided 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.

Code 024.44.022.00.00

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

For any servicing requirements, please get in contact with Beta-motor's authorized service network.

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OPERATINGS INSTRUCTIONS

- The vehicle must be accompanied by: number-plate, registration document, tax disc and insurance.
- Any modifications of the engine or other parts are punishable by severe sanctions including the confiscation of the vehicle.
- To protect your safety and that of others, always drive carefully and with your helmet on and always keep low beams on.
- Do not sit on the vehicle when it is on its stand.
- 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

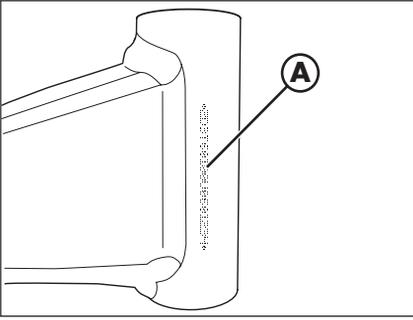
RIDING SAFETY

- Observe the Highway Code.
- Always wear approved personal protective equipment.
- Always ride with the low beam on.
- Always keep the crash helmet visor clean.
- Avoid wearing garments with hanging ends.
- Do not keep sharp or brittle objects in your pockets while riding.
- Properly adjust the rearview mirrors.
- Always ride in a seated position, with both hands on the handlebars and both feet on the footrests.
- Never ride abreast with other vehicles.
- Do not tow and avoid being towed by other vehicles.
- Always keep a safe distance from other vehicles.
- Do not start off while the vehicle is on its stand.
- Avoid swaying and wheelies as they are extremely dangerous for your own and other people's safety as well as for your vehicle.
- 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.
- On wet roads and in off-road riding, drive with care and at moderate speed. Take special care in applying the brakes.

CHAPTER 1 GENERAL INFORMATION

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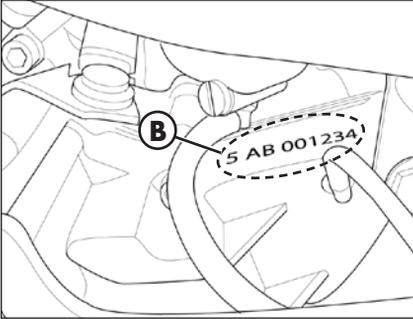
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VEHICLE IDENTIFICATION DATA

FRAME IDENTIFICATION

Frame identification data **A** are stamped on the right side of the steering head tube.



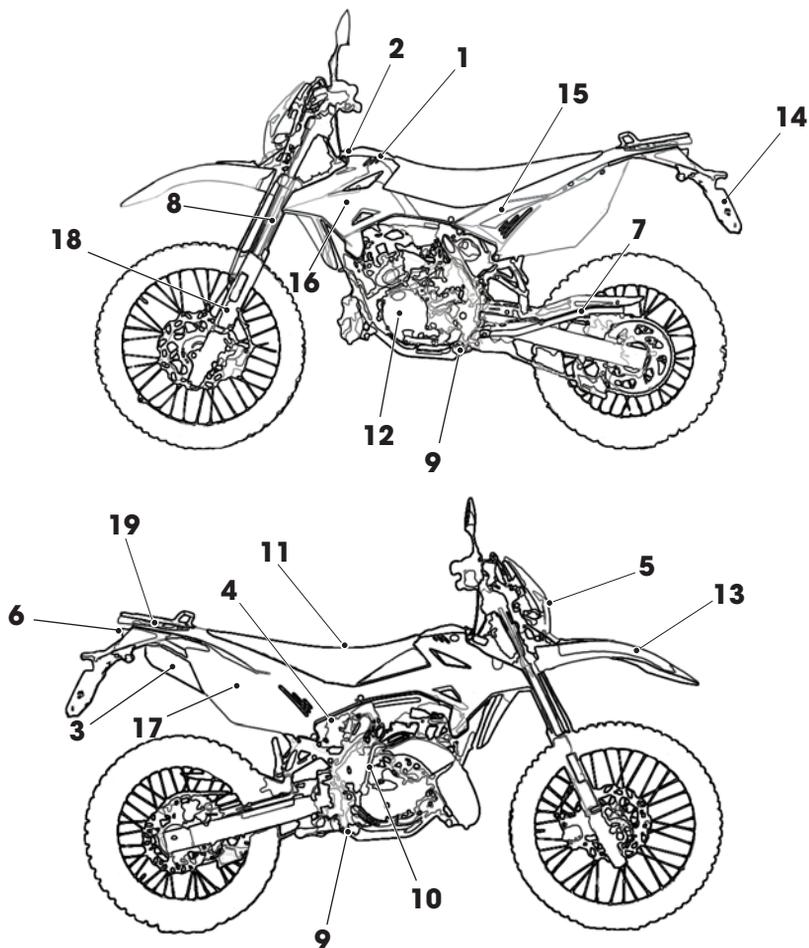
ENGINE IDENTIFICATION

Engine identification data **B** are stamped on the l.h. side half crankcase.

WARNING:

Tampering with the identification numbers is severely punished by law.

FAMILIARIZING WITH THE VEHICLE



MAIN PARTS

- | | | |
|-------------------------|----------------------------------|--------------------|
| 1 - Fuel tank | 10 - Kickstarter | 18 - Fork covers |
| 2 - Tank cap | 11 - Saddle | 19 - Rear mudguard |
| 3 - Silencer | 12 - Engine | |
| 4 - Rear shock absorber | 13 - Front mudguard | |
| 5 - Headlight | 14 - Number-plate holder | |
| 6 - Rear light | 15 - Side panel air filter cover | |
| 7 - Side stand | 16 - Front side panel | |
| 8 - Fork | 17 - Rear side panel | |
| 9 - Rider's footrests | | |

TECHNICAL DATA

Weight in running order with full fuel and optional85 kg

VEHICLE DIMENSIONS

Version	ENDURO SPORT	MOTARD SPORT / TRACK	RACING	ENDURO	MOTARD
Maximum length [mm]	2090	2035	2090	2090	2030
Maximum width [mm]	810	810	810	810	810
Maximum height from ground [mm]	1180	1150	1180	1180	1150
Clearance from ground [mm]	350	315	350	350	315
Saddle height [mm]	910	890	910	910	890
Footrest height [mm]	405	365	405	405	365
Dimensions [mm]	1405	1400	1405	1405	1400

FRAME steel double cradle frame

TYRES

ENDURO SPORT / ENDURO / RACING			
Front tyre		Rear tyre	
Dimension	Pressure [Bar]	Dimension	Pressure [Bar]
80/90 - 21	1	110/80 - 18	1

MOTARD SPORT / MOTARD / TRACK			
Front tyre		Rear tyre	
Dimension	Pressure [Bar]	Dimension	Pressure [Bar]
100/80 - 17	1,9	130/70 - 17	2

FILLING CAPACITY

fuel tank.....	6 liters
including reserve of.....	1 liter
mixer tank (NO racing).....	1,1 liters
cooling circuit liquid	
All the models.....	500cc
RACING.....	850cc
crank case transmission oil.....	10W/30 - 820cc

FRONT SUSPENSION

Version	ENDURO SPORT / MOTARD SPORT	ENDURO / MOTARD	RACING		TRACK	
Fork leg diameter [mm]	40	37	41		41	
Wheel stroke [mm]	245	205,6	265		210	
			Right fork leg	Left fork leg	Right fork leg	Left fork leg
Oil type	SAE 15	SAE 10	SAE 15		SAE 15	
Oil quantity [ml]	360ml	300ml	450ml	450ml	370ml	370ml
Register spring preload	X	X	10 (from fully closed)	X	X	X
Click in extension	X	X	X	3 (from fully closed)	X	X

REAR SUSPENSION

Version	ENDURO / MOTARD SPORT / MOTARD / TRACK	FACOTRY	ENDURO SPORT
spring (k) [Kg/mm]	12,5	4	4
Length (spring in its seat) [mm]	X	282	289
Click in compression (from fully closed)	X	19	x
Click in extension (from fully closed)	X	9	x

FRONT BRAKE

disk-type with hydraulic control Ø 260 mm

REAR BRAKE

disk-type with hydraulic control Ø 210 mm

ENGINE

type..... single-cylinder, two-stroke
 bore x stroke 40,3x39 mm
 displacement (cm³) 49,7 cm³
 compression ratio..... 12:1
 CO₂* 78 g/km
 Fuel consumption* 3,43 l/100km
 liquid cooled
 ignition electronic MORIC - 120W
 starter kick-starter
 spark plug NGK BR9 ES
 clutch wet, multidisc
 gearchange 6 speed

* R47 cycle related data, for class L1e-B vehicles

FUEL SYSTEM

Version	RR 50 Europe
Carburetor type	DELL'ORTO PHBN 16
Main jet	90
Slow jet	36D
Start jet	45
Needle	A20
Needle position (from top)	2°
Air screw turns (from fully closed)	2

- * - Such modification makes the vehicle non-compliant with the road regulations in force. Its use must be limited to the sole private circuits which are closed to circulation.

