

USER MANUAL



V2357005

ED. 00/2025

XX 125

XX 250

XE 125



READ THIS MANUALE CAREFULLY BEFORE OPERATING THIS VEHICLE

EN

FANTIC

FANTIC WANTS TO THANK YOU
for choosing one of its products.

We recommend that you read this manual before driving your vehicle. It contains information, advice and warnings on the vehicle maintenance and use. The instructions in this manual have been prepared to give you a simple and clear guide for use. We are sure that taking it into consideration you will gain confidence with your new vehicle, which you can use for a long time and with full satisfaction.

MANUFACTURER DATA AND EDITION

FANTIC MOTOR S.P.A.
www.fantic.com - info@fanticmotor.it

Edition: 00/2025.
Code: V2357005.

Introduction

This manual was prepared by **Fantic Motor** for use by **Fantic Motor** dealers and their specialized personnel. It is assumed that those who use this documentation for repair and maintenance of **Fantic Motor** vehicles have a basic knowledge of the principles and mechanical procedures regarding vehicle repair techniques. In the absence of these notions, repair or maintenance may be inadequate or dangerous.

Fantic Motor is constantly committed in improving its production. Any significant modifications and changes introduced with regard to vehicle characteristics and repair procedures will be brought to the attention of all **Fantic Motor** dealers and will be published in future editions of the manual.

- ① **Fantic Motor reserves the right to modify and make changes, at any time and without notice, to the models described, specifications and design data, guaranteeing the essential characteristics described and illustrated in this manual.**
- ⚠ **Operators have the obligation to read the manual and to scrupulously follow the instructions given. The manufacturer is not responsible for damages caused to people and/or things and is not responsible for damages to the product, if the instructions given in this manual are not observed.**
- ⚠ **This publication, or part of it, cannot be reduced or translated without the Fantic Motor's approval. Reproduction of the contents used in this manual without the Manufacturer's permission is prohibited. Fantic Motor assumes no responsibility for printing errors and omissions. All rights reserved.**
- ① **For further information on the conformity of vehicle components and to view the type approval documents, if any, please visit the website: "<https://www.fantic.com/red>"**

1. General Informations	9
1.1 Warnings	9
1.2 Symbols used in the manual	11
1.3 Behaviour and driving	12
1.3.1 Vehicle use	12
1.3.2 Getting on	12
1.3.3 Getting off	12
1.4 Frame number	13
1.5 Engine number	13
1.6 Location of important labels	14
1.7 Vehicle component location	16
1.7.1 Handlebar components (XX 125 version)	16
1.7.2 Right and left side components (XX 125 version)	17
1.7.3 Handlebar components (XE 125 version)	18
1.7.4 Right and left side components (XE 125 version)	19
1.7.5 Handlebar components (XX 250 version)	20
1.7.6 Right and left side components (XX 250 version)	21
1.8 Technical data	22
1.8.1 Technical data (XX 125 / XE 125 versions)	22
1.8.2 Technical Data (XX 250 version)	25
1.9 Engine tightening torques	27
1.9.1 Engine tightening torques (XX 125 / XE 125 versions)	27
1.9.2 Engine tightening torques (XX 250 version)	29
1.10 Chassis tightening torques	31
1.10.1 Chassis tightening torques (XX 125 / XE 125 versions)	31
1.10.2 Chassis tightening torques (XX 250 version)	33
1.11 Electrical tightening torques	35
1.12 Maintenance limits	36
1.12.1 Engine maintenance limits (XX 125 / XE 125 versions)	36
1.12.2 Engine maintenance limits (XX 250 version)	39
1.12.3 Chassis maintenance limits	41
1.12.4 Service limits of electrical system components	44
1.13 Electrical system diagram	45
1.13.1 Cables colour coding	45
1.13.2 Key to the wiring diagram components (XX 125 version)	46
1.13.3 Wiring diagram (XX 125 version)	47
1.13.4 Key to the wiring diagram components (XE 125 version)	48
1.13.5 Wiring diagram (XE 125 version)	49
1.13.6 Key to the wiring diagram components (XX 250 version)	51
1.13.7 Wiring diagram (XX 250 version)	52
1.14 Lamps (XE 125 version only)	53
1.15 Fuses (XE 125 version only)	53
1.16 Recommended lubricants and liquids	54
1.17 Maintenance intervals	55
1.17.1 Maintenance table (XX 125 version)	55
1.17.2 Maintenance table (XE 125 “Racing” versions)	58
1.17.3 Maintenance table (XE 125 “amateur” version)	61
1.17.4 Maintenance table (XX 250 version)	63

2. Use of the vehicle.....	67
2.1 Pre-operation inspection and maintenance	67
2.2 Running in.....	67
2.3 Refuelling.....	68
2.4 Starting the engine	68
2.4.1 Starting a cold engine	68
2.4.2 Starting a warm engine.....	68
2.5 Stop the engine	69
2.6 Main components	69
2.6.1 Engine stop switch (XX 125 / XX 250 versions)	69
2.6.2 Engine stop switch (XE 125 version)	69
2.6.3 Clutch lever.....	70
2.6.4 Shift pedal (XX 125 / XE 125 versions)	70
2.6.5 Shift pedal (XX 250 version)	70
2.6.6 Kickstarter lever	70
2.6.7 Throttle grip.....	71
2.6.8 Engine mapping selection “Switch” (XX 125 / XX 250 versions).....	71
2.6.9 Front brake lever	71
2.6.10 Rear brake pedal	71
2.6.11 Fuel cock (XX 125 / XX 250 versions)	72
2.6.12 Fuel cock (XE 125 version).....	72
2.6.13 Starter knob (choke)	72
2.6.14 Sidestand (only for XE 125 version).....	72
2.6.15 Locking device (only for XE 125 version)	73
2.7 Dashboard (only XE 125 version)	74
2.7.1 Instruction of function	74
2.7.2 Battery replacement	75
2.7.3 Switch Function Instructions	75
2.7.4 Setting Mode.....	78
2.7.5 The tire circumference and sensing point setting.....	78
2.7.6 Sensing point setting	79
2.7.7 The clock (hour) setting.....	79
2.7.8 The clock (minute) setting.....	79
2.7.9 Stop watch Setup	80
2.7.10 Maintenance Oil Light Setting	81
2.7.11 Backlight brightness	81
2.7.12 Dashboard setting value	82
3. Adjustments.....	83
3.1 Brakes.....	83
3.1.1 Front brake adjustment	83
3.1.2 Rear brake adjustment.....	83
3.2 Clutch	84
3.2.1 Adjusting the clutch lever position	84
3.2.2 Adjusting the clutch lever clearance.....	84
3.3 Throttle control	85
3.3.1 Adjusting the throttle grip clearance	85
3.4 Idling speed Adjustment	86

3.4.1 XX 125 and XE 125 Versions.....	86
3.4.2 XX 250 Version	86
3.5 Handlebar adjustment	87
3.5.1 Handlebar installation and adjustment	87
3.6 3.6 Rear-view mirrors (only for XE 125 version).....	88
3.6.1 Rear-view mirror adjustment	88
3.7 Carburation	88
3.7.1 Carburettor setting.....	88
3.7.2 Test run	89
3.7.3 Effect of setting parts in relation to throttle valve opening (XE 125 version).....	90
3.7.4 Standard carburation setting (XE 125 version with “Racing” configuration).....	90
3.7.5 Standard carburation setting (XE 125 approved version)	90
3.7.6 Effect of setting parts in relation to throttle valve opening (XX 125 / XX 250 versions).....	91
3.7.7 Standard carburation setting (XX 125 version).....	91
3.7.8 Standard carburation setting (XX 250 version)	91
3.7.9 Adjusting the main jet.....	92
3.7.10 Adjusting the Power Jet (XX 125 / XX 250 versions)	92
3.7.11 Adjusting the pilot air screw	92
3.7.12 Adjusting the pilot jet.....	92
3.7.13 Adjusting the jet needle groove position	93
3.7.14 Jet needle adjustment (XE 125 version)	93
3.7.15 Relationship with throttle opening (XE 125 version)	94
3.7.16 Carburettor setting parts (XE 125 version).....	94
3.7.17 Jet needle adjustment (XX 250 version)	96
3.7.18 Relationship with throttle opening (XX 250 version)	96
3.7.19 Carburettor setting parts (XX 250 version)	97
3.7.20 Jet needle adjustment (XX 125 version)	98
3.7.21 Relationship with throttle opening (XX 125 version)	98
3.7.22 Carburettor setting parts (XX 125 version)	99
3.7.23 Examples of carburettor setting depending on symptom	101
3.8 Fork adjustment.....	102
3.8.1 Rebound damping adjustment (return)	102
3.8.2 Compression damping adjustment.....	102
3.8.3 Relieving the front fork internal pressure	103
3.9 Rear shock absorber adjustment.....	104
3.9.1 Rebound damping adjustment (return)	104
3.9.2 Compression damping adjustment (low speed)	104
3.9.3 Compression damping adjustment (high speed).....	105
3.10 Setting the SAG.....	105
3.10.1 Rear shock absorber sinking adjustment (SAG) (XE 125 version)	105
3.10.2 Rear shock absorber sinking adjustment (SAG) (XX 125 / XX 250 version).....	106
3.11 Chain tension.....	108
3.11.1 Chain tension check	108
3.11.2 Chain tension adjustment	108
4. Maintenance	109
4.1 Transmission oil	109
4.1.1 Checking the transmission oil level	109

4.1.2 Changing the transmission oil.....	110
4.2 Coolant	111
4.2.1 Coolant level check and topping up	111
4.2.2 Coolant change	112
4.3 Air filter.....	113
4.4 Spark plug.....	115
4.5 Head, cylinder, piston and exhaust valve.....	115
4.5.1 Parts removal (XX 250 version)	115
4.5.2 Parts removal (XX 125 / XE 125 versions)	117
4.5.3 Head check	118
4.5.4 Cylinder check	119
4.5.5 Piston check	119
4.5.6 Piston and cylinder combination.....	120
4.5.7 Checking the piston and cylinder combination.....	120
4.5.8 Segments check (XX 250 version)	121
4.5.9 Segments check (XX 125 / XE 125 versions).....	121
4.5.10 Exhaust valve check (XX 250 version).....	122
4.5.11 Exhaust valve check (XX 125 / XE 125 versions)	122
4.5.12 Installation of the piston.....	123
4.5.13 Exhaust valve installation (XX 250 version)	124
4.5.14 Exhaust valve installation (XX 125 / XE 125 versions).....	126
4.5.15 Cylinder installation (XX 250 version)	127
4.5.16 Cylinder installation (XX 125 / XE 125 versions).....	128
4.5.17 Head installation	129
4.6 Clutch	130
4.6.1 Clutch removal	130
4.6.2 Check the clutch elements	132
4.6.3 Clutch installation	133
4.7 Steering play control and adjustment.....	137
4.7.1 Steering play control.....	137
4.7.2 Steering play adjustment	137
4.8 Fork	138
4.9 Shock absorber	138
4.10 Wheels.....	139
4.10.1 Spokes check and tightening	139
4.10.2 Wheel check.....	139
4.11 Brake pads	140
4.11.1 Replace the front brake pads.....	140
4.11.2 Replace the rear brake pads	141
4.12 Brake fluid.....	143
4.12.1 Check the front brake fluid level	143
4.12.2 Check the rear brake fluid level.....	143
4.13 Tyres	144
4.14 Chain, crown and sprocket.....	144
4.14.1 Chain check.....	144
4.14.2 Pinion and crown check	144
4.15 Cleaning and vehicle storage	145
4.16 Long time vehicle inactivity.....	145

5. Warranty and Service	147
5.1 Introduction.....	147
5.2 24 month Fantic commercial warranty	148
1. Warranty content.....	148
2. Effectiveness.....	148
3. Exclusions	148
4. Disputes	149
5.3 3 month Off-Road Fantic commercial warranty	150
5. Warranty content	150
6. Effectiveness.....	150
7. Exclusions	150
8. Disputes	151
5.4 Warnings for maintenance and care.....	151
5.5 Vehicle Warranty Data.....	152
5.6 Service	153

1.1 WARNINGS

Carbon monoxide

- ⚠ The exhaust fumes contain carbon monoxide, a poisonous gas that can cause death. Therefore, for certain operations, make sure you are in an open space, or in a suitable and well-ventilated room, never in enclosed spaces. If operating in enclosed spaces, use an evacuation system for the exhaust fumes.

Fuel

- ⚠ The fuel used is extremely flammable and can become explosive under certain conditions. Refuelling and maintenance operations must be carried out in a ventilated area and with the vehicle switched off. Do not smoke during refuelling and near fuel vapours; avoid contact with open flames, sparks and any other source that could cause ignition or explosion.
- ⚠ Do not disperse in the environment and keep away from children.

Hot components

- ⚠ The engine and certain components become very hot and remain hot for a while even when the engine is off. Before carrying out any operation near the engine or exhaust system, wear insulating gloves or wait for their cooling.

Used engine and gearbox oil

- ⚠ Used engine and gearbox oil is harmful to health, whether it is inhaled or swallowed. It is also irritating and can cause serious consequences if it comes into contact with the skin.
- ⚠ Spreading and dispersion into the environment is prohibited.
- ⚠ If swallowed, do not induce vomiting, but go urgently to a first aid centre, indicating the cause and how the accident occurred.
- ⚠ In case of contact with the skin, immediately wash the affected part with soap and water, repeating the operation until the affected part is free from residues.
- ⚠ In case of contact with eyes and ears, immediately rinse the affected parts with plenty of water and urgently go to a first aid center, indicating the cause and how the accident occurred.
- ⚠ In case of contact with clothing, undress and wash thoroughly with soap and water. Change the dirty cloths which must be specifically washes as soon as possible.
- ⚠ Always use gloves suitable to protect your hands during the maintenance operations.
- ⚠ Keep out of the reach of children.
- ⓘ Used engine and gearbox oil must be collected in a sealed container, and delivered to the nearest service station or at a waste oil collection centre where you will find personnel authorized to dispose of it.

Brakes

- ⚠ Brake fluid may damage the vehicle painted, plastic or rubber surfaces. Protect these components with a clean rag when performing certain operations.
- ⚠ Always wear protective glasses and in case of accidental contact of the brake fluid with eyes, rinse immediately with plenty of clean, fresh water and consult a doctor immediately. Keep out of the reach of children.
- ⚠ Clean the brake pads in a ventilated environment, directing the compressed air jet so as not to inhale the dust produced by the wear of the friction material. Although the latter does not contain asbestos, inhaling dust is however harmful.

Electrolyte and hydrogen gas from the battery

- ⚠ The electrolyte of the battery is toxic and caustic. In contact with skin it can cause burns, as it contains sulphuric acid. Wear gloves and protective clothing.
- ⚠ If the electrolyte liquid comes into contact with the skin, wash it thoroughly with fresh water.
- ⚠ Protect your eyes, as battery fluid can cause blindness. If it comes into contact with the eyes, wash thoroughly with water for fifteen minutes and promptly contact an eye specialist.

 The battery emits explosive gases, it is advisable to keep away flames, sparks and any other source of heat. Provide adequate ventilation when servicing or recharging the battery.

 Keep out of the reach of children.

 The battery fluid is corrosive. Do not pour it or spread it, especially on plastic parts.

 Provide for regular disposal.

Coolant

 Under certain conditions, the ethylene glycol present in the engine coolant is combustible and its flame is not visible. If ethylene glycol is ignited, its flame is not visible but it is able to cause serious burns.

 Avoid pouring engine coolant to the exhaust system or on engine parts. These parts may be hot enough to ignite the liquid which then burns without visible flames. Coolant (ethylene glycol) can cause skin irritation and is poisonous if swallowed. Keep out of the reach of children. Do not remove the radiator cap when the engine is still hot. Coolant is under pressure and may cause burns.

 Keep hands and clothes away from the cooling fan as it starts automatically.

Precautions and general warnings

 The clothing of the operator performing the repair operations must be adequate to avoid the risk of injury when working on moving parts (for example, too wide clothes that can get caught).

 Do not wear personal items (e.g. rings, wristwatches, etc.) while performing repairs on the vehicle, and in particular on the electrical system.

 Keep the work area tidy, to avoid that elements left on the ground interfere with the repair operations.

 Clean the floors of the working areas from oil, grease or other residual fluids, to avoid slipping.

 Perform compression or decompression operations on the springs, using only suitable tools to prevent the operations from causing damage to the operator.

 Avoid inhalation of vapours from cleaning fluids: they can be highly toxic. Make sure the work area is properly ventilated.

 Use suitable cleaning products for each operation, making sure that they are approved.

 Wear eye protection when using electrical tools such as drills, grinders or milling machines.

1.2 SYMBOLS USED IN THE MANUAL

Within this manual there will be technical warnings and annotations preceded by the following symbols according to the reference topic:

- Warning regarding the procedure described and the specific safety rules:** indicates procedures that must be followed to prevent damage to the vehicle or possible injuries to vehicle repairers.
- Information note on the procedure described and on the characteristics of the vehicle:** it provides useful information to make the procedure easier and clearer.
- Tightening torque:** note showing one or more tightening torques values referred to the procedure described.
- Measurement data:** note showing the values of one or more measurements to be complied with or verified for the procedure described.
- Equipment:** note that informs the user of the need to use particular tools for the procedure described.
- Consumable:** note that illustrates the names, types and/or quantities of consumables (such as oil, fuel, sealants, additives, etc.) to be used for the procedure described.

All left or right indications refer to the direction of travel of the motorcycle.

This manual contains images illustrating some disassembling sequences, using the following symbols to identify the characteristics of the type of intervention.

- Apply and/or lubricate using engine oil.**
- Apply and/or lubricate using gear oil.**
- Apply and/or lubricate using molybdenum disulphide oil.**
- Apply and/or lubricate using brake fluid.**
- Apply a product that is not specified or specified separately.**
- Apply wheel bearing grease.**
- Apply lithium soap based grease.**
- Apply molybdenum disulphide grease.**
- Apply and/or lubricate using silicone grease.**
- Apply a threadlocker (LOCTITE®).**
- Replace with a new component.**

1.3 BEHAVIOUR AND DRIVING

Some safety tips are given below to avoid damage to people and/or things and to use your vehicle with an easier and safer drive.

1.3.1 Vehicle use

To use the vehicle it is necessary to meet all the law requirements.

It is advisable, in order to acquire a good knowledge of the vehicle, to use the vehicle in areas without traffic or unpopulated stretches of road.

It is advisable to always respect the highway code while driving, to avoid sudden or dangerous manoeuvres keeping both hands on the handlebar and always keeping your feet on the appropriate footrests. Pay close attention while riding.

 **Do not ride the vehicle while drunk, under the influence of drugs, after taking certain medicines or in a state of physical fatigue and drowsiness. Failure to comply with these rules is considered extremely dangerous and could cause serious damage to property and/or people.**

Evaluate and keep in consideration the conditions of the road surface, visibility and weather. In a situation not suitable for safe driving, reduce the speed and drive carefully.

The braking effect in wet roads without ever having applied the brakes is initially less; under these conditions it is advised to periodically operate the brakes.

In case the vehicle is used on roads dirty with sand, mud, snow mixed with salt, we recommend checking and if necessary cleaning the brake discs with special non-aggressive detergents, so as to prevent the formation of abrasive agglomerates inside the holes and an early wear of the brake pads.

The getting on and off from the vehicle must be in complete freedom of movement and without impediments.

Go up and down only from the left side of the vehicle and with the kickstand down to prevent unbalancing or loss of balance, causing falls or overturns.

 **The rider is always the first to go on and the last to go down as he/she has to govern the stability of the vehicle.**

1.3.2 Getting on

The passenger must make the movements to get on with the utmost caution, avoiding to unbalance the rider and the vehicle.

Place your feet on the ground and hold the vehicle in running position.

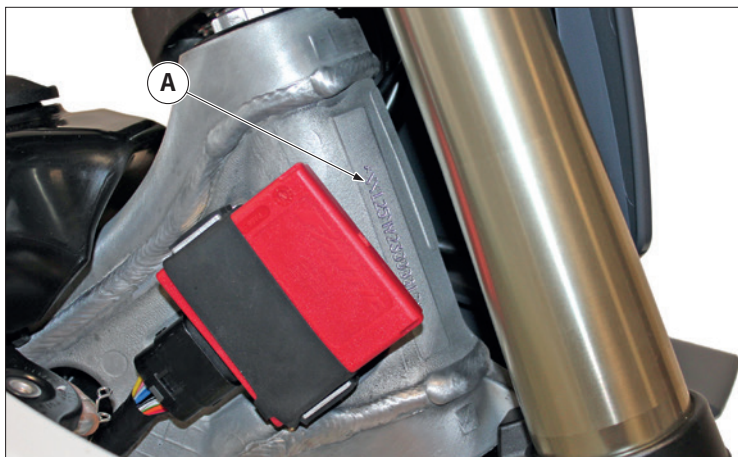
1.3.3 Getting off

Stop the vehicle in an area suitable for stopping or parking, ensuring that the ground is stable and free of obstacles. Fully extend the kickstand using the left foot.

Tilt the vehicle making the kickstand touch the ground. Get off the vehicle and turn the handlebar completely to the left.

 **Make sure that the vehicle is stationary and stable.**

 **Do not lift the vehicle grasping the license plate holder frame, in order to avoid damage.**

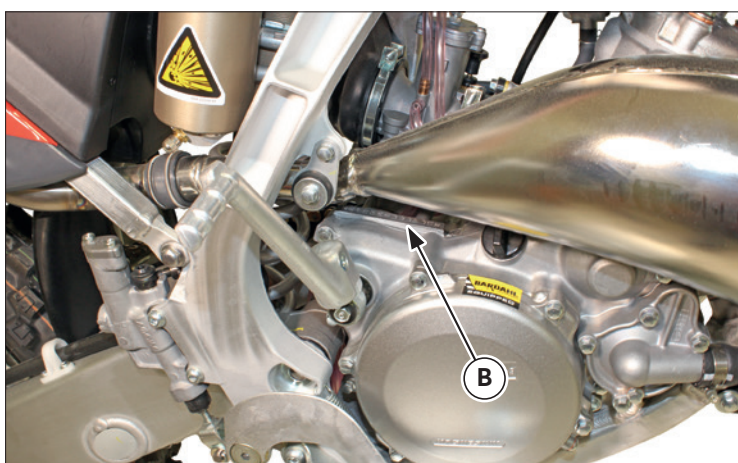


Fantic Motor vehicles are equipped with frame and engine identification numbers.

i These numbers that identify the motorcycle model must be mentioned for the request for spare parts.

1.4 FRAME NUMBER

The frame number “A” is punched on the steering tube on the right side.

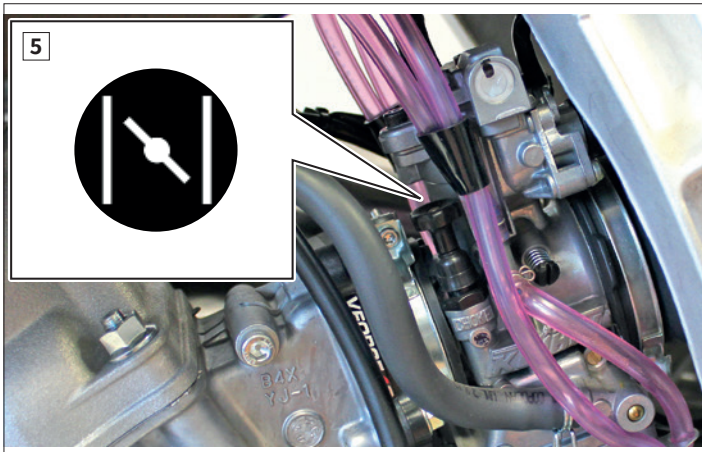
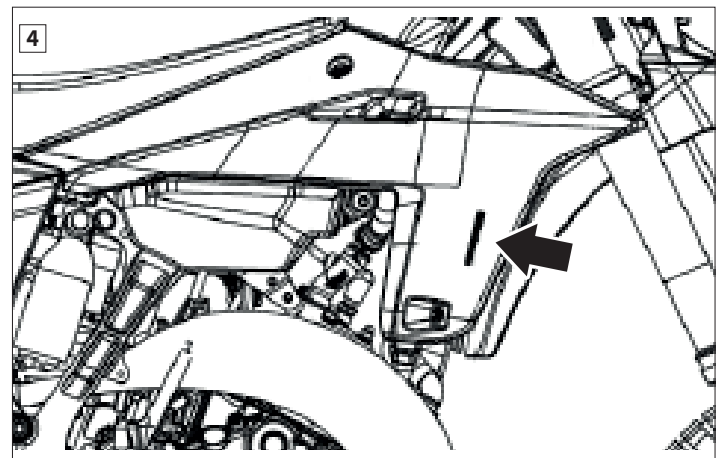
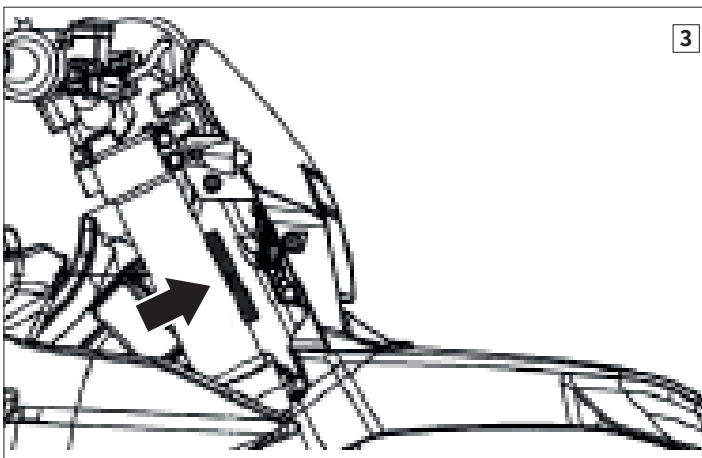
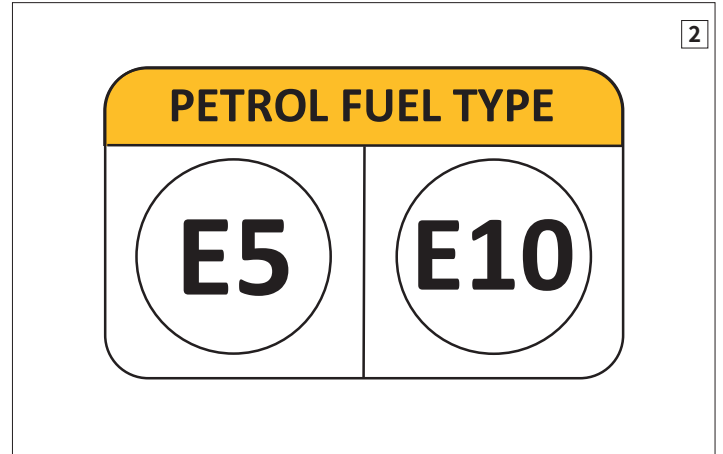
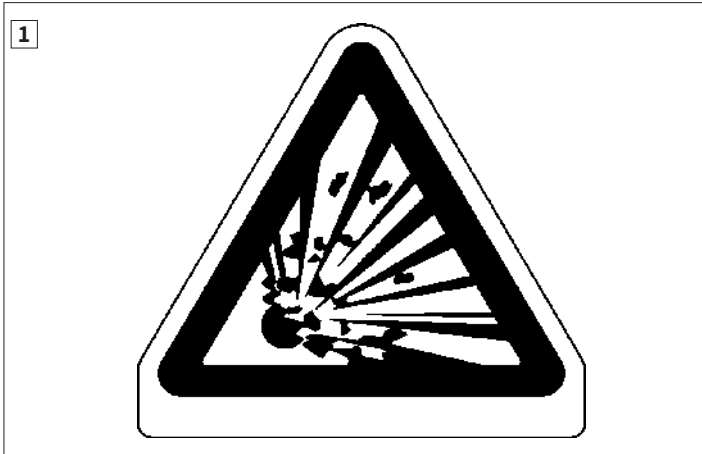


1.5 ENGINE NUMBER

The engine number “B” is punched on the left side of the engine crankcase.

1.6 LOCATION OF IMPORTANT LABELS


Rif.	Component
1	Pressurised gas hazard label
2	Usable petrol quality label (only XE 125)
3	Chassis number punching
4	Vehicle data plate
5	“Choke” symbol (only XE 125)
6	Tyre pressure label (only XE 125)



6

FANTIC		PRESSURE [kPa]	
AXLE	SIZE	ON-ROAD USE	OFF-ROAD USE
Front	90/90-21	200	100
	80/100-21	200	100
Rear	120/90-18	220	100
	140/80-18	220	100

1.7 VEHICLE COMPONENT LOCATION

1.7.1 Handlebar components (XX 125 version)



Ref.	Component
1	Clutch lever
2	Engine stop switch
3	Front brake lever
4	Throttle grip
5	Radiator cap
6	Fuel tank cap
7	Engine mapping selector

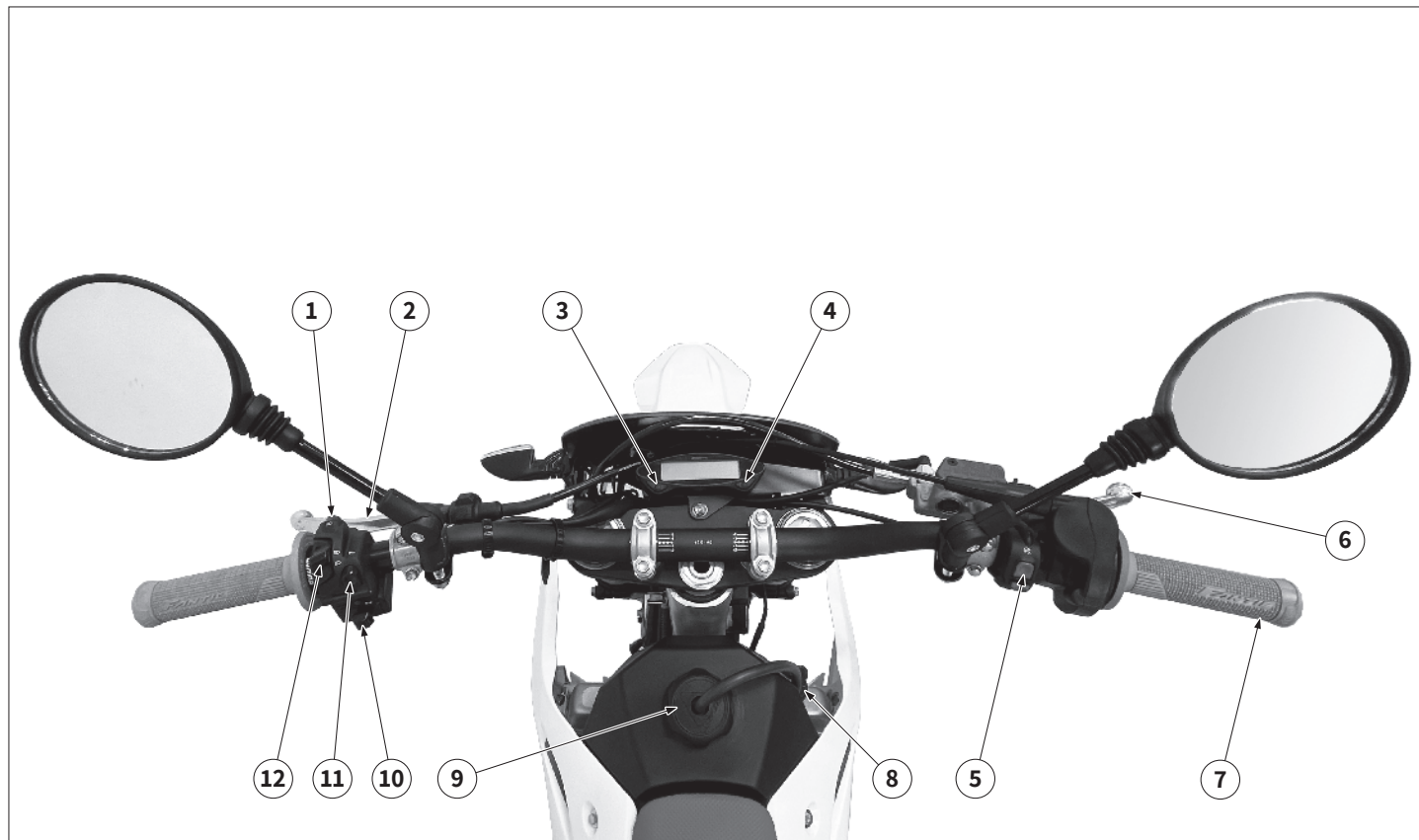
1.7.2 Right and left side components (XX 125 version)



Ref.	Component
8	Kickstarter lever
9	Fuel tank
10	Radiator
11	Coolant drain bolt
12	Check bolt (Transmission oil level)
13	Rear brake pedal
14	Fuel cock

Ref.	Component
15	Air filter
16	Drive chain
17	Shift pedal
18	Starter knob
19	Front fork

1.7.3 Handlebar components (XE 125 version)



Ref.	Component
1	High beam flashing button
2	Clutch lever
3	"ADJUST" button
4	"SELECT" button
5	Engine stop switch
6	Front brake lever
7	Throttle grip
8	Radiator cap
9	Fuel tank cap
10	Turn signal indicator light
11	Horn button
12	Low beam/high beam light switch

1.7.4 Right and left side components (XE 125 version)

1



Ref.	Component
13	Kickstarter lever
14	Fuel tank
15	Radiator
16	Coolant drain bolt
17	Check bolt (Transmission oil level)
18	Rear brake pedal
19	Fuel cock

Ref.	Component
20	Air filter
21	Drive chain
22	Shift pedal
23	Starter for cold start
24	Front fork

1.7.5 Handlebar components (XX 250 version)



Ref.	Component
1	Clutch lever
2	Engine stop switch
3	Front brake lever
4	Throttle grip
5	Radiator cap
6	Fuel tank cap
7	Engine mapping selector

1.7.6 Right and left side components (XX 250 version)

1



Ref.	Component
8	Kickstarter lever
9	Fuel tank
10	Radiator
11	Coolant drain bolt
12	Check bolt (Transmission oil level)
13	Rear brake pedal
14	Fuel cock

Ref.	Component
15	Air filter
16	Drive chain
17	Shift pedal
18	Starter for cold start
19	Front fork

1.8 TECHNICAL DATA

1.8.1 Technical data (XX 125 / XE 125 versions)

i All the values indicated for the XE 125 version refer to the approved version.

Technical data	Value(s)
Overall length:	
XX 125	2135 mm (84.1 in)
XE 125	2290 mm (90.2 in)
Overall width:	
XX 125	825 mm (32.5 in)
XE 125	860 mm (33.9 in)
Overall height:	
XX 125	1295 mm (51 in)
XE 125	1300 mm (51.2 in)
Seat height:	
XX 125	975 mm (38.4 in)
XE 125	970 mm (38.2 in)
Wheelbase:	
XX 125	1445 mm (56.9 in)
XE 125	1485 mm (58.5 in)
Minimum ground clearance:	
XX 125	365 mm (14.4 in)
XE 125	320 mm (12.6 in)
Curb weight:	
XX 125	90 kg (198 lb)
XE 125	94 kg (207 lb)
Weight in running order:	
XX 125	97 kg (214 lb)
XE 125	100 kg (220.6 lb)
Weight at full load:	
XX 125	170 kg (374.8 lb)
XE 125	175 kg (385.8 lb)
Maximum allowable weight:	
XX 125	240 kg (529 lb)
XE 125	250 kg (551.2 lb)
Engine type	2-stroke, gasoline
Cooling system	Liquid cooled
Cylinder arrangement	Single cylinder
Displacement	125 cm ³
Bore × stroke	54.0 x 54.5 mm (2.13 x 2.15 in)
Compression ratio:	
XX 125	8.2–10.1:1
XE 125	7.8–10.2:1
Starting system	Kickstarter
Lubrication system	Premix (30:1)
Mixture oil	Premix 30:1 (API TC / JASO FD / ISO-L-EGD)

Technical data	Value(s)
Transmission oil:	
Recommended type	10W-40 (API SL / JASO MA MA2)
Periodic oil change	0.70 L (0.74 US qt, 0.62 Imp qt)
Total amount	0.76 L (0.80 US qt , 0.67 Imp qt)
Cooling system:	
Coolant quantity (including all routes)	1.20 L (1.30 US qt, 1.06 Imp qt)
Radiator cap valve opening pressure	120 kPa (0.122 kgf/cm ² , 0.174 PSI)
Air filter:	
Air filter type	Wet element
Air filter oil	Air Filter Special Oil
Brake oil	Synthetic Brake Fluid DOT 4
Fuel:	
Type	Premium unleaded gasoline only (E10 acceptable)
Tank capacity	9.0 L (2.4 US gal, 2.0 Imp.gal)
Reserve amount (XE 125 version only)	2.0 L (0.53 US gal, 0.44 Imp.gal)
Carburettor:	
Type/Manufacturer	PWK38S x 1
Spark plug:	
Type/Manufacturer	NGK /BR9EVX (resistance type)
Gap	0.6–0.7 mm (0.024–0.028 in)
Clutch type	Wet, multiple-disc
Primary reduction system	Gear
Primary reduction ratio	3.368 (64/19)
Final drive	Chain
Secondary reduction ratio:	
XX 125	3.769 (49/13)
XE 125	3.583 (46/13)
Transmission type	Constant mesh, 6-speed
Operation	Left foot operation
Gear ratio:	
1a	2.385 (31/13)
2a	1.933 (29/15)
3a	1.588 (27/17)
4a	1.353 (23/17)
5a	1.176 (20/17)
6a	1.056 (19/18)
Seats	1
Frame	Semi double cradle
Caster angle:	
XX 125	26.0°
XE 125	26.8°
Trail:	
XX 125	109 mm (4.3 in)
XE 125	116 mm (4.6 in)
Wheels (XX 125, original equipment):	
Front	80/100-21 Pirelli MX32 Mid/Soft
Rear	100/90-19 Pirelli MX32 Mid/Soft

Technical data	Value(s)
Front/rear inflation pressure	1 bar (100 kPa ± 10) (15 PSI)
Wheels (XE 125, original equipment):	
Front	90/90-21 Metzeler 6 Days
Rear	120/90-18 Metzeler 6 Days
Front inflation pressure (road use)	2 bar (200 kPa - 29 PSI)
Rear inflation pressure (road use)	2.2 bar (220 kPa - 32 PSI)
Front/rear inflation pressure ("Racing" use)	1 bar (100 kPa - 15 PSI)
Wheels (XE 125, alternative sizes):	
Front	80/100-21
Rear	140/80-18
Front inflation pressure (road use)	2 bar (200 kPa - 29 PSI)
Rear inflation pressure (road use)	2.5 bar (250 kPa - 36 PSI)
Front/rear inflation pressure ("Racing" use)	1 bar (100 kPa - 15 PSI)
Brake:	
Front brake type	Single disc brake
Operation	Right hand operation
Rear brake type	Single disc brake
Operation	Right foot operation
Suspension:	
Front suspension	Telescopic fork
Rear suspension	Swingarm (link suspension)
Shock absorber:	
Front shock absorber	Coil spring, hydraulic damper
Rear shock absorber	Coil spring, gas-hydraulic damper
Wheel travel:	
Front wheel travel	300 mm (11.8 in)
Rear wheel travel	315 mm (12.4 in)
Ignition system	CDI (Capacitive Discharge Ignition)
Turn signals (XE 125 version only)	13.5 V - 1 W
High/low beam light (XE 125 version only)	Led
Position/brake light (XE 125 version only)	Led
License plate light (XE 125 version only)	Led
Fuses (XE 125 version only):	
Battery fuse	7.5 A
Light Fuse	7.5 A
Key Fuse	7.5 A
Speed sensor fuse	2 A

1.8.2 Technical Data (XX 250 version)

1

Technical data	Value(s)
Overall length	2185 mm (85.6 in)
Overall width	825 mm (32.5 in)
Overall height	1290 mm (50.6 in)
Seat height	980 mm (38.6 in)
Wheelbase	1485 mm (58.1 in)
Minimum ground clearance	360 mm (13.19 in)
Curb weight	98 kg (216 lb)
Weight in running order	103 kg (234 lb)
Weight at full load	178 kg (392.6 lb)
Maximum allowable height	248 kg (546,8 lb)
Engine type	2 stroke – gasoline
Cooling system	Liquid cooled
Cylinder arrangement	Single cylinder
Displacement	249 cm ³
Bore × stroke	66.4 x 72.0 mm (2.61 x 2.83 in)
Compression ratio:	8.9–10.6:1
Valve train	DOHC
Starting system	Kickstarter
Lubrication system	Premix (30:1)
Mixture oil	Premix 30:1 (API TC / JASO FD / ISO-L-EGD)
Transmission oil:	
Recommended type	10W-40 (API SL / JASO MA MA2)
Periodic oil change	0.75 L (0.79 US qt, 0.66 Imp.qt)
Total amount	0.80 L (0.85 US qt, 0.70 Imp.qt)
Cooling system:	
Coolant quantity (including all routes)	2.0 L (2.11 US qt, 1.76 Imp.qt)
Radiator cap valve opening pressure	120 kPa (0.122 kgf/cm ² , 0.174 PSI)
Air filter:	
Air filter type	Wet element
Air filter oil	Air Filter Special Oil
Brake oil	Synthetic Brake Fluid DOT 4
Fuel:	
Type	Premium unleaded gasoline only (E10 acceptable)
Tank capacity:	9.0 L (2.4 US gal, 2 Imp.gal)
Carburettor:	
Type/Manufacturer	PWK38 x 1
Spark plug:	
Type/Manufacturer	NGK/BR9EVX (resistance type)
Gap	0.6–0.7 mm (0.024–0.028 in)
Clutch type	Wet, multiple-disc
Primary reduction system	Gear
Primary reduction ratio	3.000 (63/21)
Final drive	Chain
Secondary reduction ratio	3.571 (50/14)
Transmission type	Constant mesh, 5-speed

Technical data	Value(s)
Operation	Left foot operation
Gear ratio (XEF 450 version):	
1a	1.929 (27/14)
2a	1.533 (23/15)
3a	1.278 (23/18)
4a	1.091 (24/22)
5a	0.952 (20/21)
Seats	1
Frame	Semi double cradle
Caster angle	27.7°
Trail	122 mm (4.8 in)
Wheels (XX 250, original equipment):	
Front	80/100-21 Pirelli MX 32 MID SOFT
Rear	110/90-19 Pirelli MX32 MID SOFT
Front/rear inflation pressure	1 bar (100 kPa ± 10) (15 PSI)
Brake:	
Front brake type	Single disc brake
Operation	Right hand operation
Rear brake type	Single disc brake
Operation	Right foot operation
Suspension:	
Front suspension	Telescopic fork
Rear suspension	Swingarm (link suspension)
Shock absorber:	
Front shock absorber	Coil spring, hydraulic damper
Rear shock absorber	Coil spring, gas-hydraulic damper
Wheel travel:	
Front wheel travel	300 mm (11.8 in)
Rear wheel travel	315 mm (12.4 in)
Ignition system	CDI (Capacitive Discharge Ignition)

1.9 ENGINE TIGHTENING TORQUES

1.9.1 Engine tightening torques (XX 125 / XE 125 versions)

i “◊” = marked portion shall be checked for torque tightening after break-in or before each race.

Item	Thread size	Quantity	Tightening torque	Remarks
Spark plug	M14S	1	20 N·m (2.0 kgf·m, 15 lb·ft)	
Cylinder head nut	M8	5	28 N·m (2.8 kgf·m, 21 lb·ft)	
Cylinder head stud bolt	M8	5	13 N·m (1.3 kgf·m, 9.6 lb·ft)	
Cylinder nut	M8	4	30 N·m (3.0 kgf·m, 22 lb·ft)	
Cylinder stud bolt	M8	4	13 N·m (1.3 kgf·m, 9.6 lb·ft)	
Power valve cover screw	M5	4	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Power valve link lever bolt	M4	1	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	
Power valve	M5	4	8 N·m (0.8 kgf·m, 5.9 lb·ft)	
Push rod bolt	M5	1	4.5 N·m (0.45 kgf·m, 3.3 lb·ft)	
Thrust plate screw	M5	1	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	
Governor fork screw	M4	2	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Power valve housing bolt	M5	3	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	
Water pump housing cover bolt	M6	4	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Coolant drain bolt	M6	1	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Radiator bolt	M6	6	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Radiator guard bolt	M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Radiator hose clamp	M6	8	1.5 N·m (0.15 kgf·m, 1.1 lb·ft)	
Air filter element	M6	1	2.0 N·m (0.20 kgf·m, 1.5 lb·ft)	
Carburettor joint bolt	M6	4	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Carburettor joint clamp	M4	1	2.3 N·m (0.23 kgf·m, 1.7 lb·ft)	
Air filter case joint clamp	M4	1	2.3 N·m (0.23 kgf·m, 1.7 lb·ft)	
Air filter case bolt ◊	M6	2	8 N·m (0.8 kgf·m, 5.9 lb·ft)	
Air filter guide clamp	M5	1	3.5 N·m (0.35 kgf·m, 2.6 lb·ft)	
Locknut (throttle cable handlebar side)	M8	1	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Locknut (throttle cable carburettor side)	M6	1	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	
Crankcase bolt	M6	12	14 N·m (1.4 kgf·m, 10 lb·ft)	
Crankcase cover screw (right)	M6	8	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Crankcase cover screw (left) (XX 125)	M6	4	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Crankcase cover screw (left) (XE 125) ◊	M6	4	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Drive sprocket cover screw	M6	2	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Bearing plate cover screw	M6	3	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Holder bolt	M6	1	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Oil check bolt	M6	1	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Oil drain bolt	M10	1	20 N·m (2.0 kgf·m, 15 lb·ft)	
Kickstarter lever	M6	1	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Clutch cover bolt	M6	6	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Primary drive gear bolt	M8	1	48 N·m (4.8 kgf·m, 35 lb·ft)	
Clutch boss nut	M16	1	80 N·m (8.0 kgf·m, 59 lb·ft)	Lock washer
Clutch spring bolt	M6	5	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Locknut (clutch cable side)	M6	1	4.3 N·m (0.43 kgf·m, 3.2 lb·ft)	
Drive sprocket nut	M18	1	75 N·m (7.5 kgf·m, 55 lb·ft)	Lock washer
Shift pedal bolt	M6	1	12 N·m (1.2 kgf·m, 8.9 lb·ft)	

Item		Thread size	Quantity	Tightening torque	Remarks
Bearing plate cover screw (shift cam)		M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Shift guide bolt		M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Stopper lever bolt		M6	1	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Segment		M8	1	30 N·m (3.0 kgf·m, 22 lb·ft)	
Exhaust pipe bolt	◇	M6	2	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Exhaust pipe stay bolt (front)	◇	M6	1	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Exhaust pipe stay bolt (rear)	◇	M6	1	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Silencer bolt (XX 125)	◇	M6	1	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Silencer bolt (XE 125)	◇	M6	2	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Fiber bolt		M6	4	10 N·m (1.0 kgf·m, 7.4 lb·ft)	

1.9.2 Engine tightening torques (XX 250 version)

i “♦” = marked portion shall be checked for torque tightening after break-in or before each race.

Item	Thread size	Quantity	Tightening torque	Remarks
Spark plug	M14S	1	20 N·m (2.0 kgf·m, 15 lb·ft)	
Cylinder head (nut)	M8	6	25 N·m (2.5 kgf·m, 18 lb·ft)	
Cylinder head (stud)	M8	6	13 N·m (1.3 kgf·m, 9.6 lb·ft)	
Cylinder (nut)	M10	4	42 N·m (4.2 kgf·m, 31 lb·ft)	
Cylinder (stud)	M10	4	13 N·m (1.3 kgf·m, 9.6 lb·ft)	
Power valve holder 2	M5	2	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Link rod screw	M5	2	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Push rod bolt	M5	1	4.5 N·m (0.45 kgf·m, 3.3 lb·ft)	
Thrust plate screw	M5	1	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Side holder screw	M5	4	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	
Power valve link lever bolt	M4	1	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	
Pulley bolt	M4	2	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	
Power valve cover screw	M5	4	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	
Governor fork screw	M4	2	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Power valve housing bolt	M5	4	4.5 N·m (0.45 kgf·m, 3.3 lb·ft)	
Impeller	M8	1	14 N·m (1.4 kgf·m, 10 lb·ft)	
Water pump housing cover bolt	M6	4	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Coolant drain bolt	M6	1	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Radiator bolt	M6	4	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Radiator guard bolt	M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Radiator hose clamp	M6	8	1.5 N·m (0.15 kgf·m, 1.1 lb·ft)	
Air filter element	M6	1	2.0 N·m (0.20 kgf·m, 1.5 lb·ft)	
Carburettor joint bolt	M6	5	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Air filter case bolt ♦	M6	2	8 N·m (0.8 kgf·m, 5.9 lb·ft)	
Air filter guide clamp	M5	1	3.5 N·m (0.35 kgf·m, 2.6 lb·ft)	
Reed valve screw	M3	4	1.0 N·m (0.10 kgf·m, 0.73 lb·ft)	
Locknut (throttle cable handlebar side)	M8	1	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Locknut (throttle cable carburettor side)	M6	1	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	
Exhaust pipe bolt (front) ♦	M6	1	14 N·m (1.4 kgf·m, 10 lb·ft)	
Exhaust pipe bolt (rear) ♦	M6	1	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Exhaust pipe stay bolt (front) ♦	M8	1	25 N·m (2.5 kgf·m, 18 lb·ft)	
Exhaust pipe stay bolt (rear) ♦	M6	1	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Silencer bolt ♦	M6	2	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Fiber bolt	M6	4	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Crankcase bolt	M6	11	14 N·m (1.4 kgf·m, 10 lb·ft)	
Crankcase cover screw (left)	M6	5	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Drive sprocket cover screw	M6	2	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Crankcase cover screw (right)	M6	9	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Bearing plate cover screw (drive axle left)	M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Bearing plate cover bolt (main axle right)	M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Holder bolt	M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Oil drain bolt	M12	1	23 N·m (2.3 kgf·m, 17 lb·ft)	

Item	Thread size	Quantity	Tightening torque	Remarks
Oil check bolt	M6	1	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Neutral switch lead holder bolt	M6	1	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Kickstarter lever	M8	1	30 N·m (3.0 kgf·m, 22 lb·ft)	
Ratchet wheel stopper bolt	M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Clutch cover bolt	M6	6	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Primary drive gear bolt	M10	1	55 N·m (5.5 kgf·m, 41 lb·ft)	
Clutch boss nut	M20	1	75 N·m (7.5 kgf·m, 55 lb·ft)	Use a Lock washer
Clutch spring bolt	M6	6	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Locknut (clutch cable side)	M6	1	4.3 N·m (0.43 kgf·m, 3.2 lb·ft)	
Push lever shaft bolt	M5	1	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Drive sprocket nut	M20	1	75 N·m (7.5 kgf·m, 55 lb·ft)	Use a Lock washer
Shift guide bolt	M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Stopper lever bolt	M6	1	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Tension spring (shift shaft) stopper bolt	M8	1	22 N·m (2.2 kgf·m, 16 lb·ft)	
Segment	M8	1	30 N·m (3.0 kgf·m, 22 lb·ft)	
Bearing plate cover screw (shift cam right)	M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Shift pedal bolt	M6	1	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Neutral switch screw	M5	2	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	

1.10 CHASSIS TIGHTENING TORQUES

1.10.1 Chassis tightening torques (XX 125 / XE 125 versions)

i “◊” = marked portion shall be checked for torque tightening after break-in or before each race.

Item	Thread size	Quantity	Tightening torque	Remarks
Upper bracket pinch bolt	◊ M8	4	21 N·m (2.1 kgf·m, 15 lb·ft)	
Lower bracket pinch bolt	◊ M8	4	21 N·m (2.1 kgf·m, 15 lb·ft)	
Steering stem nut	◊ M24	1	145 N·m (14.5 kgf·m, 107 lb·ft)	
Upper handlebar holder bolt	◊ M8	4	28 N·m (2.8 kgf·m, 21 lb·ft)	
Lower handlebar holder nut	◊ M12	2	40 N·m (4.0 kgf·m, 30 lb·ft)	
Steering ring nut	◊ M28	1	Vedere nota ❶ a page 35	
Damper assembly (front fork)	M51	2	30 N·m (3.0 kgf·m, 22 lb·ft)	
Inner tube and adjuster	M22	2	55 N·m (5.5 kgf·m, 41 lb·ft)	
Base valve (front fork)	M42	2	29 N·m (2.9 kgf·m, 21 lb·ft)	
Adjuster (damper assembly)	M12	2	29 N·m (2.9 kgf·m, 21 lb·ft)	
Bleed screw (front fork)	M5	2	1.3 N·m (0.13 kgf·m, 0.95 lb·ft)	
Front fork protector bolt	◊ M6	6	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Cable guide screw	◊ M6	1	3.8 N·m (0.38 kgf·m, 2.8 lb·ft)	
Front brake hose holder bolt	◊ M6	2	9 N·m (0.9 kgf·m, 6.6 lb·ft)	
Throttle cable cap screw	M4	2	0.5 N·m (0.05 kgf·m, 0.37 lb·ft)	
Front brake master cylinder holder bolt	◊ M6	2	9 N·m (0.9 kgf·m, 6.6 lb·ft)	
Front brake lever pivot bolt	M6	1	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Front brake lever pivot nut	M6	1	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Locknut (front brake lever position)	M6	1	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Clutch lever nut	M6	1	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	
Clutch lever holder bolt	M6	2	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Locknut (clutch lever position)	M5	1	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Front brake master cylinder reservoir cap screw	M4	2	1.5 N·m (0.15 kgf·m, 1.1 lb·ft)	
Front brake hose union bolt	◊ M10	1	30 N·m (3.0 kgf·m, 22 lb·ft)	
Front brake caliper bolt	◊ M8	2	28 N·m (2.8 kgf·m, 21 lb·ft)	
Grip cap bolt	M6	2	3.8 N·m (0.38 kgf·m, 2.8 lb·ft)	
Engine stop switch screw	M3	1	0.5 N·m (0.05 kgf·m, 0.37 lb·ft)	
Brake pad pin plug	M10	2	2.5 N·m (0.25 kgf·m, 1.8 lb·ft)	
Brake pad pin	◊ M10	2	17 N·m (1.7 kgf·m, 13 lb·ft)	
Brake caliper bleed screw	◊ M8	2	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Front wheel axle nut	◊ M16	1	105 N·m (10.5 kgf·m, 77 lb·ft)	
Front wheel axle pinch bolt	◊ M8	4	21 N·m (2.1 kgf·m, 15 lb·ft)	
Front brake disc bolt	◊ M6	6	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Rear brake disc bolt	◊ M6	6	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Footrest bracket bolt	M10	4	55 N·m (5.5 kgf·m, 41 lb·ft)	
Rear brake pedal bolt	◊ M8	1	Vedere nota ❷ a page 35	
Rear brake master cylinder bolt	◊ M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Rear brake master cylinder reservoir cap bolt	M4	2	1.5 N·m (0.15 kgf·m, 1.1 lb·ft)	
Rear brake hose union bolt	◊ M10	2	30 N·m (3.0 kgf·m, 22 lb·ft)	
Rear brake pedal adjusting locknut	M6	1	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Rear wheel axle nut	◊ M20	1	125 N·m (12.5 kgf·m, 92 lb·ft)	

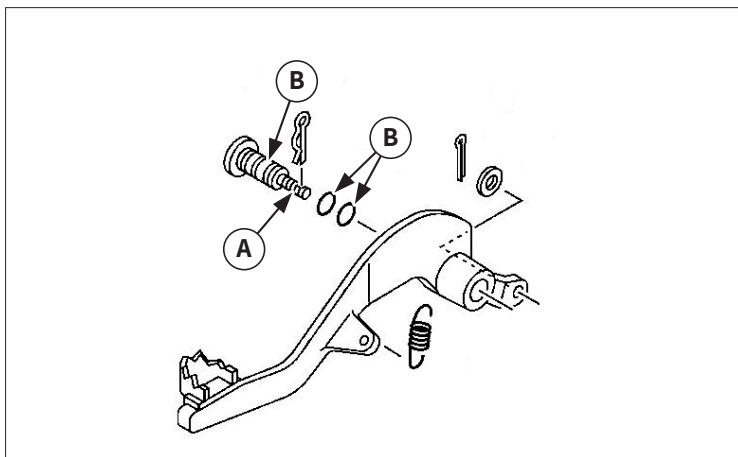
Item	Thread size	Quantity	Tightening torque	Remarks
Nipple (spoke)	—	72	2.5 N·m (0.25 kgf·m, 1.8 lb·ft)	
Rear wheel sprocket nut	M8	6	42 N·m (4.2 kgf·m, 31 lb·ft)	
Rear brake disc cover bolt	M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Rear brake caliper protector bolt	M6	2	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Drive chain puller locknut	M8	2	19 N·m (1.9 kgf·m, 14 lb·ft)	
Engine mounting nut (front side)	M10	1	64 N·m (6.4 kgf·m, 47 lb·ft)	
Engine mounting nut (lower side)	M10	1	64 N·m (6.4 kgf·m, 47 lb·ft)	
Engine bracket nut (upper side)	M8	2	34 N·m (3.4 kgf·m, 25 lb·ft)	
Engine bracket nut (lower side)	M8	1	34 N·m (3.4 kgf·m, 25 lb·ft)	
Pivot shaft nut	M16	1	85 N·m (8.5 kgf·m, 63 lb·ft)	
Relay arm nut (swingarm side)	M14	1	70 N·m (7.0 kgf·m, 52 lb·ft)	
Connecting arm nut (relay arm side)	M14	1	80 N·m (8.0 kgf·m, 59 lb·ft)	
Connecting arm nut (frame side)	M14	1	80 N·m (8.0 kgf·m, 59 lb·ft)	
Rear shock absorber assembly upper nut	M10	1	56 N·m (5.6 kgf·m, 41 lb·ft)	
Rear shock absorber assembly lower nut	M10	1	53 N·m (5.3 kgf·m, 39 lb·ft)	
Rear frame bolt (upper)	M8	1	32 N·m (3.2 kgf·m, 24 lb·ft)	
Rear frame bolt (lower)	M8	2	29 N·m (2.9 kgf·m, 21 lb·ft)	
Brake hose holder screw	M5	4	3.5 N·m (0.35 kgf·m, 2.6 lb·ft)	
Swingarm and patch screw	M4	4	2.0 N·m (0.20 kgf·m, 1.5 lb·ft)	
Drive chain tensioner bolt	M8	1	16 N·m (1.6 kgf·m, 12 lb·ft)	
Drive chain tensioner nut	M8	1	16 N·m (1.6 kgf·m, 12 lb·ft)	
Drive chain support bolt	M6	1	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Drive chain support nut	M6	2	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Drive chain guide bolt	M5	4	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Fuel tank bolt (boss)	M10	2	20 N·m (2.0 kgf·m, 15 lb·ft)	
Fuel tank bolt	M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Fuel cock screw	M6	2	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	
Fuel tank screw (seat set side)	M6	1	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Fuel tank screw (fitting band side)	M6	1	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Fuel tank bracket bolt	M6	4	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Air scoop bolt (fuel tank)	M6	4	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Air scoop bolt (radiator guard)	M6	2	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Front fender bolt	M6	4	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Rear fender bolt (front side)	M6	2	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Rear fender bolt (rear side)	M6	2	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Screw (mud flap)	—	2	1.3 N·m (0.13 kgf·m, 0.95 lb·ft)	
Side cover bolt (front side)	M6	2	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Side cover bolt (rear side)	M6	2	9 N·m (0.9 kgf·m, 6.6 lb·ft)	
Seat bolt	M6	1	11 N·m (1.1 kgf·m, 8.1 lb·ft)	
Number plate bolt	M6	1	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Side kickstand bolt (XE 125 only)	M10	1	25 N·m (2.5 kgf·m, 18 lb·ft)	

1.10.2 Chassis tightening torques (XX 250 version)

i “◊” = marked portion shall be checked for torque tightening after break-in or before each race.

