MRX-SMX 50

Chassis workshop manual

Index

Chassis

INTRODUCTION

GETTING TO KNOW THE MOTORBIKE

DISASSEMBLY

Introduction

This workshop manual contains the main electromechanical checks, as well as the essential general checks and the fitting of components supplied separately, designed to prepare the factory-new moped for delivery.

It is very important to adhere strictly to the instructions set out in the manual. Interventions carried out superficially, or worse still, omitted entirely, may result in personal injury to the user, damage to the machine, etc., or may simply result in disagreeable complaints.

N.B.: **Rieju, S.A.** reserves the right to make changes at any time, without prior notification. For any enquiry, or for further complimentary information, please call the **Rieju S.A.** After-sales Service.

MANUAL UPDATES

Updates will be sent within a reasonable period of time. Each new CD-Rom will update previous information.

The contents list will be updated if the modifications and/or variations in the pages affect the ability to consult the manual.

IMPORTANT! This series of workshop manuals should be considered as work instruments in themselves and can only maintain their "value" over time if they are kept constantly up to date.

SYMBOLOGY USED IN THE MANUAL

CAUTION! Recommendations and precautions regarding rider safety and motor vehicle integrity.

WARNING!
Situations entailing the risk of personal injury to maintenance or repair mechanics, other workshop personnel or third parties, or damage to environment, vehicle or equipment.

FIRE HAZARD
Indicates operations which may constitute a fire hazard.

RISK OF EXPLOSION
Indicates operations which may constitute a risk of explosion.

TOXIC
Indicates a possibility of intoxication or inflammation of the upper respiratory tract.

MECHANICAL MAINTENANCE
Operations to be performed only by an expert mechanic.

ELECTRICAL MAINTENANCE
Operations be performed only by an expert electrical / electronic technician.

NO!
Operations to be absolutely avoided.

SERVICE MANUAL
Indicates information which may be obtained by referring to said manual.

SPARE PARTS CATALOGUE
Indicates information which may be obtained by referring to said catalogue.

ABBREVIATIONS USED IN THE MANUAL

F	Figure
Pr Tr	Tightening torque
P	Page
Ap	Paragraph
S	Section
Es	Diagram
T	Table
Tr	Screw

Note:
The letter Tr in the illustrations refers to retaining or adjusting screws. The number following this letter refers to the number of the same type of screw in the unit or component described and illustrated. Letters not followed by a number indicate a single screw . In case of different screws being referred to in the illustration, the letter Tr is followed by a number and a small letter , for instance: (Tr4a).

Unless otherwise specified, units and components are reassembled by proceeding in the reverse order of removal.

GENERAL WORK RULES

- The **advice**, **recommendations** and **warnings** given hereafter are aimed at ensuring maximum work safety as well as at considerably reducing the risk of accidents, personal injury, equipment damage and idle times. They should therefore be strictly adhered to.

ADVICE:

- Only use quality tools and equipment.
- Only use equipment conforming to EU Directives for lifting the vehicle.
- During operations, always keep tools and equipment at hand, possibly laying them out according to the sequence in which they are to be used. Absolutely avoid putting them on the vehicle itself, out-of-sight or in poorly accessible places.
- Always keep the work area clean and tidy.
- When tightening screws or nuts, start with the **larger diameter** or inner fasteners, and tighten them in progressive "**pulls**" in accordance to a "**criss-cross**" pattern.
- Preferably use open-end box wrenches by "**pulling**" and not "pushing".
- Adjustable wrenches (F-1) should only be used in case of emergency, i.e. when a properly sized wrench is not available. They should preferably not be used as the movable jaw tends to open thus risking damaging or not properly tightening the bolt to the correct torque. In any case, when using an adjustable wrench, take care to proceed as shown in Figure 1.
- Except for occasional customers, always make out and deliver to the customer a **work sheet** specifying the operations performed, with notes as to any future checks eventually required.

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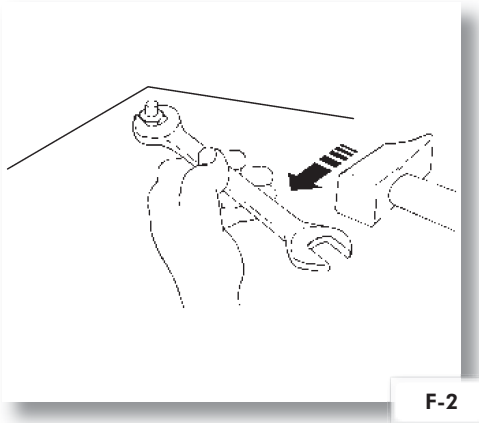
RECOMMENDATIONS

- **Before** carrying out any operation on the vehicle**,** wait for all parts to **cool** down.
- For operations requiring two mechanics, make sure that the various steps to be performed by each of them are clearly defined and coordinated beforehand.
- Make sure that each component has been properly fitted before proceeding with the next one.
- Lubricate all parts (where applicable) before reinstalling them.
- Gaskets, O-rings, circlips and split pins **must be replaced** at every refitting.
- The torque settings specified in the manuals refer to the "**final torque**", which must be attained progressively by steps.
- Loosen and tighten aluminium alloy parts (covers) only after the ***engine has fully cooled down***.
- Only use screwdrivers with sizes suitable to the screws to be loosened or tightened.
- **Work in a comfortable position and ensure that the vehicle is stable.**
- **Never use a screwdriver as a lever or chisel.**
- **Never use pincers to loosen or tighten screws or nuts because, in addition to not providing a sufficient clamping force, they may also damage the screw head or nut hexagon.**
- **Never tap the wrench with a hammer or other similar tools to loosen or tighten screws and nuts (F. 2).**
- **Never attempt to increase the lever arm by fitting a tube into the wrench (F-3).**



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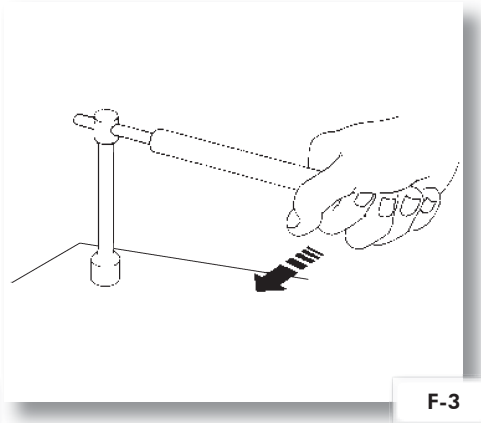


F-3

Never use open flames for any reason.