LEGEND ELECTRICAL DIAGRAM

- 1) R.H. FRONT TURN INDICATOR
- 2) KEY SWITCH
- 3) ENGINE STOP BUTTON
- 4) R.H. TURN INDICATOR WARNING LIGHT
- 5) NEUTRAL INDICATOR LIGHT
- 6) DASHBOARD
- 7) HIGH BEAM WARNING LIGHT
- 8) L.H. TURN INDICATOR WARNING LIGHT
- 9) OIL RESERVE WARNING LIGHT
- 10) PARKING LIGHT - BULB 12V 5W
- 11) SPEED SENSOR
- 12) HEADLAMP - BULB 12V 35/35W
- 13) HORN BUTTON
- 14) FLASH-TO-PASS BUTTON
- 15) HEADLIGHT SELECTOR
- 16) TURN SIGNAL LAMPS SWITCH
- 17) RIGHT BUTTONS GROUP
- 18) L.H. FRONT TURN INDICATOR
- 19) REGULATOR
- 20) FRONT STOP BUTTON
- 21) L.H. REAR TURN INDICATOR
- 22) OIL RESERVE SENSOR
- 23) PLATE ILLUMINATION
- 24) REAR STOP LIGHT
- 25) RESISTANCE 3,9 K Ω
- 26) WATER TEMPERATURE SENSOR
- 27) R.H. REAR TURN INDICATOR
- 28) PICK-UP
- 29) STATOR
- 30) SOLENOID
- 31) SPARK PLUG
- 32) ELECTRONIC CONTROL UNIT
- 33) FRAME EARTH
- 34) CONDENSATOR 4700 μ F
- 35) BLINKING UNIT
- 36) HORN
- 37) FRONT STOP BUTTON
- 38) NEUTRAL SENSOR

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

1

RECOMMENDED LUBRICANTS AND LIQUIDS

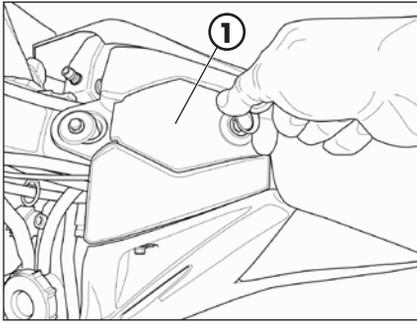
For better operation and longer vehicle life, we advise you to use the products listed in the following chart:

TYPE OF PRODUCT	TECHNICAL SPECIFICATION
FUEL	GASOLINE E5 (OR GASOLINE 95 RON)
GEAR AND CLUTCH OIL	LIQUI MOLY RACING 4T 10W-30
OIL MIXTURE	LIQUI MOLY 2-STROKE MOTOR OIL, SELF-MIXING LIQUI MOLY RACING SYNTH 2T (Racing)
BRAKE OIL	DOT 4
FORK OIL: - RR50 Enduro Sport Motard Sport - RR50 Enduro Motard - RR50 Racing - RR50 Track	FORC. Ø 40 - SAE 10W FORC. Ø 37 - SAE 7,5W FORC. Ø 41 FORC. Ø 41
GREASE FOR JOINTS AND RODS	LIQUI MOLY SCHMIERFIX
LIQUID COOLANT	LIQUI MOLY COOLANT READY MIX RAF 12 PLUS

CHAPTER 2 OPERATION

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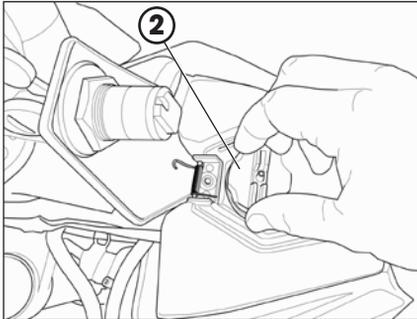
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MAIN PARTS

FUEL TANK CAP

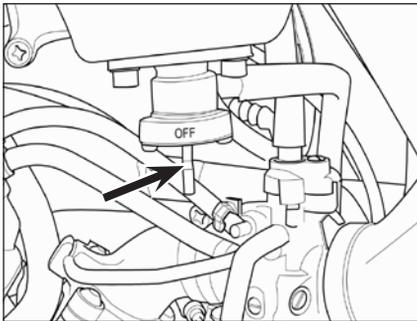
The cover **1** must be unlocked with the appropriate key and lifted in order to access the fuel tank's cap. Insert the key and turn clockwise. The cover opens automatically.



Turn the cap **2** anticlockwise.

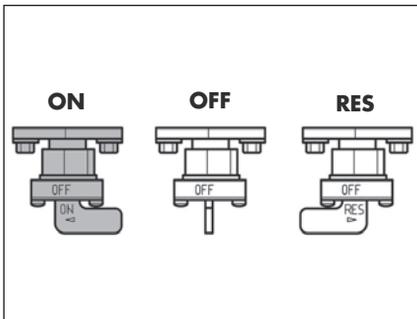
To close the fuel tank's cap, set it on the tank and crew it clockwise.

When you have completed this operation, close by pushing the cover **1** down until it locks.



FUEL COCK

Fuel cock has three 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. The tank empties until it reaches the reserve level.

RES: reserve fuel supply. Fuel flows from the tank to the carburettor and the tank empties completely.

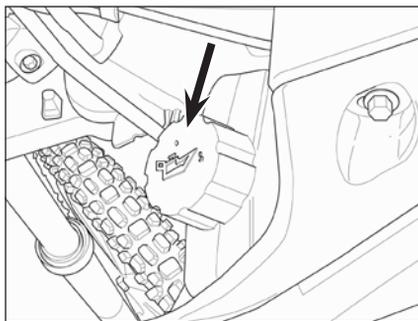
MIXER OIL TANK CAP

(not present on RR50 Racing)

To refuel open the tank cap shown in figure.

To open the fuel tank cap turn it anticlockwise.

To close the fuel tank cap, set it on the tank and screw it clockwise.



WARNING:

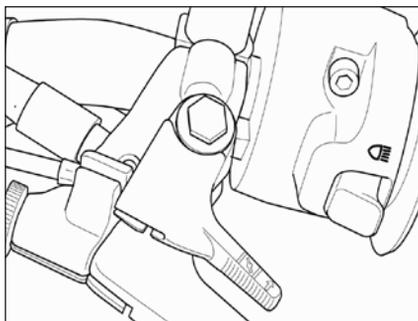
The model Racing has no mixer therefore in the fuel tank must be introduced directly gasoline-oil mixture to 1,5%.

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

STARTER

The starter lever is located on the left side of the handlebar.