Item	Thread size	Quantity	Tightening torque	Remarks
Upper bracket pinch bolt	◊ M8	4	21 N·m (2.1 kgf·m, 15 lb·ft)	
Lower bracket pinch bolt	◊ M8	4	21 N·m (2.1 kgf·m, 15 lb·ft)	
Steering stem nut	◊ M24	1	145 N·m (14.5 kgf·m, 107 lb·ft)	
Upper handlebar holder bolt	◊ M8	4	28 N·m (2.8 kgf·m, 21 lb·ft)	
Lower handlebar holder nut	◊ M12	2	40 N·m (4.0 kgf·m, 30 lb·ft)	
Steering ring nut	◊ M28	1	Vedere nota ❶ a page 35	
Damper assembly (front fork)	M51	2	30 N·m (3.0 kgf·m, 22 lb·ft)	
Inner tube and adjuster	M22	2	55 N·m (5.5 kgf·m, 41 lb·ft)	
Base valve (front fork)	M42	2	29 N·m (2.9 kgf·m, 21 lb·ft)	
Adjuster (damper assembly)	M12	2	29 N·m (2.9 kgf·m, 21 lb·ft)	
Bleed screw (front fork)	M5	2	1.3 N·m (0.13 kgf·m, 0.95 lb·ft)	
Front fork protector bolt	◊ M6	6	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Front brake hose holder bolt	◊ M6	2	9 N·m (0.9 kgf·m, 6.6 lb·ft)	
Throttle cable cap screw	M4	2	0.5 N·m (0.05 kgf·m, 0.37 lb·ft)	
Grip cap bolt	M6	2	3.8 N·m (0.38 kgf·m, 2.8 lb·ft)	
Clutch lever nut	M6	1	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	
Clutch lever holder bolt	M6	2	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Locknut (clutch lever position)	M5	1	4.8 N·m (0.48 kgf·m, 3.5 lb·ft)	
Engine stop switch screw	M3	1	0.5 N·m (0.05 kgf·m, 0.37 lb·ft)	
Front brake master cylinder holder bolt	◊ M6	2	9 N·m (0.9 kgf·m, 6.6 lb·ft)	
Front brake master cylinder reservoir cap screw	M4	2	1.5 N·m (0.15 kgf·m, 1.1 lb·ft)	
Front brake lever pivot bolt	M6	1	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Front brake lever pivot nut	M6	1	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Locknut (front brake lever position)	M6	1	5 N·m (0.5 kgf·m, 3.7 lb·ft)	
Cable guide screw	◊ M6	1	3.8 N·m (0.38 kgf·m, 2.8 lb·ft)	
Front brake hose union bolt	◊ M10	2	30 N·m (3.0 kgf·m, 22 lb·ft)	
Front brake caliper bolt	◊ M8	2	28 N·m (2.8 kgf·m, 21 lb·ft)	
Brake pad pin plug	M10	2	2.5 N·m (0.25 kgf·m, 1.8 lb·ft)	
Brake pad pin	◊ M10	2	17 N·m (1.7 kgf·m, 13 lb·ft)	
Brake caliper bleed screw	◊ M8	2	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Front wheel axle nut	◊ M16	1	105 N·m (10.5 kgf·m, 77 lb·ft)	
Front wheel axle pinch bolt	◊ M8	4	21 N·m (2.1 kgf·m, 15 lb·ft)	
Front brake disc bolt	◊ M6	6	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Rear brake disc bolt	◊ M6	6	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Footrest bracket bolt	M10	4	55 N·m (5.5 kgf·m, 41 lb·ft)	
Rear brake pedal bolt	◊ M8	1	Vedere nota ❷ a page 35	
Rear brake pedal adjusting locknut	M6	1	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Rear brake master cylinder bolt	◊ M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Rear brake master cylinder reservoir cap bolt	M4	2	1.5 N·m (0.15 kgf·m, 1.1 lb·ft)	
Rear brake hose union bolt	◊ M10	2	30 N·m (3.0 kgf·m, 22 lb·ft)	
Rear wheel axle nut	◊ M20	1	125 N·m (12.5 kgf·m, 92 lb·ft)	
Rear wheel sprocket nut	◊ M8	6	42 N·m (4.2 kgf·m, 31 lb·ft)	

Item	Thread size	Quantity	Tightening torque	Remarks
Nipple (sproke)	—	72	2.5 N·m (0.25 kgf·m, 1.8 lb·ft)	
Rear brake disc cover bolt	M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Rear brake caliper protector bolt	M6	2	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Drive chain puller locknut	M8	2	19 N·m (1.9 kgf·m, 14 lb·ft)	
Engine bracket nut (upper side)	M8	2	34 N·m (3.4 kgf·m, 25 lb·ft)	
Engine bracket nut (lower side)	M10	1	64 N·m (6.4 kgf·m, 47 lb·ft)	
Engine mounting nut (front side)	M10	1	64 N·m (6.4 kgf·m, 47 lb·ft)	
Engine mounting nut (lower side)	M10	1	64 N·m (6.4 kgf·m, 47 lb·ft)	
Pivot shaft nut	M16	1	85 N·m (8.5 kgf·m, 63 lb·ft)	
Relay arm nut (swingarm side)	M14	1	70 N·m (7.0 kgf·m, 52 lb·ft)	
Connecting arm nut (relay arm side)	M14	1	80 N·m (8.0 kgf·m, 59 lb·ft)	
Connecting arm nut (frame side)	M14	1	80 N·m (8.0 kgf·m, 59 lb·ft)	
Rear shock absorber assembly upper nut	M10	1	56 N·m (5.6 kgf·m, 41 lb·ft)	
Rear shock absorber assembly lower nut	M10	1	53 N·m (5.3 kgf·m, 39 lb·ft)	
Rear frame bolt (upper)	M8	1	32 N·m (3.2 kgf·m, 24 lb·ft)	
Rear frame bolt (lower)	M8	2	29 N·m (2.9 kgf·m, 21 lb·ft)	
Brake hose holder screw	M5	4	3.5 N·m (0.35 kgf·m, 2.6 lb·ft)	
Swingarm and patch screw	M4	4	2.0 N·m (0.20 kgf·m, 1.5 lb·ft)	
Drive chain tensioner bolt	M8	1	16 N·m (1.6 kgf·m, 12 lb·ft)	
Drive chain tensioner nut	M8	1	16 N·m (1.6 kgf·m, 12 lb·ft)	
Drive chain support bolt	M6	1	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Drive chain support nut	M6	2	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Drive chain guide bolt	M5	4	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Fuel tank bolt (boss)	M10	2	20 N·m (2.0 kgf·m, 15 lb·ft)	
Fuel tank bolt	M6	2	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Fuel cock screw	M6	2	4.0 N·m (0.40 kgf·m, 3.0 lb·ft)	
Fuel tank screw (seat set side)	M6	1	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Fuel tank screw (fitting band side)	M6	1	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Fuel tank bracket bolt	M6	4	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Seat bolt	M8	2	19 N·m (1.9 kgf·m, 14 lb·ft)	
Side cover bolt	M6	2	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Air scoop bolt (fuel tank)	M6	4	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Air scoop bolt (radiator guard)	M6	2	6 N·m (0.6 kgf·m, 4.4 lb·ft)	
Front fender bolt	M6	4	10 N·m (1.0 kgf·m, 7.4 lb·ft)	
Rear fender bolt (front side)	M6	2	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
Rear fender bolt (rear side)	M6	2	12 N·m (1.2 kgf·m, 8.9 lb·ft)	
Screw (mud flap)	—	2	1.3 N·m (0.13 kgf·m, 0.95 lb·ft)	
Number plate bolt	M6	1	7 N·m (0.7 kgf·m, 5.2 lb·ft)	

**TIP ①: Steering ring nut**

1. First, tighten the steering ring nut approximately 38 N·m (3.8 kgf·m, 28 lb·ft) by using the steering nut wrench, then loosen the steering ring nut one turn.
2. Retighten the steering ring nut 7 N·m (0.7 kgf·m, 5.2 lb·ft).

TIP ②: Rear brake pedal bolt

When removing/installing the brake lever:

1. Clean the screw and housing of loctite residue.
2. Apply new threadlock "A" on the screw thread and lithium-based grease "B" on the cylindrical part where the O-rings fit and on the O-rings as well.
3. Tighten the screw to 26 N·m (2.6 kgf·m, 19 lb·ft).

1.11 ELECTRICAL TIGHTENING TORQUES

Item	Thread size	Quantity	Tightening torque	Remarks
Stator coil screw	M6	3	7 N·m (0.7 kgf·m, 5.2 lb·ft)	
CDI magneto rotor nut	M12	1	56 N·m (5.6 kgf·m, 41 lb·ft)	
Ignition coil bolt	M6	2	7 N·m (0.7 kgf·m, 5.2 lb·ft)	

1.12 MAINTENANCE LIMITS

1.12.1 Engine maintenance limits (XX 125 / XE 125 versions)

Item	Standard	Limit
Cylinder head:		
Warp limit	–	0.03 mm (0.0012 in)
Cylinder:		
Bore size	54.000–54.014 mm (2.1260–2.1265 in)	54.064 mm (2.1285 in)
Piston:		
Diameter	53.957-53.972 mm (2.1260-2.1249 in)	–
Piston-to-cylinder clearance	0.040-0.045 mm (0.0016-0.0018 in)	–
Measuring point (from piston skirt bottom)	17.5 mm (0.69 in)	–
Piston pin:		
Piston pin bore inside diameter	15.040 mm (0.5921 in)	–
Piston pin outside diameter	14.975 mm (0.5896 in)	–
Piston-pin-to-piston-pin-bore clearance	0.008-0.023 mm (0.0003-0.0009 in)	–
Piston ring:		
End gap (installed)	–	1.20 mm (0.0472 in)
Ring side clearance (installed)	0.035–0.070 mm (0.0014–0.0028 in)	0.10 mm (0.0039 in)
Crankshaft:		
Crank assembly width:	55.90–55.95 mm (2.201–2.203 in)	0.050 mm (0.0020 in)
Clutch:		
Clutch lever free play	7.0–12.0 mm (0.28–0.47 in)	–
Friction plate:		
Thickness	2.90–3.10 mm (0.114–0.122 in)	2.80 mm (0.110 in)
Quantity	8 pieces	–
Clutch plate:		
Thickness	1.50–1.70 mm (0.059–0.067 in)	–
Quantity	7 pieces	–
Warpage limit	–	0.20 mm (0.008 in)
Clutch spring free length	41.20 mm (1.62 in)	39.20 mm (1.54 in)
Push rod bending limit	–	0.30 mm (0.012 in)
Transmission:		
Main axle deflection limit	–	0.01 mm (0.0004 in)
Drive axle deflection limit	–	0.01 mm (0.0004 in)
Shifter:		
Shifting type	Cam drum and guide bar	
Guide bar bending limit	–	0.050 mm (0.0020 in)
Kickstarter:		
Kickstarter type	Kick and mesh	
Kick clip friction force	P=7.80–11.80 N (0.80–1.20 kg, 1.75–2.65 lb)	–
Air filter oil grade (oiled filter):		
Oil quality	Foam air filter oil or other quality foam air filter oil	
Carburettor (XX 125):		
Type/Quantity	PWK38S x 1	–

Item	Standard	Limit
I.D. mark	BAX2 10	–
Main jet (M.J.)	#162	–
Full throttle air jet	#200	–
Taper pin	NYCF-3	–
Taper jet	ø2.9(#6)	–
Notch	#7	–
Idle throttle outlet	0.8	–
Idle throttle jet	#62	–
Bypass 1	1.5	–
Air screw opening turns	1 e 3/4	–
Valve seat size	3.8	–
Starter jet 1	#85	–
Booster jet	#35	–
Float height	6.5 mm (0.26 in)	–
Throttle grip clearance	3.0–5.0 mm (0.12–0.20 in)	–
Carburettor (XE 125):		
Type/Quantity	PWK38S x 1	–
I.D. mark	BRX1	–
Main jet (M.J.):		
Approved version	#105	–
“Racing” configuration version	#162	–
Full throttle air jet	#200	–
Taper pin:		
Approved version	–	–
“Racing” configuration version	NYCF-2	–
Taper jet	ø2.9(#6)	–
Notch	#7	–
Idle throttle outlet	0.8	–
Idle throttle jet:		
Approved version	#35	–
“Racing” configuration version	#60	–
Bypass 1	1.5	1.5
Air screw opening turns	1 e 1/2	1 e 1/2
Valve seat size	3.8	3.8
Starter jet 1	#85	#85
Booster jet:		
Approved version	#35	–
“Racing” configuration version	#35	–
Float height	6.5 mm (0.26 in)	–
Throttle grip clearance	3.0–5.0 mm (0.12–0.20 in)	–
Reed valve:		
Thickness	0.400 mm (0.0157 in)	–
Valve stopper height	–	–
Valve bending limit	–	0.2 mm (0.01 in)

Item	Standard	Limit
Cooling:		
Radiator cap valve opening pressure	120 kPa (1.22 kgf/cm ² , 17.40 PSI)	–
Radiator capacity (including the whole circuit)	0.90 L (0.95 US qt, 0.79 Imp.qt)	–

1.12.2 Engine maintenance limits (XX 250 version)

Item	Standard	Limit
Cylinder head:		
Warp limit	–	0.03 mm (0.0012 in)
Cylinder:		
Bore size	66.400–66.414 mm (2.6142–2.6147 in)	66.464 mm (2.6167 in)
Piston:		
Diameter	66.345–66.355 mm (2.6120–2.6124 in)	–
Piston-to-cylinder clearance	0.040–0.060 mm (0.0016–0.0024 in)	–
Measuring point (from piston skirt bottom)	25 mm (0.98 in)	–
Piston pin :		
Piston pin bore inside diameter	18.030 mm (0.7098 in)	–
Piston pin outside diameter	17.985 mm (0.7081 in)	–
Piston-pin-to-piston-pin-bore clearance	0.006–0.013 mm (0.0002–0.0005 in)	–
Upper piston ring:		
End gap (installed)	–	0.70 mm (0.0276 in)
Ring side clearance (installed)	0.030–0.065 mm (0.0012–0.0026 in)	0.10 mm (0.0039 in)
Second piston ring:		
End gap (installed)	–	1.20 mm (0.0472 in)
Ring side clearance (installed)	0.030–0.065 mm (0.0012–0.0026 in)	0.10 mm (0.0039 in)
Crankshaft:		
Crank assembly width	59.95–60.00 mm (2.360–2.362 in)	0.050 mm (0.0020 in)
Clutch:		
Clutch lever free play	7.0–12.0 mm (0.28–0.47 in)	–
Friction plate:		
Thickness	2.90–3.10 mm (0.114–0.122 in)	2.80 mm (0.110 in)
Quantity	8 pieces	–
Clutch plate:		
Thickness	1.50–1.70 mm (0.059–0.067 in)	–
Quantity	7 pieces	–
Warpage limit	–	0.20 mm (0.008 in)
Clutch spring free length	50.00 mm (1.97 in)	48.00 mm (1.89 in)
Push rod bending limit	–	0.30 mm (0.012 in)
Transmission:		
Main axle deflection limit	–	0.01 mm (0.0004 in)
Drive axle deflection limit	–	0.01 mm (0.0004 in)
Shifter:		
Shifting type	Cam drum and guide bar	
Guide bar bending limit	–	0.050 mm (0.0020 in)
Kickstarter:		
Kickstarter type	Kick and mesh	
Kick clip friction force	P=7.80–11.80 N (0.80–1.20 kg, 1.75–2.65 lb)	–
Air filter oil grade (oiled filter):		
Oil quality	Foam air filter oil or other quality foam air filter oil	

Item	Standard	Limit
Carburettor:		
Type/Quantity	PWK38 x 1	–
I.D. mark	1P86 40	–
Main jet (M.J.)	#190	–
Full throttle air jet	#200	–
Taper pin	N3-EW-3	–
Taper jet	ø2.9(#6)	–
Notch	#7	–
Idle throttle outlet	0.8	–
Idle throttle jet	#55	–
Bypass 1	1.5	–
Air screw opening turns	2 e 1/4	–
Valve seat size	3.8	–
Starter jet 1	#85	–
Booster jet	#50	–
Float height	6.5 mm (0.26 in)	–
Throttle grip clearance	3.0–5.0 mm (0.12–0.20 in)	–
Reed valve:		
Thickness	0.420 mm (0.0165 in)	–
Valve stopper height	10.3–10.7 mm (0.41–0.42 in)	–
Valve bending limit	–	0.2 mm (0.01 in)
Cooling:		
Radiator cap valve opening pressure	120 kPa (1.22 kgf/cm ² , 17.40 PSI)	–
Radiator capacity (including the whole circuit)	1.20 L (1.27 US qt, 1.06 Imp.qt)	–

1.12.3 Chassis maintenance limits

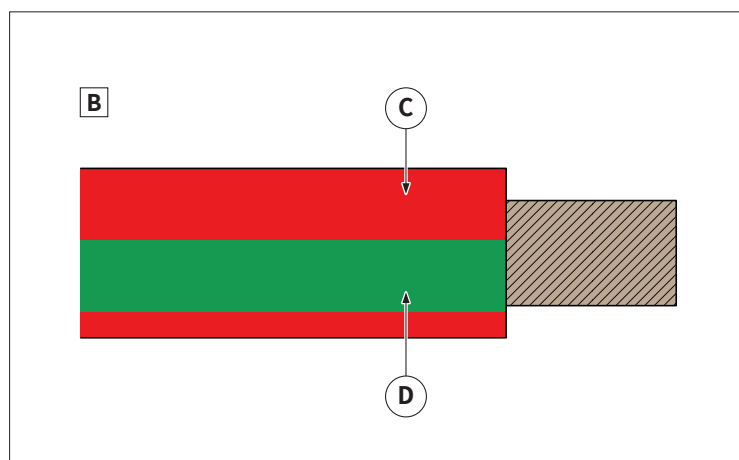
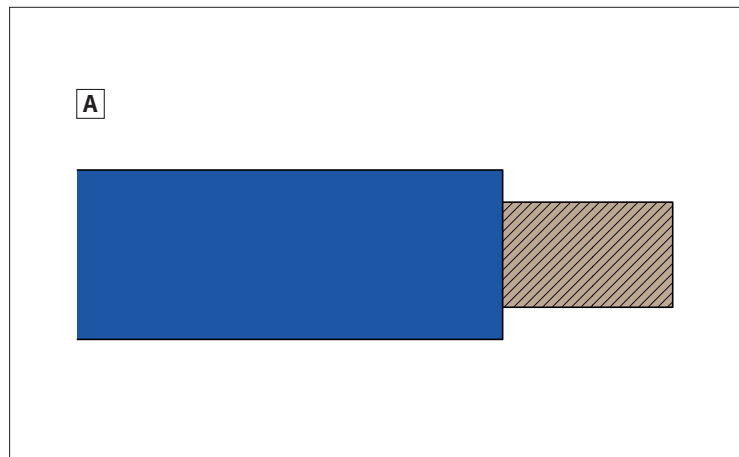
Item	Standard	Limit
Steering system:		
Type of steering bearings	Tapered roller bearing	
Front suspension:		
Front fork stroke	300.0 mm (11.8 in)	–
Fork spring free length:		
XX 125 / XE 125		492.0 mm (19.37 in)
XX 250		449.0 mm (17.68 in)
Stem oil capacity:		
XX 125 / XE 125	500.0 cm ³ (16.91 US oz, 17.64 Imp.oz)	–
XX 250	515.0 cm ³ (17.41 US oz, 18.16 Imp.oz)	–
Oil gradation	7.5W	
Force tube outside diameter	48 mm (1.9 in)	0.2 mm (0.01 in)
Front suspension extension damping:		
Adjustment system	Adjustable mechanical type	
Adjustment unit	Click	
Setting value for initial position (SOFT)	20	–
Setting value for initial position (STD):		
XX 125	11	–
XE 125	10	–
XX 250	12	–
Setting value for initial position (HARD)	0	–
Front suspension compression damping:		
Adjustment system	Adjustable mechanical type	
Adjustment unit	Click	
Setting value for initial position (SOFT)	20	–
Setting value for initial position (STD):		
XX 125	10	–
XE 125	15	–
XX 250	12	–
Setting value for initial position (HARD)	0	–
Rear suspension:		
Adjustment system	Adjustable mechanical type	
Wheel stroke	315 mm (12.4 in)	–
Rear suspension spring preload:		
Setting value (SOFT)	1.5 mm (0.06 in)	–
Setting value (STD):		
XX 125	7.0 mm (0.28 in)	–
XE 125	4.0 mm (0.16 in)	–
XX 250	12.0 mm (0.47 in)	–
Setting value (HARD)		
XX 125 / XE 125	18.5 mm (0.73 in)	–
XX 250	18.0 mm (0.71 in)	–
Rear suspension extension damping:		
Adjustment system	Adjustable mechanical type	

Item	Standard	Limit
Adjustment unit	Click	
Setting value for initial position (SOFT)	20	–
Setting value for initial position (STD)	10	–
Setting value for initial position (HARD)	0	–
Rear suspension compression damping:		
Adjustment system	Adjustable mechanical type	
Rear suspension quick compression damping:		
Adjustment unit	Rotate	
Setting value for initial position (SOFT)	2	–
Setting value for initial position (STD):		
XX 125	1-1/2	–
XE 125	1-5/8	–
XX 250	1-3/8	–
Setting value for initial position (HARD)	0	–
Rear suspension slow compression damping:		
Adjustment unit	Click	
Setting value for initial position (SOFT)	20	–
Setting value for initial position (STD):		
XX 125 / XX 250	12	–
XE 125	14	–
Setting value for initial position (HARD)	0	–
Swingarm:		
Swingarm end clearance limit (radial)	–	1.0 mm (0.04 in)
Swingarm end clearance limit (lateral)	–	0.2–0.9 mm (0.01–0.04 in)
Wheels and rims:		
Front wheel type	Spoked wheel	–
Rear wheel type	Spoked wheel	–
Front rim dimensions/material	21 × 1.60/Aluminum	–
Rear rim dimensions/material:		
XX 125	19 × 1.85/Aluminum	–
XE 125	18 × 2.15/Aluminum	–
XX 250	19 × 2.15/Aluminum	–
Rim misalignment limit:		
Radial	–	2.0 mm (0.08 in)
Lateral	–	2.0 mm (0.08 in)
Deformation limit front wheel axle	–	0.50 mm (0.02 in)
Deformation limit rear wheel axle	–	0.50 mm (0.02 in)
Transmission drive chain:		
Measurement	520	–
Type	Type without gasket	–
Number of joints:		
XX 125	112	–
XE 125 / XX 250	114	–
Chain clearance	48.0–58.0 mm (1.89–2.28 in)	–
Chain length (15 joints):		

Item	Standard	Limit
XE 125	–	239.3 mm (9.42 in)
XX 125 / XX 250	–	242.9 mm (9.56 in)
Front brake:		
Front brake lever clearance	0.0 mm (0.00 in)	–
Brake plate thickness limit	–	2.5 mm (0.10 in)
Brake plate misalignment (as measured on the wheel)	0.15 mm (0.0059)	1.0 mm (0.04 in)
Pump plunger internal diameter	9.52 mm (0.37 in)	–
Calliper piston internal diameter (left)	25.40 mm, 25.40 mm (1.00 in, 1.00 in)	–
Brake fluid type	DOT 4	
Rear brake:		
Brake pedal position	0.0 mm (0.00 in)	–
Brake plate thickness limit	–	3.5 mm (0.14 in)–
Brake plate misalignment (as measured on the wheel)	0.15 mm (0.0059)	1.0 mm (0.04 in)
Pump plunger internal diameter	11.0 mm (0.43 in)	–
Calliper plunger internal diameter	25.40 mm (1.00 in)	–
Brake fluid type	DOT 4	

1.12.4 Service limits of electrical system components

Item	Standard	Limit
System voltage	12 V	–
Ignition system:		
Ignition system	CDI (Capacitive Discharge Ignition)	
Minimum advance (before PMS):		
XX 125 / XE 125	0.50 mm (0.02 in)	–
XX 250	0.18 mm (0.01 in)	–
Pick-up coil resistance	248.0–372.0 Ω	
Charge coil resistance 1	720.0–1080.0 Ω	
Charge coil resistance 2	44.0–66.0 Ω	
Ignition coil:		
Primary coil resistance:		
XX 125 / XE 125	0.24–0.36 Ω	–
XX 250	0.20–0.30 Ω	–
Secondary coil resistance:		
XX 125 / XE 125	5.68–8.52 kΩ	–
XX 250	9.52–14.28 kΩ	–
Spark plug cap:		
Resistance	5.00 kΩ	–
Charging system:		
Charging system	CDI magnet	



1.13 ELECTRICAL SYSTEM DIAGRAM

1.13.1 Cables colour coding

i The colour of a cable can be an “A” colour or two “B” colours.

i The cable which has two colours is identified by the first colour code (primary “C” or colour of the sheath) followed by the second colour code (secondary “D”): the codes are separated by a dash “-”.

i Examples:

- case “A” : Blue = L ;
- case “B” : Red (primary) and Green (secondary) = RV.

The following table shows the codes used in the wiring diagram to identify the colour of the cable.

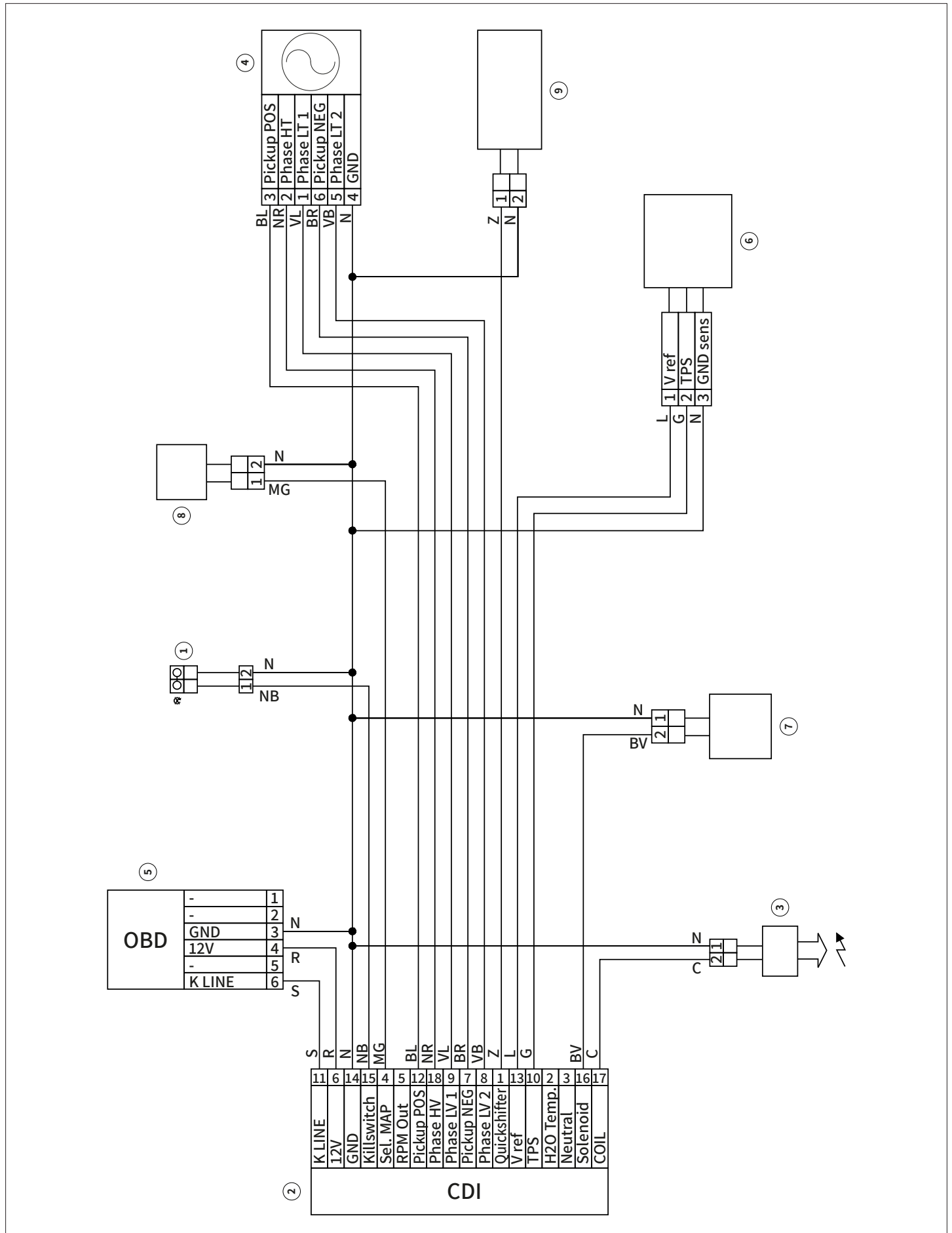
Code	Cables colour
A	SKY BLUE
B	WHITE
C	ORANGE
D	DARK BLUE
G	YELLOW
H	GREY
L	BLUE
M	BROWN
N	BLACK
R	RED
S	PINK
V	GREEN
Z	PURPLE

1.13.2 Key to the wiring diagram components (XX 125 version)

The following table lists all the components in the wiring diagram and their numbering.

Number	Description of the electrical component
1	Engine stop switch
2	CDI unit
3	Ignition coil
4	Magnet flywheel
5	Diagnosis connector (OBD)
6	TPS sensor
7	Carburettor solenoid valve
8	Engine mapping selector
9	Electronic gear sensor (prearrangement)

1.13.3 Wiring diagram (XX 125 version)

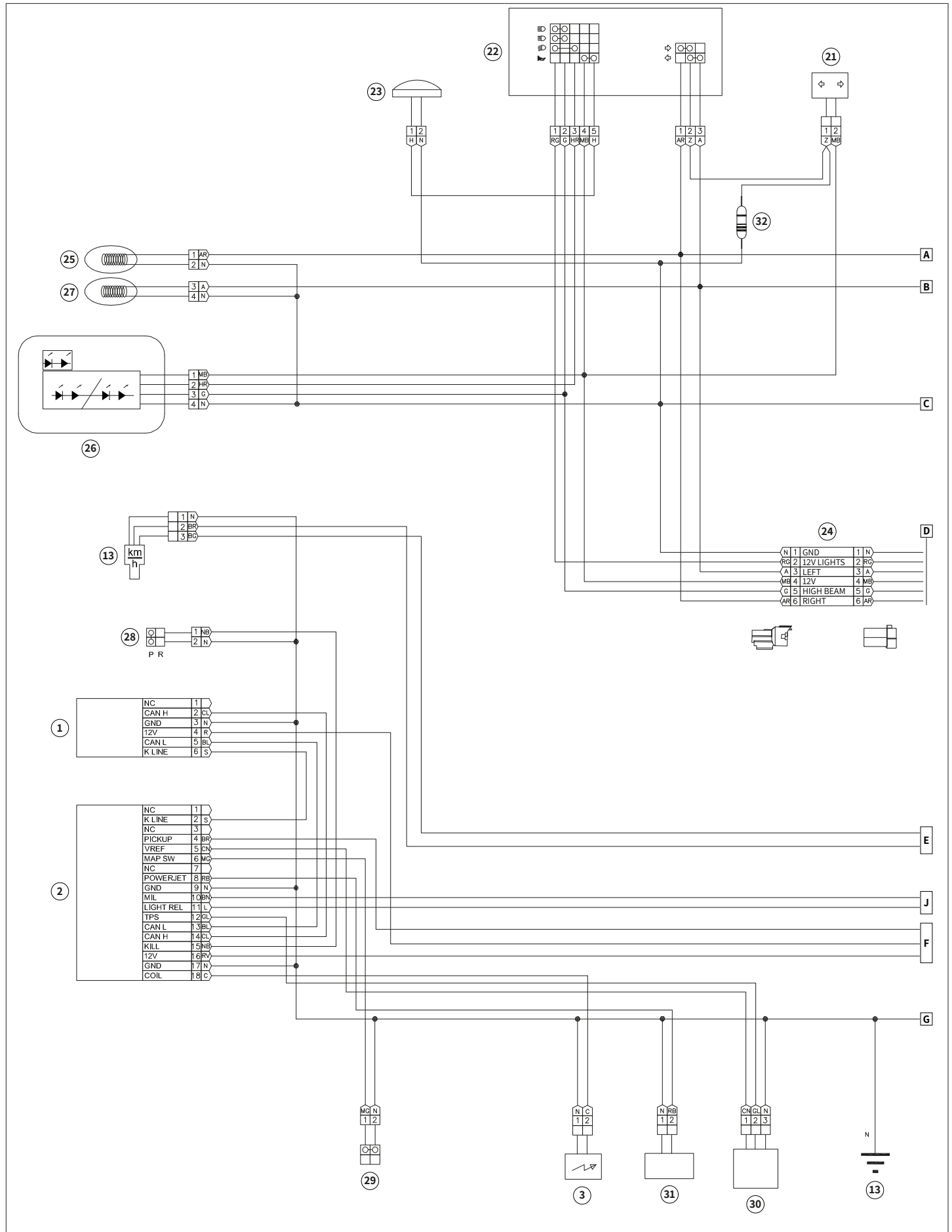


1.13.4 Key to the wiring diagram components (XE 125 version)

The following table lists all the components in the wiring diagram and their numbering.

Number	Description of the electrical component
1	OBD diagnosis connector
2	Engine control unit (CDI)
3	Ignition coil
4	Battery positive terminal
5	Battery negative terminal
6	System fuse (7.5 A)
7	Fuse holder: F1 (7.5 A) ignition, F2 (7.5 A) auxiliary lights, F3 (2 A) speed
8	Capacitor
9	Voltage regulator
10	Generator
11	Pick-Up
12	Lights switch
13	Speedsensor
14	Right rear turn signal
15	Tail light
16	Left rear turn signal
17	Front stop switch
18	Rear stop switch
19	Engine stop switch
20	Dashboard
21	Lights intermittence
22	Left light stalk
23	Horn
24	Handlebar devices interconnecting wiring harness
25	Right front turn signal
26	Headlight
27	Left front turn signal
28	Engine stop switch
29	Engine mapping selector
30	TPS Sensor
31	Power Jet
32	Lighting system resistance (4.7 k Ω)
33	Frame ground

1.13.5 Wiring diagram (XE 125 version)

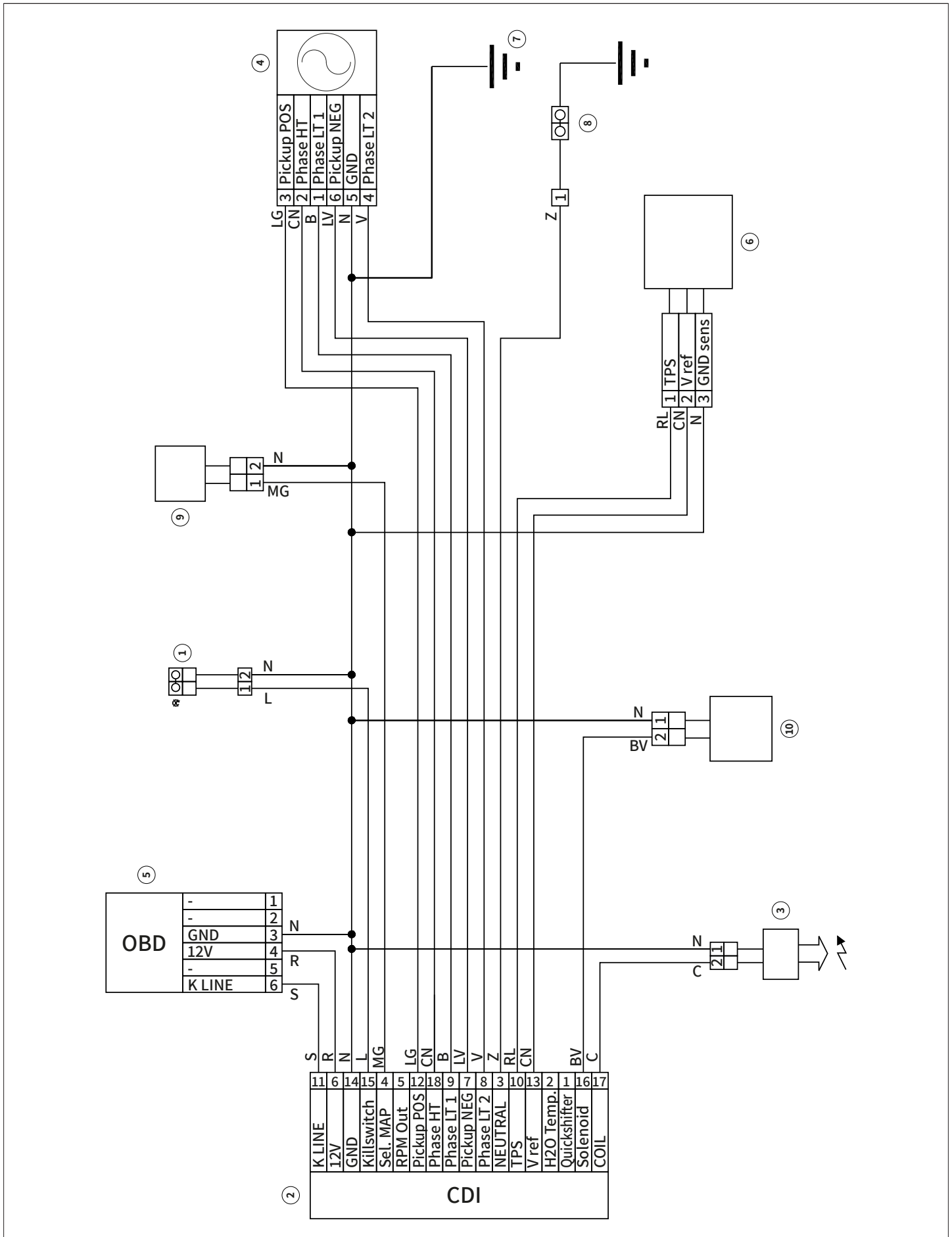


1.13.6 Key to the wiring diagram components (XX 250 version)

The following table lists all the components in the wiring diagram and their numbering.

Number	Description of the electrical component
1	Engine stop switch
2	CDI unit
3	Ignition coil
4	Magnet flywheel
5	Diagnosis connector (OBD)
6	TPS sensor
7	Frame mass
8	Neutral sensor
9	Engine mapping selector
10	Carburettor solenoid valve

1.13.7 Wiring diagram (XX 250 version)





1.14 LAMPS (XE 125 VERSION ONLY)

⚠ The front and rear lights are LED type, therefore they do not require maintenance.

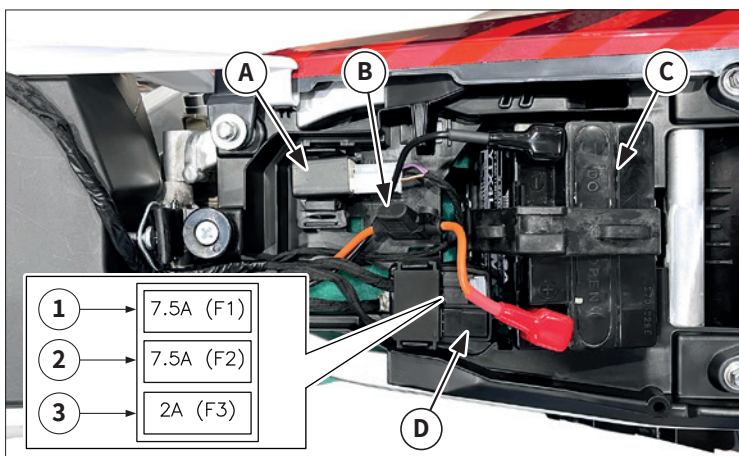
The front and rear turn indicators are equipped with 13.5 V - 1 W halogen lamps.

1.15 FUSES (XE 125 VERSION ONLY)

Fuses protect the vehicle's electrical circuits. If an electrical component of the vehicle stops working, check and replace the blown fuses, if any.

⚠ If a fuse frequently blows, there may be an electrical problem. It is therefore advisable to take the vehicle to an authorized Fantic Motor dealership for inspection.

⚠ Do not repair faulty fuses and never use a fuse of a different power rating than specified, it could cause a short circuit and consequently the risk of fire and related damage to the electrical system.



- A. Flasher
- B. Battery fuse (7.5 A)
- C. Battery
- D. Light relay
- 1. Key on fuse (7.5 A)
- 2. Auxiliary light fuse (7.5 A)
- 3. Speed sensor fuse (2 A)

1.16 RECOMMENDED LUBRICANTS AND LIQUIDS

 Use lubricating and fluid products that meet the equivalent specifications, or higher than those prescribed. These same indications are also valid for topping up.

Product	Characteristics	Remarks
2-stroke gear engine oil	SAE10W-40 (API SL / JASO MA MA2)	Do not use mineral oils.
Mixture oil	Premix 30:1 (API TC / JASO FD / ISO-L-EGD)	
Grease for bearings, joints, articulations and linkage	Lithium grease	
Coolant	Antifreeze liquid based on ethylene glycol with organic additives	Do not dilute with water.
Fork oil	Fork oil SAE15	Refer to Fantic Service Centres for correct product.
Transmission chain lubricant	Spray grease for transmission chains	
Brake oil	Synthetic Brake Fluid DOT 4	
Air filter oil	Air Filter Special Oil	
Cleaner for electrical contacts	Contact cleaner	
Fuel	95 or 98 octane super lead-free petrol	PETROL FUEL TYPE E5 E10
Paste for carter and engine covers coupling	Three Bond N. 1215®	
Safety lock medium tightening	Medium threadlocker	
Safety lock strong tightening	Strong threadlocker	
Lubricant for bolts unlocking	Unblocking protective lubricant	
Anti-friction lubricant for screw tightening torques	Generic engine oil	
Oil seals and O-rings lubricant for rubber parts	Lithium soap grease	
Battery terminals	White Vaseline grease	
Vehicle wash	Low pressure water at room temperature Ecological neutral liquid soap	Avoid aggressive detergents.
External cleaning of the brake system (brake discs and seats)	Spray Disc Brake Cleaner	Do not use to clean brake pads and plastic parts.

1.17 MAINTENANCE INTERVALS

⚠ The following schedule is intended as a general guide to maintenance and lubrication. Bear in mind that such factors as weather, terrain, geographical location, and individual usage will alter the required maintenance and lubrication intervals. If you are a doubt as to what intervals to follow in maintaining and lubricating your machine, consult your FANTIC dealer.

⚠ Periodic inspection is essential in making full use of the machine performance. The service life of the parts varies substantially according to the environment in which the machine runs (e.g., rain, dirt, etc.). Therefore, earlier inspection is required by reference to the list below.

⚠ The timely execution of the service and the relevant documentation is necessary for the correct use of the warranty.

1.17.1 Maintenance table (XX 125 version)

Item	After break-in	Every race (about 2.5 hours)	Every third (about 7.5 hours)	Every fifth (about 12.5 hours)	As required	Remarks
Piston – Inspect and clean – Replace	√	√		√	√	Inspect crack. Inspect carbon deposits and eliminate them.
Piston ring – Inspect – Replace	√	√		√	√	Check the clearance between the ends of the piston ring.
Piston pin, small end bearing – Inspect – Replace		√			√	
Cylinder head – Inspect and clean – Retighten – Replace	√ √	√ √			√	Inspect carbon deposits and eliminate them. Check gasket. Replace the gasket.
Cylinder – Inspect and clean – Replace	√	√			√	Inspect score marks. Inspect wear.
YPVS – Inspect and clean	√	√				Inspect carbon deposits and eliminate them.
Clutch – Inspect and adjust – Replace	√	√			√	Check clutch housing, driving plates, driven plates and springs.
Transmission – Replace oil – Inspect – Replace bearing	√			√	√ √	10W-40 (API SL / JASO MA MA2)

Item	After break-in	Every race (about 2.5 hours)	Every third (about 7.5 hours)	Every fifth (about 12.5 hours)	As required	Remarks
Shift fork, shift cam, guide bar – Inspect – Replace					√	Check all parts for wear and damage.
Rotor nut – Retighten	√				√	
Kick starter – Inspect – Replace					√ √	Check the idle gear for damage.
Muffler – Inspect – Clean – Retighten – Replace fiber	√ √	√ √		√	√	When the exhaust sound becomes louder or when a performance drop is felt.
Crankshaft – Inspect and clean				√	√	Check the crankshaft for carbon deposits and damage.
Carburettor – Inspect, adjust and clean	√	√				
Spark plug – Inspect and clean – Replace	√	√			√	
Drive chain – Lubricate, slack, alignment – Replace	√	√			√	Use chain lube. Chain slack: 48.0–58.0 mm (1.89–2.28 in)
Cooling system – Check coolant level and leakage – Check radiator cap operation – Replace coolant – Inspect hoses	√	√ √			√ √	Every two years.
Outside nuts and bolts – Retighten	√	√				
Air filter – Clean and lubricate – Replace	√	√			√	Use the “Air Filter Special Oil” for foam air filters.
Frame – Clean and inspect	√	√				
Fuel tank, cock – Clean and inspect	√		√			

Item	After break-in	Every race (about 2.5 hours)	Every third (about 7.5 hours)	Every fifth (about 12.5 hours)	As required	Remarks
Brakes - Adjust lever position and pedal height - Lubricate pivot point - Check brake disc surface - Check fluid level and leakage - Retighten brake disc bolts, caliper bolts, master cylinder bolts and union bolts - Replace pads - Replace brake fluid	√ √ √ √ √	√ √ √ √			√ √	Every one year.
Front forks - Inspect and adjust - Replace oil - Replace oil seal - Replace dust seal	√ √	√		√	√ √	
Rear shock absorber - Inspect and adjust - Lubricate - Retighten	√	√	√		√ (after rain ride) √	Molybdenum disulfide grease.
Drive chain guide and rollers - Inspect	√	√				Check for wear or damage and replace if necessary.
Swingarm - Inspect, lubricate and retighten	√	√				Molybdenum disulfide grease.
Relay arm, connecting rod - Inspect, lubricate and retighten	√	√				Molybdenum disulfide grease.
Steering head - Inspect free play and retighten - Clean and lubricate - Replace bearing	√	√		√	√	Lithium base grease.
Tire, wheels - Inspect air pressure, wheel run-out, tire wear and spoke looseness - Retighten sprocket bolt - Inspect bearings - Replace bearings - Lubricate	√ √	√ √	√ √		√	Lithium base grease.
Throttle, control cable - Check routing and connection - Lubricate	√ √	√ √				Cable lube or motor oil.

1.17.2 Maintenance table (XE 125 “Racing” versions)

Item	After break-in	Every race (about 2.5 hours)	Every third (about 7.5 hours)	Every fifth (about 12.5 hours)	As required	Remarks
Piston – Inspect and clean – Replace	√	√		√	√	Inspect crack. Inspect carbon deposits and eliminate them.
Piston ring – Inspect – Replace	√	√	√		√	Check ring end gap.
Piston pin, small end bearing – Inspect – Replace		√			√	
Cylinder head – Inspect and clean – Retighten	√ √	√ √				Inspect carbon deposits and eliminate them. Check gasket.
Cylinder – Inspect and clean – Replace						Inspect score marks. Inspect wear.
YPVS – Inspect and clean						Inspect carbon deposits and eliminate them.
Clutch – Inspect and adjust – Replace						Inspect housing, friction plate, clutch plate and spring.
Transmission – Replace oil – Inspect – Replace bearing	√			√	√ √	10W-40 (API SL / JASO MA MA2)
Shift fork, shift cam, guide bar – Inspect					√	Inspect wear.
Rotor nut – Retighten						
Muffler – Inspect – Clean – Retighten – Replace fiber	√ √	√ √		√	√	When the exhaust sound becomes louder or when a performance drop is felt.
Crank – Inspect and clean				√	√	
Carburettor – Inspect, adjust and clean	√	√				

Item	After break-in	Every race (about 2.5 hours)	Every third (about 7.5 hours)	Every fifth (about 12.5 hours)	As required	Remarks
Spark plug – Inspect and clean – Replace	√		√		√	
Drive chain – Lubricate, slack, alignment – Replace	√	√			√	Use chain lube. Chain slack: 48.0–58.0 mm (1.89–2.28 in)
Cooling system – Check coolant level and leakage – Check radiator cap operation – Replace coolant – Inspect hoses	√	√			√ √	Every two years.
Outside nuts and bolts – Retighten	√	√				
Air filter – Clean and lubricate – Replace	√	√			√	Use the “Air Filter Special Oil” for foam air filters.
Frame – Clean and inspect	√	√				
Fuel tank, cock – Clean and inspect	√		√			
Brakes – Adjust lever position and pedal height – Lubricate pivot point – Check brake disc surface – Check fluid level and leakage – Retighten brake disc bolts, caliper bolts, master cylinder bolts and union bolts – Replace pads – Replace brake fluid	√ √ √ √ √	√ √ √ √ √			√ √	Every one year.
Front forks – Inspect and adjust – Replace oil – Replace oil seal	√ √	√		√	√	
Front fork oil seal and dust seal – Clean and lubricate	√	√				Lithium base grease.
Protector guide – Replace					√	
Rear shock absorber – Inspect and adjust – Lubricate – Retighten	√ √	√ √	√		√ (after rain ride)	Molybdenum disulfide grease.

Item	After break-in	Every race (about 2.5 hours)	Every third (about 7.5 hours)	Every fifth (about 12.5 hours)	As required	Remarks
Drive chain guide and rollers – Inspect	√	√				
Swingarm – Inspect, lubricate and retighten	√	√				Molybdenum disulfide grease.
Sidestand (version XE 125 “Racing”) – Lubricate					√	Lithium base grease.
Relay arm, connecting rod – Inspect, lubricate and retighten	√	√				Molybdenum disulfide grease.
Steering head – Inspect free play and retighten – Clean and lubricate – Replace bearing	√	√		√	√	Lithium base grease.
Tire, wheels – Inspect air pressure, wheel run-out, tire wear and spoke looseness – Retighten sprocket bolt – Inspect bearings – Replace bearings – Lubricate	√ √	√ √	√ √		√	Lithium base grease.
Throttle, control cable – Check routing and connection – Lubricate	√ √	√ √				Cable lube or motor oil.

