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

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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.

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.

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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.

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.**

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.

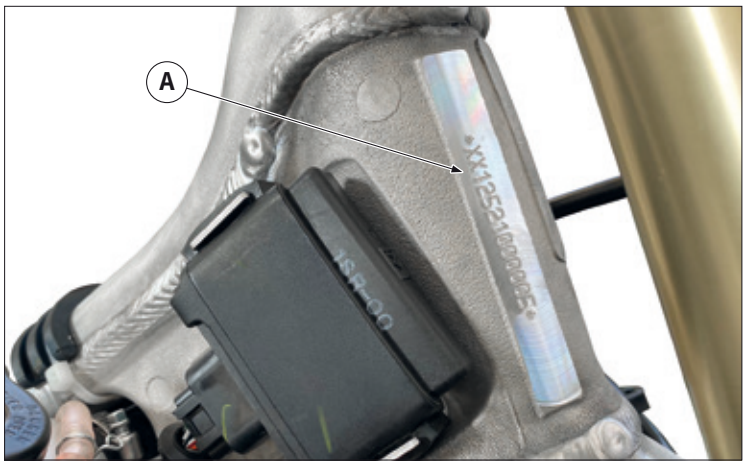
Getting off

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.Qui di seguito vengono elencati alcuni consigli sulla sicurezza al fine di evitare danni a persone e/o cose e per utilizzare il proprio veicolo con una guida più tranquilla e sicura.**

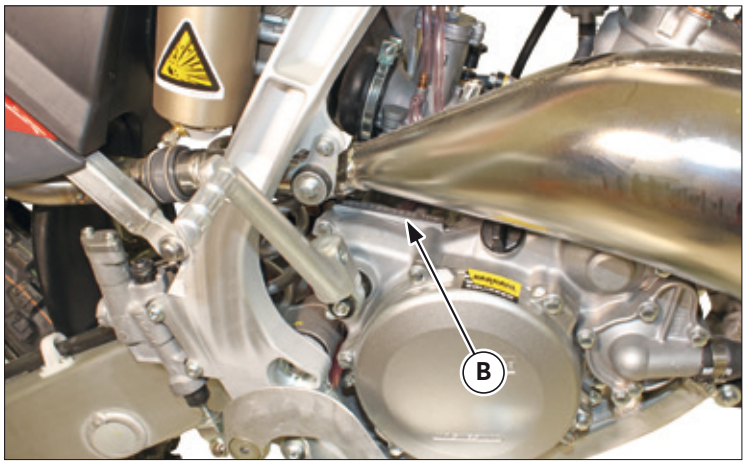


Fantic Motor vehicles are equipped with frame and engine identification numbers.

ⓘ **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

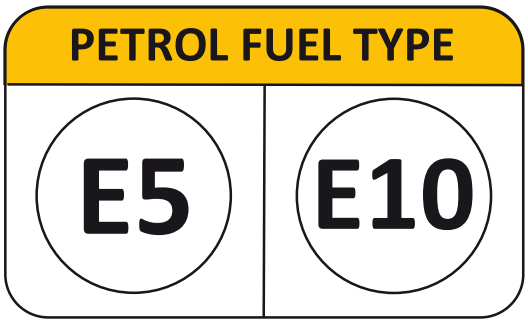
The engine number “B” is punched on the right side of the engine crankcase.

1.6 LOCATION OF IMPORTANT LABELS

1. Pressurised gas hazard label
2. Usable petrol quality label
3. Chassis number punching
4. Vehicle data plate
5. “Choke” symbol
6. Tyre pressure label

1

2



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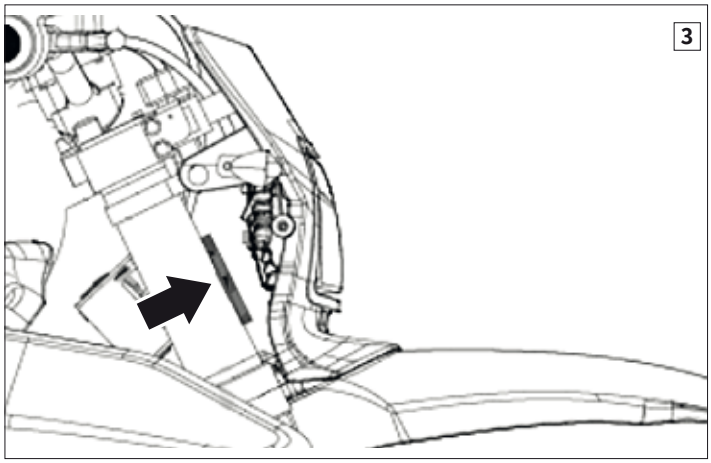

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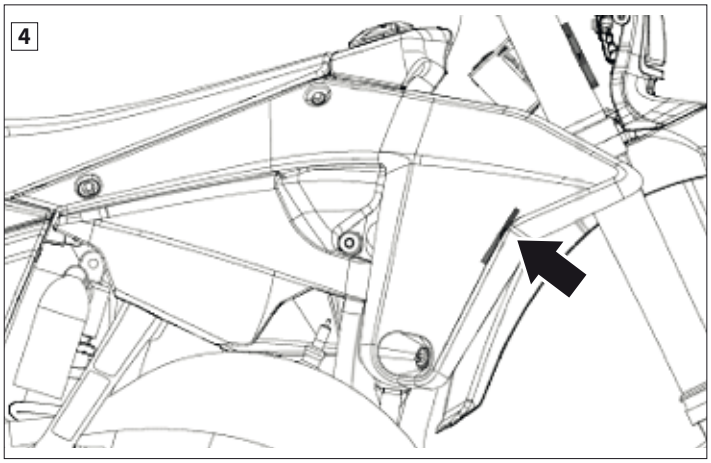

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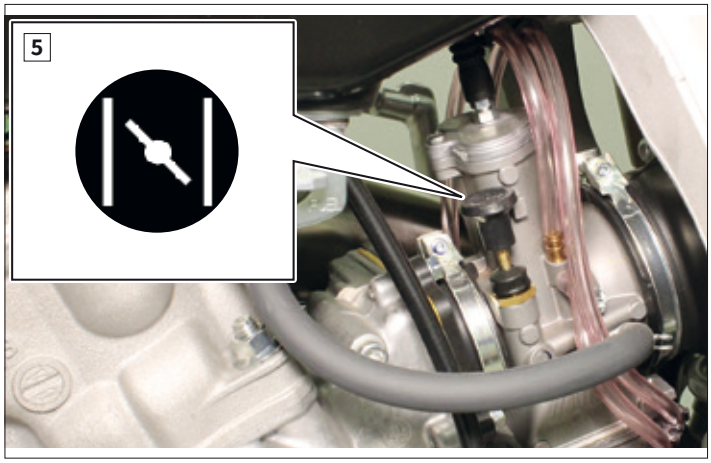


6

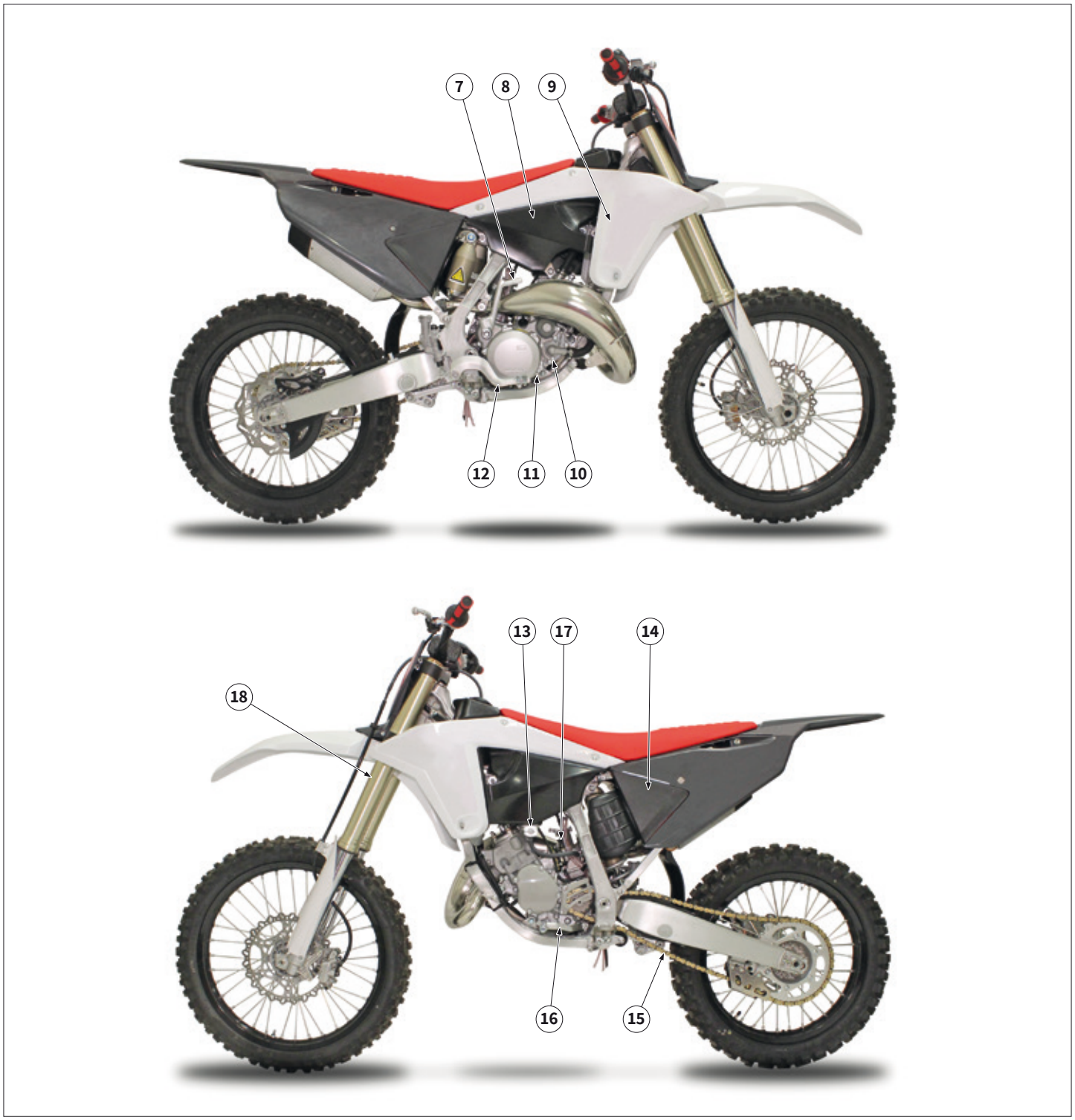
FANTIC		PRESSURE [kPa]	
AXLE	SIZE	ON-ROAD USE	OFF-ROAD USE
Front	90/90-21	200	100
	80/100-21	200	100
Rear	120/90-18	220	100
	140/80-18	220	100

1.7 VEHICLE COMPONENT LOCATION

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

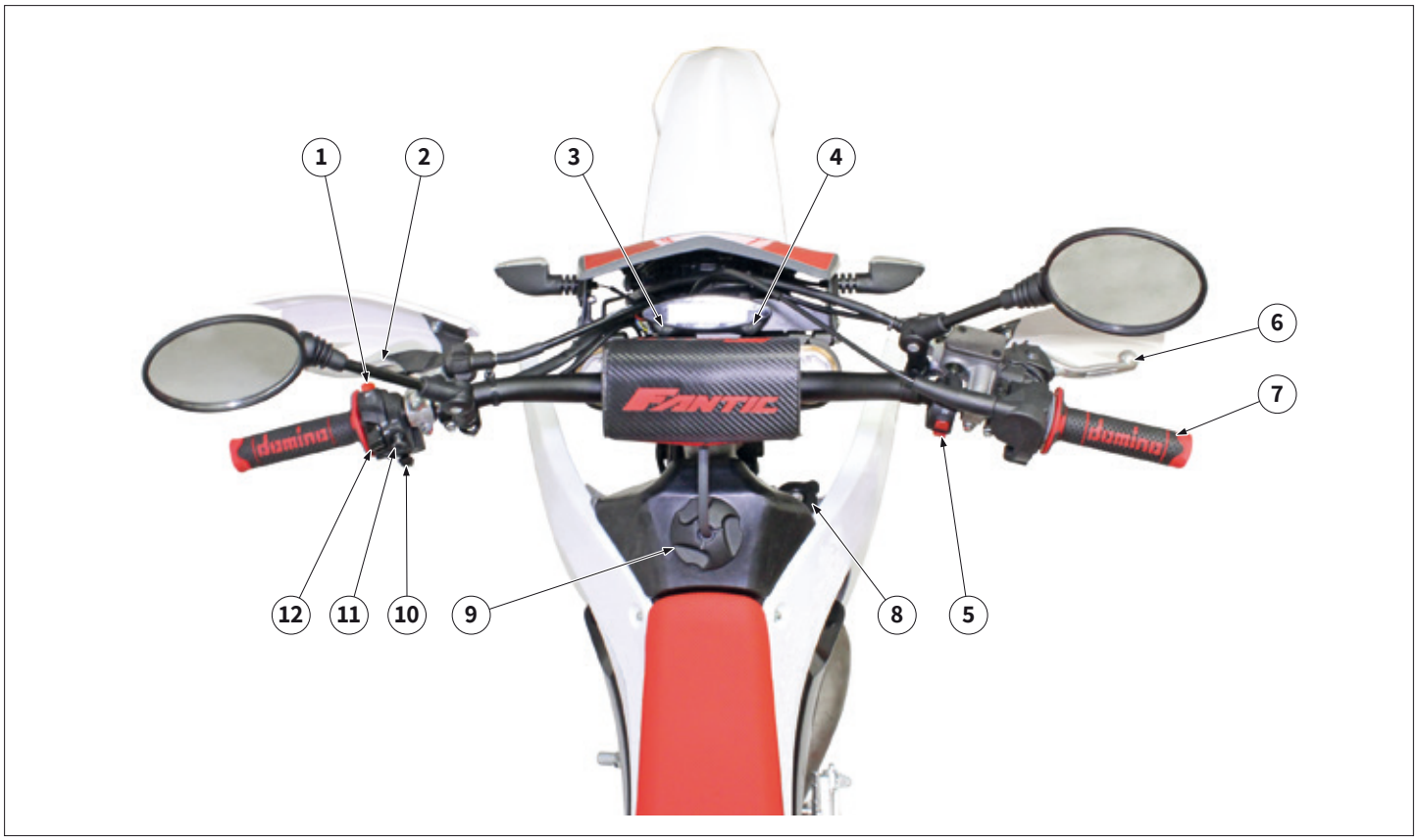
Right and left side components (XX 125 version)



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

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

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

Right and left side components (XE 125 version)

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

1.8 TECHNICAL DATA

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	2265 mm (89,2 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	965 mm (38.0 in)
Wheelbase:	
XX 125	1445 mm (56,9 in)
XE 125	1485 mm (58,5 in)
Minimum ground clearance:	
XX 125	365 mm (14.37 in)
XE 125	320 mm (13.78 in)
Weight in running order:	
XX 125	95 kg (209,4 lb)
XE 125	100 kg (220,5 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)
Curb weight:	
XX 125	94 kg (207 lb)
XE 125	95 kg (209 lb)
Engine type	Liquid cooled 2-stroke, gasoline
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	8.6–10.7:1
XE 125	7.4–8.8:1
Starting system	Kickstarter
Lubrication system	Premix (33:1)
Mixture oil	Bardahl KGR Injection Plus (API TC / JASO FD / ISO-L-EGD)
Transmission oil:	
Recommended type	Bardahl GearBox 10W-40 (API SL / JASO MA MA2)
Periodic oil change	0.66 L (0.58 Imp qt, 0.70 US qt)
Total amount	0.70 L (0.62 Imp qt, 0.74 US qt)
Coolant liquid:	
Coolant capacity (including all routes)	0.90 L (0.79 Imp qt, 0.95 US qt)

Technical data	Value(s)
Air filter oil	Bardahl Air Filter Special Oil
Brake oil	Bardahl Synthetic Brake Fluid DOT 4
Air filter	Wet element
Fuel:	
Type	Premium unleaded gasoline only
Tank capacity	9.0 L (1.98 Imp gal, 2.38 US gal)
Reserve amount (XE 125)	2.0 L (0.44 Imp gal, 0.53 US gal)
Carburetor: Type/Manufacturer	TMX χ 38SS/MIKUNI
Spark plug:	
Type/Manufacturer	BR9EVX/NGK (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	3.692 (48/13)
XE 125	3.538 (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	1.200 (24/20)
6a	1.095 (23/21)
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 Dunlop Geomax MX
Rear	100/90-19 Dunlpo Geomax MX
Front/rear inflation pressure	1 bar (100 kPa ± 10) (15 PSI)
Wheels (XE 125, original equipment):	
Front	90/90-21 Dunlop Geomax EN91F
Rear	120/90-18 Dunlop Geomax EN91
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)

Technical data	Value(s)
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
Turn signals (XE 125 version only)	12 V - 6 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	5 A
Electrical wiring fuse	7,5 A

1.9 TIGHTENING TORQUES

Tightening torque tables (version XX 125)

Engine

ⓘ **"◊" = 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 Nm (2.0 m•kg, 14 ft•lb)	
Cylinder head (nut)	M8	5	28 Nm (2.8 m•kg, 20 ft•lb)	Copper washer
Cylinder head (stud)	M8	5	13 Nm (1.3 m•kg, 9.4 ft•lb)	
Cylinder (nut)	M8	4	30 Nm (3.0 m•kg, 22 ft•lb)	
Cylinder (stud)	M10	4	13 Nm (1.3 m•kg, 9.4 ft•lb)	
Power valve: Cover	M5	4	5 Nm (0.5 m•kg, 3.6 ft•lb)	YPVS
Power valve: Link lever	M4	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	YPVS
Power valve Holder	M5	4	8 Nm (0.8 m•kg, 5.8 ft•lb)	YPVS
Power valve: Push rod	M5	1	5 Nm (0.5 m•kg, 3.6 ft•lb)	YPVS
Power valve: Thrust plate	M5	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	YPVS
Power valve: Governor fork	M4	2	5 Nm (0.5 m•kg, 3.6 ft•lb)	YPVS
Power valve: Housing	M5	3	4 Nm (0.4 m•kg, 2.9 ft•lb)	YPVS
Water pump housing cover	M6	4	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Coolant drain bolt	M6	1	10 Nm (1.0 m•kg, 7.2 ft•lb)	Copper washer
Radiator	M6	6	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Radiator guard	M6	2	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Radiator hose clamp	M6	8	2 Nm (0.2 m•kg, 1.4 ft•lb)	
Air filter element	M6	1	2 Nm (0.2 m•kg, 1.4 ft•lb)	
Carburetor joint	M6	4	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Carburetor joint clamp	M4	1	2 Nm (0.2 m•kg, 1.4 ft•lb)	
Air filter joint clamp	M4	1	2 Nm (0.2 m•kg, 1.4 ft•lb)	
Air filter guide clamp	M5	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Reed valve	M3	6	1 Nm (0.1 m•kg, 0.7 ft•lb)	
Throttle cable adjust bolt and locknut	M8	1	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Throttle cable	M6	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Crankcase	M6	12	14 Nm (1.4 m•kg, 10 ft•lb)	
Right crankcase cover	M6	8	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Left crankcase cover	M6	4	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Drive chain sprocket cover	M6	2	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Bearing plate cover	M6	4	10 Nm (1.0 m•kg, 7.2 ft•lb)	LT
Holder	M6	1	10 Nm (1.0 m•kg, 7.2 ft•lb)	LT
Oil check bolt	M6	1	10 Nm (1.0 m•kg, 7.2 ft•lb)	Copper washer
Oil drain bolt	M10	1	20 Nm (2.0 m•kg, 14 ft•lb)	Copper washer
Kickstarter lever	M6	1	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Clutch cover	M6	6	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Primary drive gear	M8	1	48 Nm (4.8 m•kg, 35 ft•lb)	
Clutch boss	M16	1	80 Nm (8.0 m•kg, 58 ft•lb)	Lock washer
Clutch spring	M6	5	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Clutch cable adjust bolt and locknut	M6	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Drive sprocket	M18	1	75 Nm (7.5 m•kg, 54 ft•lb)	Lock washer
Shift pedal	M6	1	12 Nm (1.2 m•kg, 8.7 ft•lb)	

Item	Thread size	Quantity	Tightening torque	Remarks
Bearing plate cover (shift cam)	M6	2	10 Nm (1.0 m•kg, 7.2 ft•lb)	LT
Shift guide	M6	2	10 Nm (1.0 m•kg, 7.2 ft•lb)	LT
Stopper lever	M6	1	10 Nm (1.0 m•kg, 7.2 ft•lb)	LT
Segment	M8	1	30 Nm (3.0 m•kg, 22 ft•lb)	
Exhaust pipe ◊	M6	2	12 Nm (1.2 m•kg, 8.7 ft•lb)	
Exhaust pipe stay (front) ◊	M6	1	12 Nm (1.2 m•kg, 8.7 ft•lb)	
Exhaust pipe stay (rear) ◊	M6	1	12 Nm (1.2 m•kg,8.7 ft•lb)	
Silencer and frame ◊	M6	1	12 Nm (1.2 m•kg, 8.7 ft•lb)	
Silencer Fiber	M6	4	10 Nm (1.0 m•kg, 7.2 ft•lb)	

Chassis

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

Item	Thread size	Quantity	Tightening torque	Remarks
Upper bracket and outer tube ◊	M8	4	21 Nm (2.1 m•kg, 15 ft•lb)	
Lower bracket and outer tube ◊	M8	4	21 Nm (2.1 m•kg, 15 ft•lb)	
Upper bracket and steering stem ◊	M24	1	145 Nm (14.5 m•kg, 105 ft•lb)	
Upper handlebar holder ◊	M8	4	28 Nm (2.8 m•kg,20 ft•lb)	
Lower handlebar holder ◊	M12	2	40 Nm (4.0 m•kg, 29 ft•lb)	
Steering ring nut (sequence): ◊ – Initial ring nut tightening – Loosen the ring nut by one turn – Final ring nut tightening	M28	1	 38 Nm (3.8 m•kg, 27 ft•lb) 7 Nm (0.7 m•kg, 5.1 ft•lb)	
Front fork and damper assembly	M51	2	30 Nm (3.0 m•kg, 22 ft•lb)	
Front fork and adjuster	M22	2	55 Nm (5.5 m•kg, 40 ft•lb)	Copper washer LT
Damper assembly and base valve	M42	2	29 Nm (2.9 m•kg, 21 ft•lb)	
Adjuster and damper assembly	M12	2	29 Nm (2.9 m•kg, 21 ft•lb)	
Bleed screw (front fork) and base valve	M5	2	1 Nm (0.1 m•kg, 0.7 ft•lb)	
Front fork and front fork protector ◊	M6	6	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Cable guide (front brake hose) and lower bracket ◊	M6	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Front fork protector and brake hose holder ◊	M6	2	8 Nm (0.8 m•kg, 5.8 ft•lb)	
Throttle cable cap	M4	2	0.5 Nm (0.05 m•kg, 0.36 ft•lb)	
Front brake master cylinder and bracket ◊	M6	2	9 Nm (0.9 m•kg, 6.5 ft•lb)	
Brake lever mounting bolt	M6	1	6 Nm (0.6 m•kg, 4.3 ft•lb)	
Brake lever mounting nut	M6	1	6 Nm (0.6 m•kg, 4.3 ft•lb)	
Brake lever position locknut	M6	1	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Clutch lever mounting nut	M6	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Clutch lever holder	M6	2	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Clutch lever position nut	M5	1	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Front brake master cylinder cap	M4	2	2 Nm (0.2 m•kg, 1.4 ft•lb)	
Front brake hose union bolt (brake master cylinder) ◊	M10	1	30 Nm (3.0 m•kg, 22 ft•lb)	Copper washer
Front brake hose union bolt (caliper) ◊	M10	1	30 Nm (3.0 m•kg, 22 ft•lb)	Copper washer
Front brake caliper and front fork ◊	M8	2	28 Nm (2.8 m•kg, 20 ft•lb)	
Grip cap upper and lower	M6	2	4 Nm (0.4 m•kg, 2.9 ft•lb)	

Item	Thread size	Quantity	Tightening torque	Remarks
Engine stop switch screw	M3	1	0.5 Nm (0.05 m•kg, 0.36 ft•lb)	
Brake caliper (front and rear) and pad pin plug	M10	2	3 Nm (0.3 m•kg, 2.2 ft•lb)	
Brake caliper (front and rear) and pad pin ◊	M10	2	18 Nm (1.8 m•kg, 13 ft•lb)	
Brake caliper (front and rear) and bleed screw ◊	M8	2	6 Nm (0.6 m•kg, 4.3 ft•lb)	
Front wheel axle and axle nut ◊	M16	1	105 Nm (10.5 m•kg, 75 ft•lb)	
Front wheel axle holder ◊	M8	4	21 Nm (2.1 m•kg, 15 ft•lb)	
Front brake disc and wheel hub ◊	M6	6	12 Nm (1.2 m•kg, 8.7 ft•lb)	LT
Rear brake disc and wheel hub ◊	M6	6	14 Nm (1.4 m•kg, 10 ft•lb)	LT
Footrest bracket and frame	M10	4	55 Nm (5.5 m•kg, 40 ft•lb)	TORX LT
Brake pedal mounting ◊	M8	1	26 Nm (2.6 m•kg, 19 ft•lb)	
Rear brake master cylinder and frame ◊	M6	2	10 Nm (0.1 m•kg, 7.2 ft•lb)	
Rear brake master cylinder cap	M4	2	2 Nm (0.2 m•kg, 1.4 ft•lb)	
Rear brake hose union bolt (caliper) ◊	M10	1	30 Nm (3.0 m•kg, 22 ft•lb)	Copper washer
Rear brake hose union bolt (master cylinder) ◊	M10	1	30 Nm (3.0 m•kg, 22 ft•lb)	Copper washer
Rear wheel axle and axle nut ◊	M20	1	125 Nm (12.5 m•kg, 90 ft•lb)	
Nipple (spoke) ◊	–	72	3 Nm (0.3 m•kg, 2.2 ft•lb)	
Wheel rim and wheel hub ◊	M8	6	42 Nm (4.2 m•kg, 30 ft•lb)	
Disc cover and rear brake caliper ◊	M6	2	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Protector and rear brake caliper ◊	M6	2	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Drive chain puller adjust bolt and locknut	M8	2	19 Nm (1.9 m•kg, 13 ft•lb)	
Engine and frame (front) ◊	M10	1	64 Nm (6.4 m•kg, 46 ft•lb)	
Engine and frame (lower) ◊	M10	1	64 Nm (6.4 m•kg, 46 ft•lb)	
Engine bracket and frame ◊	M8	2	34 Nm (3.4 m•kg, 24 ft•lb)	
Engine bracket and engine ◊	M8	1	34 Nm (3.4 m•kg, 24 ft•lb)	
Pivot shaft and nut ◊	M16	1	85 Nm (8.5 m•kg, 61 ft•lb)	
Relay arm and swingarm ◊	M14	1	70 Nm (7.0 m•kg, 50 ft•lb)	
Relay arm and connecting rod ◊	M14	1	80 Nm (8.0 m•kg, 58 ft•lb)	
Connecting rod and frame ◊	M14	1	80 Nm (8.0 m•kg, 58 ft•lb)	
Rear shock absorber and frame ◊	M10	1	56 Nm (5.6 m•kg, 40 ft•lb)	
Rear shock absorber and relay arm ◊	M10	1	53 Nm (5.3 m•kg, 38 ft•lb)	
Rear shock absorber adjust locknut	M56	1	30 Nm (3.0 m•kg, 22 ft•lb)	
Rear frame and frame (upper) ◊	M8	1	32 Nm (3.2 m•kg, 23 ft•lb)	
Rear frame and frame (lower) ◊	M8	2	29 Nm (2.9 m•kg, 21 ft•lb)	
Swingarm and brake hose holder ◊	M5	4	3 Nm (0.3 m•kg, 2.2 ft•lb)	
Swingarm and patch	M4	4	2 Nm (0.2 m•kg, 1.4 ft•lb)	LT
Drive chain tensioner	M8	2	16 Nm (1.6 m•kg, 11 ft•lb)	
Drive chain support and swingarm	M6	3	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Seal guard and swingarm	M5	4	6 Nm (0.6 m•kg, 4.3 ft•lb)	
Cable guide and frame	M5	2	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Fuel tank boss and frame ◊	M10	2	20 Nm (2.0 m•kg, 14 ft•lb)	LT
Fuel tank ◊	M6	2	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Fuel tank and fuel cock ◊	M6	2	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Fuel tank and seat set bracket	M6	1	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Fuel tank and hooking screw (fitting band)	M6	1	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Fuel tank and fuel tank bracket	M6	4	7 Nm (0.7 m•kg, 5.1 ft•lb)	

Item	Thread size	Quantity	Tightening torque	Remarks
Air scoop and fuel tank ◊	M6	4	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Air scoop and radiator guard (lower) ◊	M6	2	6 Nm (0.6 m•kg, 4.3 ft•lb)	
Front fender ◊	M6	4	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Rear fender (lower) ◊	M6	2	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Rear fender (upper) ◊	M6	2	12 Nm (1.2 m•kg, 8.7 ft•lb)	LT
Mud flap ◊	–	2	1 Nm (0.1 m•kg, 0.7 ft•lb)	
Side cover ◊	M6	3	7 Nm (0.7 m•kg, 7.2 ft•lb)	
Seat ◊	M8	2	19 Nm (1.9 m•kg, 13 ft•lb)	
Number plate ◊	M6	1	7 Nm (0.7 m•kg, 7.2 ft•lb)	

Electrical

Item	Thread size	Quantity	Tightening torque	Remarks
Stator	M6	3	7 Nm (0.7 m•kg, 7.2 ft•lb)	
Rotor	M12	1	56 Nm (5.6 m•kg, 40 ft•lb)	
Ignition coil	M6	2	7 Nm (0.7 m•kg, 7.2 ft•lb)	

Tightening torque tables (version XE 125)

Engine

ⓘ **"◊" = 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 Nm (2.0 m•kg, 14 ft•lb)	
Cylinder head (nut)	M8	5	28 Nm (2.8 m•kg, 20 ft•lb)	Copper washer
Cylinder head (stud)	M8	5	13 Nm (1.3 m•kg, 9.4 ft•lb)	
Cylinder (nut)	M8	4	30 Nm (3.0 m•kg, 22 ft•lb)	
Cylinder (stud)	M10	4	13 Nm (1.3 m•kg, 9.4 ft•lb)	
Power valve: Cover	M5	4	5 Nm (0.5 m•kg, 3.6 ft•lb)	YPVS
Power valve: Link lever	M4	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	YPVS
Power valve Holder	M5	4	8 Nm (0.8 m•kg, 5.8 ft•lb)	YPVS
Power valve: Push rod	M5	1	5 Nm (0.5 m•kg, 3.6 ft•lb)	YPVS
Power valve: Thrust plate	M5	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	YPVS
Power valve: Governor fork	M4	2	5 Nm (0.5 m•kg, 3.6 ft•lb)	YPVS
Power valve: Housing	M5	3	4 Nm (0.4 m•kg, 2.9 ft•lb)	YPVS
Water pump housing cover	M6	4	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Coolant drain bolt	M6	1	10 Nm (1.0 m•kg, 7.2 ft•lb)	Copper washer
Radiator	M6	6	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Radiator guard	M6	2	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Radiator hose clamp	M6	8	2 Nm (0.2 m•kg, 1.4 ft•lb)	
Air filter element	M6	1	2 Nm (0.2 m•kg, 1.4 ft•lb)	
Carburetor joint	M6	4	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Carburetor joint clamp	M4	1	2 Nm (0.2 m•kg, 1.4 ft•lb)	
Air filter joint clamp	M4	1	2 Nm (0.2 m•kg, 1.4 ft•lb)	
Air filter guide clamp	M5	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Reed valve	M3	6	1 Nm (0.1 m•kg, 0.7 ft•lb)	
Throttle cable adjust bolt and locknut	M8	1	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Throttle cable	M6	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Crankcase	M6	12	14 Nm (1.4 m•kg, 10 ft•lb)	
Right crankcase cover	M6	8	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Left crankcase cover	M6	4	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Drive chain sprocket cover	M6	2	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Bearing plate cover	M6	4	10 Nm (1.0 m•kg, 7.2 ft•lb)	LT
Holder	M6	1	10 Nm (1.0 m•kg, 7.2 ft•lb)	LT
Oil check bolt	M6	1	10 Nm (1.0 m•kg, 7.2 ft•lb)	Copper washer
Oil drain bolt	M10	1	20 Nm (2.0 m•kg, 14 ft•lb)	Copper washer
Kickstarter lever	M6	1	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Clutch cover	M6	6	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Primary drive gear	M8	1	48 Nm (4.8 m•kg, 35 ft•lb)	
Clutch boss	M16	1	80 Nm (8.0 m•kg, 58 ft•lb)	Lock washer
Clutch spring	M6	5	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Clutch cable adjust bolt and locknut	M6	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Drive sprocket	M18	1	75 Nm (7.5 m•kg, 54 ft•lb)	Lock washer
Shift pedal	M6	1	12 Nm (1.2 m•kg, 8.7 ft•lb)	
Bearing plate cover (shift cam)	M6	2	10 Nm (1.0 m•kg, 7.2 ft•lb)	LT

Item	Thread size	Quantity	Tightening torque	Remarks
Shift guide	M6	2	10 Nm (1.0 m•kg, 7.2 ft•lb)	LT
Stopper lever	M6	1	10 Nm (1.0 m•kg, 7.2 ft•lb)	LT
Segment	M8	1	30 Nm (3.0 m•kg, 22 ft•lb)	
Exhaust pipe ◊	M6	2	12 Nm (1.2 m•kg, 8.7 ft•lb)	
Exhaust pipe stay (front) ◊	M6	1	12 Nm (1.2 m•kg, 8.7 ft•lb)	
Exhaust pipe stay (rear) ◊	M6	1	12 Nm (1.2 m•kg,8.7 ft•lb)	
Silencer and frame ◊	M6	1	12 Nm (1.2 m•kg, 8.7 ft•lb)	
Silencer Fiber	M6	4	10 Nm (1.0 m•kg, 7.2 ft•lb)	

Chassis

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

Item	Thread size	Quantity	Tightening torque	Remarks
Upper bracket and outer tube ◊	M8	4	21 Nm (2.1 m•kg, 15 ft•lb)	
Lower bracket and outer tube ◊	M8	4	21 Nm (2.1 m•kg, 15 ft•lb)	
Upper bracket and steering stem ◊	M24	1	145 Nm (14.5 m•kg, 105 ft•lb)	
Upper handlebar holder ◊	M8	4	28 Nm (2.8 m•kg,20 ft•lb)	
Lower handlebar holder ◊	M12	2	40 Nm (4.0 m•kg, 29 ft•lb)	
Steering ring nut (sequence): ◊ – Initial ring nut tightening – Loosen the ring nut by one turn – Final ring nut tightening	M28	1	 38 Nm (3.8 m•kg, 27 ft•lb) 7 Nm (0.7 m•kg, 5.1 ft•lb)	
Front fork and damper assembly	M51	2	30 Nm (3.0 m•kg, 22 ft•lb)	
Front fork and adjuster	M22	2	55 Nm (5.5 m•kg, 40 ft•lb)	Copper washer LT
Damper assembly and base valve	M42	2	29 Nm (2.9 m•kg, 21 ft•lb)	
Adjuster and damper assembly	M12	2	29 Nm (2.9 m•kg, 21 ft•lb)	
Bleed screw (front fork) and base valve	M5	2	1 Nm (0.1 m•kg, 0.7 ft•lb)	
Front fork and front fork protector ◊	M6	6	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Cable guide (front brake hose) and lower bracket ◊	M6	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Front fork protector and brake hose holder ◊	M6	2	8 Nm (0.8 m•kg, 5.8 ft•lb)	
Throttle cable cap	M4	2	0.5 Nm (0.05 m•kg, 0.36 ft•lb)	
Front brake master cylinder and bracket ◊	M6	2	9 Nm (0.9 m•kg, 6.5 ft•lb)	
Brake lever mounting bolt	M6	1	6 Nm (0.6 m•kg, 4.3 ft•lb)	
Brake lever mounting nut	M6	1	6 Nm (0.6 m•kg, 4.3 ft•lb)	
Brake lever position locknut	M6	1	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Clutch lever mounting nut	M6	1	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Clutch lever holder	M6	2	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Clutch lever position nut	M5	1	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Front brake master cylinder cap	M4	2	2 Nm (0.2 m•kg, 1.4 ft•lb)	
Front brake hose union bolt (brake master cylinder) ◊	M10	1	30 Nm (3.0 m•kg, 22 ft•lb)	Copper washer
Front brake hose union bolt (caliper) ◊	M10	1	30 Nm (3.0 m•kg, 22 ft•lb)	Copper washer
Front brake caliper and front fork ◊	M8	2	28 Nm (2.8 m•kg, 20 ft•lb)	
Grip cap upper and lower	M6	2	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Engine stop switch screw	M3	1	0.5 Nm (0.05 m•kg, 0.36 ft•lb)	
Brake caliper (front and rear) and pad pin plug	M10	2	3 Nm (0.3 m•kg, 2.2 ft•lb)	