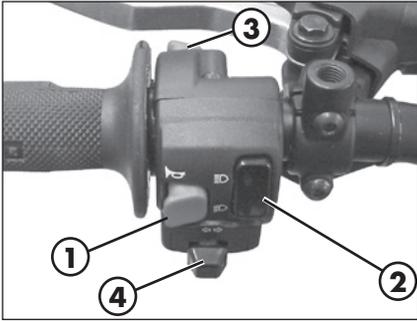
To operate the starter rotate the lever counterclockwise.



CLUTCH LEVER

The clutch lever is located on the left side of the handlebar. See the Adjustments chapter to adjust.





LH SWITCH

The dip and service switch is located on the left side of the handlebar and is composed as follows:

1 Horn button;

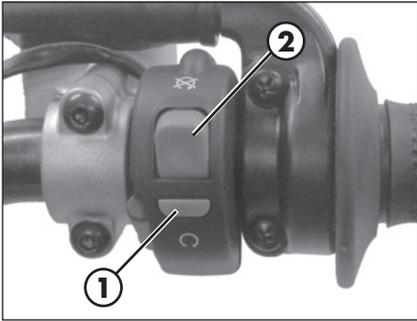
2 Dip switch:

( parking lights and high beam;

 parking lights and low beam);

3 Flash-to-pass button;

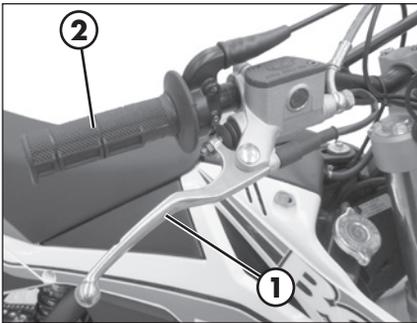
4 Turn signal light switch.



RH SWITCH

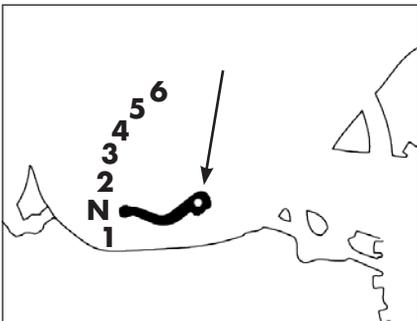
The starter button **1** operate the electric engine starter.

The button **2** turns off the engine.



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.



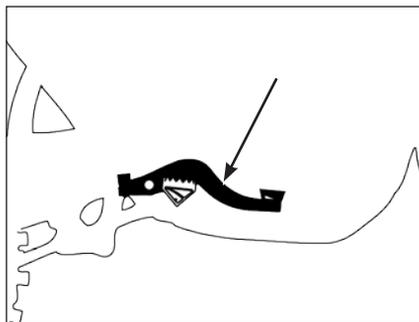
GEAR CHANGE LEVER

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

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

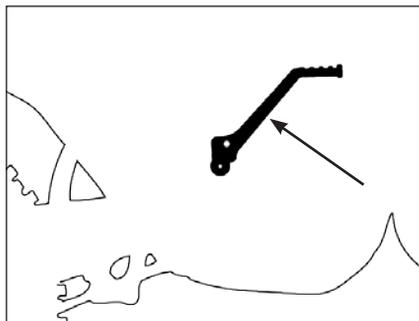
BRAKE PEDAL

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



KICKSTART

The kick-starter pedal is located on the right side of the engine. The upper part is rotatable. To start, depress the kick-starter outward and with a quick movement downward. The pedal will automatically return upward. After starting, manually fold the pedal in the rest position.

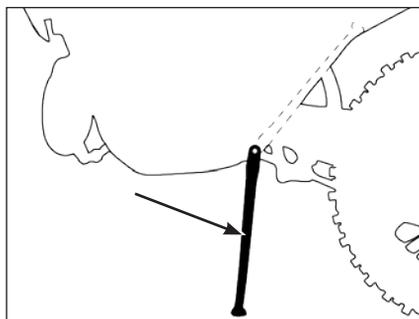


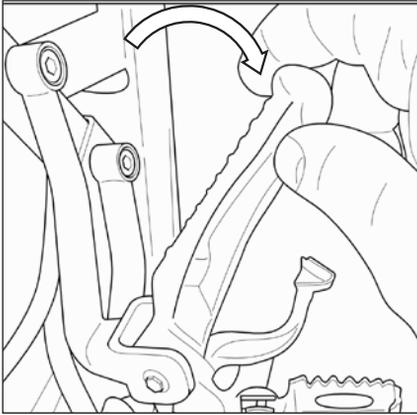
SIDE STAND

Press down side stand with the foot and lean the vehicle against it. Ensure that the ground is solid and the vehicle stands steadily.

 Warning! Once you lift the vehicle off the side stand, the stand automatically returns to its rest position.

 Do not sit on the vehicle when it is on its stand.





PASSENGER FOOTRESTS

The passenger footrests are located on the rear frame.

To open the footrests turn them outwards.



To close the footrests turn them inwards until they lock



Warning

If there is no passenger, always ride with the passenger footrests closed.

KEYS

The vehicle is supplied with two keys (one key and its spare), each of which can be used for the steering lock switch, for switching the engine on and off and the refuelling door.

- Turn the key to  to start up the engine.

- Turn the key to  to switch off the engine.

STEERING LOCK

A The steering lock is off.

B The steering lock is on.

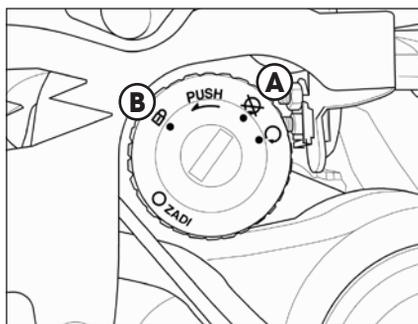
To activate the steering lock:

- turn the handlebar counter-clockwise;
 - push the key and turn counter-clockwise;
- Remove the key from this position. The engine cannot be started.

To deactivate the steering lock:

- turn the key clockwise;
- turn the handlebar clockwise;

From this position, the handlebar is free to move, the key can be removed and the engine cannot be started.



WARNING: do not keep the spare key inside the vehicle, but in a safe place. We suggest you note the code number stamped on the keys. In this way you can obtain a duplicate.

2

DASHBOARD OPERATING INSTRUCTIONS

MAIN PARTS

Speedometer

Display range: 0~360km/h (0~225 MPH)
Display unit: km/h or MPH

Indicator lights

High beam light (Blue) 
Oil reserve warning light (Red) 
Direction light (Green) 
Neutral (Green) 

Select button

Press the **Select button** in the main screen to switch between 12/24 hour mode, speedometer record, stopwatch, and MAX record.



Time

Clock: 12/24 MODE
Stopwatch: According to setup distance to record the testing time.
Speed Log: Average speed and max speed record.

Battery

Inner Battery Level
Display range: 4 levels.

Adjust Button

Press the **Adjust button** in the main screen to switch between ODO, Trip A/B, Total Hour meter, Hour meter A/B.
Press and hold the **Adjust button** for 3 seconds in Trip A/B screen to reset.
Press and hold the **Adjust button** for 3 seconds in Hour meter A/B screen to reset.

Odometer

Display range: 0~99999 km (mile), reset automatically after 99999 km (mile).
Display unit: 1 km (mile).

Tripmeter

Display range: 0~9999.9 km (mile), reset automatically after 999.9 km (mile).
Display unit: 0.1 km (mile).

WARNING LIGHTS



1 Headlight indicator

The system activates the indicator in synchrony with the activation of the mains beams.

2 Direction indicator lights

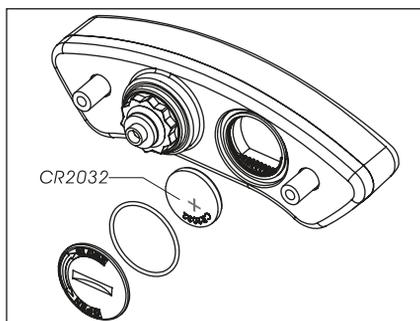
The system activates the indicator in synchrony with the activation of the direction indicators.