1.17.3 Maintenance table (XE 125 “amateur” version)

Item	After break-in	Every 10 Hours	Every 20 Hours	As required
Piston	Inspect, clean	Inspect, clean	Replace	Replace
Piston ring	Inspect	Inspect		Replace
Piston pin, small end bearing		Inspect		Replace
Cylinder head	Inspect, clean, retighten	Inspect, clean, retighten		
Cylinder	Inspect, clean	Inspect, clean		Replace
YPVS	Inspect, clean	Inspect, clean		
Clutch	Inspect, adjust	Inspect, adjust		Replace
Transmission	Replace oil		Replace oil	Inspect, replace bearing
Shift fork, shift cam, guide bar				Inspect
Rotor nut	Retighten		Retighten	
Muffler	Inspect, retighten	Inspect, retighten	Clean	Replace fiber
Crank			Inspect, clean	Inspect, clean
Carburettor	Inspect, adjust, clean	Inspect, adjust, clean		
Spark plug	Inspect, clean	Inspect, clean		Replace
Drive chain	Lubricate, slack, alignment	Lubricate, slack, alignment		Replace
Cooling system	Check coolant level and leakage	Check coolant level and leakage Inspect hoses		Check radiator cap operation Replace coolant (every two years)
Outside nuts and bolts	Retighten	Retighten		
Air filter	Clean, lubricate	Clean, lubricate		Replace
Frame	Clean, inspect	Clean, inspect		
Fuel tank cock	Clean, inspect	Clean, inspect		
Brakes	Adjust lever position and pedal height Lubricate pivot point Check brake disc surface Check fluid level and leakage Retighten brake disc bolts, caliper bolts, master cylinder bolts and union bolts	Adjust lever position and pedal height Lubricate pivot point Check brake disc surface Check fluid level and leakage Retighten brake disc bolts, caliper bolts, master cylinder bolts and union bolts		Replace pads Replace brake fluid (every one year)
Front forks	Inspect, adjust Replace oil	Inspect, adjust	Replace oil	Replace oil seal
Front fork oil seal and dust seal	Clean and lubricate	Clean and lubricate		
Protector guide				Replace
Rear shock absorber	Inspect, adjust Retighten	Inspect, adjust lubricate Retighten		Lube (after rain ride)
Drive chain guide and rollers	Inspect	Inspect		
Swingarm	Inspect, lubricate, retighten	Inspect, lubricate, retighten		
Steering head	Inspect free play and retighten	Inspect free play and retighten	Clean and lube	Replace bearing

Item	After break-in	Every 10 Hours	Every 20 Hours	As required
Tire, wheels	Inspect air pressure, wheel run-out, tire wear and spoke looseness Retighten sprocket bolt	Inspect air pressure, wheel run-out, tire wear and spoke looseness Retighten sprocket bolt Inspect/Replace bearings Lubricate		Replace bearings
Throttle, control cable	Check routing and connection Lubricate	Check routing and connection Lubricate		

1.17.4 Maintenance table (XX 250 version)

Item	After break-in	Every race (about 2.5 hours)	Every third (about 7.5 hours)	Every fifth (about 12.5 hours)	As required	Remarks
Piston – Inspect and clean – Replace	√	√		√	√	Inspect crack. Inspect carbon deposits and eliminate them.
Piston rings – Inspect – Replace	√	√		√	√	Check ring end gap.
Piston pin, small end bearing – Inspect – Replace		√			√	
Cylinder head – Inspect and clean – Retighten – Replace	√ √	√ √			√	Inspect carbon deposits and eliminate them. Check gasket. Replace the gasket.
Cylinder – Inspect and clean – Replace	√	√			√	Inspect score marks. Inspect wear.
YPVS – Inspect and clean	√	√				Inspect carbon deposits and eliminate them.
Clutch – Inspect and adjust – Replace	√	√			√	Inspect housing, friction plate, clutch plate and spring.
Transmission – Replace oil – Inspect – Replace bearing	√			√	√ √	10W-40 (API SL / JASO MA MA2)
Shift fork, shift cam, guide bar – Inspect					√	Inspect wear.
Rotor nut – Retighten	√				√	
Kick starter – Inspect – Replace					√ √	Check the idle gear for damage.
Muffler – Inspect – Clean – Retighten – Replace fiber	√ √	√ √		√	√	When the exhaust sound becomes louder or when a performance drop is felt.

Item	After break-in	Every race (about 2.5 hours)	Every third (about 7.5 hours)	Every fifth (about 12.5 hours)	As required	Remarks
Crankshaft – Inspect and clean				√	√	Check the crankshaft for carbon deposits and damage.
Carburettor – Inspect, adjust and clean	√	√				
Spark plug – Inspect and clean – Replace	√	√			√	
Drive chain – Lubricate, slack, alignment – Replace	√	√			√	Use chain lube. Chain slack: 48.0–58.0 mm (1.89–2.28 in)
Cooling system – Check coolant level and leakage – Check radiator cap operation – Replace coolant – Inspect hoses	√	√			√ √	Every two years.
Outside nuts and bolts – Retighten	√	√				
Air filter – Clean and lubricate – Replace	√	√			√	Use the “Bardahl Air Filter Special Oil” for foam air filters.
Frame – Clean and inspect	√	√				
Fuel tank, cock – Clean and inspect	√		√			
Brakes – Adjust lever position and pedal height – Lubricate pivot point – Check brake disc surface	√ √ √	√ √ √				
– Check fluid level and leakage – Retighten brake disc bolts, caliper bolts, master cylinder bolts and union bolts – Replace pads – Replace brake fluid	√ √	√ √			√ √	Every one year.
Front forks – Inspect and adjust – Replace oil – Replace oil seal – Replace dust seal	√ √	√		√	√ √	

Item	After break-in	Every race (about 2.5 hours)	Every third (about 7.5 hours)	Every fifth (about 12.5 hours)	As required	Remarks
Rear shock absorber – Inspect and adjust – Lubricate – Retighten	√	√	√		√ (after rain ride)	Molybdenum disulfide grease.
Drive chain guide and rollers – Inspect	√	√				Check for wear or damage and replace if necessary.
Swingarm – Inspect, lubricate and retighten	√	√				Molybdenum disulfide grease.
Relay arm, connecting rod – Inspect, lubricate and retighten	√	√				Molybdenum disulfide grease.
Steering head – Inspect free play and retighten – Clean and lubricate – Replace bearing	√	√		√	√	Lithium base grease.
Tire, wheels – Inspect air pressure, wheel run-out, tire wear and spoke looseness – Retighten sprocket bolt – Inspect bearings – Replace bearings – Lubricate	√	√	√		√	Lithium base grease.
Throttle, control cable – Check routing and connection – Lubricate	√	√				Cable lube or motor oil.

2.1 PRE-OPERATION INSPECTION AND MAINTENANCE

 **Before riding for break-in operation, practice or a race, make sure the machine is in good operating condition.**

 **Before using this machine, check the following points.**

Item	Routine	Page
Coolant	Check that coolant is filled up to the radiator cap. Check the cooling system for leakage.	page 111
Fuel	Check that a fresh mixture of oil and gasoline is filled in the fuel tank. Check the fuel line for leakage.	page 68
Transmission oil	Check that the oil level is correct. Check the crankcase for leakage.	page 109
Gear shifter and clutch	Check that gears can be shifted correctly in order and that the clutch operates smoothly.	page 130
Throttle grip/Housing	Check that the throttle grip operation and free play are correctly adjusted. Lubricate the throttle grip and housing, if necessary.	page 85
Brakes	Check the play of front brake and effect of front and rear brake.	page 83
Drive chain	Check drive chain slack and alignment. Check that the drive chain is lubricated properly.	page 144
Wheels	Check for excessive wear and tire pressure. Check for loose spokes and have no excessive play.	page 139
Steering	Check that the handlebar can be turned smoothly and have no excessive play.	page 137
Front forks and rear shock absorber	Check that they operate smoothly and there is no oil leakage.	page 138
Cables (wires)	Check that the clutch and throttle cables move smoothly. Check that they are not caught when the handlebars are turned or when the front forks travel up and down.	–
Muffler	Check that the muffler is tightly mounted and has no cracks.	–
Rear wheel sprocket	Check that the rear wheel sprocket tightening bolt is not loose.	page 144
Bolts and nuts	Check the chassis and engine for loose bolts and nuts.	–
Settings	Is the machine set suitably for the condition of the racing course and weather or by taking into account the results of test runs before racing? Are inspection and maintenance completely done?	–

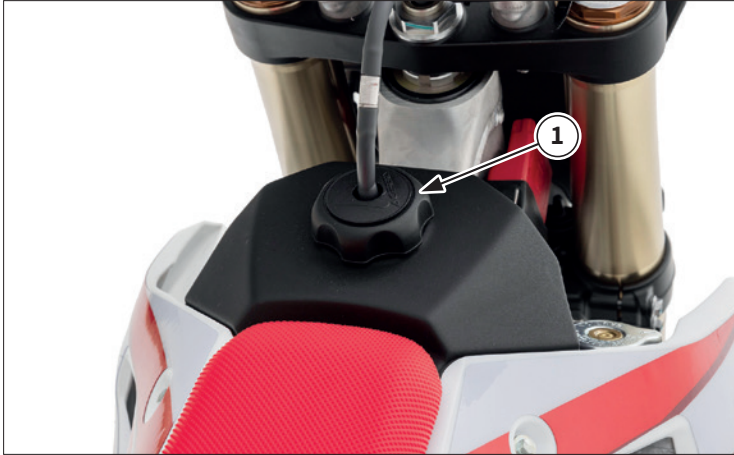
2.2 RUNNING IN

Running-in is important to allow the rotating parts, sliding surfaces and assembled areas to combine, as well as to allow the driver to become familiar with the vehicle. During this period it is recommended:

- refuelling with 3% oil/petrol mixture;
- use oil mixture recommended in the section “RECOMMENDED LUBRICANTS AND FLUIDS”;
- heat the engine well before using the vehicle;
- drive for approximately 20 minutes with the throttle opened to 1/2 or less;
- make a pit stop and check assembled areas for slack, oil leaks or other problems;
- drive for approximately 40 minutes with the throttle opened to 3/4 or less;
- make another pit stop and thoroughly check assembled areas for slack, oil leaks, or other problems. Thorough checks and adjustments are particularly necessary for cable routing, brake clearance, drive chain, spoke loosening and so on.

 **Repeat the procedures described each time they are replaced: piston, piston rings, cylinder, crankshaft bearings.**

 **After the first 3 hours or 15 litres of fuel, replace the transmission oil**



2.3 REFUELLING

To refuel, turn cap “1” anti-clockwise and lift it up.

After refuelling, insert the cap into the tank and turn it clockwise.

⚠ Do not smoke or use naked flames when refuelling. Avoid using electrical devices or any source that can trigger sparks or ignition. Failure to comply with these rules could result in a danger of fire or explosion, causing serious damage to property and/or persons.

⚠ Do not add additives or other substances to the fuel during refuelling.

⚠ Avoid fuel leakage during refuelling. If you use a funnel, make sure that it is perfectly clean.

⚠ It is recommended to use the type of fuel indicated in the technical specifications of this manual. Do not use different fuels, they could damage the fuel system and compromise the operation of the engine.

⚠ Make sure that the tank cap is closed.



2.4 STARTING THE ENGINE

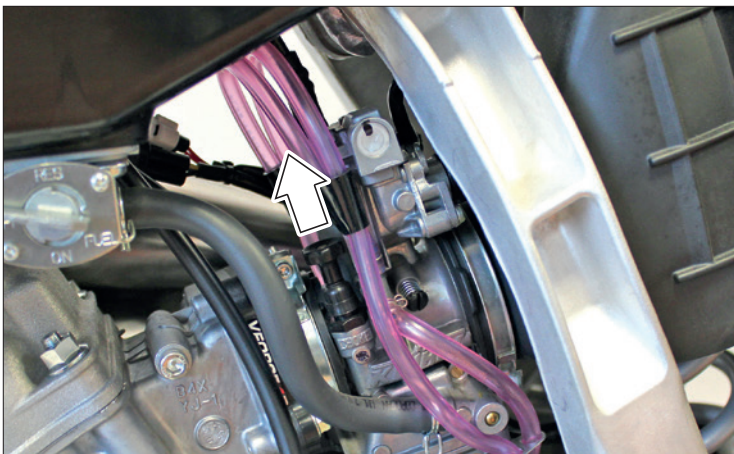
2.4.1 Starting a cold engine

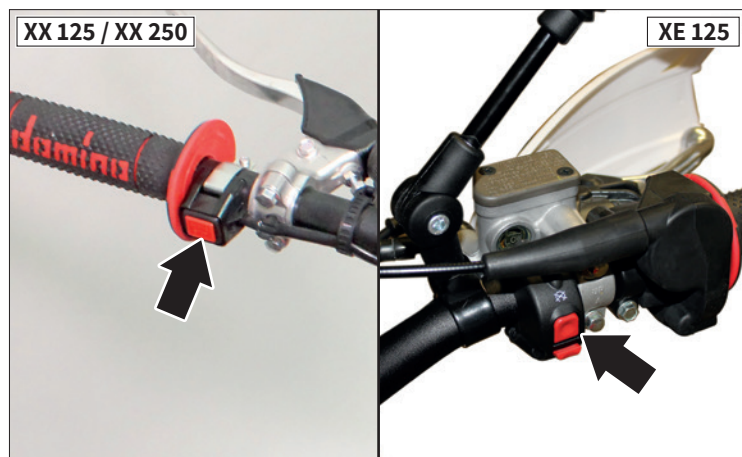
4. Shift the transmission into neutral.
5. Turn the fuel cock to “ON” and full open the starter knob (CHOKE).
6. With the throttle completely closed start the engine by kicking the kickstarter forcefully with firm stroke.
7. Run the engine at idle or slightly higher until it warms up: this usually takes about one or two minutes.
8. The engine is warmed up when it responds normally to the throttle with the starter knob (CHOKE) turned off.

⚠ Do not warm up the engine for extended periods of time.

2.4.2 Starting a warm engine

Do not operate the starter knob (CHOKE). Open the throttle slightly and start the engine by kicking the kickstarter forcefully with firm stroke.



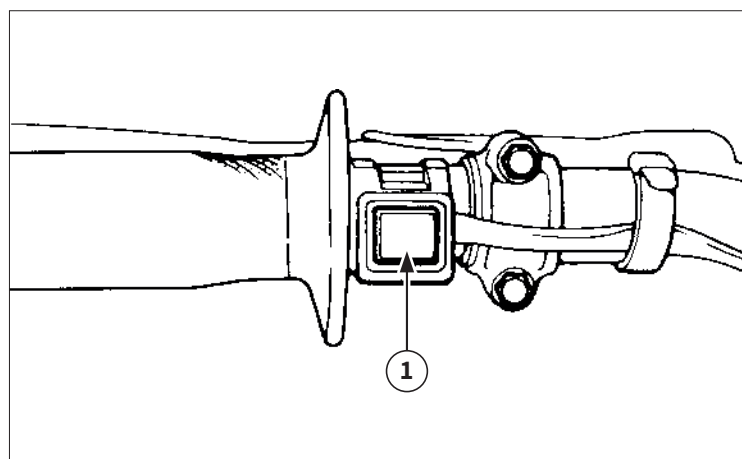


2.5 STOP THE ENGINE

With the throttle valve completely closed, press the “ENGINE STOP” button on the handlebar.



⚠ Always set the fuel cock to OFF when the engine is switched off.



2.6 MAIN COMPONENTS

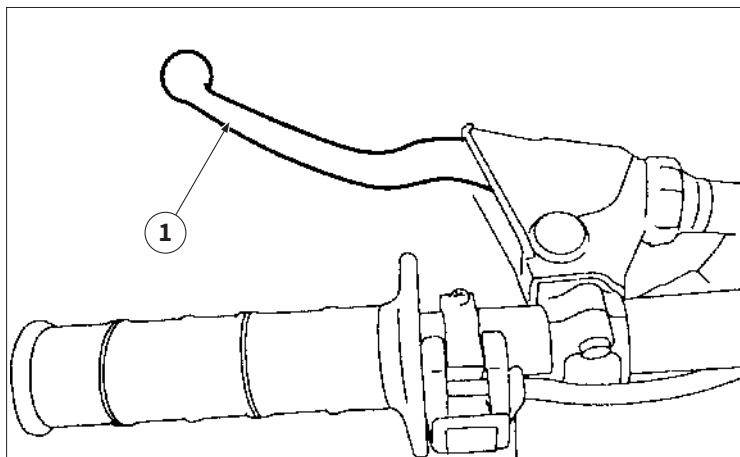
2.6.1 Engine stop switch (XX 125 / XX 250 versions)

The engine stop switch “1” is located on the left handlebar. Continue pushing the engine stop switch till the engine comes to a stop.



2.6.2 Engine stop switch (XE 125 version)

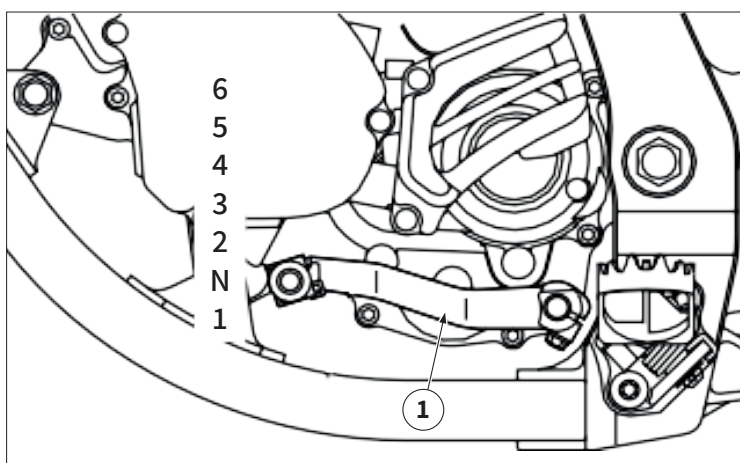
The engine stop switch “2” is located on the right handlebar. Continue pushing the engine stop switch till the engine comes to a stop.



2.6.3 Clutch lever

The clutch lever “1” is located on the left handlebar; it disengages or engages the clutch. Pull the clutch lever to the handlebar to disengage the clutch, and release the lever to engage the clutch.

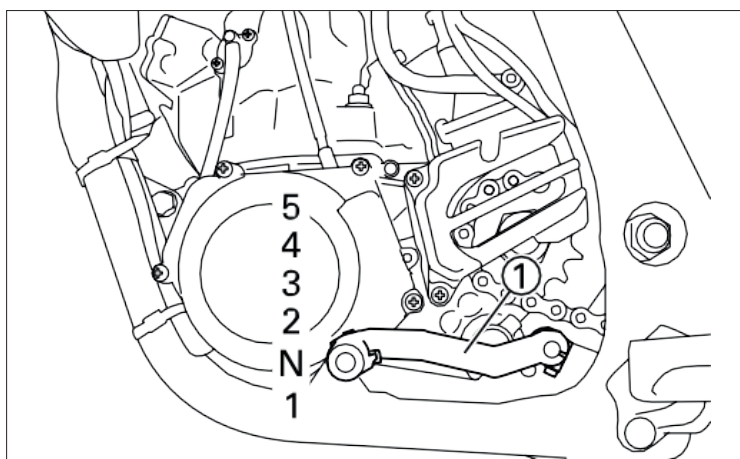
The lever should be pulled rapidly and released slowly for smooth starts.



2.6.4 Shift pedal (XX 125 / XE 125 versions)

i The gear ratios of the constant-mesh 6 speed transmission are ideally spaced.

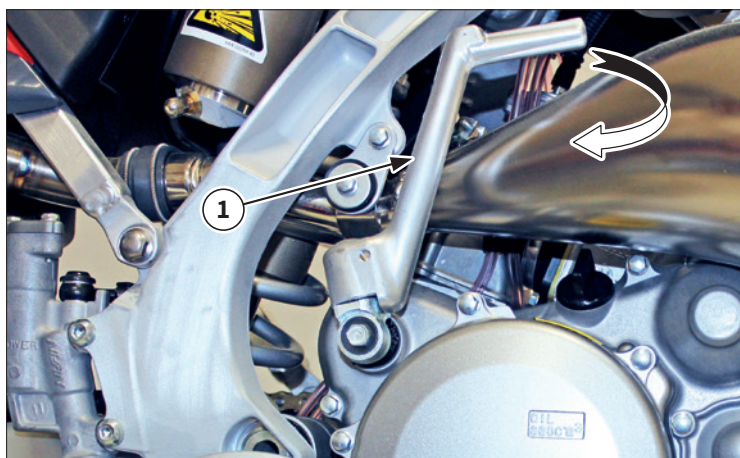
The gears can be shifted by using the shift pedal “1” on the left side of the engine.



2.6.5 Shift pedal (XX 250 version)

i The gear ratios of the constant-mesh 5 speed transmission are ideally spaced.

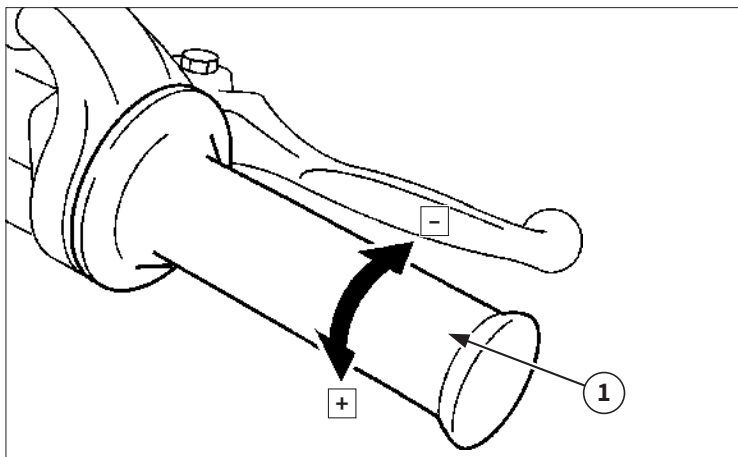
The gears can be shifted by using the shift pedal “1” on the left side of the engine.



2.6.6 Kickstarter lever

Rotate the kickstarter lever “1” away from the engine. With your foot, gently press the lever down until the gears engage, then press firmly and sharply to start the engine.

! This model has a primary kickstarter lever so the engine can be started in any gear if the clutch is disengaged. In normal practices, however, shift to neutral before starting.



2.6.7 Throttle grip

The throttle grip "1" is located on the right handlebar; it accelerates or decelerates the engine. For acceleration, turn the grip toward you; for deceleration, turn it away from you.

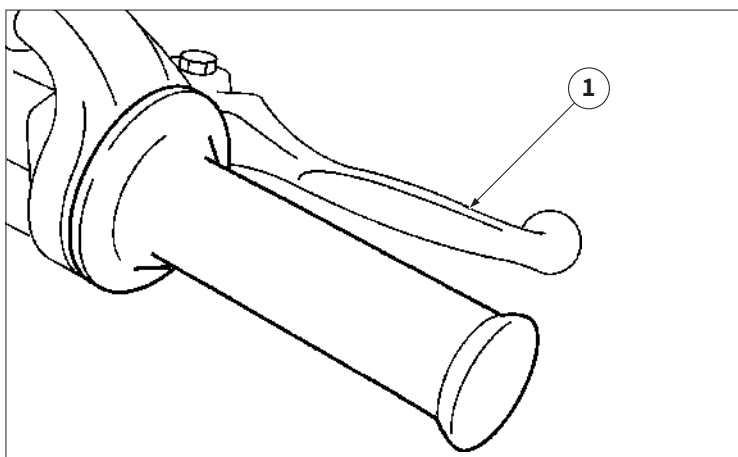
- ① "+" : accelerate
- "-" : decelerate



2.6.8 Engine mapping selection "Switch" (XX 125 / XX 250 versions)

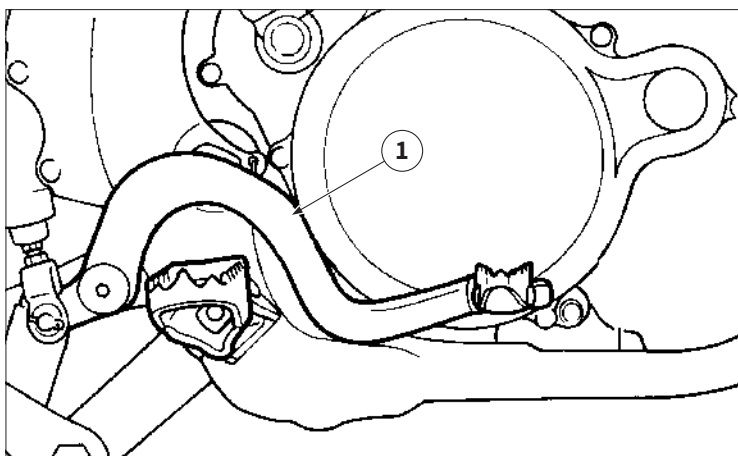
By means of switch "1" on the right handlebar, it is possible to select two different engine mappings, which modify the throttle response and the performance of the vehicle during use.

- ① **MAP 1: STANDARD**
MAP 2: SOFT
- ① Mappings are set by Fantic and cannot be changed.



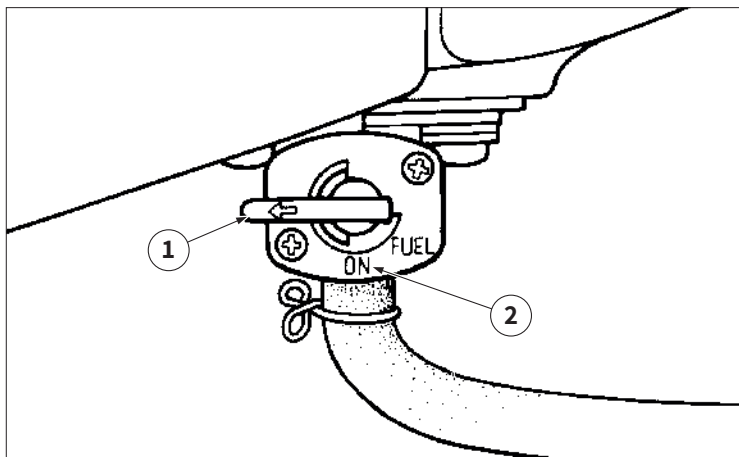
2.6.9 Front brake lever

The front brake lever "1" is located on the right handlebar. Pull it toward the handlebar to activate the front brake.



2.6.10 Rear brake pedal

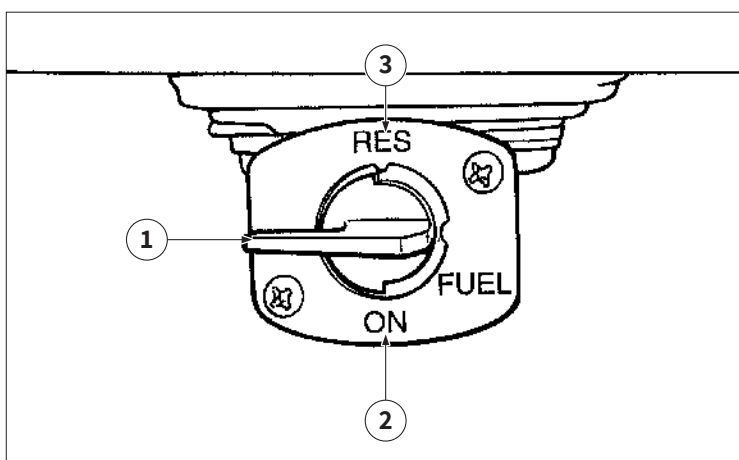
The rear brake pedal "1" is located on the right side of the machine. Press down on the brake pedal to activate the rear brake.



2.6.11 Fuel cock (XX 125 / XX 250 versions)

The fuel cock supplies fuel from the tank to carburettor and also filters the fuel. The fuel cock has the two positions:

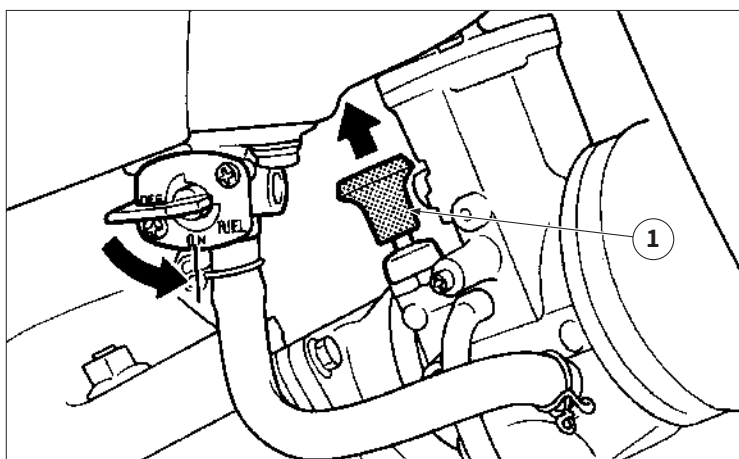
1. **"OFF"** : With the lever in this position, fuel will not flow. Always return the lever to this position when the engine is not running.
2. **"ON"** : With the lever in this position, fuel flows to the carburettor. Normal riding is done with the lever in this position.



2.6.12 Fuel cock (XE 125 version)

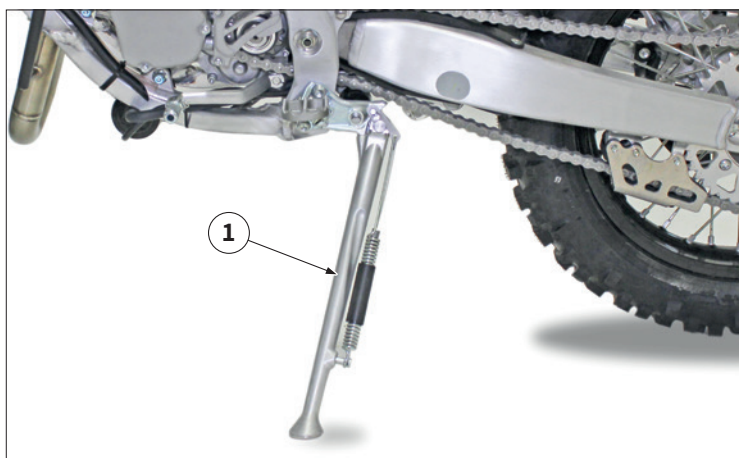
The fuel cock supplies fuel from the tank to carburettor and also filters the fuel. The fuel cock has the three positions:

1. **"OFF"** : With the lever in this position, fuel will not flow. Always return the lever to this position when the engine is not running.
2. **"ON"** : With the lever in this position, fuel flows to the carburettor. Normal riding is done with the lever in this position.
3. **"RES"** : With the lever in this position fuel flows to the carburettor from the reserve section of the fuel tank after the main supply of the fuel has been depleted. Normal riding is possible with the lever in this position, but it is recommended to add fuel as soon as possible.



2.6.13 Starter knob (choke)

When cold, the engine requires a richer air-fuel mixture for starting. A separate starter circuit, which is controlled by the starter knob "1", supplies this mixture. Pull the starter knob out to open the circuit for starting. When the engine has warmed up, push it in to close the circuit.



2.6.14 Sidestand (only for XE 125 version)

This sidestand "1" is used to support only the machine when standing or transporting it.

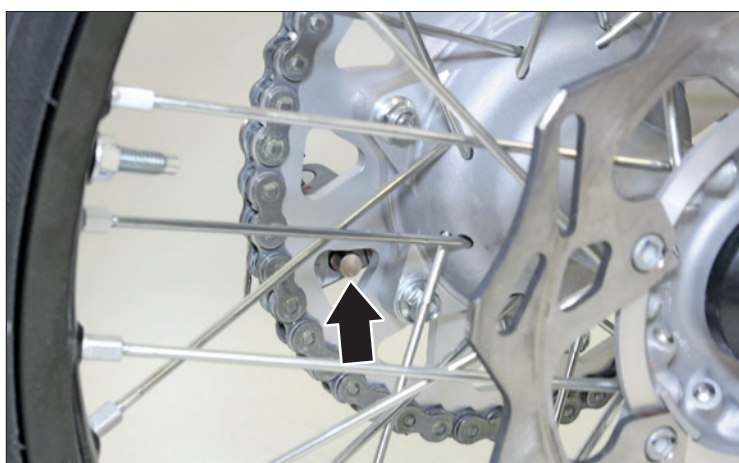
⚠ **Never apply additional force to the sidestand.**

⚠ **Hold up the sidestand before starting out.**

**2.6.15 Locking device (only for XE 125 version)**

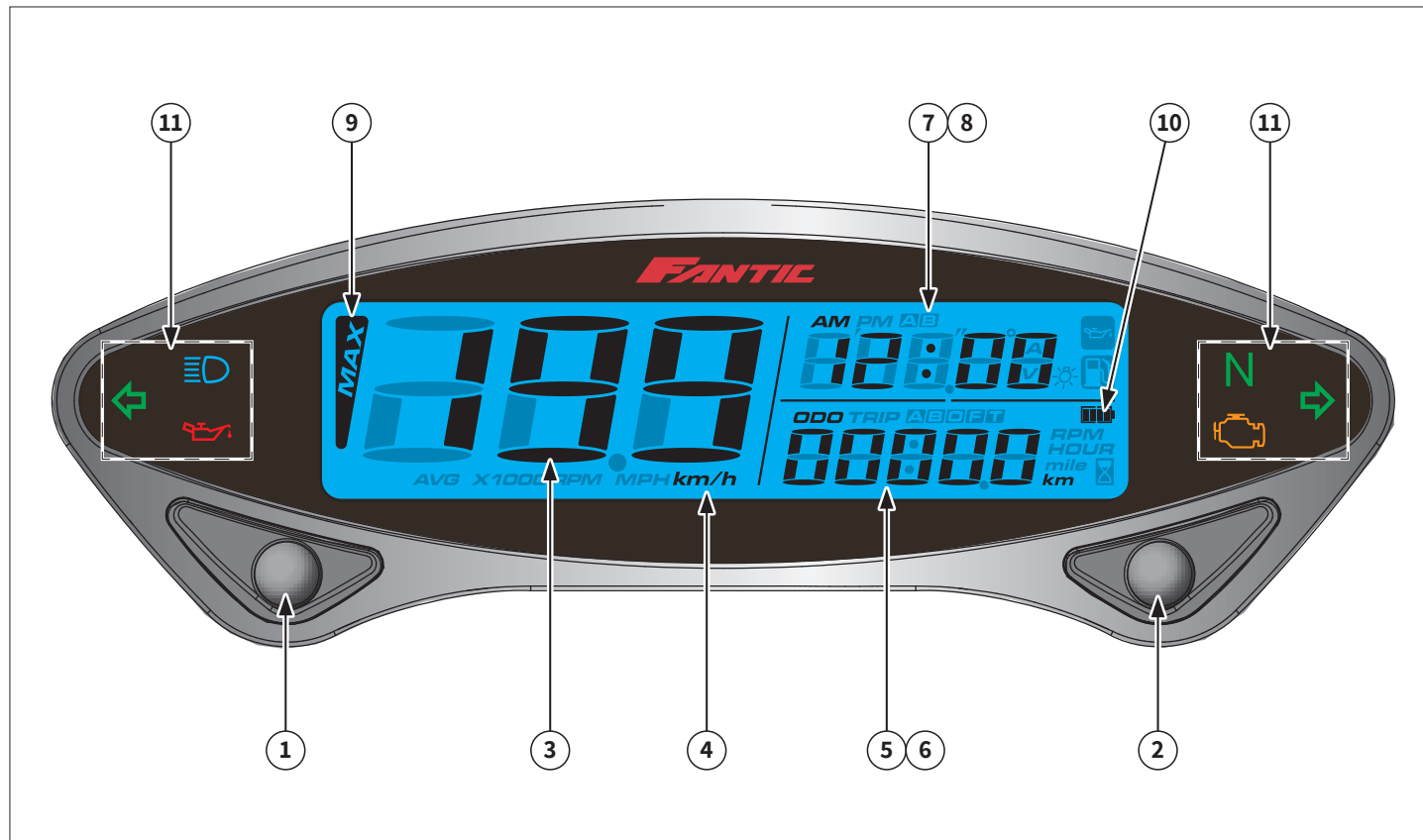
This device "1", operated by the vehicle keys, allows the rotation of the rim so it can be mechanically locked.

- i** It is recommended to use the device if the vehicle is left parked unattended.

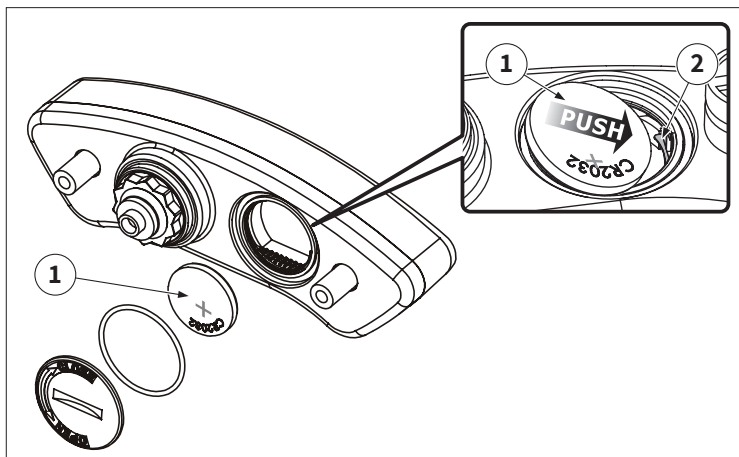


2.7 DASHBOARD (ONLY XE 125 VERSION)

2.7.1 Instruction of function



1. Select button
 - Press the Select button on the main screen to switch between 12-24 hour mode, speedometer record, stopwatch , and MAX record;
2. Adjust button
 - Press the Adjust button on the main screen to switch between ODO, Trip A-B, Total Hour meter, Hour meter A-B;
3. Speedometer
 - Display range : 0~360km/h (0~225 MPH);
4. Speedometer
 - Display unit : km/h (MPH);
5. Odo meter
 - Display range : 0~99999 km (mile), automatically reset after 99999 km (mile);
 - Display unit : 1 km (mile);
6. Trip meter
 - Display range : 0~9999.9 km (mile), automatically reset after 9999.9 km (mile);
 - Display unit : 0.1 km (mile);
7. Clock
 - 12-24 MODE;
8. Stopwatch function
 - Can be either programmed for manual activation or by wheel activation;
9. Max Record function
 - Average speed : 0 ~ 360 km/h (0 ~ 225 MPH);
 - MAX Speed : 0 ~ 360 km/h (0 ~ 225 MPH);
10. Inner battery display range
 - 4 levels;
11. Indicator lights
 - High beam light (Blue);
 - Direction light (Green);
 - Neutral light(Green);
 - FI light (Yellow);
 - Oil light (Red).



2.7.2 Battery replacement

Follow this procedure for installation:

- The meter includes an internal battery "1" (CR2032). This battery shall be replaced only when power runs out.
- In order to install the battery "1" properly, push the battery as show on figure to make sure the battery is placed underneath the metal tab "2".

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

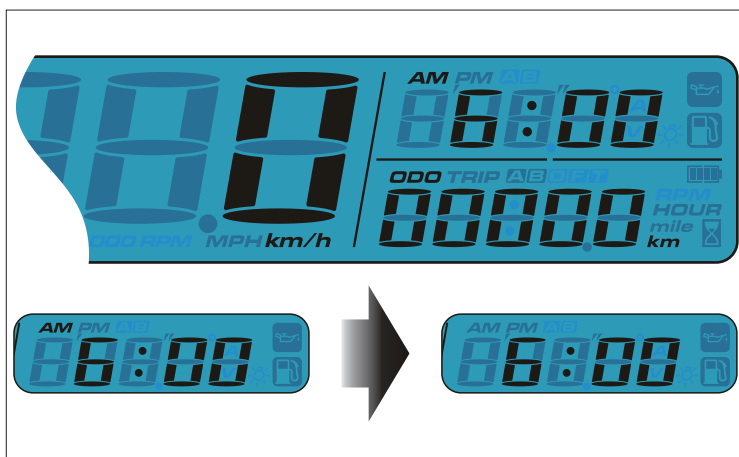
⚠ The following valid only if required to comply with the European Battery Regulation and imported by Panasonic into EEA.

Manufacturer :

Panasonic Energy Co., Ltd.
1-1 Matsushita-cho, Moriguchi City, Osaka 570-8511, Japan
<https://www.panasonic.com/global/energy/>

Importer to EEA :

Panasonic Industry Europe GmbH
Carlone-Herschel-Strasse 100, 85521 Ottobrunn, Germany
<https://industry.panasonic.eu/>

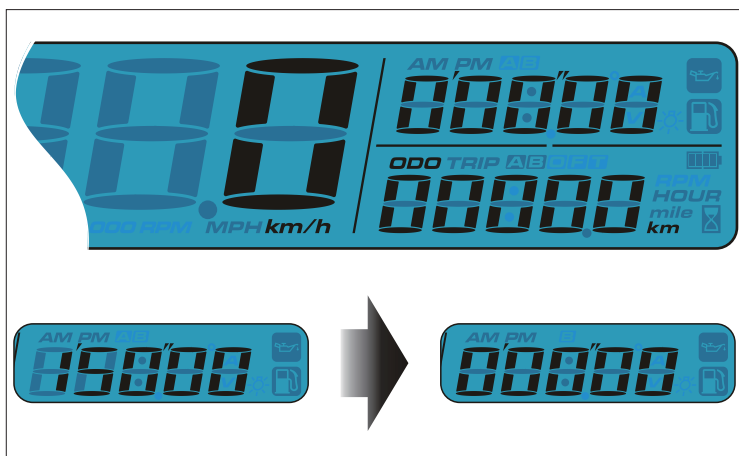


2.7.3 Switch Function Instructions

Instructions for select button:

- Press the Select button while on main screen to switch from Clock to Stopwatch.
- Press and hold the Select button for 3 seconds to alternate 12/24 hour modes.

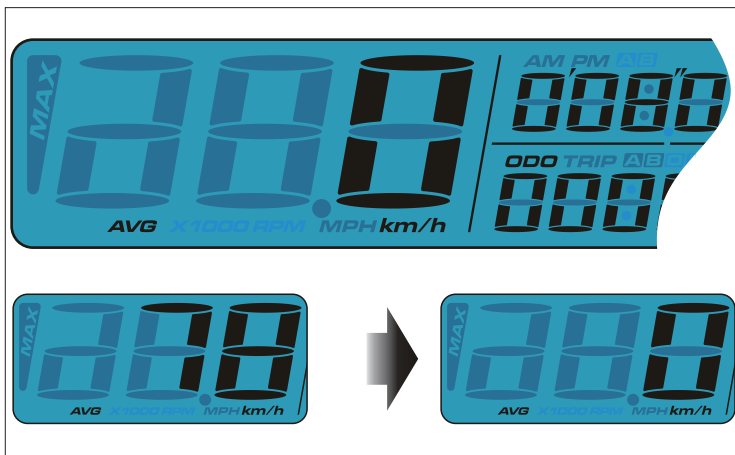
i If 24 hour mode is chosen, then the AM/PM symbol will not be displayed.



- Press the Select button to switch from Stopwatch to Average record.

i When the option for manually resetting the stopwatch is chosen, press Select button and hold for 6 sec. to switch to Average record.

- Press and hold the Select button for 3 seconds to reset the Stopwatch.



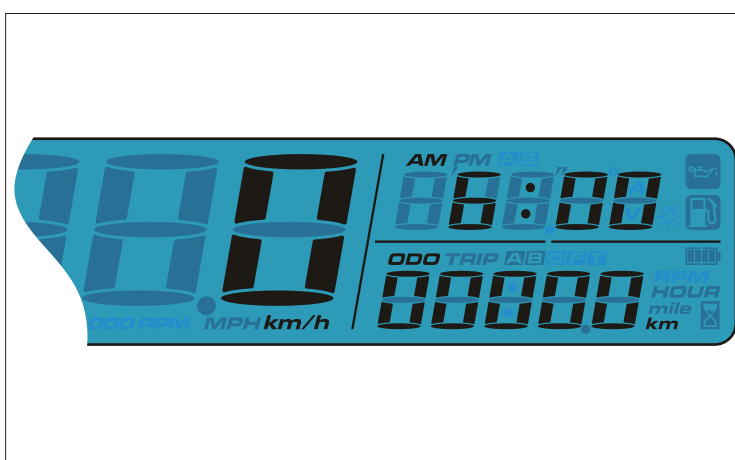
– Press the Select button to switch from Average record to clock meter.

i Average speed and the Max speed display in the 3 seconds rotation.

– Press and hold the Select button for 3 seconds to reset all records.

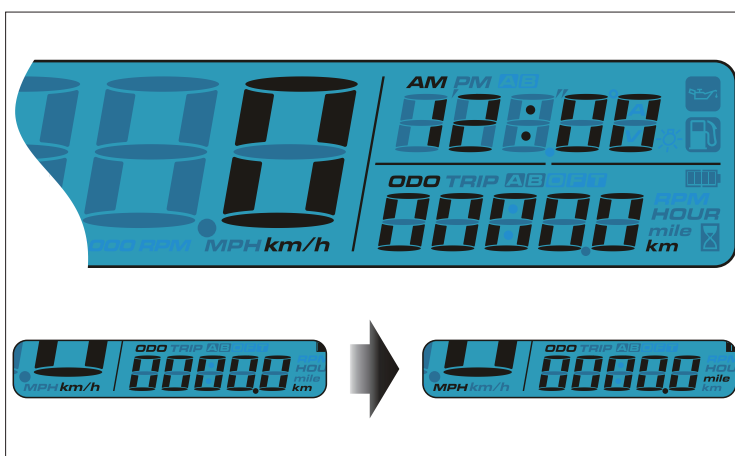
i When Maintenance Symbol is ON, please reset under this function screen.

– Back to clock screen.

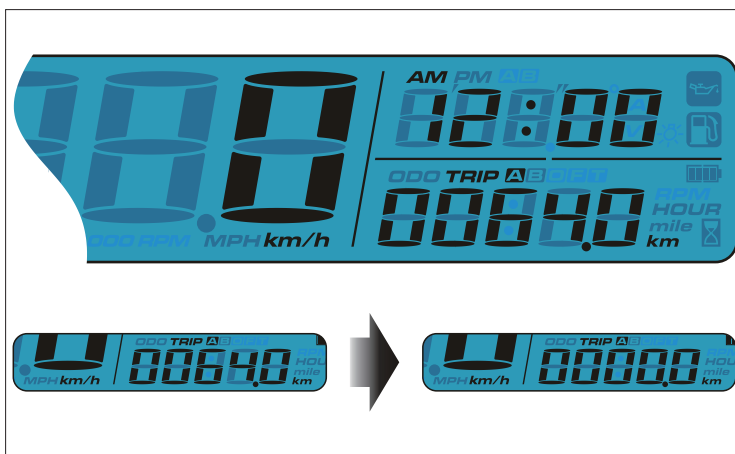


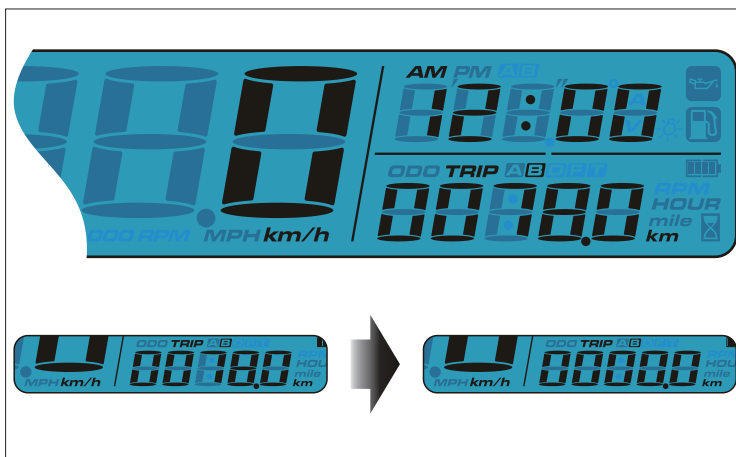
Instructions for adjust button:

- While on odometer screen, press the Adjust button to switch from odometer to trip A.
- While on odometer screen, press and hold the Adjust button for 3 seconds to change the speed unit.



- Press the Adjust button to switch from trip A to trip B.
- Press and hold the Adjust button for 3 seconds to reset the trip A.

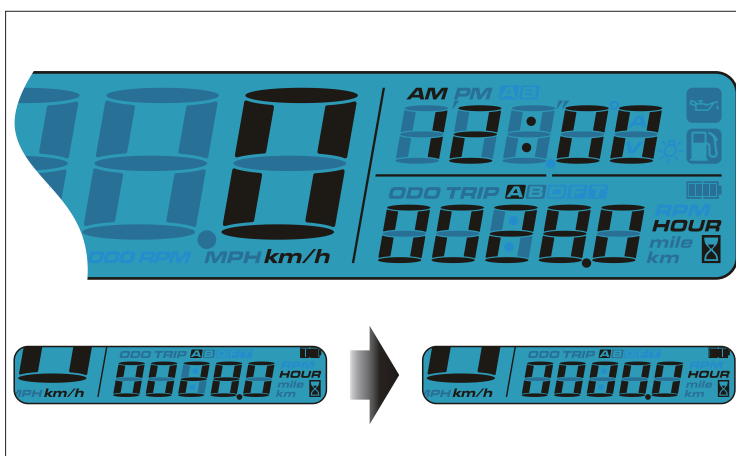




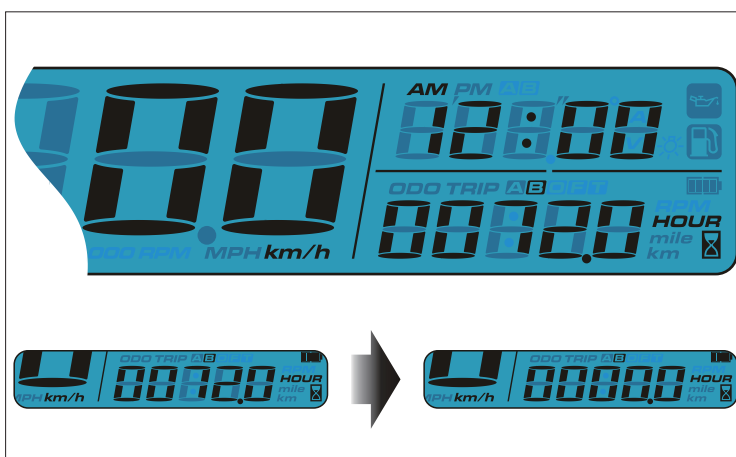
- Press the Adjust button to switch from trip B to total hour meter.
- Press and hold the Adjust button for 3 seconds to reset the trip B.



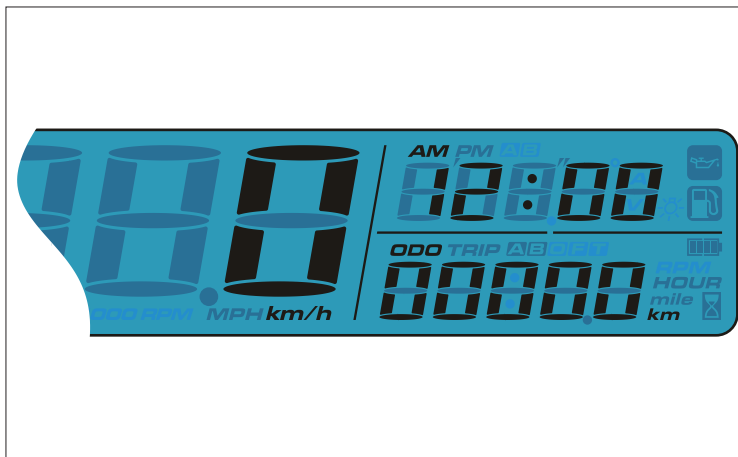
- Press the Adjust button to switch from total hour meter to hour meter A.



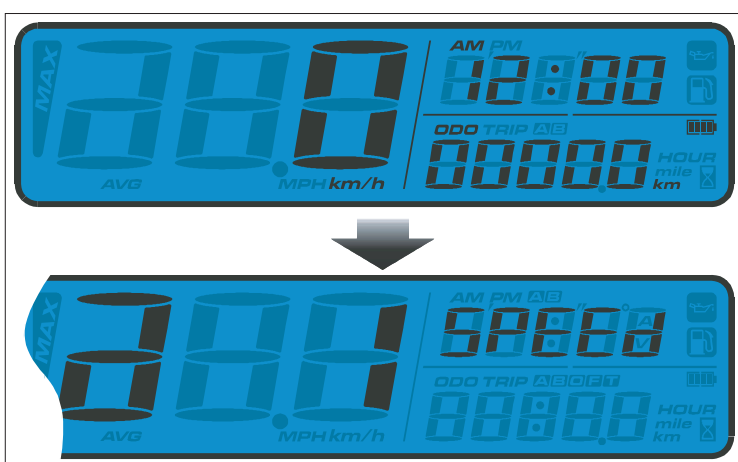
- Press the Adjust button to switch from hour meter A to hour meter B.
- Press and hold the Adjust button for 3 seconds to reset the hour meter A.



- Press the Adjust button to exit from hour meter B and to go back to odometer screen.
- Press and hold the Adjust button for 3 seconds to reset the hour meter B.

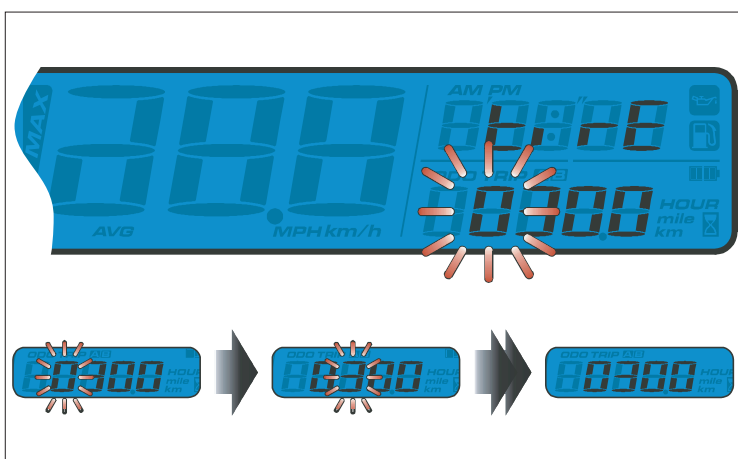


- Back to the odometer screen.



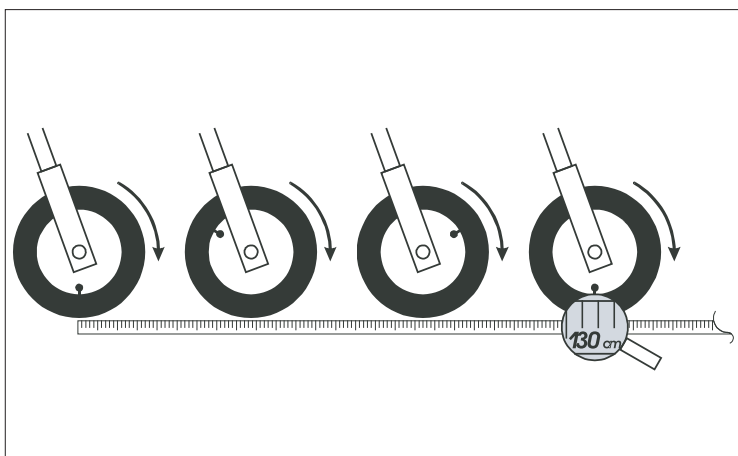
2.7.4 Setting Mode

- While on main screen, press the Adjust + Select 3 seconds to enter the tire circumference and sensing point settings (for setting a different tire size).
- Use the Adjust button to set the circumference.

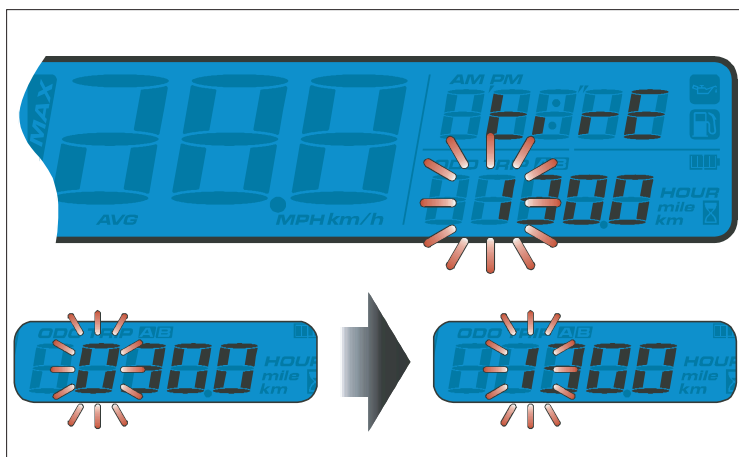


2.7.5 The tire circumference and sensing point setting

- ① Example: the tire circumference is 1300 mm.
- Press the Adjust button to move the digit you want to set.
- ① The tire circumference setting range is from 300 to 2500 mm.
- ✂ Default setting: 1000 mm.

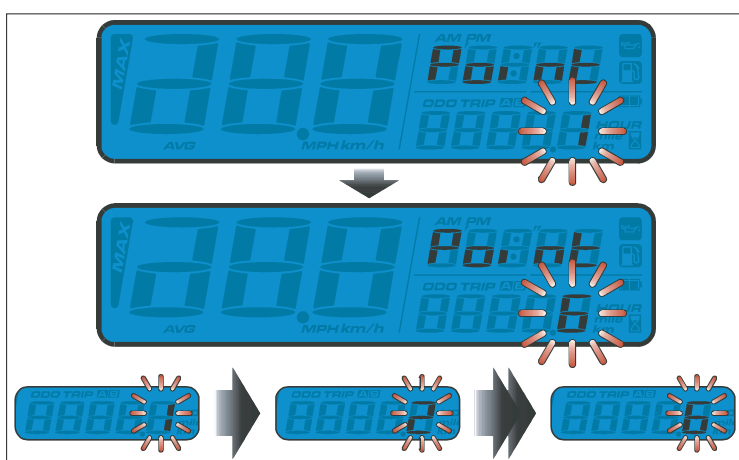


- Use the valve stem as the starting point and the terminal point to measure the wheel circumference with a measuring tape.



i Example: the tire circumference setting is changed from 1000 mm to 1300 mm.