Item	Thread size	Quantity	Tightening torque	Remarks
Brake caliper (front and rear) and pad pin ◊	M10	2	18 Nm (1.8 m•kg, 13 ft•lb)	
Brake caliper (front and rear) and bleed screw ◊	M8	2	6 Nm (0.6 m•kg, 4.3 ft•lb)	
Front wheel axle and axle nut ◊	M16	1	105 Nm (10.5 m•kg, 75 ft•lb)	
Front wheel axle holder ◊	M8	4	21 Nm (2.1 m•kg, 15 ft•lb)	
Front brake disc and wheel hub ◊	M6	6	12 Nm (1.2 m•kg, 8.7 ft•lb)	LT
Rear brake disc and wheel hub ◊	M6	6	14 Nm (1.4 m•kg, 10 ft•lb)	LT
Footrest bracket and frame	M10	4	55 Nm (5.5 m•kg, 40 ft•lb)	TORX LT
Brake pedal mounting ◊	M8	1	26 Nm (2.6 m•kg, 19 ft•lb)	
Rear brake master cylinder and frame ◊	M6	2	10 Nm (0.1 m•kg, 7.2 ft•lb)	
Rear brake master cylinder cap	M4	2	2 Nm (0.2 m•kg, 1.4 ft•lb)	
Rear brake hose union bolt (caliper) ◊	M10	1	30 Nm (3.0 m•kg, 22 ft•lb)	Copper washer
Rear brake hose union bolt (master cylinder) ◊	M10	1	30 Nm (3.0 m•kg, 22 ft•lb)	Copper washer
Rear wheel axle and axle nut ◊	M20	1	125 Nm (12.5 m•kg, 90 ft•lb)	
Nipple (spoke) ◊	–	72	3 Nm (0.3 m•kg, 2.2 ft•lb)	
Wheel rim and wheel hub ◊	M8	6	42 Nm (4.2 m•kg, 30 ft•lb)	
Disc cover and rear brake caliper ◊	M6	2	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Protector and rear brake caliper ◊	M6	2	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Drive chain puller adjust bolt and locknut	M8	2	19 Nm (1.9 m•kg, 13 ft•lb)	
Engine and frame (front) ◊	M10	1	64 Nm (6.4 m•kg, 46 ft•lb)	
Engine and frame (lower) ◊	M10	1	64 Nm (6.4 m•kg, 46 ft•lb)	
Engine bracket and frame ◊	M8	2	34 Nm (3.4 m•kg, 24 ft•lb)	
Engine bracket and engine ◊	M8	1	34 Nm (3.4 m•kg, 24 ft•lb)	
Pivot shaft and nut ◊	M16	1	85 Nm (8.5 m•kg, 61 ft•lb)	
Relay arm and swingarm ◊	M14	1	70 Nm (7.0 m•kg, 50 ft•lb)	
Relay arm and connecting rod ◊	M14	1	80 Nm (8.0 m•kg, 58 ft•lb)	
Connecting rod and frame ◊	M14	1	80 Nm (8.0 m•kg, 58 ft•lb)	
Rear shock absorber and frame ◊	M10	1	56 Nm (5.6 m•kg, 40 ft•lb)	
Rear shock absorber and relay arm ◊	M10	1	53 Nm (5.3 m•kg, 38 ft•lb)	
Rear shock absorber adjust locknut	M56	1	30 Nm (3.0 m•kg, 22 ft•lb)	
Rear frame and frame (upper) ◊	M8	1	32 Nm (3.2 m•kg, 23 ft•lb)	
Rear frame and frame (lower) ◊	M8	2	29 Nm (2.9 m•kg, 21 ft•lb)	
Swingarm and brake hose holder ◊	M5	4	3 Nm (0.3 m•kg, 2.2 ft•lb)	
Swingarm and patch	M4	4	2 Nm (0.2 m•kg, 1.4 ft•lb)	LT
Drive chain tensioner	M8	2	16 Nm (1.6 m•kg, 11 ft•lb)	
Drive chain support and swingarm	M6	3	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Seal guard and swingarm	M5	4	6 Nm (0.6 m•kg, 4.3 ft•lb)	
Cable guide and frame	M5	2	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Fuel tank boss and frame ◊	M10	2	20 Nm (2.0 m•kg, 14 ft•lb)	LT
Fuel tank ◊	M6	2	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Fuel tank and fuel cock ◊	M6	2	4 Nm (0.4 m•kg, 2.9 ft•lb)	
Fuel tank and seat set bracket	M6	1	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Fuel tank and hooking screw (fitting band)	M6	1	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Fuel tank and fuel tank bracket	M6	4	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Air scoop and fuel tank ◊	M6	4	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Air scoop and radiator guard (lower) ◊	M6	2	6 Nm (0.6 m•kg, 4.3 ft•lb)	

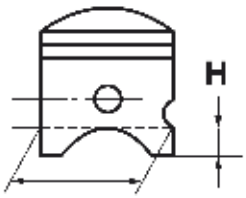
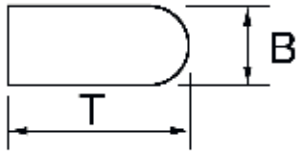
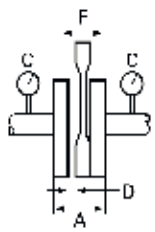
Item	Thread size	Quantity	Tightening torque	Remarks
Front fender ◊	M6	4	10 Nm (1.0 m•kg, 7.2 ft•lb)	
Rear fender (lower) ◊	M6	2	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Rear fender (upper) ◊	M6	2	14 Nm (1.4 m•kg, 10 ft•lb)	LT Strong
Mud flap ◊	–	2	1 Nm (0.1 m•kg, 0.7 ft•lb)	
Side cover ◊	M6	3	7 Nm (0.7 m•kg, 7.2 ft•lb)	
Seat ◊	M8	2	19 Nm (1.9 m•kg, 13 ft•lb)	
Number plate ◊	M6	1	7 Nm (0.7 m•kg, 7.2 ft•lb)	
License plate holder frame – approved license plate holder screw	M6	2	12 Nm (1.2 m•kg, 8.7 ft•lb)	LT Medium
Approved license plate – fender screw	Self-thread.	3	1 Nm (0.1 m•kg, 0.7 ft•lb)	
Battery support – seat post frame screw	M6	2	7 Nm (0.7 m•kg, 5.1 ft•lb)	
Headlight cover screw	M6	2	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Headlight – headlight cover side screws	M6	2	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Front turn indicators screws	M5	4	5 Nm (0.5 m•kg, 3.6 ft•lb)	
Sidestand pin	M10	1	25 Nm (2.5 m•kg, 18.5 ft•lb)	

Electrical

Item	Thread size	Quantity	Tightening torque	Remarks
Stator	M6	3	7 Nm (0.7 m•kg, 7.2 ft•lb)	
Rotor	M12	1	56 Nm (5.6 m•kg, 40 ft•lb)	
Ignition coil	M6	2	7 Nm (0.7 m•kg, 7.2 ft•lb)	

1.10 MAINTENANCE LIMITS

Engine

Item	Standard	Limit
Cylinder head:		
Combustion chamber volume:		
– XX 125	8.30–8.50 cm^3 (0.51–0.52 cu.in)	–
– XE 125	10.0–10.2 cm^3 (0.61–0.62 cu.in)	–
Warp limit	–	0.03 mm (0.0012 in)
Cylinder:		
Bore size	54.000–54.014 mm (2.1260–2.1265 in)	54.100 mm (2.1299 in)
Taper limit	–	0.050 mm (0.0020 in)
Out of round limit	–	0.050 mm (0.0020 in)
Piston:		
Piston size	53.957–53.972 mm (2.1243–2.1249 in)	–
Measuring point “H”	17.5 mm (0.69 in)	–
		
Piston clearance	0.040–0.045 mm (0.0016–0.0018 in)	0.100 mm (0.0039 in)
Piston offset	0.50 mm (0.0197 in)/EX-side	–
Piston pin:		
Piston pin outside diameter	14.995–15.000 mm (0.5904–0.5906 in)	14.975 mm (0.5896 in)
Piston ring:		
Sectional sketch	Barrel	–
	B=1.00 mm (0.04 in) T=2.35 mm (0.09 in)	– –
End gap (installed)	0.50–0.70 mm (0.0197–0.0276 in)	1.20 mm (0.0472 in)
Side clearance (installed)	0.035–0.070 mm (0.0014–0.0028 in)	0.100 mm (0.0039 in)
Crankshaft:		
Crank width “A”	55.90–55.95 mm (2.201–2.203 in)	–
Runout limit “C”	0.030 mm (0.0012 in)	0.050 mm (0.0020 in)
Connecting rod big end side clearance “D”	0.060–0.640 mm (0.0024–0.0252 in)	–
Small end free play “F”	0.80–1.00 mm (0.03–0.04 in)	2.0 mm (0.08 in)
		

Item	Standard	Limit
Clutch:		
Friction plate thickness	2.90–3.10 mm (0.114–0.122 in)	2.80 mm (0.110 in)
Quantity	8	–
Clutch plate thickness	1.50–1.70 mm (0.059–0.067 in)	–
Quantity	7	–
Warp limit	–	0.20 mm (0.008 in)
Clutch spring free length	40.10 mm (1.58 in)	38.10 mm (1.50 in)
Quantity	5	–
Clutch housing thrust clearance	0.15–0.26 mm (0.006–0.010 in)	–
Clutch housing radial clearance	0.01–0.04 mm (0.0006–0.0018 in)	–
Clutch release method	Inner push, cam push	–
Trasmission:		
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 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)	Foam air filter oil or other quality foam air filter oil	–
Carburetor:		
Type/Manufacturer	TMX χ 38SS/ MIKUNI	
I.D. mark	1C37 51 (USA, CAN)	–
	1C36 41 (EUR, AUS, NZ, ZA)	–
Main jet (M.J.):		
XX 125	#480	–
XE 125 Omologato	#130	–
XE 125 Racing	#470	–
Jet needle-clip position (J.N.):		
XX 125	6BFY43-74-3	–
XE 125 Omologato	6BFY43-74-4	–
XE 125 Racing	6BFY43-74-3	–
Cutaway (C.A.)	4	–
Pilot jet (P.J.):		
XX 125	#45	–
XE 125 Omologato	#20	–
XE 125 Racing	#40	–
Pilot air screw (P.A.S.)	2-1/4	–
Valve seat size (V.S.)	ø3.8 mm (0.15 in)	–
Starter jet (G.S.)	#80	–
Fuel level (F.L.)	9.5–10.5 mm (0.37–0.41 in)	–
Reed valve:		
Thickness	0.470 mm (0.0185 in)	–
Valve stopper height	8.2–8.6 mm (0.32–0.34 in)	–
Valve bending limit	–	0.2 mm (0.01 in)

Item	Standard	Limit
Cooling:		
Radiator core size:		
Width	107.8 mm (4.24 in)	–
Height (left)	240.0 mm (9.45 in)	–
Height (right)	220.0 mm (8.66 in)	–
Thickness	32.0 mm (1.26 in)	–
Radiator cap opening pressure	93.3–122.7 kPa (0.93–1.23 kg/cm2, 13.5–17.8 psi)	–
Radiator capacity (total)	0.56 L (0.49 Imp qt, 0.59 US qt)	–
Water pump:		
Type	Single suction centrifugal pump	–

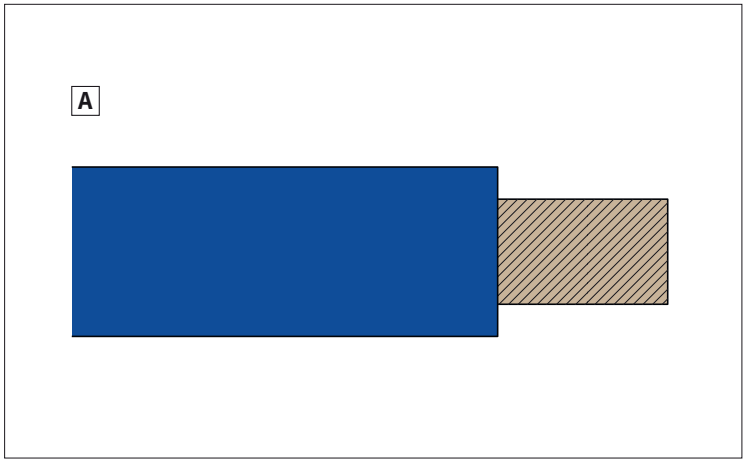
Chassis

Item	Standard	Limit
Steering system:		
Steering bearing type	Taper roller bearing	–
Front suspension:		
Front fork travel	300.0 mm (11.81 in)	–
Fork spring free length	454.0 mm (17.87 in)	449.0 mm (17.68 in)
Spring rate, STD	K=4.10 N/mm (0.42 kg/mm, 23.41 lb/in)	–
Optional spring	Sì	–
Oil capacity:		
XX 125	510.0 cm^3 (17.99 Imp oz, 17.24 US oz)	–
XE 125	425.0 cm^3 (14.99 Imp oz, 14.37 US oz)	–
Oil grade	Yamaha Suspension Oil S1	–
Inner tube outer diameter	48 mm (1.9 in)	–
Front fork top end:		
XX 125	5 mm (0.2 in)	–
XE 125	5 mm (0.2 in)	–
Rear suspension:		
Shock absorber travel	131.5 mm (5.18 in)	–
Spring free length	260.0 mm (10.24 in)	–
Fitting length:		
XX 125	252.0 mm (9.92 in)	–
XE 125	254.0 mm (10.0 in)	–
Preload length:		
<Min. – Max.>	1.5–18 mm (0.06–0.71 in)	–
Spring rate, STD	K=46.00 N/mm (4.69 kg/mm, 262.66 lb/in)	–
Optional spring	Yes	–
Enclosed gas pressure	1,000 kPa (10.0 kg/cm^2, 142.2 psi)	–
Swingarm:		
Swingarm free play limit:		
End	–	1.0 mm (0.04 in)
Side clearance	–	0.2–0.9 mm (0.01–0.04 in)

Item	Standard	Limit
Wheel:		
Front wheel type	Spoke wheel	–
Rear wheel type	Spoke wheel	–
Front rim size/material	21 × 1.60/Aluminium	–
Rear rim size/material:		
XX 125	19 × 1.85/Aluminium	–
XE 125	18 × 2.15/Aluminium	–
Rim runout limit:		
Radial	–	2.0 mm (0.08 in)
Lateral	–	2.0 mm (0.08 in)
Drive chain:		
Type:		
XX 125	DID520DMA4K-112LL	–
XE 125	DID520MXV5-114LL	–
Number of links:		
XX 125	112	–
XE 125	114	–
Chain slack:		
XX 125 / XE 125 Racing	48.0–58.0 mm (1.89–2.28 in)	–
XE 125 Omologato	58.0–68.0 mm (2.28–2.28 in)	–
Chain length (15 links)	–	242.8 mm (9.56 in)
Front disc brake:		
Disc outside diameter × Thickness	270.0 × 3.0 mm (10.63 × 0.12 in)	270.0 × 2.5 mm (10.63 × 0.10 in)
Pad thickness	4.4 mm (0.17 in)	1.0 mm (0.04 in)
Master cylinder inside diameter	9.52 mm (0.37 in)	–
Caliper cylinder inside diameter	22.65 mm, 22.65 mm (0.89 in, 0.89 in)	–
Brake fluid type	DOT 4	–
Rear disc brake:		
Disc outside diameter × Thickness	245.0 × 4.0 mm (9.65 × 0.16 in)	245.0 × 3.5 mm (9.65 × 0.14 in)
Deflection limit	–	0.15 mm (0.0059 in)
Pad thickness	6.4 mm (0.25 in)	1.0 mm (0.04 in)
Master cylinder inside diameter	11.0 mm (0.43 in)	–
Caliper cylinder inside diameter	25.40 mm (1.00 in)	–
Brake fluid type	DOT 4	–
Brake lever and brake pedal:		
Brake lever position	100 mm (3.94 in)	–
Brake pedal height (vertical height above footrest top)	0.0 mm (0.00 in)	–
Clutch lever free play (lever end)	7.0–12.0 mm (0.28–0.47 in)	–
Throttle grip free play	3.0–5.0 mm (0.12–0.20 in)	–

Electrical

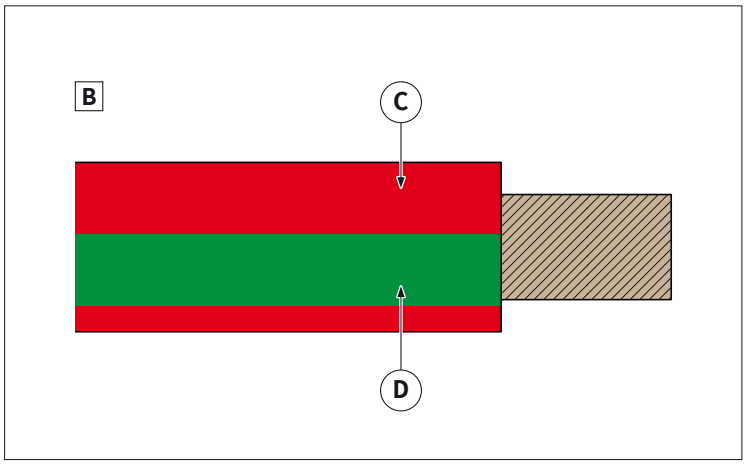
Item	Standard	Limit
Ignition system:		
Ignition timing (B.T.D.C.)	0.50 mm (0.02 in)	–
Advancer type	Digital	–
CDI:		
Magneto-model (stator)/Manufacturer	07381005 / IDM	–
Pickup coil resistance	248.0–372.0 Ω a 20 °C (68 °F)	–
(color)	(White/Blue – White/Red)	–
CDI unit-model/manufacturer:		
XX 125	07405005 / EFI	–
XE 125	07664005 / EFI	–
Ignition coil:		
Model/manufacturer	1C3-00 / YAMAHA	–
Minimum spark gap	6.0 mm (0.24 in)	–
Primary winding resistance	0.24–0.36 Ω a 20 °C (68 °F)	–
Secondary winding resistance	5.68–8.52 kΩ a 20 °C (68 °F)	–
Spark plug cap:		
Resistance	4.00–6.00 kΩ a 20 °C (68 °F)	–



1.11 ELECTRICAL SYSTEM DIAGRAM

Cables colour coding

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



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 “-”.

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.

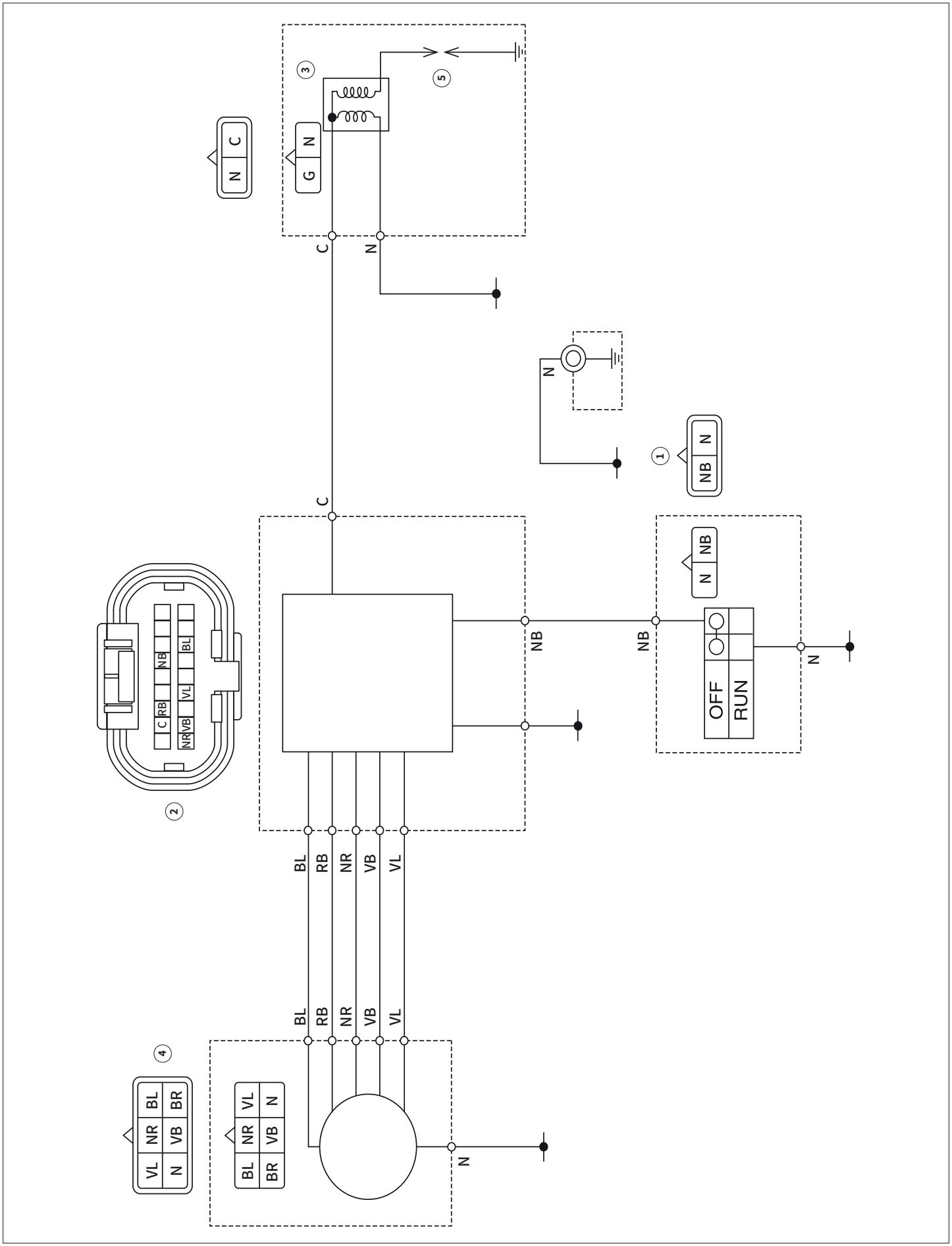
Codice	Colore dei cavi
A	SKY BLUE
B	WHITE
C	ORANGE
G	YELLOW
H	GREY
L	BLUE
M	BROWN
N	BLACK
R	RED
S	PINK
V	GREEN
Z	PURPLE

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	Ignition
5	Spark plug

1

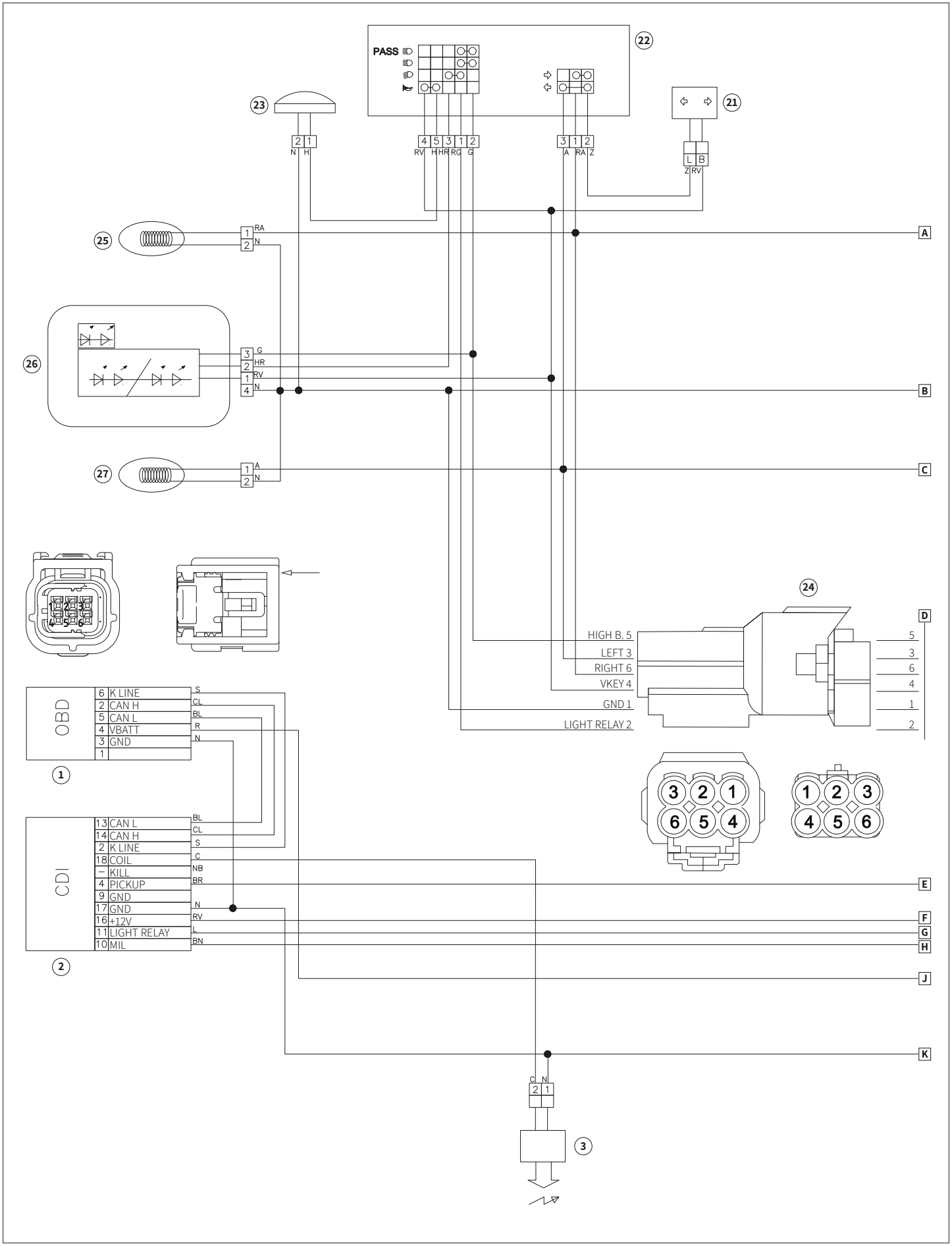
Wiring diagram (XX 125 version)

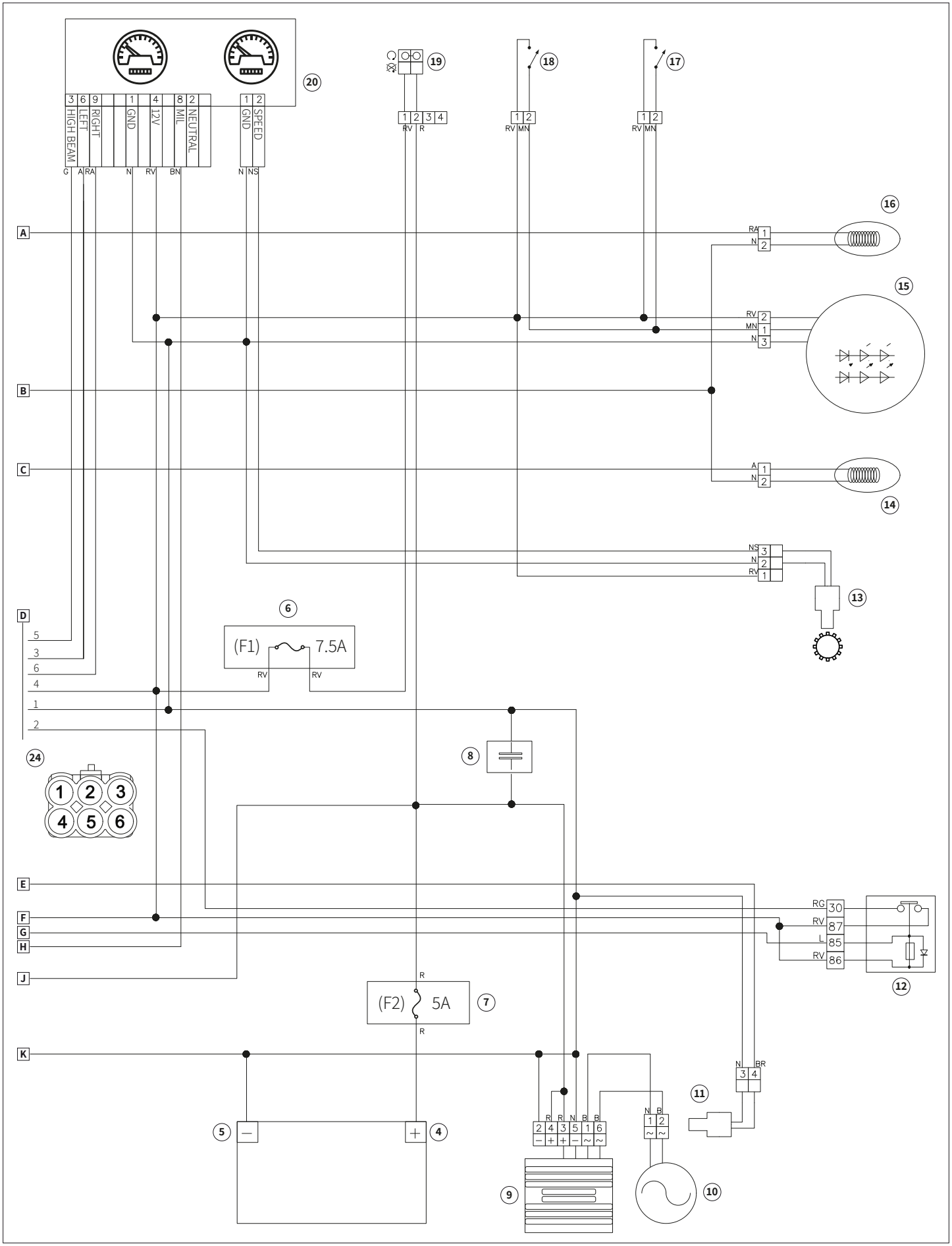


Key to the wiring diagram components (XE 125 version)
The following table lists all the components in the wiring diagram and their numbering.

Number	Description of the electrical component
1	OBD diagnosis connector
2	Engine control unit (CDI)
3	Ignition coil
4	Positive battery pole
5	Negative battery pole
6	Fuse 1 (7.5 A)
7	Fuse 2 (5 A)
8	Capacitor
9	Voltage regulator
10	Magnet flywheel
11	Pick-Up
12	Lights remote control switch
13	Speed sensor
14	Rear right turn signal
15	Tail light
16	Rear left turn signal
17	Front brake light switch
18	Rear brake light switch
19	Engine stop switch
20	Dashboard
21	Intermittent light
22	Left light stalk
23	Horn
24	Handlebar devices wiring harness interconnection
25	Front right turn signal
26	Front headlight
27	Front left turn signal

Wiring diagram (XE 125 version)

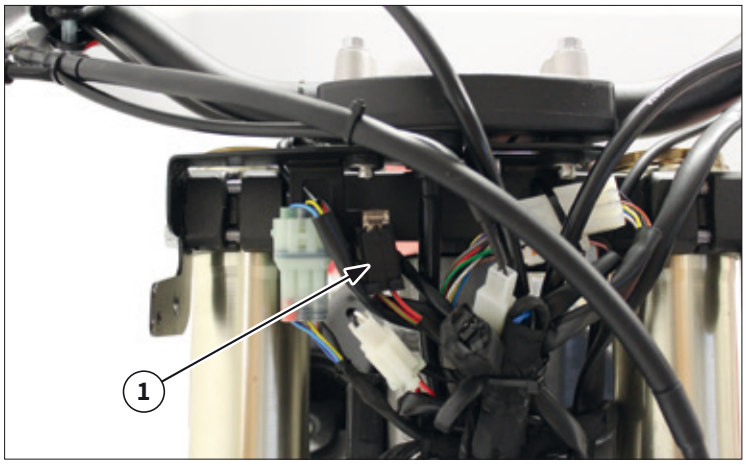



20
3 6 9 1 4 8 2
HIGH BEAM
LEFT
RIGHT
GND
12V
MIL
NEUTRAL
G A RA N RV BN
1 2
GND
SPEED
N NS
19
1 2 3 4
RV R
18
1 2
RV MN
17
1 2
RV MN
16
RA
N
15
RV
MN
N
A
N
14
NS
N
RV
13
A
B
C
D
5
3
6
4
1
2
6
(F1) 7.5A
RV RV
24
1 2 3
4 5 6
8
E
F
G
H
J
K
RG 30
RV 87
L 85
RV 86
12
R
(F2) 5A
7
R
5
4
R R N B B
2 4 3 5 1 6
N B
1 2
11
N BR
3 4
9
10

1.12 LAMPS (XE 125 VERSION ONLY)

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

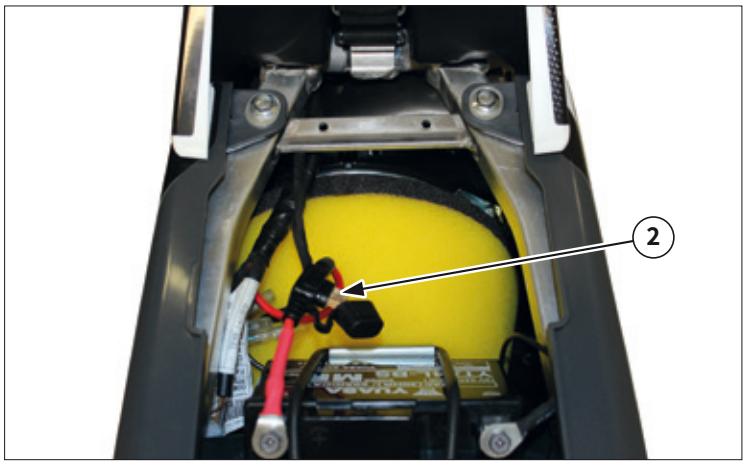
The front and rear turn indicators are equipped with 12V - 6W halogen lamps.



1.13 FUSES (XE 125 VERSION ONLY)

The system protection fuse “1” can be accessed by removing the front numberplate.

Electrical wiring fuse: 7.5 A

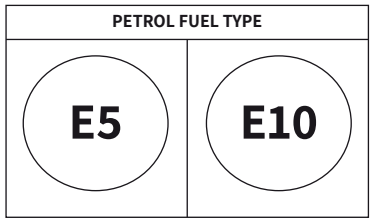


The battery “2” fuse is accessible by removing the seat.

Battery fuse: 5 A

1.14 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	Bardahl GearBox - (API SL / JASO MA MA2)	Do not use mineral oils.
Olio per miscela	BARDAHL KGR Injection Plus (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	Bardahl Oil XTF or equivalent	
Transmission chain lubricant	Spray grease for transmission chains	
Brake oil	Bardahl Synthetic Brake Fluid DOT 4	
Olio per filtro aria	Bardahl Air Filter Special Oil	
Cleaner for electrical contacts	Contact cleaner	
Fuel	95 or 98 octane super lead-free petrol	
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.