3 Neutral indicator light

The system activates the indicator in synchrony with the engaging of the neutral.

4 Mixer oil level indicator light

If the warning light comes on, refuel as soon as possible. The mixer tank reserve is indicated on page 11. Refuel with special oil as indicated in the "Table of Lubricants and Recommended Liquids" on page 16.

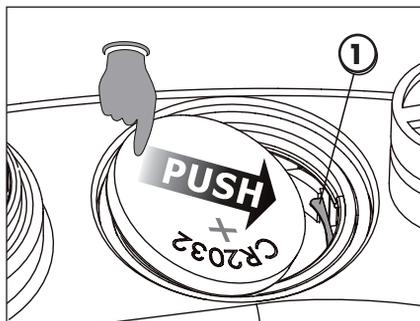


BATTERY REPLACEMENT

Follow this procedure for proper installation.

The meter includes an internal battery (CR2032). This battery shall be replaced only when power runs out.

For replacement remove the headlight mask. Remove the battery cover located behind the instrument and pull out the battery.



In order to install the battery properly, push the battery as shown on figure to make sure the battery is placed underneath the metal tab (1).



WARNING:

Not following this procedure could result in permanent damage to the meter.

2

ADJUST BUTTON FUNCTION INSTRUCTION

OPERATION



In main screen, press the **Adjust button** once to switch the function from odometer to trip.



In main screen, you could hold pressing the **Adjust button** for 3 seconds to change the speed unit.



Press the **Adjust button** to switch from trip A to trip B.



When the trip A is selected, hold pressing the **Adjust button** for 3 seconds to reset the trip A.



Press the **Adjust button** to switch from trip B to total hour meter.



Hold pressing the **Adjust button** for 3 seconds to reset the trip B.



Press the **Adjust button** to switch from total hour meter to hour meter A.



Press the **Adjust button** to switch from hour meter A to hour meter B.



When the hour meter A is selected, press and hold the **Adjust button** for 3 seconds to reset the hour meter A.



Press the **Adjust button** to switch from Hour Meter B back to the main screen.

When the hour meter B is selected, press and hold the **Adjust button** for 3 seconds to reset the Hour meter B.



The main screen.

SELECT BUTTON FUNCTION INSTRUCTION



Press the **Select button** during main screen to switch from Clock to Stopwatch.

Press and hold the **Select button** for 3 seconds to change between 12/24 hour mode.



NOTE: If 24hour mode is chosen, then the AM/PM symbol will not be displayed.



Press the **Select button** to switch from Stopwatch to Speed Record.

Press and hold the **Select button** for 1 second to reset the Stopwatch.



Press the **Select button** to switch from Speed Record back to main screen.

Press and hold the **Select button** for 3 seconds to reset the Speed Record.



NOTE: If Engine Oil Light goes up, reset the Engine Oil Light in this screen to recalculate the mileage.

NOTE: Average speed and the Max speed display in the 3 seconds rotation.



The main screen.

2

TO ENTER THE SETTING MODE

Function instruction



In the main screen press the combination of buttons Adjust + Select for 3 seconds to enter the tire circumference.



The tire circumference and sensor point setting

Press the **Adjust button** and then the **Select button** to enter the tire circumference setting.



EX. The tire circumference is 1,300 mm.

Press the **Adjust button** and then the **Select button** to change the setting.

NOTE:

Default 2070mm Enduro
 1820mm Motard

EX. The tire circumference setting is changed from 2,100 mm to 2,400 mm.

Press **Adjust button** to go back to tire circumferences value setting screen.



From **a 1** switch to **a 2** screen by pressing the **Select button**.

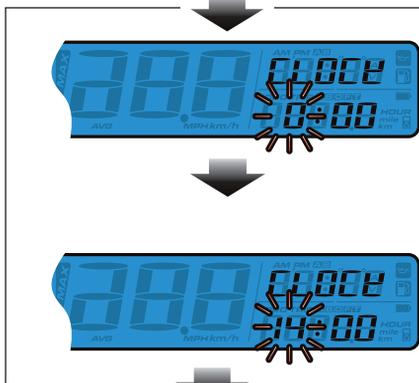
Press the **Adjust button** to enter the clock (Hour) setting.

Press the **Select button** to set the time hour.

To confirm the hour and set the minutes press the **Adjust button**. To set the minutes press the **Select button**. To confirm and return to the menu, press the **Adjust button**.



The clock (Hour) setting



EX: You want to set the hour at 14.
Press the **Select** button to choose the hour you want to set.

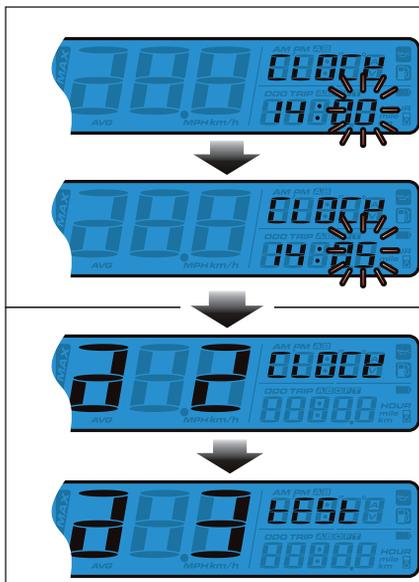
NOTE: Setting range: 0~24 H.

NOTE: The sequent of cursor movement:
Hour>Ten-Digit of Minute>Single
Digit of Minute

EX. Now the setting is changed from 0:00 to 14:00.

Press the **Adjust** button to enter the minute setting.

The clock (Minute) setting



EX. To change the setting to 14:05.

Press the **Select** button to choose the minute you want to set.

NOTE: Setting range: 0~59 minutes.

EX. Now the minute is changed from 14:00 to 14:05.

Press the **Adjust** button to get back to Clock setting screen.

Switch from **a 2** to **a 3**

Press **Select** button to switch to Stopwatch distance setup entering screen.

Press **Adjust** button to enter the distance setup for Stopwatch.

Distance setup for Stopwatch



Press the **Select** button to choose auto/manual stopwatch function.

If Auto is chosen, press the **Select** button to exit the stopwatch setting function.



NOTE: Default: AUTO



Switch from **a 3** to **a 4**

Press **Select button** to switch to Maintenance Mileage setting screen.



Press **Adjust button** to enter Maintenance Mileage setting.

Maintenance Mileage Setting



Press the **Select button** to choose maintenance mileage ON or OFF.

NOTE: Default: OFF.



If ON is chosen, press **Select button** to enter the maintenance mileage setting.

Press the **Select button** to move the cursor to the digit that would like to set.

To set the digit press the **Select button**. Once programmed press the **Adjust button** to return to the main menu.

Note: the limit is set to 5000km.

If OFF is chosen then press the **Adjust button** to exit the maintenance mileage setting.



Press **Select button** to switch the screen from **a 4** to **a 5**

Press the **Adjust button** to enter the Backlight Brightness setting



Press the **Adjust button** to get back to the main menu.

Backlight brightness



Press the **Select** button to adjust the brightness of the backlight.

NOTE: Adjustable Range: 1 ~ 5

NOTE: Default: 5



Press the **Adjust** button to exit from the Backlight Brightness setting



From **3 5** switch to **3 6** screen.



Press **Adjust** button to enter the mileage setting.

ODO setting



Press the **Adjust** button to enter the actual ODO viewing display.

Press the **Select** button to enter the User ODO setting.



Press **Adjust** button to enter the User ODO setting.



Press the **Adjust** button to back to ODO adjust function.

Press **Select** Button to switch to ODO viewing adjusting function.



In Setting Screen, press and hold the both **Adjust** and **Select** button for 3 seconds to exit the setting.

2

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 45).
- 3 Check pressure, general condition and thickness of tread (page 51).
- 4 Check that the spokes are properly tightened.
- 5 Check the tensioning of the chain (page 52).
- 6 Check the adjustment and the operation of all the cable controls.
- 7 Inspect all the nuts and bolts.
- 8 With the engine running, check the operation of the headlight, the rear and brake lights, the indicators, the warning lights and the horn.
- 9 Wash the motorcycle thoroughly after off-road use (page 54).