- Press the Select button to change the setting.
- Press the Adjust button three times to enter the sensing point setting.



2.7.6 Sensing point setting

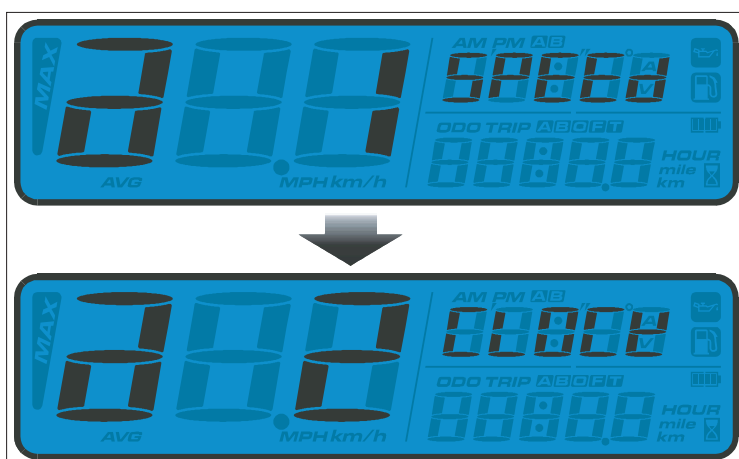
i Example: to change the sensing point to 6.

i The sensing point settings range from 1 to 6 points.

✂ Default value: 1.

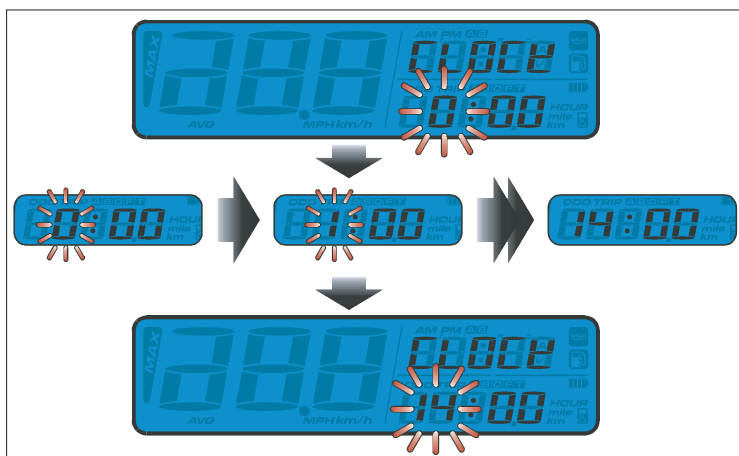
i Example: the sensing point setting has been changed from 1 to 6.

- Press the Select button to choose the hour you want to set.
- Press Adjust button to go back to tire circumferences value and sensing point setting screen.



- From **00:00** switch to **01:00** screen.

- Press the Select button to enter the clock (Hour) setting.



2.7.7 The clock (hour) setting

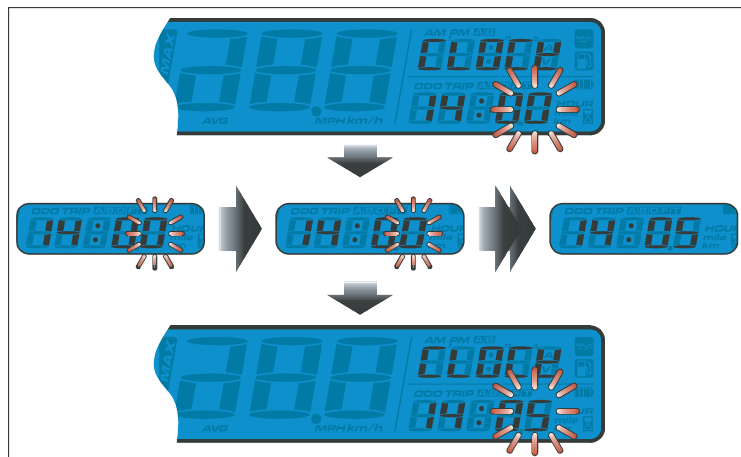
i Example: the hours have to be set to 14.

- Press the Select button to choose the hour you want to set.

✂ Setting range: 0~24 H.

i Example: the hours have now been changed from 0:00 to 14:00.

- Press the Adjust button to enter the minute setting.



2.7.8 The clock (minute) setting

i Example: to change the setting to 14:05.

– Press the Select button to choose the minute to be set.

✖ Setting range: 0~59 minutes.

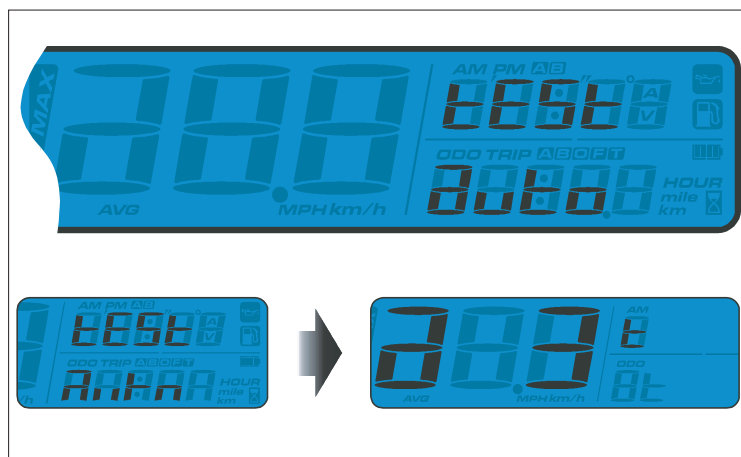
i Example: the time is now changed to 14:05.

– Press Adjust button to go back to Clock setting screen.



– From **22** switch to **23** screen.

– Press the Select button again to enter the Stop watch Setup.

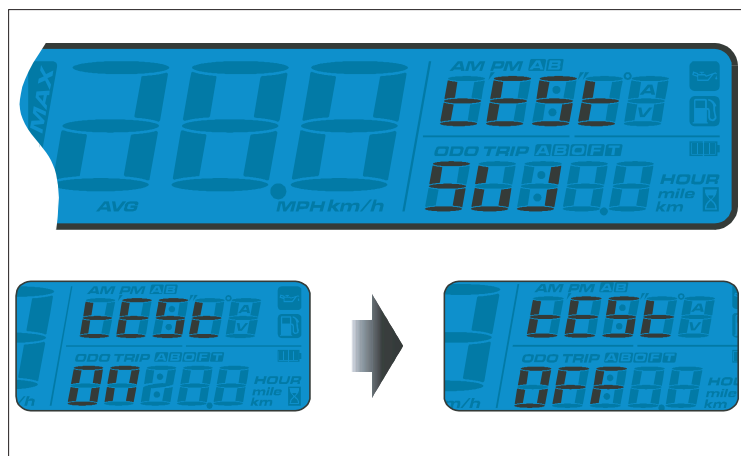


2.7.9 Stop watch Setup

– Press Adjust button to choose between Auto mode (Stop watch starts/stops according to the wheel rotation) and Manual mode (Stop watch starts/stops by pressing the meter button of the optional thumb switch).

– If “Auto” option is chosen, press Adjust button to exit the Stop watch setup.

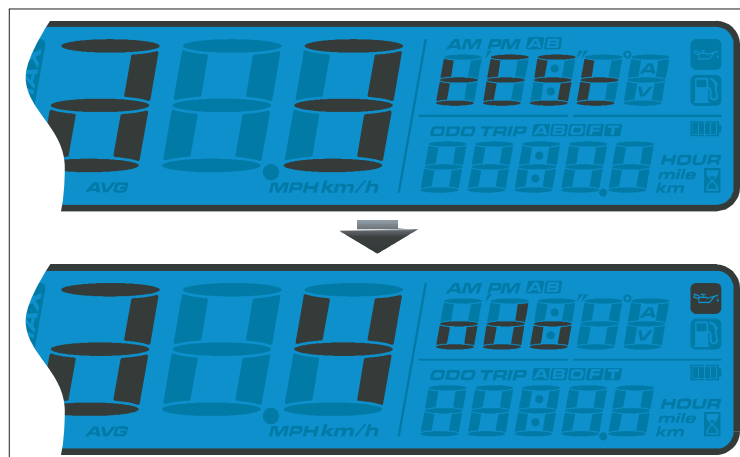
✖ Default value: AUTO.



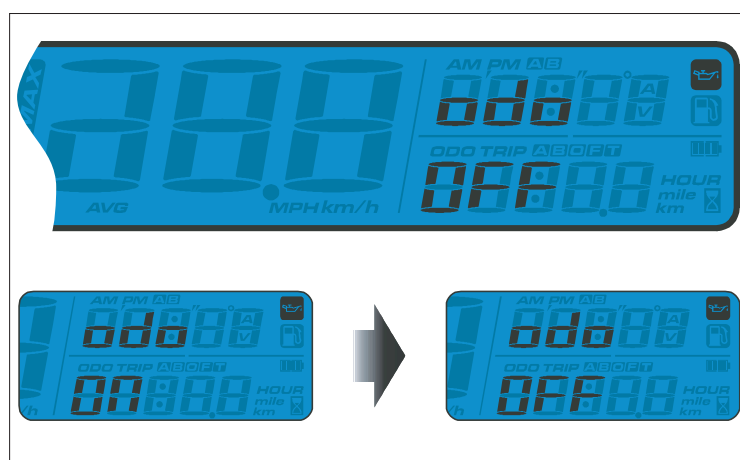
– If Manual mode “SW” (switch) option is chosen, press Adjust button to enter the menu then Select button to switch between “ON” (external button - optional) or “OFF” (meter button).

✖ Default value: OFF.

– Press the Adjust button to enter the ODO setting.



- From **23** switch to **24** screen.
- Press the Adjust button to enter the Maintenance Oil Light Setting.

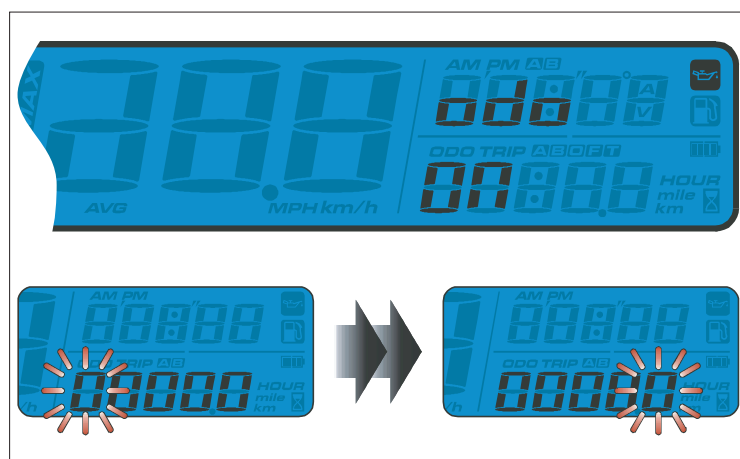


2.7.10 Maintenance Oil Light Setting

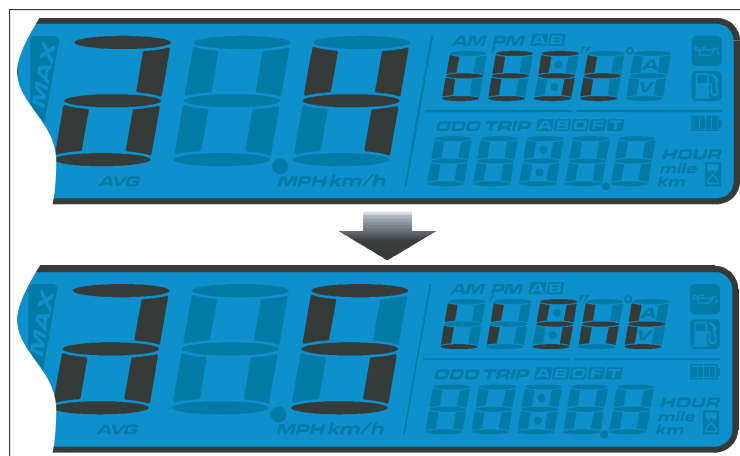
i Example: select ON/OFF to enable/disable the maintenance oil light function.

- If "OFF" is selected, the press the Adjust button once to exit the maintenance mileage setting.

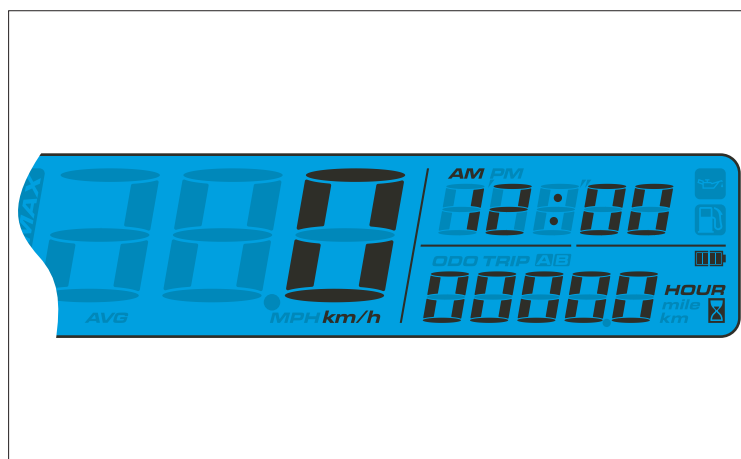
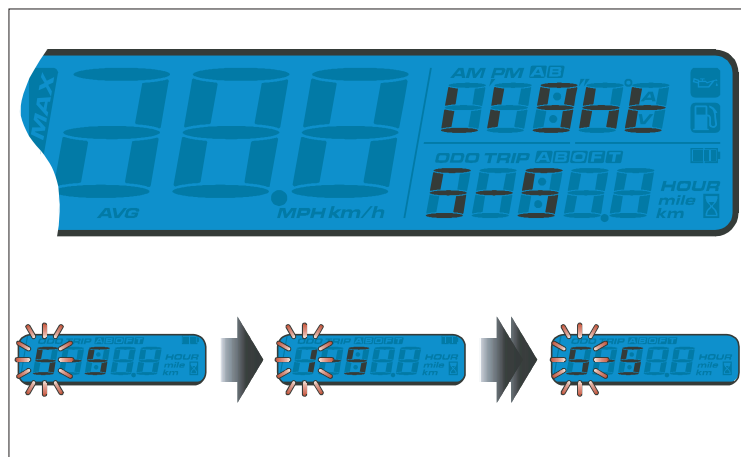
✖ Default value: OFF.



- If "ON" is chosen, press Adjust button to enter the maintenance oil light setting.
- Press the Adjust button to move the cursor to the digit to be set.
- If "OFF" is chosen, then press the Adjust button to exit the maintenance oil light setting.



- From **24** switch to **25** screen.
- Press the Adjust button to enter the Backlight Brightness setting.



2.7.11 Backlight brightness

i Example: to change the Backlight brightness setting to 1.

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

✂ Adjustable Range: 1~5.

✂ Default value: 5.

i Example: the Backlight brightness setting is changed from 5 to 1.

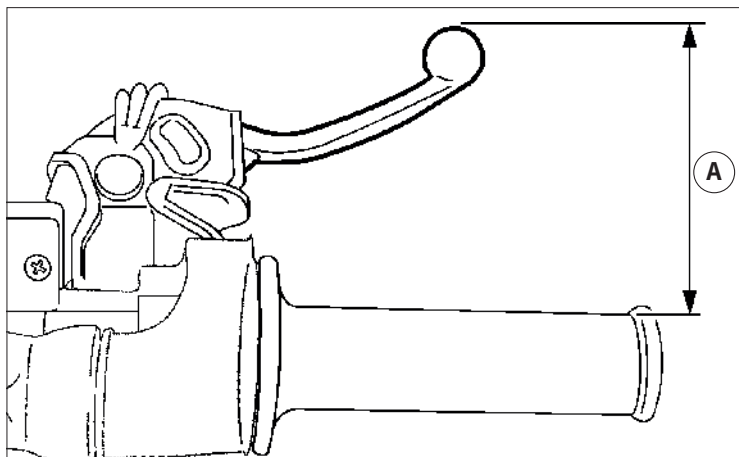
– Press the Adjust button to confirm and exit the Backlight Brightness setting.

– Then press and hold both the Adjust and Select buttons 3 seconds to exit and go back to the main screen.

– Back to the main screen.

2.7.12 Dashboard setting value

Dashboard setting	Version	Standard value
Wheel circumference	–	552
Sensitive point	–	P4



3.1 BRAKES

3.1.1 Front brake adjustment

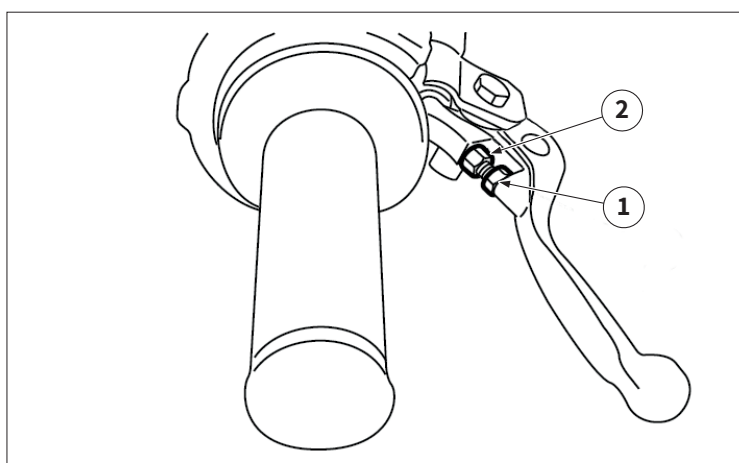
Check brake lever position "A". If it is different from the standard value, adjust it.



Brake lever position "A":

Standard position: 100 mm (3.94 in)

Adjustment point: 86-105 mm (3.39-4.13 in)



Adjust the brake lever position as described below:

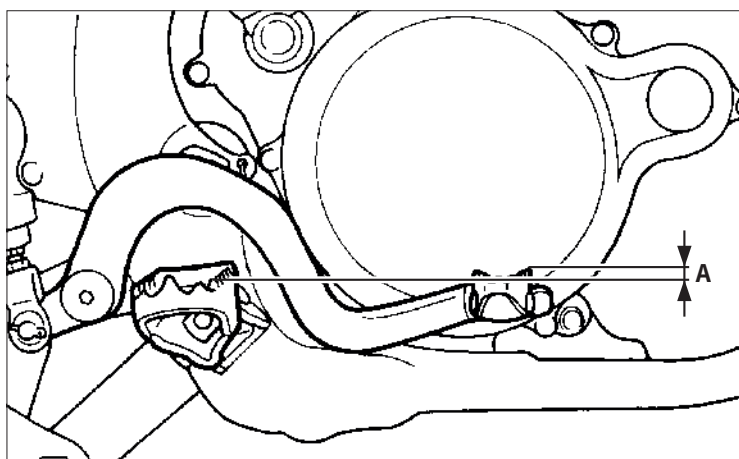
- Remove the brake lever cover;
- Loosen the locknut "1";
- Turn the adjusting bolt "2" until the lever position "A" is within specified position;
- Tighten the locknut "1";
- Reinstall the brake lever cover.



Be sure to tighten the locknut, as it will cause poor brake performance.



Locknut: 5 Nm (0.5 m•kg, 3.6 ft•lb)

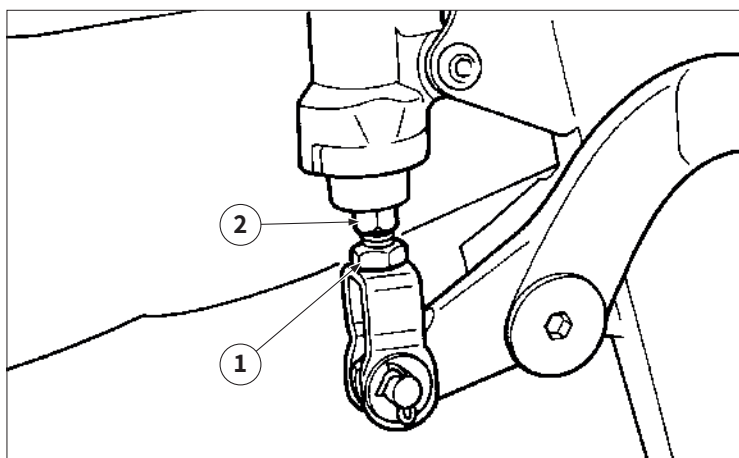


3.1.2 Rear brake adjustment

Check the height of brake pedal "A". If it is different from the standard value, adjust it.

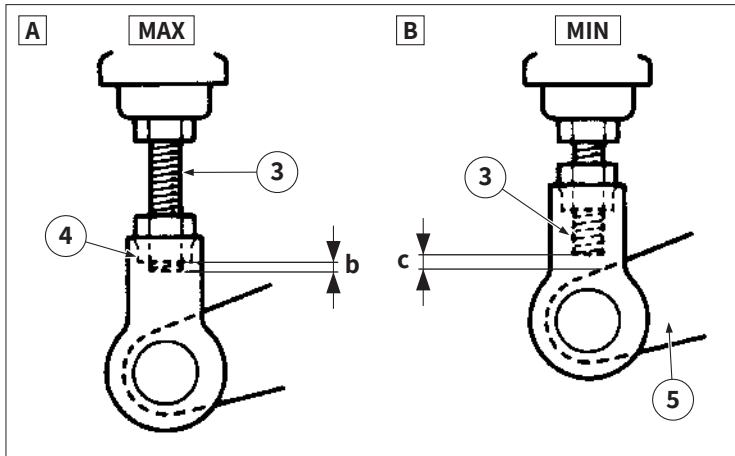


Brake pedal height "A": 0.0 mm (0.00 in)

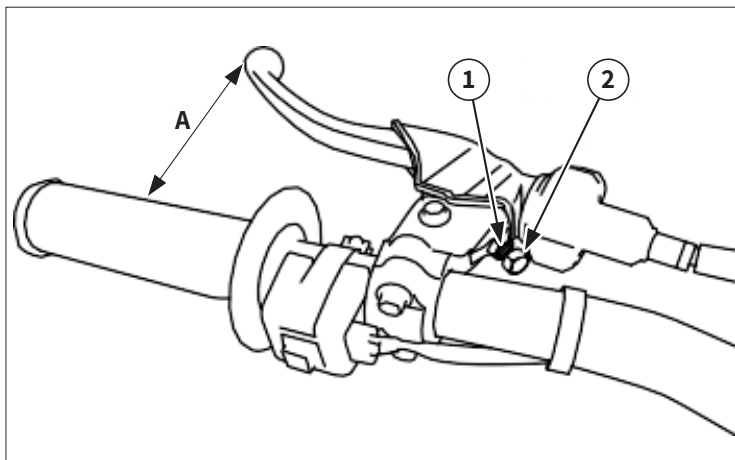


Adjust the brake pedal height as described below:

- Loosen the locknut "1";
- Turn the adjusting nut "2" until the pedal height "A" is within specified height;
- Tighten the locknut.



- ⚠ • Adjust the pedal height between the maximum “A” and the minimum “B” as shown. (In this adjustment, the bolt “3” end “b” should protrude out of the threaded portion “4” but not be less than 2 mm (0.08 in) “c” away from the brake pedal “5”).
- After the pedal height adjustment, make sure that the rear brake does not drag.

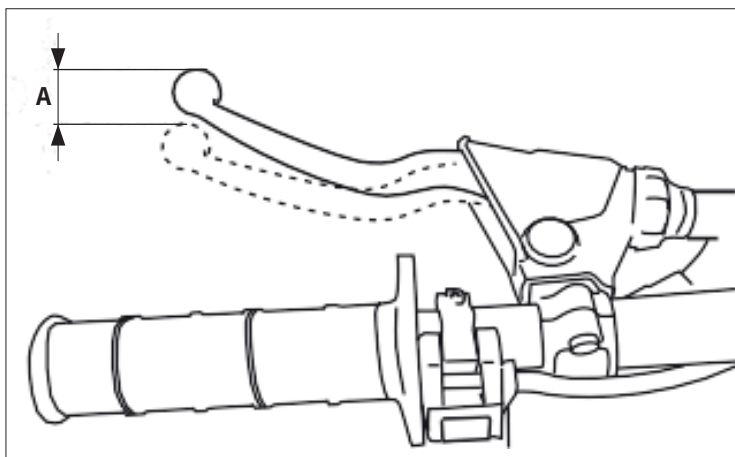


3.2 CLUTCH

3.2.1 Adjusting the clutch lever position

- Loosen the locknuts “1”;
- Turn the adjusting bolt “2” until the clutch lever position “A” is in the desired position;
- Tighten the locknuts.

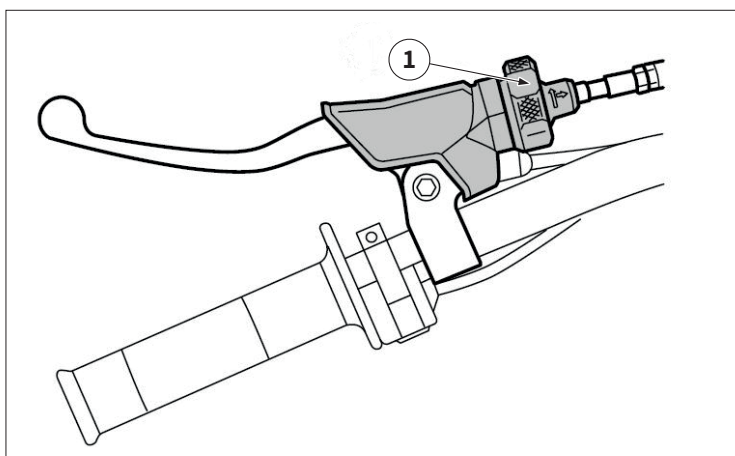
🔧 Locknut: 5 Nm (0.5 m•kg, 3.6 ft•lb)



3.2.2 Adjusting the clutch lever clearance

Check the clutch lever clearance “A”. If it is different from the standard value, adjust it.

🔧 Clutch lever clearance “A”:
7.0–12.0 mm (0.28–0.47 in)



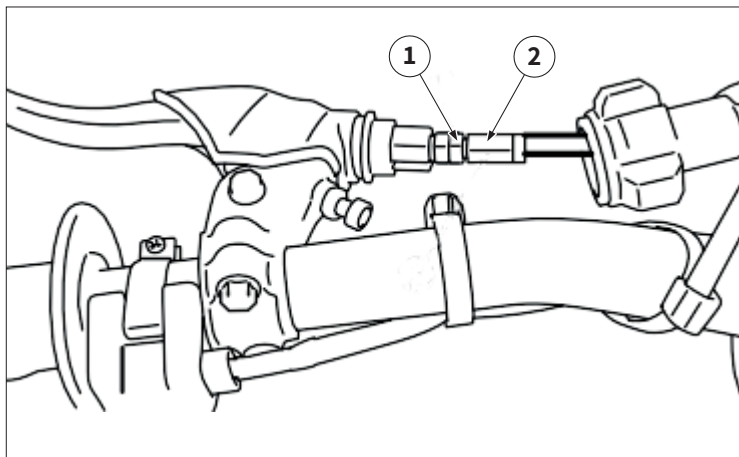
Adjust the clutch lever clearance as described below:

Handlebar side

- Turn the adjuster “1” until the specified clutch lever free play is obtained.

ⓘ Turning clockwise increases the clearance, turning counter-clockwise decreases it.

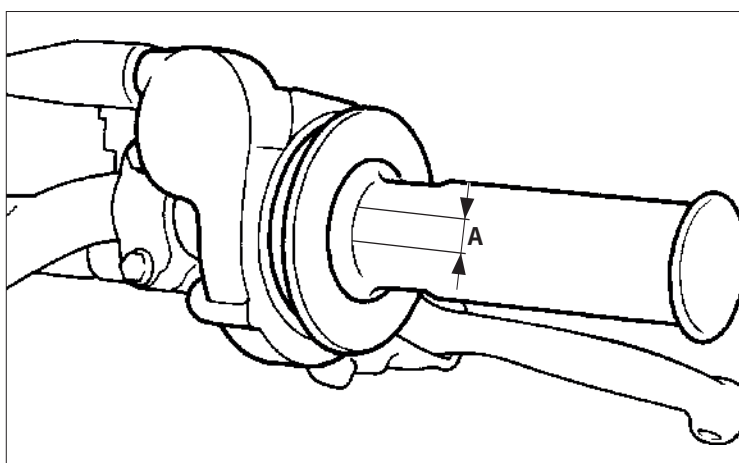
⚠ If the clutch lever free play cannot be obtained on the handlebar side, use the adjuster on the clutch cable side.


Clutch cable side

- Slide the clutch cable cover;
- Loosen the locknut "1";
- Turn the adjuster "2" until the specified clutch lever free play is obtained;
- Tighten the locknut;

 **Locknut: 5 Nm (0.5 m•kg, 3.6 ft•lb)**

- Return the clutch cable cover to its original position.


3.3 THROTTLE CONTROL
3.3.1 Adjusting the throttle grip clearance

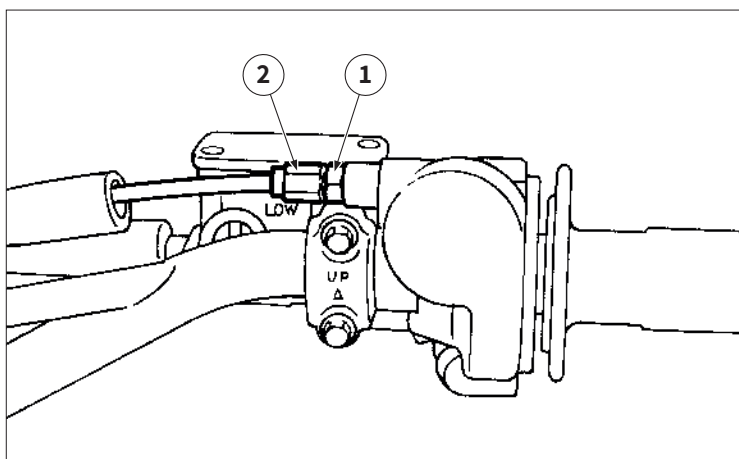
Check the throttle control knob clearance "A".

If it is different from the standard value, adjust it.

 **Throttle grip clearance "A":**
3.0-5.0 mm (0.12-0.20 in)

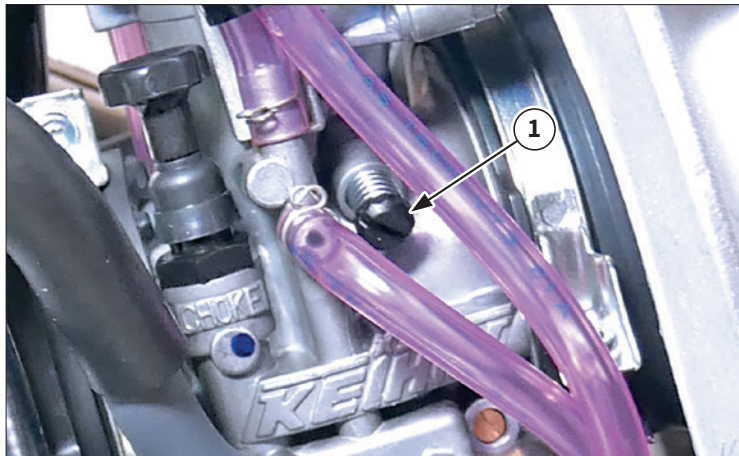
Adjust the throttle control knob clearance as described below:

- Slide the adjuster cover;
- Loosen the locknut "1";
- Turn the adjuster "2" until the specified free play is obtained;
- Tighten the locknut.



 **Prior to adjusting throttle grip free play, the engine idling speed should be adjusted.**

 **Prior to adjusting throttle grip free play, the engine idling speed should be adjusted. After adjusting the throttle grip free play, turn the handlebar to the right and to the left to ensure that this does not cause the engine idling speed to change.**

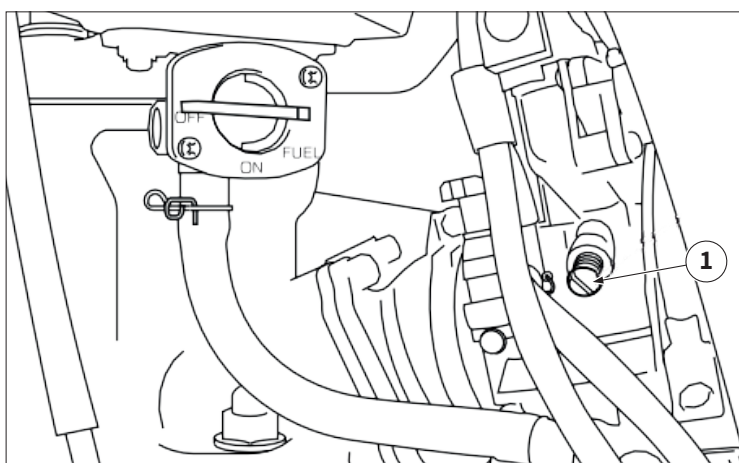


3.4 IDLING SPEED ADJUSTMENT

3.4.1 XX 125 and XE 125 Versions

- Start the engine and thoroughly warm it up;
- Turn the throttle stop screw "1" until the engine runs at the lowest possible speed.

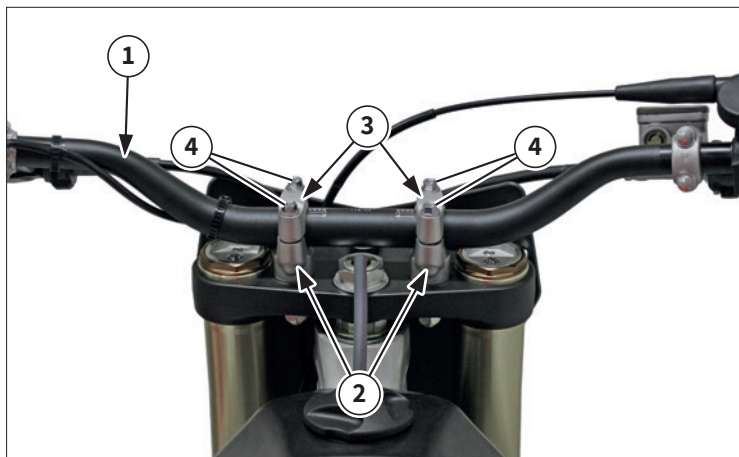
i Screwing it in increases idle speed, unscrewing it decreases.



3.4.2 XX 250 Version

- Start the engine and thoroughly warm it up;
- Turn the throttle stop screw "1" until the engine runs at the lowest possible speed.

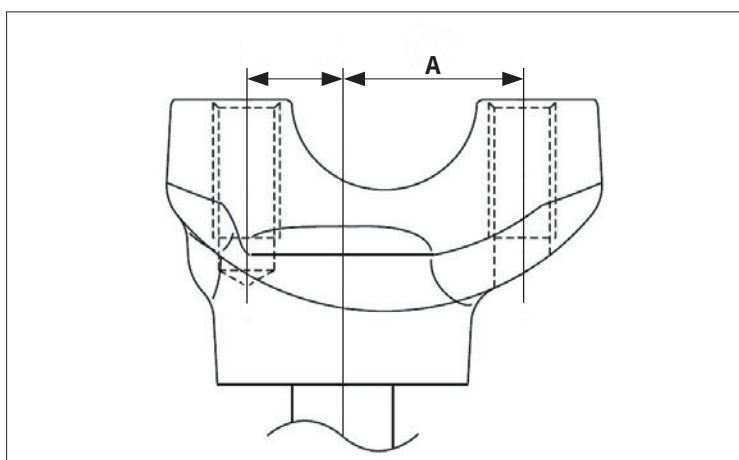
i Screwing it in increases idle speed, unscrewing it decreases.



3.5 HANDLEBAR ADJUSTMENT

3.5.1 Handlebar installation and adjustment

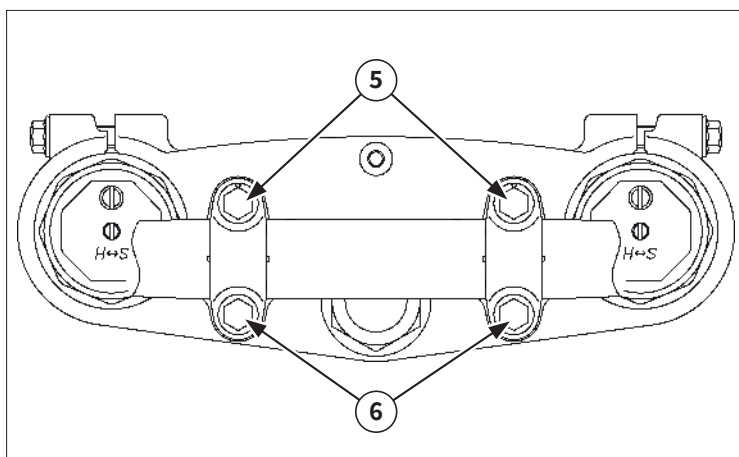
Install handlebar "1" on lower supports "2";
Install upper supports "3" and fastening bolts "4", without tightening them definitively.



! Install the lower handlebar mounts so that the side with the longest distance "A" faces forward. By installing them in the opposite direction, it is possible to change the front/rear off-set of the handlebar position.

i By installing the lower mounts in the opposite direction, the amount of front-rear offset of the handlebar position can be changed.

⚙ Lower handlebar support nut:
40 Nm (4.0 m•kg, 30 ft•lb)



First tighten the bolts on the front side "5" of the upper handlebar holder, and then tighten the bolts "6" on the rear side.

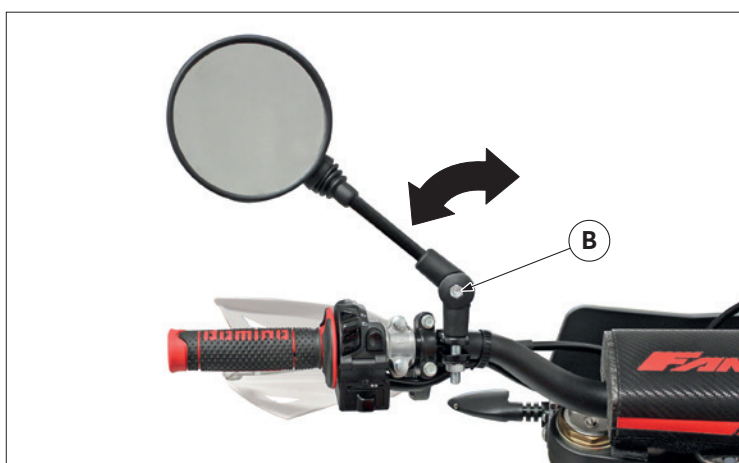
! Always install the upper handlebar mounts with the punching facing the front and the side reference notch towards the centre nut of the steering plate.

⚙ Upper handlebar support bolt:
28 Nm (2.8 m•kg, 20 ft•lb)



3.6 REAR-VIEW MIRRORS (ONLY FOR XE 125 VERSION)

- i** The operations described below apply to both rearview mirrors.
- Place the vehicle on the kickstand and on a flat and stable surface.
 - Loosen the lock nut “A”, turn the left-hand mirror counter-clockwise and remove it, then turn the right-hand mirror clockwise and remove it.
- i** During reassembly, before tightening the nut, check that the mirror support rod is aligned with the handlebar.



3.6.1 Rear-view mirror adjustment

To adjust the rear-view mirrors, get on the vehicle in the driving position and turn the rear-view mirror according to your needs. It is also possible to adjust the inclination of the rear-view mirror support rod. To carry out this operation, loosen the screw “B” and move the support rod sideways. Adjust and tighten screw “B”.

3.7 CARBURATION

3.7.1 Carburettor setting

The role of the fuel is to cool the engine and lubricate the engine in addition to developing power. As a result, if a mixture of air and fuel is too poor, abnormal combustion will occur and engine seizure may occur. If the mixture is too rich, the spark plugs will get wet with oil, making it impossible to use the engine at full rpm or, in the worst case, the engine may stop.

The richness of the air-fuel mixture required for the engine will vary with atmospheric conditions of the day and therefore, the settings of the carburettor must be properly suited to the atmospheric conditions (air pressure, humidity and temperature).

Finally, the driver has to make a test drive and check the vehicle condition (resumption of engine rpm, road surface condition) and the spark plug colour.

- i** It is advisable to make a note of settings, atmospheric conditions, road surface condition, lap-time, etc. so that the memorandum can be used as a reference useful for future.

Air temperature	Humidity	Air pressure (altitude)	Mixture	Setting
High	High	Low (high)	Richer	Leaner
Low	Low	High (low)	Leaner	Richer

- i** The reason for the above tendency is that the richness or leanness of a fuel mixture depends on the density of the air (i.e. the concentration of oxygen in it).
- Higher temperature expands the air with its resultant reduced density.
 - Higher humidity reduces the amount of oxygen in the air by so much of the water vapor in the same air.
 - Lower atmospheric pressure (at a high altitude) reduces the density of the air.

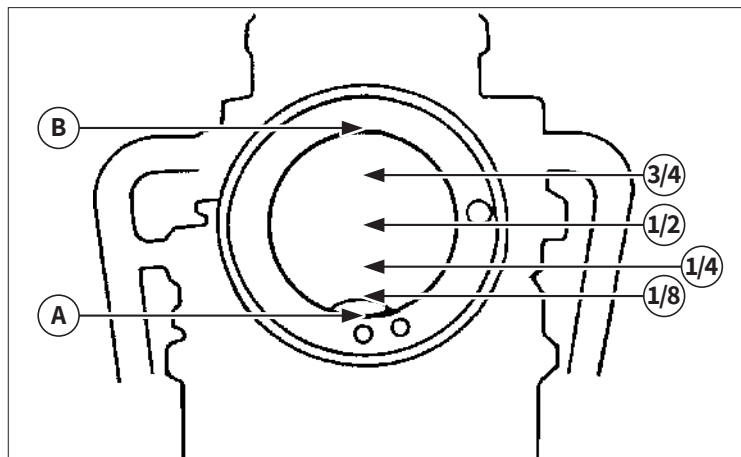


3.7.2 Test run

After heating the engine equipped with the carburettor and normal spark plug, run two or three laps of the circuit and check the smooth running of the engine and the spark plug colour.

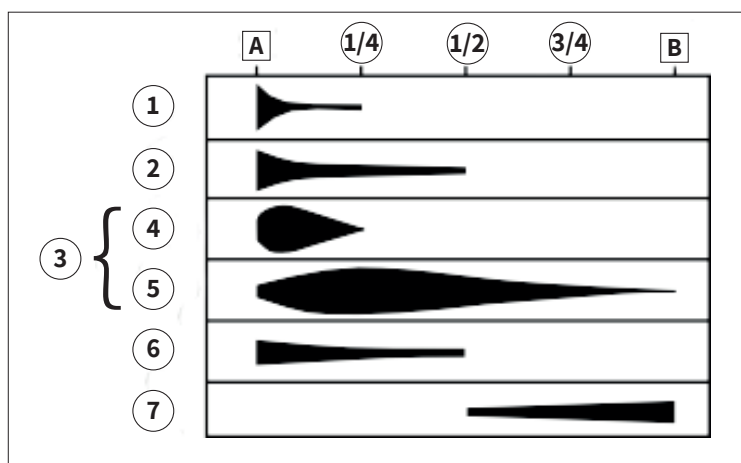
Colour	Condition of spark plug
Normal	Insulator is dry and burnt brown.
Over burned (too lean)	Insulator is whitish.
Oil fouled (too rich)	Insulator is sooty and wet.

- E. Normal
- F. Over burned (too lean)
- G. Oil fouled (too rich)



3.7.3 Effect of setting parts in relation to throttle valve opening (XE 125 version)

- A. Closed
- B. Full-open



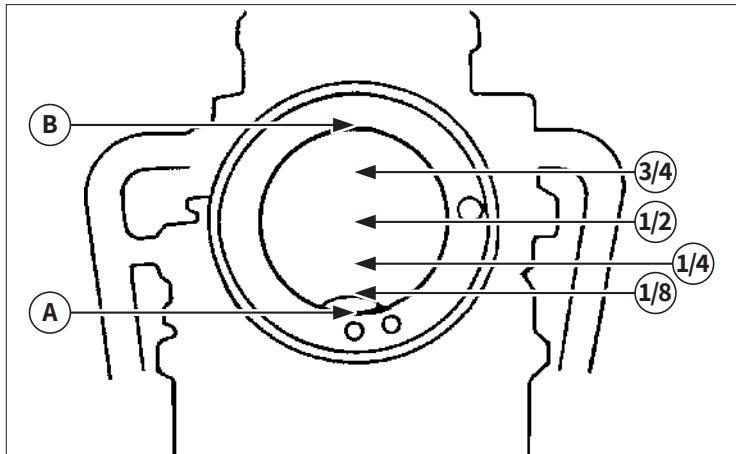
- 12. Pilot air screw
- 13. Pilot jet
- 14. Jet needle
- 15. Diameter of straight portion
- 16. Clip position
- 17. Throttle valve
- 18. Main jet

3.7.4 Standard carburation setting (XE 125 version with “Racing” configuration)

Pilot jet:	#60 (07868005)
Main jet:	#162 (07917005)
Jet needle:	NYCF-2 (09013001), 2 of 5 notches
Pilot air screw:	1-½ turns open
Power Jet:	#35 (08995001)

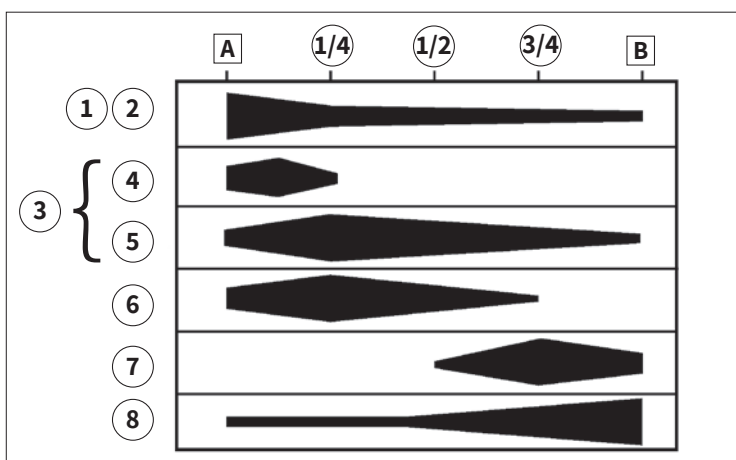
3.7.5 Standard carburation setting (XE 125 approved version)

Pilot jet:	#35 (09815005)
Main jet:	#105 (09814005)
Pilot air screw:	1-½ turns open
Throttle valve:	#35 (08995001)



3.7.6 Effect of setting parts in relation to throttle valve opening (XX 125 / XX 250 versions)

- A. Closed
- B. Full-open



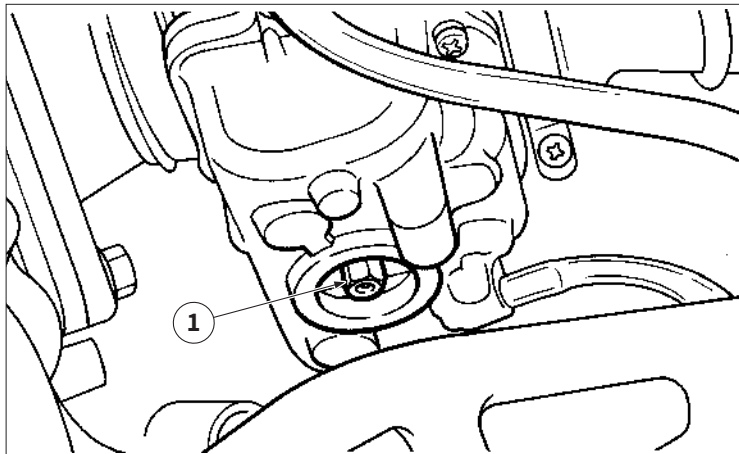
- 1. Idle jet
- 2. Idle air screw
- 3. Taper pin
- 4. Diameter of straight portion
- 5. Retainer position
- 6. Throttle valve
- 7. Power Jet
- 8. Full jet

3.7.7 Standard carburation setting (XX 125 version)

Pilot jet:	#62 (07867005)
Main jet:	#162 (07917005)
Jet needle:	NYCF (09013001), 3 of 5 notches
Pilot air screw:	1-¾ turns open
Power jet	#35 (08995001)

3.7.8 Standard carburation setting (XX 250 version)

Pilot jet:	#55 (07870005)
Main jet:	#190 (07907005)
Jet needle:	N3EW (07877005), 3 of 5 notches
Pilot air screw:	2-¼ turns open
Power jet	#50 (07921005)



3.7.9 Adjusting the main jet

The richness of air-fuel mixture with 1/2–4/4 throttle can be set by changing the main jet “1”.



Standard main jet

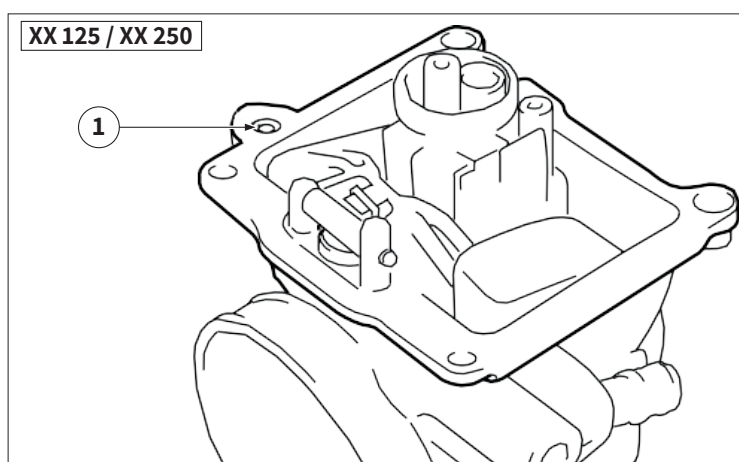
XX 125 version: #162

XE 125 “Racing” version: #162

XE 125 approved version: #105

XX 250 : #190

- Spark plug is too hot: select a main jet having higher calibrating No. than standard. (To be enriched);
- Spark plug is wet: select a main jet having lower calibrating No. than standard. (To be leaned out).



3.7.10 Adjusting the Power Jet (XX 125 / XX 250 versions)

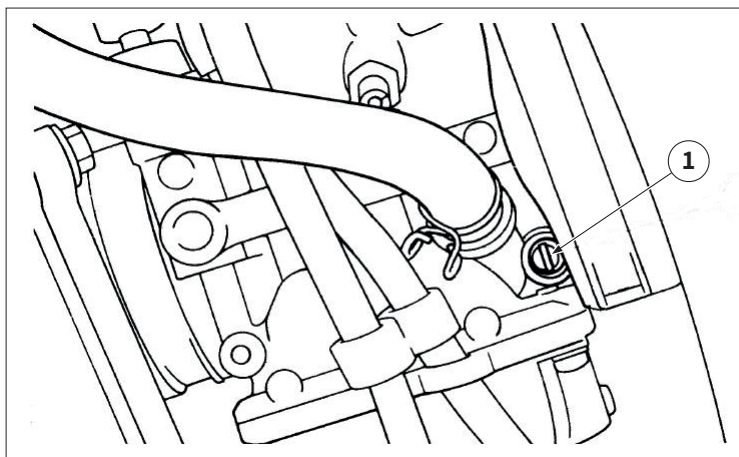
The richness of the air-fuel mixture with flow control valve 1/2 to 4/4, below 8500 rpm, can be set by changing the power jet “1”. A larger jet size produces a richer mixture, while a smaller size produces a leaner mixture



Standard Power Jet

XX 125 version : #35

XX 250 version : #50



3.7.11 Adjusting the pilot air screw

The air-fuel mixture ratio can be adjusted by turning the air pilot screw “1”: with the flow control valve from fully closed to 1/8.

Screwing in the air pilot screw will enrich the mixture at low revs and unscrewing it will make the mixture leaner.

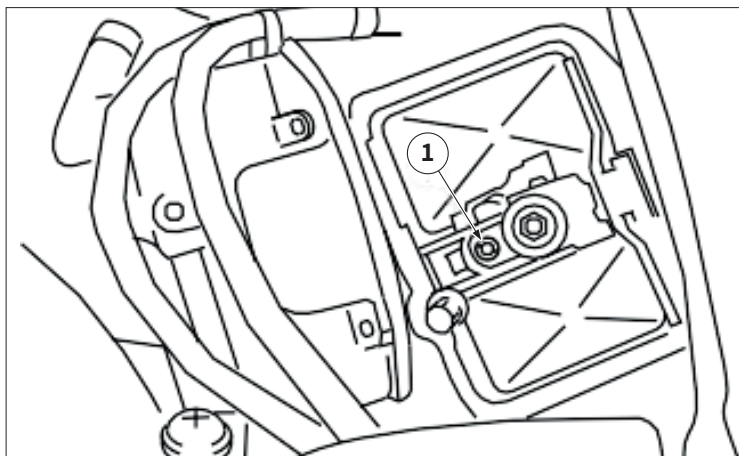


Standard pilot air screw position:

1–3/4 turns outwards (XX 125 version)

1–1/2 turns outwards (XE 125 version)

2–1/4 turns outwards (XX 250 version)



3.7.12 Adjusting the pilot jet

The richness of the air-fuel mixture with the flow control valve from fully closed to 1/2 can be set by changing the idle jet “1”. Jet “1” must be replaced when the adjustment cannot be made by adjusting the IDLE AIR SCREW.



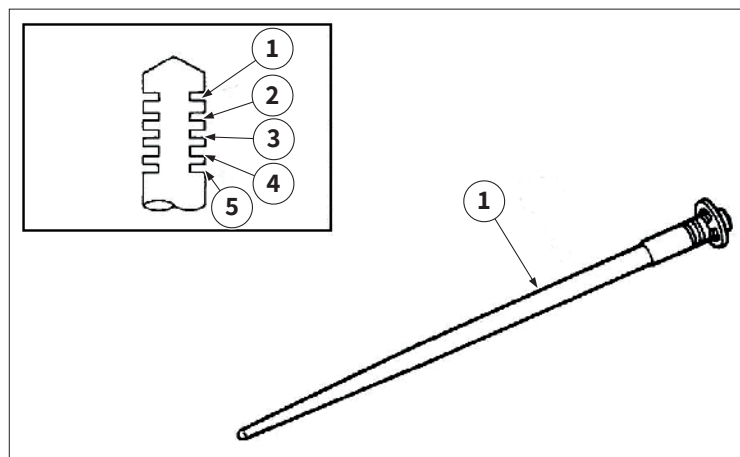
Standard pilot jet:

XX 125 version: #62

XE 125 “Racing” version: #60

XE 125 approved version: #35

XX 250 : #55



3.7.13 Adjusting the jet needle groove position

Should the engine be hard to run smoothly at intermediate speeds, the jet needle "1" must be adjusted. If the mixture is too rich or too lean at intermediate speed operation, irregular engine operation and poor acceleration will result. Whether or not the richness of the mixture is proper is hard to be determined by means of the spark plug and therefore, it should be judged from your feeling of actual engine operation.

Too rich at intermediate speeds: rough engine operation is felt and the engine will not pick up speed smoothly. In this case, step up the jet needle clip by one groove or 0.5 groove and move down the needle to lean out the mixture.

Too lean at intermediate speeds: the engine breathes hard and will not pick up speed quickly. In this case, step down the jet needle clip by one groove or 0.5 groove and move up the needle to enrich the mixture.