1.15 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.**

Maintenance table (XX 125 and 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	√	√				Inspect crack.
– Replace				√	√	Inspect carbon deposits and eliminate them.
Piston ring						
– Inspect	√	√				Check ring end gap.
– Replace			√		√	
Piston pin, small end bearing						
– Inspect		√				
– Replace					√	
Cylinder head						Inspect carbon deposits and eliminate them.
– Inspect and clean	√	√				Check gasket.
– Retighten	√	√				
Cylinder						
– Inspect and clean						Inspect score marks.
– Replace						Inspect wear.
YPVS						
– Inspect and clean						Inspect carbon deposits and eliminate them.
Clutch						
– Inspect and adjust						Inspect housing, friction plate, clutch plate and spring.
– Replace						
Transmission						
– Replace oil	√			√		Bardahl GearBox 10W-40 (API SL / JASO MA MA2)
– Inspect					√	
– Replace bearing					√	

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					√	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				√	√	
Carburetor						
– Inspect, adjust and clean	√	√				
Spark plug						
– Inspect and clean	√		√			
– Replace					√	
Drive chain						Use chain lube.
– Lubricate, slack, alignment	√	√				Chain slack: 48.0–58.0 mm (1.89–2.28 in)
– Replace					√	
Cooling system						
– Check coolant level and leakage	√	√				
– Check radiator cap operation					√	
– Replace coolant					√	Every two years.
– Inspect hoses		√				
Outside nuts and bolts						
– Retighten	√	√				
Air filter						
– Clean and lubricate	√	√				Use the “Bardahl Air Filter Special Oil” for foam air filters.
– Replace					√	
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					√	
Front fork oil seal and dust seal						
– Clean and lube	√	√				Lithium base grease.
Protector guide						
– Replace					√	
Rear shock absorber						
– Inspect and adjust	√	√				
– Lube			√		√ (after rain ride)	Molybdenum disulfide grease.
– Retighten	√	√				
Drive chain guide and rollers						
– Inspect	√	√				
Swingarm						
– Inspect, lube and retighten	√	√				Molybdenum disulfide grease.
Sidestand (version XE 125 “Racing”)						
– Lubricate					√	Lithium base grease.
Relay arm, connecting rod						
– Inspect, lube and retighten	√	√				Molybdenum disulfide grease.
Steering head						
– Inspect free play and retighten	√	√				
– Clean and lube				√		Lithium base grease.
– Replace bearing					√	

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
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.

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
Carburetor	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		

Item	After break-in	Every 10 Hours	Every 20 Hours	As required
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 lube	Clean and lube		
Protector guide				Replace
Rear shock absorber	Inspect, adjust Retighten	Inspect, adjust Lube Retighten		Lube (after rain ride)
Drive chain guide and rollers	Inspect	Inspect		
Swingarm	Inspect, lube, retighten	Inspect, lube, retighten		
Steering head	Inspect free play and retighten	Inspect free play and retighten	Clean and lube	Replace bearing
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		

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 80
Fuel	Check that a fresh mixture of oil and gasoline is filled in the fuel tank. Check the fuel line for leakage.	page 49
Transmission oil	Check that the oil level is correct. Check the crankcase for leakage.	page 79
Gear shifter and clutch	Check that gears can be shifted correctly in order and that the clutch operates smoothly.	page 91
Throttle grip/Housing	Check that the throttle grip operation and free play are correctly adjusted. Lubricate the throttle grip and housing, if necessary.	page 51
Brakes	Check the play of front brake and effect of front and rear brake.	page 99
Drive chain	Check drive chain slack and alignment. Check that the drive chain is lubricated properly.	page 102
Wheels	Check for excessive wear and tire pressure. Check for loose spokes and have no excessive play.	page 98
Steering	Check that the handlebar can be turned smoothly and have no excessive play.	page 97
Front forks and rear shock absorber	Check that they operate smoothly and there is no oil leakage.	page 98
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 102
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?	page 77

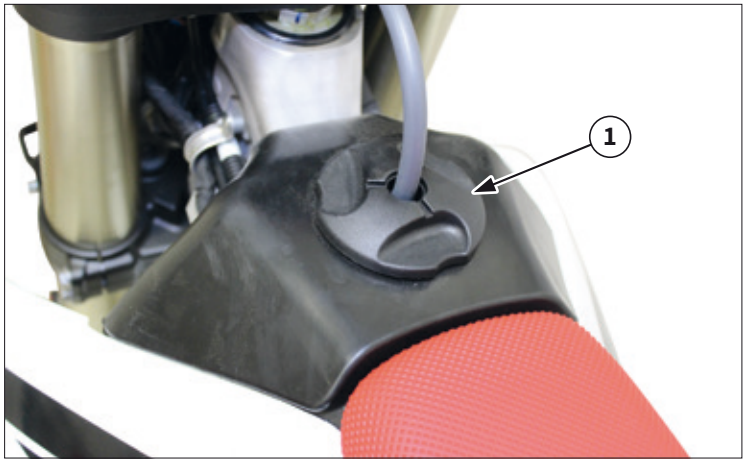
2.2 RUNNING IN

The running-in has a duration of 5 hours of activity, 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;
- during the first 3 hours, the engine must be used only at 70% of the power;
- in the following 2 hours, the engine can be used up to 90% of the power;
- avoid travelling at constant speed, so that the components will settle evenly and in less time.

ⓘ **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.

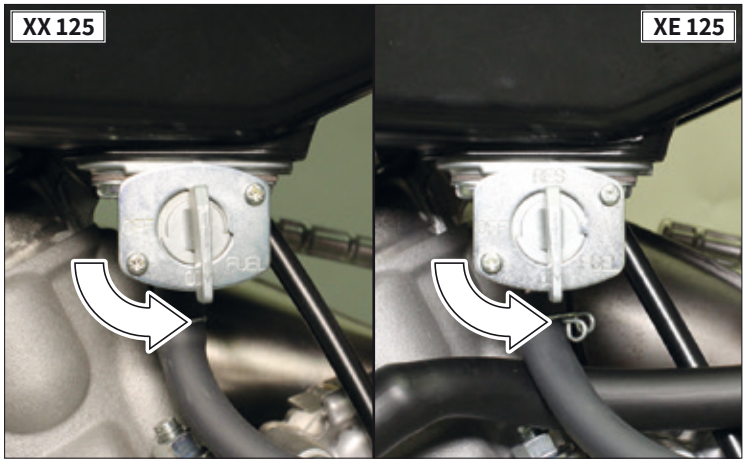
⚠ Do not smoke or use naked flames when refuelling. Avoid using electrical devices or any source that can trigger sparks or ignition. Failure to comply with these rules could result in a danger of fire or explosion, causing serious damage to property and/or persons.

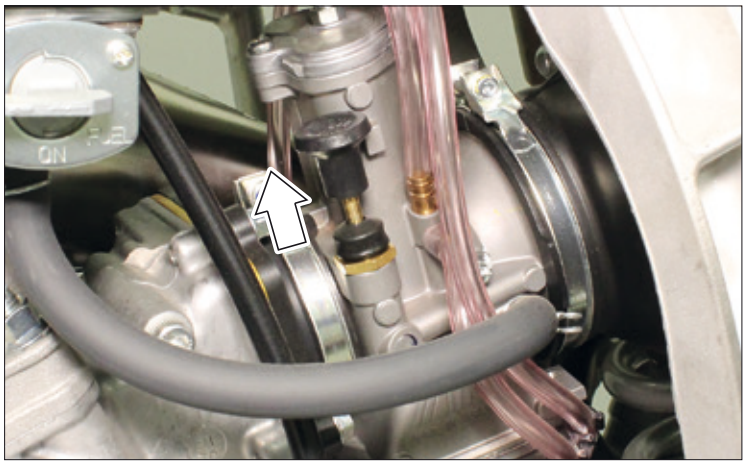
⚠ Do not add additives or other substances to the fuel during refuelling.

⚠ 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

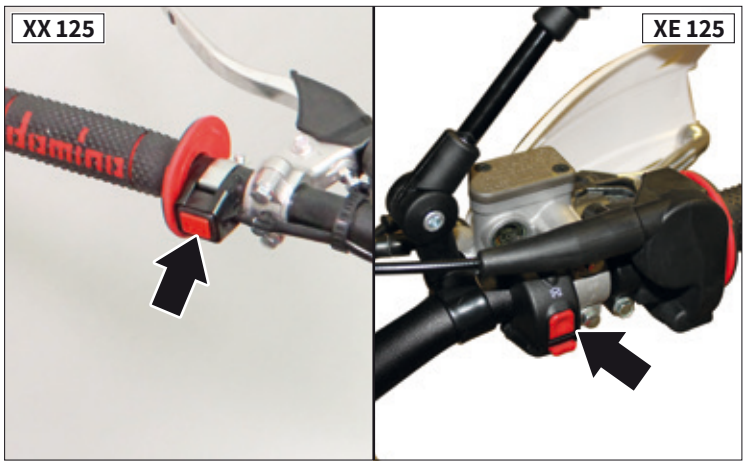
Starting a cold engine

1. Shift the transmission into neutral.
2. Turn the fuel cock to “ON” and full open the starter knob (CHOKE).
3. With the throttle completely closed start the engine by kicking the kickstarter forcefully with firm stroke.
4. Run the engine at idle or slightly higher until it warms up: this usually takes about one or two minutes.
5. 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.

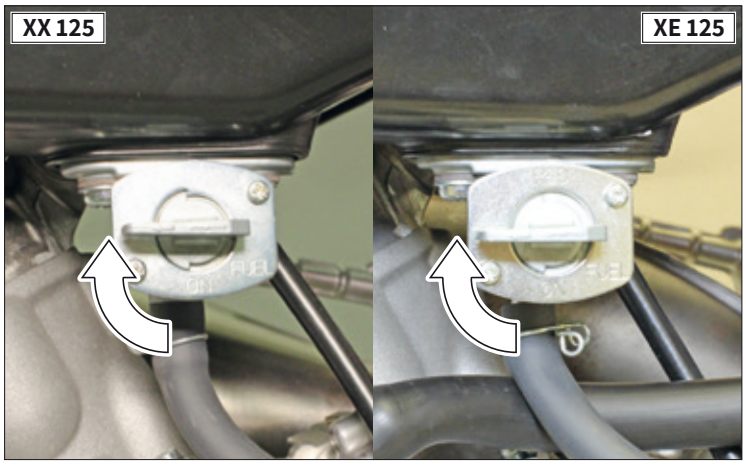
Starting a warm engine

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

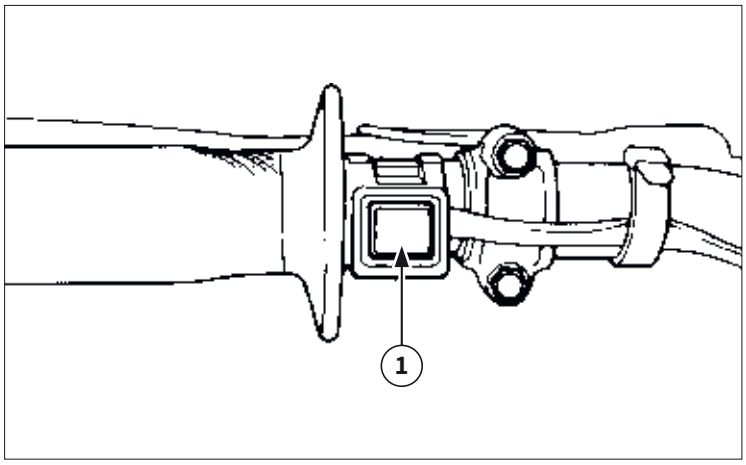


2.5 STOP THE ENGINE

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



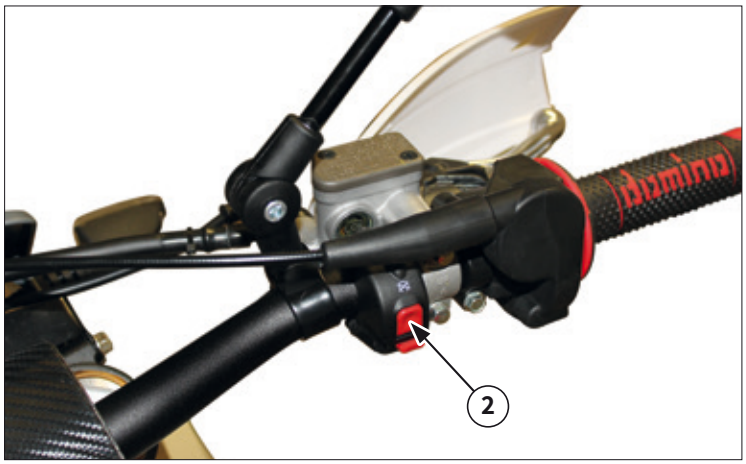
⚠ **Always set the fuel tap to OFF when the engine is switched off.**



2.6 MAIN COMPONENTS

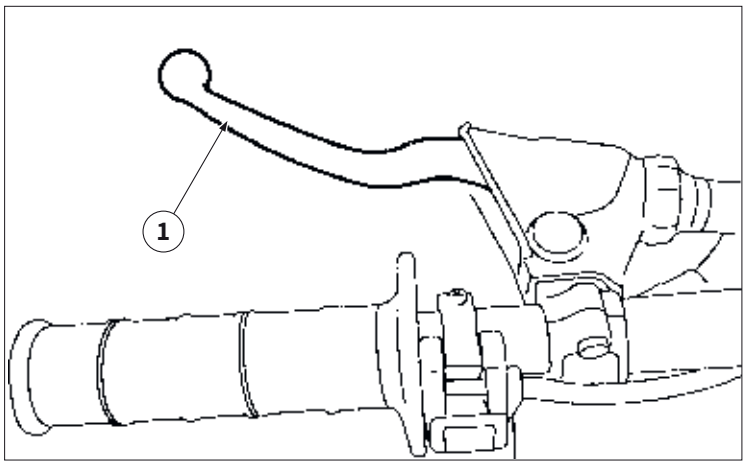
Engine stop switch (XX 125 version)

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



Engine stop switch (XE 125 version)

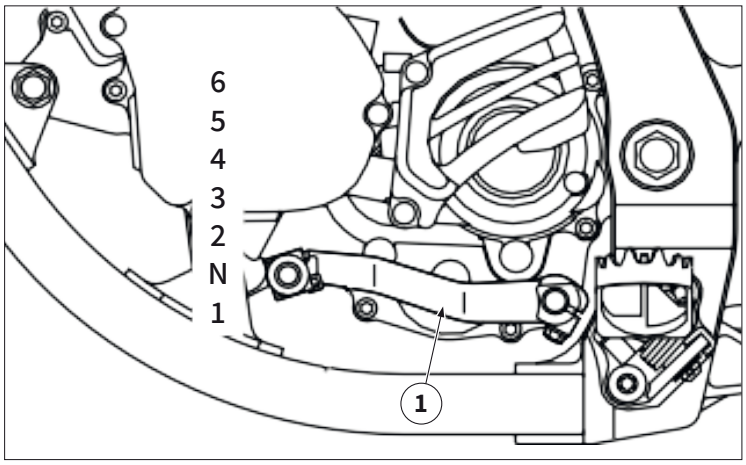
The engine stop switch “2” is located on the right handlebar. Continue pushing the engine stop switch till the engine comes to a stop.



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.

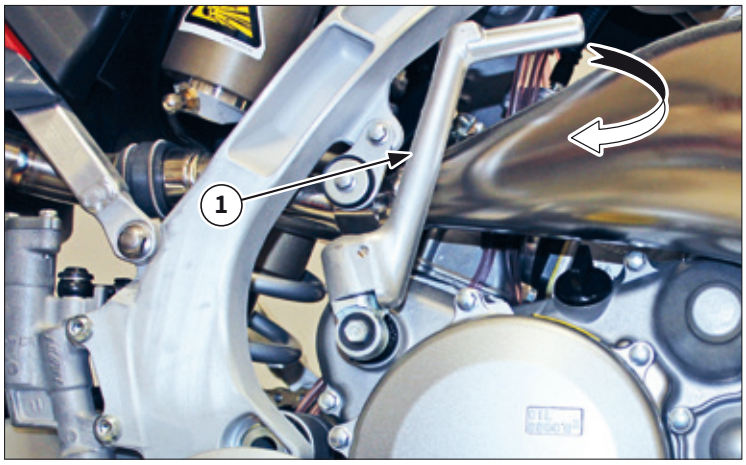
The lever should be pulled rapidly and released slowly for smooth starts.



Shift pedal

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

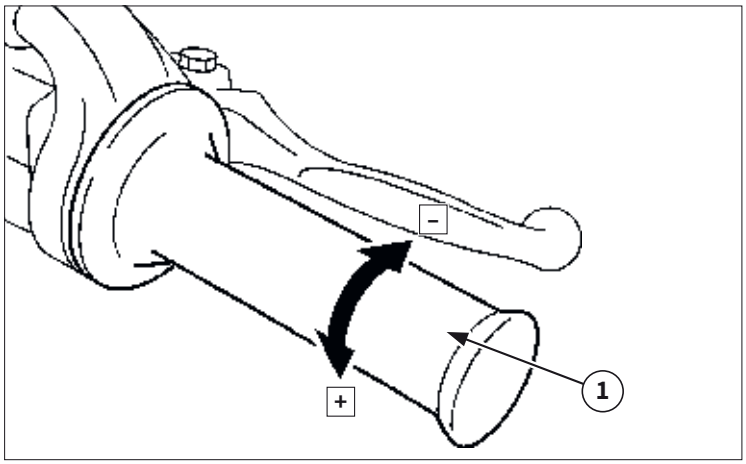
The gears can be shifted by using the shift pedal “1” on the left side of the engine.



Kickstarter lever

Rotate the kickstarter lever “1” away from the engine. Push the starter down lightly with your foot until the gears engage, then kick smoothly and forcefully to start the engine.

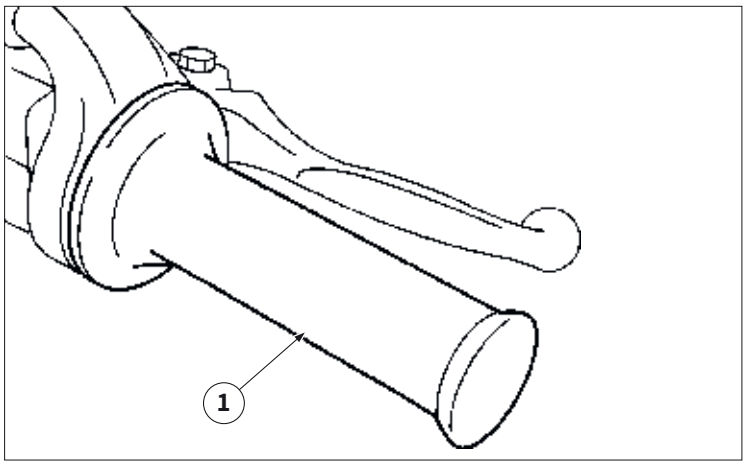
This model has a primary kickstarter lever so the engine can be started in any gear if the clutch is disengaged. In normal practices, however, shift to neutral before starting.



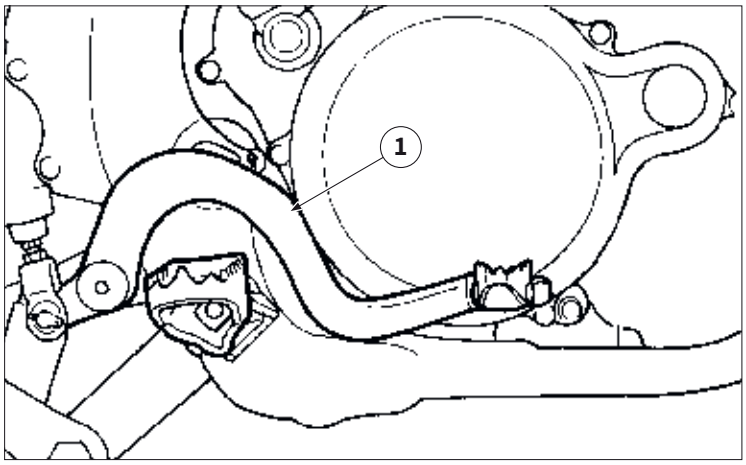
Throttle grip

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.

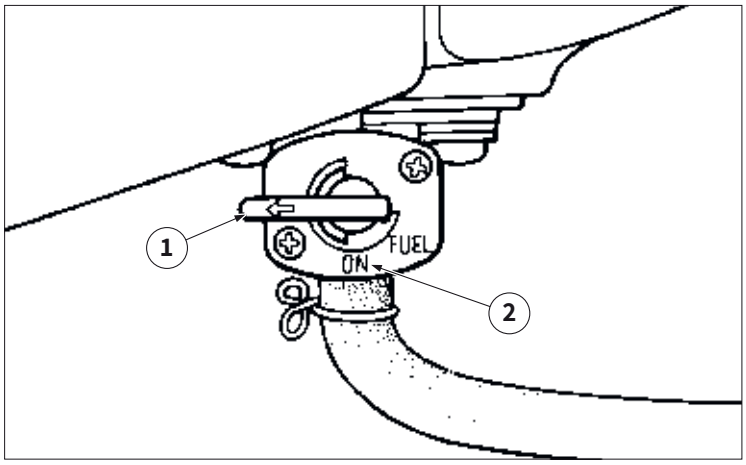
“+” : accelerate
“–” : decelerate



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

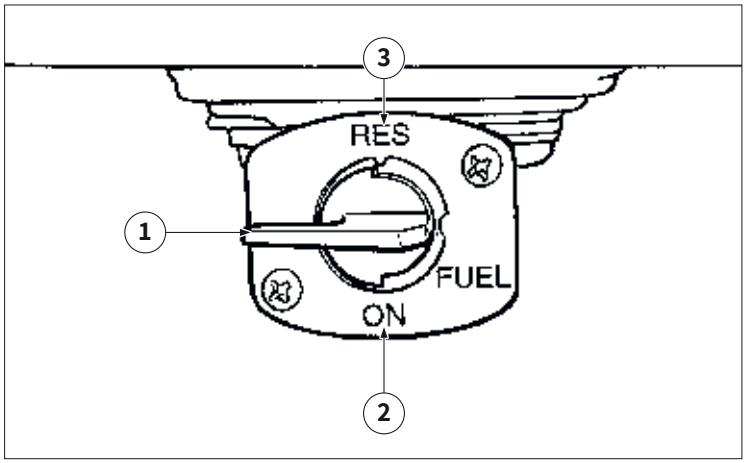


Rear brake pedal
The rear brake pedal “1” is located on the right side of the machine. Press down on the brake pedal to activate the rear brake.



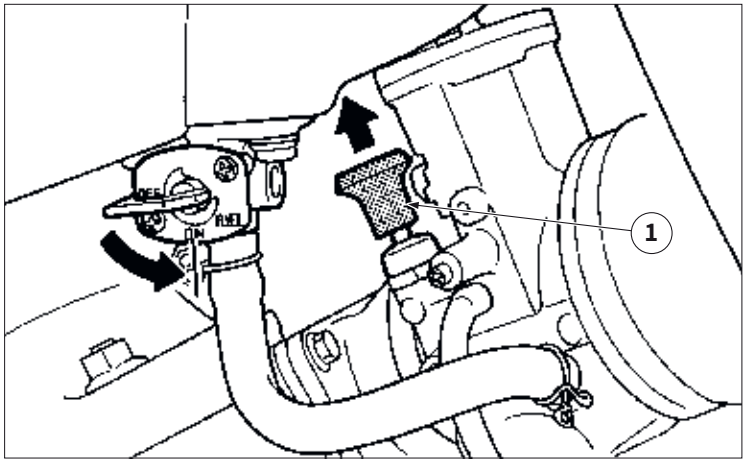
Fuel cock (XX 125 version)
The fuel cock supplies fuel from the tank to carburetor and also filters the fuel. The fuel cock has the two positions:

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 carburetor. Normal riding is done with the lever in this position. Il rubinetto del carburante filtra il carburante e lo eroga dal serbatoio al carburatore. Il rubinetto del carburante ha due posizioni:



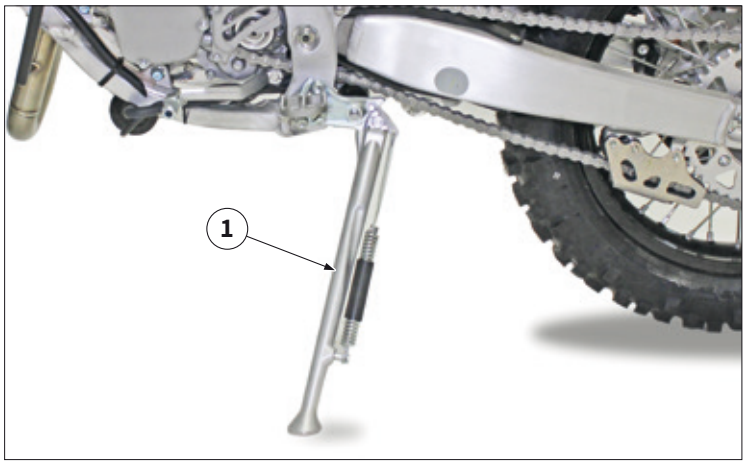
Fuel cock (XE 125 version)
The fuel cock supplies fuel from the tank to carburetor and also filters the fuel. The fuel cock has the three positions:

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 carburetor. Normal riding is done with the lever in this position.
3. “**RES**” : With the lever in this position fuel flows to the carburetor 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 is in this position, but it is recommended to add fuel as soon as possible.



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.



Sidestand (only for XE 125 version)

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

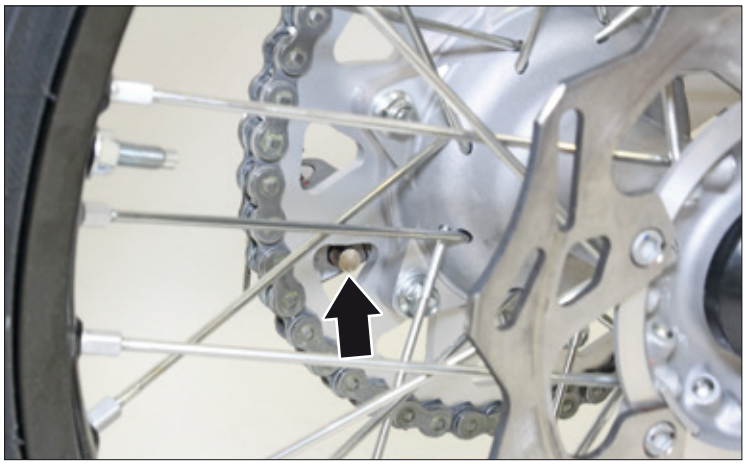
⚠ **Never apply additional force to the sidestand.**

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

Locking device (only for XE 125 version)

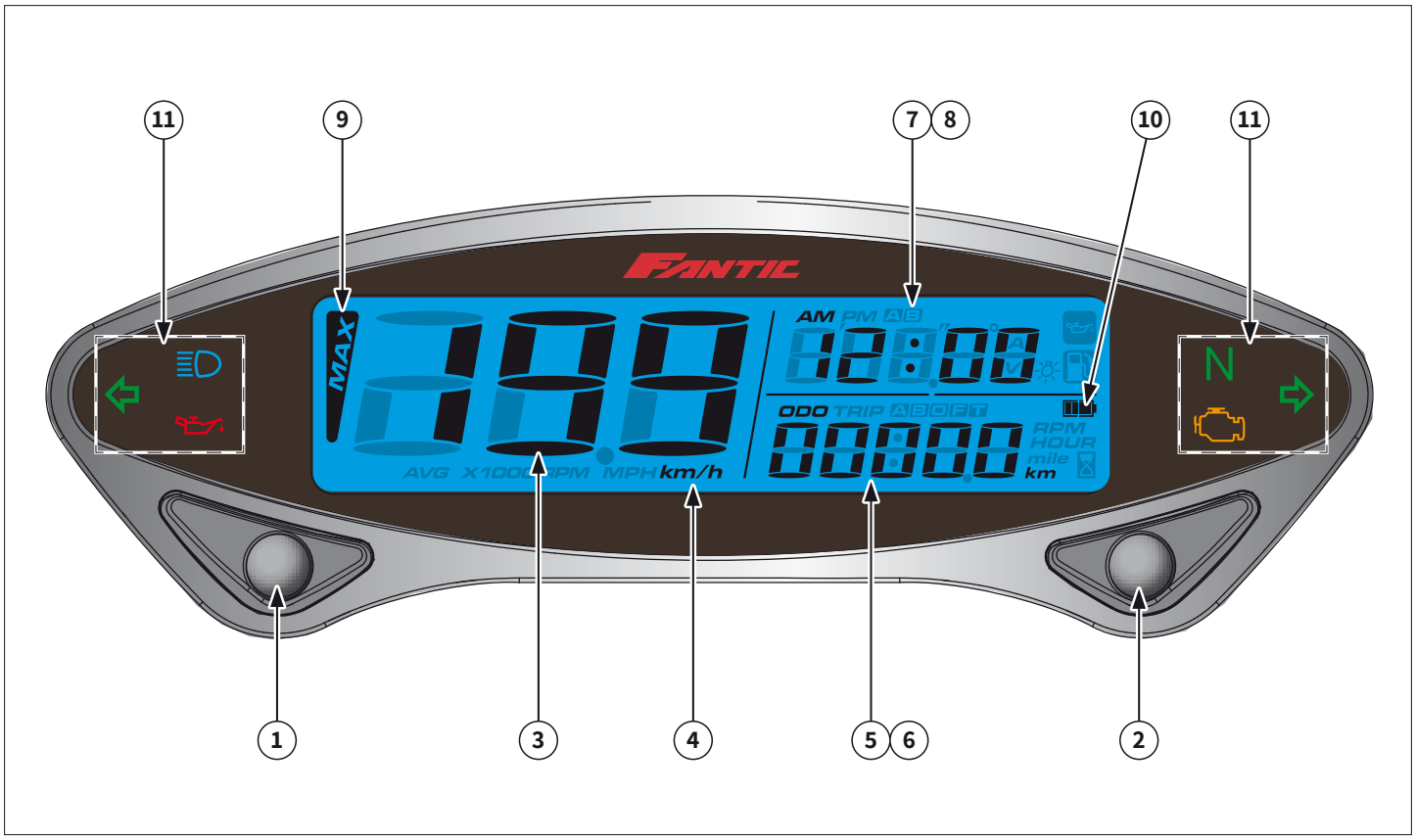
This device “1”, operated by the vehicle keys, allows the rotation of the rim so it can be mechanically locked.

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

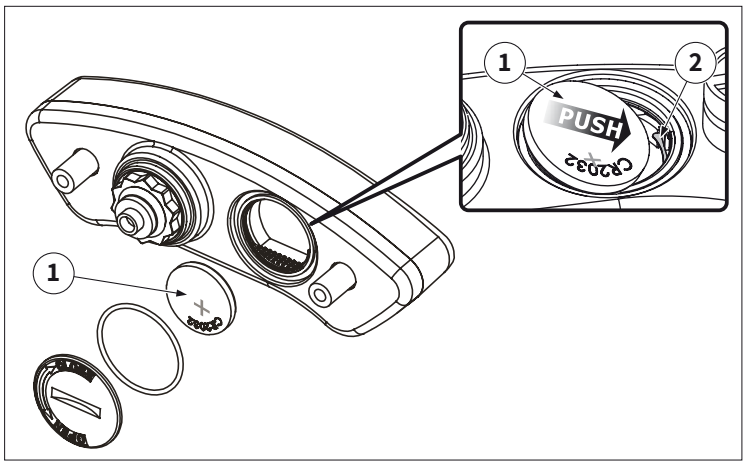


2.7 DASHBOARD

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).

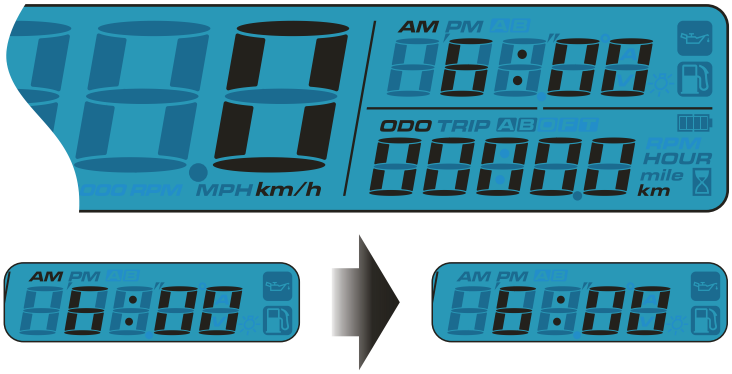


Battery replacement

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.**

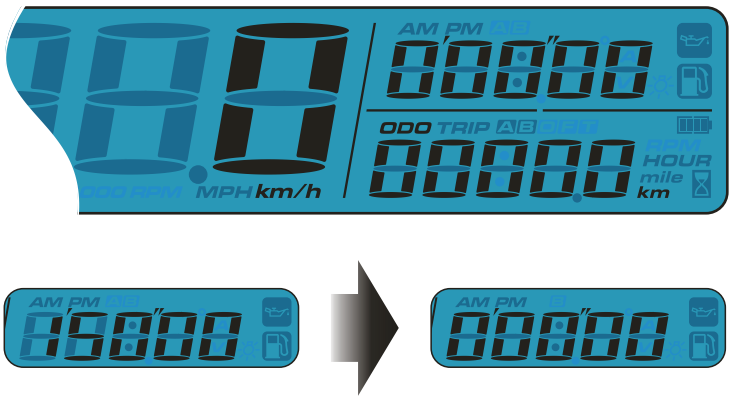


Switch Function Instructions

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.

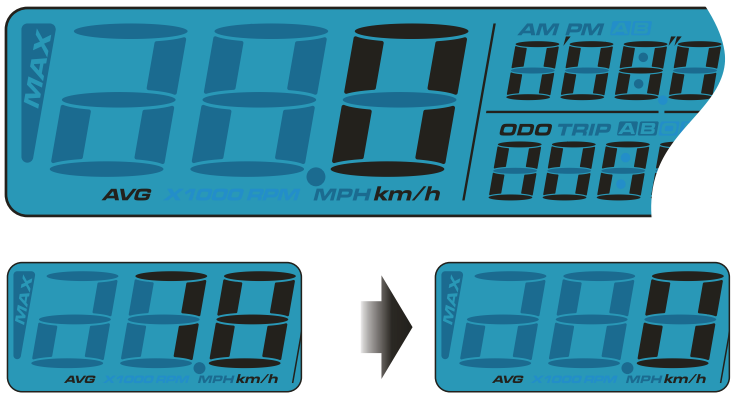
ⓘ **If 24 hour mode is chosen, then the AM/PM symbol will not be displayed.**



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

ⓘ **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.



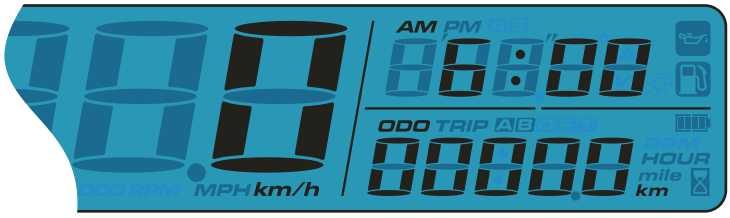
- Press the Select button to switch from Average record to clock meter.

ⓘ **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.

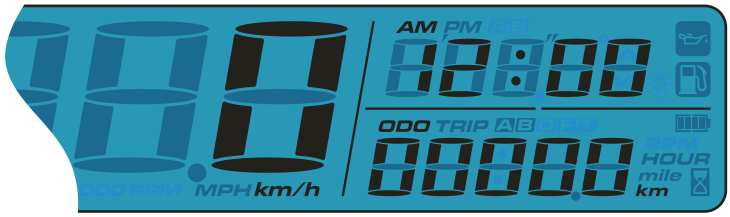
ⓘ **When Maintenance Symbol is ON, please reset under this function screen.**

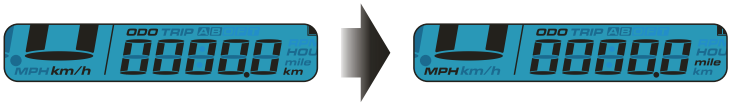
– Back to clock screen.



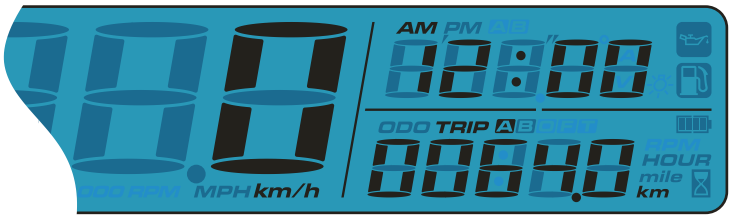
Instructions for adjust button:

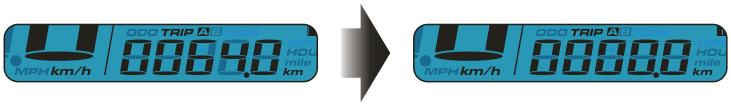
– While on odometer screen, press the Adjust button to switch from odometer to trip A.
– While on odometer screen, press and hold the Adjust button for 3 seconds to change the speed unit.



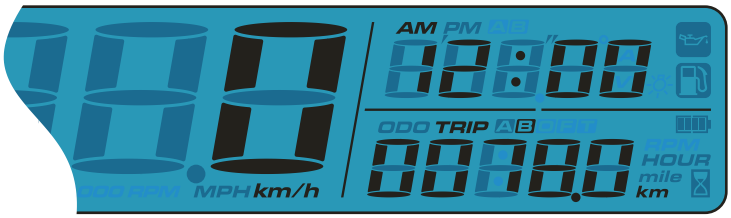


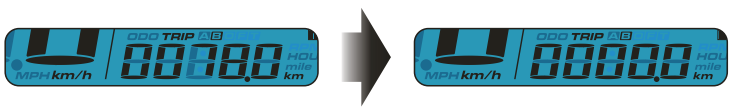
– Press the Adjust button to switch from trip A to trip B.
– Press and hold the Adjust button for 3 seconds to reset the trip A .