BREAKING IN

Breaking in takes approximately 500 km/350 miles. During this time:

- Avoid travel at high speeds
- Change speed often so that the parts will break in uniformly and in a shorter time
- Avoid turning the throttle more than 3/4 of the way.

WARNING:

- After the first 500 km/350 miles, change the gear oil.
- After the first off-road use, check all of the nuts and bolts.

REFUELLING

See page 16 for the fuel specifications.

Fuel tank capacity is shown on page 11.

To refuel open the tank cap (page 18).

After refuelling, screw the cap back and tighten securely.

 **WARNING:**
Since the Racing version is not equipped with an oil mixer, pour a mixture of gasoline and oil at 1,5% directly into the fuel tank..

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.

2

OIL MIXER REFUELLING

To refuel open the tank cap (page 18).

Fuel tank capacity is shown on page 11.

After refuelling, screw the cap back and tighten securely.



WARNING:

The Racing version is not equipped with an oil mixer.

Use the oil indicated on page 16 in the "Recommended lubricants and liquids" table.

STARTING THE ENGINE

Move the fuel tank valve in **ON** or **RES** position (page 18).

Check that the gears are in neutral (page 20).

Turn the key to  (page 22).

Make sure the right switch on the handlebar is on  position (page 20).

Close the side stand (page 21).

WITH KICK-STARTER (page 20):

Depress the kick-starter with a sharp movement of the foot.



ATTENTION

Once the pedal has been depressed, release it immediately. This avoids jolts to the entire ignition group and to the foot.

COLD STARTING:

Operate the starter (page 19), start the vehicle, wait a few seconds, then move the starter back to its starting position.

ENGINE SHUT-DOWN

To shut-down the engine, proceed in one of the two following ways:

- turn the key to  (see page 22).

- press the button  on the switch unit (see page 20).

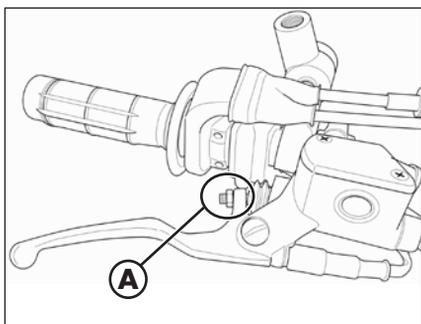
NOTE:

With the engine off, make sure the fuel cock is set to OFF (page 18).

CHAPTER 3 ADJUSTMENTS

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Rear brake	36
Adjustment of clutch lever	36
Adjustment of idling speed	37
Adjustment of gas clearance.....	37
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Adjusting the spring preload (Racing)	37
Adjusting the shock absorber (Enduro/Motard/ Motard Sport/Track).....	38
Adjusting the compression and extension brake (Racing).....	38
Adjusting the spring preload (Enduro/Racing)	38
Adjusting the headlight	39

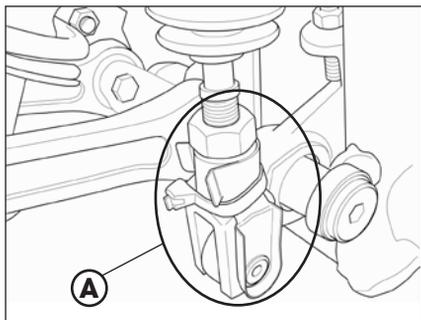


ADJUSTMENT OF BRAKES

FRONT BRAKE

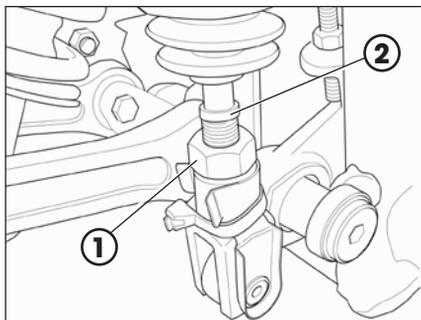
The front brake is disk type with hydraulic control.

You can adjust lever height by means of the register **A**.



REAR BRAKE

You may adjust pedal height by means of register **A**.

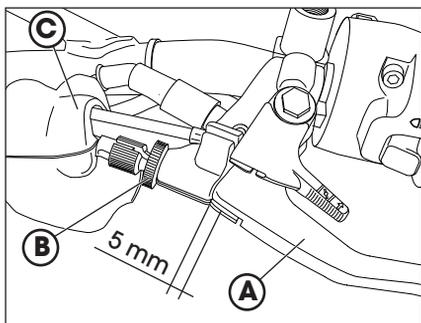


To do this, loosen nut **1** and turn lever **2** to adjust as required.

After it has been adjusted, tighten nut **1**.



WARNING: reduced play causes brake overheating leading to sudden lockup.



ADJUSTMENT OF CLUTCH LEVER

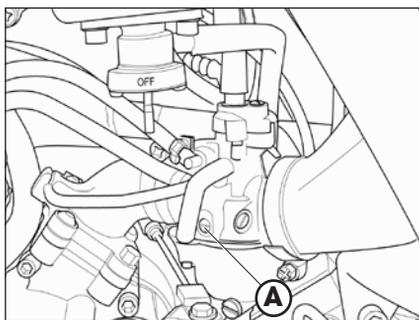
Generally, the only operation that is performed on the clutch is adjustment of the position of lever **A**.

To perform the adjustment, lift rubber dust cover **C** and turn adjuster **B**.

The lever must have 5 mm of idle stroke.

ADJUSTMENT OF IDLING SPEED

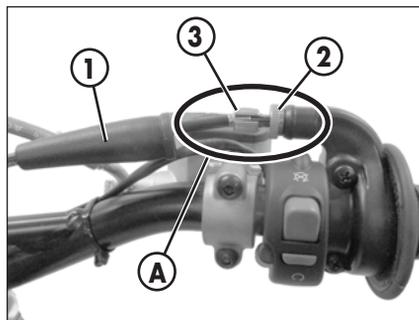
In order to perform this operation correctly, we advise you to do it when the engine is hot, connecting an electric revolution counter to the spark plug wire. Then use a screwdriver on register screw **A** to calibrate the minimum with 1900 R.P.M.



ADJUSTMENT OF GAS CLEARANCE

Whenever the accelerator shows unloaded travel exceeding 3 mm, measured from the edge of the handle, you should adjust it by means of register **A**.

Push back protective cap **1**. Loosen counternut **2** and turn adjusting screw **3**. Tighten the counternut and check that the throttle twist grip turns smoothly.



ADJUSTING THE FORK (RACING)

The hydraulic rebound damper determines the behaviour of the telescopic fork during extension and can be adjusted by means of screw **1**. Turning the screw clockwise increases the action of the rebound damper; turning it anticlockwise decreases the action of the rebound damper.

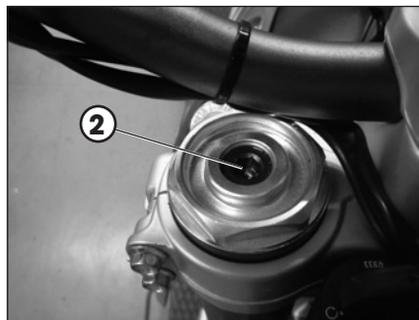
For standard calibration, refer to page 11.

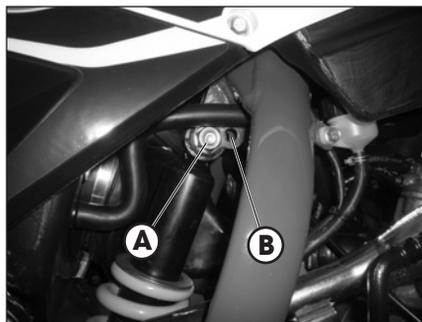


ADJUSTING THE SPRING PRELOAD (RACING)

Spring preload is adjusted by means of screw **2**. Turning clockwise will increase the preload, while rotating counter-clockwise decreases the preload.