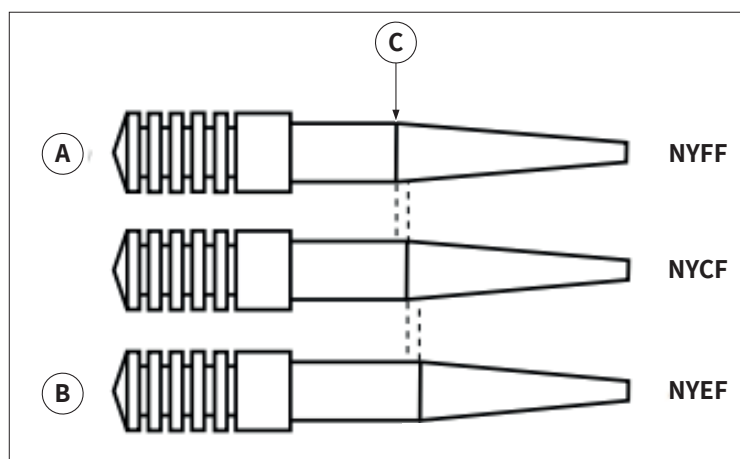


Standard clip position:

XX 125 version: n.3

XE 125 "Racing" version: n.3

XX 250 version: n.3



3.7.14 Jet needle adjustment (XE 125 version)

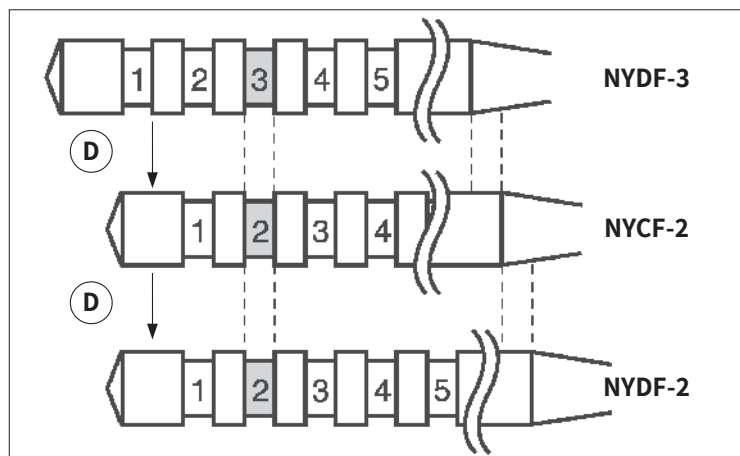
On the carburettor used in the XE 125 the main nozzle is of non-removable type and therefore cannot be replaced. Therefore, adjusting the carburettor requires changing the pin.

The pin adjustment parts, which have the same taper angle, are available in different straight part diameters and different taper start positions.

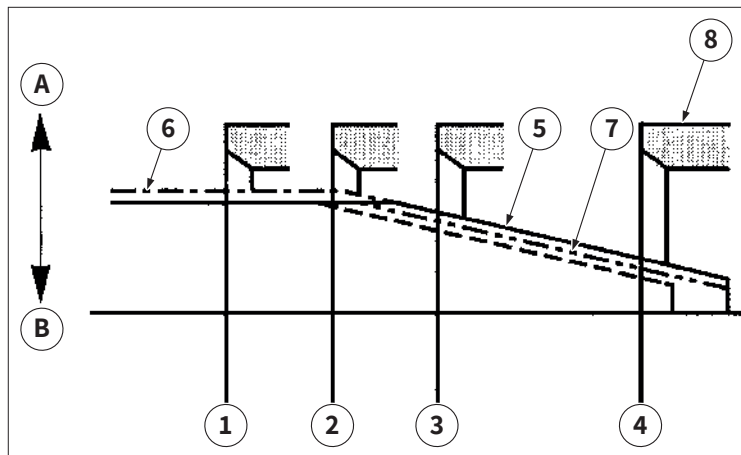


"Racing" version pin: NYCF

If the retainer position number is the same, changing NYDF to NYEF has the same effect as raising the retainer position by 0.5.



- A. Rich
- B. Lean
- C. Initial position of the taper part
- D. 0.5 groove variation



3.7.15 Relationship with throttle opening (XE 125 version)

The flow of fuel through the main system of the carburettor is controlled by the full jet and then further regulated by the area between the atomizer and the taper pin. In the relationship between fuel flow and throttle opening, fuel flow refers to the diameter of the straight portion of the taper pin around the 1/8 to 1/4 throttle opening, while the 1/4 to 1/1 throttle opening refers to the initial position of the taper and the position of the clip.

Therefore, the fuel flow is balanced at each stage of the throttle opening by a combination of the diameter of the straight portion of the taper pin, the initial position of the taper and the position of the clip.

- A. Lean (larger diameter)
- B. Rich (smaller diameter)
- 1. 1/8 throttle
- 2. 1/4 throttle
- 3. 1/2 throttle
- 4. Fully open
- 5. NYCF-2 pin
- 6. NYCG-2 pin
- 7. NYDF-2 pin
- 8. Main nozzle

3.7.16 Carburettor setting parts (XE 125 version)

Main jet

Main jet	Size	Part number
Lean	#148	09002001
	#150	09001001
	#152	09000001
	#155	08999001
	#158	08998001
	#160	08997001
Standard (XE 125 "Racing" version)	#162	07917005
	#165	07916005
	#168	07915005
	#170	07914005
	#172	07913005
Rich	#175	07912005

Pilot jet

Pilot jet	Size	Part number
Lean	#50	07871005
	#52	07866005
	#55	07870005
	#58	07869005
Standard (XE 125 "Racing" version)	#60	07868005
	#62	07867005

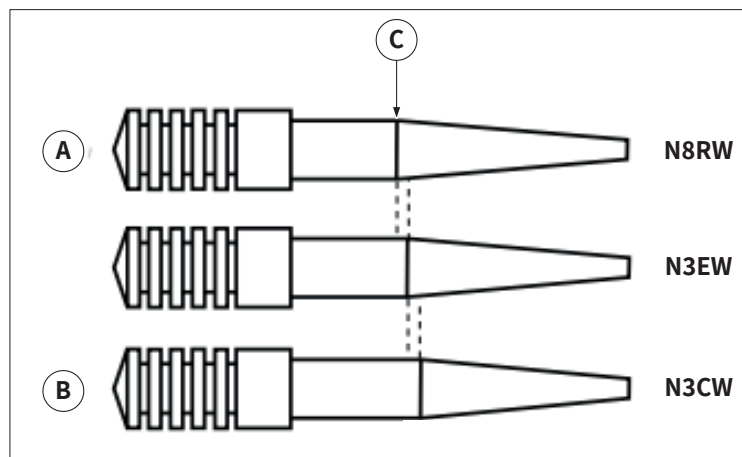
Pilot jet	Size	Part number
	#65	08988001
	#68	08989001
	#70	08990001
	#72	08991001
	#75	08992001
	#78	08993001
Rich	#80	08994001

Throttle valve

Throttle valve "3"	Size	Part number
Rich – Standard	4.0	05810005
Lean	4.25	05811005

Jet needle

Jet needle "4"	Size	Part number
Rich	NYEH	09003001
	NYDH	09004001
	NYCH	09005001
	NYFH	09006001
	NYEG	09007001
	NYDG	09008001
	NYCG	09009001
	NYFG	09010001
	NYEF	09011001
	NYDF	09012001
Standard (XE 125 "Racing" version)	NYCF	09013001
	NYFF	09014001
	NYEE	09015001
	NYDE	09016001
	NYCE	09017001
	NYFE	09018001
	NYED	09019001
	NYDD	09020001
	NYCD	09021001
Lean	NYFD	09022001



3.7.17 Jet needle adjustment (XX 250 version)

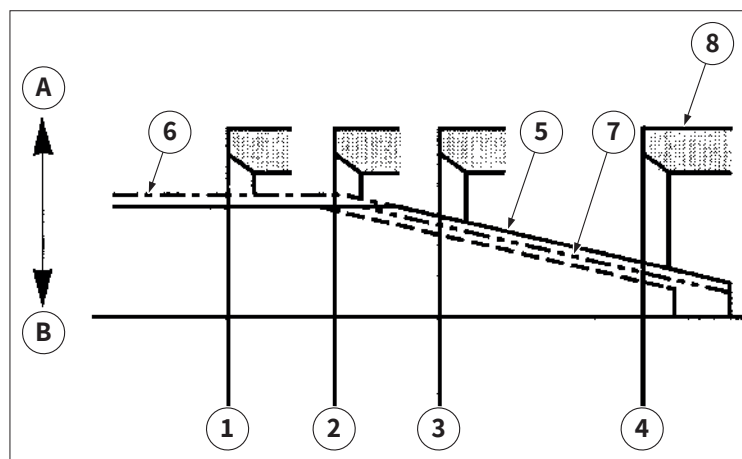
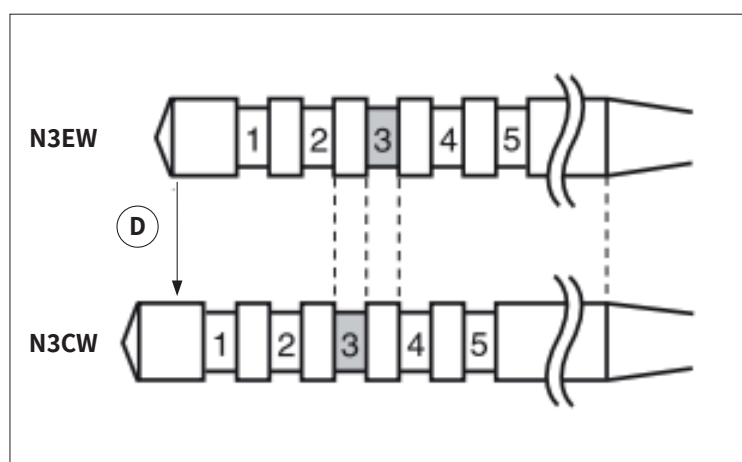
On the carburettor used in the XX250 the main nozzle is of non-removable type and therefore cannot be replaced. Therefore, adjusting the carburettor requires changing the pin.

The pin adjustment parts, which have the same taper angle, are available in different straight part diameters and different taper start positions.

Standard pin: N3EW

If the retainer position number is the same, changing N3EW to N3CW has the same effect as raising the retainer position by 0.5.

- A. Rich
- B. Lean
- C. Initial position of the taper part
- D. 0.5 groove variation



3.7.18 Relationship with throttle opening (XX 250 version)

The flow of fuel through the main system of the carburettor is controlled by the full jet and then further regulated by the area between the atomizer and the taper pin. In the relationship between fuel flow and throttle opening, fuel flow refers to the diameter of the straight portion of the taper pin around the 1/8 to 1/4 throttle opening, while the 1/4 to 1/1 throttle opening refers to the initial position of the taper and the position of the clip.

Therefore, the fuel flow is balanced at each stage of the throttle opening by a combination of the diameter of the straight portion of the taper pin, the initial position of the taper and the position of the clip.

- A. Lean (larger diameter)
- B. Rich (smaller diameter)
- 1. 1/8 throttle
- 2. 1/4 throttle
- 3. 1/2 throttle
- 4. Fully open
- 5. N3EW-3 pin
- 6. N3EJ-3 pin
- 7. N8RW-3 pin
- 8. Main nozzle

3.7.19 Carburettor setting parts (XX 250 version)

Main jet

Main jet	Size	Part number
Lean	#162	07917005
	#165	07916005
	#168	07915005
	#170	07914005
	#172	07913005
	#175	07912005
	#178	07911005
	#180	07906005
	#182	07910005
	#185	07909005
	#188	07908005
Standard	#190	07907005
Rich	#195	08673005

Pilot jet

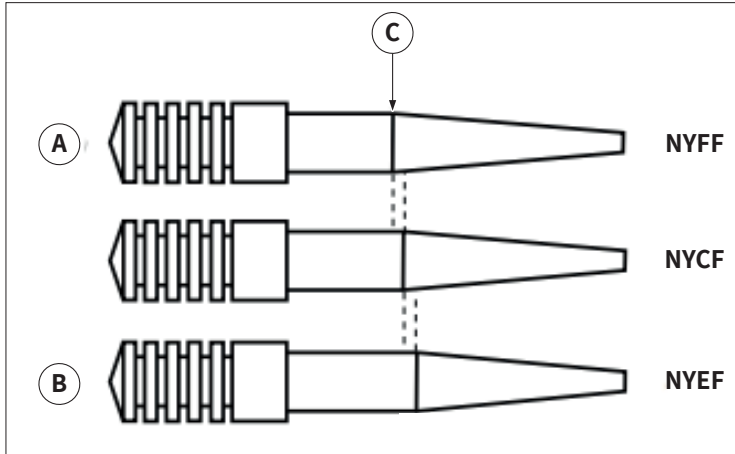
Pilot jet	Size	Part number
Lean	#38	07876005
	#40	07875005
	#42	07874005
	#45	07873005
	#48	07872005
	#50	07871005
	#52	07866005
Standard	#55	07870005
	#58	07869005
	#60	07868005
Rich	#62	07867005

Power Jet

Power Jet	Size	Part number
Lean	#40	07926005
Standard	#50	07921005
	#55	07922005
	#60	07923005
Rich	#65	07924005

Jet needle

Jet needle	Size	Part number
Lean	N3CJ	07885005
	N3EJ	07889005
	N3CW	07884005
Standard	N3EW	07877005
	N8RW	07892005
	N3EH	07888005
Rich	N8RH	07891005



3.7.20 Jet needle adjustment (XX 125 version)

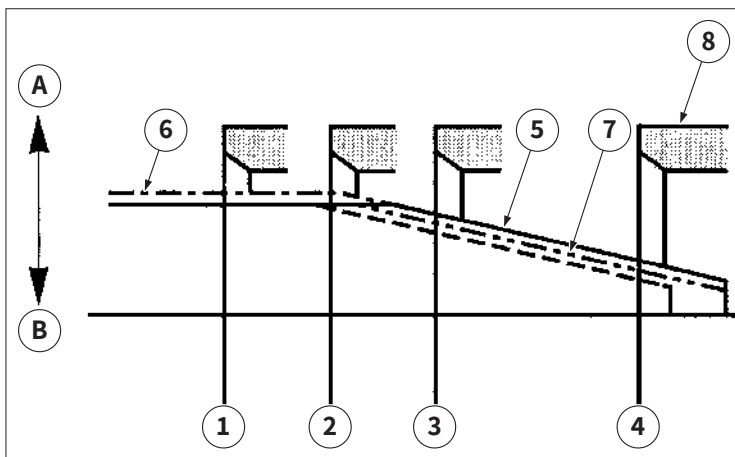
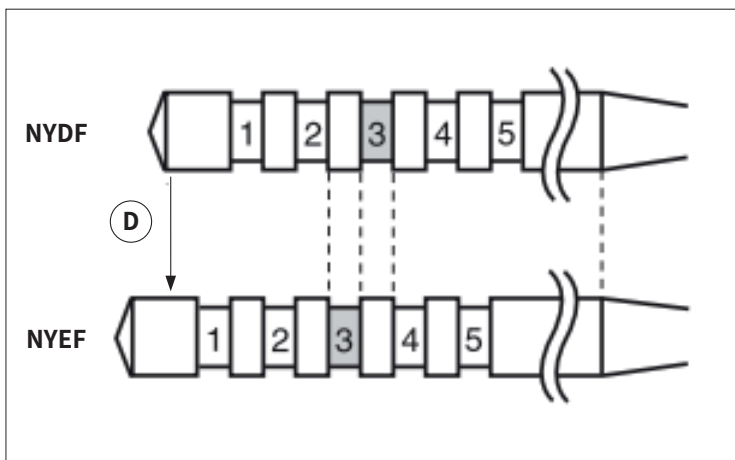
On the carburettor used in the XX 125 the main nozzle is of non-removable type and therefore cannot be replaced. Therefore, adjusting the carburettor requires changing the pin.

The pin adjustment parts, which have the same taper angle, are available in different straight part diameters and different taper start positions.

Standard pin: NYCF

If the retainer position number is the same, changing NYDF to NYEF has the same effect as raising the retainer position by 0.5.

- A. Rich
- B. Lean
- C. Initial position of the taper part
- D. 0.5 groove variation



3.7.21 Relationship with throttle opening (XX 125 version)

The flow of fuel through the main system of the carburettor is controlled by the full jet and then further regulated by the area between the atomizer and the taper pin. In the relationship between fuel flow and throttle opening, fuel flow refers to the diameter of the straight portion of the taper pin around the 1/8 to 1/4 throttle opening, while the 1/4 to 1/1 throttle opening refers to the initial position of the taper and the position of the clip.

Therefore, the fuel flow is balanced at each stage of the throttle opening by a combination of the diameter of the straight portion of the taper pin, the initial position of the taper and the position of the clip.

- A. Lean (larger diameter)
- B. Rich (smaller diameter)
- 1. 1/8 throttle
- 2. 1/4 throttle
- 3. 1/2 throttle
- 4. Fully open
- 5. NYDF-3 pin
- 6. NYDG-3 pin
- 7. NYCF-3 pin
- 8. Main nozzle

3.7.22 Carburettor setting parts (XX 125 version)

Main jet

Main jet	Size	Part number
Lean	#148	09002001
	#150	09001001
	#152	09000001
	#155	08999001
	#158	08998001
	#160	08997001
	#162	07917005
	#165	07916005
	#168	07915005
	#170	07914005
	#172	07913005
Rich	#175	07912005

Pilot jet

Pilot jet	Size	Part number
Lean	#50	07871005
	#52	07866005
	#55	07870005
	#58	07869005
	#60	07868005
	#62	07867005
	#65	08988001
	#68	08989001
	#70	08990001
	#72	08991001
	#75	08992001
	#78	08993001
Rich	#80	08994001

Power Jet

Power Jet	Size	Part number
Lean	#35	08995001
	#40	07926005
	#45	08996001
	#50	07921005
	#55	07922005
Rich	#60	07923005

Jet needle

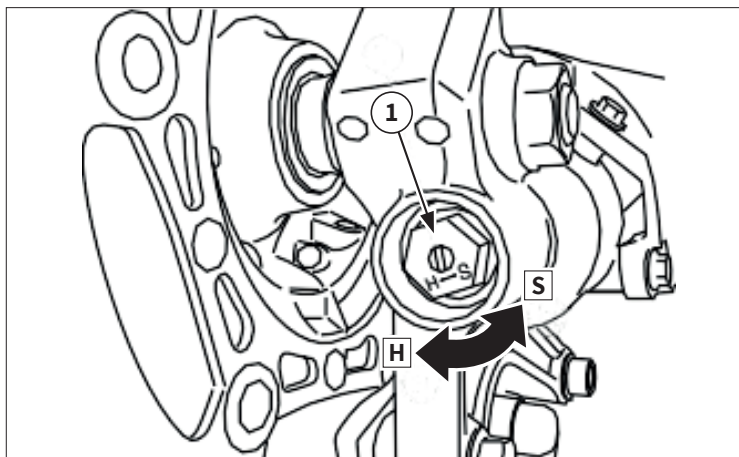
Jet needle	Size	Part number
Lean	NYEH	09003001
	NYDH	09004001
	NYCH	09005001
	NYFH	09006001
	NYEG	09007001
	NYDG	09008001
	NYCG	09009001

Jet needle	Size	Part number
	NYFG	09010001
	NYEF	09011001
	NYDF	09012001
	NYCF	09013001
	NYFF	09014001
	NYEE	09015001
	NYDE	09016001
	NYCE	09017001
	NYFE	09018001
	NYED	09019001
	NYDD	09020001
	NYCD	09021001
Rich	NYFD	09022001

3.7.23 Examples of carburettor setting depending on symptom

(*) : In case of hard breathing, check the carburettor breather hoses for clogging. This should be taken simply for an example. It is necessary to set the carburettor while checking the operating conditions of the engine and discoloration of spark plugs. Normally, carburettor setting is made by means of the main jet, jet needle clip position, pilot jet and pilot air screw.

Symptom	Setting	Control
At full throttle: – Stall at high speeds – (*) Hard breathing – Shearing noise – Whitish spark plug • Lean mixture	Increase main jet calibration no. (Gradually)	Discoloration of spark plug: • If tan color, it is in good condition. If cannot be corrected: – Clogged float valve seat – Clogged fuel hose – Clogged fuel cock
At full throttle: – Speed pick-up stops – Slow speed pick-up – Slow response – Sooty spark plug • Rich mixture	Decrease main jet calibration no. (Gradually) (*) In case of racing slight enrichment of mixture reduces engine trouble.	Discoloration of spark plug: • If tan color, it is in good condition. If cannot be corrected: – Clogged air filter – Fuel overflow from carburettor – Clogged air intake or clogged air filter.
Lean mixture	Lower jet needle clip position. (1 groove down)	The clip position is the jet needle groove on which the clip is installed. The positions are numbered from the top. If a change in the clip position (1 groove) is effective, try another jet needle that provides a difference of 0.5 in the clip position.
Rich mixture	Raise jet needle clip position. (1 groove up)	
1/4–3/4 throttle: – (*) Hard breathing – Lack of speed	Lower jet needle clip position. (1 groove down)	
1/4–1/2 throttle: – Slow speed pick-up – White smoke – Poor acceleration	Raise jet needle clip position. (1 groove up)	
Closed to 1/4 throttle: – (*) Hard breathing – Speed down	Use jet needle having a smaller diameter.	
Closed to 1/4 throttle: – Poor acceleration – White smoke	Use jet needle with a larger diameter.	
Unstable at low speeds: – Pinking noise	Lower jet needle clip position. (1 groove down) Turn in pilot air screw.	
Poor response at extremely low speed	Reduce pilot jet calibration No. Turn out pilot air screw. If not effect, reverse the above procedures.	– Dragging brake – Overflow from carburettor
Poor response in the low to intermediate speeds	Raise jet needle clip position. If not effect, reverse the above procedures.	
Poor response when the throttle is opened quickly	Check overall settings. Use main jet having lower calibration No. Raise jet needle clip position. (1 groove up) If not effect, reverse the above procedures.	Check air filter for fouling.
Poor engine operation	Turn in pilot air screw.	Check throttle valve operation.



3.8 FORK ADJUSTMENT

3.8.1 Rebound damping adjustment (return)

- To adjust the rebound damping force of the fork, turn the adjustment device "1". The device has a range of action of 20 clicks;
- To increase the rebound damping force (slower return) rotate the device clockwise, following the letter "H";
- To decrease the rebound damping force (faster return) rotate the device counter-clockwise, following the letter "S".



XX 125 version standard setting:

From all closed, open 11 clicks by turning to "S".



XE 125 standard setting:

From all closed, open 11 clicks by turning to "S".



XX 250 standard setting:

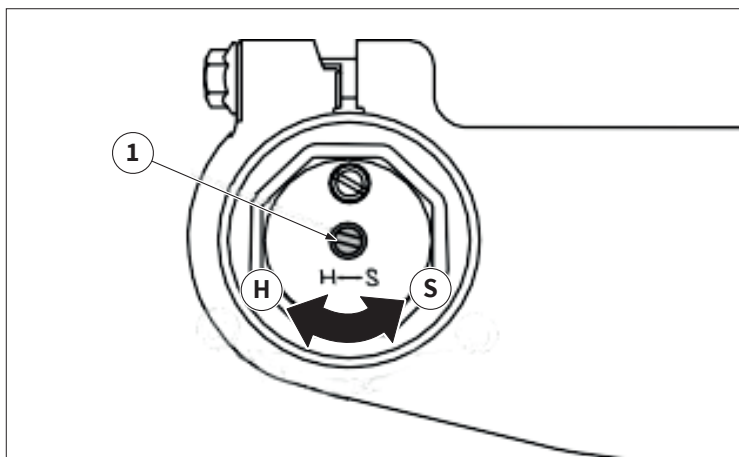
From all closed, open 12 clicks by turning to "S".



Do not force the adjuster past the minimum or maximum extent of adjustment. The adjuster may be damaged.



Always adjust each front fork to the same setting. Uneven adjustment can cause poor handling and loss of stability.



3.8.2 Compression damping adjustment

- To adjust the compression damping force of the fork, turn the adjustment device "1". The device has a range of action of 20 clicks;
- To increase the compression damping force (harder thrust) rotate the device clockwise, following the letter "H";
- To decrease the compression damping force (softer thrust) rotate the device counter-clockwise, following the letter "S".



XX 125 version standard setting:

From all closed, open 10 clicks by turning to "S".



XE 125 version standard setting:

From all closed, open 15 clicks by turning to "S".



XX 250 version standard setting:

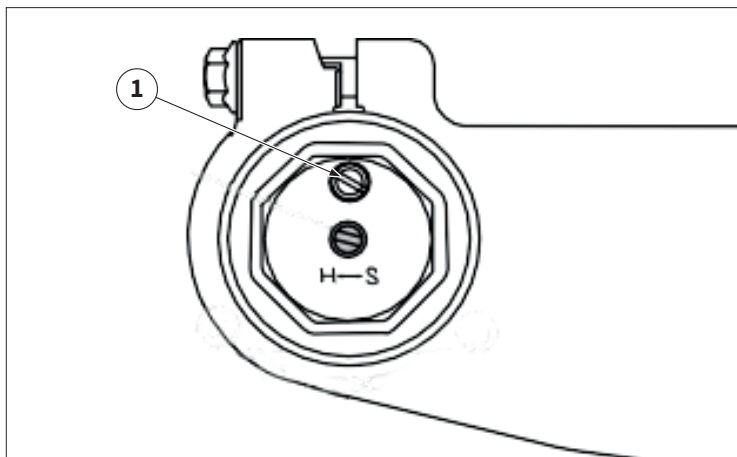
From all closed, open 12 clicks by turning to "S".



Do not force the adjuster past the minimum or maximum extent of adjustment. The adjuster may be damaged.



Always adjust each front fork to the same setting. Uneven adjustment can cause poor handling and loss of stability.



3.8.3 Relieving the front fork internal pressure

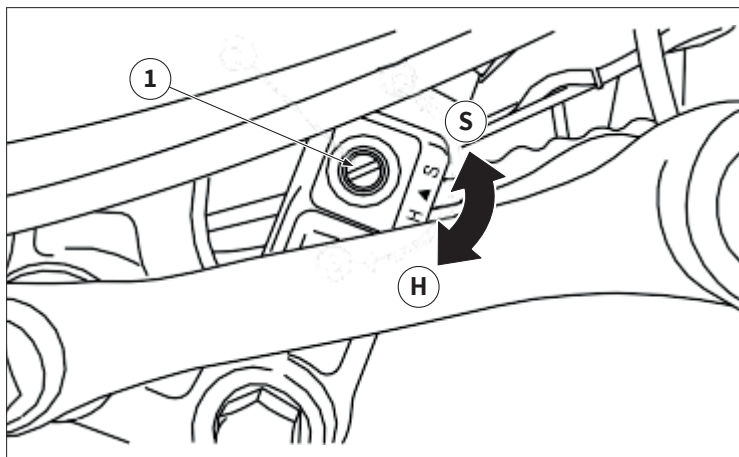
i If the front fork initial movement feels stiff during a run, relieve the front fork internal pressure.

- Elevate the front wheel by placing a suitable stand under the engine;
- Remove the air bleed screw "1" and release the internal pressure from the front fork;
- Reinstall air purge screw "1".

Air bleed screw: 1.3 Nm (0.13 m•kg, 0.95 ft•lb)

i To improve the front fork performance, and adapt it to different road conditions, driving style and rider's weight, Fantic features springs with different load coefficients which can be purchased from authorized dealers.

Load factor	Part number
3.9 N/mm	06415005
4 N/mm	06416005
4.1 N/mm	06417005 - 06125005
4.2 N/mm (XE 125 / XX 125 STANDARD)	06418005
4.3 N/mm (XX 250 STANDARD)	06419005
4.4 N/mm	06420005
4.5 N/mm	06421005
4.6 N/mm	06422005
4.7 N/mm	06423005



3.9 REAR SHOCK ABSORBER ADJUSTMENT

3.9.1 Rebound damping adjustment (return)

- To adjust the rebound damping force of the rear shock absorber, turn the adjustment device "1". The device has a range of action of 20 clicks;
- To increase the rebound damping force (slower return) rotate the device clockwise, following the letter "H";
- To decrease the rebound damping force (faster return) rotate the device counter-clockwise, following the letter "S".



XX 125 version standard setting:

From all closed, open 10 clicks by turning towards "S".



XE 125 version standard setting:

From all closed, open 10 clicks by turning towards "S".

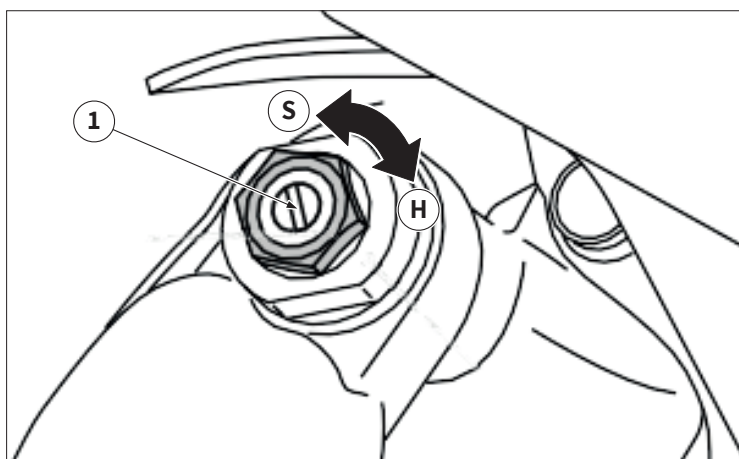


XX 250 version standard setting:

From all closed, open 10 clicks by turning towards "S".



Do not force the adjuster past the minimum or maximum extent of adjustment. The adjuster may be damaged.



3.9.2 Compression damping adjustment (low speed)

- To adjust the compression damping force at low speed, turn the adjustment device "1". The device has a range of action of 20 clicks;
- To increase the compression damping force (harder thrust) rotate the device clockwise, following the letter "H";
- To decrease the compression damping force (softer thrust) rotate the device counter-clockwise, following the letter "S".



XX 125 version standard setting:

From all closed, open 12 clicks by turning towards "S".



XE 125 version standard setting:

From all closed, open 12-15 clicks by turning towards "S".

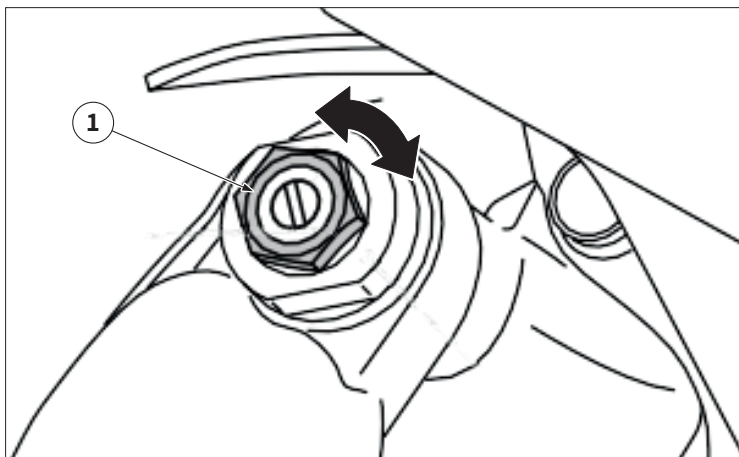


XX 250 version standard setting:

From all closed, open 12 clicks by turning towards "S".



Do not force the adjuster past the minimum or maximum extent of adjustment. The adjuster may be damaged.



3.9.3 Compression damping adjustment (high speed)

- To adjust the compression damping force at high speed, turn the adjustment device "1". The device has a range of action of 2 turns, from fully closed, rotating counter-clockwise;
- To increase the compression damping force (harder thrust) rotate the device clockwise;
- To decrease the compression damping force (softer thrust) rotate the device counter-clockwise.



XX 125 version standard setting:
From all closed, open the register of 1-1/2 +/- 1/6 turns.



XE 125 version standard setting:
From all closed, open the register of 1-5/8 +/- 1/6 turns.



XX 250 version standard setting:
From all closed, open the register of 1-3/8 +/- 1/6 turns.



Do not force the adjuster past the minimum or maximum extent of adjustment. The adjuster may be damaged.



3.10 SETTING THE SAG

3.10.1 Rear shock absorber sinking adjustment (SAG) (XE 125 version)

- Place a stand or retainer under the engine to raise the rear wheel off the floor and measure the distance "A" between the rear wheel axle and the symbol on the rear mudguard;



- Remove the stand or retainer from the engine and, with the driver on board, measure the distance "B" between the rear wheel axle and the symbol on the rear mudguard.



Standard value: 90-100mm

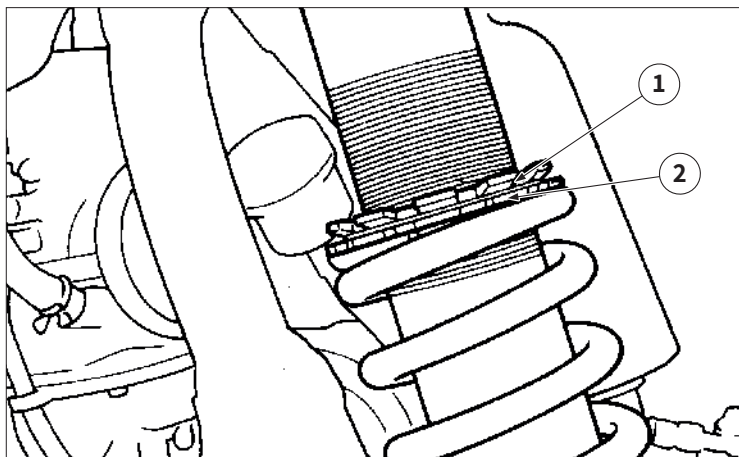
**3.10.2 Rear shock absorber sinking adjustment (SAG) (XX 125 / XX 250 version)**

- Place a kickstand or a stand under the engine to raise the rear wheel off the floor and measure the distance “A” between the centre of the rear wheel axle and the reference mark on the rear mudguard;



- Remove the kickstand or stand from the engine and, with the driver on board, measure the distance “B” between the centre of the rear wheel axle and the reference on the rear mudguard.

 **Standard value: 90-100mm**



- If the measured value does not match the Standard values, proceed with the adjustment by loosening the lock nut "1". Then turn the ring nut "2" of the spring, screwing it to give greater preload (less sink), unscrewing it to give less preload (greater sink);
- Repeat the measurement and adjustment operations until the standard values are reached. Once reached, tighten the lock nut "1".

i If the machine is new and after it is broken in, the same set length of the spring may change because of the initial fatigue, etc. of the spring. Therefore, be sure to make re-evaluation.

i If the standard figure cannot be achieved by adjusting the spring adjuster and changing the spring set length, replace the spring with an optional one and make readjustment.

i In case it is not possible to reach the standard value through ring nut adjustment, replace the shock absorber spring with a spring having a different load coefficient. If the ring nut is in the highest position (lower preload) but the sag value is lower than the standard value, choose a spring with a lower coefficient. Conversely, if the spring is in the lowest position but the sag value is higher than the standard value, choose a spring with a higher coefficient.

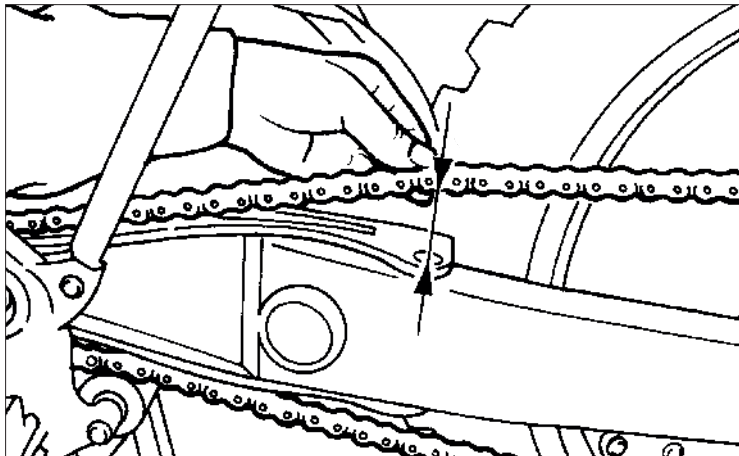
i To improve the rear shock absorber performance, and adapt it to different road conditions, riding style and rider's weight, Fantic features springs with different load coefficients that can be purchased from authorized dealers.

Springs with equal-pitch

Load factor	Part number
42 N/mm	06401005
44 N/mm	06402005
46 N/mm	06075005
48 N/mm (XE 125 / XX 125 / XX 250 STANDARD)	06403005
50 N/mm	06404005
52 N/mm	06405005
54 N/mm	06406005
56 N/mm	06407005

Springs with NON equal pitch (only for XE 125 / XX 250 versions)

Load factor	Part number
44 N/mm	06408005
46 N/mm	06409005
48 N/mm	06410005
50 N/mm	06411005
52 N/mm	06412005
54 N/mm	06413005
56 N/mm	06414005



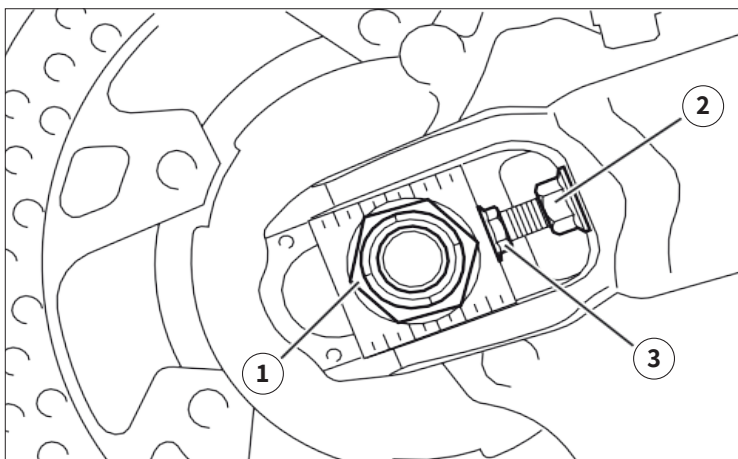
3.11 CHAIN TENSION

! If the drive chain is too tight, it will overload the engine and other vital parts, and if it is too loose it may jump and damage the swingarm or cause an accident. Therefore it is recommended to keep the chain tension within the specified limits.

3.11.1 Chain tension check

- Place a kickstand or stand under the engine to raise the rear wheel off the floor;
- Place the gearshift in neutral;
- Lift the drive chain off the swingarm, close to the chain guide fixing bolt;
- Measure the tension between the guide and the bottom of the chain, as shown in the figure;

✖ **Transmission chain tension:**
48.0 - 58.0mm (1.89 - 2.28 in)



3.11.2 Chain tension adjustment

- Place a kickstand or a stand under the engine to raise the rear wheel off the floor;
- Place the gearshift in neutral;
- Loosen the wheel axle nut "1";
- Loosen the locknut "2" on both sides;
- Turn the adjusting bolt "3", on both sides, until the specified chain tension is achieved;

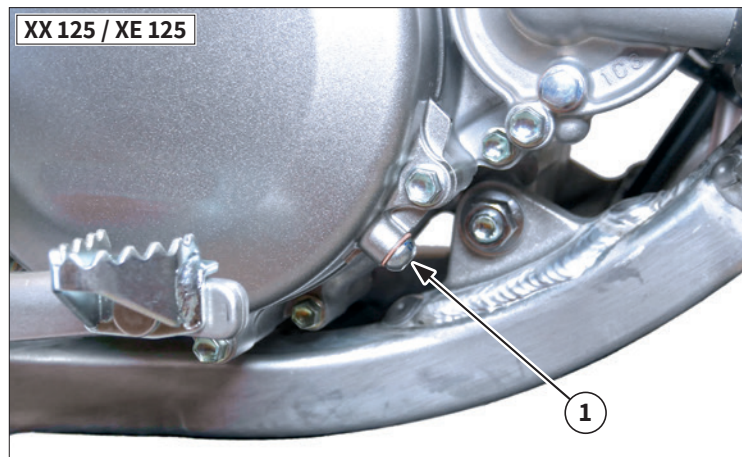
i **To maintain the correct alignment of the rear wheel, carry out the adjustment by acting evenly on both adjusters.**

- Once the correct tension is achieved, tighten the rear wheel axle nut to the specified torque;
- Tighten the locknuts of the drive chain adjusters.

i **While tightening the wheel axle nut, push the wheel forward to ensure that there is no clearance between the adjusters and the wheel axle plates.**

✖ **Rear wheel axle nut:**
125 Nm (12.5 m•kg, 92 ft•lb)

✖ **Chain adjusters locknut:**
19 Nm (1.9 m•kg, 14 ft•lb)

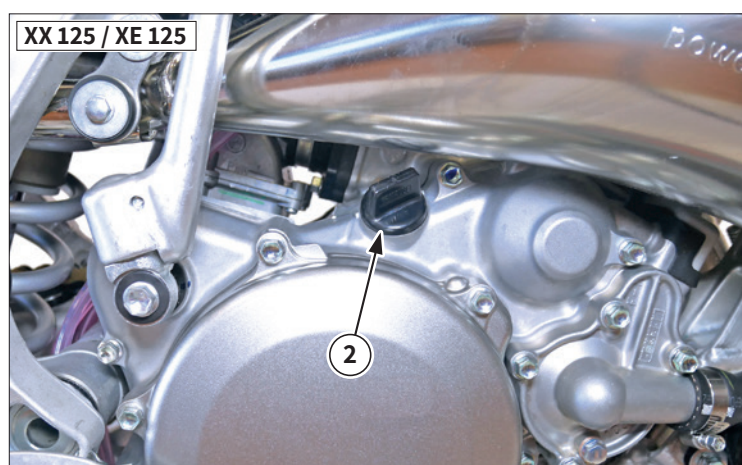


4.1 TRANSMISSION OIL

4.1.1 Checking the transmission oil level

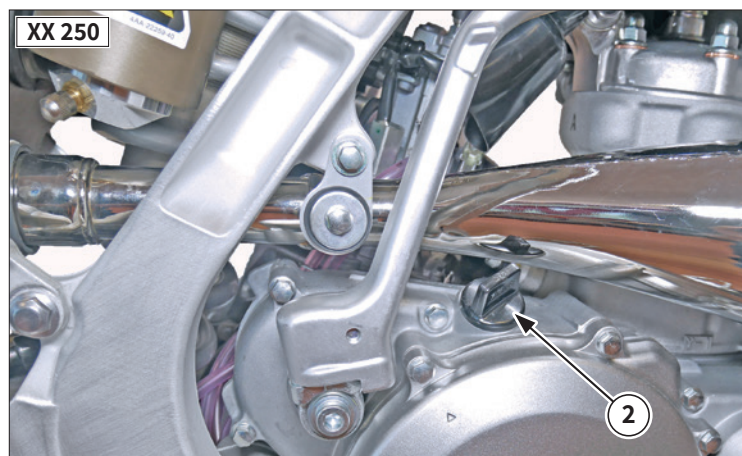
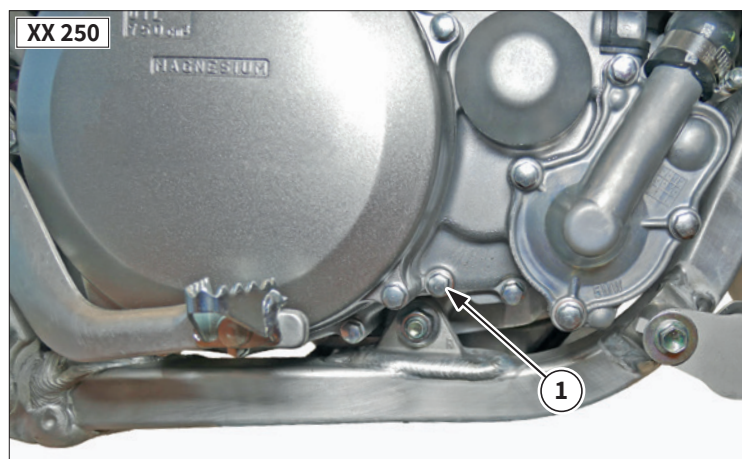
- Start the engine, warm it up for several minutes and wait for five minutes;
- Place the machine on a level place and hold it up on upright position by placing the suitable stand under the engine;
- Check the transmission oil level by removing control bolt "1". If oil leaks, the level is correct, while if it does not, add oil from the appropriate loading opening "2" until the oil comes out of the control hole;

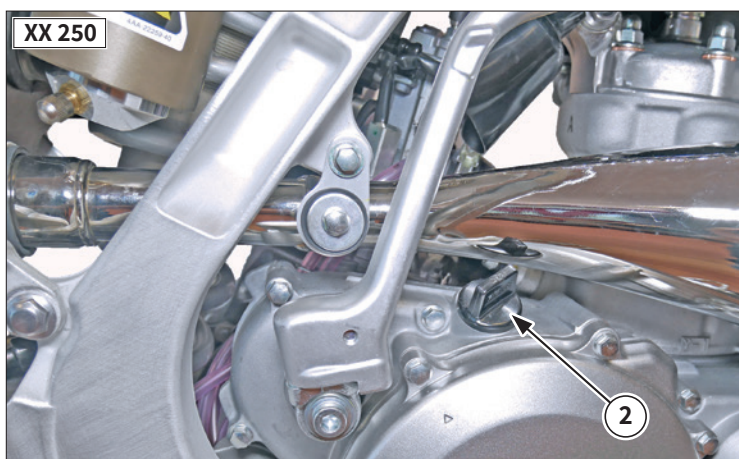
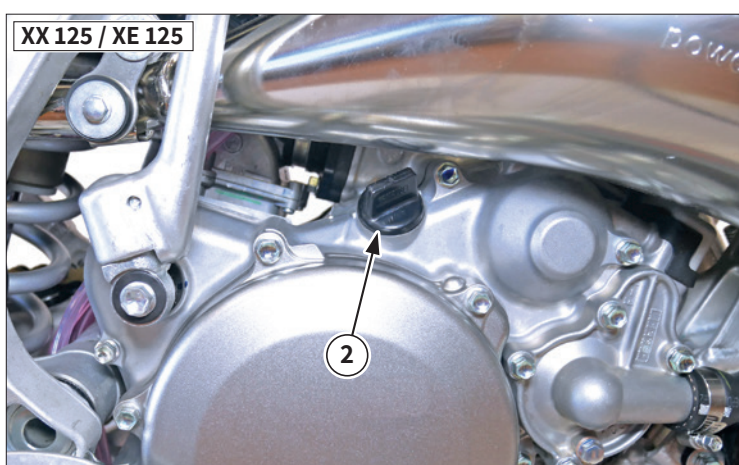
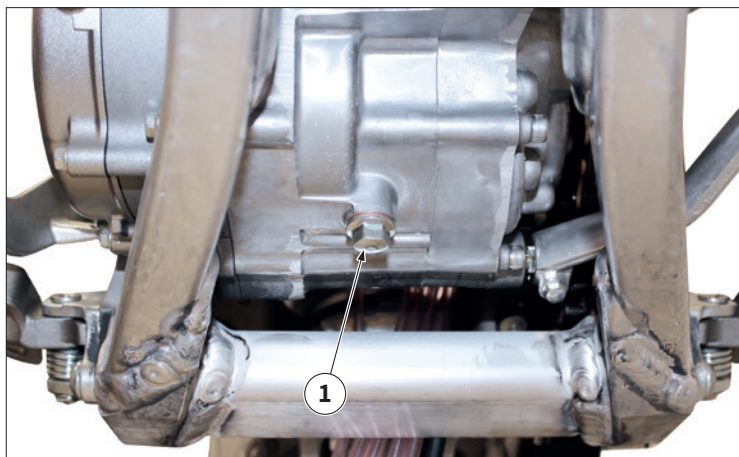
⚠ Do not add additives or other substances and use the products recommended in the "RECOMMENDED PRODUCTS TABLE" section.



- Inspect the gasket (oil check bolt), replace if damaged;
- Tighten the oil check bolt.

🔧 Oil check bolt: 10 Nm (1.0 m•kg, 7.2 ft•lb)





4.1.2 Changing the transmission oil

- Start the engine and warm it up for several minutes and wait for five minute;
- Place the machine on a level place and hold it on upright position by placing the suitable stand under the engine;
- Drain the transmission oil, removing the drain bolt "1" and the filler cap "2";

- Install a new aluminium washer to the drain bolt "1" and install it in its housing;
- Fill the crankcase from the appropriate opening with transmission oil;



Transmission oil quantity
(XX 125 and XE 125 versions):
0.70 L (0.62 Imp qt, 0.74 US qt)



Transmission oil quantity
(XX 250 version):
0.75 L (0.66 Imp qt, 0.79 US qt)



Do not add additives or other substances and use the products recommended in the "RECOMMENDED PRODUCTS TABLE" section.

- Check the transmission oil level. Once the correct level is reached, install the filler cap "2".

4.2 COOLANT

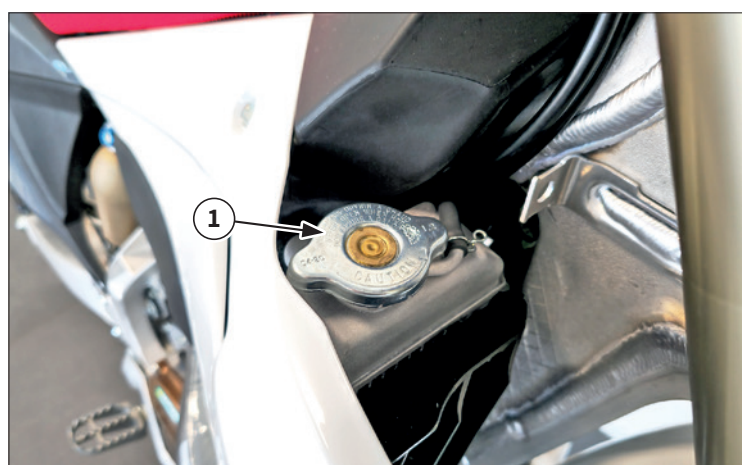
4.2.1 Coolant level check and topping up

⚠ Do not remove radiator cover “1”, drain plug and hoses when the engine and radiator are hot. Leakage of boiling fluid and steam under pressure could occur, resulting in serious injuries. After the engine has cooled down, place a thick towel on the radiator cover and slowly rotate the cover anti-clockwise until it stops. This procedure allows residual pressure to escape. When you no longer hear the characteristic hissing sound, remove the cover by holding it down and unscrewing it simultaneously in an anti-clockwise direction.

⚠ In case of a burn, immediately soak the affected area in lukewarm water.

⚠ The coolant is toxic and harmful to health.

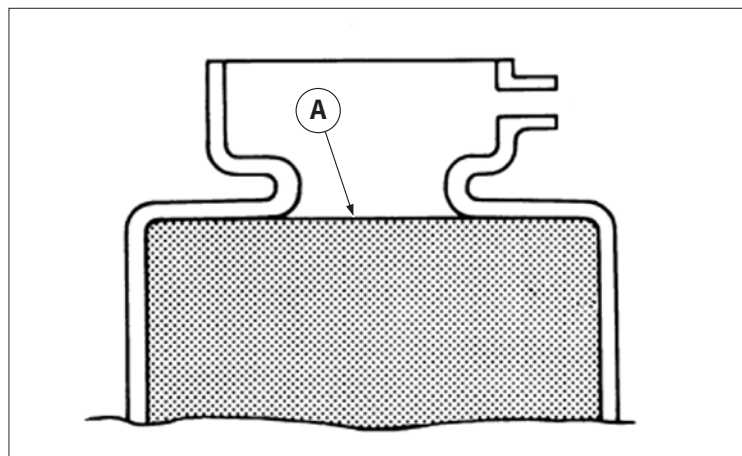
⚠ Hard or salt water damages engine components. If fresh water is unavailable, use distilled water.



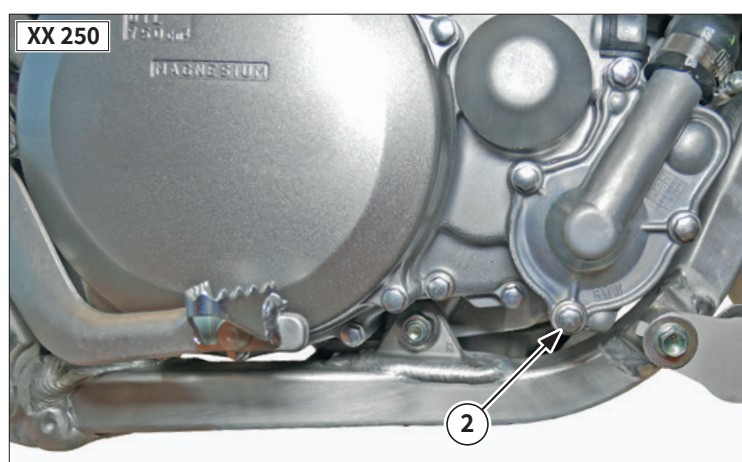
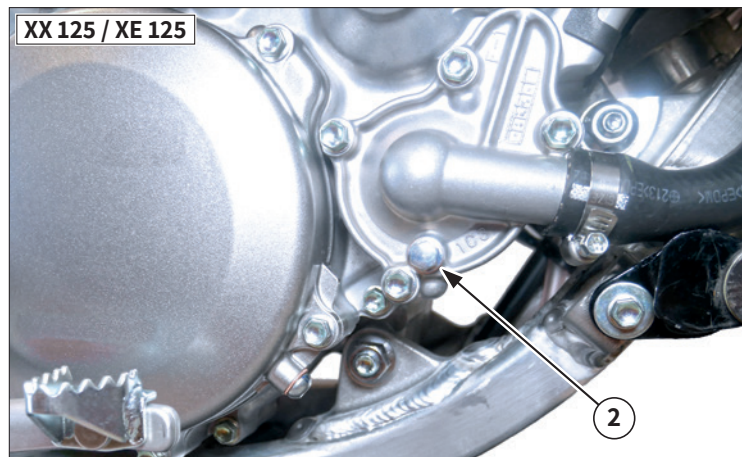
- Make sure that the engine is cold;
- Place the motorbike on a central stand;
- Remove the radiator cap “1”;



- Unscrew the M6 screw “2” located on the left radiator;



- Fill the right radiator with new coolant up to the maximum level “A”;
- Tighten the M6 screw “2” securely;
- Refit the radiator cap “1”.



4.2.2 Coolant change

⚠ Do not remove radiator cover “1”, drain plug and hoses when the engine and radiator are hot. Leakage of boiling fluid and steam under pressure could occur, resulting in serious injuries. After the engine has cooled down, place a thick towel on the radiator cover and slowly rotate the cover anti-clockwise until it stops. This procedure allows residual pressure to escape. When you no longer hear the characteristic hissing sound, remove the cover by holding it down and unscrewing it simultaneously in an anti-clockwise direction.

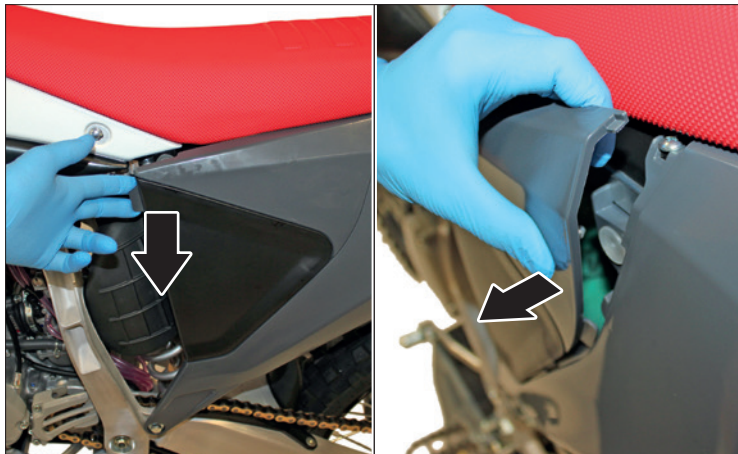
- Place a container under the engine;
- Remove the radiator cover and the coolant drain plug “2”, then drain the coolant completely by collecting it in the container under the engine;
- Fit a new washer to drain plug “2” and install it in its housing;
- Fill the engine and radiator with “ETHYLENE GLYCOLS WITH ANTICORROSIVE FOR ALUMINIUM ENGINES”, up to the level indicated above.