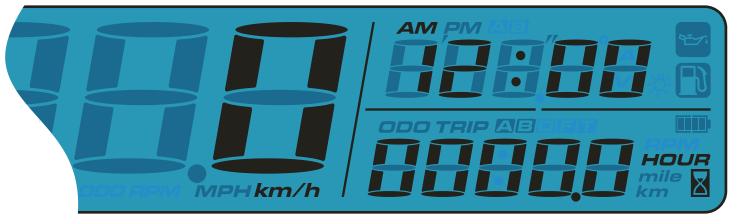


– Press the Adjust button to switch from trip B to total hour meter.
– Press and hold the Adjust button for 3 seconds to reset the trip B .

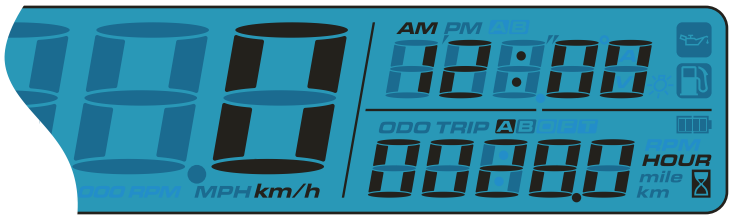


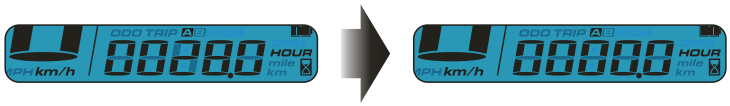


– Press the Adjust button to switch from total hour meter to hour meter A.

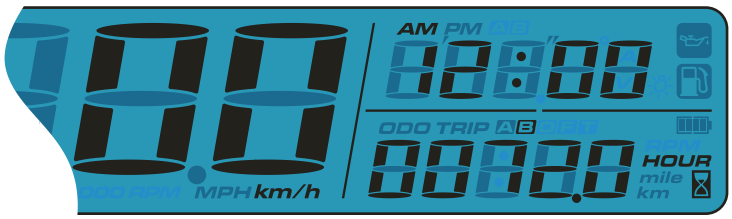


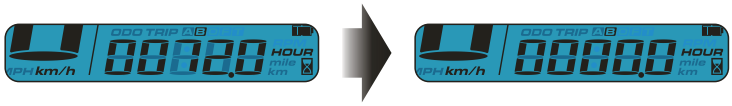
– Press the Adjust button to switch from hour meter A to hour meter B.
– Press and hold the Adjust button for 3 seconds to reset the hour meter A .



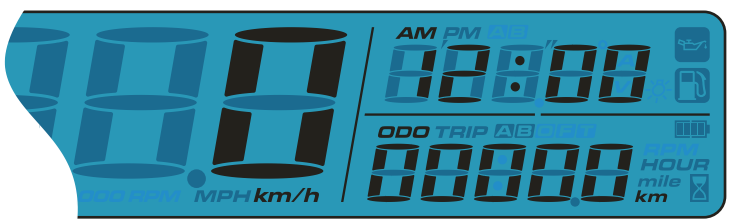


– Press the Adjust button to exit from hour meter B and to go back to odometer screen.
– Press and hold the Adjust button for 3 seconds to reset the hour meter B.



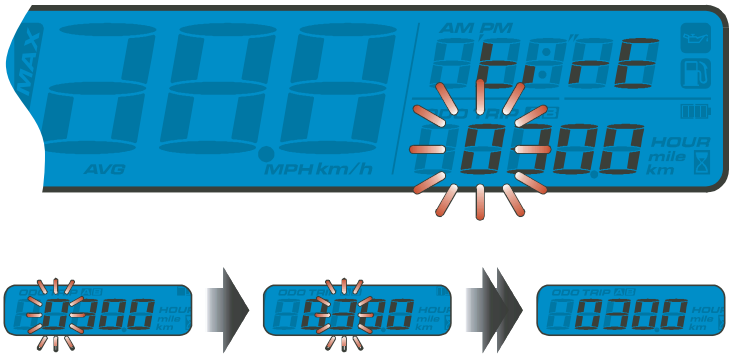


– Back to the odometer screen.



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.



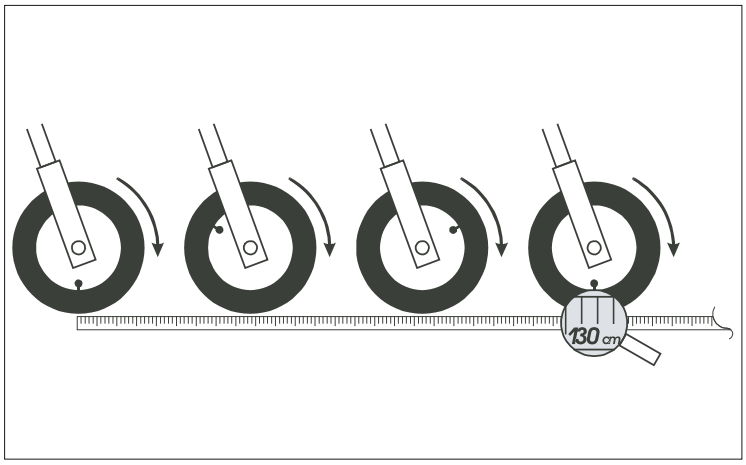
The tire circumference and sensing point setting

ⓘ **Example: the tire circumference is 1300 mm.**

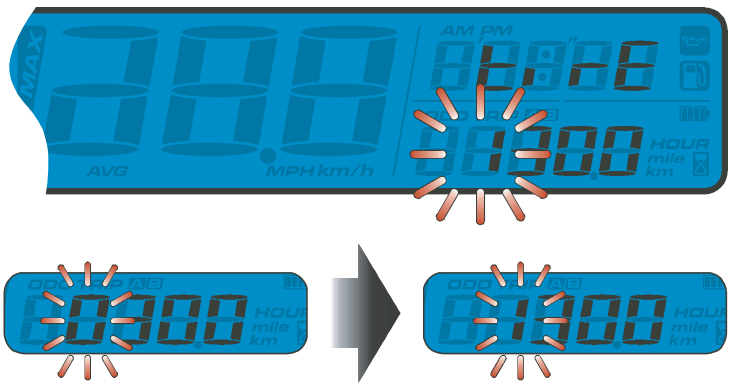
– Press the Adjust button to move the digit you want to set.

ⓘ **The tire circumference setting range is from 300 to 2500 mm.**

Default setting: 1000 mm.

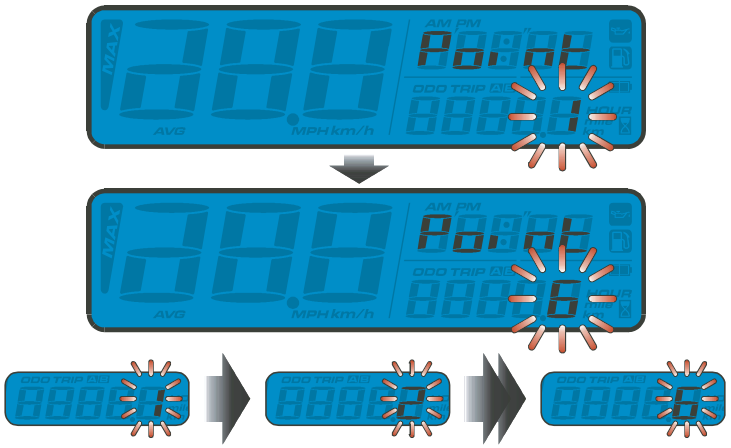


– Use the valve stem as the starting point and the terminal point to measure the wheel circumference with a measuring tape.



ⓘ **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.



Sensing point setting

ⓘ **Example: to change the sensing point to 6.**

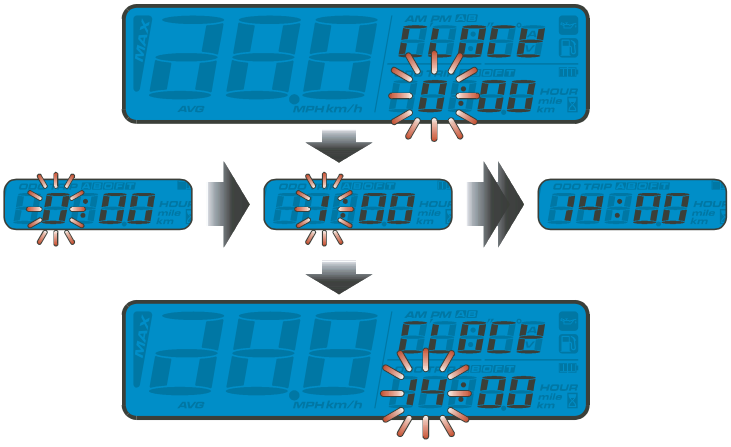
ⓘ **The sensing point settings range from 1 to 6 points.**

Default value: 1.

ⓘ **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 d 1 switch to d 2 screen.
– Press the Select button to enter the clock (Hour) setting.



The clock (hour) setting

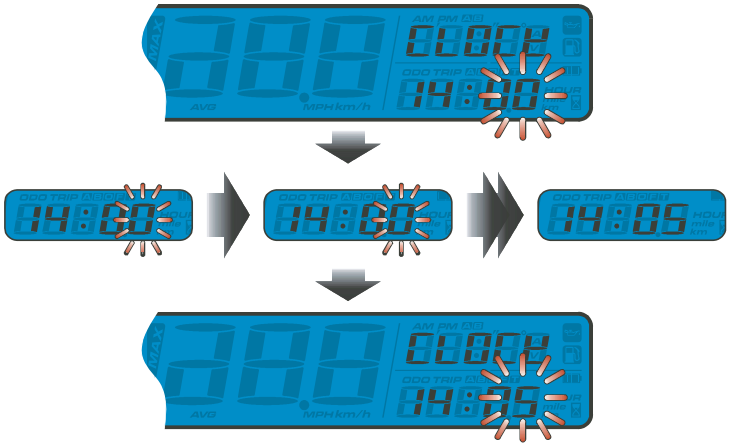
ⓘ **Example: the hours have to be set to 14.**

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

Setting range: 0~24 H.

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

– Press the Adjust button to enter the minute setting.



The clock (minute) setting

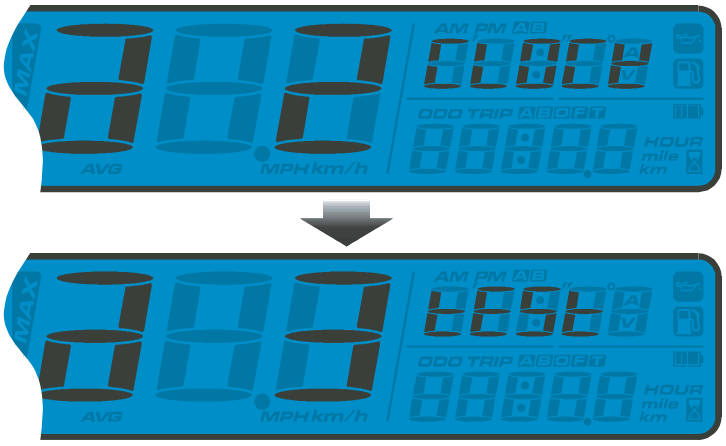
ⓘ **Example: to change the setting to 14:05.**

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

Setting range: 0~59 minutes.

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

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



– From 02 switch to 03 screen.
– Press the Select button again to enter the Stop watch Setup.

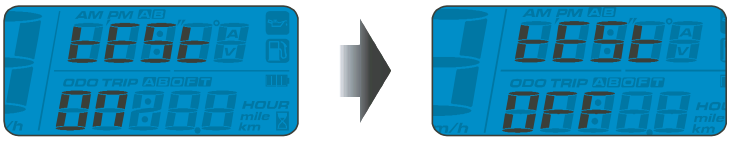
Stop watch Setup
– Press Adjust button to choose between Auto mode (Stop watch starts/stops according to the wheel rotation) and Manual mode (Stop watch starts/stops by pressing the meter button of the optional thumb switch).
– If “Auto” option is chosen, press Adjust button to exit the Stop watch setup.

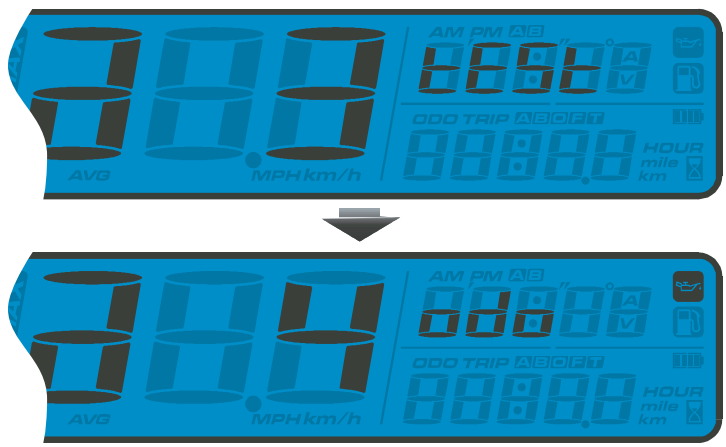
Default value: AUTO.

– 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).

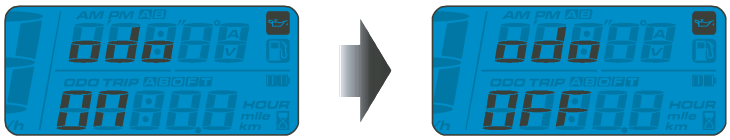
Default value: OFF.

– Press the Adjust button to enter the ODO setting.





– From 03 switch to 04 screen.
– Press the Adjust button to enter the Maintenance Oil Light Setting.

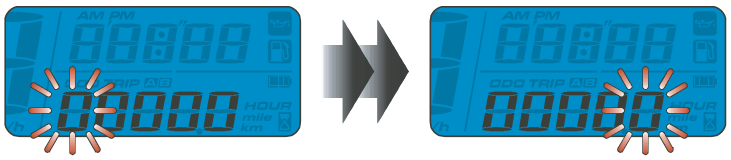


Maintenance Oil Light Setting

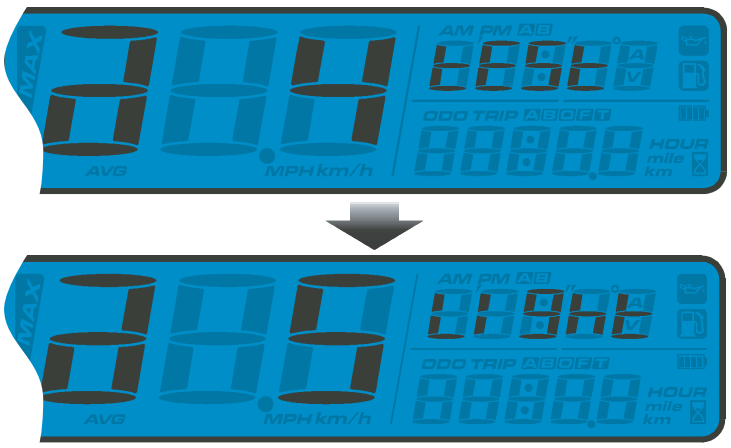
ⓘ **Example: select ON/OFF to enable/disable the maintenance oil light function.**

– 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 maintenace oil light setting.



– From d 4 switch to d 5 screen.
– Press the Adjust button to enter the Backlight Brightness setting.

Backlight brightness

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

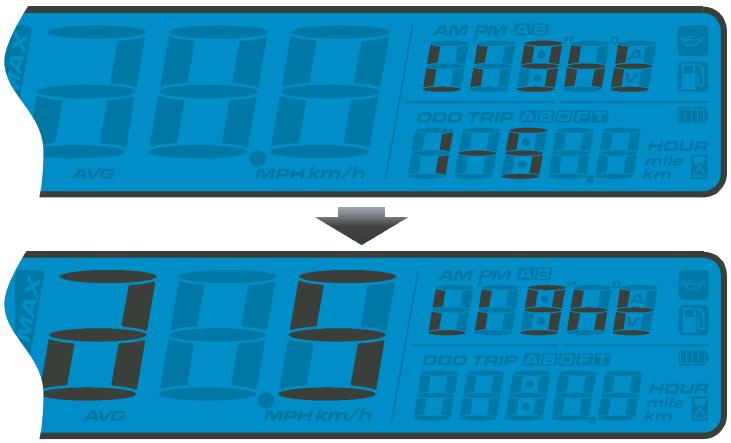
– Press the Select button to adjust the brightness of the backlight.

Adjustable Range: 1~5.

Default value: 5.

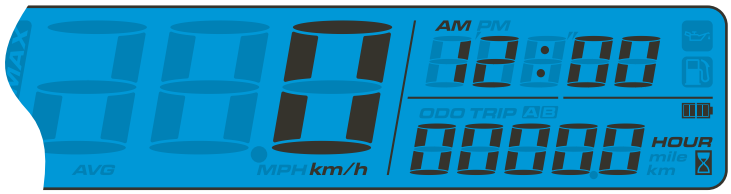
ⓘ **Example: the Backlight brightness setting is changed from 5 to 1.**

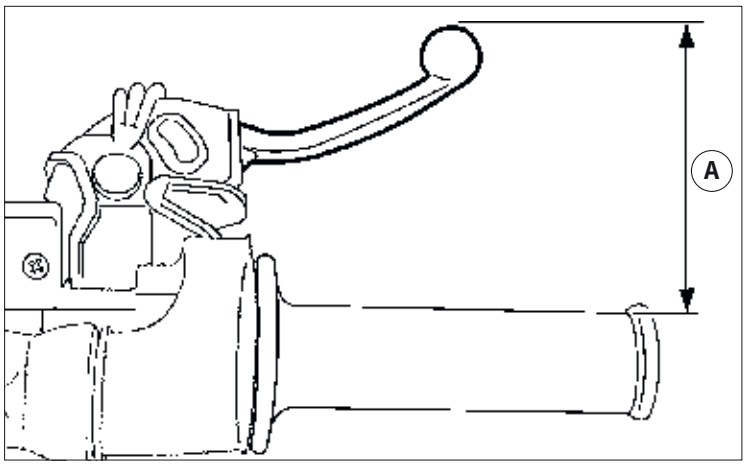
– Press the Adjust button to confirm and exit the Backlight Brightness setting.



– 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.



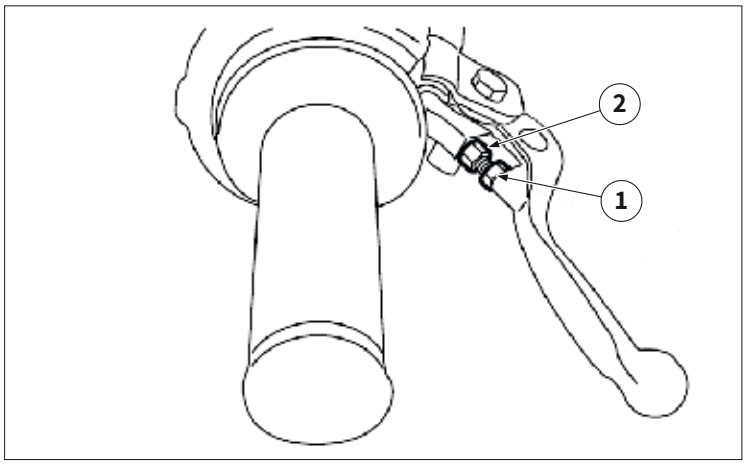


3.1 BRAKES

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)

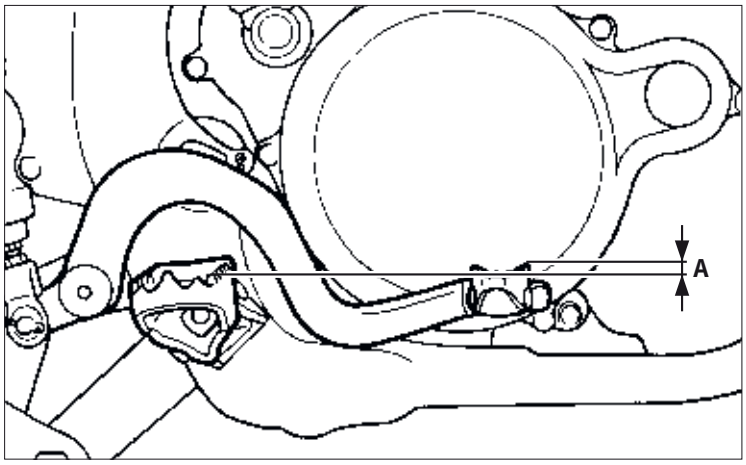


Adjust the brake lever position as described below:

- 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.

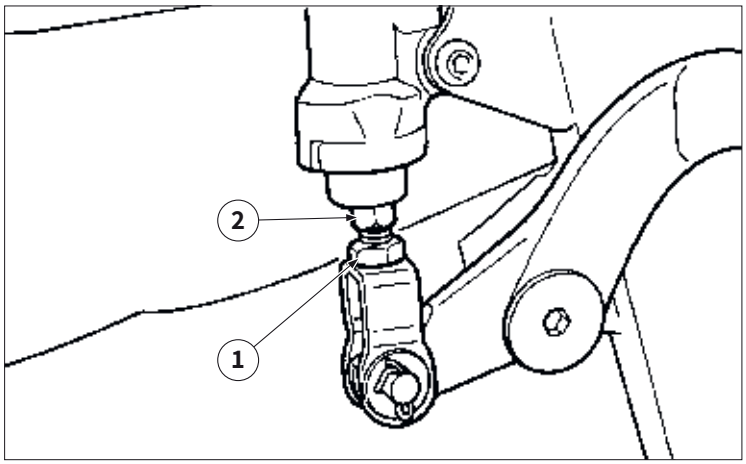
Locknut: 5 Nm (0.5 m•kg, 3.6 ft•lb)



Rear brake adjustment

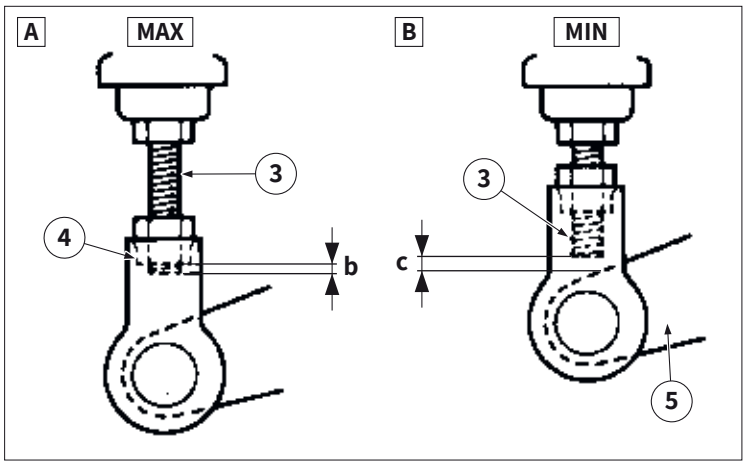
Check the height of brake pedal “A”. If it is different from the standard value, adjust it.

Brake pedal height “A”: 0.0 mm (0.00 in)

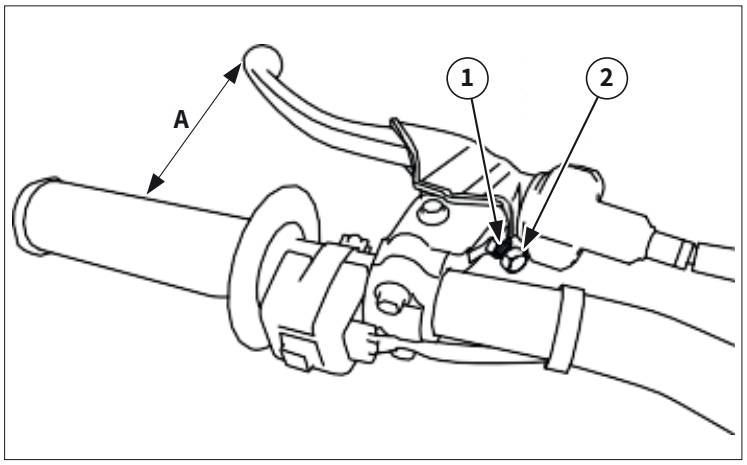


Adjust the brake pedal height as described below:

- 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.

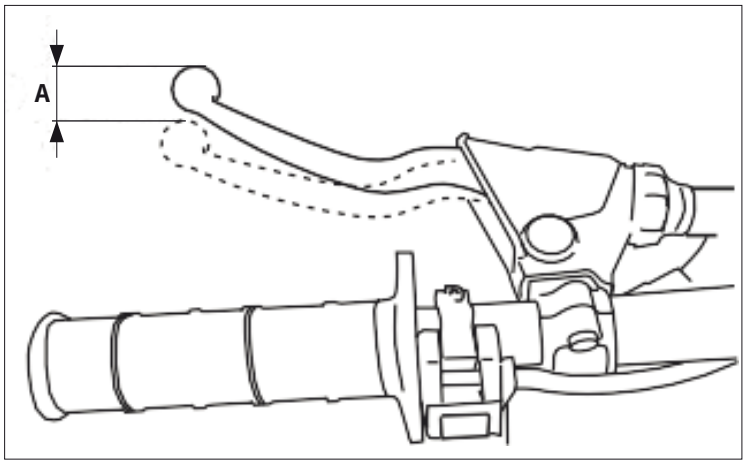


3.2 CLUTCH

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.

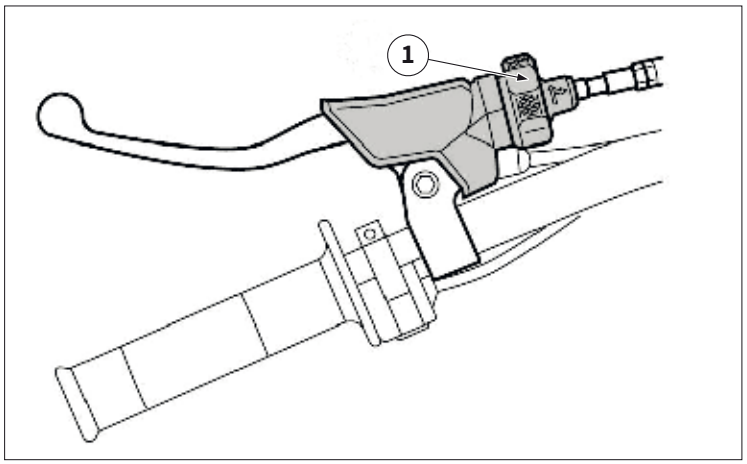
Locknut: 5 Nm (0.5 m•kg, 3.6 ft•lb)



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)



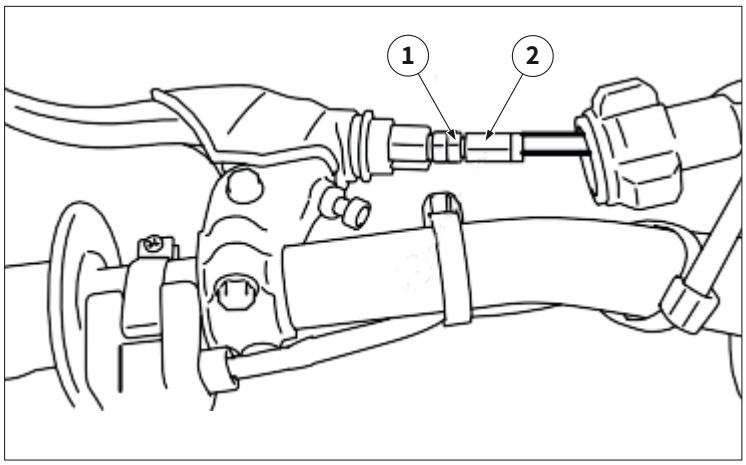
Adjust the clutch lever clearance as described below:

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.**

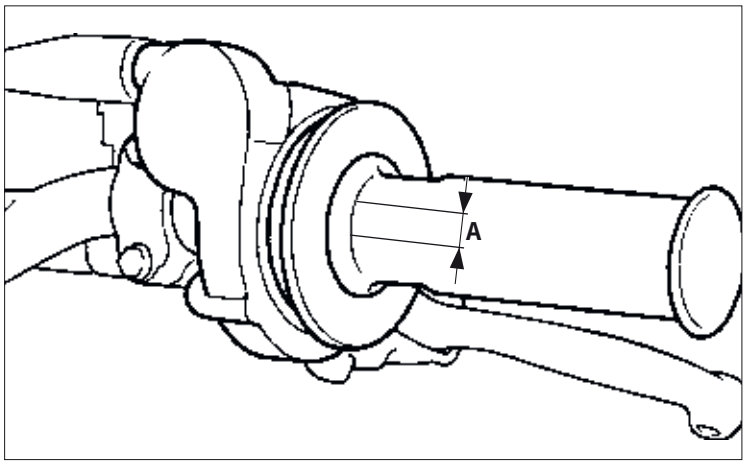


Clutch cable side

- 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

Adjusting the throttle grip clearance

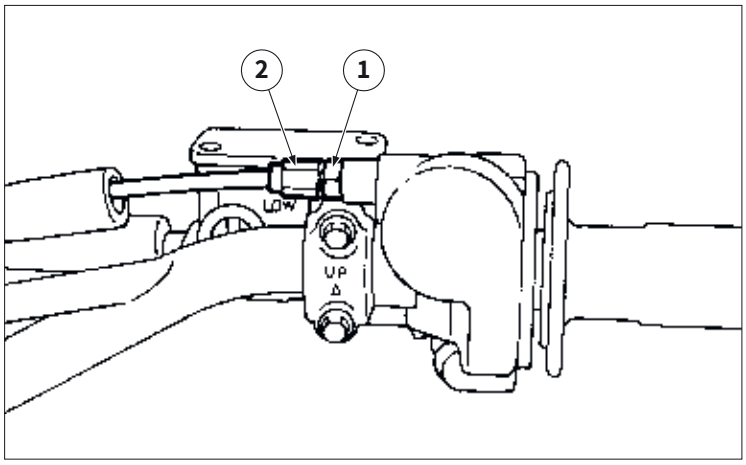
Check the throttle control knob clearance “A”.

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

Throttle grip clearance “A”:
3.0–5.0 mm (0.12–0.20 in)

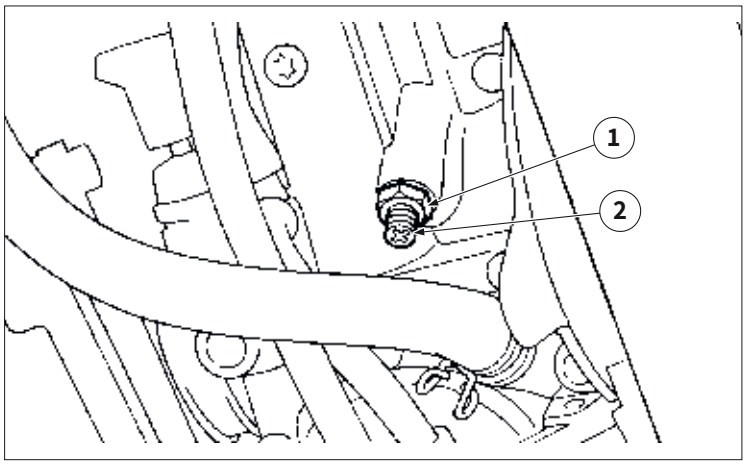
Adjust the throttle control knob clearance as described below:

- 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.

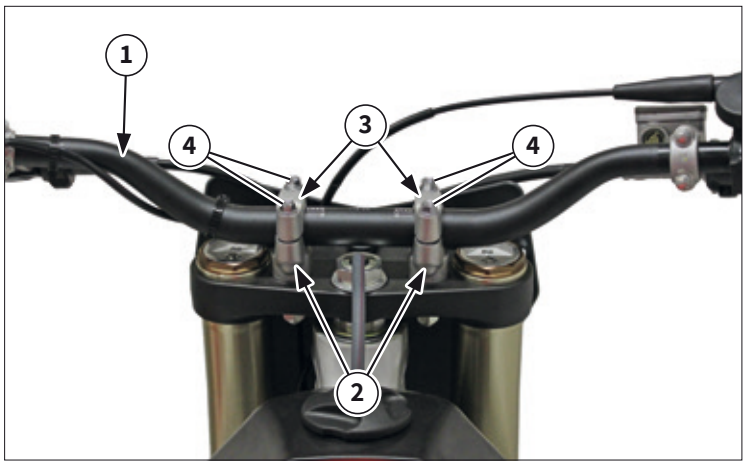


3.4 ADJUSTING THE ENGINE IDLING SPEED

- Start the engine and thoroughly warm it up;
- Loosen the locknut “1”;
- Turn the throttle stop screw “2” until the engine runs at the lowest possible speed;

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

- Tighten the locknut.

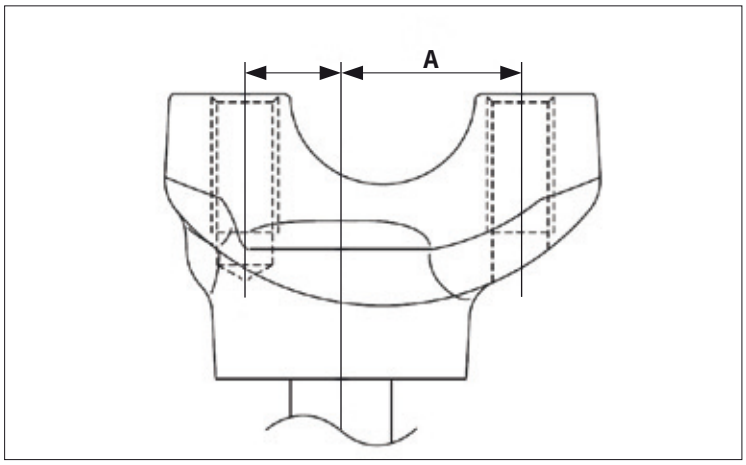


3.5 HANDLEBAR ADJUSTMENT

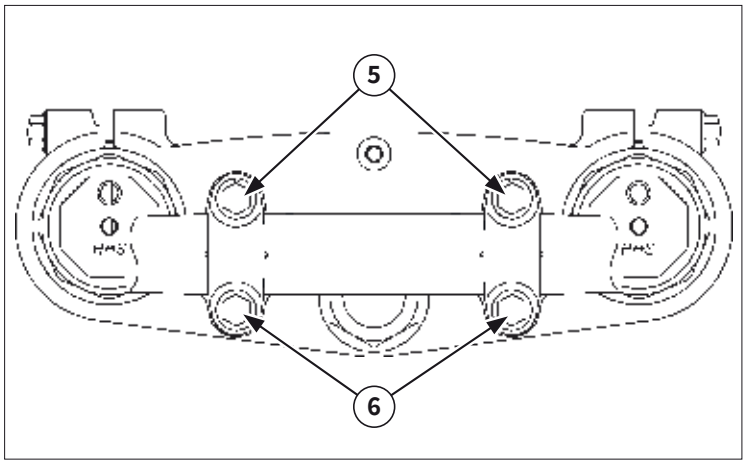
Handlebar installation and adjustment

Install handlebar “1” on lower supports “2”;

Install upper supports “3” and fastening bolts “4”, without tightening them definitively.