For standard calibration, refer to page 11.





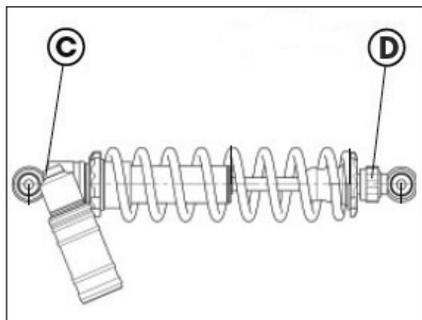
ADJUSTING THE SHOCK ABSORBER (ENDURO/MOTARD/MOTARD SPORT/TRACK)

The motorcycle has two different positions for the upper attachment of the shock absorber.

Position **A**: standard position.

Position **B**: lowered position. The height of the motorcycle reduces by 30 mm.

WARNING: locknuts with plastic ring are for single use only. Once removed it must be replaced.



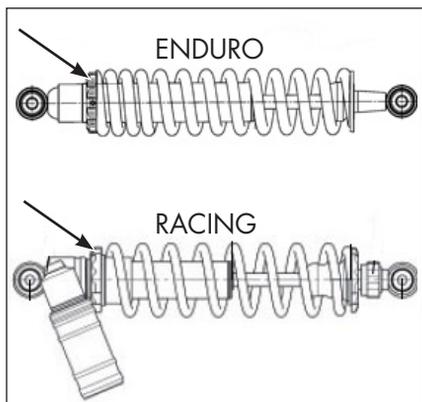
ADJUSTING THE COMPRESSION AND EXTENSION BRAKE (RACING)

Adjuster **(D)**, located near the lower shock absorber mount, is used to adjust the hydraulic damping during the rebound (return) phase.

Knob **(C)**, located on the expansion tank of the shock absorber, adjusts the hydraulic damping during the compression phase.

Turning knobs **(D)** and **(C)** clockwise increases the damping action; conversely, turning them anticlockwise decreases it.

For standard setting, refer to page 12.



ADJUSTING THE SPRING PRELOAD (ENDURO/RACING)

To adjust the spring preload, use the procedure described below.

Rotate ring clockwise to increase the spring preload (and consequently the shock absorber preload) or anticlockwise to decrease it.

In the event of any malfunction, contact our authorized customer service network.

ADJUSTING THE HEADLIGHT

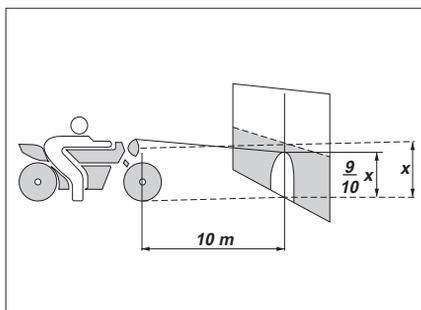
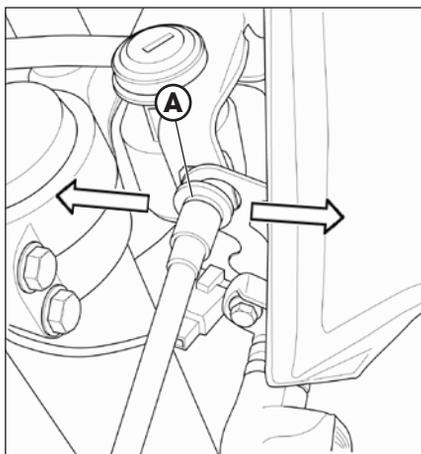
The beam is adjusted by loosening the left and right fixing screws **A** of the mask and manually changing the inclination of the mask's complete optical unit by sliding the fixing screws into the support slots.

Periodically check the direction of the beam. The beam can only be adjusted vertically.

Place the vehicle on level ground (but not on the stand) 10 metres from a vertical wall.

Measure the height of the headlight centre above the ground and then draw a cross on the wall at $\frac{9}{10}$ of the height of the headlight centre.

Turn on the low beam, get on the motorbike and check that the headlight beam on the wall is slightly lower than the cross drawn previously.



CHAPTER 4 CHECKS AND MAINTENANCE

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KEY TO SYMBOLS

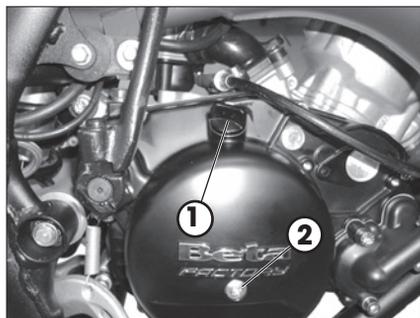
Tightening torque



Threadlocker Medium



Grease

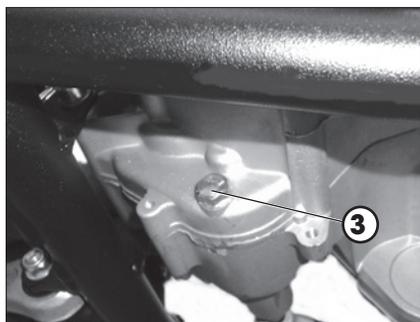
**GEARBOX OIL****CHECK**

Hold the vehicle upright.

Remove screw **2**: the oil must arrive at the lower edge of the hole.

Remove filler cap **1** and top up with fresh oil.

When the operation is completed, screw on cap **1** and screw **2**.

**REPLACEMENT**

Always renew the oil while the engine is hot:

- Place a container under the engine
- Unscrew filler cap **1** and drain plug **3**
- Empty the crankcase completely
- Close plug **3**
- Pour in 850 gr. / 820 cc of oil
- Verify the level as described above
- Screw on filler cap **1** again.

**WARNING:**

Hot oil can cause severe burns!

WARNING:

Dispose of used oil in compliance with local regulations.

NOTE:

Change the gear box oil after the first 500 km/350 miles. For subsequent oil changes, follow the instructions given on the chart on page 56, using the lubricants recommended on page 16.

LIQUID COOLANT

The level check must be performed with the engine cold, as follows:

- Hold the motorcycle vertical to the ground
- remove the cap **A** and check that the level of the liquid covers all the radiator elements. If it does not, add liquid until all elements are covered.



At the end of operation refit the filler cap.

NOTE:

The RACING version is equipped with a dual radiator.

NOTE:

The circuit capacity of the Racing version is 850cc, while for all other versions, it is 500 cc. Use the fluids specified in the table on page 16.



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.



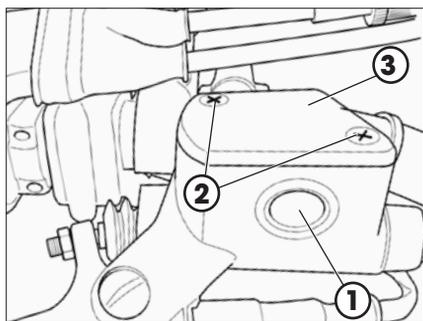
Keep coolant out of reach of children.



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.



FRONT BRAKE

CHECK THE LEVEL OF THE FRONT BRAKE FLUID

Check the oil level by means of oil window **1**.

Minimum oil level must never be below the level of window **1**.

To restore the oil level, top up by unscrewing the two screws **2**, lifting cap **3** and adding oil.

WARNING:

If the lever feels soft, there may be an air bubble in the circuit, then contact authorised Betamotor authorised service immediately.

NOTE:

Use the liquid indicated on page 16 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.

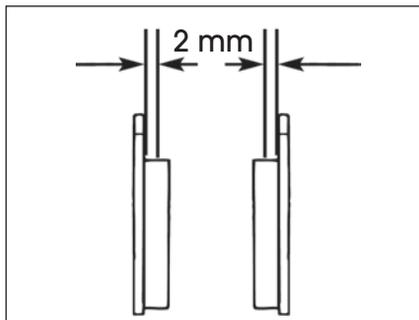
FRONT BRAKE LINING CONTROL

To check the wear of the front brake pads, visually inspect the caliper from below. The lining on the visible ends of the two brake pads should be at least 2 mm thick. If this layer is thinner than 2 mm, replace the pads immediately.