Never leave open containers or containers not suitable for holding fuel in passageways, close to heat sources, etc

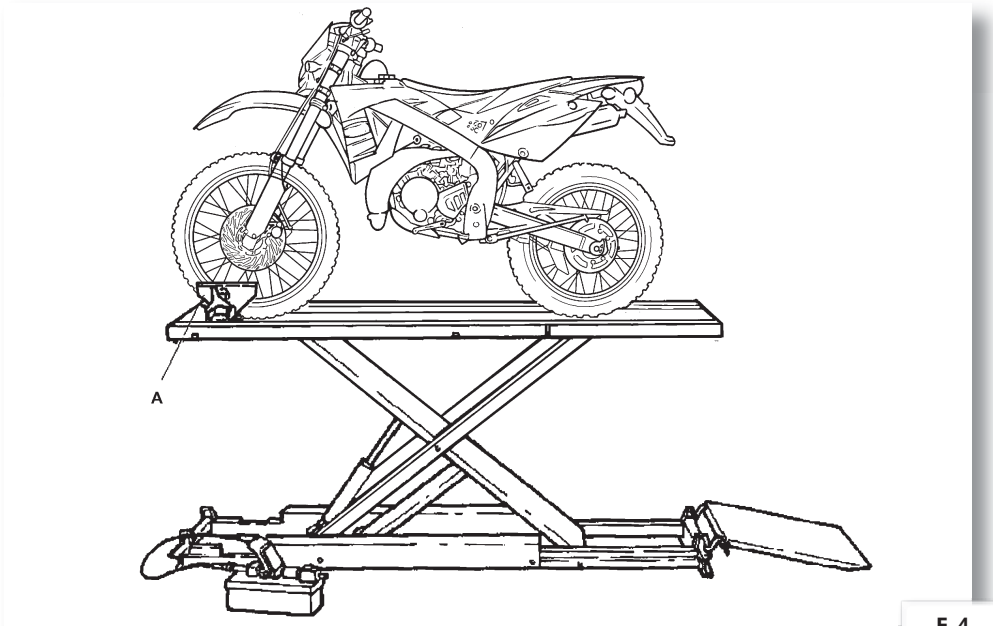
Never use petrol to clean the vehicle or the floor of the workshop. Always use low flash point solvents to clean the vehicle components.

Never suck from or blow into the fuel pipe.

When welding, make sure that there are no flammable liquids in the vicinity. Always remove the tank, even if completely empty, and disconnect the negative cable **(-)** from the battery.

Never leave the engine running in closed or poorly ventilated areas.

Before any servicing, make sure that the motorbike is perfectly stable.
The front wheel should preferably be anchored to the equipment (A/F-4) integral with the lifting board.



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Getting to know the motorbike

MAINTENANCE OPERATIONS	1ST SERVICE 1.000 KMS.	2ND SERVICE 3.000 KMS.	SER. EVERY 5.000 KMS.
Brake system checking	•	•	•
Transmission oil level checking	Change	•	Change
Chain tension and wear inspection	•	•	•
Suspension control	•		•
Controls and cables checking adjustment and grease	•	•	•
Wheel spoke tension and wheel off-centre inspection	•		•
Air filter cleaning and grease	•	•	•
Carburettor checking and adjustment	•		•
Spark plug checking and adjustment or change	•	•	•
Screws and chassis nut control – plastics	•		•
Electrical system checking			•
Segments wear control			•
Radiator water level control	•	•	•
Exhaust system checking			•
Oil pump operation checking	•		•

SPECIFICATIONS AND TECHNICAL CHARACTERISTICS

Dimensions	MRX	SMX
Overall length	2050 mm.	1970 mm.
Overall width	790 mm.	790 mm.
Overall height	1170 mm.	1170 mm.
Seat height	920 mm.	920 mm.
Wheelbase	1332 mm.	1332 mm.
Minimum ground clearance	358 mm.	358 mm.
Weight		
Dry	93 kg.	
Engine		
Type	2-stroke	
Transmission	6 speeds	
Make	Minarelli	
Cylinder arrangement	Monocylindrical, forward-inclined cylinder	
Cylinder capacity	49,7 c.c.	
Bore x stroke	40,3 x 39 mm.	
Starting system type	Kick-starter and electric starter	
Lubrication system	Wet sump	
Oil type	CASTROL TTS injection 2-stroke oil	

Transmission oil	
Type	CASTROL MTX SAE 10W 40
Quantity	820 c.c.
Air filter	
	Wet type foam rubber cartridge
Fuel	
Type	95 Unleaded petrol
Tank capacity	8,4 L.
Carburettor	
	Dellorto PHBN 16 HS
Spark plug	
Type	NGK BR 9 ES
Electrode gap	0,6 - 0,7 mm.
Clutch type	
	Wet, multiple-disc
Primary transmission	
Clutch crown wheel	Z = 71
Drive pinion	Z = 20
Transmission ratio	1: 3,55
Secondary transmission	
Engine output pinion	Z = 11
Drag plate	Z = 52
Transmission ratio	1: 4,36
Chain	420 x 126 steps

GEARCHANGE				
Speed	**Primary shaft**	**Secondary shaft**	**Gear ratio**	**Output ratio**
1ª	Z = 12	Z = 36	1: 3,00	1: 10,65
2ª	Z = 16	Z = 33	1: 2,06	1: 7,31
3ª	Z = 19	Z = 29	1: 1,53	1: 5,43
4ª	Z = 22	Z = 27	1: 1,23	1: 4,37
5ª	Z = 24	Z = 25	1: 1,04	1: 3,69
6ª	Z = 25	Z = 24	1: 0,96	1: 3,40

Suspension	**MRX / SMX**
Front	MRX / SMX Inverted hydraulic fork Ø 35 mm
Rear	CASTROL OIL FORK 15W 20, 245 cc per bar Hydraulic damper
Suspension	**MRX PRO / SMX PRO**
Front	PAIOLI Inverted hydraulic fork Ø 38 mm CASTROL OIL FORK 10W, 325 cc per bar
Rear	Gas filled damper and spring preload adjustment
Brakes	**MRX / SMX**
Front	Disc Ø 260 mm
Rear	Disc Ø 200 mm
Brakes	**MRX PRO / SMX PRO**
Front	Wave type Disc Ø 260 mm
Rear	Wave type Disc Ø 200 mm
Tyres	**MRX / MRX PRO**
Front	80/90 - 21, con cámara, 1'7 kg/cm^2
Rear	110/80 - 18, con cámara, 1'8 kg/cm^2
Tyres	**SMX / SMX PRO**
Front	100/80 - 17, con cámara, 1'8 kg/cm^2
Rear	130/70 - 17, con cámara, 1'9 kg/cm^2
Electric equipment	
Ignition system	Electronic 12V 95W
Generator	Ducati
Ignition advance	20° 1,4 mm before the P.M.S.
Bulb voltage and wattage	
Headlight	12V 35/35W
Taillight	12V 21/5W
Dashboard	12V 1,2W
Turn signal lights	12V 10W
Odometer lighting	12V 1,2W

UNPACKING

• Unpack the motorcycle following the indications appearing on the same packaging, after that it should be thrown according to current regulations.