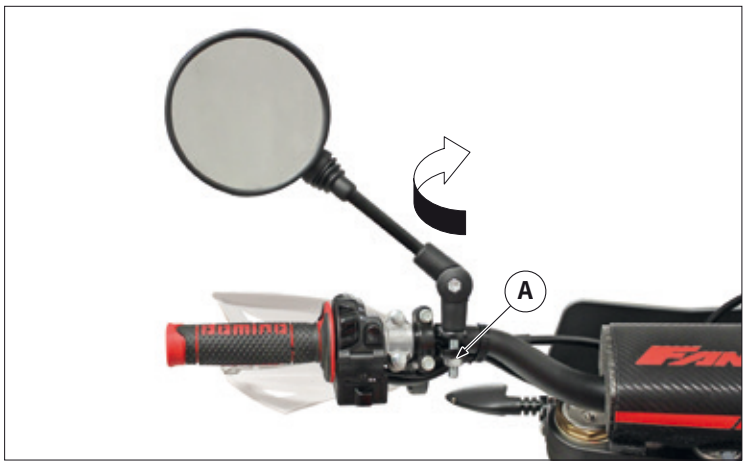


⚠ **Install the handlebar so that the projection “A” of the upper handlebar holders is positioned at the mark on the handlebar as shown.**



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

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

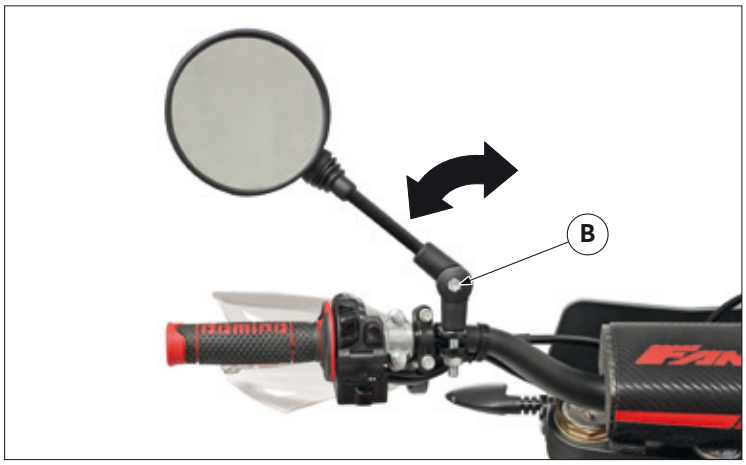


3.6 REAR-VIEW MIRRORS (ONLY FOR XE 125 VERSION)

ⓘ 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.

ⓘ During reassembly, before tightening the nut, check that the mirror support rod is aligned with the handlebar.



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

Carburetor setting

The role of the carburettor 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 carburetor 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.

ⓘ 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.

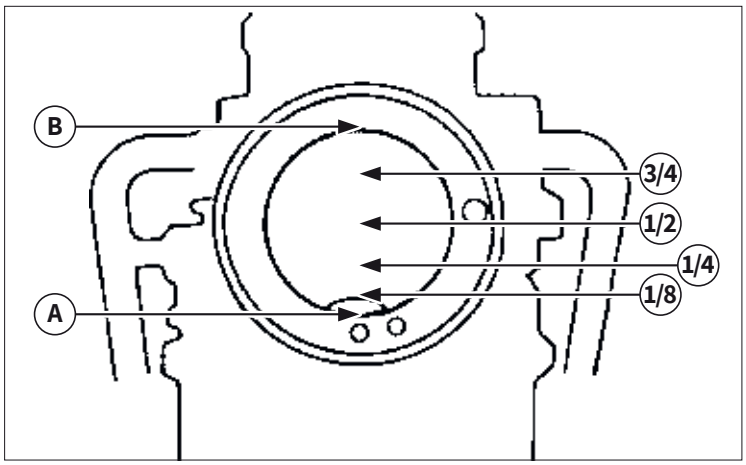
Air temperature	Humidity	Air pressure	Mixture	Setting
High	High	Low (high)	Richer	Leaner
Low	Low	High (low)	Leaner	Richer

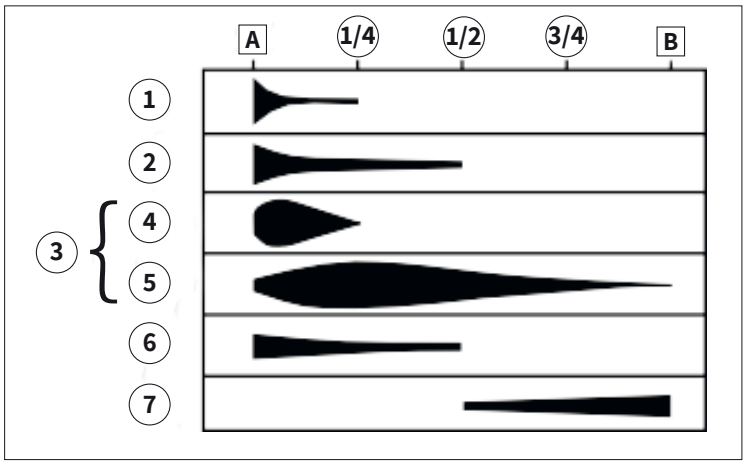
ⓘ The reason for the above tendency is that the richness or leanness of a fuel mixture depends on the density of the air (i.e. the concentration of oxygen in it).
– Higher temperature expands the air with its resultant reduced density.
– Higher humidity reduces the amount of oxygen in the air by so much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

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.

A. Normal
B. Over burned (too lean)
C. Oil fouled (too rich)





Effect of setting parts in relation to throttle valve opening

A. Closed
B. Full-open
1. Pilot air screw
2. Pilot jet
3. Jet needle
4. Diameter of straight portion
5. Clip position
6. Throttle valve
7. Main jet

Standard carburation setting (XX 125 version)

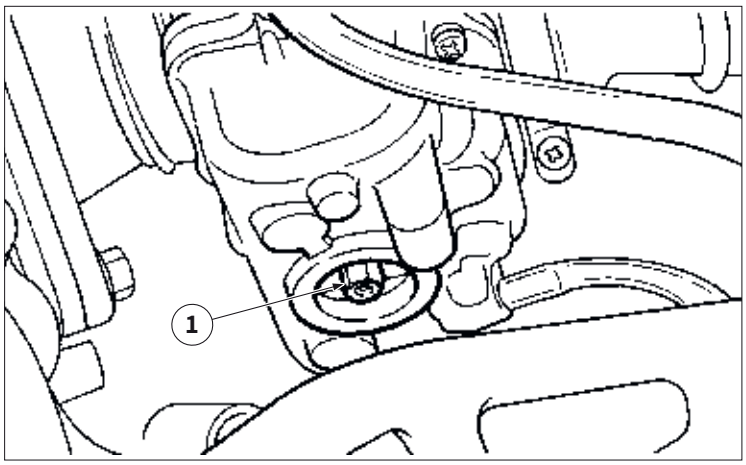
Pilot jet:	#45 (05793005)
Main jet:	#480 (07449005)
Jet needle:	6BFY43-74 (05778005), 3 of 5 notches
Throttle valve:	4.0 (05810005)
Pilot air screw:	2–¼ turns open

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

Pilot jet:	#40 (05798005)
Main jet:	#470 (07449005)
Jet needle:	6BFY43-74 (05778005), 3 of 5 notches
Throttle valve:	4.0 (05810005)
Pilot air screw:	2–¼ turns open

Standard carburation setting (XE 125 approved version)

Pilot jet:	#20 (07451005)
Main jet:	#130 (07450005)
Jet needle:	6BFY43-74 (05778005), 4 of 5 notches
Throttle valve:	4.0 (05810005)
Pilot air screw:	2–¼ turns open

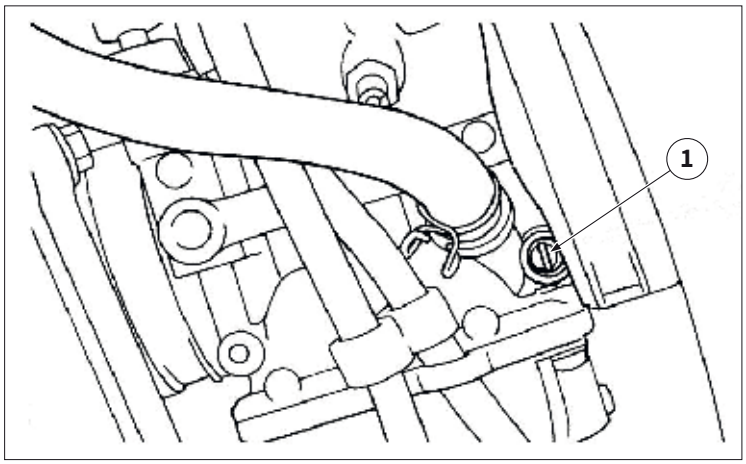


Adjusting the main jet

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: #480
XE 125 “Racing” version: #470
XE 125 approved version: #130

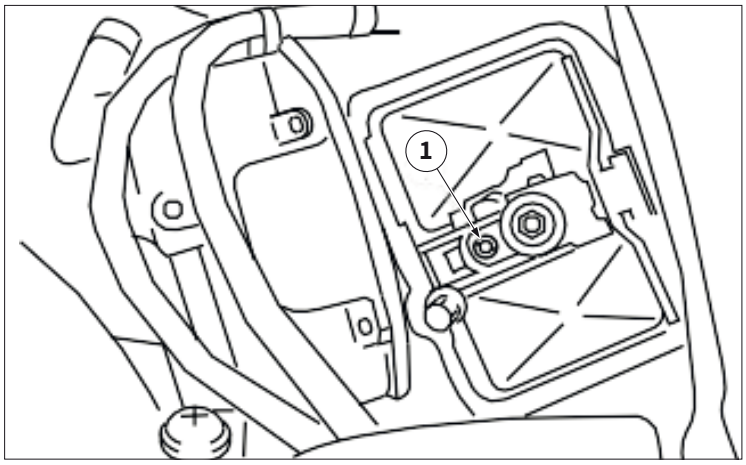
- Spark plug is too hot: select a main jet having higher calibrating No. than standard. (To be enriched);
- Spark plug is wet: select a main jet having lower calibrating No. than standard. (To be leaned out).



Adjusting the pilot air screw

The richness of the air-fuel mixture with full closed to 1/4 throttle can be set by turning the pilot air screw “1”. Turning in the pilot air screw will enrich the mixture at low speeds, and turning out it will lean out the mixture.

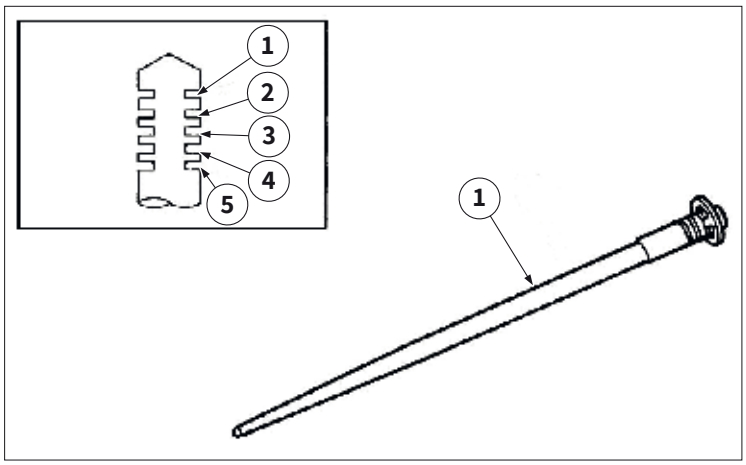
Standard pilot air screw position:
2–1/4 turns out



Adjusting the pilot jet

The richness of air-fuel mixture with the throttle fully closed to 1/2 open can be set by changing the pilot jet “1”. It is changed when adjustment cannot be made by the pilot air screw alone.

Standard pilot jet:
XX 125 version: #45
XE 125 “Racing” version: #40
XE 125 approved version: #20



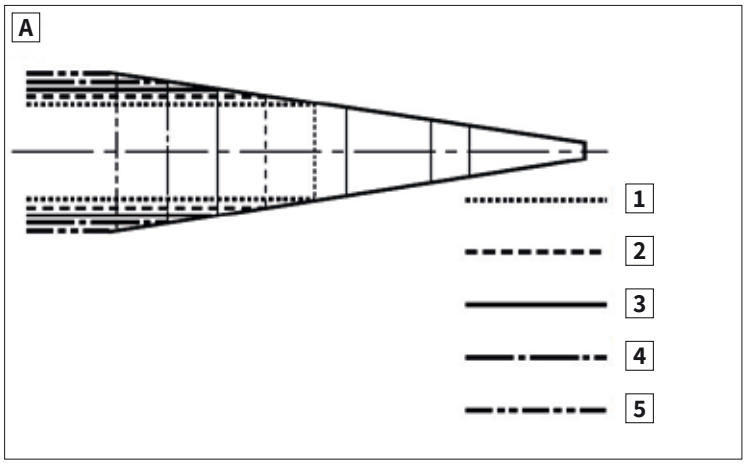
Adjusting the jet needle groove position

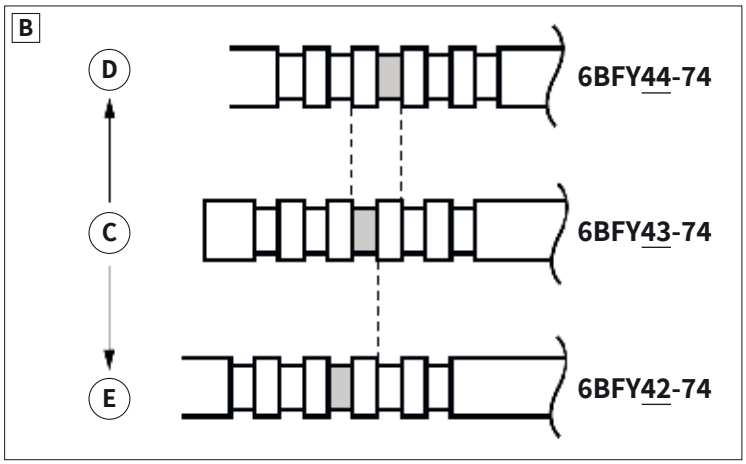
Should the engine be hard to run smoothly at intermediate speeds, the jet needle “1” must be adjusted. If the mixture is too rich or too lean at intermediate speed operation, irregular engine operation and poor acceleration will result. Whether or not the richness of the mixture is proper is hard to 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
XE 125 approved version: n.4





Jet needle adjustment

On the carburetors used in the XX125 and XE125, the main nozzle is a non disassembly type, so it can not be replaced. Therefore, the carburettor adjustment requires jet needle change.

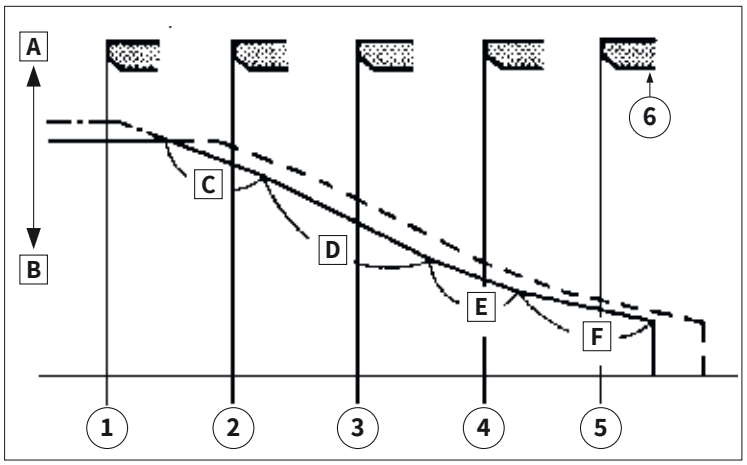
The jet needle setting parts, having the same taper angle, are available in different straight portion diameters and in different taper starting positions.

Standard jet needle: 6BFY43-74

In the case of the same number of clip position, changing from 6BFY43-74 to 6BFY42-74 has the same effect as a lowering of 0.5-clip position. And in the case of the same number of clip position, changing from 6BFY43-74 to 6BFY44-74 has the same effect as a rising of 0.5-clip position.

A. Difference in straight portion diameter.
B. Difference in clip position
C. Reference needle
D. 0.5 richer
E. 0.5 leaner

1. 6BFY43-**72**
2. 6BFY43-**73**
3. 6BFY43-**74**
4. 6BFY43-**75**
5. 6BFY43-**76**



Relationship with throttle opening

The flow of the fuel through the carburetor main system is controlled by the main jet and then, it is further regulated by the area between the main nozzle and the jet needle. On the relationship between the fuel flow and the throttle opening, the fuel flow relates to the straight portion of the jet needle at full closed–1/8 throttle, to the 1st tapered portion at 1/4 throttle, to the second tapered portion at 1/2 throttle, to the third tapered portion at 3/4 throttle and to the fourth tapered portion at full open.

Therefore, the fuel flow is balanced at each stage of throttle opening by a combination of the jet needle diameter and clip position.

A. Lean (larger diameter)
B. Rich (smaller diameter)
C. 1st taper
D. 2nd taper
E. 3rd taper
F. 4th taper
1. Full closed
2. 1/4 throttle
3. 1/2 throttle
4. 3/4 throttle
5. Full open
6. Main nozzle

Carburetor setting parts

Main jet

Main jet “1”	Size	Part number
Lean	#400	05803005
	#410	05804005
	#420	05805005
	#430	05802005
	#440	05806005
	#450	05807005
	#460	05808005
Standard (XE 125 “Racing”)	#470	05809005
Standard (XX125) Rich	#480	07449005

Pilot jet

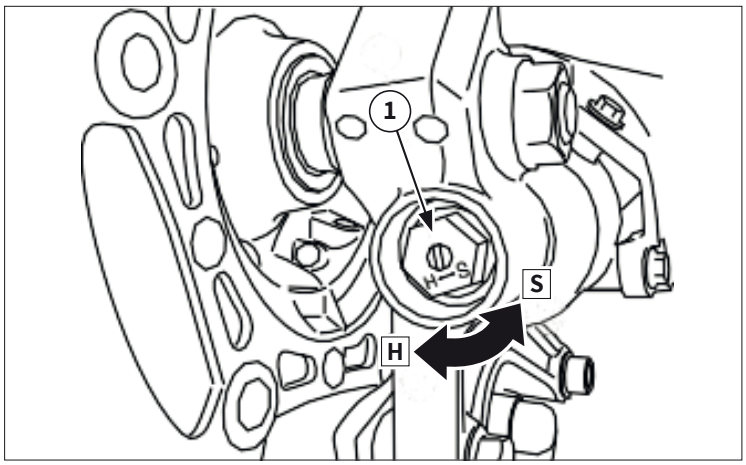
Pilot jet “1”	Size	Part number
Lean	#30	05794005
	#32.5	05795005
	#35	05796005
	#37.5	05795005
Standard (XE 125 “Racing”)	#40	05798005
	#42.5	05799005
Standard (XX125)	#45	05793005
	#47.5	05800005
Rich	#50	05801005

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	6BFY42-72	05779005
	6BFY42-73	05780005
	6BFY42-74	05781005
	6BFY42-75	05782005
Lean	6BFY42-76	05783005
Rich	6BFY43-72	05784005
	6BFY43-73	05785005
Standard	6BFY43-74	05778005
	6BFY43-75	05786005
Lean	6BFY43-76	05787005
Rich	6BFY44-72	05788005
	6BFY44-73	05789005
	6BFY44-74	05790005
	6BFY44-75	05791005
Lean	6BFY44-76	05792005



3.8 FORK ADJUSTMENT

Rebound damping adjustment (return)

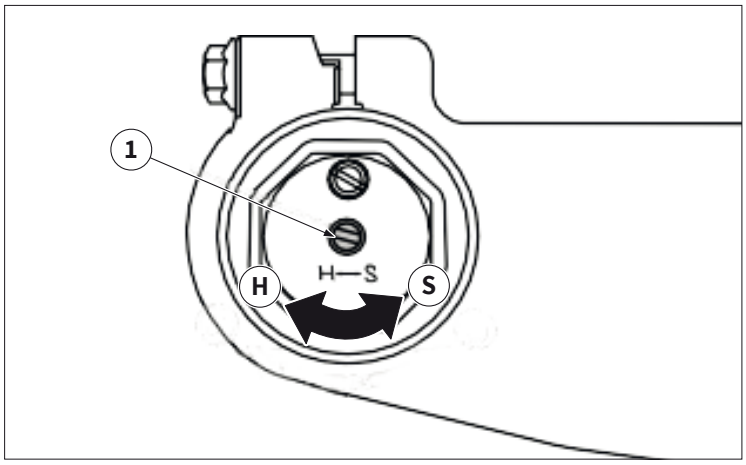
- To adjust the rebound damping force of the fork, turn the adjustment device “1”. The device has a range of action of 20 clicks;
- To increase the rebound damping force (slower return) rotate the device clockwise, following the letter “H”;
- To decrease the rebound damping force (faster return) rotate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

XX125 version standard adjustment:
From all closed, open by 12 clicks by turning to “H”.

XE125 version standard adjustment:
From all closed, open by 11 clicks by turning to “H”.

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.



Compression damping adjustment

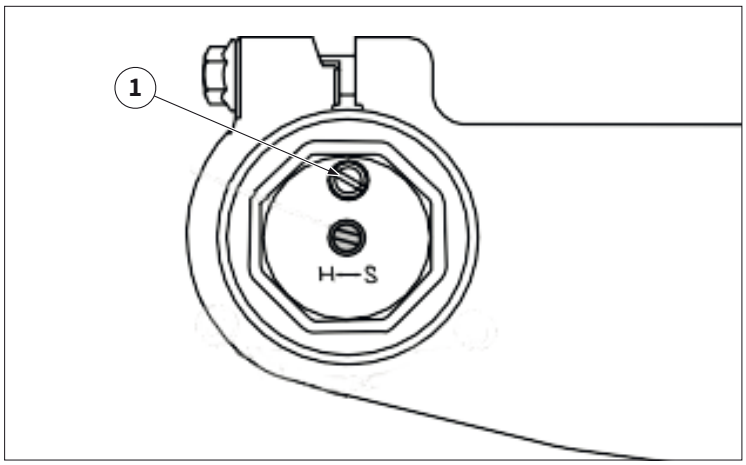
- To adjust the compression damping force of the fork, turn the adjustment device “1”. The device has a range of action of 20 clicks;
- To increase the compression damping force (harder thrust) rotate the device clockwise, following the letter “H”;
- To decrease the compression damping force (softer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

XX125 version standard adjustment:
From all closed, open by 12 clicks by turning to “H”.

XE125 version standard adjustment:
From all closed, open by 15 clicks by turning to “H”.

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.



Relieving the front fork internal pressure

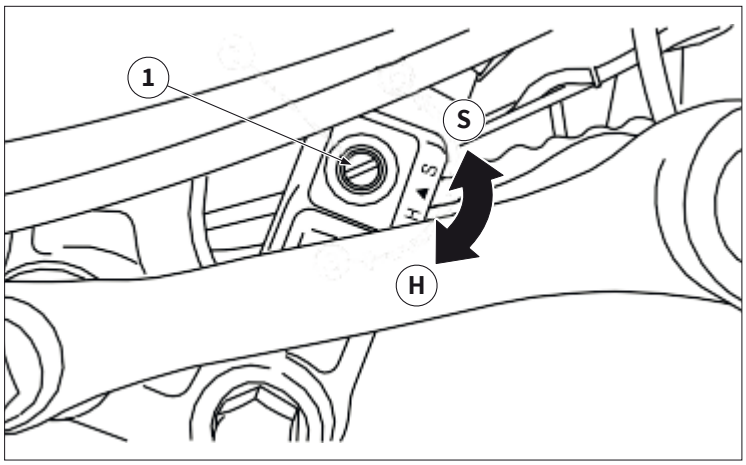
If the front fork initial movement feels stiff during a run, relieve the front fork internal pressure.

- 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 Nm (0.1 m•kg, 0.7 ft•lb)

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	06418005
4.3 N/mm	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

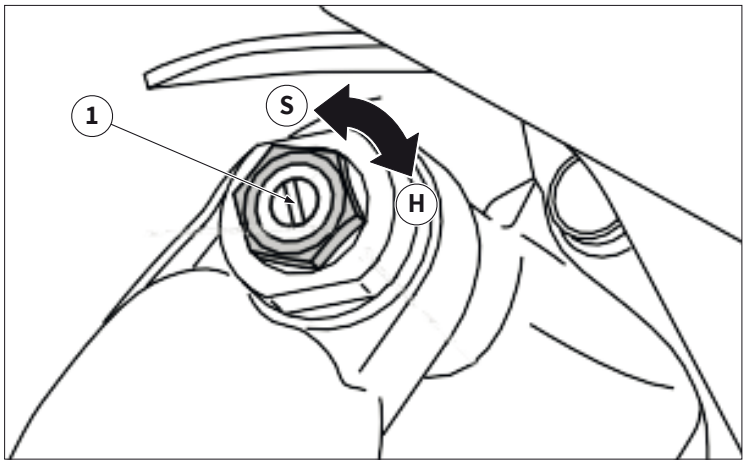
Rebound damping adjustment (return)

- 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”.

XX125 version standard adjustment:
From all closed, open by 10-13 clicks by turning towards “H”.

XE125 version standard adjustment:
From all closed, open by 12-15 clicks by turning towards “H”.

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



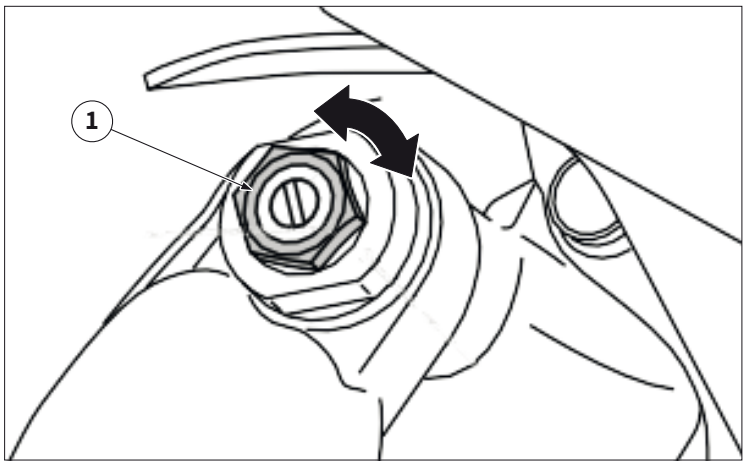
Compression damping adjustment (low speed)

- 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”.

XX125 version standard adjustment:
From all closed, open by 11-14 clicks by turning towards “H”.

XE125 version standard adjustment:
From all closed, open by 12-15 clicks by turning towards “H”.

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



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.

XX125 version standard adjustment:
From all closed, open the register of 1-3/8 +/- 1/6 turns.

XE125 version standard adjustment:
From all closed, open the register of 1-5/8 +/- 1/6 turns.

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

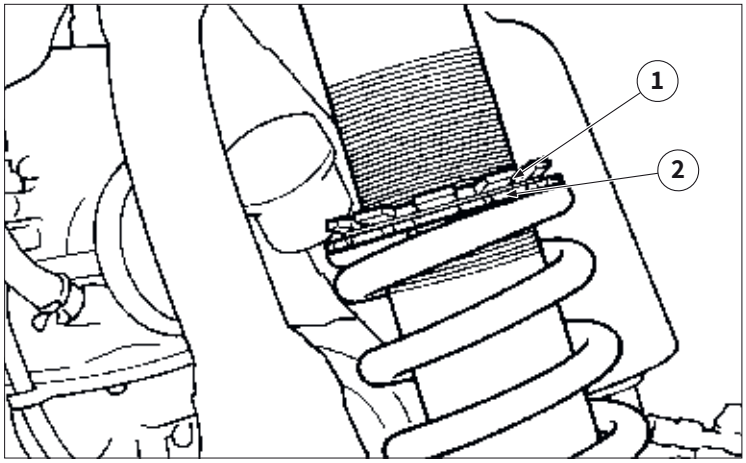
3.10 SETTING THE SAG

Rear shock absorber sinking adjustment (SAG)

- Place a stand or block under the engine to put the rear wheel above the floor, and measure the length “A” between the rear wheel axle center and the rear fender holding bolt;

- Remove the stand or block from the engine and with a rider astride the seat, measure the sunken length “B” between the rear wheel axle center and the rear fender holding bolt.

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".

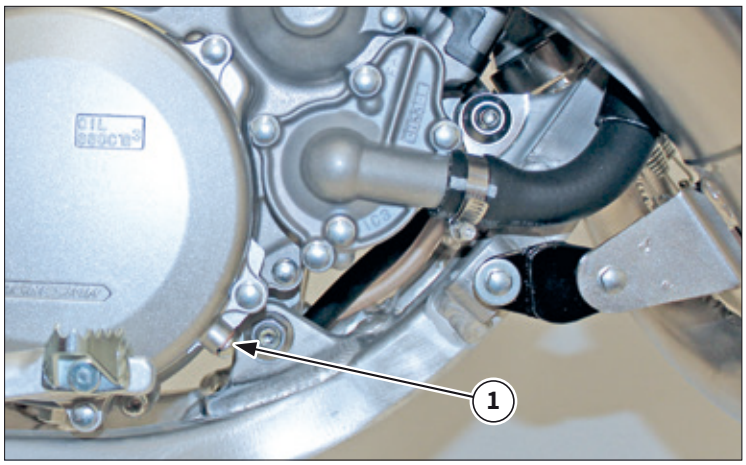
If the machine is new and after it is broken in, the same set length of the spring may change because of the initial fatigue, etc. of the spring. Therefore, be sure to make reevaluation.

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.

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.

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.

Load factor	Part number
42 N/mm	06401005
44 N/mm	06402005
46 N/mm	06075005
48 N/mm	06403005
50 N/mm	06404005
52 N/mm	06405005
54 N/mm	06406005
56 N/mm	06407005



4.1 TRASMISSION OIL

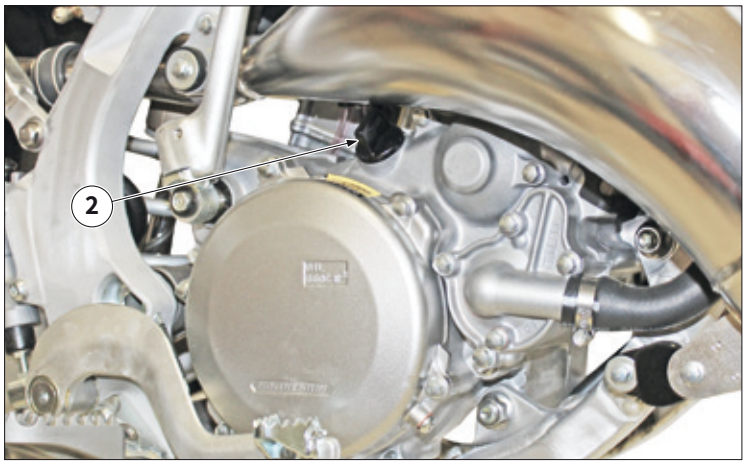
Checking the transmission oil level

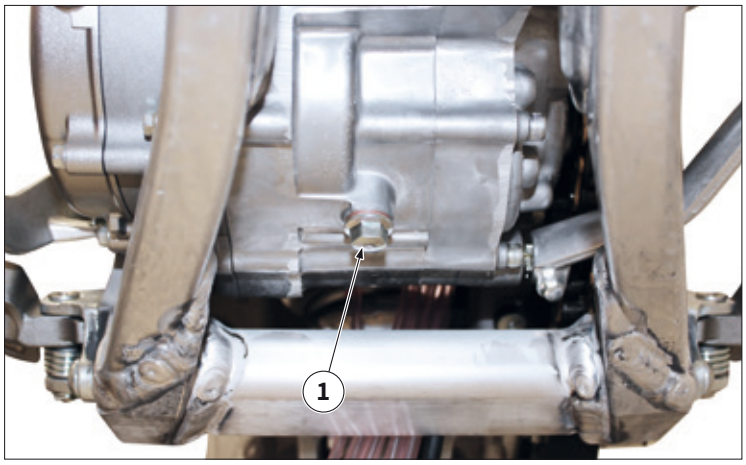
- Start the engine, warm it up for several minutes and wait for five minutes;
- Place the machine on a level place and hold it up on upright position by placing the suitable stand under the engine;
- Check the transmission oil level by removing control bolt “1”. If oil leaks, the level is correct, while 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.

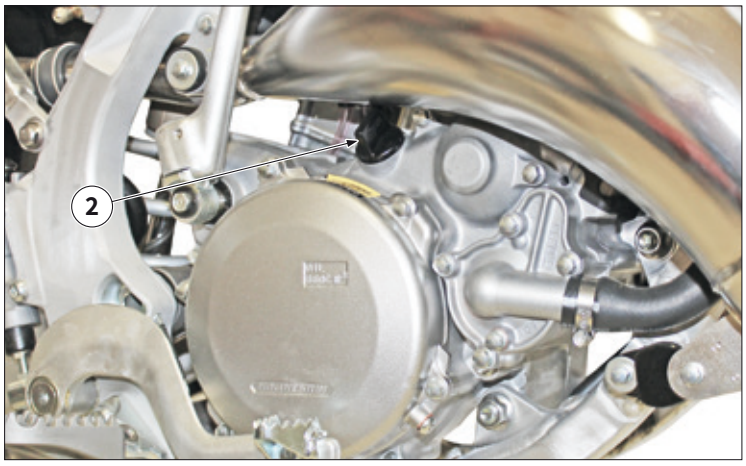
Oil check bolt: 10 Nm (1.0 m•kg, 7.2 ft•lb)





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”;

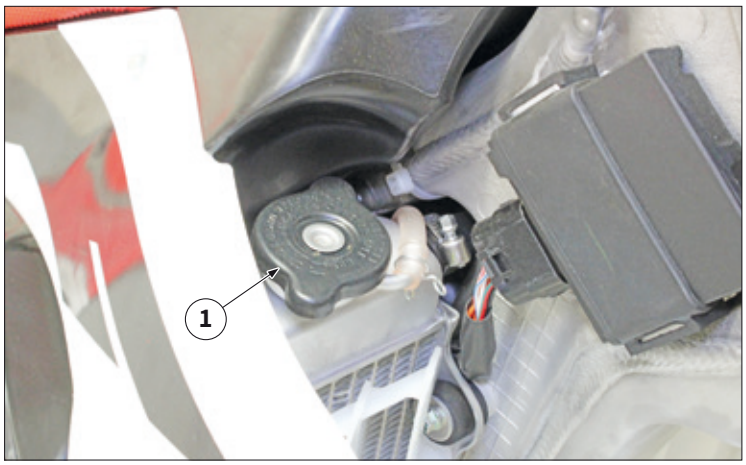


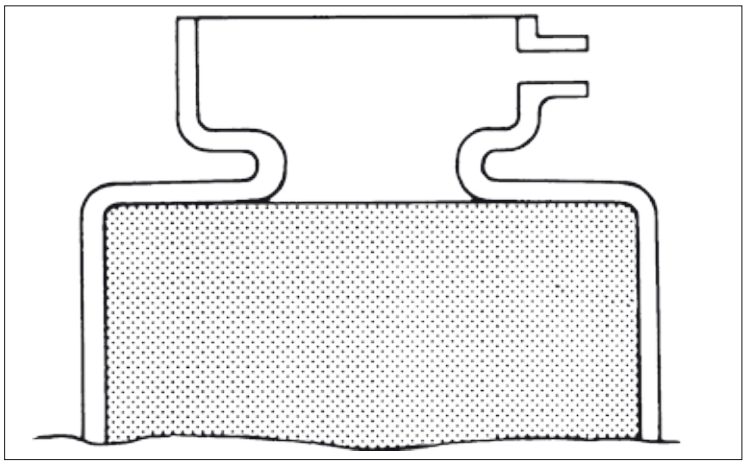
- Install a new aluminium washer to the drain bolt “1” and install it in its housing;
- Fill the crankcase from the appropriate opening with transmission oil;

Quantity of transmission oil: 0,66 L

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”.





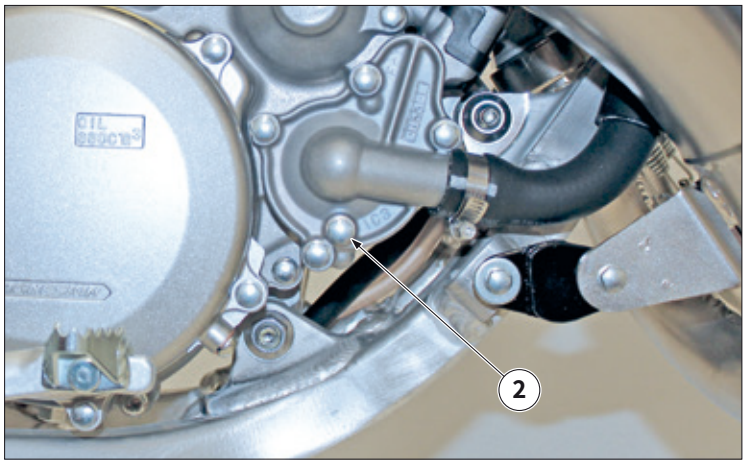
4.2 COOLANT

Checking the coolant level

⚠ Do not remove the radiator cap “1”, drain bolt and hoses when the engine and radiator are hot. Scalding hot fluid and steam may be blown out under pressure, which could cause serious injury. When the engine has cooled, place a thick towel over the radiator cap, slowly rotate the cap counterclockwise to the detent. This procedure allows any residual pressure to escape. When the hissing sound has stopped, press down on the cap while turning counterclockwise and remove it.

⚠ Hard water or salt water is harmful to the engine parts. You may use distilled water, if you can’t get soft water.