Note:

Perform the check according to the times shown in the table on page 56.

To replace, contact authorised Betamotor customer service.

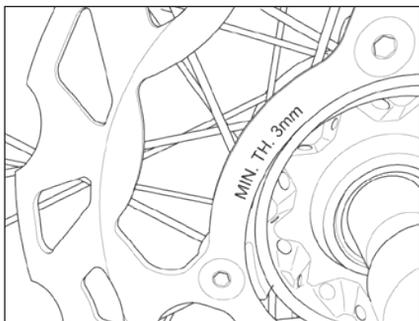


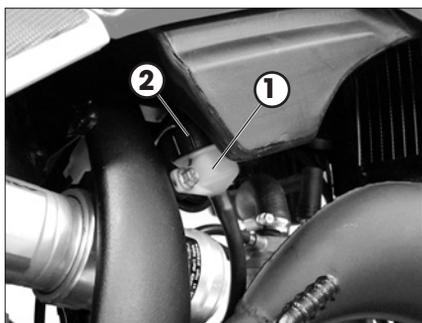
BRAKE DISC THICKNESS CONTROL

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 oil level by means of oil container **1**.

Oil level must never be below the minimum level mark on container.

To restore the oil level, top up by means of oil filler cap **2**.

WARNING:

If the pedal feels soft, there may be an air bubble in the circuit, then contact authorised Betamotor authorised service immediately.

NOTE:

Use the liquid indicated on page 16 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.

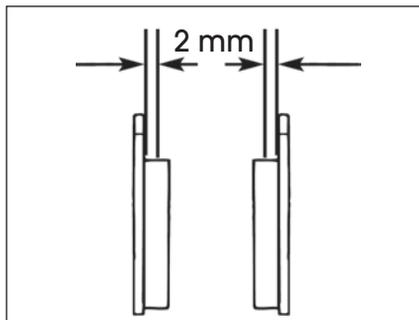
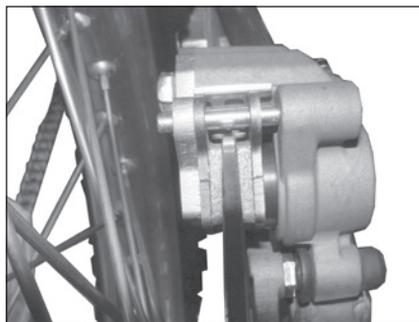
REAR BRAKE LINING CONTROL

To check the wear of the rear brake pads, visually inspect the caliper from below. The lining on the visible ends of the two brake pads should be at least 2 mm thick. Should the lining be thinner, immediately replace the brake pads.

Note:

Perform the check according to the times shown in the table on page 16.

To replace, contact authorised Betamotor customer service.

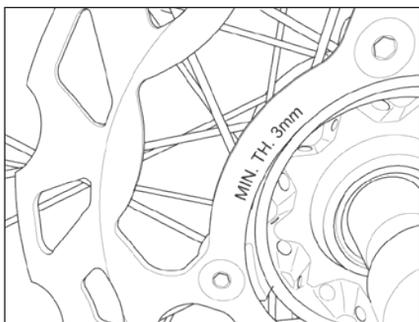


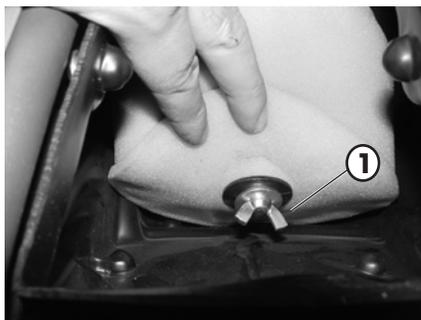
BRAKE DISC THICKNESS CONTROL

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.





AIR FILTER

To access the filter:

- Remove the saddle (page 58).
- Remove the filter box cover
- Remove screw **1** and pull out the filter

Sponge filter

- wash the filter with soap and cold water
- Dry the filter
- Wet the filter with filter oil, removing any excess oil so that there is no dripping; we suggest to grease the side that touches the filter box.

Paper filter

- Blow the filter with compressed air.
- If necessary also clean the interior of the filter box
- Reassemble proceeding in the reverse order.

NOTE:

If the filter is damaged, replace it immediately.



WARNING:

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

Clean the filter every time the vehicle is used cross-country.

SPARK PLUG

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

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 0,6 - 0,7 mm. If it is not, it may be corrected by bending the earth electrode.

The spark plug may appear:

black ■ "fat" carburation

light brown ■ appropriate carburation

white □ "thin" carburation

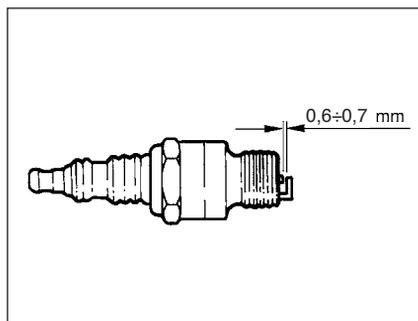
Check as well that there are no cracks in the insulation or corroded electrodes. If so, replace immediately.

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.

Close the tank tap and place a container under the carburettor pipe, so that you can collect the running out fuel.

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

 **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.

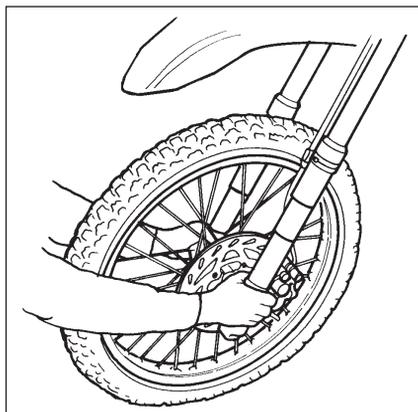
Refuel in an open well ventilated area.

 Immediately clean up any spilled fuel.

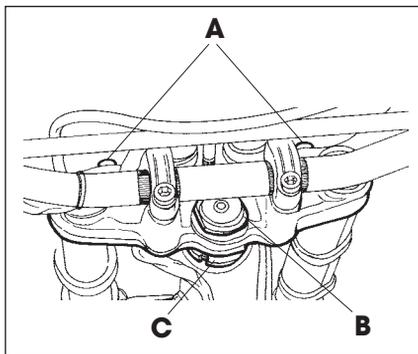
CHECK AND ADJUSTING OF STEERING PLAY

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

- Unscrew the screws **A**
 - Loosen nut **B**
 - Take up the play by means of ring nut **C**
- For reassembly, proceed in the reverse order.



NOTE: Correct adjustment, in addition to not leaving any play, should not cause difficulty or irregularity in turning the handlebar.



TYRES

Only fit tyres approved by BETAMOTOR.

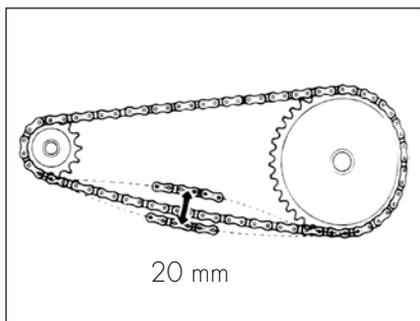
Unsuitable tyres can adversely affect the road holding of the vehicle.

- 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.

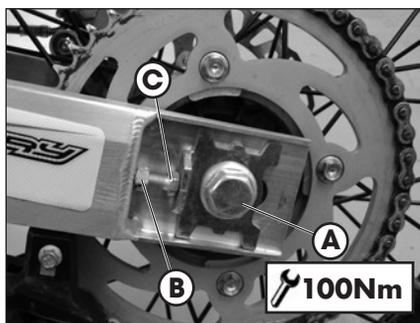
4 CHAIN

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.