🔧 **Coolant quantity**
1.20 L (1.27 US qt, 1.06 Imp.qt)

⚠ Do not add additives or other substances and use the products recommended in the “Recommended lubricants and liquids” at page 54 section.

⚠ Do not mix different types of ethylene glycol antifreeze with corrosion inhibitors for aluminium engines.

⚠ Do not use water containing impurities or oil.

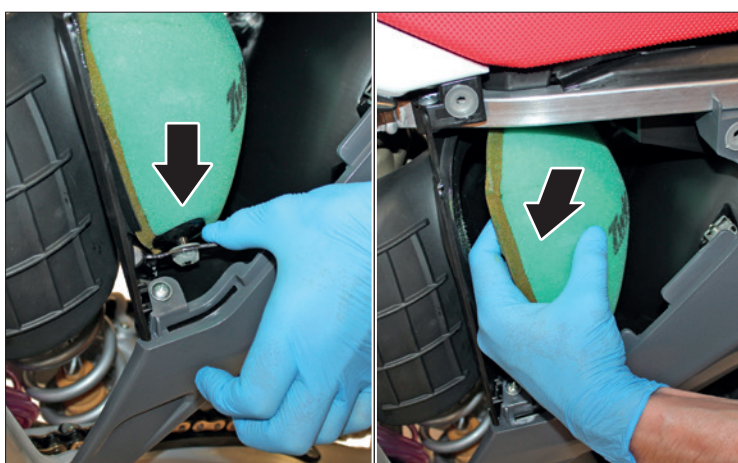


4.3 AIR FILTER

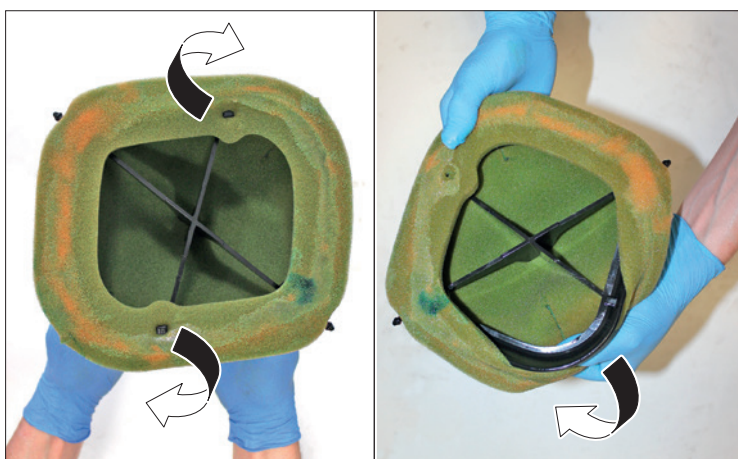
(i) Proper air filter maintenance is the biggest key to preventing premature engine wear and damage.

⚠ Never run the engine without the air filter element in place; this would allow dirt and dust to enter the engine and cause rapid wear and possible engine damage.

- Working on the left side of the vehicle, release the side panel at the two points indicated, pulling it outwards.
- Turn the side panel outwards and remove it.



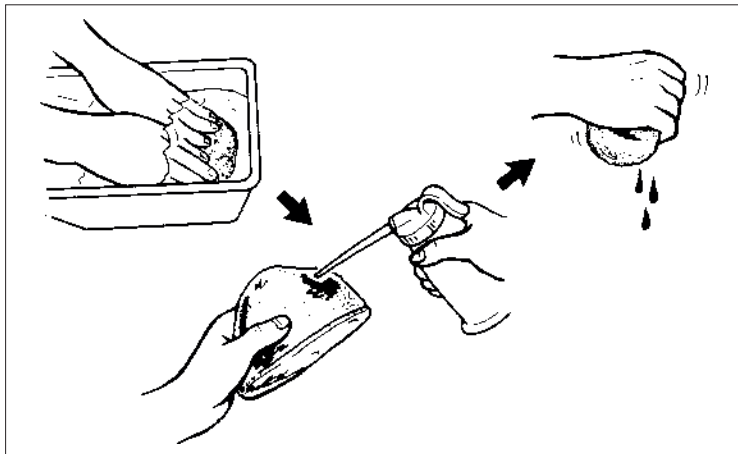
- Push the closing flap down to release the air filter support.
- Grasp the air filter support and pull it outwards to disconnect the second anchor point.
- Remove the complete air filter support.



- Release the air filter from the two hooks indicated on the air filter support.
- Lift the air filter from one side as indicated.

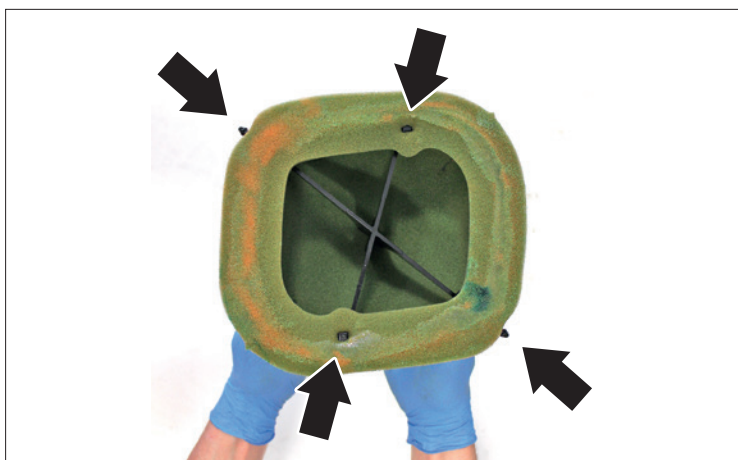


- Remove the two air filter guides from the pins on the filter support and separate the two components.

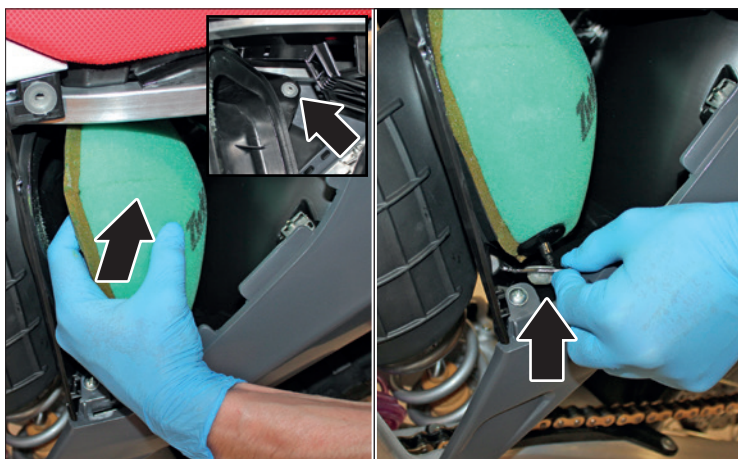


- Check that the cartridge is not damaged, if it is, replace it;
- Clean the cartridge with a dedicated solvent, after cleaning remove the solvent by pressing the cartridge and blowing it with compressed air;
- Apply air filter oil to the cartridge, press it to remove the excess oil.

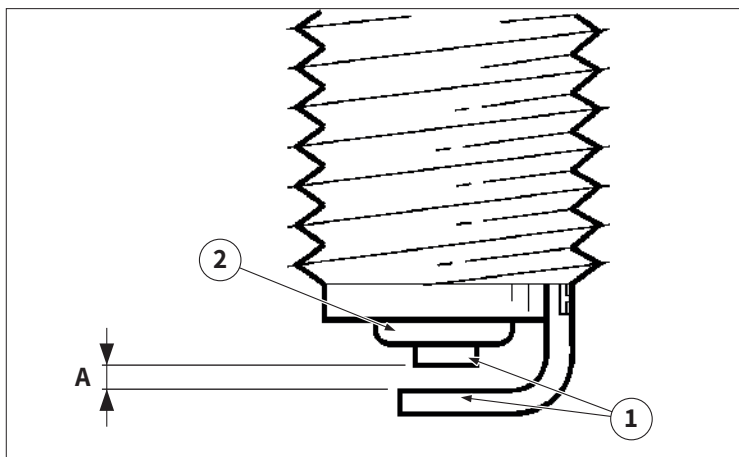
⚠ The cartridge must be damp, but not wet.



- Assemble the air filter on the support by carrying out the procedures described above in reverse order and checking that the hooks/pins on the support are fitted correctly.



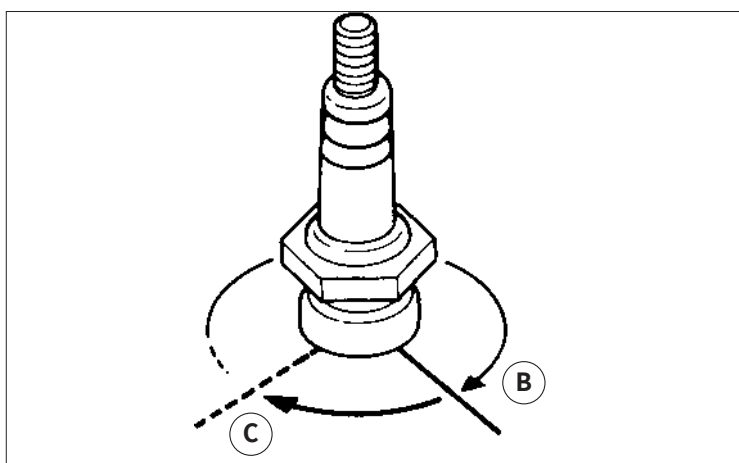
- Insert the filter support and push it until the pin engages into the support on the filter housing.
- Fit the side panel again.



4.4 SPARK PLUG

- Remove the spark plug from the cylinder head;
- Check that electrode "1" is not worn and/or damaged. If it is, replace the spark plug;
- Check the colour of the insulation "2", under correct operating conditions it must be light brown. In case of different colour, consult the "CARBURATION" section to make the necessary adjustments;
- Measure the distance of the spark plug electrodes "A" using a thickness gauge. If different from the standard value, proceed with the adjustment;

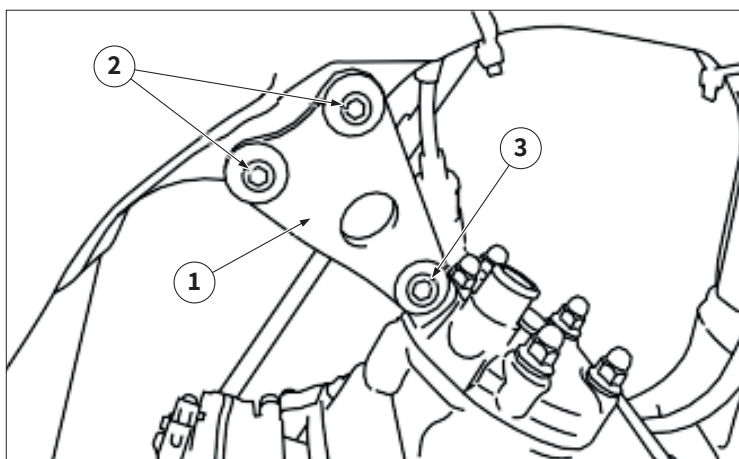
Standard spark plug electrodes gap "A":
0.6–0.7 mm (0.024–0.028 in)



- Clean the gasket surface and plug surface, then install and tighten the spark plug;

Spark plug: 20 Nm (0.2 m•kg, 1.4 ft•lb)

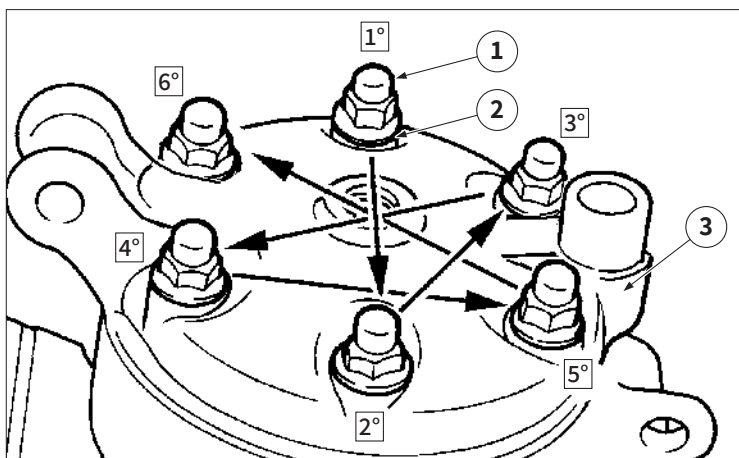
i **Finger-tighten "B" the spark plug before torquing to specification "C".**



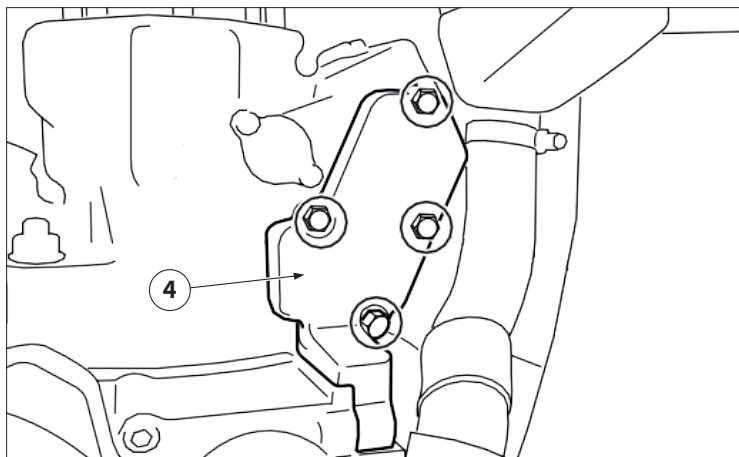
4.5 HEAD, CYLINDER, PISTON AND EXHAUST VALVE

4.5.1 Parts removal (XX 250 version)

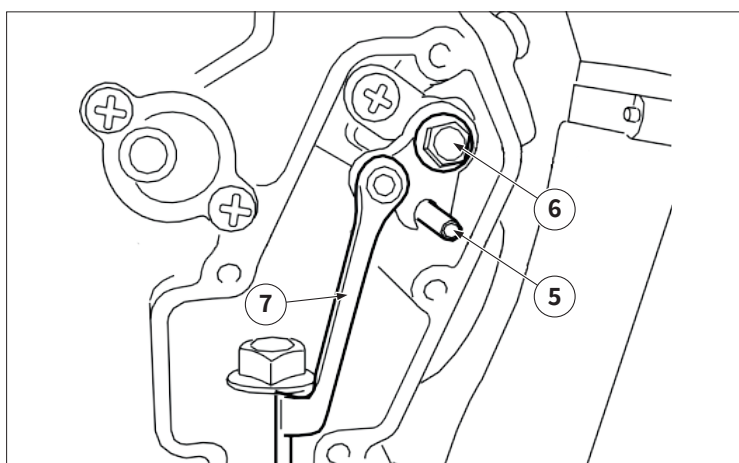
- Remove the spark plug;
- Remove the engine bracket "1", the bracket fastening bolts "2" and the engine fastening bolt "3";



- Remove the head nuts "1" and the copper washers "2", in sequence and following a crossed pattern;
- Then remove the cylinder head "3";

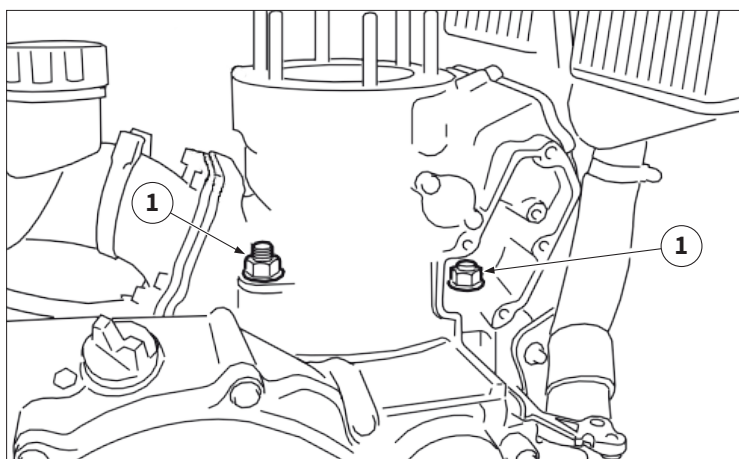


- Remove the cover "4" and the exhaust valve gasket;

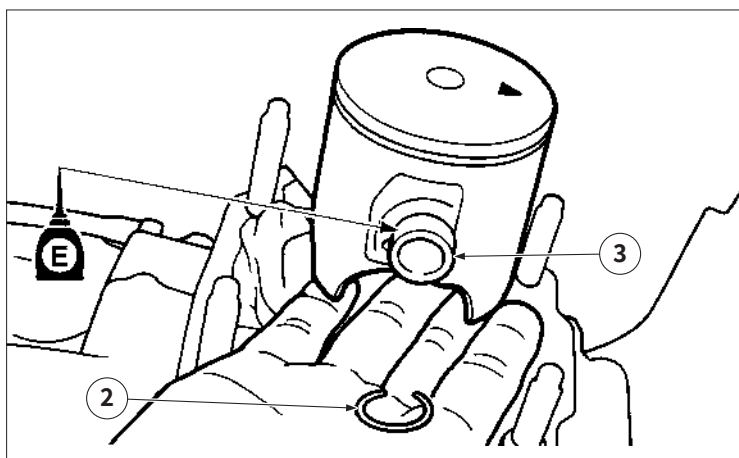


- Insert the lock pin "5" into the hole provided on the cylinder. Remove the pushrod bolt "6" and pushrod "7";

⚠ When removing the pushrod bolt use the locking pin to avoid damaging the exhaust valve components.



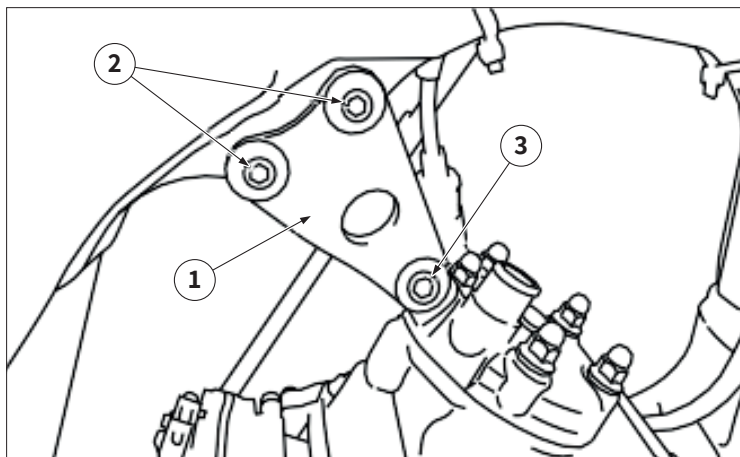
- Remove the cylinder nuts "1" in sequence and following a crossed pattern, then remove the cylinder from the crankcases;



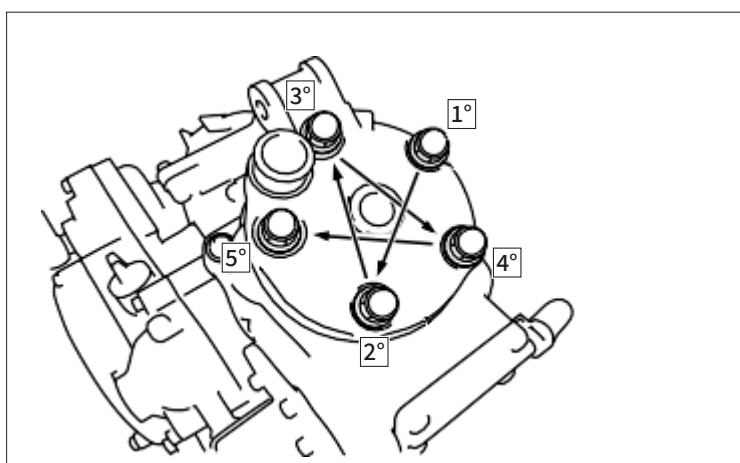
- Remove a pin seeger "2", then remove the pin "3", the piston and roller bearing of the connecting rod head;
- Remove piston rings from the piston.

i Before removing the seeger, cover the crankcase with a clean cloth to prevent the seeger from falling into it.

⚠ Do not use a hammer to pull out the pin, in case the operation is difficult use a special puller.


4.5.2 Parts removal (XX 125 / XE 125 versions)

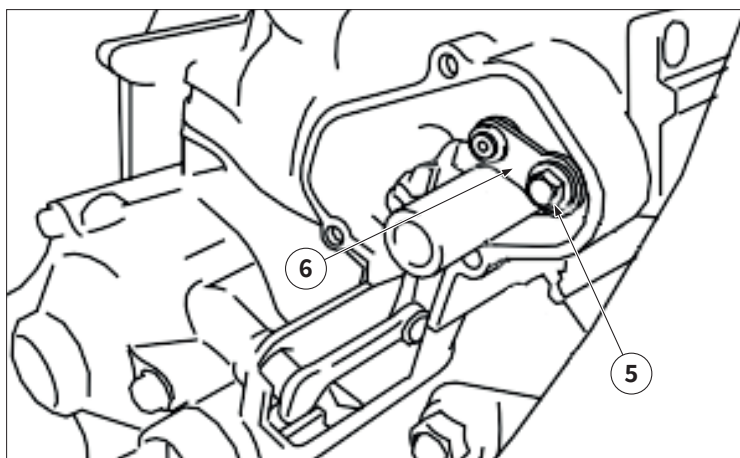
- Remove the spark plug;
- Remove the engine bracket “1”, the bracket fastening bolts “2” and the engine fastening bolt “3”;



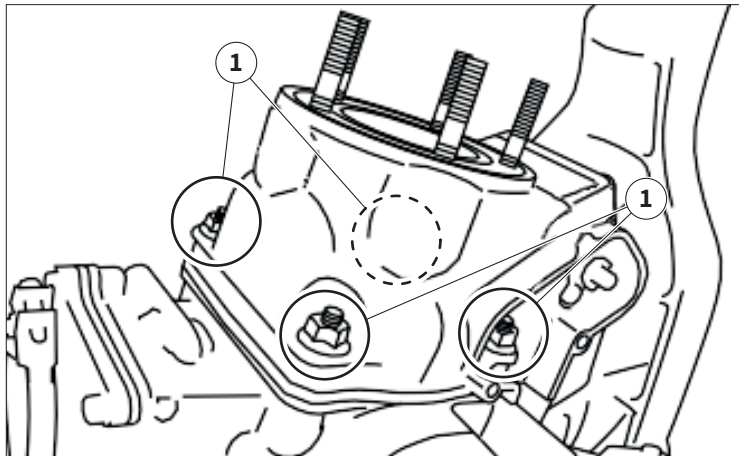
- Remove the head nuts and the copper washers, in sequence and following a crossed pattern;
- Then remove the cylinder head “3”;



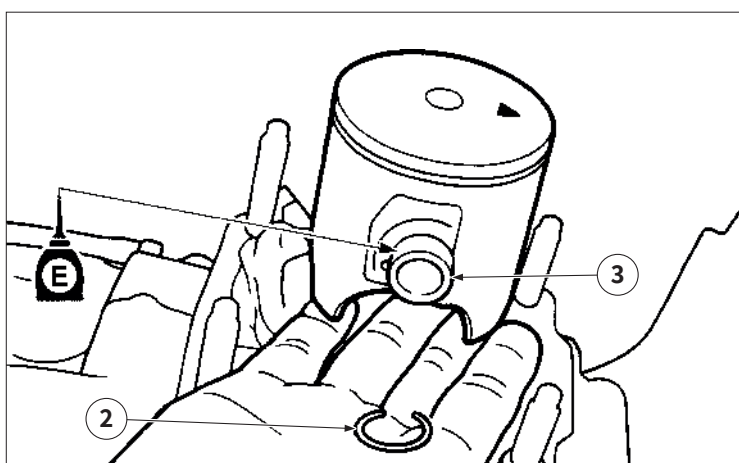
- Remove the cover “4” and the exhaust valve gasket;



- Remove the thrust rod bolt “5” and the locking rod “6”;



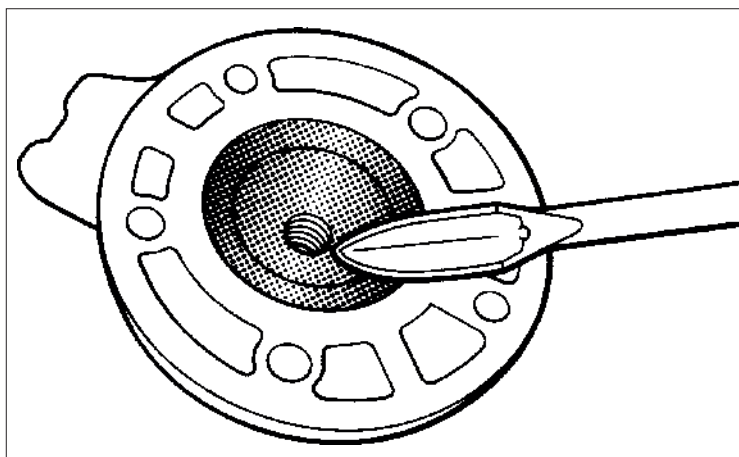
- Remove the cylinder nuts “1” in sequence and following a crossed pattern, then remove the cylinder from the crankcases;



- Remove a pin seeger “2”, then remove the pin “3”, the piston and roller bearing of the connecting rod head;
- Remove piston ring from the piston.

i Before removing the seeger, cover the crankcase with a clean cloth to prevent the seeger from falling into it.

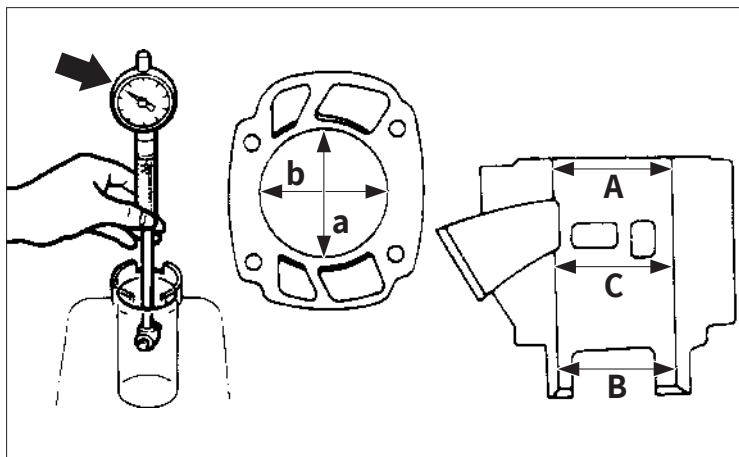
! Do not use a hammer to pull out the pin, in case the operation is difficult to use a special puller.



4.5.3 Head check

- Remove carbon deposits using a rounded scraper;
- !** Take care to avoid damaging the spark plug threads. Do not use a sharp instrument. Avoid scratching the aluminum.
- Check the water circuit, if there is encrustation and/or rust replace the head;
- Measure the deformation of the head, if it does not conform to specifications, level the head.

✂ Maximum permissible deformation:
less than 0.03 mm (0.0012 in)



4.5.4 Cylinder check

- Remove carbon deposits using a rounded scraper;

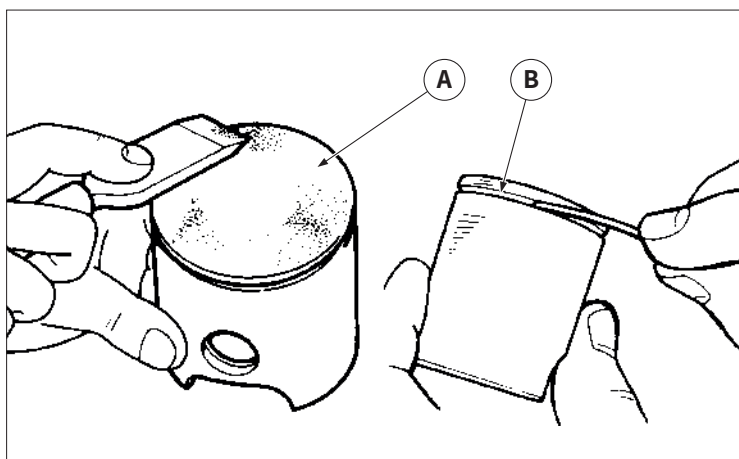
⚠ Do not use a sharp instrument. Avoid scratching the aluminum.

- Check the internal surface of the cylinder, if damaged, grind or replace;
- Measure the cylinder bore “C” in parallel (A,B,C) to and at right angles to the crankshaft (a,b). Then, find the average of the measurements.

“C” = Maximum Aa-Cb

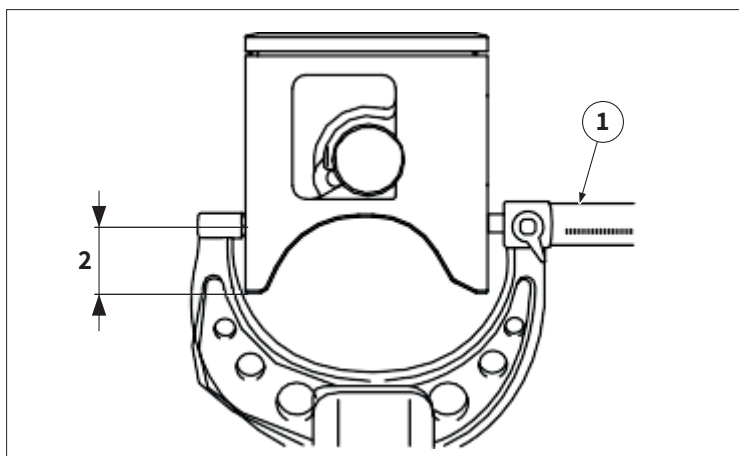
“T” = (Maximum Aa, or Ab) – (Maximum Ba, or Bb)

	Standard	Wear limit
Cylinder bore “C” (XX 125 version)	54.000–54.014 mm (2.1260–2.1265 in)	54.064 mm (2.1285 in)
Cylinder bore “C” (XE 125 version)	54.000–54.014 mm (2.1260–2.1265 in)	54.100 mm (2.1299 in)
Cylinder bore “C” (XX 250 version)	66.400–66.414mm (2.6142–2.6147 in)	66.464 mm (2.6167 in)
Taper “T”	–	0.050 mm (0.0020 in)



4.5.5 Piston check

- Remove deposits from the piston crown “A” and piston ring groove “B”;
- Check the piston skirt, replace if it has scratches and/or cracks;



- Measure the diameter of the piston skirt using a micrometer “1”;
- Measure the specific distance “2” from the lower edge, if it does not comply with the specifications replace it.

	Distance “2”	Piston diameter
	17.5 mm (0.69 in)	53.957–53.972 mm (2.1243–2.1249 in) (XX 125 / XE 125 versions)
	25 mm (0.98 in)	66.345–66.355 mm (2.6120–2.6124 in) (XX 250 version)

4.5.6 Piston and cylinder combination

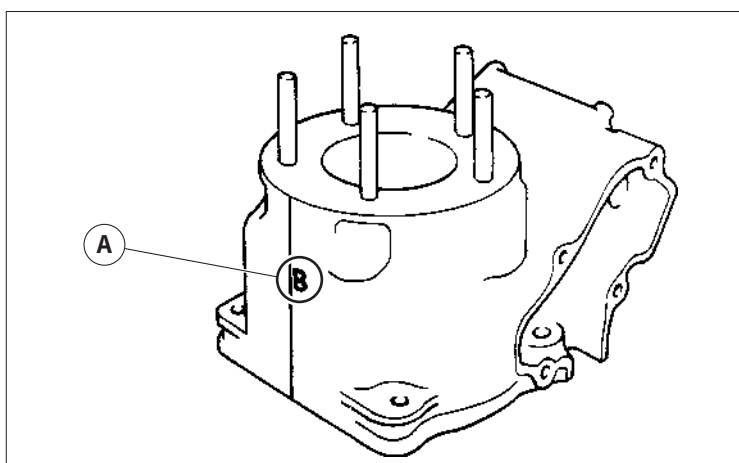
i **PISTON CLEARANCE =
CYLINDER BORE –
PISTON DIAMETER.**

- If the piston clearance does not meet specifications, replace the piston with piston ring and/or cylinder.

	Standard	Limit
Piston clearance	0.040–0.045 mm (0.0016–0.0018 in) (XX 125 / XE 125 versions)	0.100 mm (0.0039 in)
	0.040–0.060 mm (0.0016–0.0024 in) (XX 250 version)	

4.5.7 Checking the piston and cylinder combination

- Check the notch on cylinder “A”:



- Check the notch on piston “B”:
- Combine piston and cylinder according to the table below:

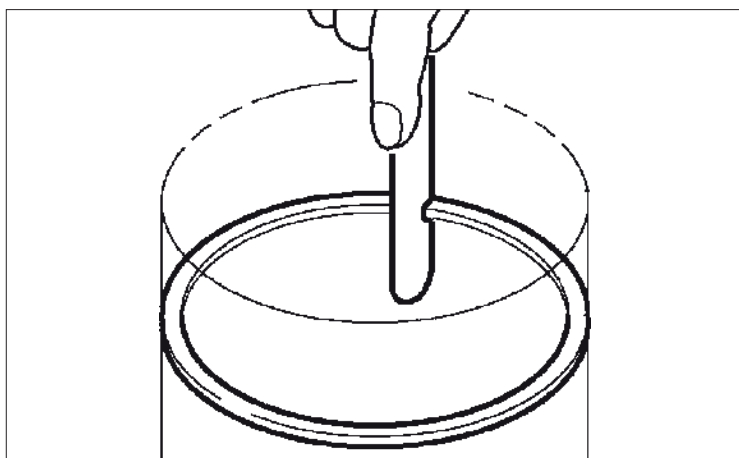
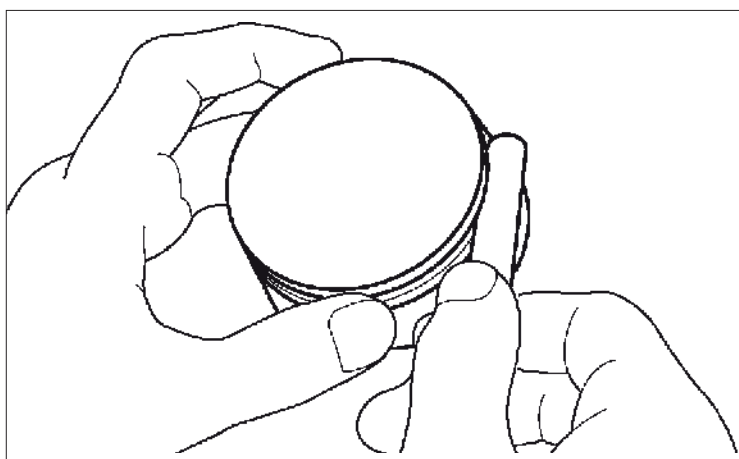
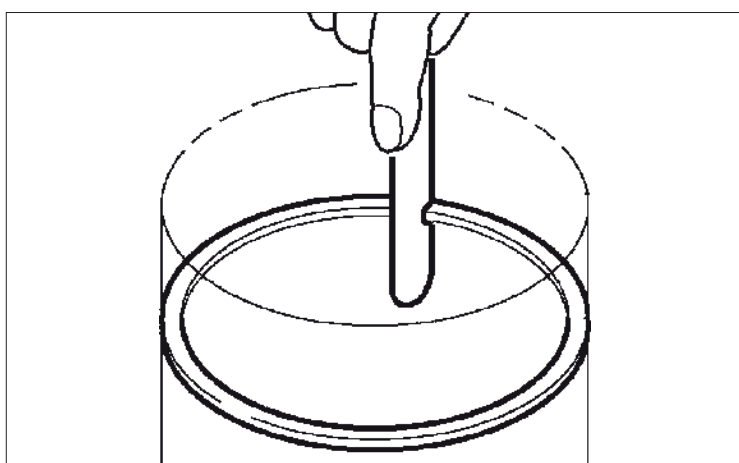
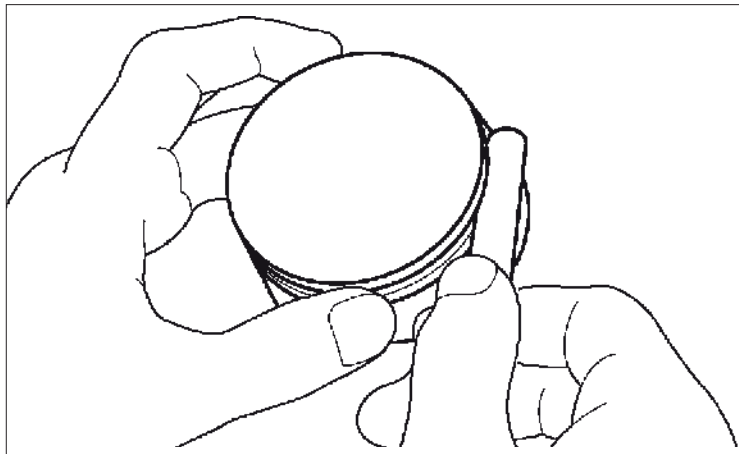
(XX 125 / XE 125 versions)

Cylinder mark	Piston mark (color)
A	A (red)
B	B (orange)
C	C (green)
D	D (purple)

(XX 250 version)

Cylinder mark	Piston mark (color)
A	B (orange)
B	
C	C (green)
D	

i When you purchase a cylinder, you cannot designate its size. Choose the piston that matches the above chart.



4.5.8 Segments check (XX 250 version)

- Remove carbon deposits from the segments and their grooves.
- Using a thickness gauge, measure the lateral clearance of the segments.

	Standard	Limit
First segment lateral clearance	0.030–0.065 mm (0.0012–0.0026 in)	0.100 mm (0.0039 in)
Second segment lateral clearance	0.030–0.065 mm (0.0012–0.0026 in)	0.100 mm (0.0039 in)

- Insert one segment at a time into the cylinder, using the crown of the piston to position and level the segment at the bottom of the cylinder (zone where wear is minimal).
- Measure the clearance between the ends of the segments, if it is not in accordance with the specifications replace the segments all together.

	Standard	Limit
Distance between ends of piston rings (installed)		0.700 mm (0.0276 in)

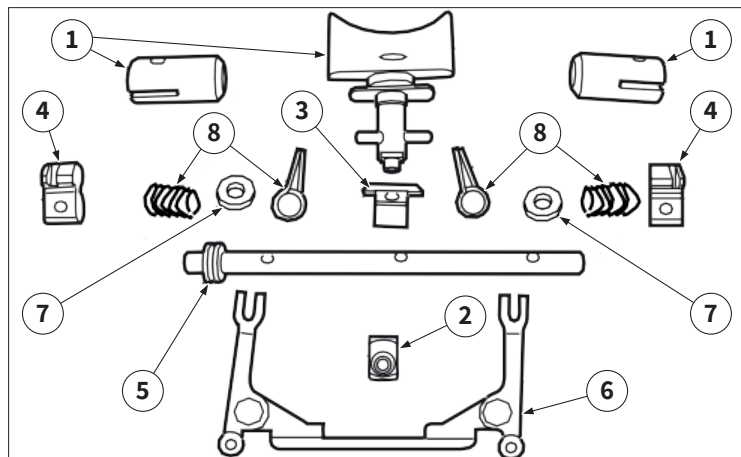
4.5.9 Segments check (XX 125 / XE 125 versions)

- Remove carbon deposits from the segment and its groove.
- Using a thickness gauge, measure the lateral clearance of the segment.

	Standard	Limit
Lateral segment clearance	0.035–0.070 mm (0.0014–0.0028 in)	0.100 mm (0.0039 in)

- Insert the segment into the cylinder, using the crown of the piston to position and level the segment at the bottom of the cylinder (zone where wear is minimal).
- Measure the clearance between the ends of the segment, replace if not in accordance with specifications.

	Standard	Limit
Distance between ends of piston ring (installed)		1.20 mm (0.0472 in)

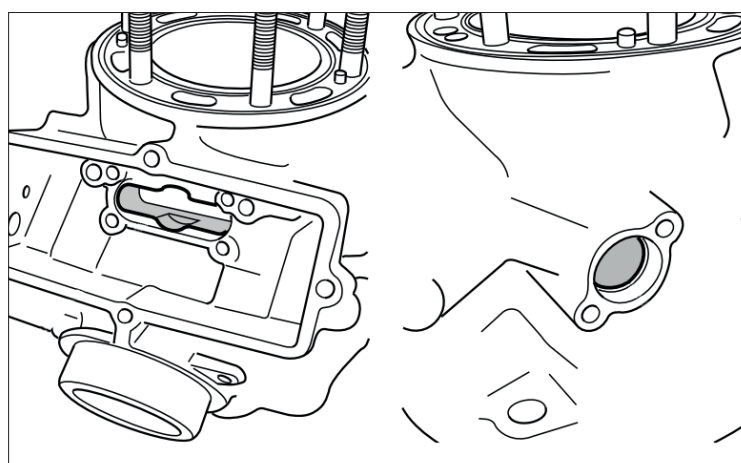


4.5.10 Exhaust valve check (XX 250 version)

Check:

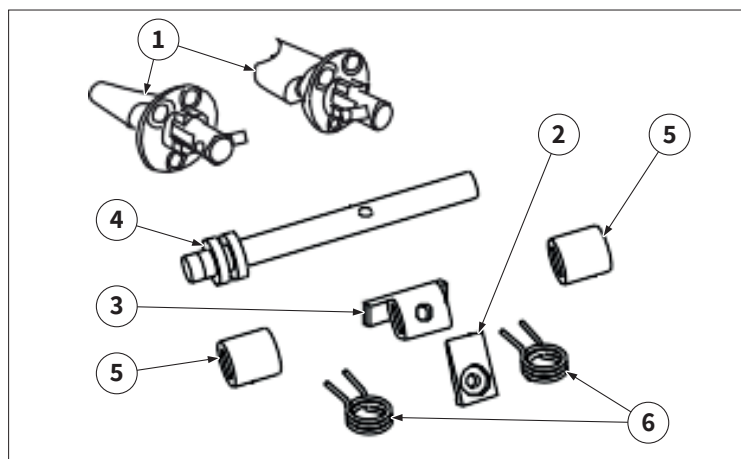
- the exhaust valves, main and secondary "1";
- the main exhaust valve bracket "2";
- the main valve connection lever "3";
- pulleys "4";
- exhaust valve shaft "5";
- linkage rod "6";
- washers "7";
- springs "8".

Clean any carbon deposits, check for wear and/or damage, if present replace the components..



Remove carbon deposits from the surfaces of the exhaust valve seats.

⚠ Do not use a sharp instrument. Avoid scratching the aluminum.

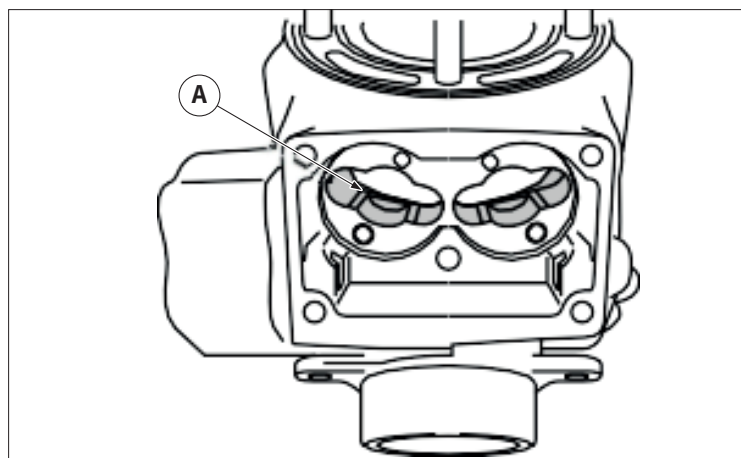


4.5.11 Exhaust valve check (XX 125 / XE 125 versions)

Check:

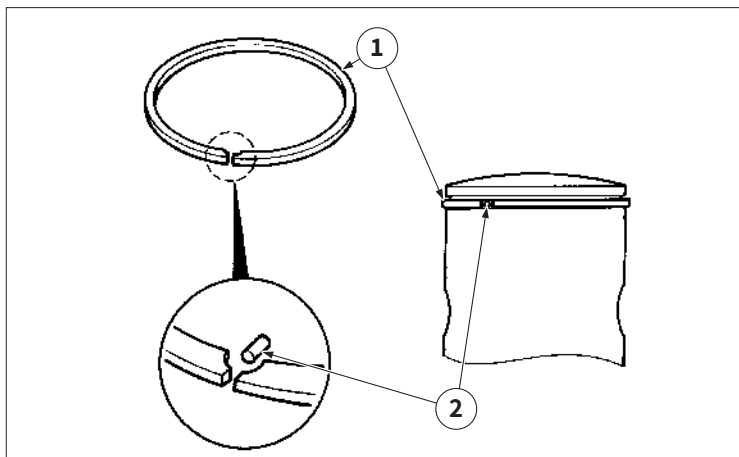
- the exhaust valves "1";
- the valve holder "2",
- the link lever "3";
- the valve shaft "4";
- the collars "5";
- the spring "6".

Clean any carbon deposits, check for wear and/or damage, if present replace the components.



Remove carbon deposits from power valve hole surface "A".

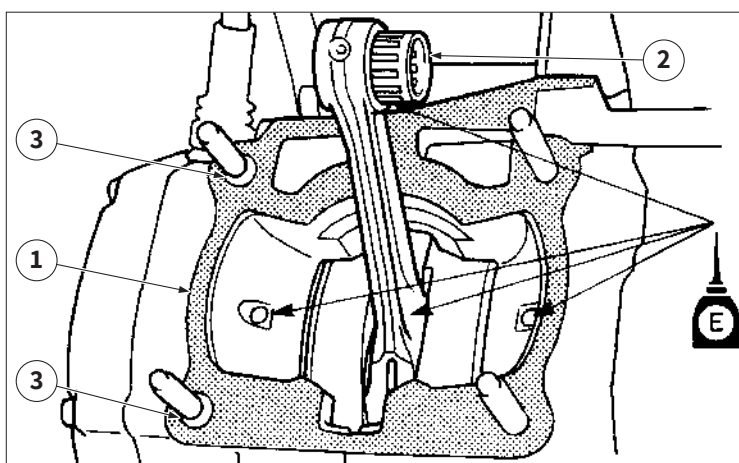
⚠ Do not use a sharp instrument. Avoid scratching the aluminum.



4.5.12 Installation of the piston

- Install the piston ring/rings "1" by aligning the port with the pin on the piston "2";
- After installing the piston ring/rings, check that if it/they moves smoothly;

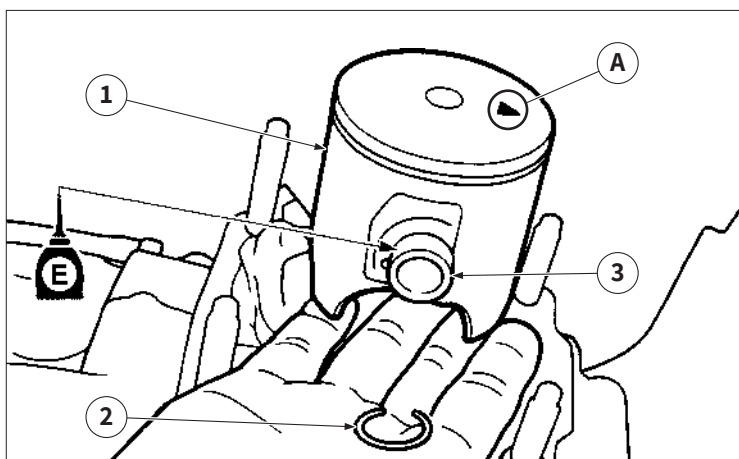
⚠ Take care not to scratch the piston or damage the piston ring.



- Install the centering bushings "3", a new cylinder gasket "1" and the connecting rod head roller bearing "2";

i Apply the engine oil onto the bearing (crankshaft and connecting rod) and connecting rod big end washers.

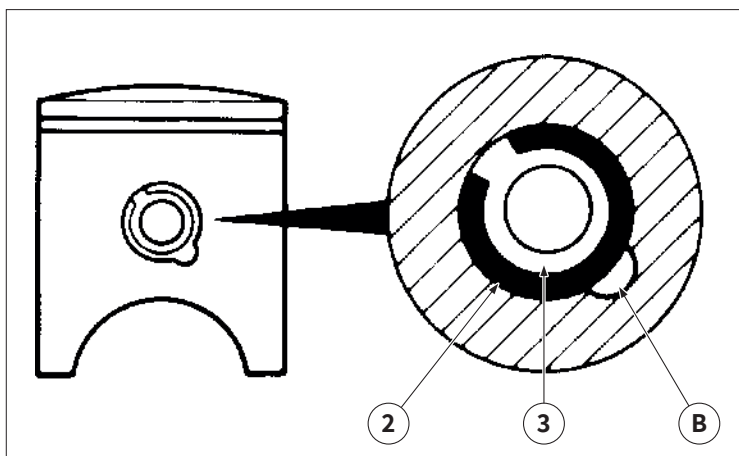
i Install the gasket with the seal print side toward the crankcase.

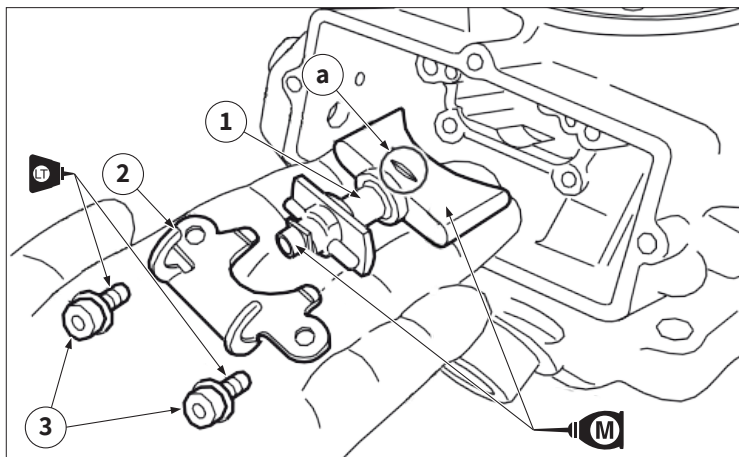


- Install piston "1" with the arrow "A" pointing towards the exhaust side;
- Apply engine oil to piston pin "3" and install it on the piston and connecting rod;
- Install seeger "2".

i Before installing the seeger, cover the crankcase with a clean cloth to prevent it from falling into it.

⚠ Install the seeger so that the ends do not touch the piston slot "B".





4.5.13 Exhaust valve installation (XX 250 version)

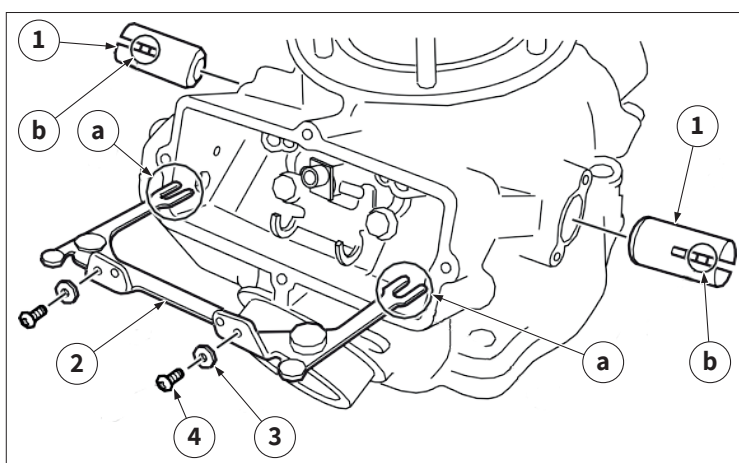
- Install the main exhaust valve "1";
- Install the secondary exhaust valve bracket "2" and bolts "3"

Valves bracket fastening bolt:
6 Nm (0.6 m•kg, 4.4 ft•lb)

Install the exhaust valve with notch "a" facing upwards.

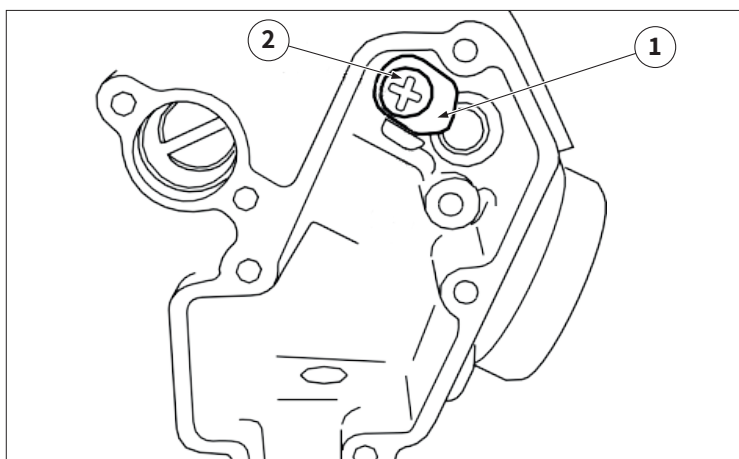
Apply molybdenum disulphide oil to the surface of the exhaust valve.

Apply threadlocker to the secondary valves bolts.



- Install the secondary exhaust valves "1";
- Install the linkage rod "2", inserting the forks "a" at its ends into the pins "b" of the secondary valves;
- Install washers "3";
- Install the linkage rod screws "4".

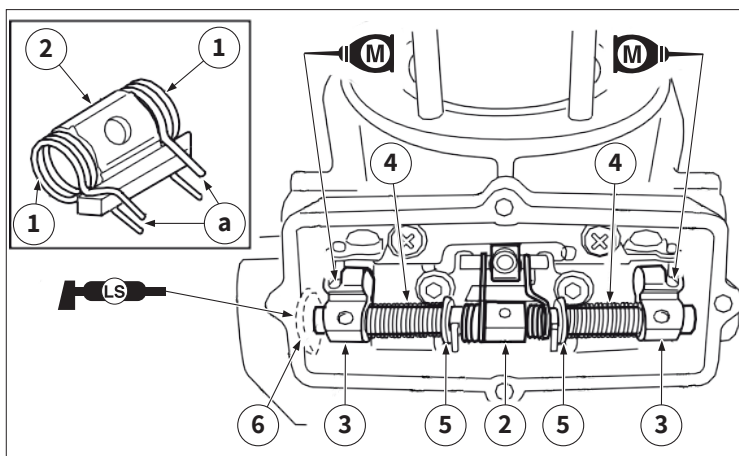
Bolt (link lever):
6 Nm (0.6 m•kg, 4.4 ft•lb)



- Install the thrust plate "1" and its fastening screw "2" on the cylinder.

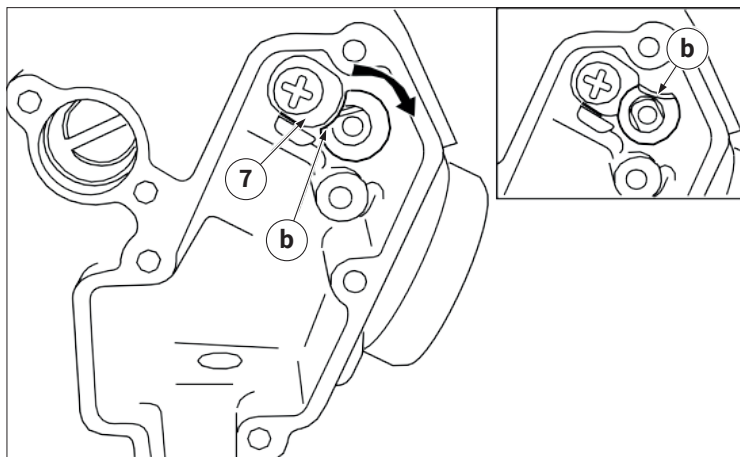
Thrust plate screw:
6 Nm (0.6 m•kg, 4.4 ft•lb)

Be sure to install the thrust plate before installing the exhaust valve shaft.