"AESTHETIC" CONTROL

• Control visually that all the components of plastic material are correctly assembled and that the motorcycle does not show any scratch, mark, etc.

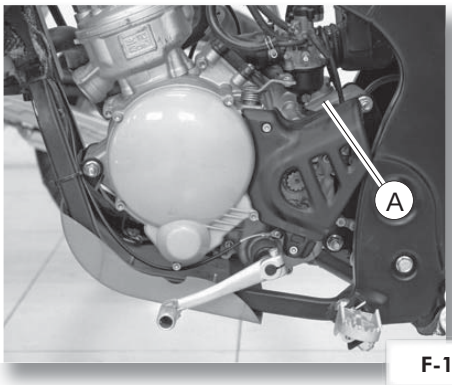
IDENTIFICATION DATA

Engine identification number

• The data for identifying the engine (A/F -1) are on the right sump.

Vehicle identification number

• The identification number of the motorcycle (B/F -2) is stamped on the steering pipe. This identification number is used to identify the moped.



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F-2

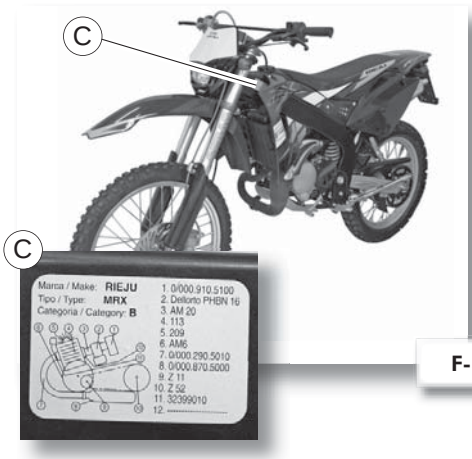
SAFETY TAG

It contains the identification data of the motorcycle according to the 97/24/CE guidelines.

It is absolutely essential to indicate the identification data of the motorcycle when ordering spare parts.

This tag should not be substituted either modified.

It is located in the left side of the chassis close to the steering pipe.



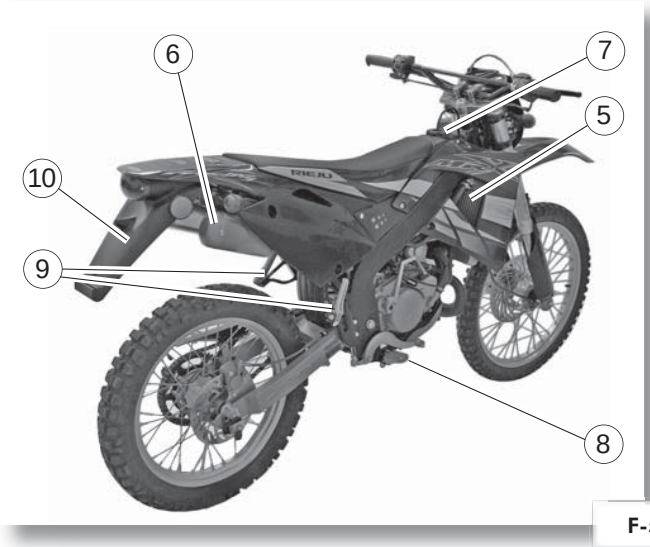
F-3

IDENTIFICATION OF THE MAIN PARTS (Left side)

F-4

1. Headlight
2. Oil mixing tank
3. Battery (SMX)
4. Gear pedal

IDENTIFICATION OF THE MAIN PARTS (Right side)



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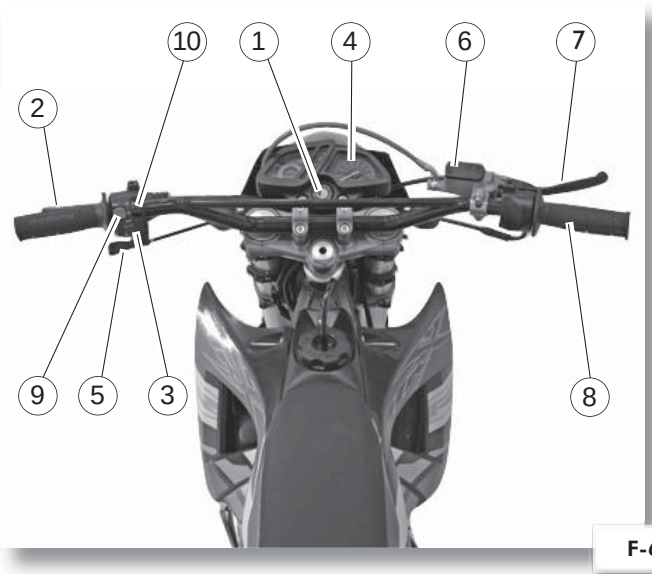
5. Radiator
6. Tool box
7. Fuel tank cap
8. Rear brake pedal
9. Passenger footrest
10. Number plate light and plate holder

CONTROLS



F-6

Controls/Instruments

1. Main switch
2. Clutch lever
3. Turn signal switch
4. Dashboard
5. Start lever
6. Front brake pump
7. Front brake lever
8. Accelerator grip
9. Horn switch
10. Lights switch (Dipped and full-beam headlights)

KEYS

• The motorcycle is provided with two numeric code keys which allow:
- To establish start ignition
- To turn on the lights
- To lock the steering

STEERING LOCK

• **Activate:** With the handlebar turned to the left, get the key thorough into the lock and then turn it to the left.
• **Deactivate:** Turn the key to the right.

SIDE STAND

• Make sure that the side stand is well fixed and it moves correctly likewise it is advisable to check frequently the hold-up system, made up of drive springs.