- Place the machine on a level place, and hold it in an upright position;
- Remove the radiator cap “1” and check the coolant level. Add coolant if the coolant level is low.



Coolant replacement

⚠ Do not remove the radiator cap “1”, drain bolt and hoses when the engine and radiator are hot. Scalding hot fluid and steam may be blown out under pressure, which could cause serious injury. When the engine has cooled, place a thick towel over the radiator cap, slowly rotate the cap counterclockwise to the detent. This procedure allows any residual pressure to escape. When the hissing sound has stopped, press down on the cap while turning counterclockwise and remove it.

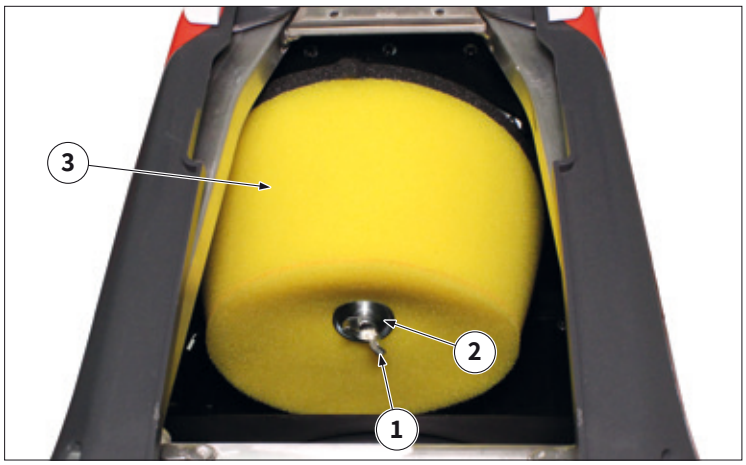
- Place a container under the engine.
- Remove the radiator cover and the coolant drain plug “1”, then drain the coolant completely by collecting it in the container under the engine;
- Install a new washer on the drain plug “1” and install it in its housing;
- Fill the engine and the radiator with “ETHYLENE GLYCOL WITH ANTICORROSIVE FOR ALUMINIUM ENGINES”, up to the level previously indicated.

Coolant quantity: 0,9 L

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

⚠ Do not mix more than one type of ethylene glycol antifreeze containing corrosion inhibitors for aluminum engine.

⚠ Do not use water containing impurities or oil.

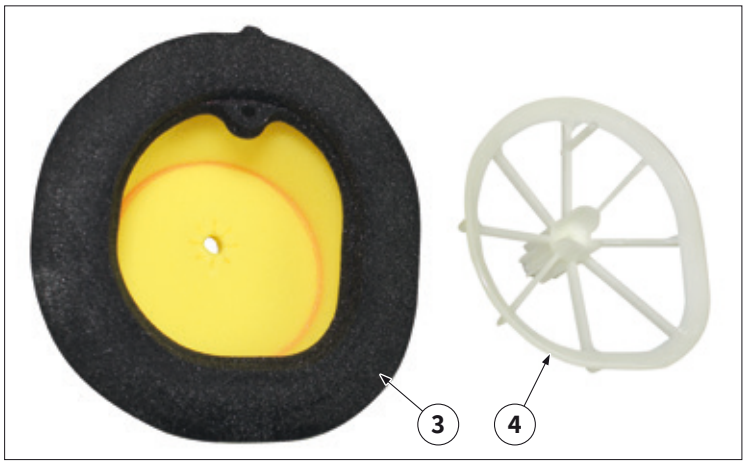


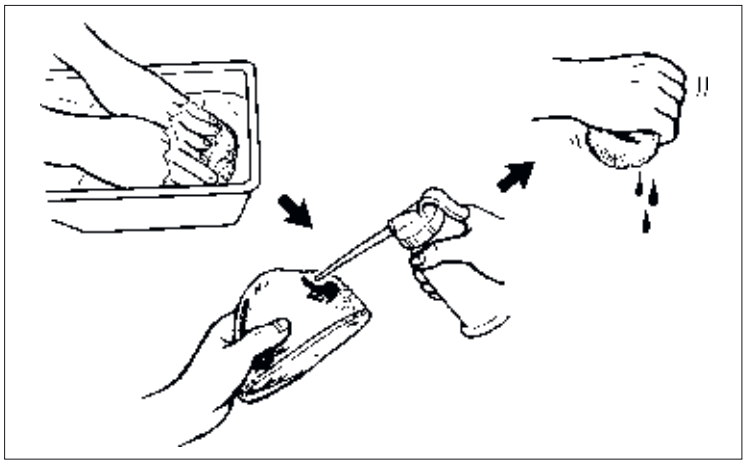
4.3 AIR FILTER

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.

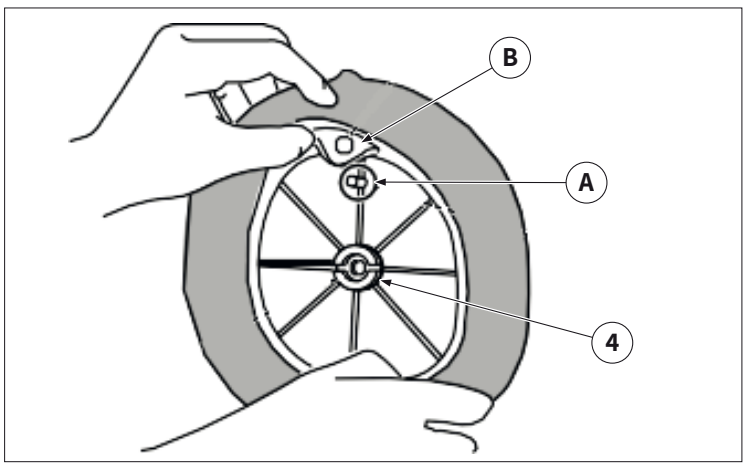
- Remove the seat from the vehicle,
- Remove the fastening bolt “1” and the related washer “2”, then remove the air filter cartridge “3” from the filter box;
- Remove the guide “4” from the air filter cartridge “3”;



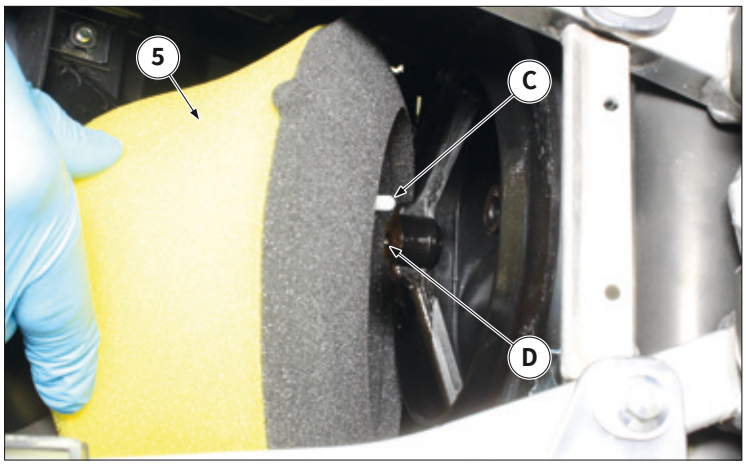


- Check that the cartridge is not damaged, if it is, replace it;
- Clean the cartridge with a dedicated solvent, after cleaning remove the solvent by pressing the cartridge and blowing it with compressed air;
- Apply air filter oil to the cartridge, press it to remove the excess oil.

The cartridge must be damp, but not wet.

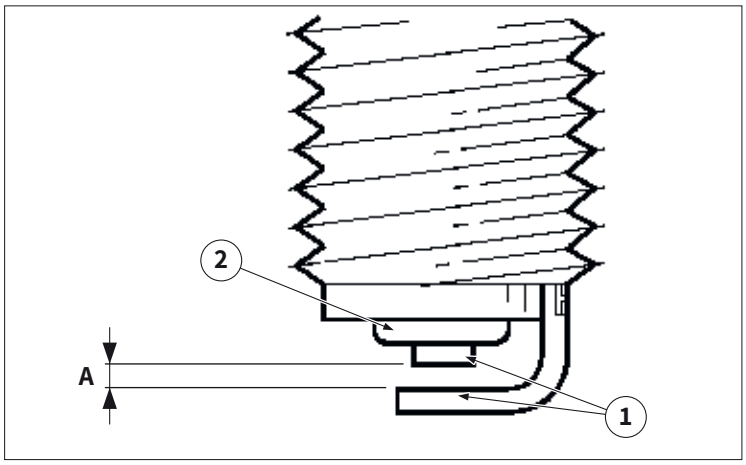


- Install the air filter guide “4”, aligning the protrusion “A” of the guide with the hole “B” of the cartridge;



– Install the air filter cartridge “5”, the washer and the fastening bolt. Align the protrusion “C” of the guide with the hole “D” of the air filter box.

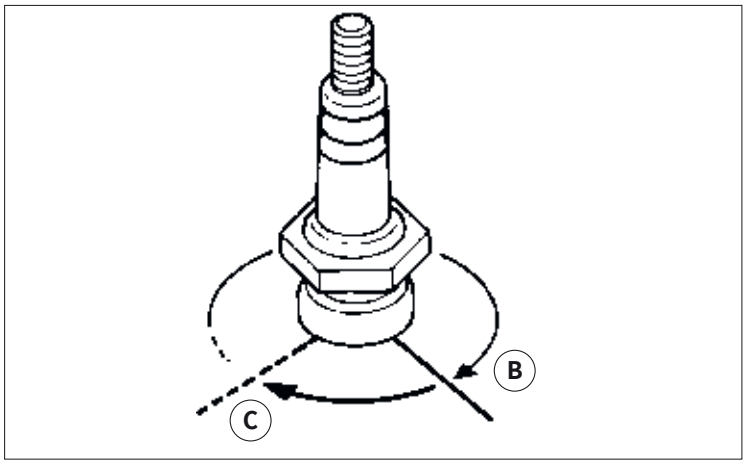
Fitting bolt: 2 Nm (0.2 m•kg, 1.4 ft•lb)



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;

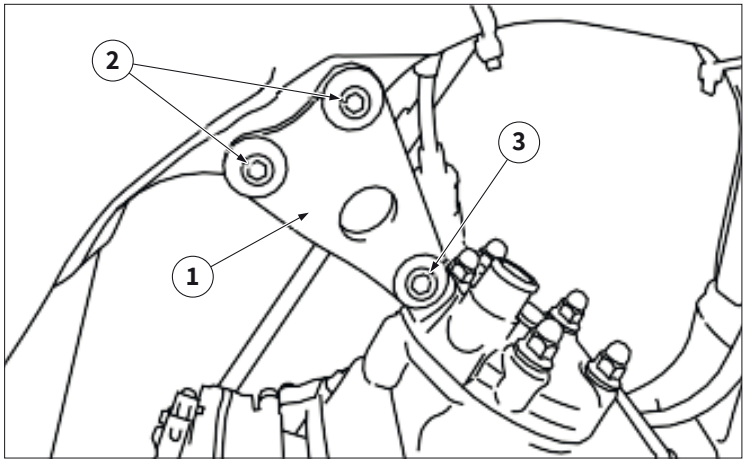
Standard spark plug electrodes gap “A”: 0.6–0.7 mm



– 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)

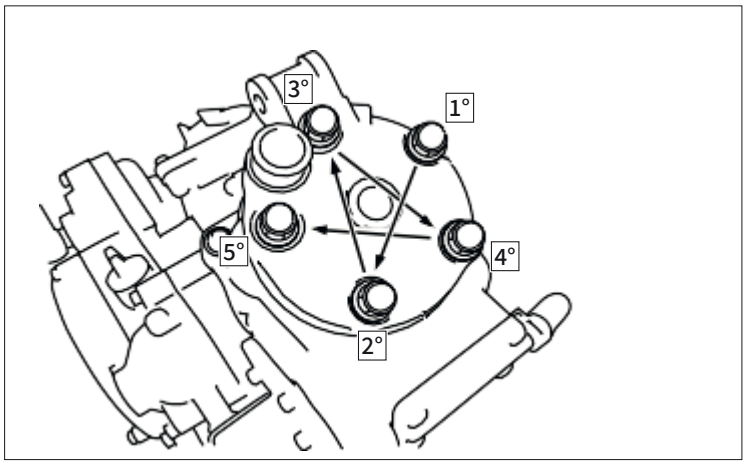
Finger-tighten “B” the spark plug before torquing to specification “C”.



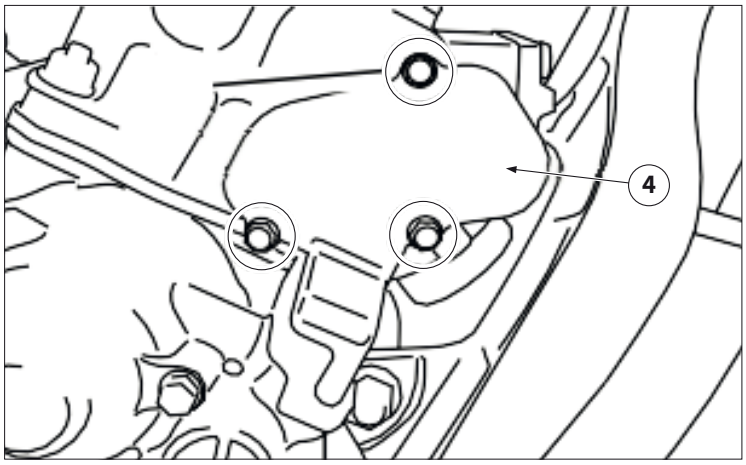
4.5 HEAD, CYLINDER, PISTON AND EXHAUST VALVE

Parts removal

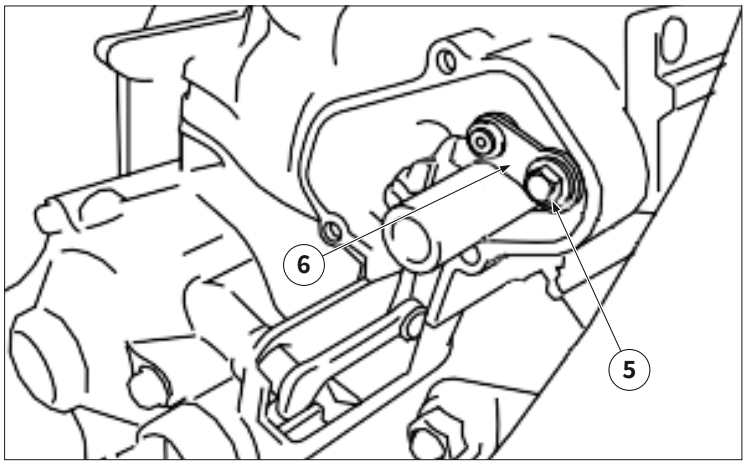
– Remove the spark plug;
– Remove the engine bracket “1”, the bracket fastening bolts “2” and the engine fastening bolt “3 “;



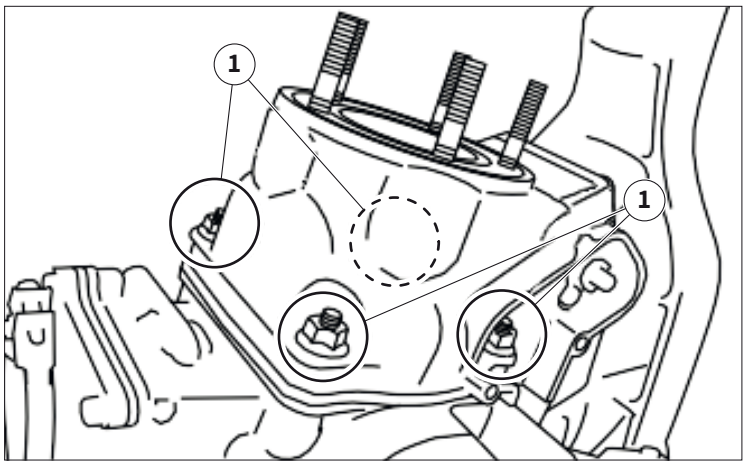
– Remove the head nuts and the copper washers, in sequence and following a crossed pattern;
– Then remove the cylinder head;



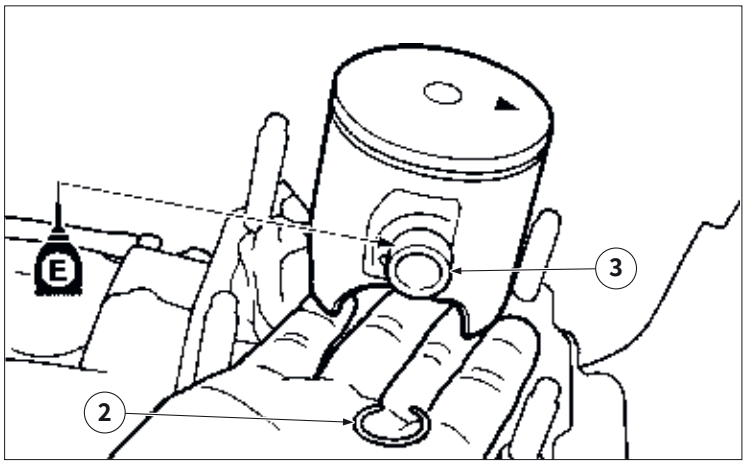
– Remove the cover “4” and the exhaust valve gasket;



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



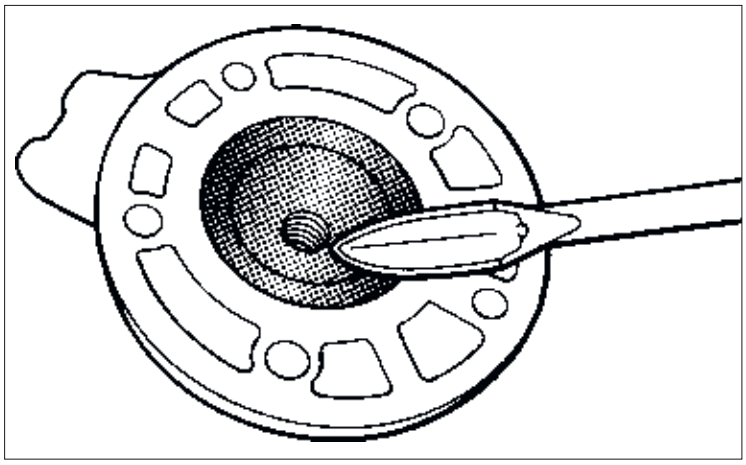
– Remove the cylinder nuts “1” in sequence and following a crossed pattern, then remove the cylinder from the crankcases;



– Remove a pin seeger, then remove the pin, the piston and roller bearing of the connecting rod head;
– Remove the piston ring from the piston.

Before removing the seeger, cover the crankcase with a clean cloth to prevent it 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.



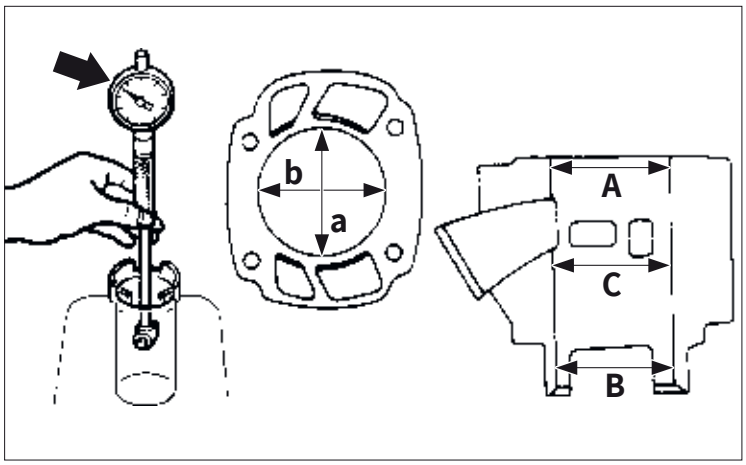
Head check

– 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



Cylinder check

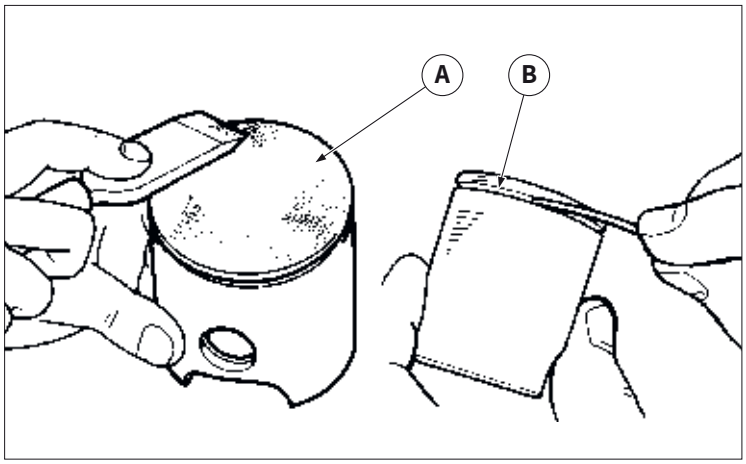
– Remove carbon deposits using a rounded scraper;

⚠ **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.

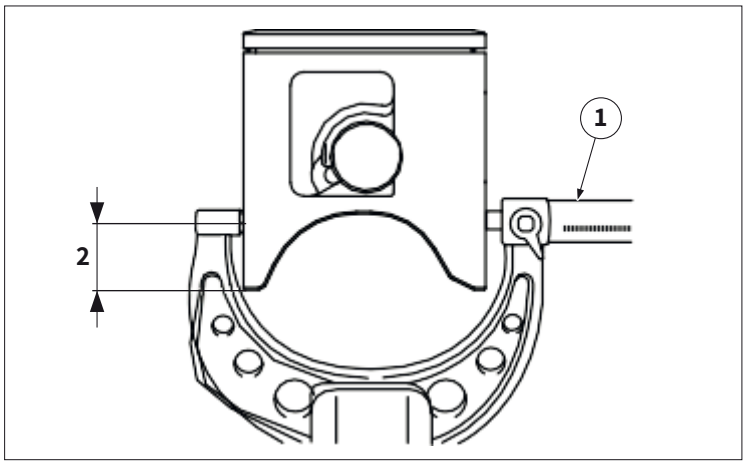
“C” = Maximum Aa-Cb
“T” = (Maximum Aa, or Ab) – (Maximum Ba, or Bb)

	Standard	Wear limit
Cylinder bore “C”	54.000–54.014 mm (2.1260–2.1265 in)	54.100 mm (2.1299 in)
Taper “T”	–	0.050 mm (0.0020 in)



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 guide ring using a micrometer “1”;
– Measure the specific distance “2” from the lower edge, if it does not comply with the specifications replace it.

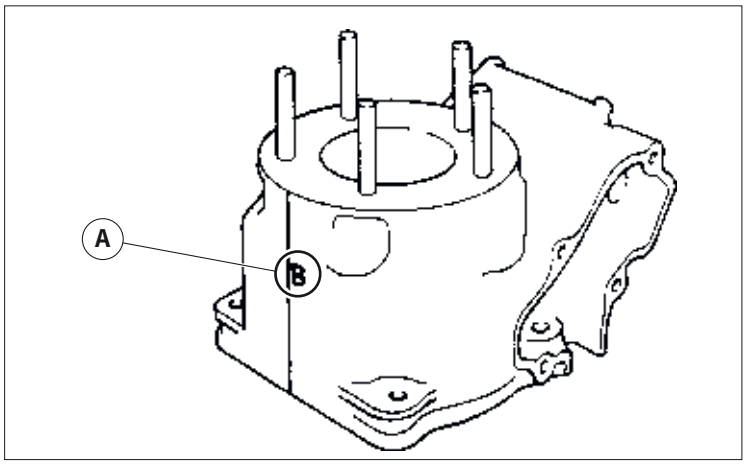
	Distance “2”	Piston diameter
	17.5 mm (0.69 in)	53.957–53.972 mm (2.1243–2.1249 in)

Checking the piston clearance

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

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

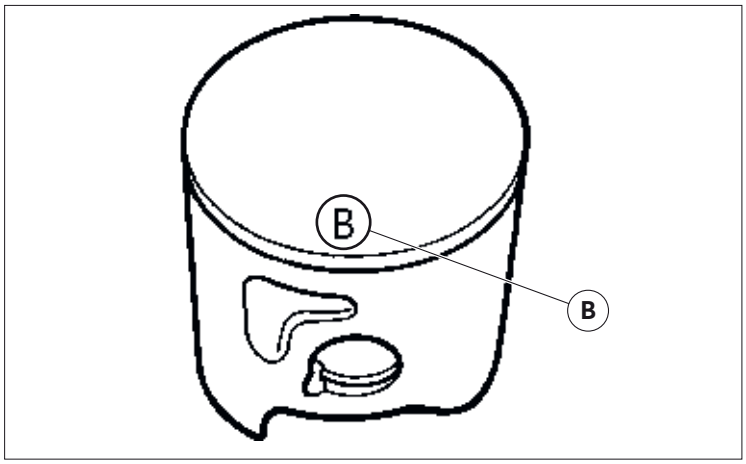
	Standard	Limit
Ring end gap (installed)	0.50–0.70 mm (0.0197–0.0276 in)	1.20 mm (0.0472 in)



Checking the combination of piston and cylinder

– Check the notch on cylinder “A”:

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



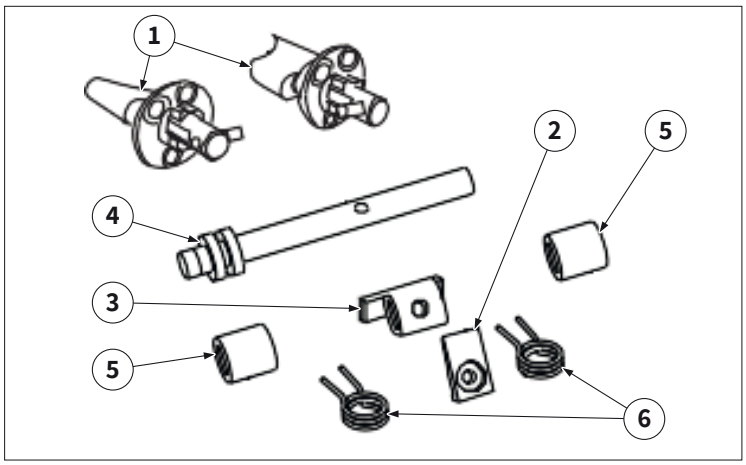
– Check the notch on piston “B”:

	Standard	Limit
Piston clearance	0.040–0.045 mm (0.0016–0.0018 in))	0.100 mm (0.0039 in)

– Combine the piston and cylinder according to the table below:

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

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

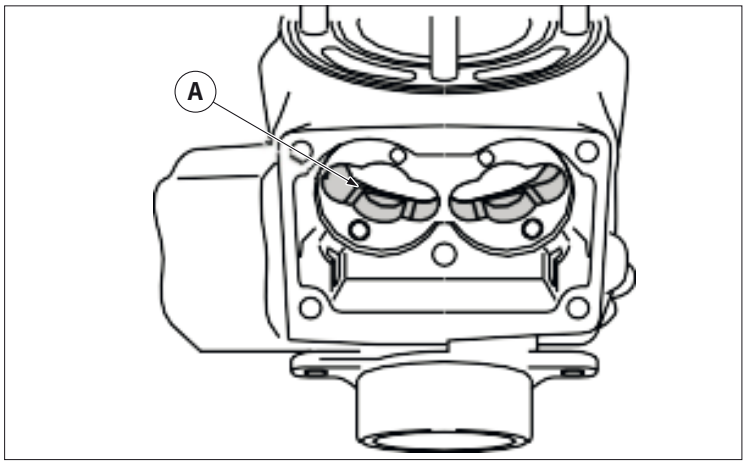


Checking the exhaust valve

Check:

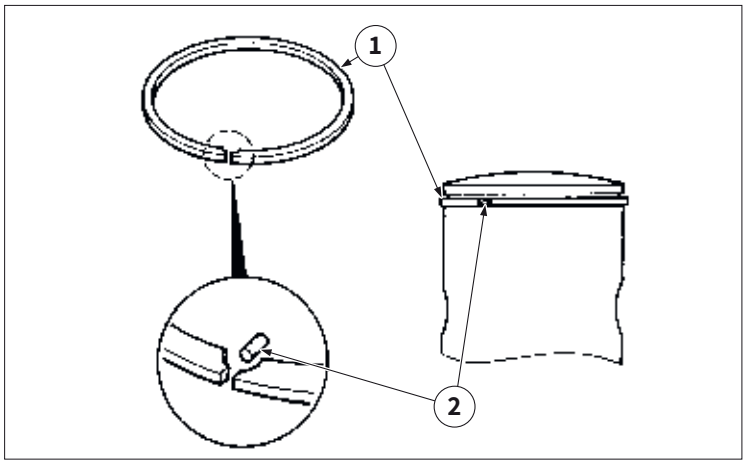
- the exhaust valves “1”;
- the valve holder “2”,
- the link lever “3”;
- the valve shaft “4”;
- the collars “5”;
- the spring “6”.

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



Remove carbon deposits from power valve hole surface “A”.

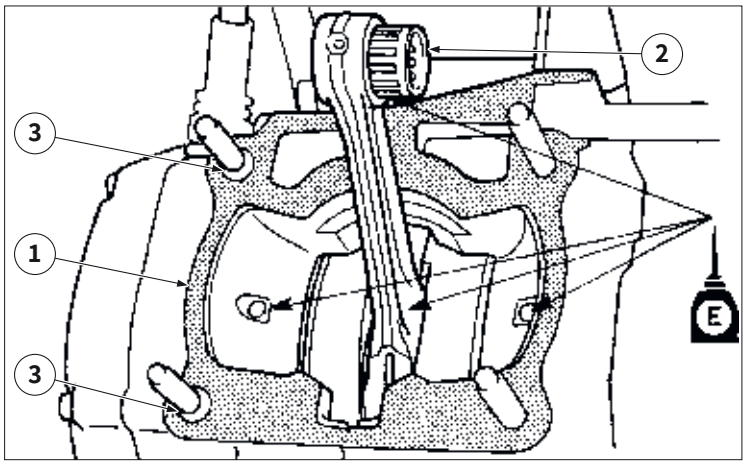
⚠ **Do not use a sharp instrument. Avoid scratching the aluminum.**



Installation of the piston

- Install the piston ring “1” by aligning the port with the pin on the piston “2”;
- After installing the piston ring, check that it moves smoothly;

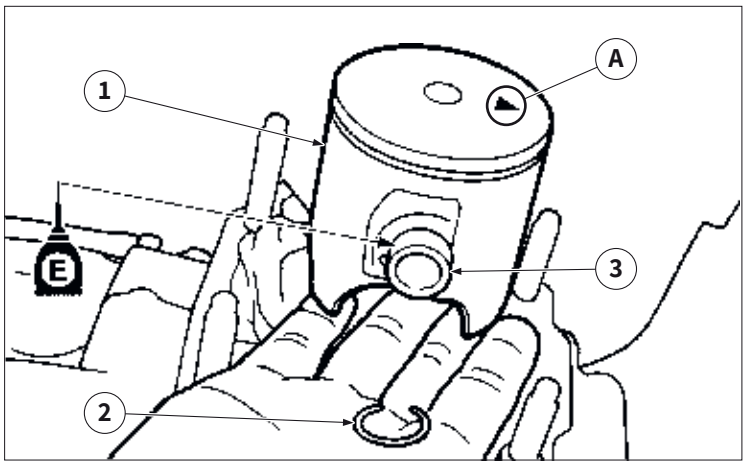
⚠ **Take care not to scratch the piston or damage the piston ring.**



- Install the centering bushings “1”, a new cylinder seal “2” and the connecting rod head roller bearing “3”;

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

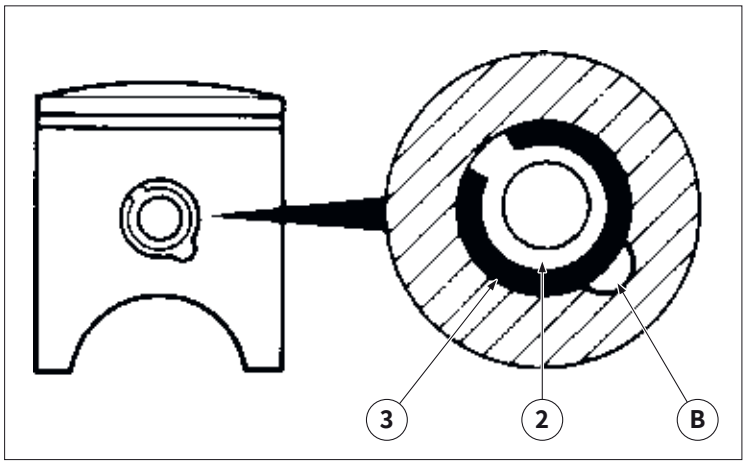
ⓘ **Install the gasket with the seal print side toward the crankcase.**

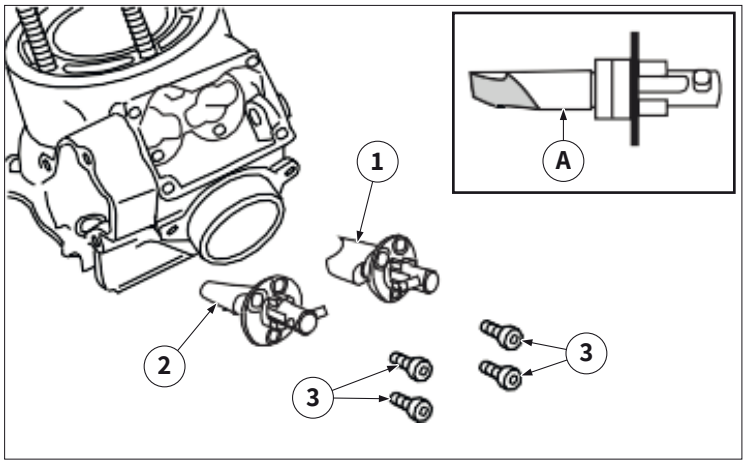


- Install piston “1” with the arrow “A” pointing towards the exhaust side;
- Apply engine oil to piston pin “2” and install it on the piston and connecting rod;
- Install seeger “3”.

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”.