20 mm



CHECK AND ADJUST TIGHTENING CHAIN

Checking the drive chain periodically to ensure longer chain life.

Always keep it lubricated and clean of deposited dirt.

If play exceeds 20 mm tighten the chain as follows:

- 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.

HEADLIGHT

Keep the headlight glass clean at all times (see page 54).

Periodically check the correct angle of the light beam.

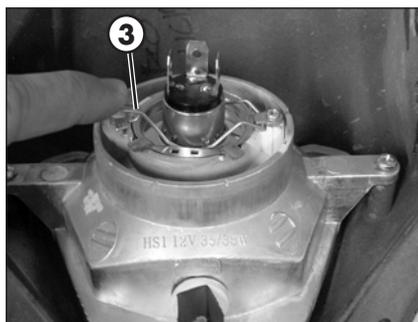
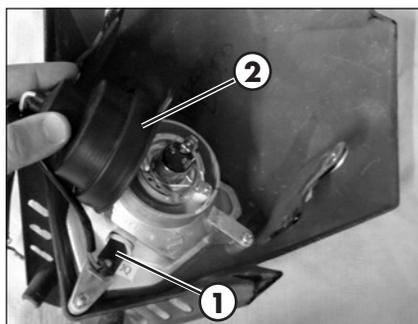
REPLACING THE HEADLIGHT BULBS

Remove the fixing screws and move forward the lamp holder front cowl.

Carefully remove the headlight bulb **1** together with lamp holder. To replace the high beam/low beam, lift the rubber cover **2**, release connector, push on the spring **3** and remove the lamp holder and replace the light bulb with a new one. Be careful not to touch the bulb so as not to compromise its efficiency.

To refit, follow the procedure above but in reverse order.

Fasten the lamp holder front cowl to the supporting pins and fix it with the two elastics.



TAIL LIGHT

Keep the tail light glass clean at all times (see page 54).

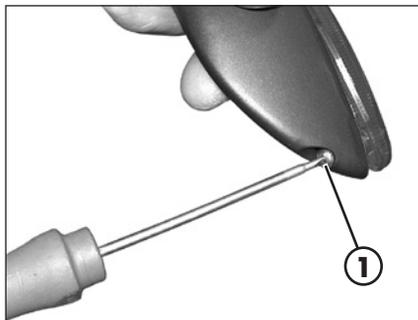
The LED tail light is sealed. In the case of burnout of one or more LEDs it is necessary to replace the entire group.

To replace, contact authorised Betamotor customer service.

TURN INDICATORS

To reach the bulb, remove the glass cover by loosening screw **1**.

Remove the bulb from the lamp holder and replace.



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.
- Remove the battery and keep it in a dry place. Charge the battery every 15 days.
- Protect the vehicle with a dust cover.

AFTER PROLONGED INACTIVITY

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

4 MAINTENANCE SCHEDULE

CHECKS AND MAINTENANCE

		End of running-in 500 km	1st service - 4,000 km	2nd service - 8,000 km	3rd service - 12,000 km	4th service - 16,000 km	5th service - 20,000 km	6th service - 24,000 km	7th service - 28,000 km	8th service - 32,000 km	9th service - 36,000 km
Engine	spark plug	p	p every 1000 Km s every 3000 Km								
	carburettor			p		p		p		p	
	mixer oil filter			p		p		p		p	
	clutch		c	c	s	c	c	s	c	c	s
	clutch play	r	r	r	r	r	r	r	r	r	r
	cooling system	c	c	c	c	c	c	c	c	c	c
	carbon formation in exhaust port/head		c-p	c-p	c-p	c-p	c-p	c-p	c-p	c-p	c-p
	coolant		c every 2,000 Km - s every 2 years								
	mixer oil level		c every 300 Km								
	transmission oil	s	c	s	c	s	c	s	c	s	c
	piston and piston rings		c		s		c		s		c
idle speed	r	c	c	c	c	c	c	c	c	c	
Cycle parts	rear shock absorber			c		c		c		c	
	nuts and bolts *	t	t	t	t	t	t	t	t	t	t
	transmission cables and controls	c	c	c	c	c	c	c	c	c	c
	wheel alignment		c	c	c	c	c	c	c	c	c
	steering bearings and steering play	c	c	c	c	c	c	c	c	c	c
	wheel bearings		c	c	c	c	c	c	c	c	c
	air filter	c	p	p	s	p	p	s	p	p	s
	general vehicle operation	c	c	c	c	c	c	c	c	c	c
	braking system	c	c	c	c	c	c	c	c	c	c
	lights	c	c	c	c	c	c	c	c	c	c
	general greasing *	c	c	c	c	c	c	c	c	c	c
	brake fluid		s every year								
	silencer		p	p	p	p	p	p	p	p	p
	fork oil and oil seals				s			s			s
	headlight adjustment/operation		c	c	c	c	c	c	c	c	c
	tyre condition and pressure		c every month								
	tensione e lubrificazione catena trasmissione		c every 300 Km								
	spoke tension	c	c	c	c	c	c	c	c	c	c
	final drive		c	c	s	c	c	s	c	c	s
	fuel lines (replace every 2 years)		c		c		c		c		c
	mixer oil lines (replace every 2 years)		c		c		c		c		c
	brake pad wear	c	c every 1,000 Km								

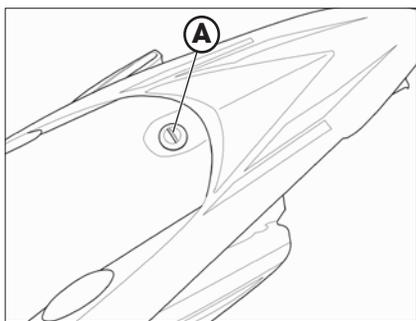
* Recommended after each off-road ride.

Key: c - check (clean, adjust, lubricate and replace as necessary)
s - replace/renew p - clean r - adjust t - tighten

CHAPTER 5 REMOVING AND INSTALLING SUPERSTRUCTURES

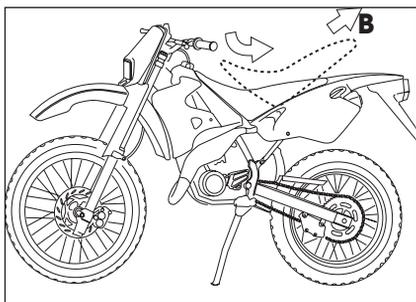
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REMOVING AND INSTALLING OF THE SADDLE

Remove screw **A**.



Remove the saddle in the direction **B** indicated in the figure.

CHARTER 5 TROUBLESHOOTING

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6 TROUBLESHOOTING

TRUBLESHOOTING

PROBLEM	CAUSE	REMEDY
The engine doesn't start	-Fuel system (tubes, fuel tank, valve) is blocked	Clean the system
	-Air filter is very dirty	Proceed as indicated on page 48
	-No current arriving at spark plug	Clean or replace spark plug. If the problem persists, contact authorised Betamotor customer service.
	-Engine is flooded	With gas completely open, continue trying to start engine for a few moments. If engine still doesn't start, remove the spark plug and dry it off.
Engine misfires	-Spark gap wrongly adjusted.	Restore the spark gap.
	-Spark plug dirty	Clean or replace the spark plug.
Engine overheats and loses power	-Silencer partly clogged.	Contact authorised Betamotor customer service
	-Exhaust clearance partially obstructed.	Contact authorised Betamotor customer service
	-Mix too lean.	Contact authorised Betamotor customer service
	-Ignition delayed.	Contact authorised Betamotor customer service
Front braking poor	-Brake pads worn	Contact authorised Betamotor customer service
	-Air or humidity in the hydraulic circuit	Contact authorised Betamotor customer service
Rear braking poor	-Brake pads worn	Contact authorised Betamotor customer service
	-Air or humidity in the hydraulic circuit	Contact authorised Betamotor customer service

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