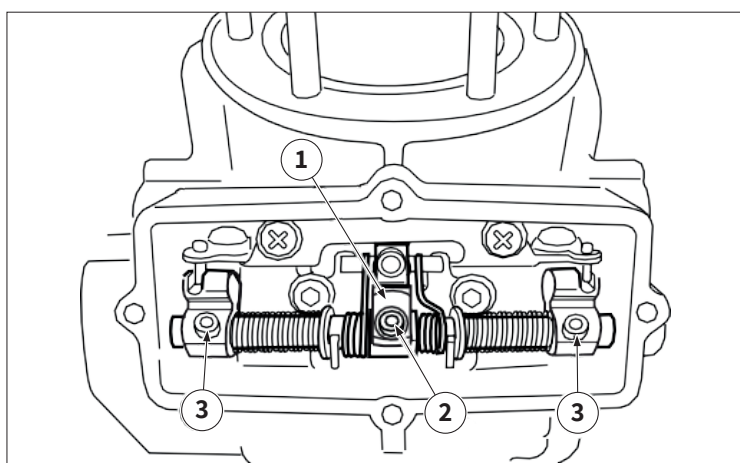


- Install springs "1" on the connection lever "2". The "a" arms of the springs must face inwards, as shown in the figure.
- Install the exhaust valve shaft in the cylinder, inserting on it the linkage lever "2" with springs, the linkage rod, washers "5", springs "4" and pulleys "3".

Apply lithium soap-based grease to the lip of oil seal "6".



- Install the exhaust valve shaft with its notch "b" aligned with the thrust plate "7". Then turn the shaft so that the notch faces upwards.

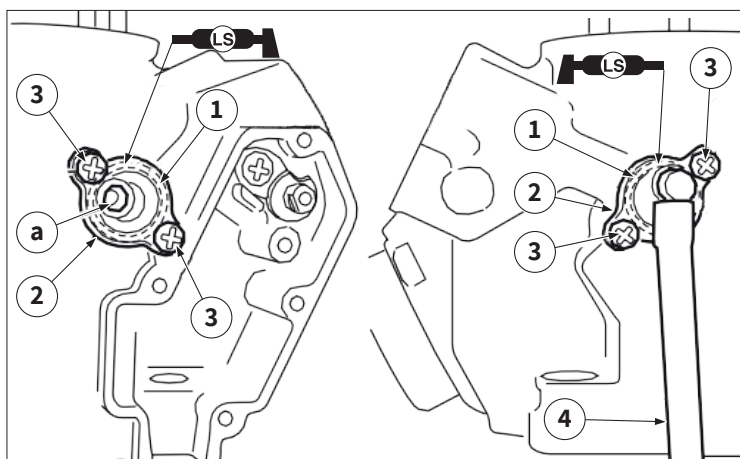


- Install the main exhaust valve support "1" and its screw "2";
- Install the screws "3" of the secondary valve pulleys.
- Check that the exhaust valve assembly moves smoothly and without jamming. If this is not the case, repeat the assembly operations.

i Tighten screw "2" of the main valve support before screws "3" of the pulleys.

Main valve support screw:
4 Nm (0.4 m•kg, 3.0 ft•lb)

Secondary valve pulley screw:
4 Nm (0.4 m•kg, 3.0 ft•lb)

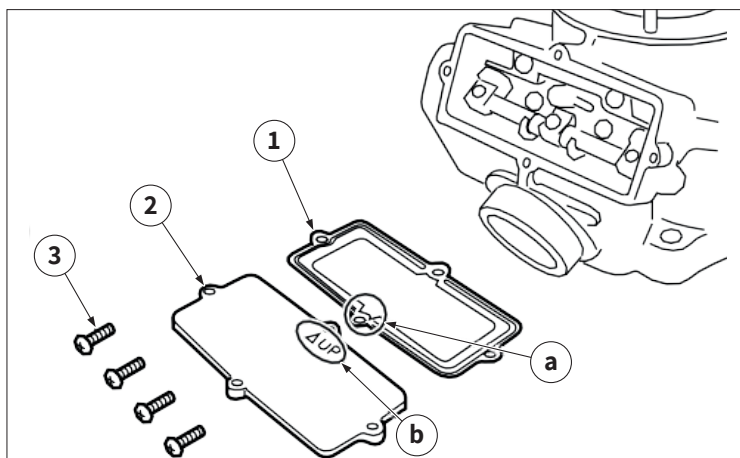


- Install new O-rings "1";
- Install the secondary valve cover "2" on the right and left sides;
- Tighten cover screws "3" to the specified torque.
- Install vent pipe "4" on the left cover.

i Apply lithium soap-based grease to the O-rings.

i Install the right secondary valve cover with the projection "a" facing upwards.

Secondary valve cover screw:
4 Nm (0.4 m•kg, 3.0 ft•lb)

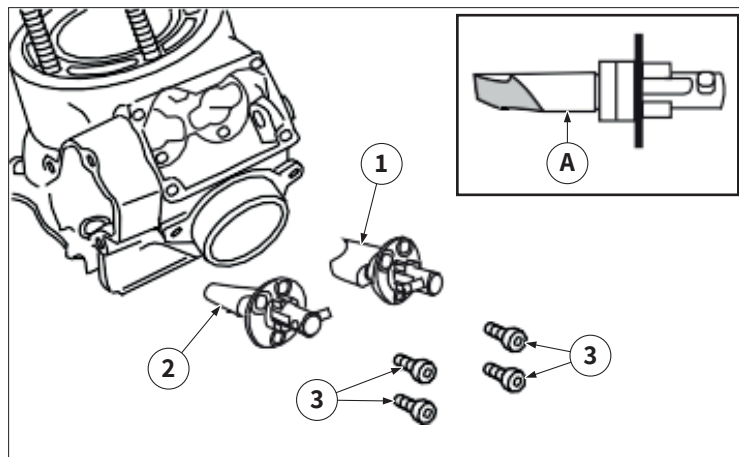


- Install a new gasket "1";
- Install the cover "2" of the main exhaust valve;
- Tighten cover screws "3" to the specified torque.

i Install the gasket with the "a" cut facing downwards and the punched side of the gasket facing the cover.

i Install the primary valve cover with arrow "b" facing upwards:

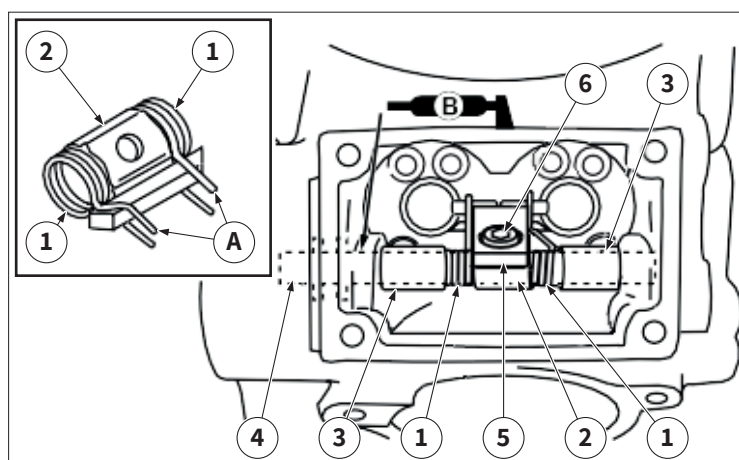
Main valve cover screw:
4 Nm (0.4 m•kg, 3.0 ft•lb)



4.5.14 Exhaust valve installation (XX 125 / XE 125 versions)

- Install the exhaust valves "1" and "2" with section "a" facing downwards;
- Install the fastening bolts "3";

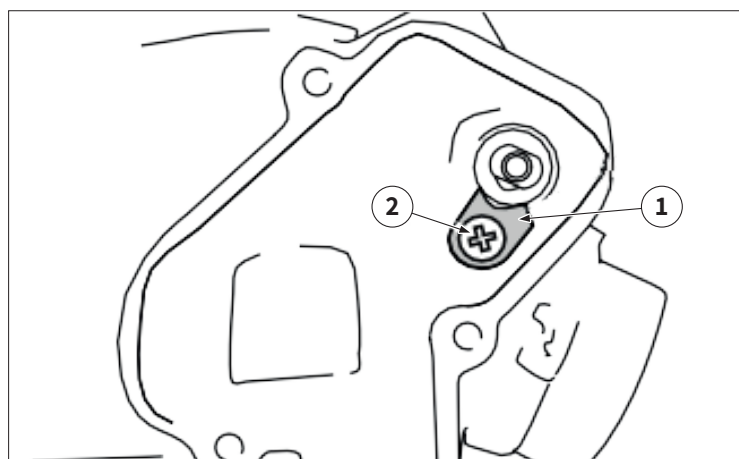
Bolt (power valve):
8 Nm (0.8 m•kg, 5.8 ft•lb)



- Install the spring "1" on lever "2". Then install the spring/lever assembly in the cylinder, with the retainer "A" facing inwards;
- Install the collar "3", the valve stem "4", the valve holder "5" and the lever bolt "6";

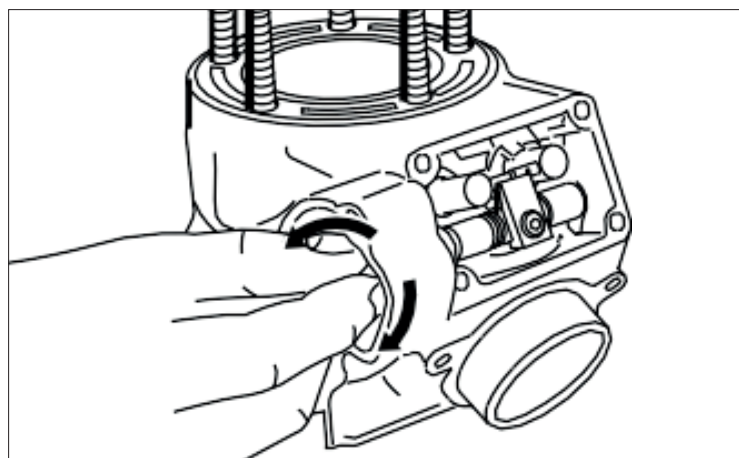
Bolt (link lever):
4 Nm (0.4 m•kg, 2.9 ft•lb)

Apply the lithium soap base grease on the oil seal lip.

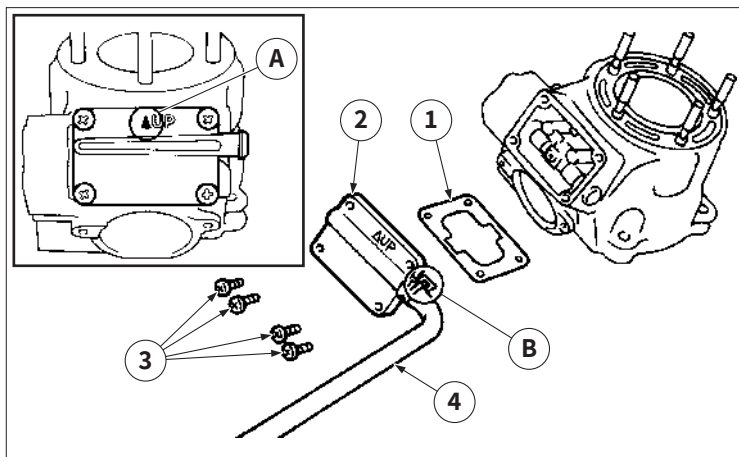


- Install the thrust plate "1" and the related fastening screw "2";

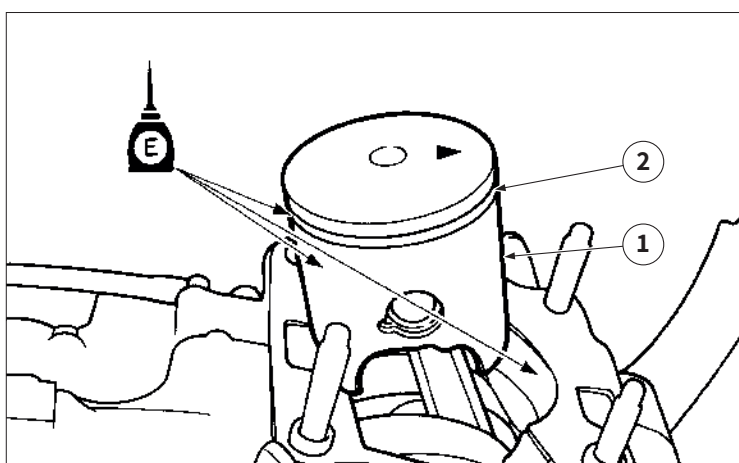
Screw (thrust plate):
4 Nm (0.4 m•kg, 2.9 ft•lb)



- Check that the drain valve moves freely and evenly. If not, repair or replace the necessary components;

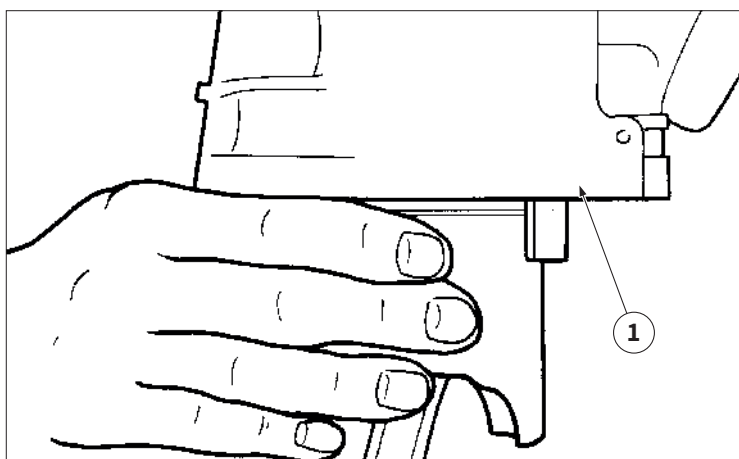


- Install a new drain valve cover gasket "1";
- Install the drain valve cover "2" with arrow "A" facing upwards;
- **Drain valve cover screw:**
5 Nm (0.5 m·kgf, 3.7 ft·lb)
- Install the cover screws "3";
- Install the YPVS vent with the opening of clamp "B" facing back.

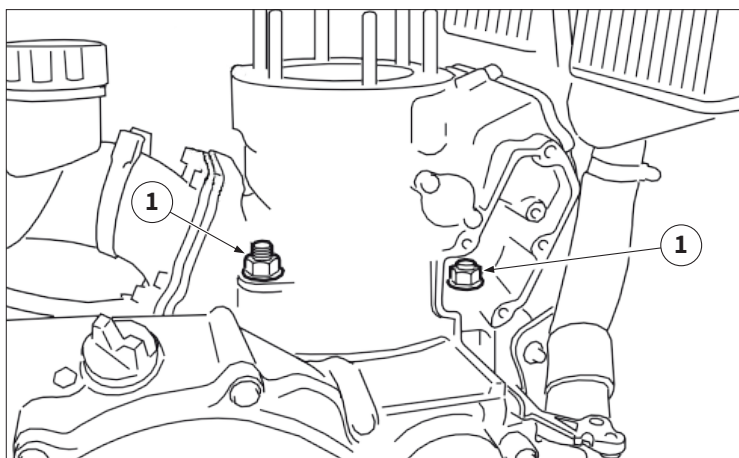


4.5.15 Cylinder installation (XX 250 version)

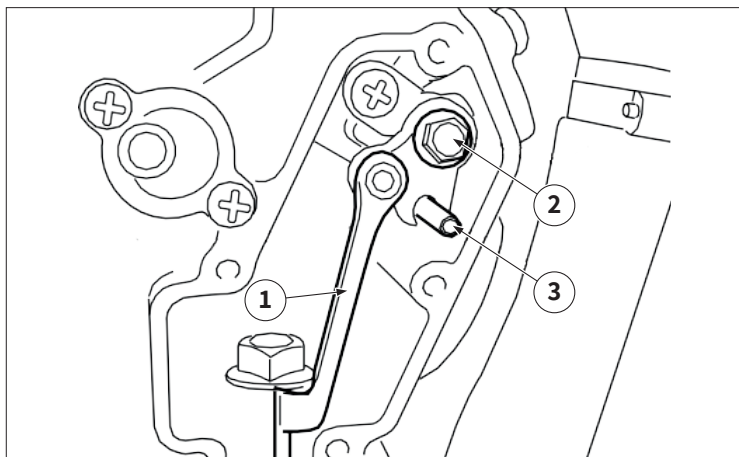
- Apply engine oil to piston "1", piston rings "2" and cylinder surface;



- Compress the piston rings with one hand, install cylinder "1" and make sure that the piston moves smoothly;



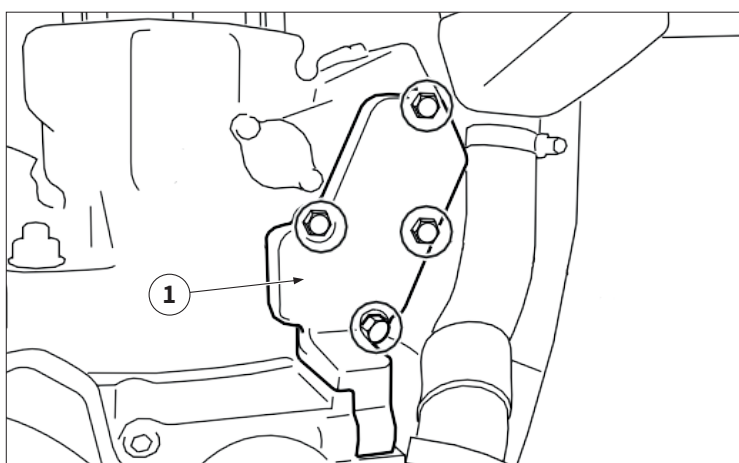
- Install cylinder nuts "1", tighten them to the specified torque following a cross pattern;
- **Cylinder nut:**
42 Nm (4.2 m·kg, 31 ft·lb)



- Install pushrod "1" and its nut "2";
- Insert the locking pin "3" into the related hole on the cylinder and tighten the nut "2" to the specified torque.

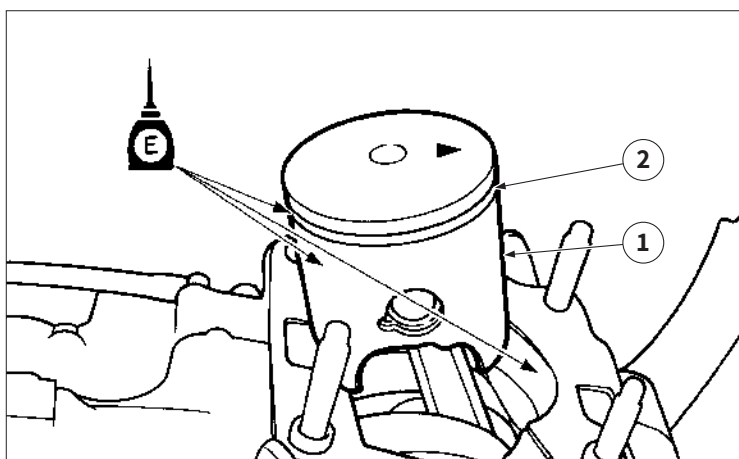
⚠ **Be sure to use the locking pin to avoid damaging the exhaust valve components.**

🔧 **Pushrod nut:**
4.5 Nm (0.45 m•kg, 3.3 ft•lb)



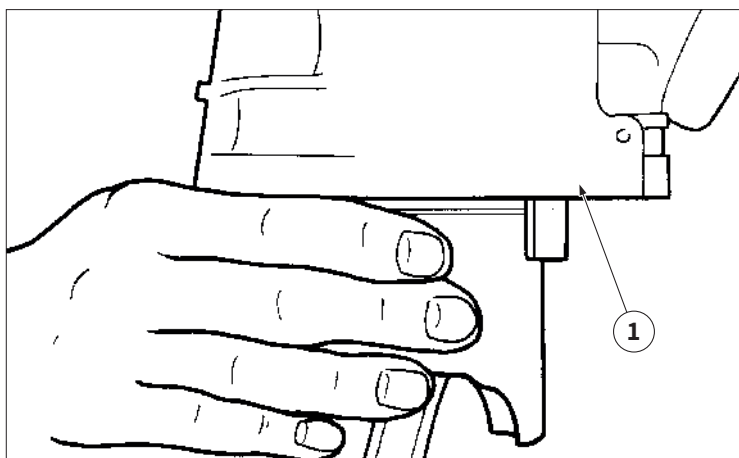
- Install a new exhaust valve cover gasket;
- Install the exhaust valve cover "1" and the related fastening bolts.

🔧 **Bolt (power valve housing):**
4.5 Nm (0.45 m•kg, 3.3 ft•lb)

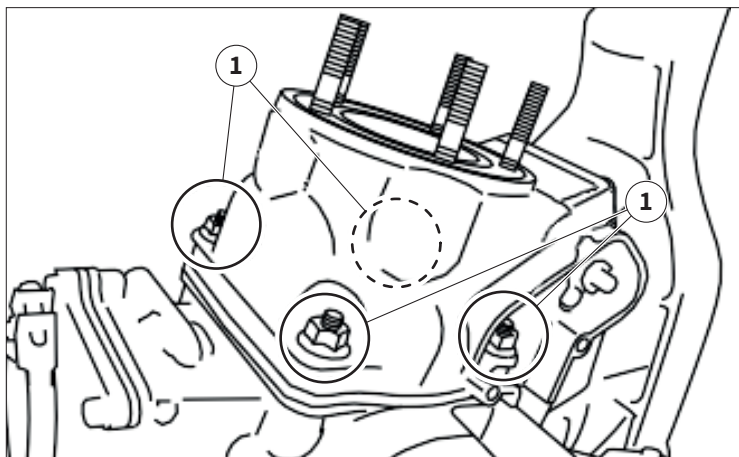


4.5.16 Cylinder installation (XX 125 / XE 125 versions)

- Apply engine oil to piston "1", piston ring "2" and cylinder surface;

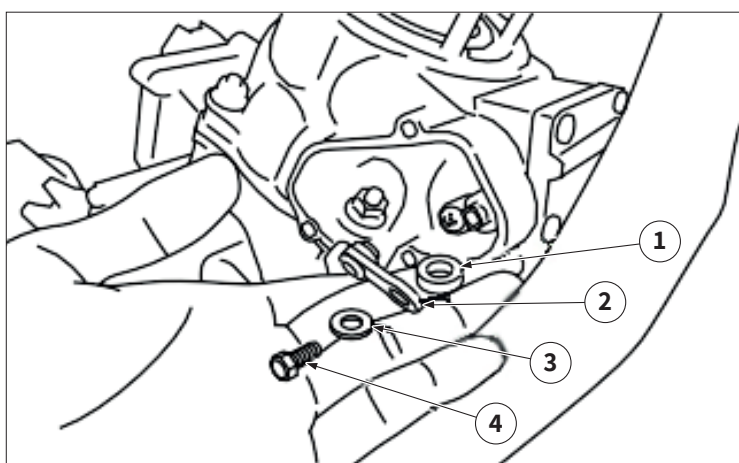


- Compress the piston ring with one hand, install cylinder "1" and make sure that the piston moves smoothly;

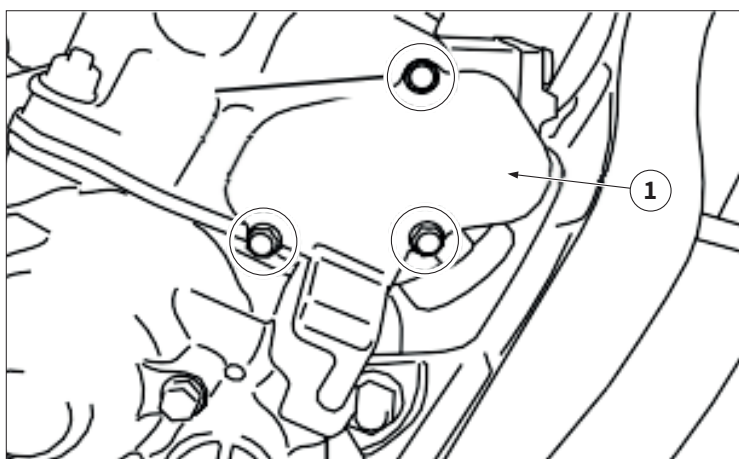


- Install cylinder nuts "1", tighten them to the specified torque following a cross pattern;

 **Cylinder nut:**
30 Nm (3.0 m•kg, 22 ft•lb)

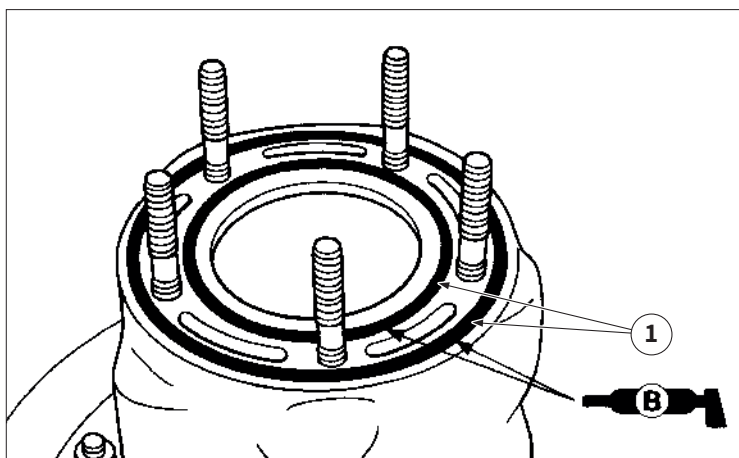


- Install the collar "1", the locking rod "2", the flat washer "3" and the push rod bolt "4";



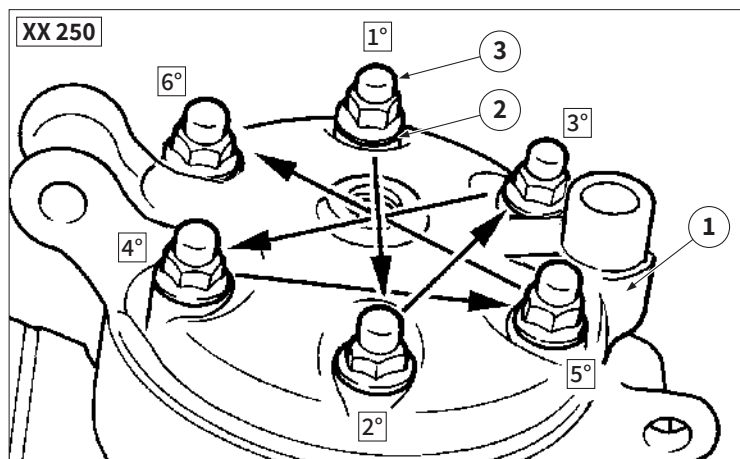
- Install a new exhaust valve cover gasket;
- Install the exhaust valve cover "1" and the related fastening bolts.

 **Bolt (power valve housing):**
4 Nm (0.4 m•kg, 2.9 ft•lb)



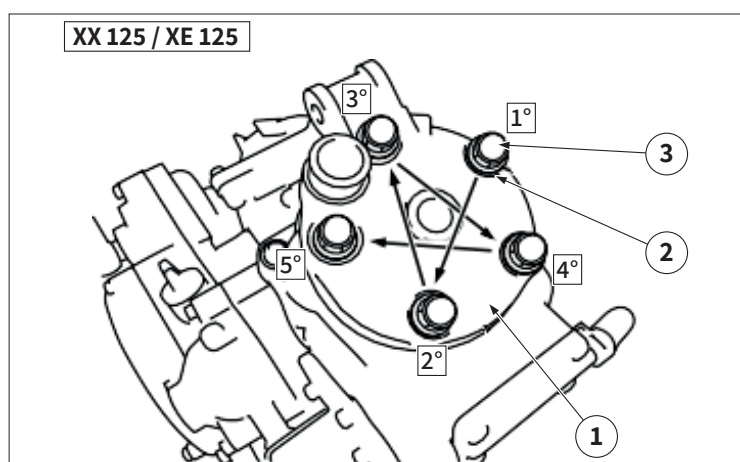
4.5.17 Head installation

- Install the new O-rings "1". Apply lithium soap grease before installing them;

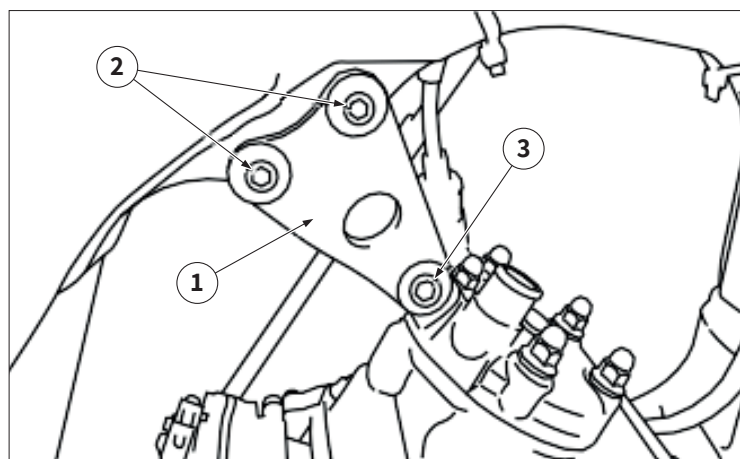


- Install the head "1", new copper washers "2" and the nuts of head "3";
- Tighten bolts "3" to the specified torque, following a cross pattern;

 **Nut (cylinder head) (XX 250 version):**
25 Nm (2.5 m•kg, 18 ft•lb)



 **Nut (cylinder head) (XX 125 / XE 125 versions):**
28 Nm (2.8 m•kg, 20 ft•lb)



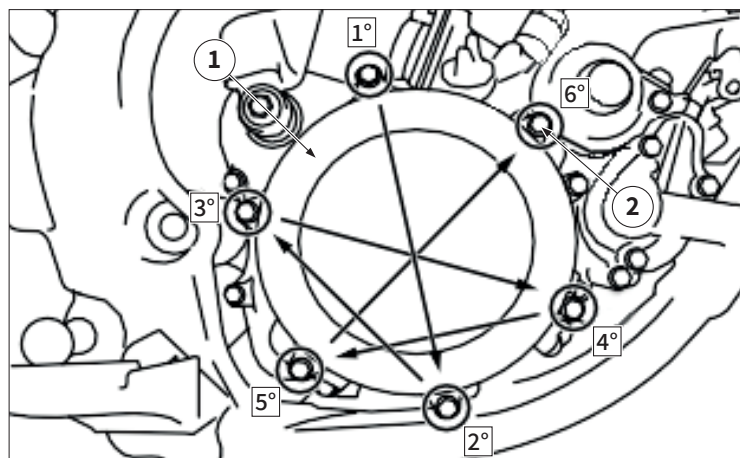
- Install the engine bracket "1", upper bolts "2" and lower bolt "3"

 **Engine bracket upper bolt**
34 Nm (3.4 m•kg, 25 ft•lb)

 **Engine bracket lower bolt (XX 250 version):**
64 Nm (6.4 m•kg, 47 ft•lb)

 **Engine bracket lower bolt (XX 125 / XE 125 versions):**
34 Nm (3.4 m•kg, 25 ft•lb)

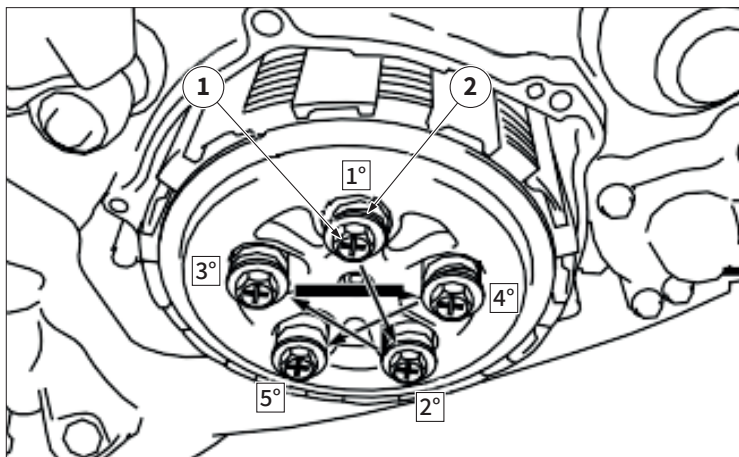
- Install the spark plug.



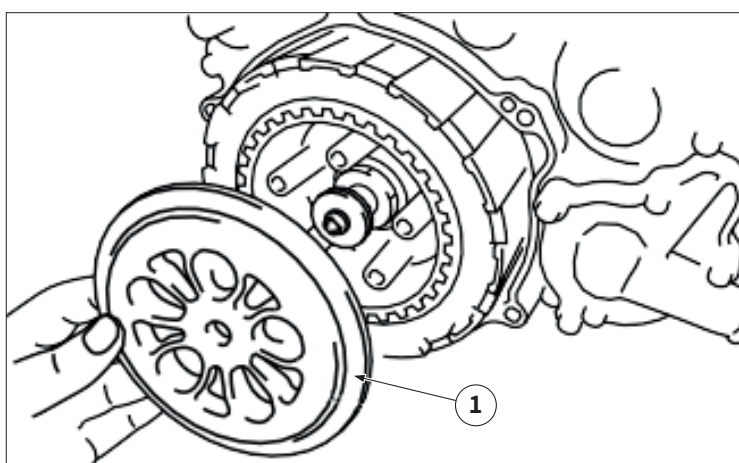
4.6 CLUTCH

4.6.1 Clutch removal

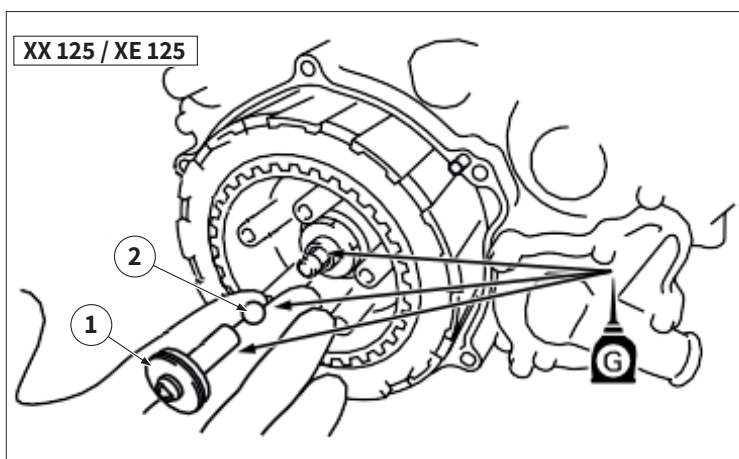
- Remove the clutch crankcase bolts "2" following a cross pattern, then remove the crankcase "1";



Remove bolts “1” and springs “2” of the clutch following a cross pattern;

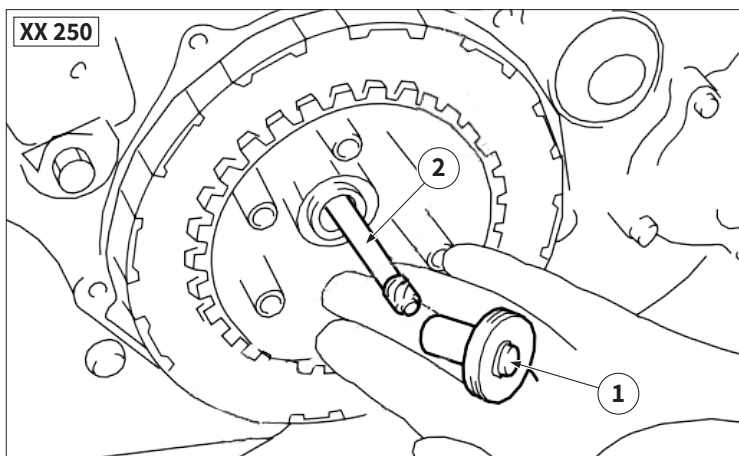


– Remove the pressure plate “1”;



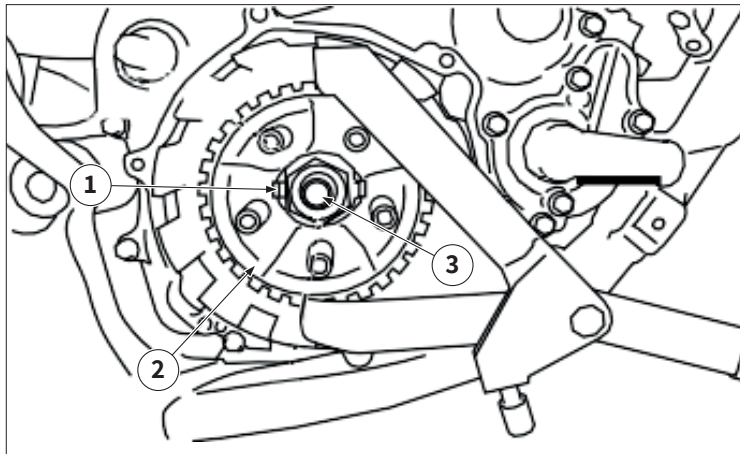
(XX 125 / XE 125 versions)

– Remove the thrust bearing “1”, ball “2” and the push rod;

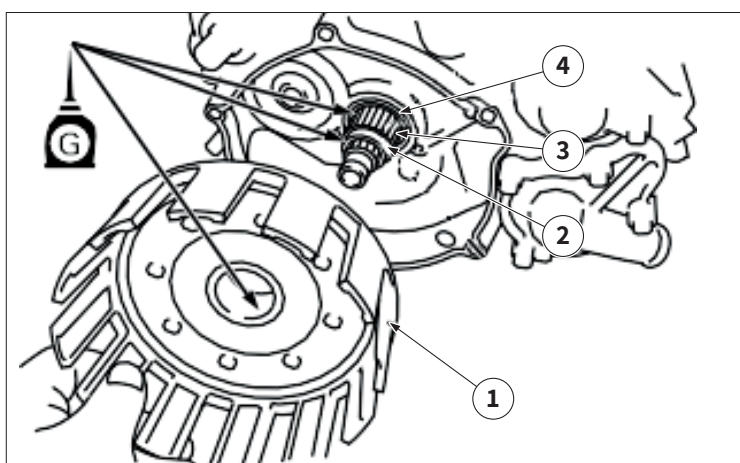


(XX 250 version)

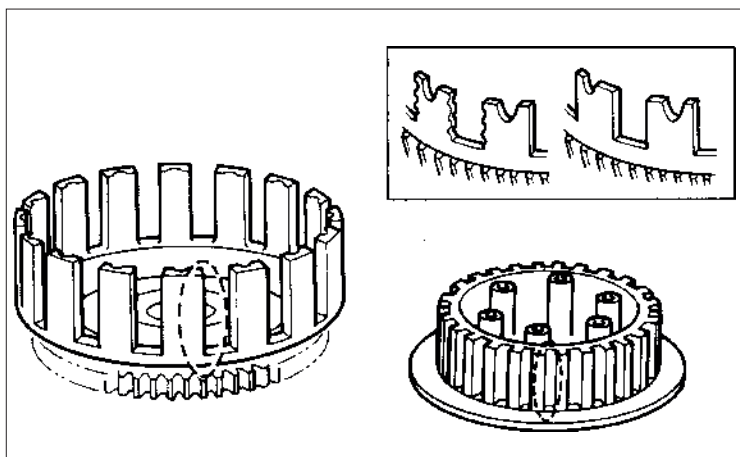
– Remove the thrust bearing “1” and the push rod “2”;



- Level the tab of the locking washer “1”, lock the clutch hub “2” with the universal locking tool, unscrew the nut “3” and remove the hub and washer;

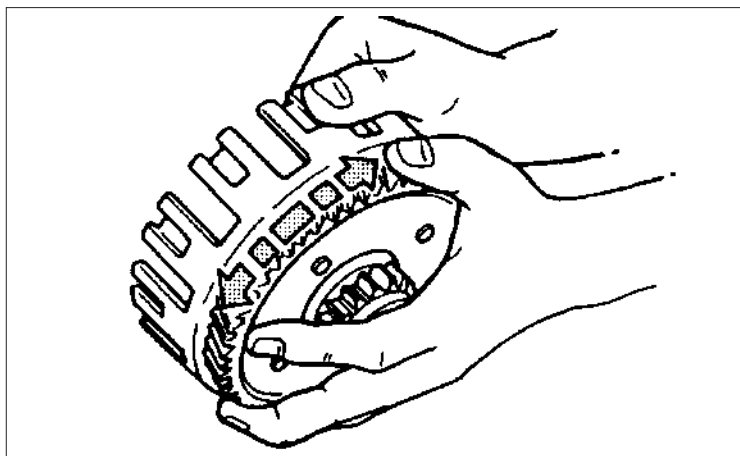


- Remove the clutch housing “1”, the bearing “2”, the spacer “3” and the washer “4”.

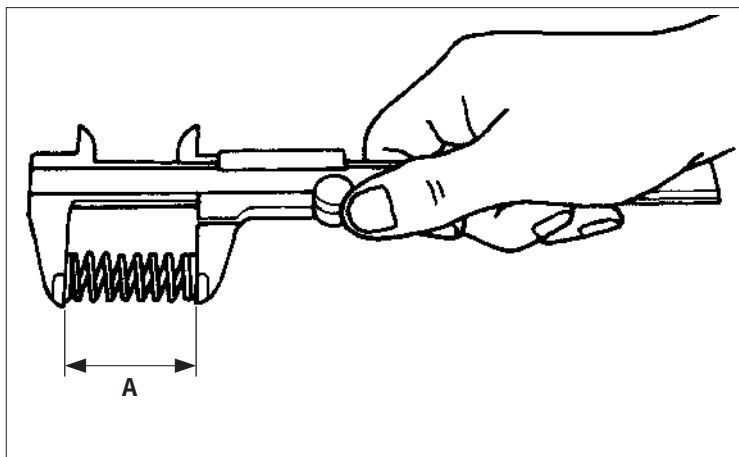


4.6.2 Check the clutch elements

- Check the clutch housing and clutch hub for wear/cracks/damage, replace them;



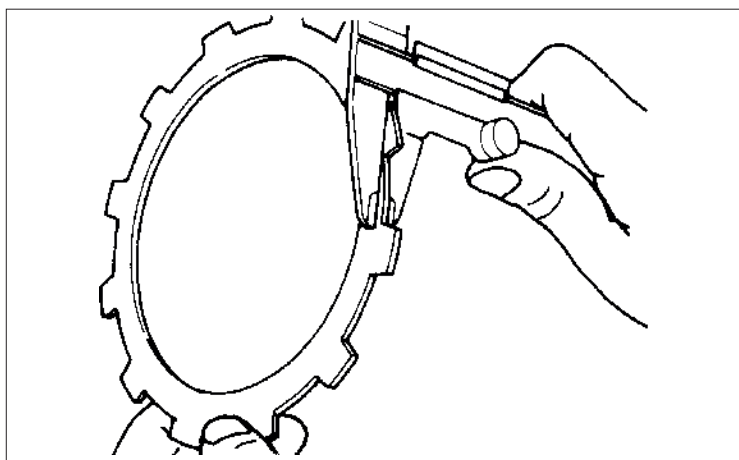
- Check the driven gear of the primary transmission for circumferential clearance and/or damage to the teeth. If it has one or both defects, replace it;



- Measure the free length "A" of the clutch springs. If not in accordance with the specifications, replace all the springs simultaneously;

✂ Clutch spring free length
(XX 125 and XE 125 versions):
41.20 mm (1.62 in)
Minimum limit: 39.20 mm (1.54 in)

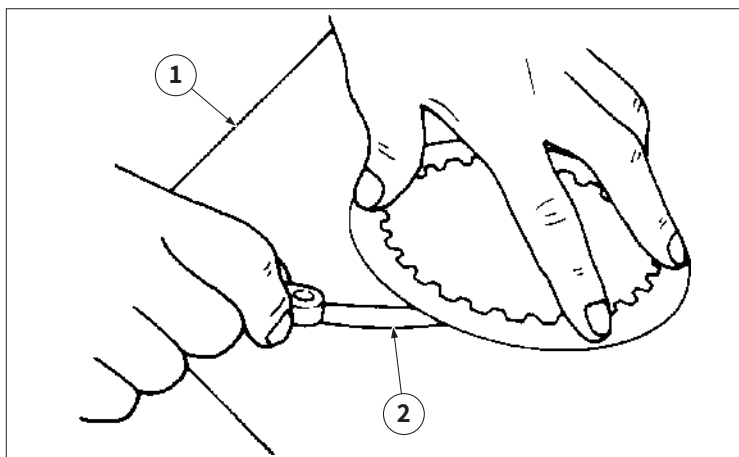
✂ Clutch spring free length (XX 250 version):
50.00 mm (1.97 in)
Minimum limit: 48.00 mm (1.89 in)



- Measure the thickness of the driving plates. If not in accordance with the specifications, replace the plate;

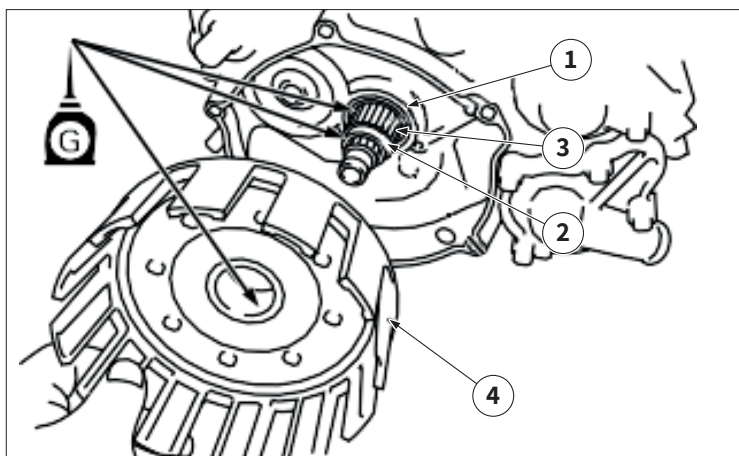
✂ Friction plate thickness:
2.90–3.10mm (0.114–0.122 in)
Minimum limit: 2.80 mm (0.110 in)

✂ Clutch plate thickness:
1.50–1.70mm (0.059–0.067 in)



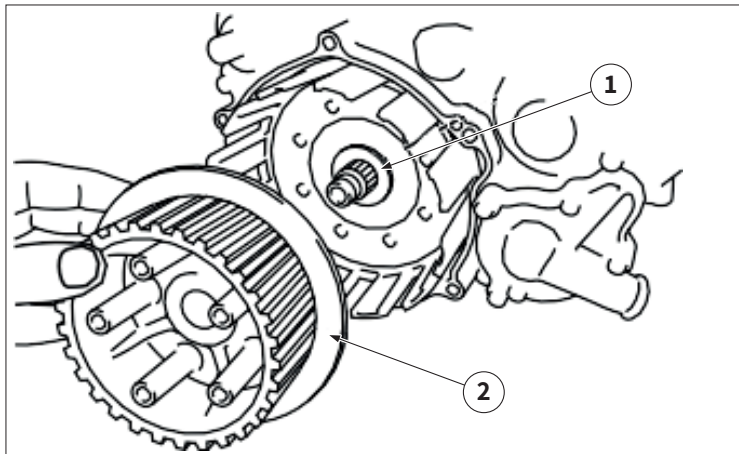
- Measure the distortion of the driven plates, using a reference plane "1" and a thickness gauge "2";
- If not in accordance with the specifications, replace the plate.

✂ Warp limit: 0.20 mm (0.008 in)

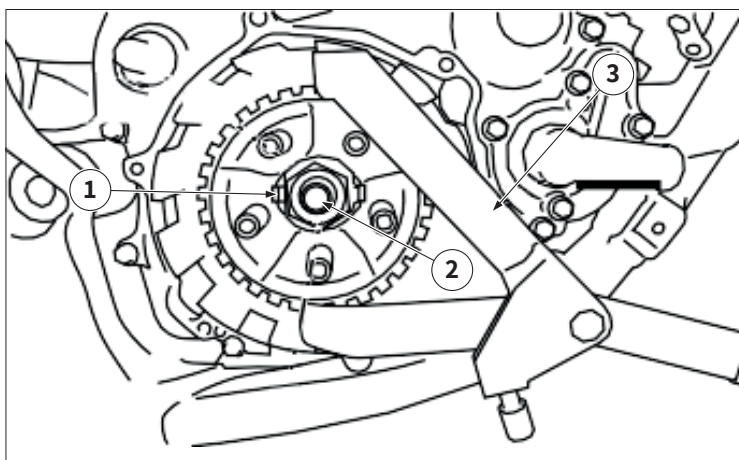


4.6.3 Clutch installation

- Install washer "1", spacer "2", bearing "3" and clutch housing "4";



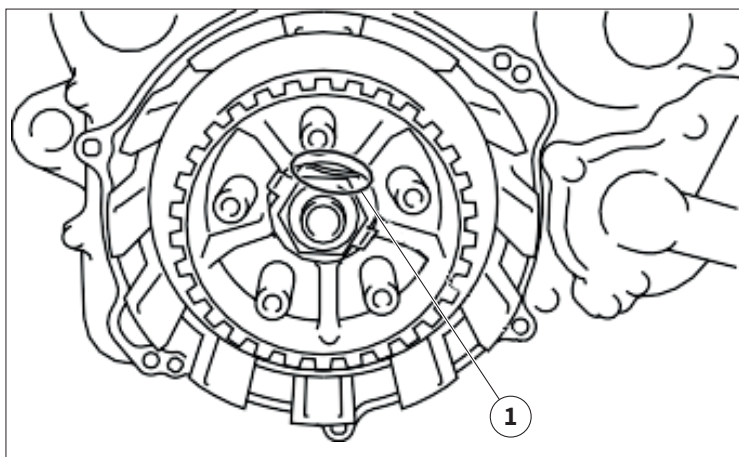
- Install washer "1" and clutch hub "2";



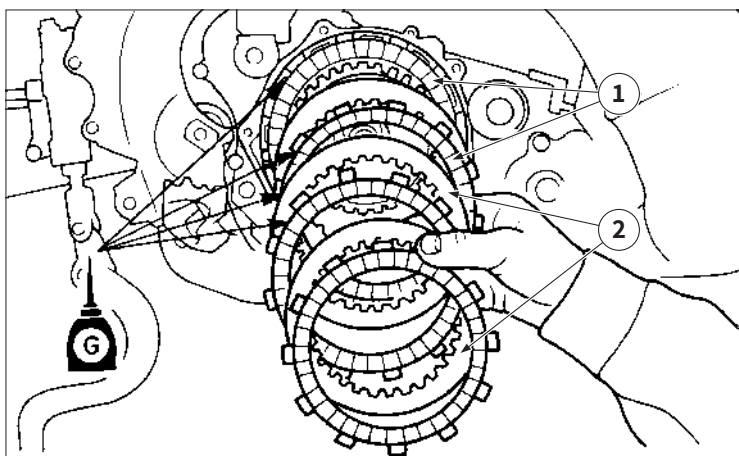
- Install the lock washer "1" and hub nut "2";
- Lock the clutch hub with the universal locking tool "3" and tighten the nut "2";

🔧 **Nut (clutch boss) (XX 125 / XE 125 versions):**
80 Nm (8.0 m•kg, 58 ft•lb)

🔧 **Nut (clutch boss) (XX 250 version):**
75 Nm (7.5 m•kg, 55 ft•lb)

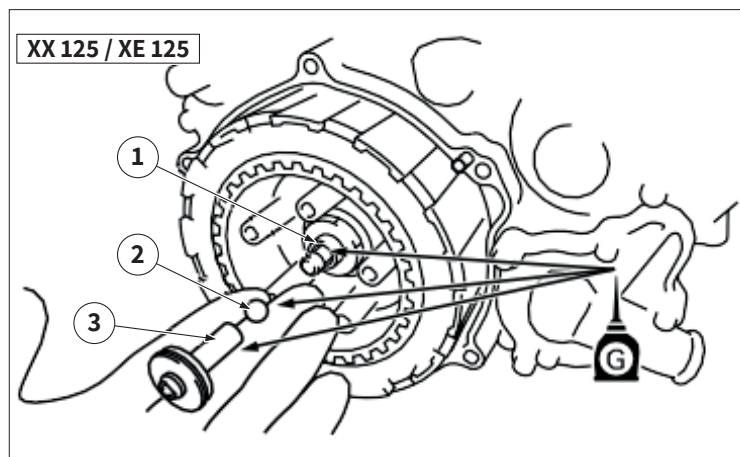


- Straighten the lock washer tab "1";



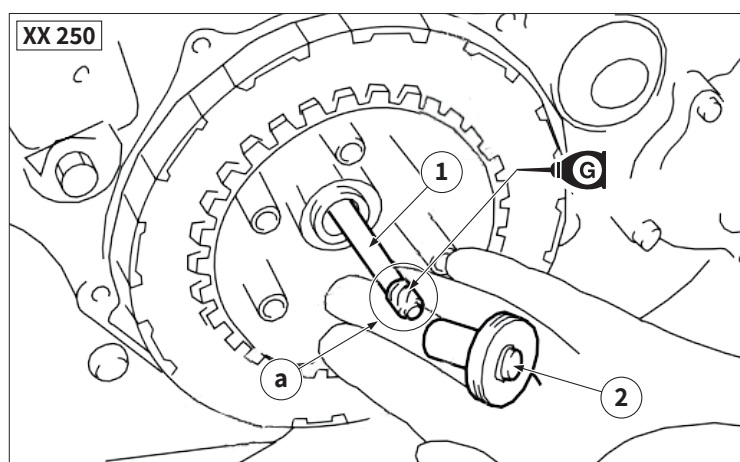
- Install alternately the driving plates "1" and the driven plates "2" on the clutch hub, starting and ending with a driving plate "1".

i Apply transmission oil to the driven and driving plates.



(XX 125 / XE 125 versions)

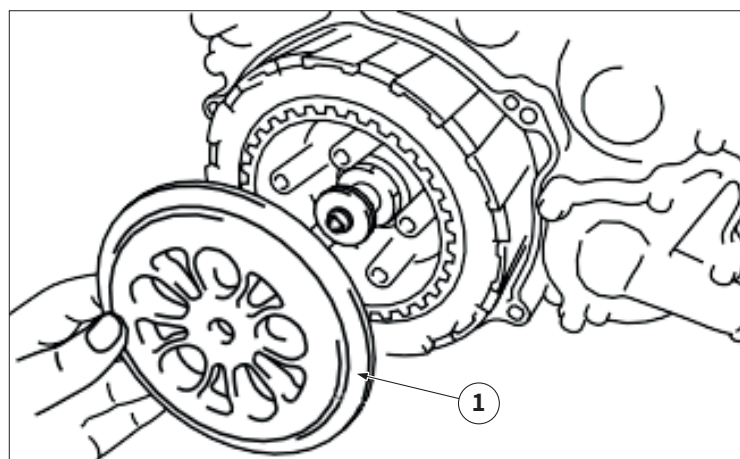
- Install the push rod "1", ball "2" and thrust bearing "3";



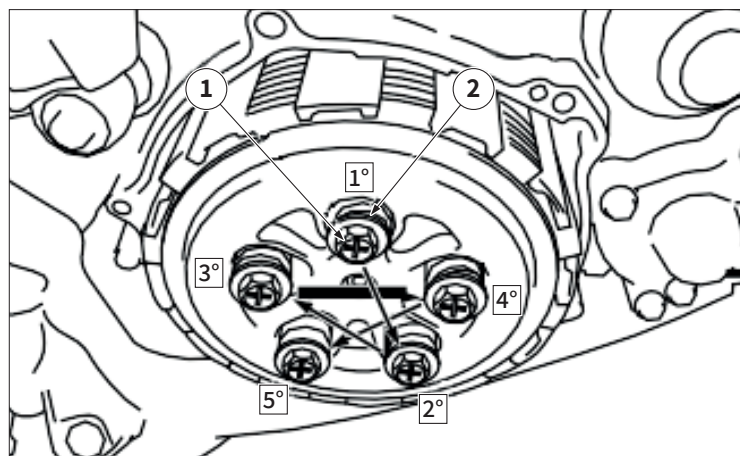
(XX 250 version)

- Install the push rod "1" and the thrust bearing "2";

i Install the pushrod with the smaller end "a" facing yourself.