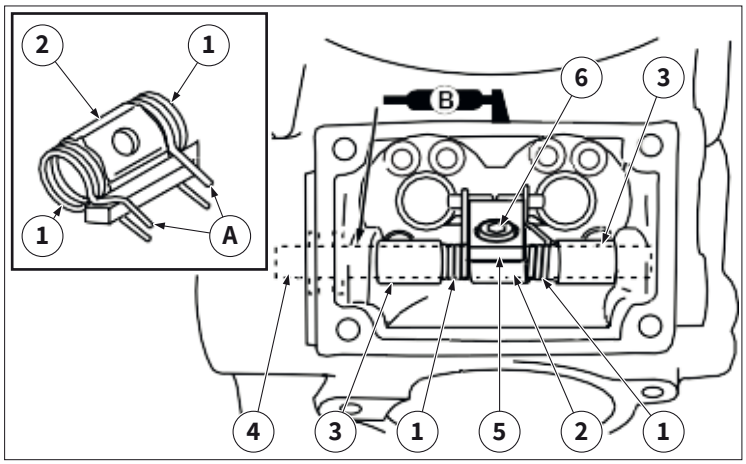




Exhaust valve installation

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

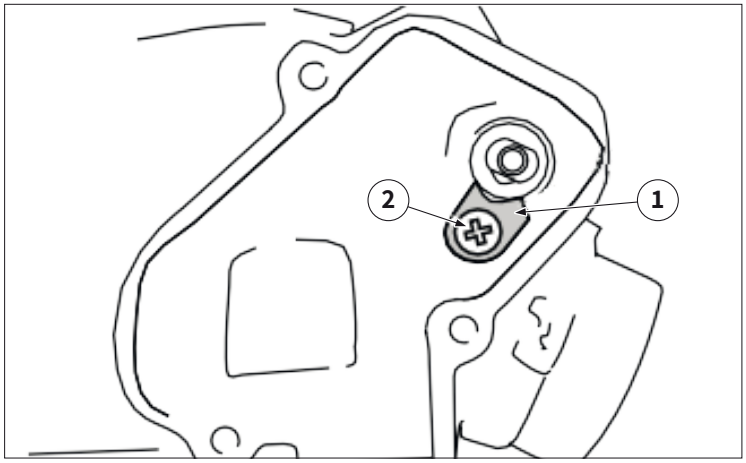
Bolt (power valve):
8 Nm (0.8 m•kg, 5.8 ft•lb)



- 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”;

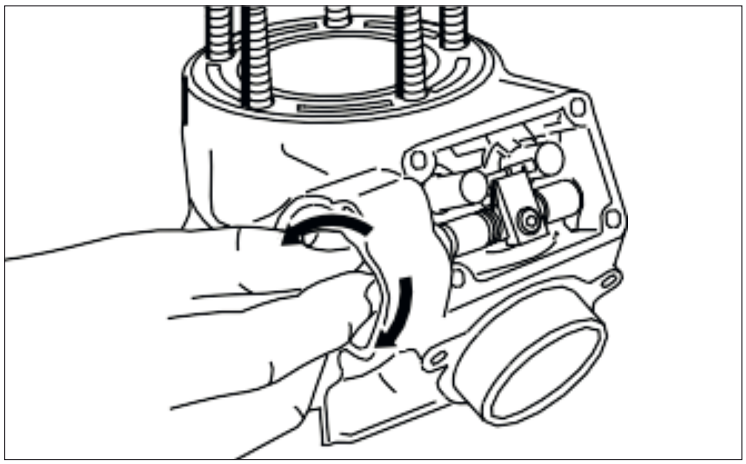
Bolt (link lever):
4 Nm (0.4 m•kg, 2.9 ft•lb)

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

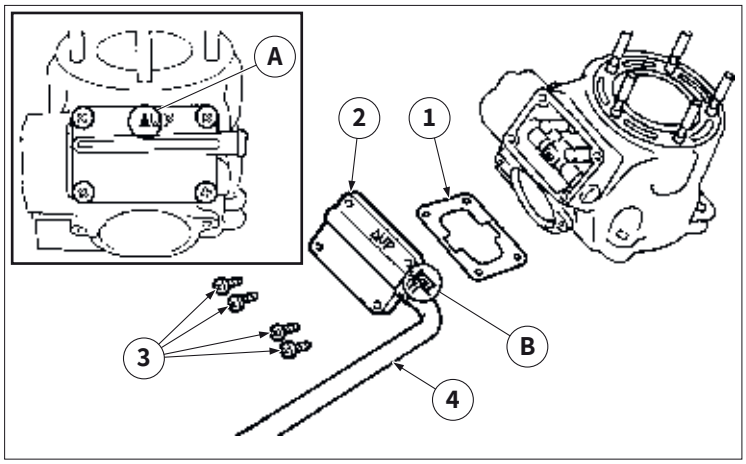


– Install the thrust plate “1” and the related fastening screw “2”;

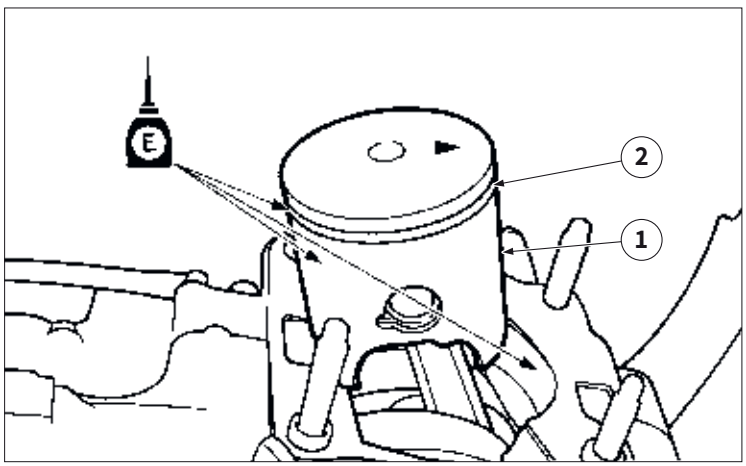
Screw (thrust plate):
4 Nm (0.4 m•kg, 2.9 ft•lb)



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

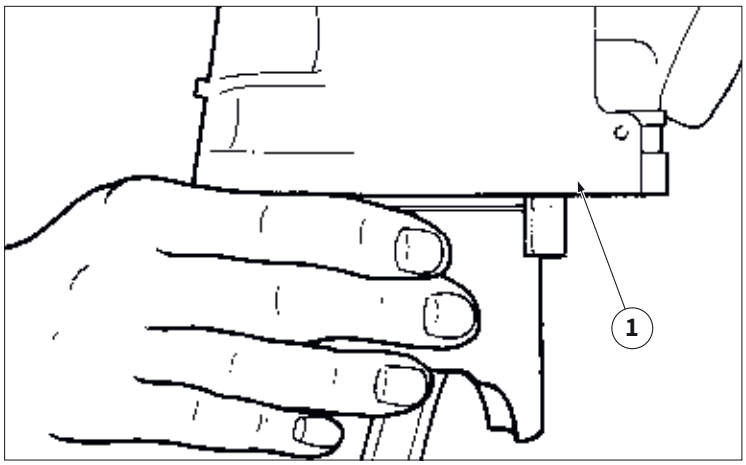


– Install a new drain valve cover gasket “1”;
– Install the drain valve cover “2” with arrow “A” facing upwards;
– Install the cover screws “3 “;
– Install the YPVS vent with the opening of clamp “B” facing back.

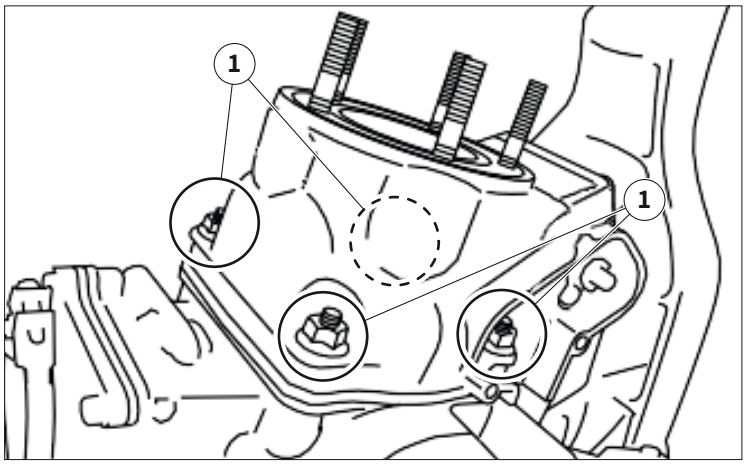


Cylinder installation

– Apply engine oil to piston “1”, piston ring “2” and cylinder surface;

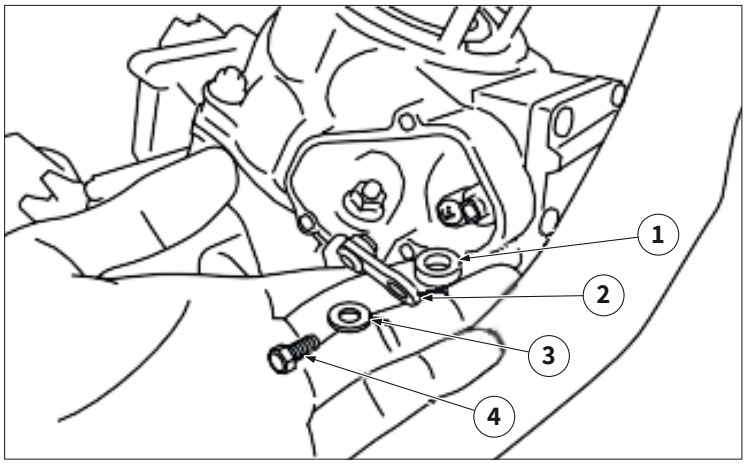


– Compress the piston ring with one hand, install cylinder "1" and make sure that the piston moves smoothly;

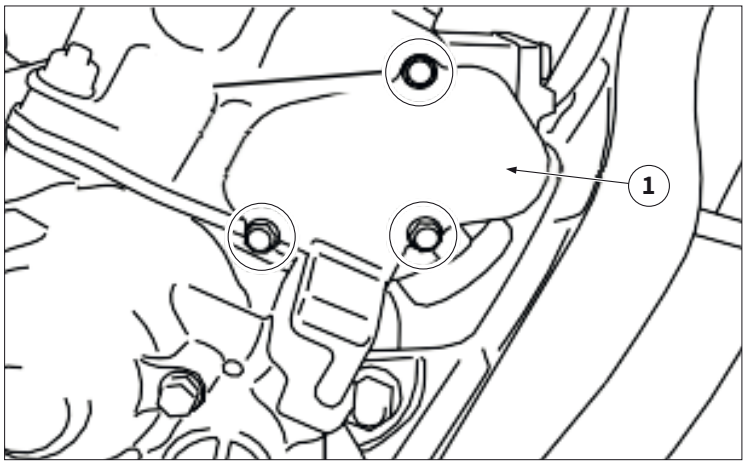


– Install the nuts of cylinder "1", tighten them to the specified torque following a cross pattern;

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

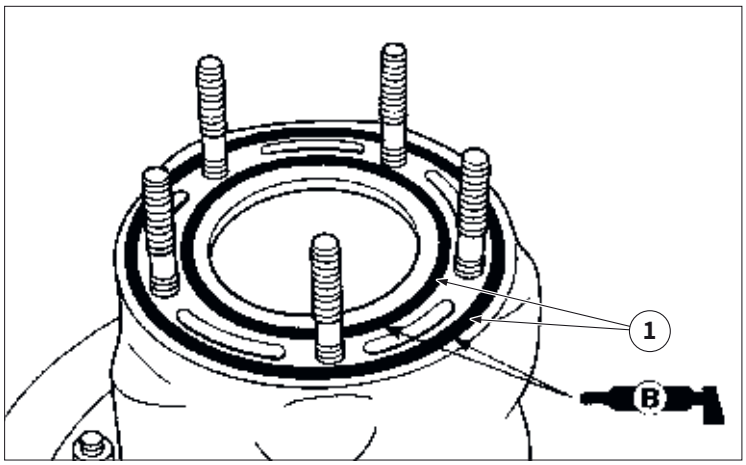


– Install the collar "1", the locking rod "2", the flat washer "3" and the push rod bolt "4";



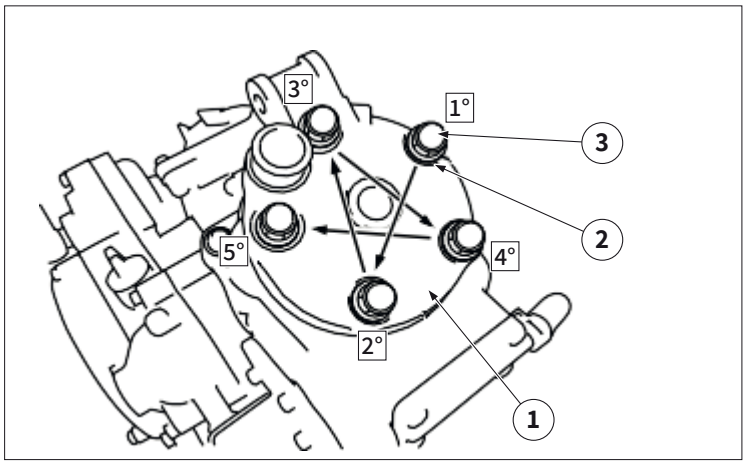
– Install a new exhaust valve cover gasket;
– Install the exhaust valve cover "1" and the related fastening bolts.

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



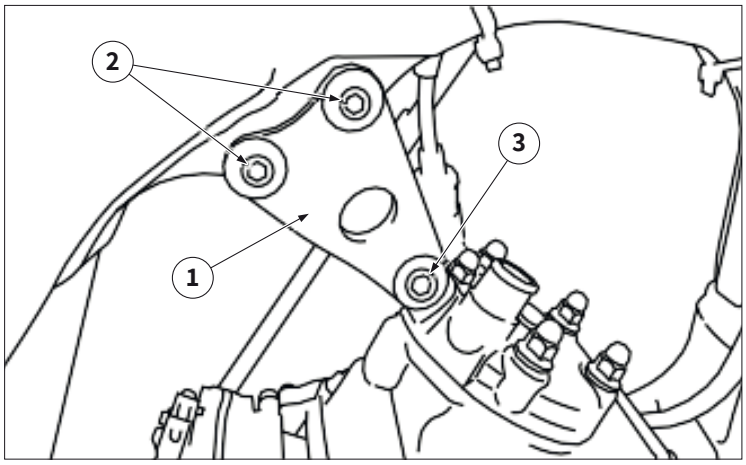
Head installation

– 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;

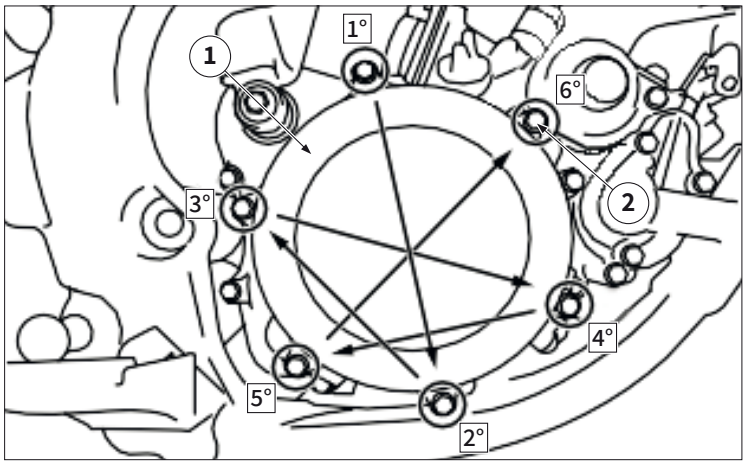
Nut (cylinder head):
28 Nm (2.8 m•kg, 20 ft•lb)



– Install the engine bracket “1”, engine bracket bolts “2” and engine fastening bolt “3”;

Bolt (engine bracket):
Engine mounting bolt (upper):
34 Nm (3.4 m•kg, 24 ft•lb)

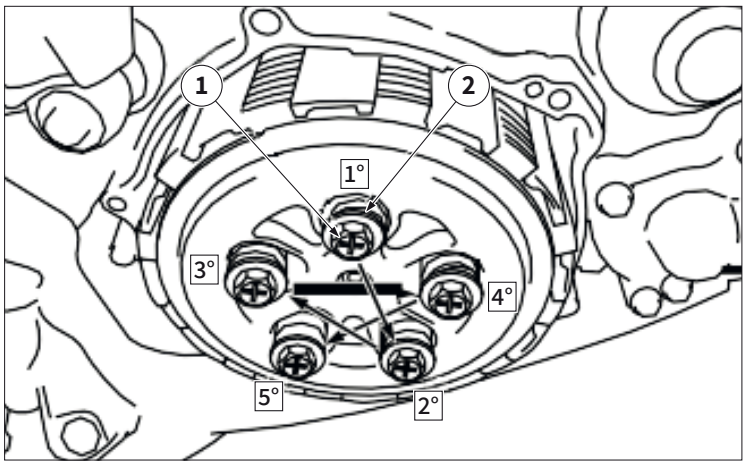
– Install the spark plug.



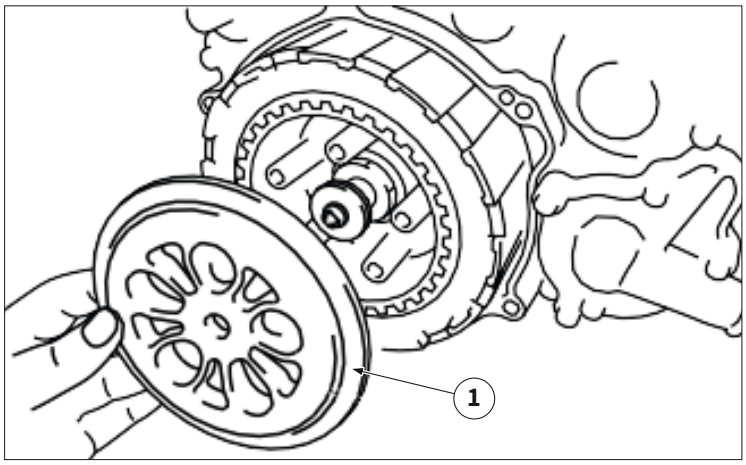
4.6 CLUTCH

Clutch removal

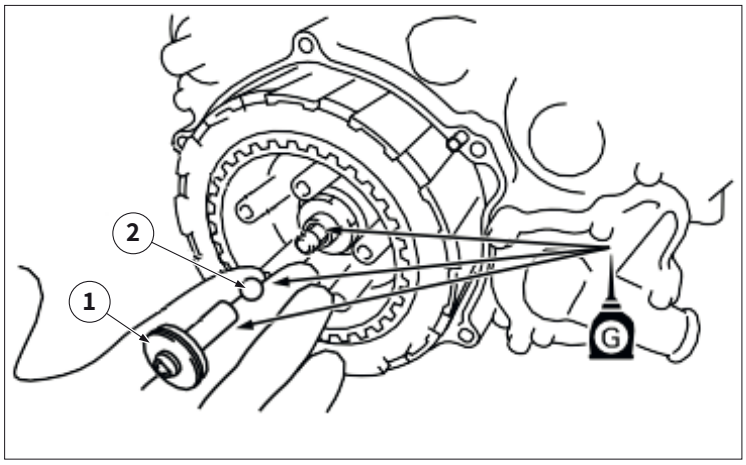
– Remove the clutch crankcase bolts “2” following a cross pattern, then remove the crankcase “1”;



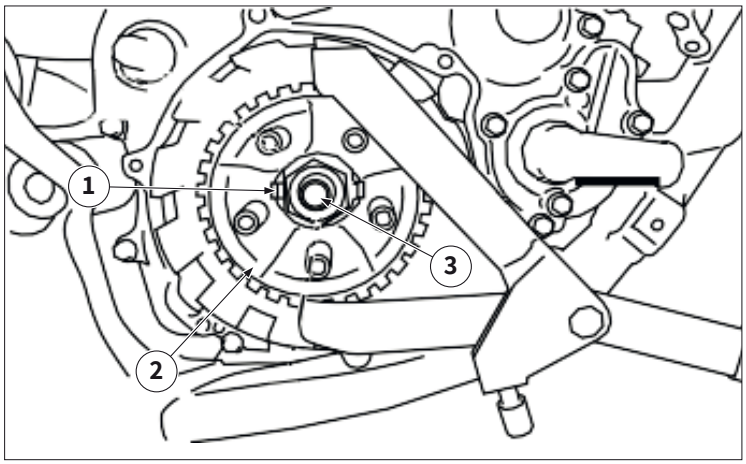
Remove bolts “1” and springs “2” of the clutch following a cross pattern;



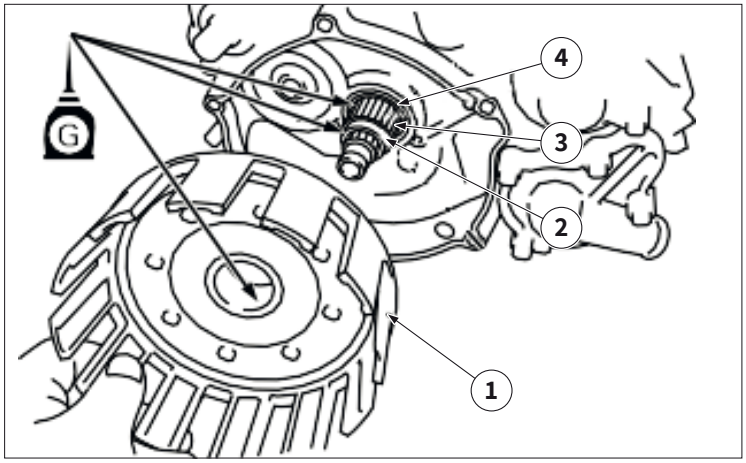
– Remove the pressure plate “1”;



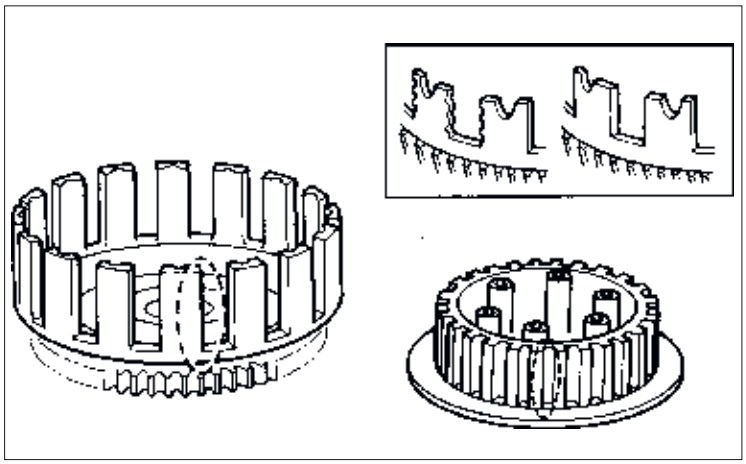
– Remove the thrust bearing “1”, ball “2” and locking rod;



– 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;

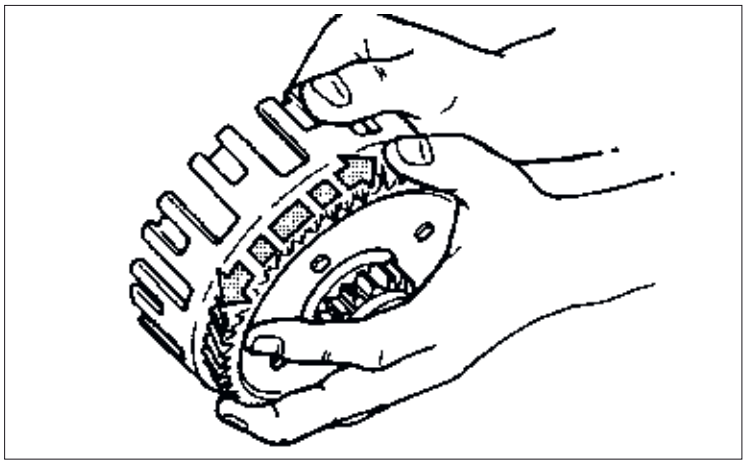


– Remove the clutch housing “1”, the bearing “2”, the spacer “3” and the washer “4”.

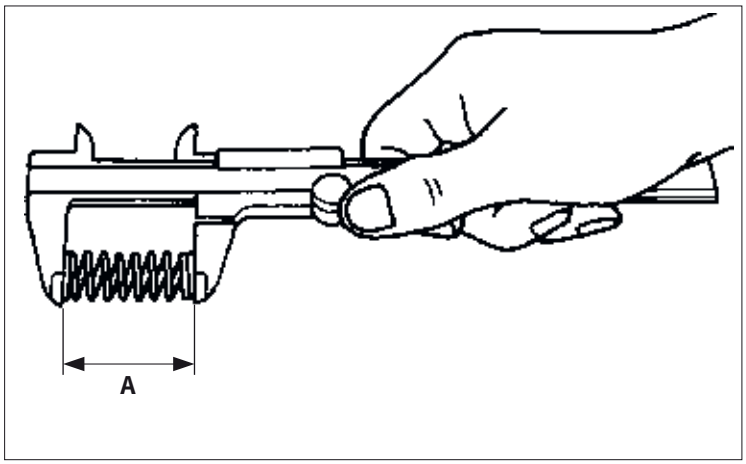


Check the clutch elements

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

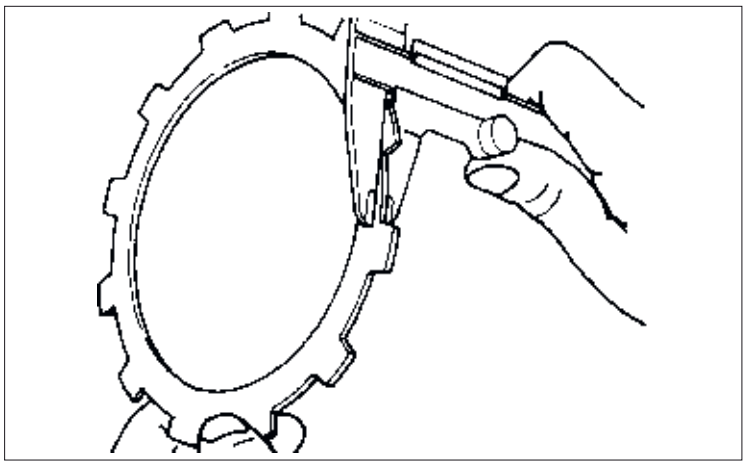


– Check the driven gear of the primary transmission for circumferential clearance and/or damage to the teeth. If it has one or both defects, replace it;



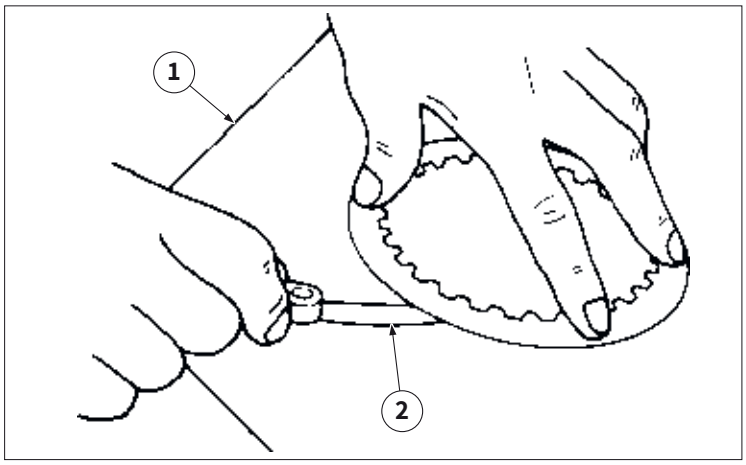
– Measure the free length “A” of the clutch springs. If not in accordance with the specifications, replace the spring;

Clutch spring free length:
40.10 mm (1.58 in)
Minimum limit: 38.10 mm (1.50 in)



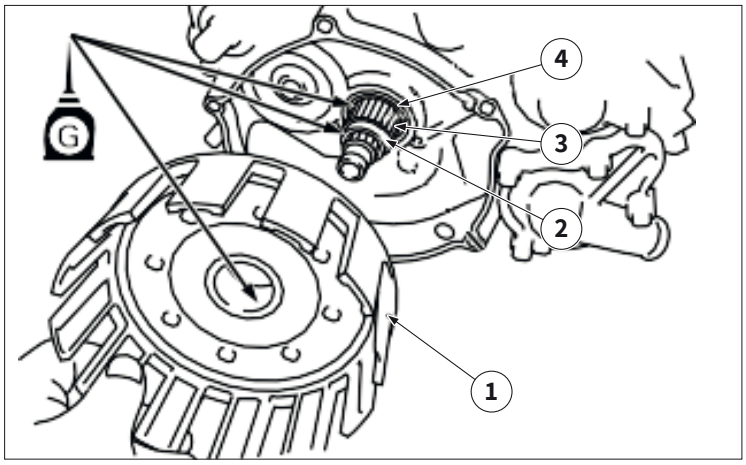
– Measure the thickness of the driving plates. If not in accordance with the specifications, replace the plate;

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



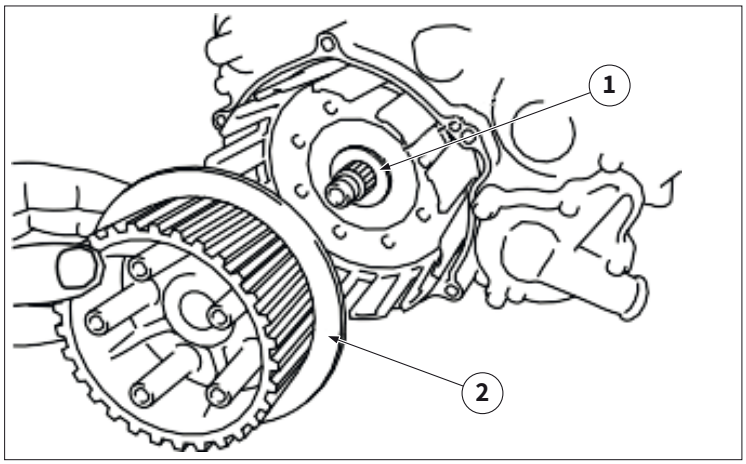
– Measure the distortion of the driven plates., using a reference plane “1” and a thickness gauge “2”;
– If not in accordance with the specifications, replace the plate.

Warp limit: 0.20 mm (0.008 in)

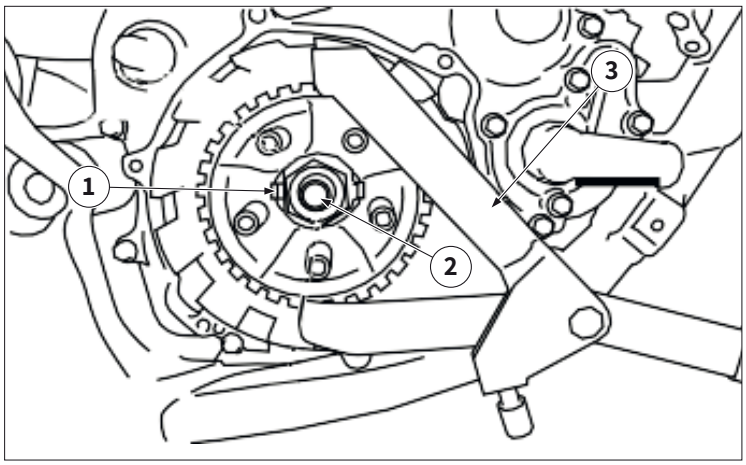


Clutch installation

– Install washer”1”, spacer “2”, bearing “3” and clutch housing”4”;

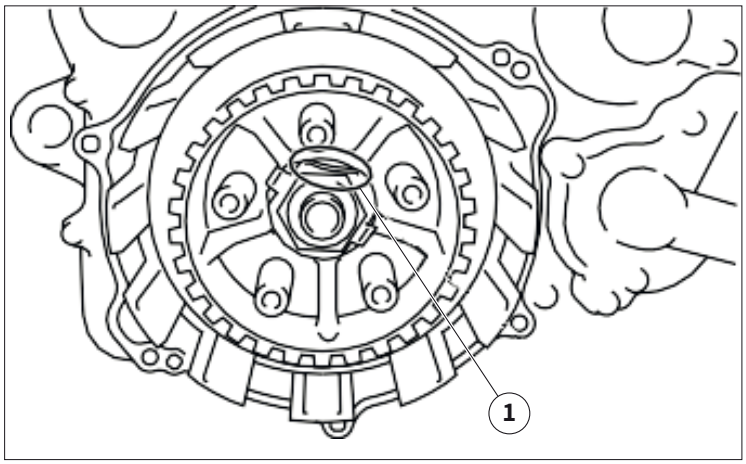


– Install washer “ 1” and clutch hub “2”;

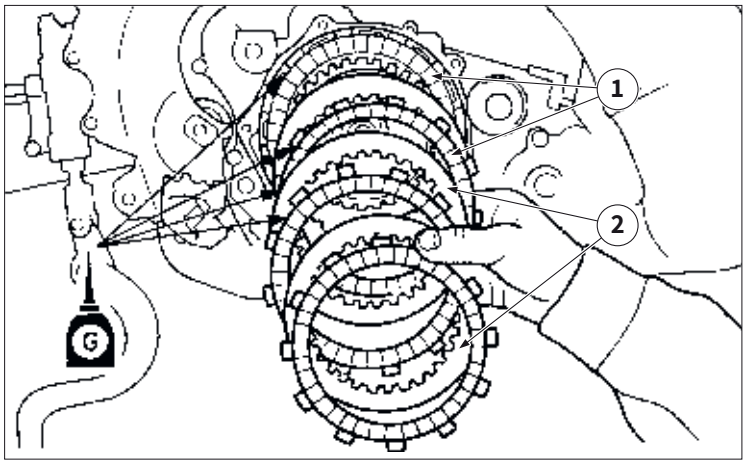


– Install the lock washer “1” and hub nut “2”;
– Lock the clutch hub with the universal locking tool “3” and tighten the nut “2”;

Nut (clutch boss):
80 Nm (8.0 m•kg, 58 ft•lb)

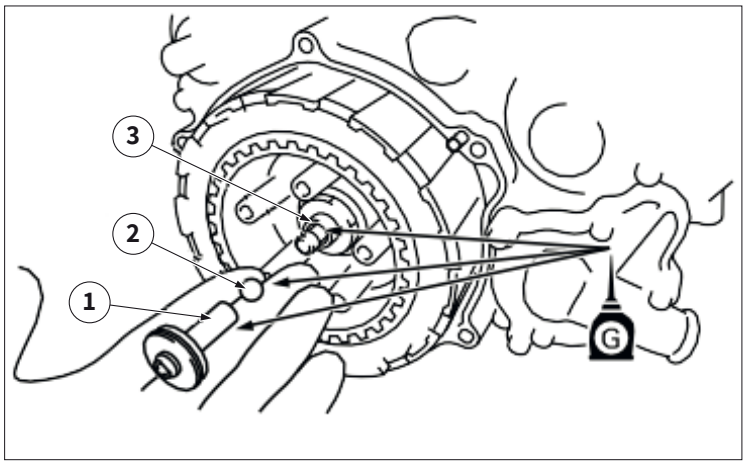


– Straighten the lock washer tab “1”;

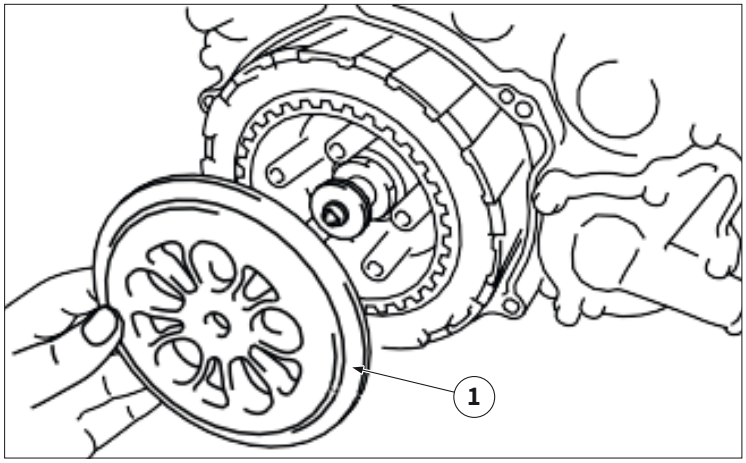


– Install alternately the driving plates “1” and the driven plates “2” on the clutch hub, starting and ending with a driving plate “1”.

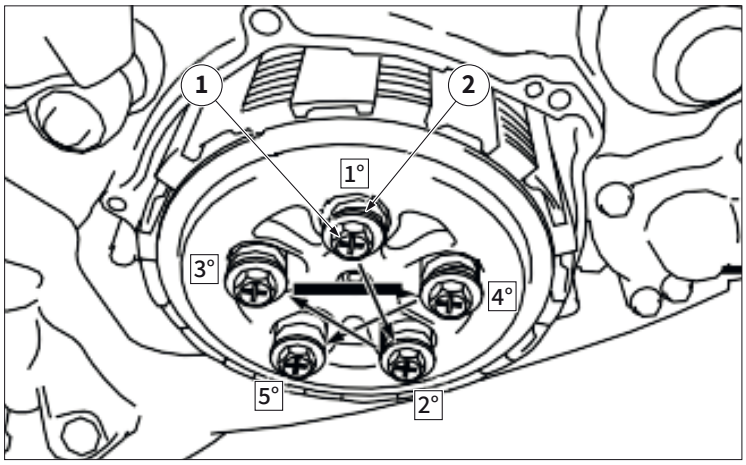
Apply transmission oil to the driven and driving plates.