F-7

DASHBOARD

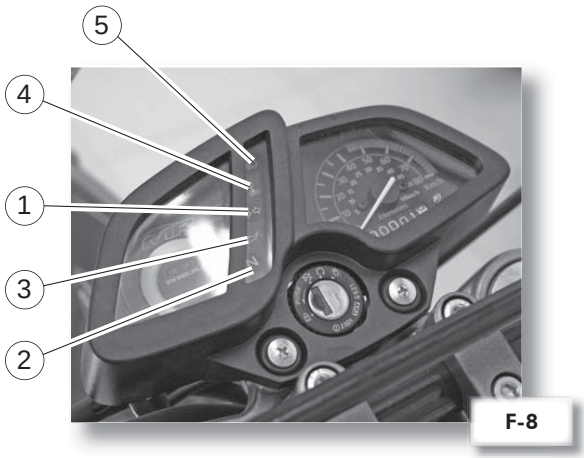
1- Steering warning light
This warning light twinkles when the steering switch moves towards the left or the right.

2- Coolant temperature warning light
This warning light lits when the temperature of the coolant is too much high. If this happens, stop the engine immediately.

3- "N" neutral gear warning light
This warning light lits when the transmission is in the neutral gear position.

4- Oil level warning light
This warning light lits when the oil level is low.

5- Warning light of the full-beam headlights
This indicator lits when the full-beam headlights are in use.



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F-9

TYRES

Dimensions

80/90-21 48 P (enduro front)
110/80-18 58 P (enduro rear)

100/80-17 52 S (supermotard front)
130/70-17 62 S (supermotard rear)

PRESSURE CONTROL

The pressure of the tyres must be controlled and regulated with the "tyres at room temperature".

ENDURO:

	bar
FRONT	1,7 kg / cm2
REAR	1,8 kg / cm2

SUPERMOTARD:

	bar
FRONT	1,8 kg / cm2
REAR	1,9 kg / cm2

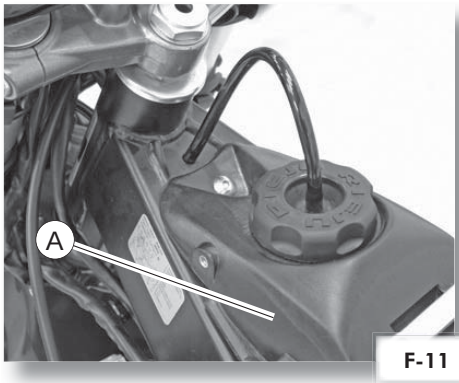
F-10

FUEL TANK

Unscrew the cap and refuel the tank paying attention not to pass the limit (A/F-11); if after filling some petrol residues are showed on the motorcycle, wipe them off immediately.
Use normal unleaded petrol with a RESEARCH 95 octane number.

Fuel tank capacity:

Total: 8,4 litres



F-11

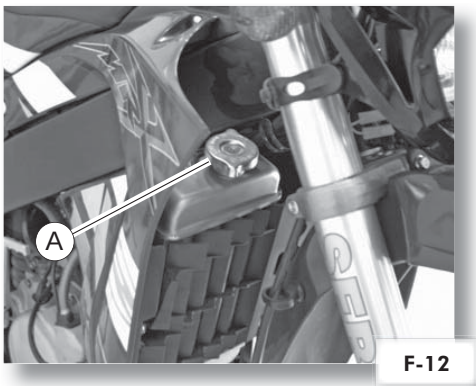
COOLANT

Control
1. Remove the cap (A/F-12) with the engine cold and first release the residual pressure.

2. Check the coolant level with the engine cold, since it varies depending on the engine temperature. The coolant level should fill the radiator panel.

3. If the level is low, add coolant.

4. Put the cap again.



F-12

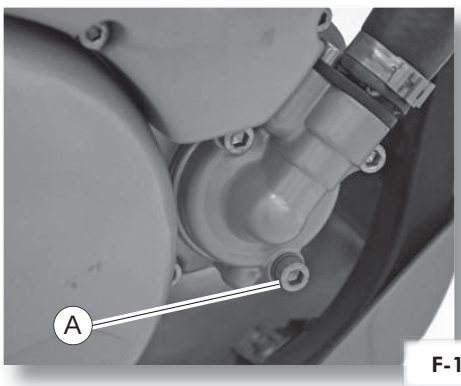
COOLANT REPLACEMENT

Before carrying out this operation, place a tray under the tube.

1. Parking the vehicle on a flat surface and place a tray under the radiator.

2. Drain the cooling circuit removing the drain plug (A/F-13).

In case you need more coolant than usual to reach the indicated level, or if you need to refill too often, control the cooling circuit.



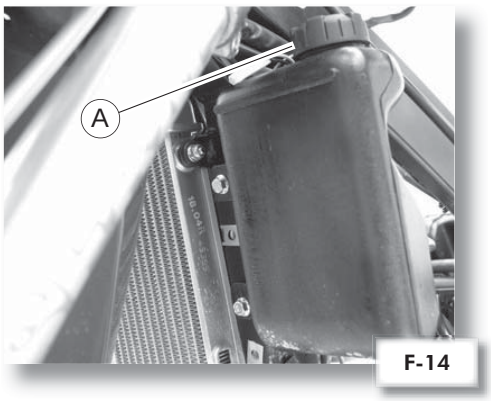
F-13

ENGINE OIL

Inside the tank there is an electronic sensor which lights up the red warning light of the reserve petrol tank, on the dashboard, when the tank shows low lubrication.

To refill the oil, remove the cap (A/F-14) and fill very cautiously.

Recommended oil:
SYNTHETIC OIL FOR 2-STROKE ENGINES.



F-14

TRANSMISSION OIL

Change

1. Place the motorcycle in a flat surface.

2. Warm the engine up for some minutes.

3. Pull the engine up. Place a tray for the oil under the engine and remove the drain plug (C/F-15).

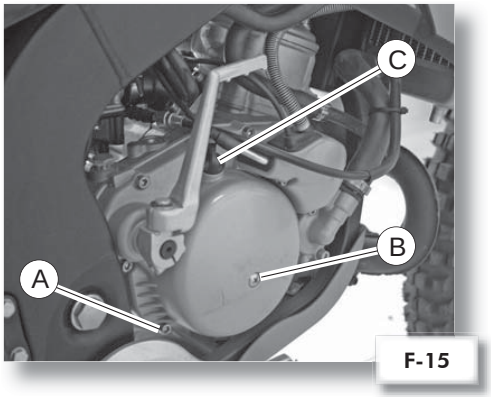
4. Unscrew the drain screw (A/F -15) and the screw (B/F -15) to allow the oil to flow.

5. The drain screw tightly (A/F -15).

6. Fill the engine with oil till it comes out by the level hole (B/F-15). Put the screw again in the hole (B/F-15), place the drain plug (C/F -15) and tighten it.

It is advisable to use SAE 10W 40.

Get the engine started and warm it up for some minutes. During the warming, check any possible leak of oil. If so, pull the engine up immediately and find out the cause.