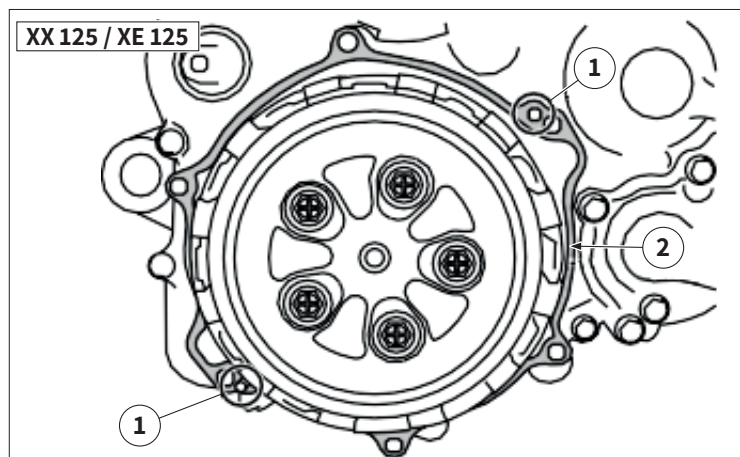


- Install the thrust plate "1"



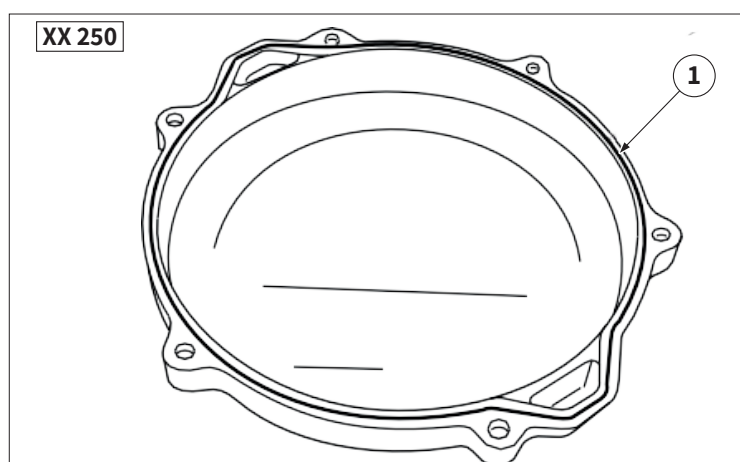
- Install the springs "1" and bolts "2" of the clutch and tighten them following a cross pattern;

Bolt (clutch spring):
10 Nm (1.0 m•kg, 7.2 ft•lb)



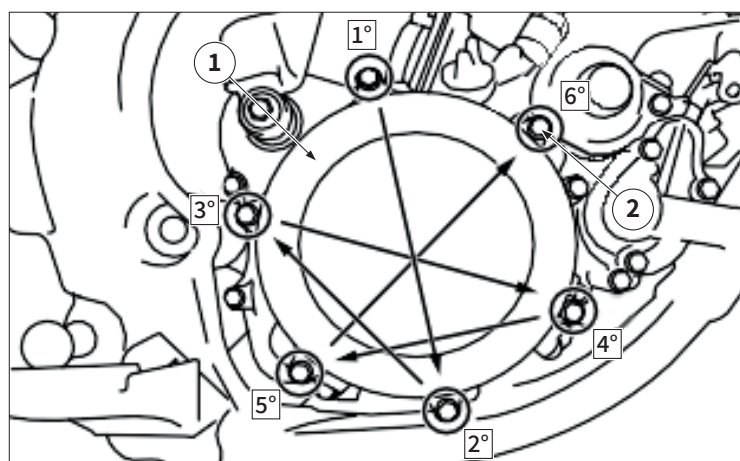
(XX 125 / XE 125 versions)

- Install the centering bushings “1” and a new gasket “2”;



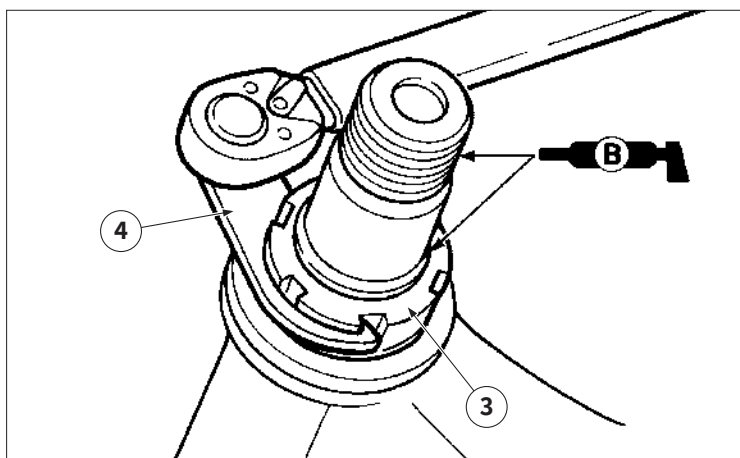
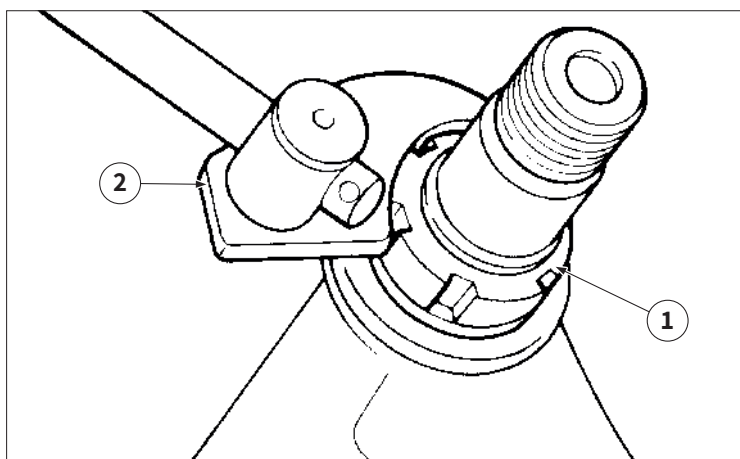
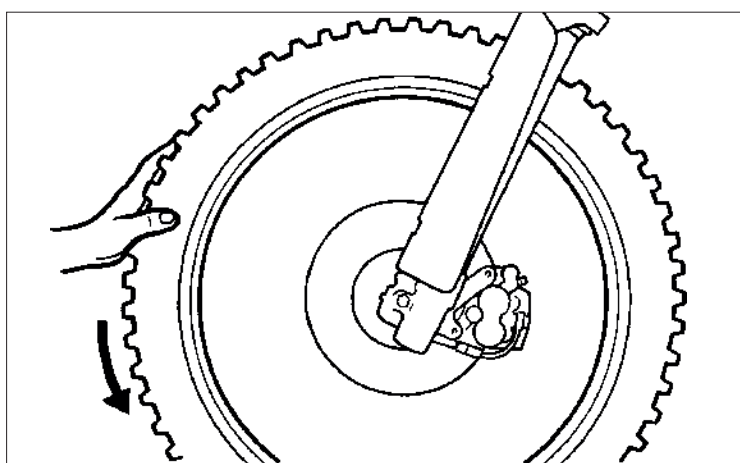
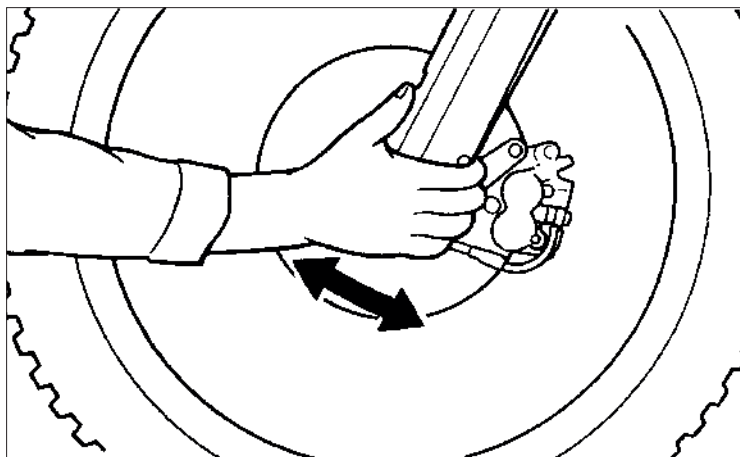
(XX 250 version)

- Install a new O-ring “1” on the clutch housing.



- Install the clutch crankcase “1” and bolts “2”. Tighten them following a cross pattern.

 **Bolt (clutch cover):**
10 Nm (1.0 m•kg, 7.2 ft•lb)



4.7 STEERING PLAY CONTROL AND ADJUSTMENT

4.7.1 Steering play control

- Place a stand under the engine to raise the front wheel off the ground;

⚠ **Securely support the vehicle so that there is no danger of it falling over.**

- Grasp the bottom of the forks and gently rock the fork assembly back and forth. If free play is present adjust the steering head;
- Check that the steering is working evenly by turning it fully to the right and left. If play is present, adjust the steering head.

4.7.2 Steering play adjustment

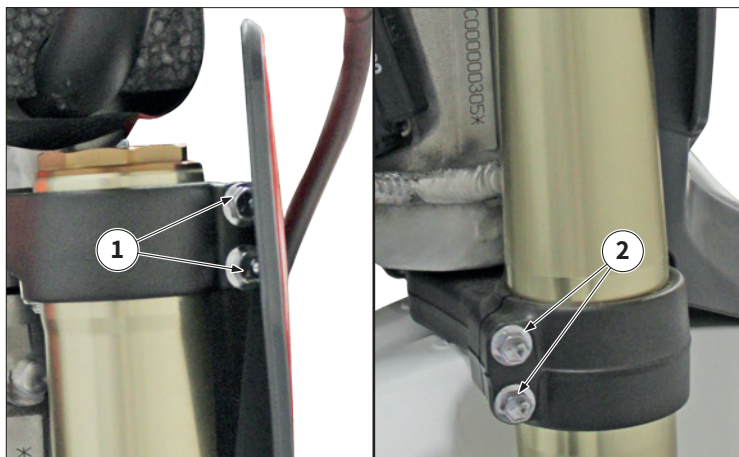
- Remove the front number plate, the upper fork plate and the handlebar;
- Loosen the lock nut “1” of the steering ring nut with a ring nut spanner “2”;

- Start tightening the steering ring nut “3”, with a ring nut spanner and a torque spanner “4”, to the specified torque;
- Then loosen the steering wheel nut “3” by one turn;

🔧 **Steering ring nut (initial tightening):**
38 Nm (3.8 m•kg, 27 ft•lb)

- Then loosen the steering ring nut “3” by one turn and check that the steering moves correctly throughout its stroke;
- Finally tighten the steering ring nut “3” to the specified torque.

🔧 **Final tightening of the steering ring nut:**
7 Nm (0.7 m•kg, 5.1 ft•lb)



4.8 FORK

⚠ For the maintenance of hydraulic components, contact an authorised Fantic workshop.

- Regularly check the upper “1” and lower “2” fastening screws of both stems. If they are loose, tighten them to the specified torque.

🔧 Nut “1”: 21 Nm (2.1 m•kg, 15 ft•lb)

🔧 Nut “2”: 21 Nm (2.1 m•kg, 15 ft•lb)

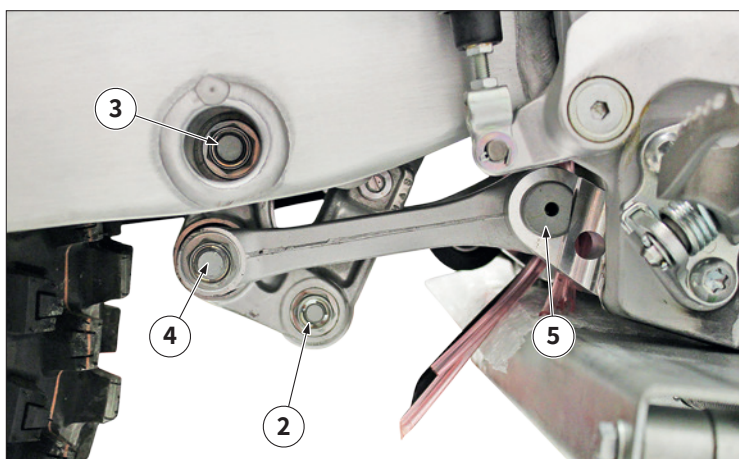


4.9 SHOCK ABSORBER

- Regularly check the upper fastening screw of the shock absorber “1”. If it is loose, tighten it to the specified torque.

🔧 Nut “1”: 56 Nm (5.6 m•kg, 41 ft•lb)

- Regularly check the shock absorber lower fastening screw “2” and linkage fastening screws “3”, “4” and “5”. If they are loose, tighten them to the specified torque.



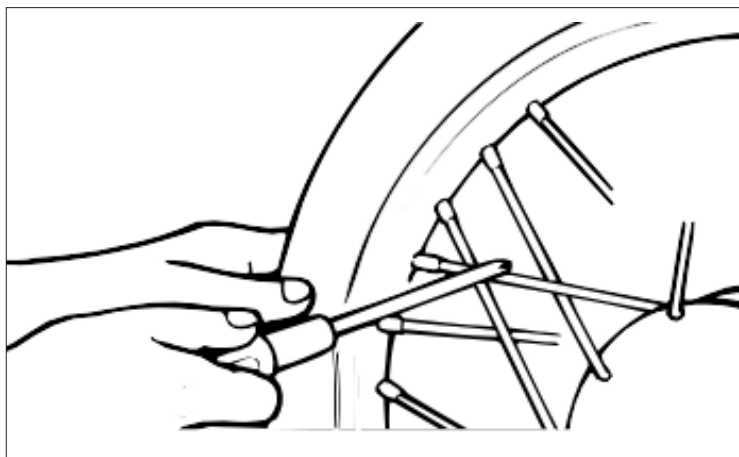
i To ensure the best operation and durability of the rear shock absorber linkage, it is recommended to check, clean and grease the linkage bearings periodically.

🔧 Nut “2”: 53 Nm (5.3 m•kg, 39 ft•lb)

🔧 Nut “3”: 70 Nm (7.0 m•kg, 52 ft•lb)

🔧 Nut “4”: 80 Nm (8.0 m•kg, 59 ft•lb)

🔧 Nut “5”: 80 Nm (8.0 m•kg, 59 ft•lb)



4.10 WHEELS

4.10.1 Spokes check and tightening

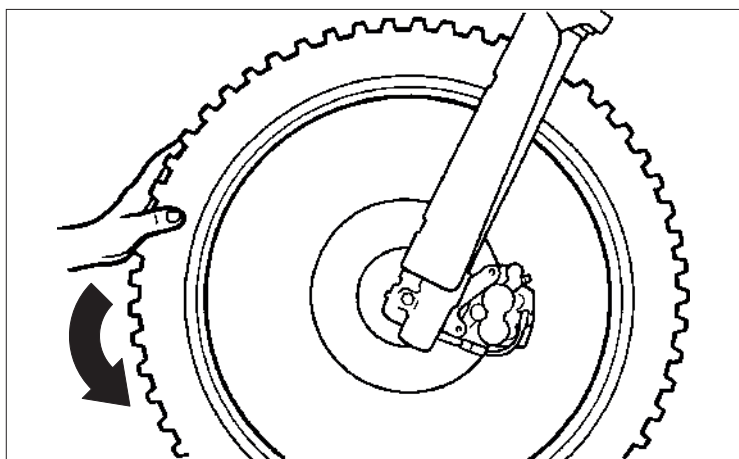
(i) The following procedure applies to all spokes of both wheels.

- Check that the spokes are not broken or deformed, if they are, they must be replaced;
- Check the tension of the spokes by tapping on them with a screwdriver. A well tightened spoke will emit a light, tinkling tone, while a loose one will emit a deaf tone. In the case of a loose spoke, tighten it with a spoke wrench to the specified torque;

Spokes (XX 125 and XE 125 versions) :
2.5 Nm (0.25 m•kg, 1.8 ft•lb)

Spokes (XX 250 version) :
2.5 Nm (0.25 m•kg, 1.8 ft•lb)

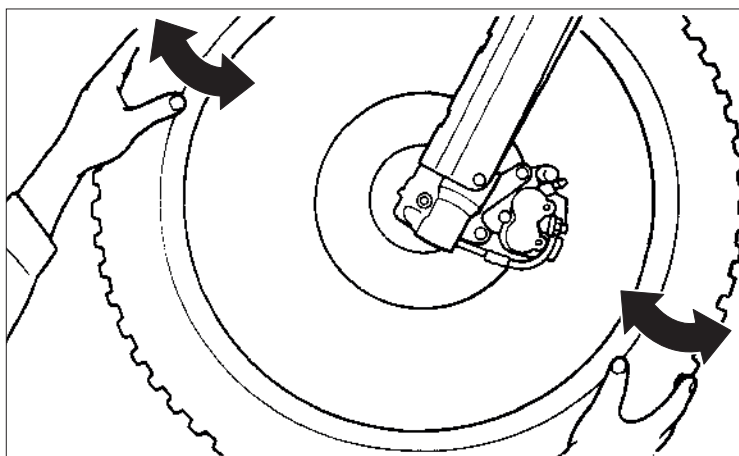
⚠ Be sure to tighten the spokes before and after the running-in.



4.10.2 Wheel check

(i) The following procedure applies to both wheels.

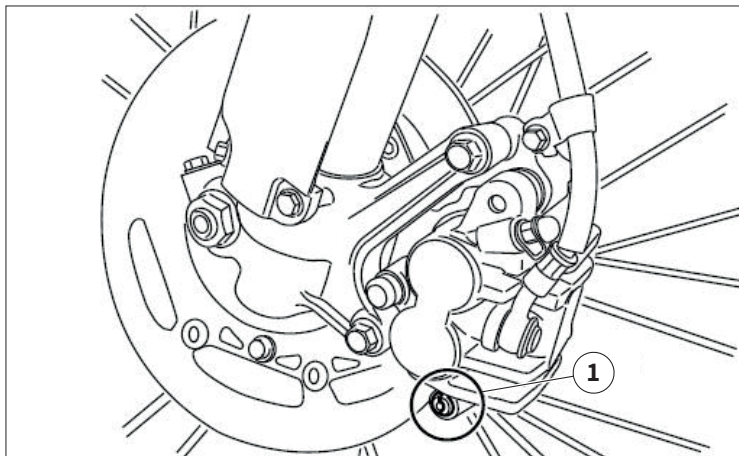
- Place a stand under the engine, lift the wheel and turn it. Check the centering and alignment of the rim channel with respect to the wheel hub. If there are any anomalies, proceed with the correction by pulling the spokes;



- Check the wheel bearings for axial and/or radial clearance, replace the bearings if present.

⚠ If there are cracks or splits in the rim channels, it is necessary to replace them.

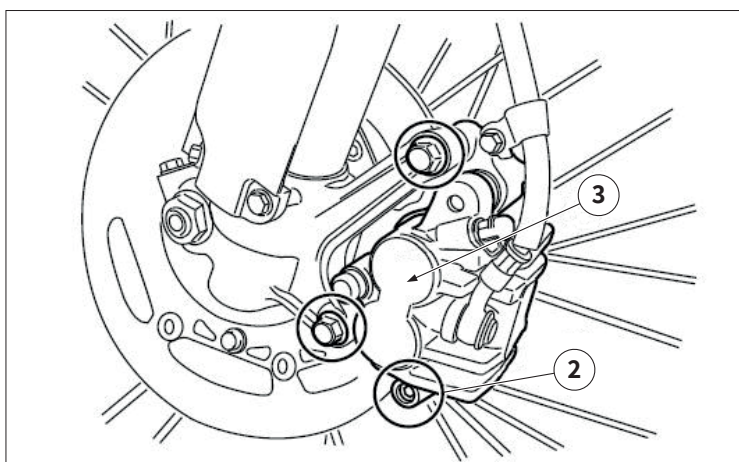
⚠ Never try to repair the wheel rims.



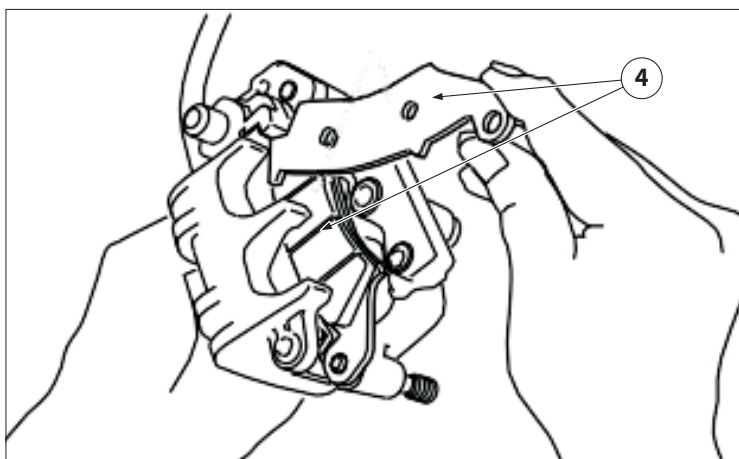
4.11 BRAKE PADS

4.11.1 Replace the front brake pads

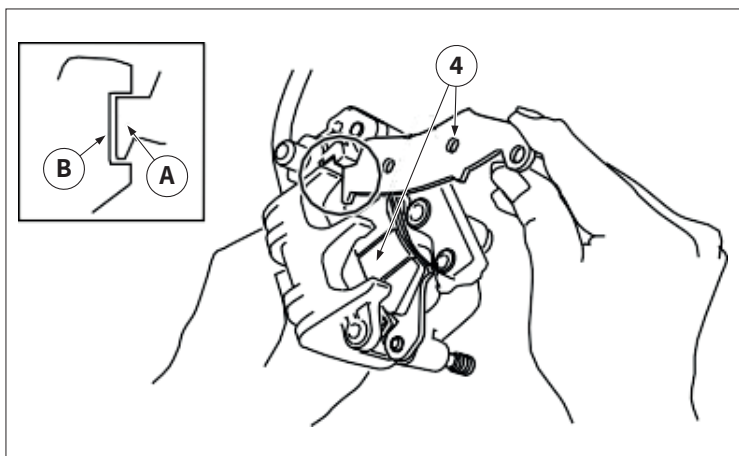
- Remove the pad pin plug “1”;



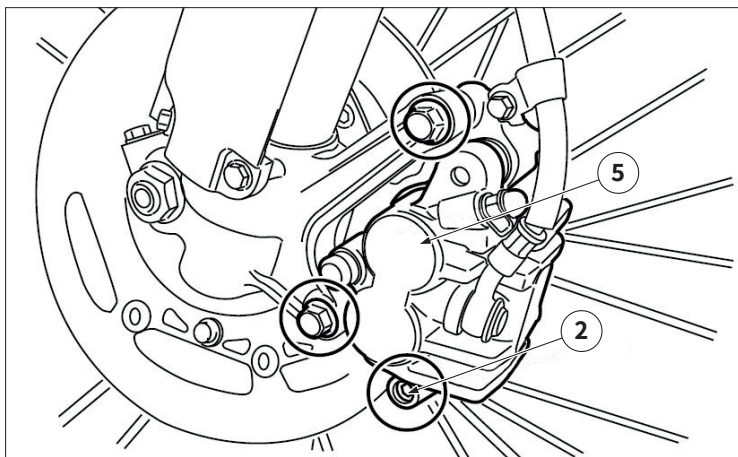
- Loosen the pad pin “2”;
- Unscrew the fixing bolts, then remove the brake caliper “3” from the fork;



- Remove the pad pin and brake pads “4”;



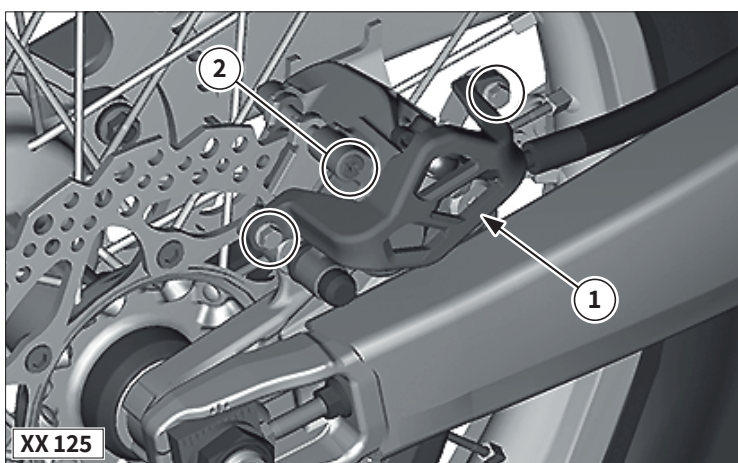
- Install the brake pads “4” with their protrusions “A” in the recesses of the brake calliper “B”. Temporarily tighten the pads pin “2”;



- Install the brake calliper “5” and tighten the relevant bolts to the specified torque. Tighten the pad pin “2” and insert the relative cap previously removed;

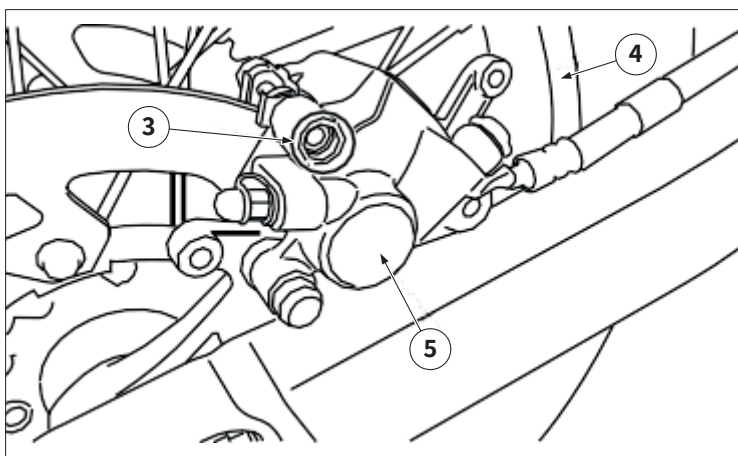
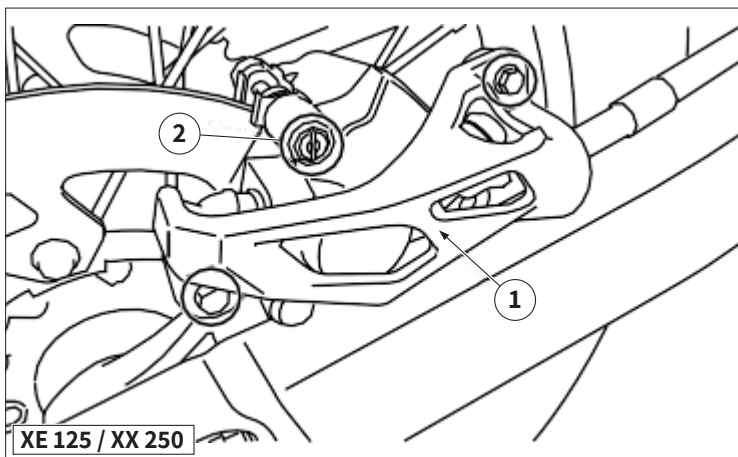
 **Bolt (brake caliper):**
28 Nm (2.8 m•kg, 20 ft•lb)

 **Brake pad pin:**
17 Nm (1.7 m•kg, 13 ft•lb)

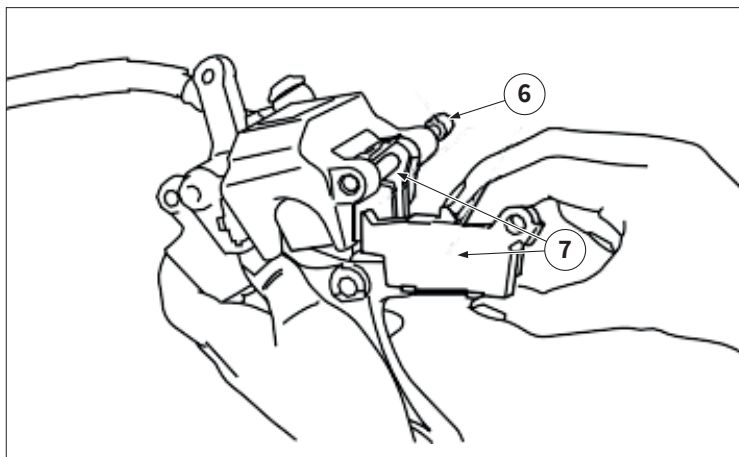


4.11.2 Replace the rear brake pads

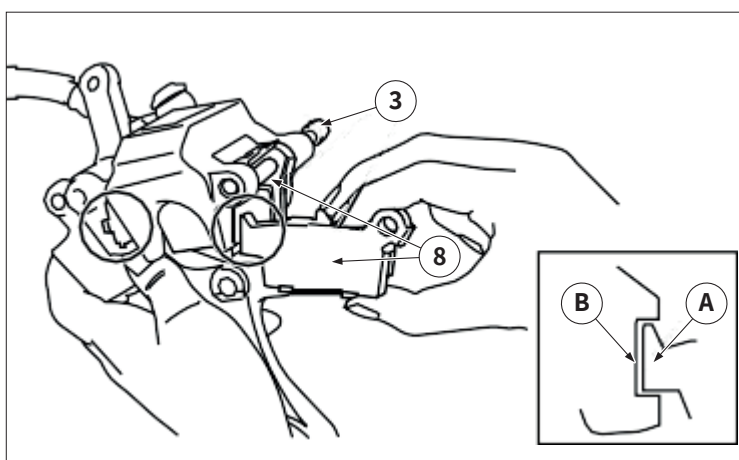
- Remove the protection “1” and the pad pin plug “2”;



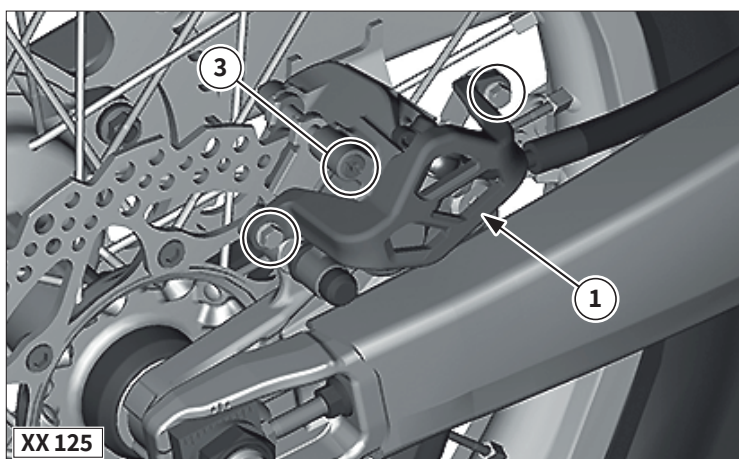
- Loosen the pad pin “3”, remove the rear wheel “4” and the brake calliper “5”;



- Remove the pad pin “6” and brake pads “7”;

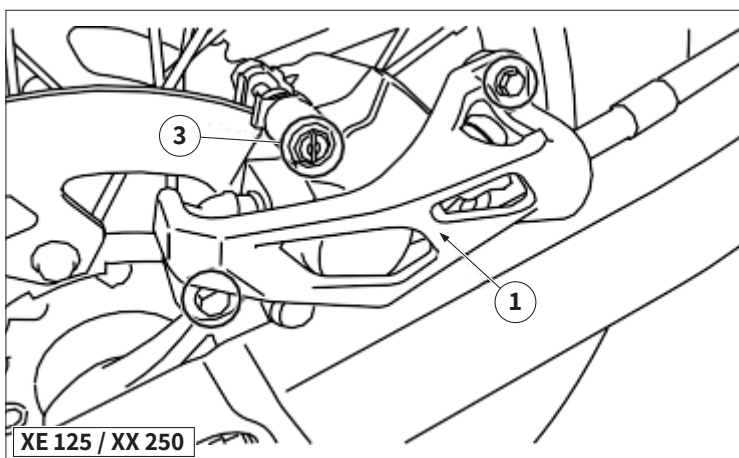


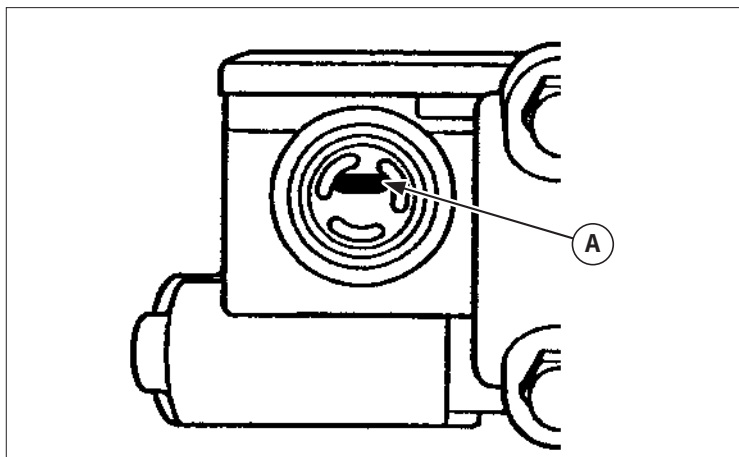
- Install the brake pads “8” with the relative protrusions “A” in the recesses “B” of the brake caliper. Temporarily tighten the pads pin “3”.



- Install the brake caliper “5” and rear wheel “4”. Tighten the pad pin “3” and install the pad pin plug. Install the protector “1”.

- 🔧 **Brake pad pin:**
17 Nm (1.7 m•kg, 13 ft•lb)
- 🔧 **Brake pad pin plug:**
2.5 Nm (0.25 m•kg, 1.8 ft•lb)
- 🔧 **Rear brake caliper protector bolt:**
7 Nm (0.7 m•kg, 5.2 ft•lb)





4.12 BRAKE FLUID

4.12.1 Check the front brake fluid level

9. Stand the vehicle upright on a level surface.

(i) In order to ensure a correct reading of the brake fluid level, make sure that the top of the brake fluid reservoir is horizontal.

10. Check:

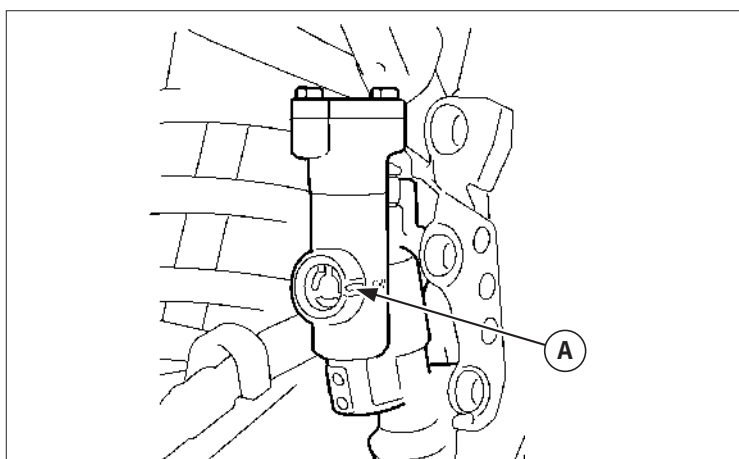
- Brake fluid level
The minimum level mark "A" or below: add DOT4 brake fluid.

⚠ Use only the designated brake fluid. Other brake fluids may cause the rubber seals to deteriorate, causing leakage and poor brake performance.

⚠ Refill with the same type of brake fluid that is already in the system. Mixing brake fluids may result in a harmful chemical reaction, leading to poor brake performance.

⚠ When refilling, be careful that water does not enter the brake fluid reservoir. Water will significantly lower the boiling point of the brake fluid and could cause vapor lock.

⚠ Brake fluid may damage painted surfaces and plastic parts. Therefore, always clean up any spilt brake fluid immediately.



4.12.2 Check the rear brake fluid level

11. Stand the vehicle upright on a level surface.

(i) In order to ensure a correct reading of the brake fluid level, make sure that the top of the brake fluid reservoir is horizontal.

12. Check:

- Brake fluid level
The minimum level mark "A" or below: add DOT4 brake fluid.
- Use a syringe with a hose to facilitate topping up.

⚠ Use only the designated brake fluid. Other brake fluids may cause the rubber seals to deteriorate, causing leakage and poor brake performance.

⚠ Refill with the same type of brake fluid that is already in the system. Mixing brake fluids may result in a harmful chemical reaction, leading to poor brake performance.

⚠ When refilling, be careful that water does not enter the brake fluid reservoir. Water will significantly lower the boiling point of the brake fluid and could cause vapor lock.

⚠ Brake fluid may damage painted surfaces and plastic parts. Therefore, always clean up any spilt brake fluid immediately.

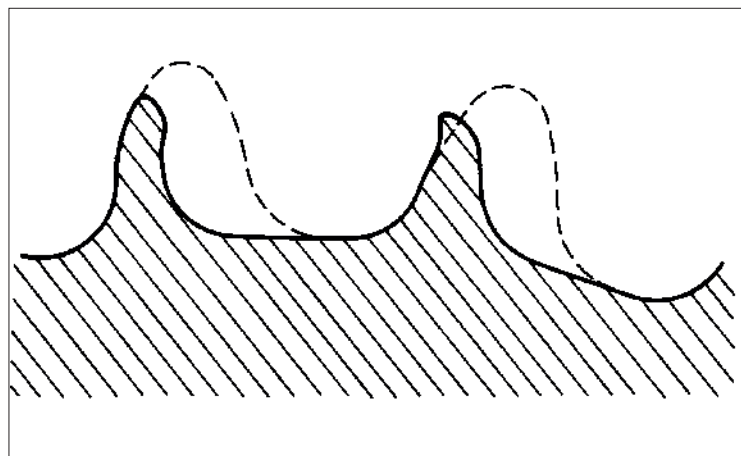
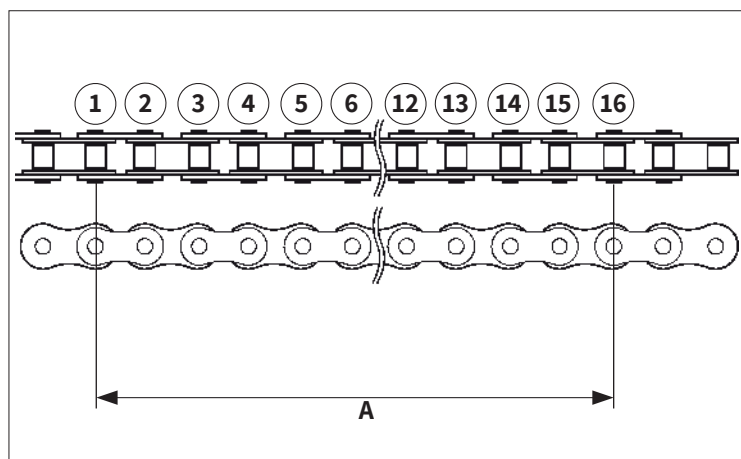


4.13 TYRES

- Check the tire while it's cold;

Model/version	Front tyre standard pressure	Rear tyre standard pressure
XX 125 XE 125 with race use configuration XX 250	100 kPa (1.00 kgf/cm ² , 15 psi)	100 kPa (1.00 kgf/cm ² , 15 psi)
XE 125 with road use configuration	200 kPa (2.00 kgf/cm ² , 29 psi)	220 kPa (2.20 kgf/cm ² , 32 psi)

- Loose bead stoppers allow the tire to slip off its position on the rim when the tire pressure is low;
- A tilted tire valve stem indicates that the tire slips off its position on the rim;
- If the tire valve stem is found tilted, the tire is considered to be slipping off its position. Correct the tire position.



4.14 CHAIN, CROWN AND SPROCKET

4.14.1 Chain check

- Measure the length of 15 joints “A” of the transmission chain, if the length “A” is longer than the service limit, replace the chain.

i While measuring the drive chain length, push down on the drive chain to increase its tension.

i Measure the length between drive chain roller “1” and “16” as shown.

! Perform this measurement at two or three different places.

✂ Service limit (XE 125 version):
239.3 mm (9.420 in)

✂ Service limit (XX 125 / XX 250 versions):
242.9 mm (9.560 in)

4.14.2 Pinion and crown check

- Check the pinion and crown teeth. If they are damaged and/or excessively worn, replace them.

! Always replace chain, rim and pinion all together. This will ensure uniform wear of the components and a longer service life of the components.

4.15 CLEANING AND VEHICLE STORAGE

Frequent cleaning of your machine will enhance its appearance, maintain good overall performance, and extend the life of many components.

13. Before washing the machine, block off the end of the exhaust pipe to prevent water from entering. A plastic bag secured with a rubber band may be used for this purpose.
14. If the engine is excessively greasy, apply some degreaser to it with a paint brush. Do not apply degreaser to the chain, sprockets, or wheel axles.
15. Rinse the dirt and degreaser off with a garden hose; use only enough pressure to do the job.

 **Do not use high-pressure washers or steam-jet cleaners since they cause water seepage and deterioration seals.**

16. After the majority of the dirt has been hosed off, wash all surfaces with warm water and a mild detergent. Use an old toothbrush to clean hard-to-reach places.
17. Rinse the machine off immediately with clean water, and dry all surfaces with a soft towel or cloth.
18. Immediately after washing, remove excess water from the chain with a paper towel and lubricate the chain to prevent rust.
19. Clean the seat with a vinyl upholstery cleaner to keep the cover pliable and glossy.
20. Automotive wax may be applied to all painted or chromed surfaces. Avoid combination cleaner waxes, as they may contain abrasives.
21. After completing the above, start the engine and allow it to idle for several minutes.

4.16 LONG TIME VEHICLE INACTIVITY

 **If your machine is to be stored for 60 days or more, some preventive measures must be taken to avoid deterioration.**

After cleaning the machine thoroughly, prepare it for storage as follows:

1. Drain the fuel tank, fuel lines, and the carburettor float bowl.
2. Remove the spark plug, pour a tablespoon of motor oil in the spark plug hole, and reinstall the plug. With the engine stop switch pushed in, kick the engine over several times to coat the cylinder walls with oil.
3. Remove the drive chain, clean it thoroughly with solvent, and lubricate it. Reinstall the chain or store it in a plastic bag tied to the frame.
4. Lubricate all control cables.
5. Block the frame up to raise the wheels off the ground.
6. Tie a plastic bag over the exhaust pipe outlet to prevent moisture from entering.
7. If the machine is to be stored in a humid or salt-air environment, coat all exposed metal surfaces with a film of light oil. Do not apply oil to rubber parts or the seat cover.

 **Make any necessary repairs before the machine is stored.**

5.1 INTRODUCTION

The vehicle covered by this manual is designed to achieve maximum performance. Versions approved for use on public roads have performance limits. Any modification to vehicles approved for use on public roads will be considered by Fantic to increase performance.

Vehicles approved for use on public roads that remain in a condition of conformity may be covered by the FANTIC 24 MONTHS COMMERCIAL WARRANTY (see conditions described below).

Vehicles not approved for use on public roads, or vehicles approved but subsequently modified with original Fantic components, are intended for use to achieve maximum performance which cannot be covered by the legal warranty. In these cases, Fantic will provide a 3 MONTH OFF-ROAD FANTIC COMMERCIAL WARRANTY (see conditions described below).

Modello	Fantic commercial warranty duration
XX 125	3 mesi
XE 125 (approved configuration)	24 mesi
XE 125 (with original Fantic racing kit)	3 mesi
XX 250	3 mesi

 **The dealer is responsible for activating the FANTIC MOTOR warranty within one week of sale and/or registration.**

 **Failure or improper activation of the warranty will result in loss of warranty coverage on the vehicle.**

5.2 24 MONTH FANTIC COMMERCIAL WARRANTY

Fantic Motor S.p.A., although it is not the final seller to the consumer, intends to support the final seller's responsibilities with its own warranty called Fantic Conventional Warranty, provided through its authorised technical assistance network under the conditions set out below. This warranty is in addition to and does not affect the rights of the purchaser under the laws of the territory in which the purchase took place (in the European territory in compliance with EU Directive n 2019/771).

1. Warranty content

- 1,1. Fantic warrants the quality, the absence of defects and the proper operation of its products and undertakes to eliminate any design or manufacturing defects.
- 1,2. This commercial warranty covers all the products in the official Fantic lists sold in the territory of the European Union and in countries where there is an official Fantic distributor of the warranted product (see <https://fantic.com>).
- 1,3. Commencement and Duration
 - 1.3.1. The warranty begins on the date of purchase.
 - Spare parts are guaranteed for 24 months from the date of invoice of Fantic to the first purchaser.
 - 1.3.2. Replacement of parts under warranty extends the warranty period of the replaced part by 12 months.
 - 1.3.3. However, repairs carried out under warranty shall not entitle the customer to:
 - Extensions or renewals of the warranty on the entire product.
 - An alternate means of transportation for the period of the repair.
 - Reimbursement of costs to bring the product to the service centre.
- 1,4. Parts replaced under warranty will remain the property of Fantic.
- 1,5. Fantic reserves the right to provide components under warranty that are different from the defective ones but with the same functional characteristics.

2. Effectiveness

- 2,1. The customer must be in possession of the proof of purchase: invoice or receipt showing the date of purchase and vehicle identification data (frame serial number or VIN).
- 2,2. The warranty and the respective conditions may be transferred to any subsequent purchasers. The warranty period is in any case calculated from the date of the first purchase. The end buyer will be responsible for acquiring proof of the first purchase from the previous owner and checking with their seller to see if the product qualifies for Fantic commercial warranty benefits.
- 2,3. The first start-up of the product must be carried out by a Fantic dealer.
- 2,4. The Commercial warranty expires under the following conditions:
 - Incorrect use of the product not in accordance with the instructions or use not in accordance with the purposes for which the product was designed.
 - Use in races or sporting competitions or for commercial purposes (e.g. rental).
 - Tampering or incorrect adjustments or repairs carried out on the product by personnel not authorised by Fantic.
 - Use of spare parts or accessories not original or not recommended by Fantic.
 - Regular maintenance (if required) has not been carried out by a Fantic Service Centre.
 - If product serial numbers (or VIN) have been removed or tampered with from the product.
- 2,5. During the warranty period, the customer must report the non-conformity within 2 (two) months from the date of its discovery. The action shall be terminated if, after this period, the right is not exercised.
- 2,6. To access the warranty, the user must be able to show the Authorised Service Centre the relevant tax documentation proving the date of purchase.
- 2,7. The commercial warranty is not valid if the product is located outside the European Union or in a country where there is no official Fantic distributor of the warranted product (see <https://fantic.com>).

3. Exclusions

- 3,1. The following are excluded from this warranty:
 - Routine maintenance
 - Malfunctions due to normal wear and tear (tyres, inner tube, chain, brake discs, brake pads, rubber parts, etc.).
 - Rust, oxidation and degradation.
 - Damage due to the use of liquids containing impurities/debris capable of damaging its components.
 - Damage due to forced or prolonged interruption of operation.
 - Noise, vibrations or deterioration that do not affect the functionality and driveability of the vehicle.
 - Slight seepage of liquids from seals or oil seals that do not alter the required levels.

- Non-conformity of the product with respect to specifications requested by the customer, accepted by the seller, but not foreseen by the normal use of the vehicle and/or not conforming to the purposes for which the product was designed.
- Indirect costs incurred (breakdown assistance, replacement rental vehicle, etc.) and/or economic disadvantages suffered (loss of use, loss of earnings, loss of time, etc.) as a result of a product defect within the guarantee period.

4. Disputes

The Court of Treviso shall have jurisdiction for any legal action. The pending legal action does not exempt the client from payment obligations.

Intervention request

If a fault should occur with your vehicle, contact your FANTIC MOTOR dealer which, after ensuring that the part or parts causing the fault are covered by the dedicated warranty, will report the problem to the FANTIC MOTOR After-Sales Service requesting authorisation to carry out warranty work.

No warranty service may be carried out without prior authorisation.

5.3 3 MONTH OFF-ROAD FANTIC COMMERCIAL WARRANTY

Fantic Motor S.p.A., although it is not the final seller to the consumer, intends to support the final seller's responsibilities with its own warranty called Off-Road Fantic Commercial Warranty, provided through its authorised technical assistance network under the conditions set out below. This warranty is in addition to and does not affect the rights of the purchaser under the laws of the territory in which the purchase took place (in the European territory in compliance with EU Directive n 2019/771).

5. Warranty content

- 5,1. Fantic warrants the quality, the absence of defects and the proper operation of its products and undertakes to eliminate any design or manufacturing defects.
 - 5.1.1. This commercial guarantee covers all products which are not approved for use on public roads, or vehicles which are approved but subsequently modified with original Fantic components, sold within the European Union and in countries where there is an official Fantic distributor of the warranted product (see <http://fantic.com>).
 - 5.1.2. This commercial warranty covers all vehicle components that have not been subjected to severe conditions of use searching for performance.
- 5,2. Commencement and Duration
 - 5.2.1. The warranty begins on the date of purchase.
 - The duration of the guarantee is 3 months.
 - 5.2.2. Replacement of parts under warranty extends the warranty period of the replaced part by 3 months.
 - 5.2.3. However, repairs carried out under warranty shall not entitle the customer to:
 - Extensions or renewals of the warranty on the entire product.
 - An alternate means of transportation for the period of the repair.
 - Reimbursement of costs to bring the product to the service centre.
- 5,3. Parts replaced under warranty will remain the property of Fantic.
- 5,4. Fantic reserves the right to provide components under warranty that are different from the defective ones but with the same functional characteristics.

6. Effectiveness

- 6,1. The customer must be in possession of the proof of purchase: invoice or receipt showing the date of purchase and vehicle identification data (frame serial number or VIN).
- 6,2. The warranty and the respective conditions may be transferred to any subsequent purchasers. The warranty period is in any case calculated from the date of the first purchase. The end buyer will be responsible for acquiring proof of the first purchase from the previous owner and checking with their seller to see if the product qualifies for Fantic commercial warranty benefits.
- 6,3. The first start-up of the product must be carried out by a Fantic dealer.
- 6,4. The Commercial warranty expires under the following conditions:
 - Incorrect use of the product not in accordance with the instructions or use not in accordance with the purposes for which the product was designed.
 - Tampering or incorrect adjustments or repairs carried out on the product by personnel not authorised by Fantic.
 - Use of spare parts or accessories not original or not recommended by Fantic.
 - Regular maintenance (if required) has not been carried out by a Fantic Service Centre.
 - If product serial numbers (or VIN) have been removed or tampered with from the product.
- 6,5. During the warranty period, the customer must report the non-conformity within 15 (fifteen) days from the date of its discovery. The action shall be terminated if, after this period, the right is not exercised.
- 6,6. To access the warranty, the user must be able to show the Authorised Service Centre the relevant tax documentation proving the date of purchase.
- 6,7. The commercial warranty is not valid if the product is located outside the European Union or in a country where there is no official Fantic distributor of the warranted product (see <https://fantic.com>).

7. Exclusions

- Routine maintenance
- Malfunctions due to normal wear and tear (tyres, inner tube, chain, brake discs, brake pads, rubber parts, etc.).
- Rust, oxidation and degradation.
- Damage due to the use of liquids containing impurities/debris capable of damaging its components.
- Noise, vibrations or deterioration that do not affect the functionality and driveability of the vehicle.
- Slight seepage of liquids from seals or oil seals that do not alter the required levels.
- Non-conformity of the product with respect to specifications requested by the customer, accepted by the

seller, but not foreseen by the normal use of the vehicle and/or not conforming to the purposes for which the product was designed.

- Indirect costs incurred (breakdown assistance, replacement rental vehicle, etc.) and/or economic disadvantages suffered (loss of use, loss of earnings, loss of time, etc.) as a result of a product defect within the guarantee period.

8. Disputes

The Court of Treviso shall have jurisdiction for any legal action. The pending legal action does not exempt the client from payment obligations.

Intervention request

If a fault should occur with your vehicle, contact your FANTIC MOTOR dealer which, after ensuring that the part or parts causing the fault are covered by the dedicated warranty, will report the problem to the FANTIC MOTOR After-Sales Service requesting authorisation to carry out warranty work.

No warranty service may be carried out without prior authorisation.

5.4 WARNINGS FOR MAINTENANCE AND CARE

The purchaser is responsible for ensuring that maintenance work is carried out at the prescribed intervals and documented by means of completed, stamped and proof of purchase receipts.

- Always inspect your motorcycle before each use. This check is especially important for your safety.
- Before starting maintenance work, allow the motorcycle to cool down to avoid burns.
- Self-locking nuts once removed must be replaced by new nuts.
- When removing bolts and nuts secured with threadlocking fluid, these must be refitted and secured in the same way.
- When washing the motorbike, do not use a high-pressure cleaner, as the water may penetrate into the bearings, carburettor, electrical connectors, etc.
- Dispose of oils, grease, filters, fuel, detergents, brake fluid, etc. in a regular manner, observing the regulations in your country. Also observe the safety regulations on the handling of these substances. Under no circumstances should used oil be dispersed into the sewer system or the environment.

5.5 VEHICLE WARRANTY DATA**VEHICLE DATA**

Vehicle Type (PRODUCT CODE)

Engine Type (DISPLACEMENT)

VEHICLE IDENTIFICATION NUMBER (V.I.N.)

ENGINE NUMBER

INVOICE DATE AND NUMBER

FIRST REGISTRATION DATE

REGISTRATION PLATE NUMBER

USER DATA

Name and Surname (or Business Name)

Address

Zip Code - City - Country

Phone Number

E-Mail Address

Variation of User name/address

 **Keep the data in this handbook up to date. Fill in any changes of address or change of user or owner of the vehicle.**

 **If all the spaces are already used, ask your Dealer for a new Warranty Manual.
Filled and verified before the delivery of the vehicle by:**

Date

Sign for Acceptance

STAMP OF THE DEALER

5.6 SERVICE

Registration of service

⚠ Give the handbook to your dealer at each service.

⚠ It is the responsibility of the user to inform the Dealer of any maintenance carried out so that it is not repeated unnecessarily.

Next service			
1 Dealer's stamp			
Hours		Date	
Invoice No.			
Routine maintenance	☐	Main maintenance	☐
Spark plug	☐	Air filter	☐

Next service			
2 Dealer's stamp			
Hours		Date	
Invoice No.			
Routine maintenance	☐	Main maintenance	☐
Spark plug	☐	Air filter	☐

Next service			
3 Dealer's stamp			
Hours		Date	
Invoice No.			
Routine maintenance	☐	Main maintenance	☐
Spark plug	☐	Air filter	☐

Next service	
4 Dealer's stamp	
Hours	Date
Invoice No.	
Routine maintenance	☐
Main maintenance	☐
Spark plug	☐
Air filter	☐

Next service	
5 Dealer's stamp	
Hours	Date
Invoice No.	
Routine maintenance	☐
Main maintenance	☐
Spark plug	☐
Air filter	☐

Next service	
6 Dealer's stamp	
Hours	Date
Invoice No.	
Routine maintenance	☐
Main maintenance	☐
Spark plug	☐
Air filter	☐

Next service	
7 Dealer's stamp	
Hours	Date
Invoice No.	
Routine maintenance	☐
Main maintenance	☐
Spark plug	☐
Air filter	☐

Next service	
8 Dealer's stamp	
Hours	Date
Invoice No.	
Routine maintenance ☐	Main maintenance ☐
Spark plug ☐	Air filter ☐

Next service	
9 Dealer's stamp	
Hours	Date
Invoice No.	
Routine maintenance ☐	Main maintenance ☐
Spark plug ☐	Air filter ☐

Next service	
10 Dealer's stamp	
Hours	Date
Invoice No.	
Routine maintenance ☐	Main maintenance ☐
Spark plug ☐	Air filter ☐

Next service	
11 Dealer's stamp	
Hours	Date
Invoice No.	
Routine maintenance ☐	Main maintenance ☐
Spark plug ☐	Air filter ☐

Next service	
12 Dealer's stamp	
Hours	Date
Invoice No.	
Routine maintenance ☐	Main maintenance ☐
Spark plug ☐	Air filter ☐

Next service	
13 Dealer's stamp	
Hours	Date
Invoice No.	
Routine maintenance ☐	Main maintenance ☐
Spark plug ☐	Air filter ☐

Next service	
14 Dealer's stamp	
Hours	Date
Invoice No.	
Routine maintenance ☐	Main maintenance ☐
Spark plug ☐	Air filter ☐

Next service	
15 Dealer's stamp	
Hours	Date
Invoice No.	
Routine maintenance ☐	Main maintenance ☐
Spark plug ☐	Air filter ☐