– Install the locking rod “1”, ball “2” and thrust bearing “3 “;

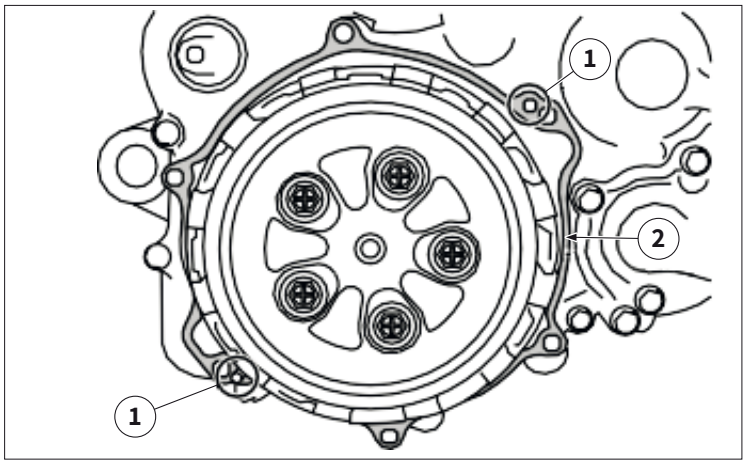


– Install the thrust plate “1”

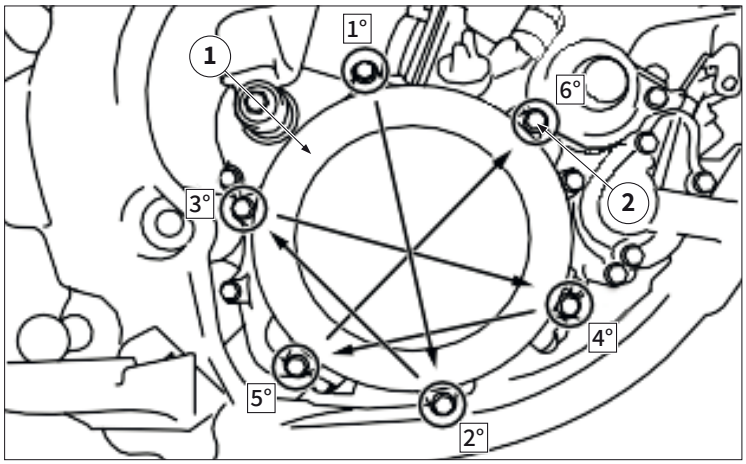


– Install the springs “1” and bolts “2” of the clutch and tighten them following a cross pattern;

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

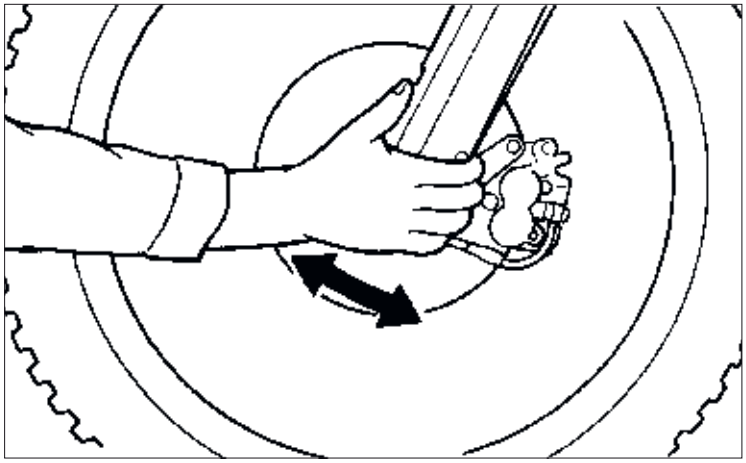


– Install the centering bushings “1” and a new gasket “2”;



– 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)

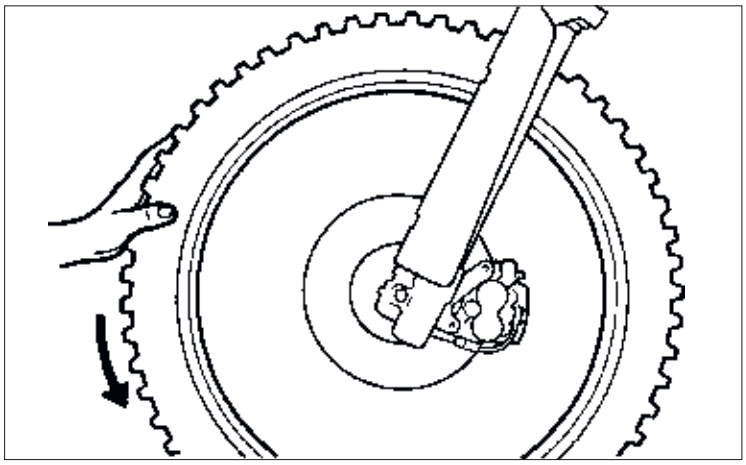


4.7 STEERING PLAY CONTROL AND ADJUSTMENT

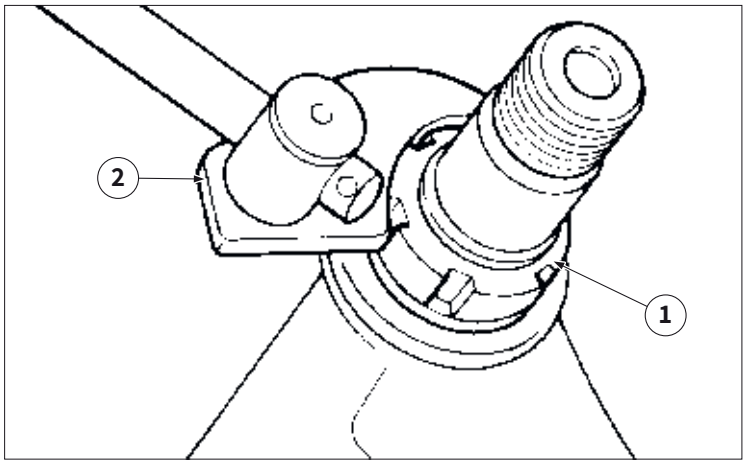
Steering play control

– 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.**

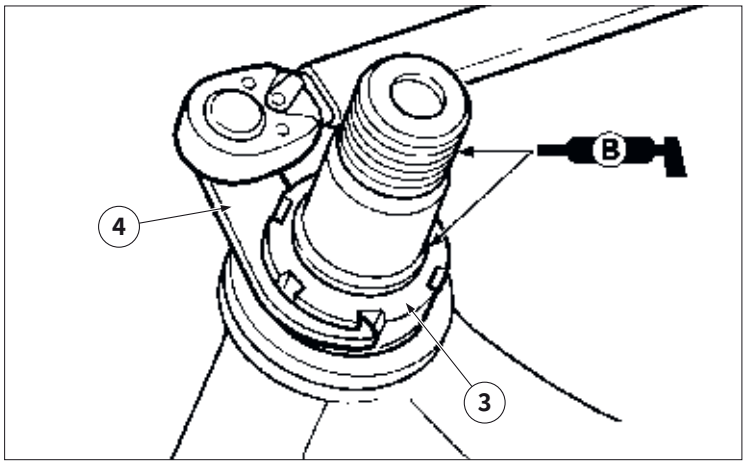


– Grasp the bottom of the forks and gently rock the fork assembly back and forth. If free play is present adjust the steering head;
– Check that the steering is working evenly by turning it fully to the right and left. If play is present, adjust the steering head.



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”;

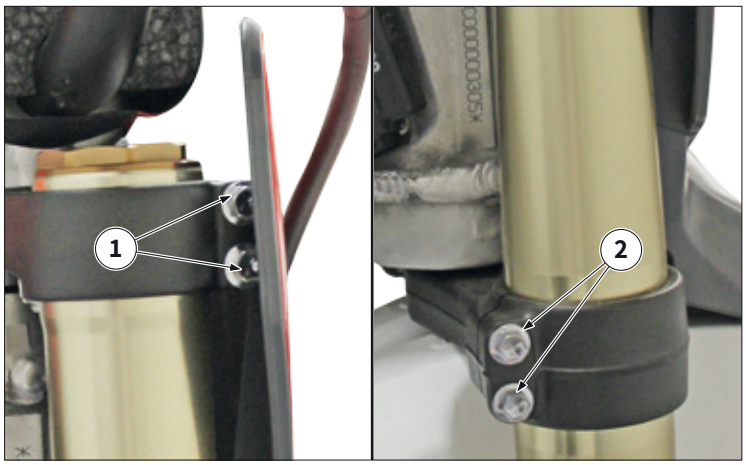


– Start tightening the steering ring nut “3”, with a ring nut spanner and a torque spanner “4”, to the specified torque;
– Then loosen the steering wheel nut “3” by one turn;

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

– Holding the lock nut in place, tighten the locknut with a locknut spanner to the specified torque.

Steering ring nut (final tightening):
7 Nm (0.7 m•kg, 5.1 ft•lb)



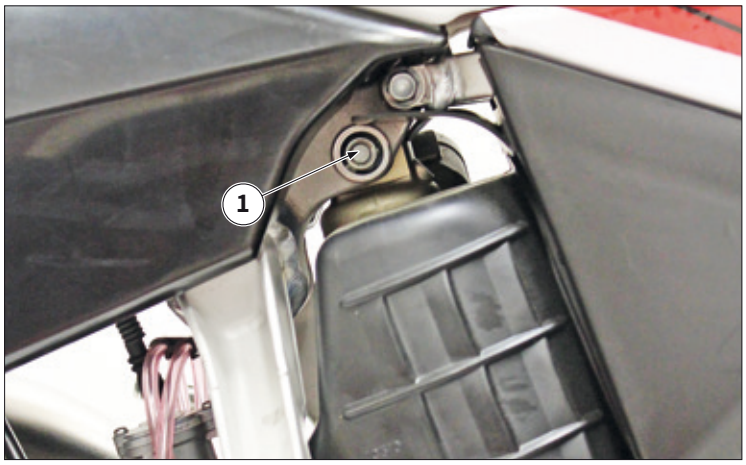
4.8 FORK

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)

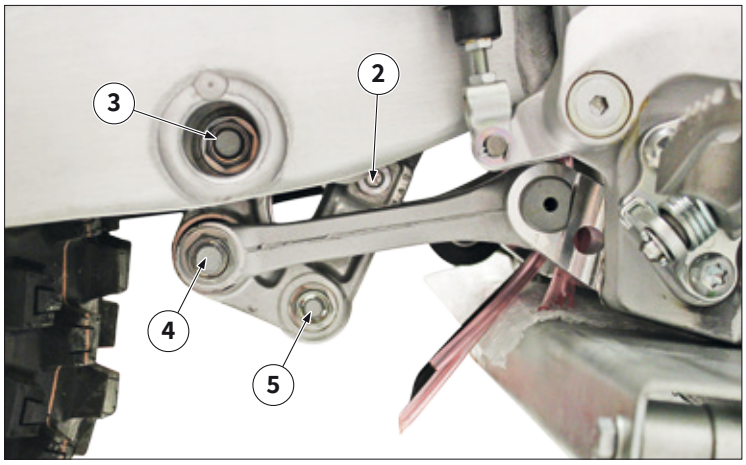
Nut “2”: 21 Nm (2.1 m•kg, 15 ft•lb)



4.9 SHOCK ABSORBER

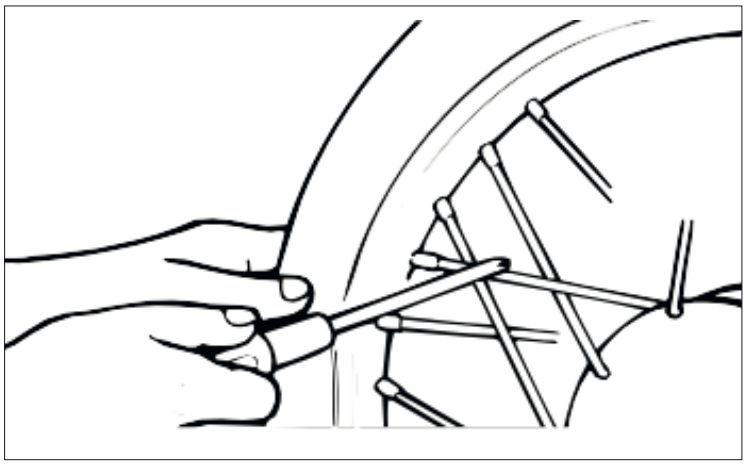
– Regularly check the upper fastening screw of the shock absorber “1”. If it is loose, tighten it to the specified torque.

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.

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.



4.10 WHEELS

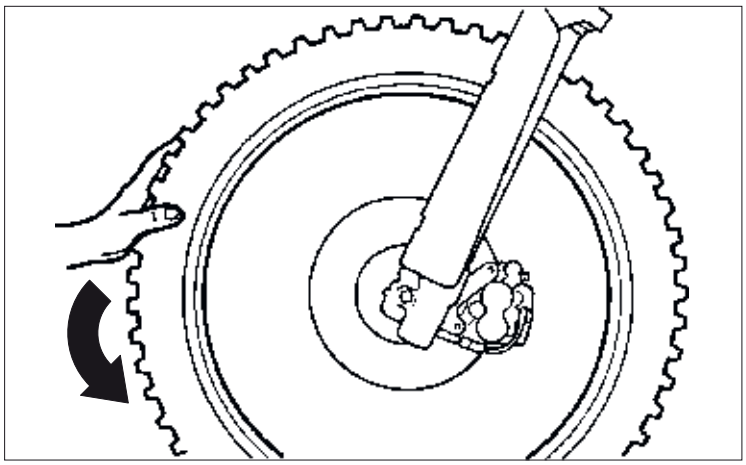
Spokes check and tightening

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: 3 Nm (0.3 m•kg, 2.2 ft•lb)

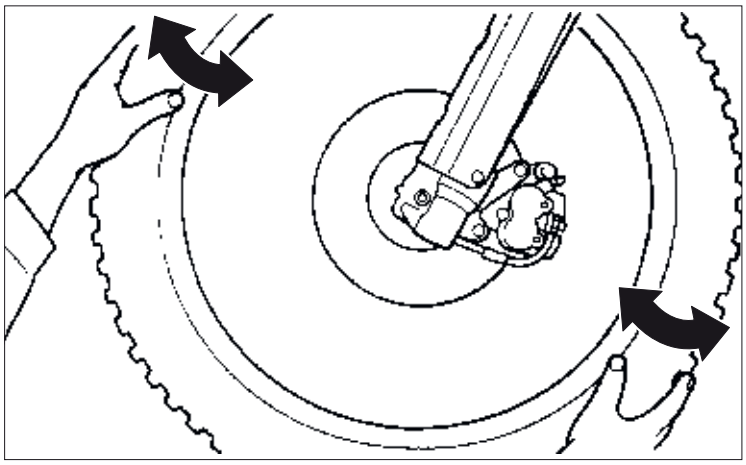
Be sure to tighten the spokes before and after the running-in.



Wheel check

The following procedure applies to both wheels.

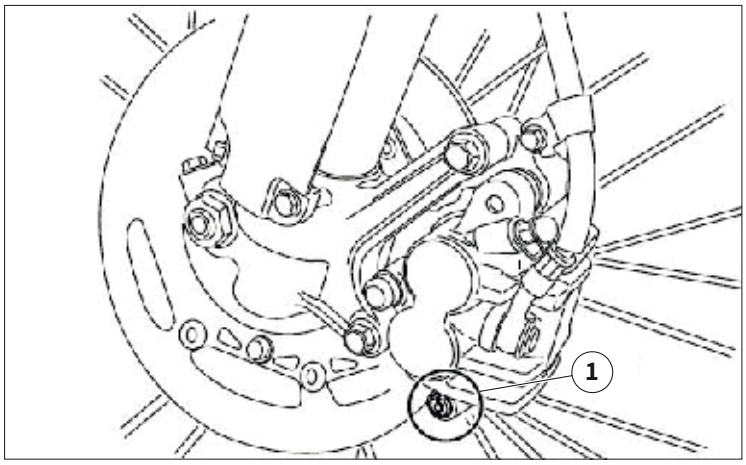
– Place a stand under the engine, lift the wheel and turn it. Check the centering and alignment of the rim channel with respect to the wheel hub. If there are any anomalies, proceed with the correction by pulling the spokes;



– Check that the wheel bearings do not have axial clearance. If there is, change the bearings.

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

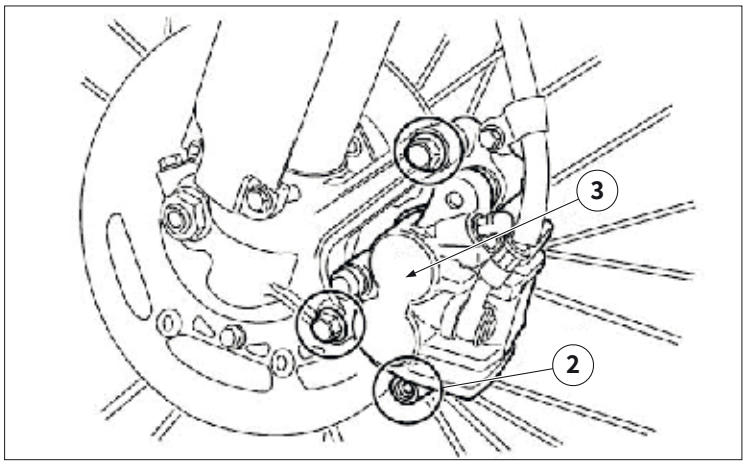
Never try to repair the wheel rims.



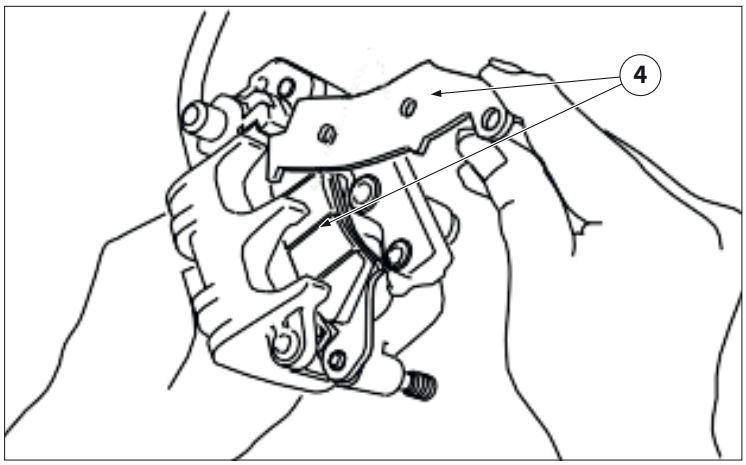
4.11 BRAKE PADS

Replace the front brake pads

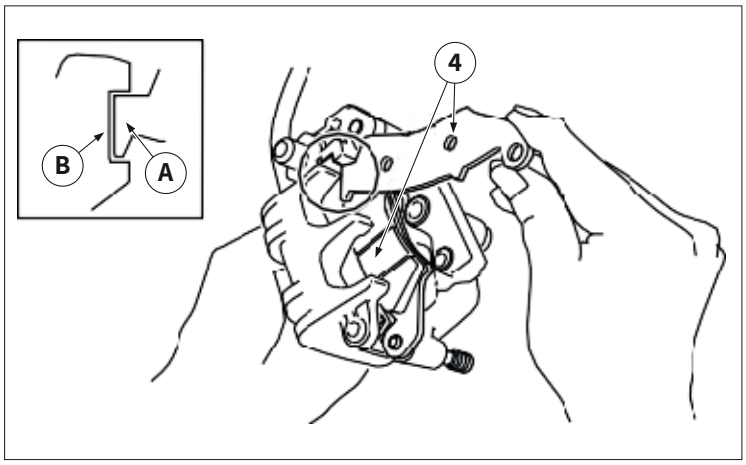
– Remove the pad pin plug “1”;



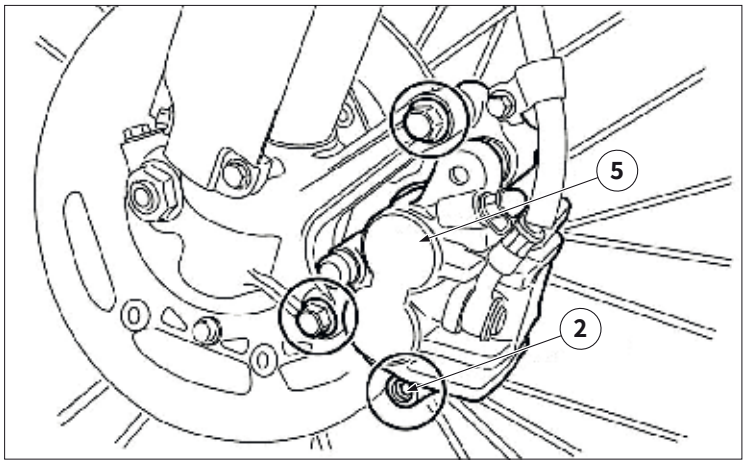
– Loosen the pad pin “2” then remove the brake calliper “3” from the fork;



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

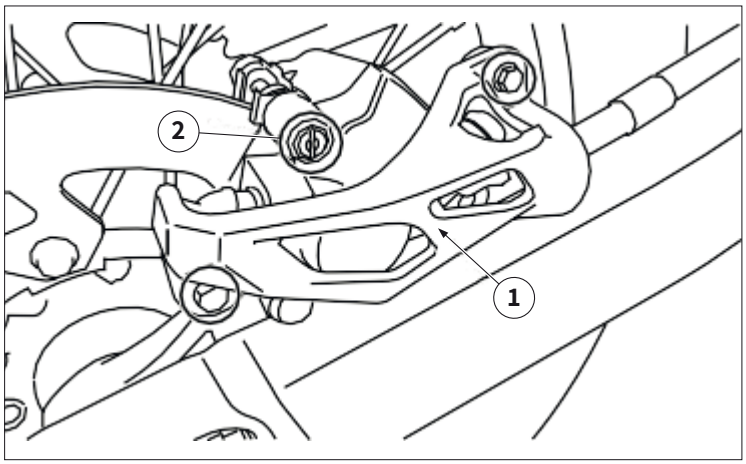


– Install the brake pads “4” with their protrusions “A” in the recesses of the brake calliper “B”. Temporarily tighten the pads pin “2”;



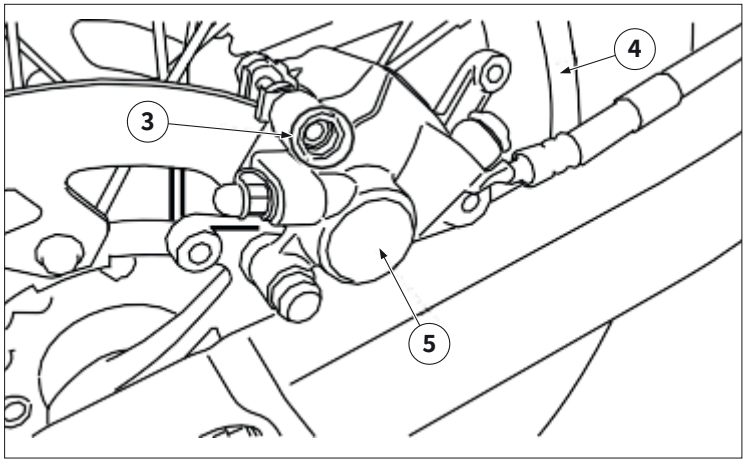
– Install the brake calliper “5” and tighten the relevant bolts to the specified torque. Tighten the pad pin “2” and insert the relative cap previously removed;

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

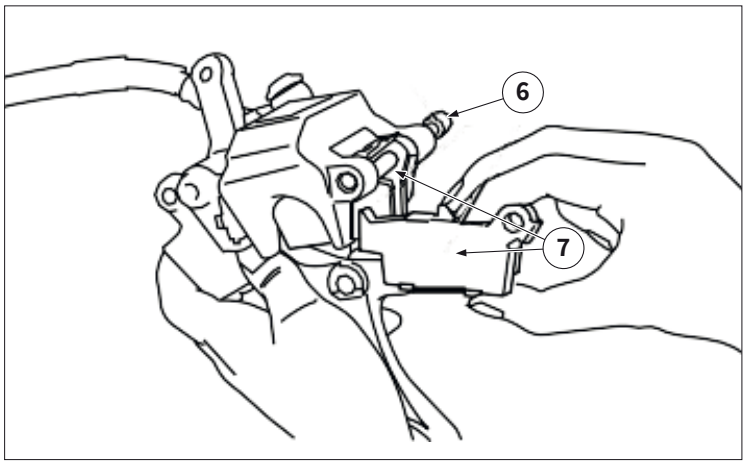


Replace the rear brake pads

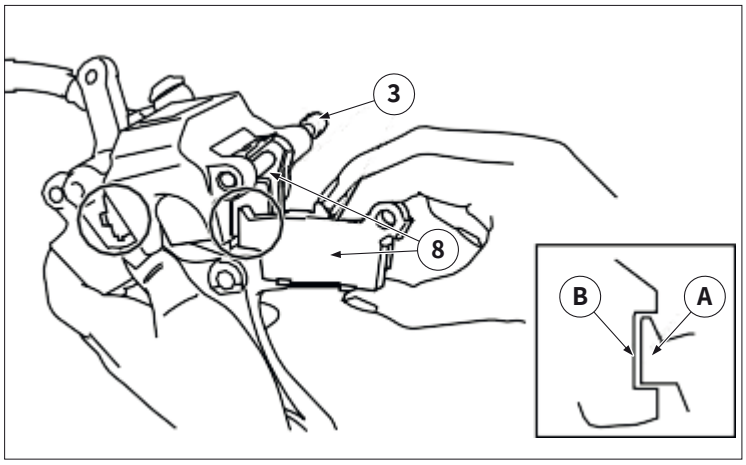
– Remove the protection “1” and the pad pin plug “2”;



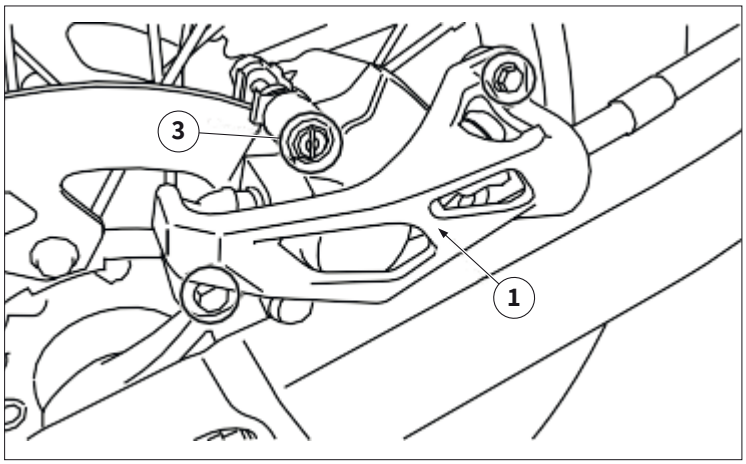
– Loosen the pad pin “3”, remove the rear wheel “4” and the brake calliper “5 “;



– 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 calliper. Temporarily tighten the pads pin “3”.



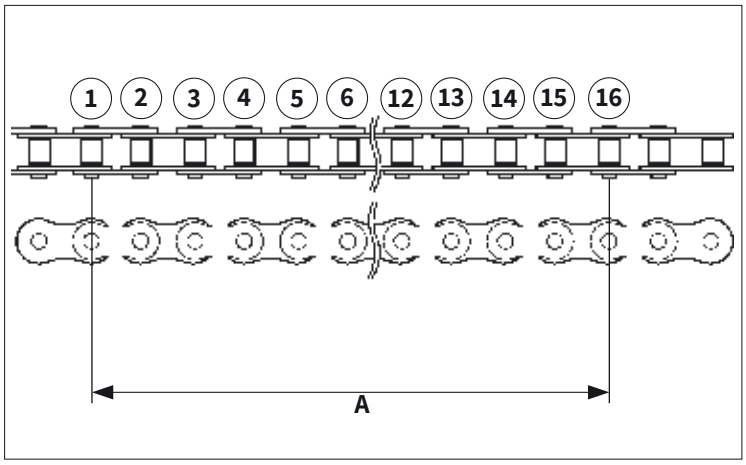
– Install the brake caliper “5” and rear wheel “4”. Tighten the pad pin “3” and install the pad pin plug. Installa the protector “1”.

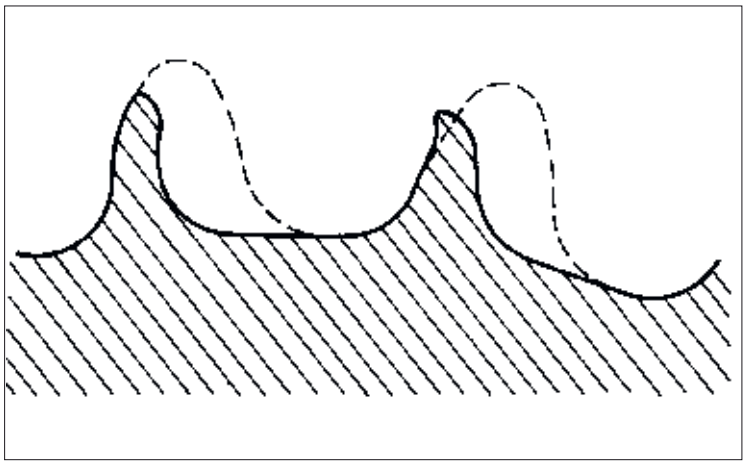
4.12 TYRES

– Check the tire while it is cold;

Model/version	Front tyre standard pressure	Rear tyre standard pressure
XX 125 XE 125 with race use configuration	100 kPa (1.00 kgf/cm², 15 psi)	100 kPa (1.00 kgf/cm², 15 psi)
XE 125 with road use configuration	200 kPa (1.00 kgf/cm², 30 psi)	250 kPa (1.00 kgf/cm², 36 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.





4.13 CHAIN, CROWN AND SPROCKET

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.

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

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

Perform this measurement at two or three different places.

Service limit:
242.8 mm (9.559 in)

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.

4.14 CLEANING AND VEHICLE STORAGE

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

1. 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.
2. 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.
3. 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.**

4. 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.
5. Rinse the machine off immediately with clean water, and dry all surfaces with a soft towel or cloth.
6. Immediately after washing, remove excess water from the chain with a paper towel and lubricate the chain to prevent rust.
7. Clean the seat with a vinyl upholstery cleaner to keep the cover pliable and glossy.
8. Automotive wax may be applied to all painted or chromed surfaces. Avoid combination cleanerwaxes, as they may contain abrasives.
9. After completing the above, start the engine and allow it to idle for several minutes.

4.15 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 carburetor 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.**

It is a dealer's responsibility to activate the warranty coverage at FANTIC MOTOR on the portal www.fantic-store.com within one week from its sale and/or registration.

To activate the vehicle, it is necessary to input the data requested on the dedicated form and **enclose the Circulation Document of the vehicle together with the delivery certificate** duly filled and signed by the dealer and the customer.

If the activation is not done or not done properly, the warranty coverage on the vehicle is to be considered lost.

WARRANTY

In case the warranty conditions reported in this manual are not respected by the customer, FANTIC MOTOR is to be considered relieved from all liabilities and duties coming from this agreement.

Terms and conditions of this agreement shall not be modified by any person or company without prior written authorization from FANTIC MOTOR.

Warranty period

The warranty period starts from the date of sale of the vehicle and from the date of registration and delivery of the vehicle from the authorized FANTIC MOTOR Dealer to the final user; the date of the registration, reported on the Registration Document will be considered as reference.

The dealer is in charge of the non-compliances reported in the initial period (six months) in accordance with the 1999/44/CE for the European Community. For the States not belonging to the EU, the warranty period shall be defined in accordance with the local laws. If the non-compliance is reported during the first six months after the sale and registration of the vehicle, it shall be considered as already existing at the delivery of the motorbike. After the sixth month the final user is must demonstrate that the defect or non-compliance was not generated by an improper or wrong use of the product.

During the first six months after the delivery of the repaired vehicle, the seller will guarantee the non-conformities that gave rise to the repair. Defects and non-compliances shall be reported to an Authorized FANTIC MOTOR Dealer strictly before the end of the warranty period. If the last warranty day happens to be on Sunday or other holiday, the last valid warranty day is to be considered the first available working day after the holiday.

All vehicles produced by FANTIC MOTOR are guaranteed without technical and production defects for the warranty period of 24 months with no limitation on mileage or operation hours.

- This manual is provided in one copy for each vehicle;
- The warranty covers only the cost of the non-compliant parts replaced and the related labor costs;
- If during the repair it turns out that the requested intervention is not among those covered by the warranty, the cost hitherto incurred must be entirely covered by the owner of the vehicle.

Model	Warranty period
XX 125	3 months
XE 125 (standard configuration)	2 years
XE 125 (with Fantic racing kit installed)	3 months

Warranty conditions

FANTIC MOTOR reserves the right to refuse the performance of warranty claims in the event that:

A. The vehicle has not been subjected, during the warranty period, to the periodic checks required by the User Manual. As proof of this, the user shall keep the coupons at the end of this manual correctly filled and endorsed by the authorized workshop, together with the proof of payment of each check performed. Failure to comply with the periodic checks coupons will invalidate the warranty!
B. Inspection, maintenance and repair work has been carried out by a workshop not authorized or recognized by FANTIC MOTOR, or has been performed not in accordance with the manufacturer's technical requirements, standards and regulations or by using non-FANTIC MOTOR spare parts.
C. The vehicle has been modified or altered in any way with or without the use of original FANTIC MOTOR parts. The only exceptions are cases in which the damage has not been caused by such parts and accessories.
D. For the use and maintenance of the vehicle fuels, lubricants, or technical liquids (also cleaning products) that do not correspond to the specifications indicated in the user manual have been used.

The use of fuels with grade different from RON 95 will cause the end of the warranty coverage.

E. The vehicle has been transported or stored inadequately.
F. The vehicle was used as a test or demonstration vehicle.
G. The vehicle has been used in any agonistic event of any kind, speed test, durability tests, i.e. all vehicles subject to improper use.

Exclusions from the warranty

The following cases are not included in the warranty coverage:

A. Cracks, breakages or damages resulting from overheating, frost, rust or corrosion, from external influences such as stone bumps, snow pans, industrial exhaust gases and other environmental influences, or from inappropriate cleaning or use of inappropriate products.
B. Signs of aging such as the fading of surfaces.
C. Components not original or not approved by FANTIC MOTOR.
D. Failures or deterioration deriving from wear and tear.
E. Wear parts such as spark plugs and caps, battery, fuel filters, oil filter, transmission chains, crowns, sprockets, air filter, brake discs, brake pads, clutch plates, light bulbs, fuses, tires, footrests, belts, tires, air chambers, hoses, control cables and other rubber parts.
F. Consumables such as: fuel additives, anti-freeze cooling fluids, hydraulic fluids, battery electrolyte, greases and lubricants.
G. Inspection and adjustment work or other periodic maintenance work and also all cleaning of the vehicle or of its parts.
H. Any aesthetic or acoustic phenomenon that does not or only irrelevantly compromise the usability of the vehicle.
I. All damages incurred in the event of a defect and all costs incurred directly and indirectly by a warranty case (such as for phone calls, rental vehicle, public transport, recovery costs, road assistance, accommodation, etc.) and other economic disadvantages (such as failure to use, loss of profit, loss of time or similar).
J. All and any injury to persons or damage to properties, caused by accident or impact both on the road or of other nature and origin, or in any case resulting from damage covered by this warranty.

Additional warranty provisions

FANTIC MOTOR decides at its discretion whether to repair and / or replace any defective parts. Ownership of replaced parts passes to FANTIC MOTOR without any right to compensation. The FANTIC MOTOR Dealer in charge of eliminating the defect has no power to issue legally binding declarations on behalf of FANTIC MOTOR.

In case of doubts about the presence of the defect, or if a visual check or material test proves necessary, FANTIC MOTOR has the right to request the dispatch of the protested parts or to appoint a competent person. There is no further warranty obligation for parts replaced free of charge or warranty services performed free of charge. For components that have been replaced within the warranty period, the warranty ends when the vehicle warranty expires.

Other forms of warranty established by the user with the dealer will not be recognized by FANTIC MOTOR.

In case of sale of the vehicle during the warranty period, the warranty coverage will be transferable to the buyer until the end of the period defined by the first registration without any prejudice to the provisions of this warranty certificate.

Request for intervention under warranty

Should any defect appear on your vehicle, please contact your FANTIC MOTOR Dealer immediately. After confirming that the part or parts causing the failure are covered by the warranty, the dealer must report the problem to the FANTIC MOTOR After-Sales Service requesting authorization to perform the warranty intervention.

No warranty service may be performed unless previously authorized by FANTIC MOTOR.

Warnings for maintenance and care

It is under the User responsibility to ensure that the maintenance work is carried out in the intervals provided and documented through the coupons filled in, stamped and proven by the proof of purchase.

– Always inspect your motorcycle before each use. This control is essential in particular for your safety.
– Before starting maintenance work let the motorcycle cool down to avoid burns.
– Once self-locking nuts are removed they must be replaced by new nuts.
– When screws and nuts secured with threaded brake fluid are removed, they must be reassembled and secured in the same way.
– Do not use a high-pressure cleaner to wash the motorcycle, as water may enter the bearings, carburetor, electrical connectors, etc.
– Dispose of oils, greases, filters, fuels, detergents, brake oil, etc. in a regular way, respecting the regulations in force in your country. Also comply with the safety regulations regarding the handling of these substances. Under no circumstances allow used oil to enter drains or watercourses or to penetrate the subsoil.

⚠ **Any modification of the engine or other components designed to increase the speed or power of the vehicle will cause the expiration of the warranty coverage. Note also that these changes are prohibited by law. Any modification that alters the characteristics of the vehicle subject to authority approval will invalidate the existing approval, making the vehicle illegal. This will cause the expiration of the warranty coverage in addition to the expiration of the insurance coverage.**

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

STAMP OF THE DEALER

⚠ **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

SERVICE

Registration of service

⚠ **Give the handbook to your dealer at each service.**

⚠ **It is the responsability 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 ☐