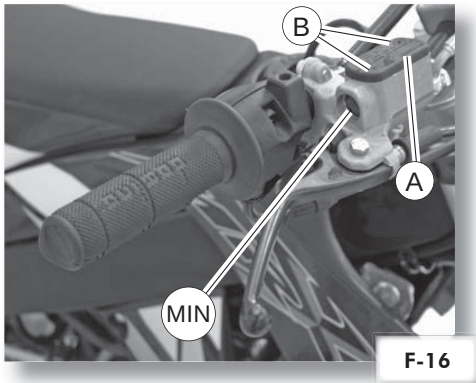
F-15

BRAKE OIL

Control

When the oil level is going to be checked, turn the handlebar to verify that the upper part of the main cylinder is levelled out.

Check the oil level is above the mark of the-minimum level in the tray of the rear brake. Andcontrol there is enough oil for the front brake observing by the peephole placed in the pump.



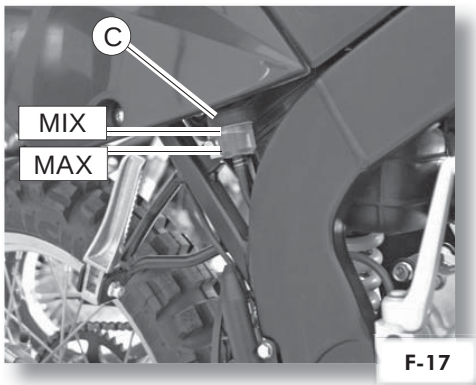
F-16

Change

For the front brake, remove the cover (A/F -16)
after taking the screws out (B/F -17).
For the back brake, remove the cap (C/F -17).

The quality of the used liquid should comply with the specified regulations; since otherwise the rubber gaskets can wear, causing leaks and reducing the effectiveness of the brake.

Recommended brake fluid: DOT 4



F-17

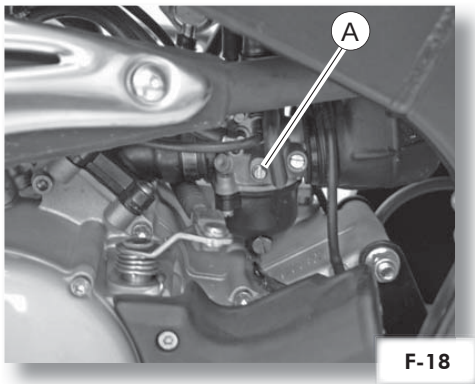
ATTENTION: Brake fluid is abrasive.

ADJUSTMENT OF THE MINIMAL INTERVAL OF TURN

Start the engine and warm it up for some minutes in the 1000 to 2000 rpm interval speeding up till the 4000 to 5000 rpm. When the engine responds quickly to the acceleration, that means it is hot.

Adjust the minimal zone of the engine turning the screw for gas adjustment (A/F -18). Screw to the right to speed up and to the left to slow down.

Control the ideal interval of the engine with an electronic tachometer connected to the spark plug lead.

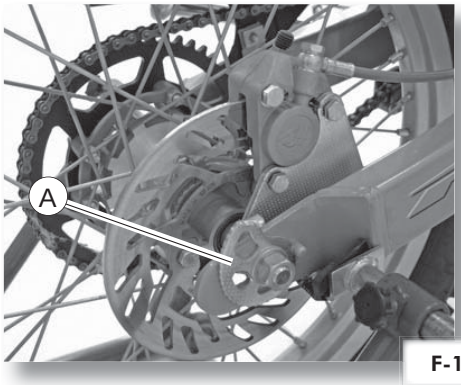


F-18

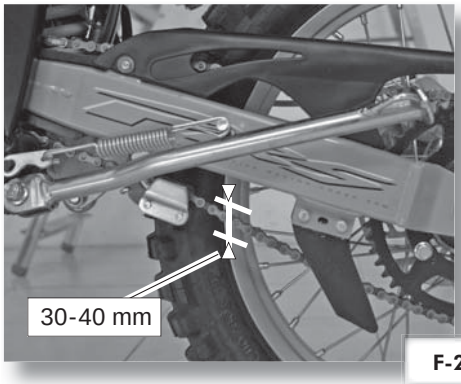
TENSION ADJUSTMENT OF THE TRANSMISSION CHAIN

One of the special features of the models MRX/SMX is the assembly of a chain tensor in such a way that maintain always this element in correct tension.

To correct the chain tension, work on the eccentrics (A/F-19) of the rear wheel axle trying to operate always on the point of maximum chain tension. Turn the rear wheel trying to work the tension in different points to find the tensest point, pulling down to avoid operation during the check.
Try not to tighten the chain excessively since it could damage the engine and the transmission; keep the chain tension within the specified limits in the following sketches.
Get a perfect balance and alignment of the wheel. The eccentrics grooves can be of help to achieve it, leave the eccentrics in the same position in both sides of the swing arm



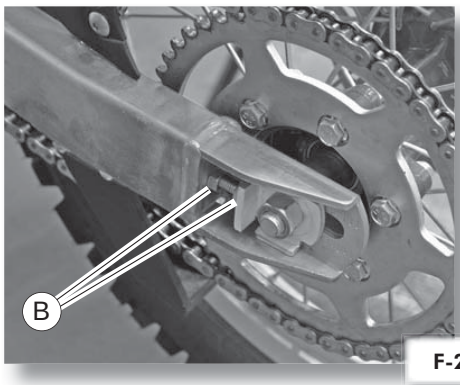
F-19



F-20

To control and adjust the chain you should operate on the rear axle of the wheel, always working in the maximum tension point of the chain.
To control the play, turn the rear wheel on several times and check the tension in different places to meet the tensest point.
The moped should be placed vertically with the two wheels on the floor and the looseness of the chain ought to be from 30 to 40 mm.

The adjustment of the chain tension carries out loosening the rear axle of the wheel and screw in or unscrew the adjacent bolts and nuts (B/F-21), always getting the same distance on both sides of the axle.
A wrong alignment of the chain and the wheel can make the chain comes out, as well as give stability problems in the motorcycle.



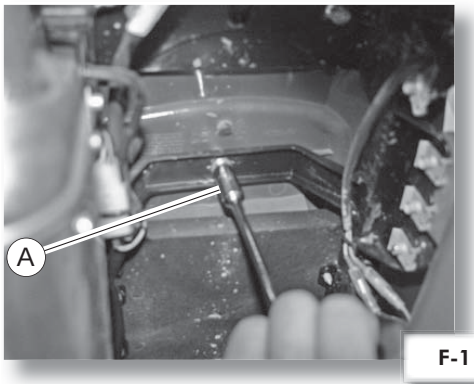
F-21

It is necessary a periodically cleaning and greasing of the chain. The chain is composed of lots of pieces that work together. A correct maintenance of the chain is required to avoid a quickly wear, so therefore, it is convenient to grease the chain periodically, with a special oil for this purpose.
Before lubricating it is necessary to clean the chain in order to get the dirt off. Clean with a brush or a cloth and then apply the lubricant between the lateral plates and in all the central rollers.

Disassembly

1. SEAT

Unscrew the nut (A/F -1) located inside the cavity of the rear wheel. After, lift the seat off the back and pull it backwards to remove it from the front catch.

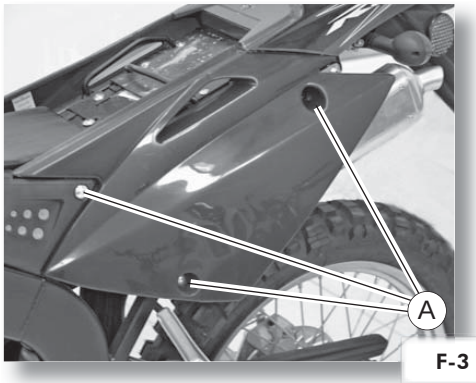


F-1

F-2

2. REAR LATERAL COVERS

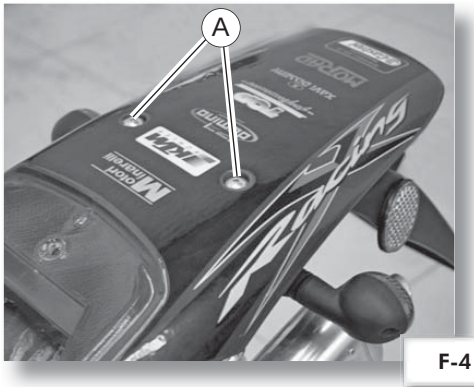
* Remove the seat.
Unscrew the 3 bolts (A/F-3).
Following, pull the part to remove it.



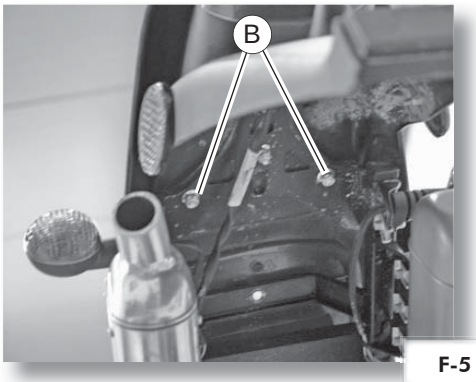
F-3

3. PILLION SEAT

* Remove the seat and the rear cowlings.
Unscrew the 2 bolts (A/F -4) holding the 2 nuts (B/F-5) of the lower part.



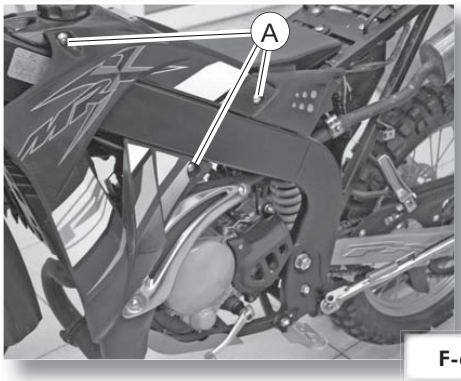
F-4



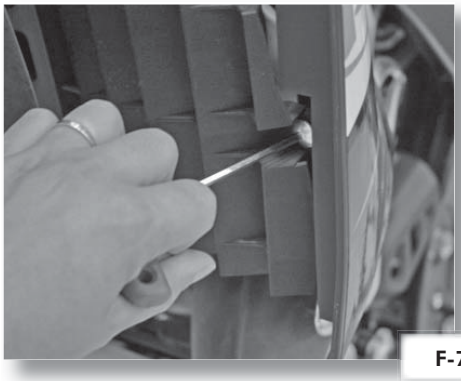
F-5

4. FRONT LATERAL COVERS

*Remove the seat.
Unscrew the 3 bolts (A - /F-6) from both sides and the bolt on the front.



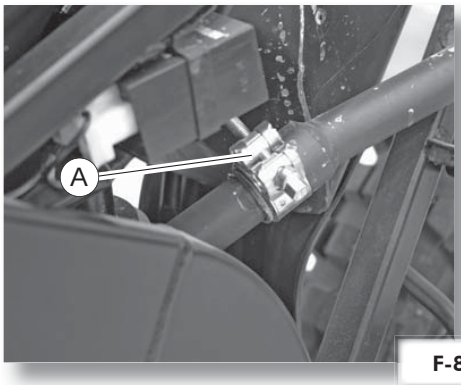
F-6


F-7

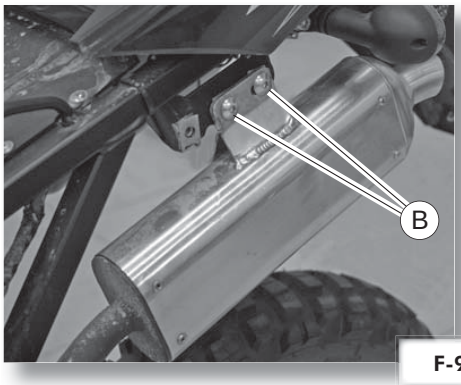
5. MUFFLER

*Remove the seat and the left rear cowling.
Loosen the clamp (A/F -8) of the exhaust which holds the muffler.
Following, unscrew the 2 bolts (B/F-9) that fix the muffler to the chassis.
To extract it, pull the muffler backwards.

ATTENTION: Before proceeding to the muffler disassembly, make sure that it is cooled down.



F-8

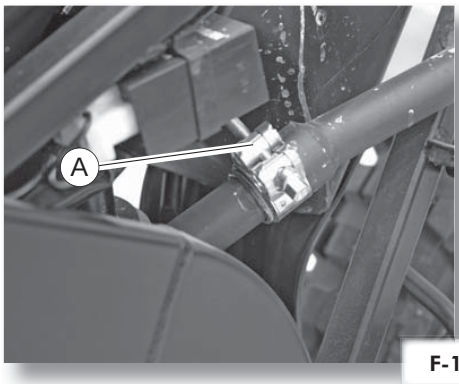


F-9

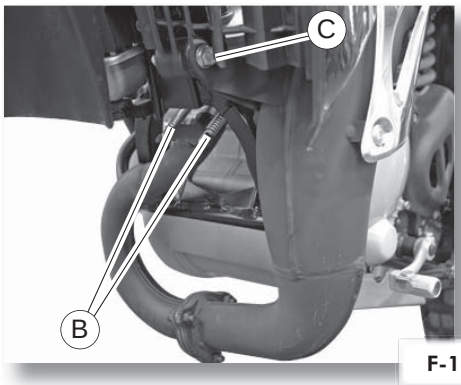
6. EXHAUST

*Remove the seat, the left rear cowling and the muffler.
Loosen the clamp (A/F -10) of the exhaust, which holds the muffler.
Remove the 2 springs (B/F -11) that hold the exhaust onto the engine in the front part and the Silembloc bolt (C/F -11).
Following, remove the vent tube (AIS system) (D/F-12) and the exhaust pulling it forward.

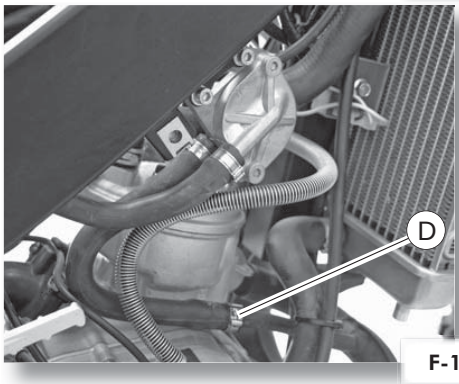
ATTENTION: Before proceeding to the muffler disassembly, make sure that it is cooled down.



F-10



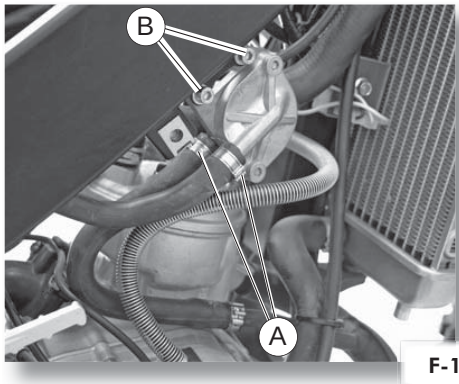
F-11



F-12

7. "AIS" SYSTEM (SECONDARY AIR VALVE)

Loosen the clamps (A/F-13).
Unscrew the 2 fixing bolts (B/F-13).

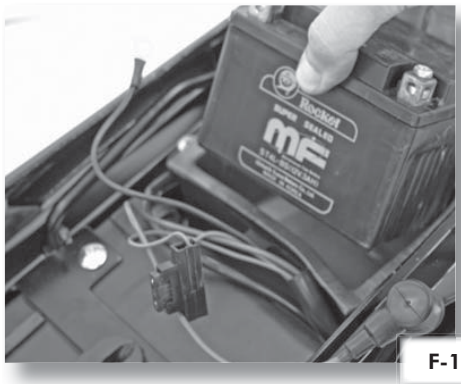


F-13

8. BATTERY (SMX)

* Remove the seat.
Disconnect the two leads (positive red and negative black).
Remove the rubber parts and then the battery pulling it upwards.


F-14

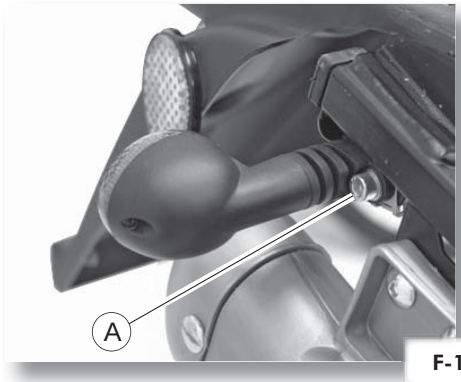

F-15

9. REAR TURN SIGNALS

Cut the clamp that hold the leads and disconnect them from the main wiring.
Following, loosen the screw (A/F -17) and pull the lead to remove the light.

ATTENTION: Before proceeding to the lights disassembly, pay attention to the sequence of the terminals for the later assembly (see electric diagram).


F-16



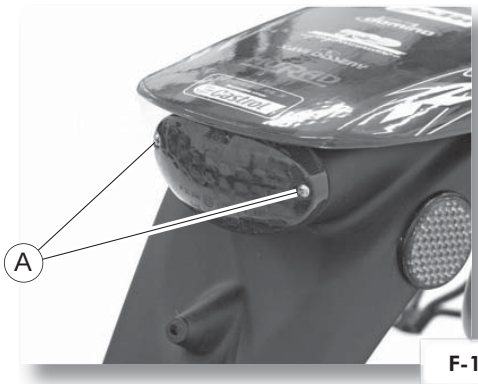
F-17

10. TAILLIGHT

Cut the clamp that hold the leads and disconnect them from the main wiring.
After, loosen the 2 screws (A/F -19) that attach the light to the fender.
To extract it, pull the lead to remove the light.

ATTENTION: Before proceeding to the lights disassembly, pay attention to the sequence of the terminals for the later assembly (see electric diagram).

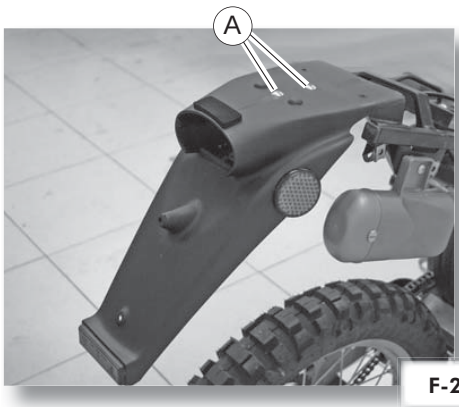
F-18



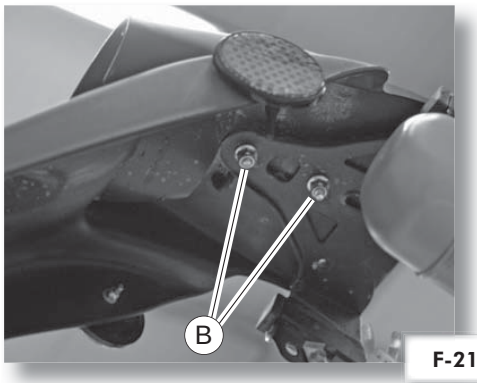
F-19

11. REAR MUDGUARD

*Remove the seat, the pillion seat, the rear turn signals and the taillight.
Unscrew the 2 bolts (A/F-20) holding the 2 nuts (B/F-21) of the lower part.



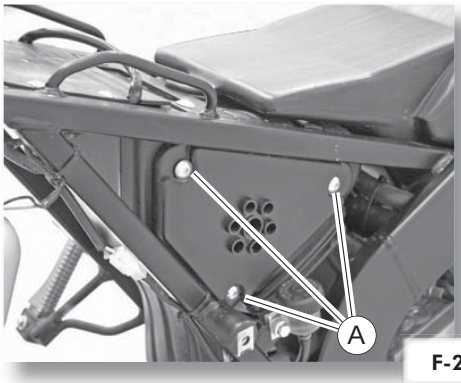
F-20



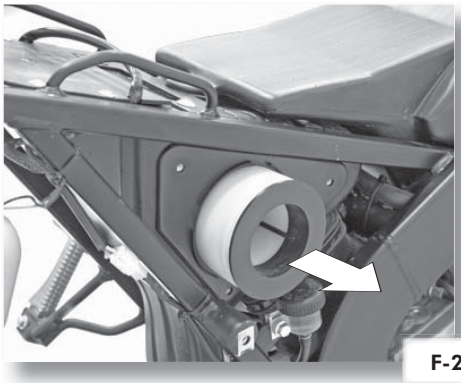
F-21

12. AIR FILTER

*Remove the seat and the right lateral cover.
Unscrew the 3 bolts (A/F -22) of the filter cover and remove the filter.



F-22

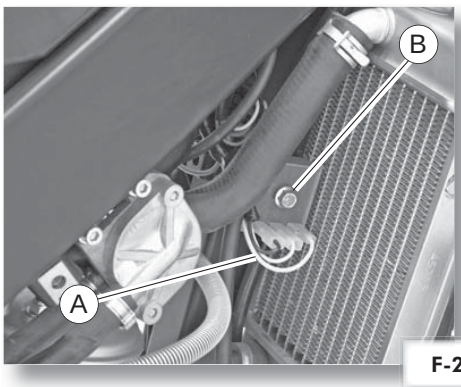


F-23

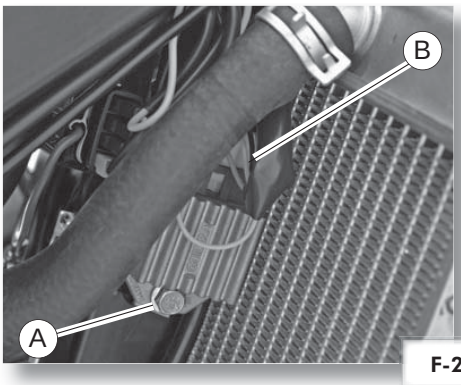
13. REGULATOR

* Remove the seat and the right lateral cover.
Disconnect the regulator from the wiring (A/F -24).
After, unscrew the bolt (B/F -24) to remove it.

SMX version



F-24



F-25

ATTENTION: Connect the earth cable again during the assembly.

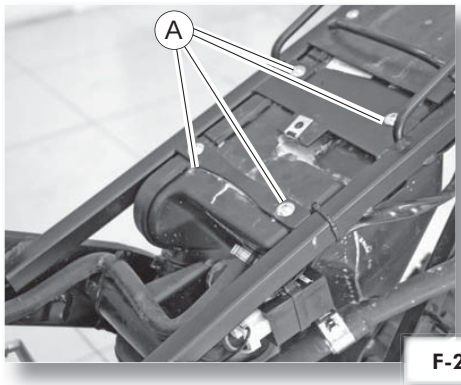
14. INTERMITTENCE STATION

* Remove the seat and the left lateral cover.
Disconnect the intermittence station from the main wiring.
Following, extract it from the rubber.

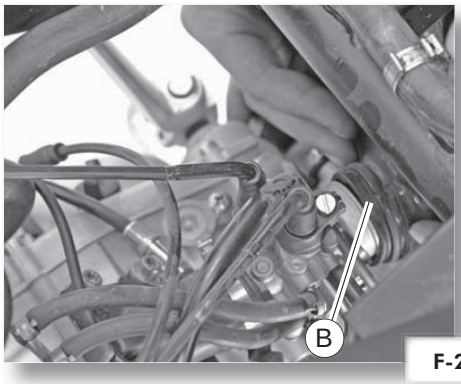
F-26

15. FILTER BOX

* Remove the seat and the rear lateral covers.
Unscrew the 4 bolts (A/F -27) at the top.
After, cut the clamp (B/F-28) that hold the nozzle of the carburettor.
To extract the filter box, pull it backwards.



F-27



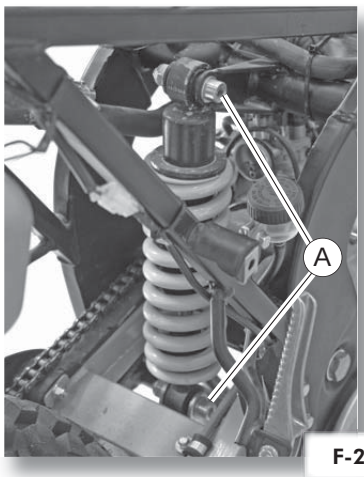
F-28

16. SHOCK ABSORBER

* Remove the seat, the front lateral covers, the rear cowlings and the filter box.
Unscrew the 2 bolts (A/F -29) that hold the shock absorber onto the chassis.
Then, remove it from the back.

ATTENTION: Before disassembly, hold the chassis by the lower part in order to avoid the fall of the swing arm and the wheel.

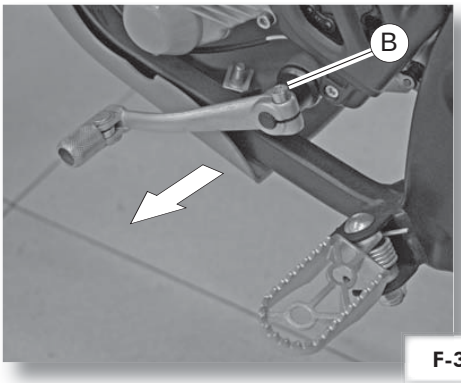
ATTENTION: Pay attention to the shock absorber position for the later assembly.



F-29

17. GEAR LEVER

Unscrew the fixing bolt (A/F -30).
After, pull carefully the lever in order not to damage the grooved shaft.

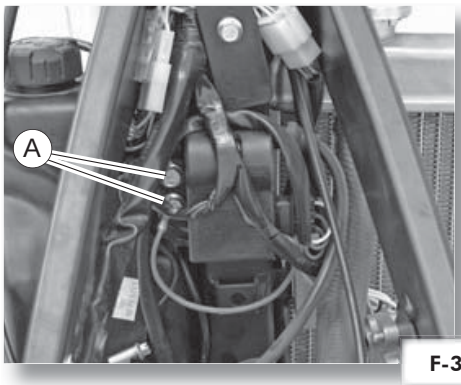


F-30

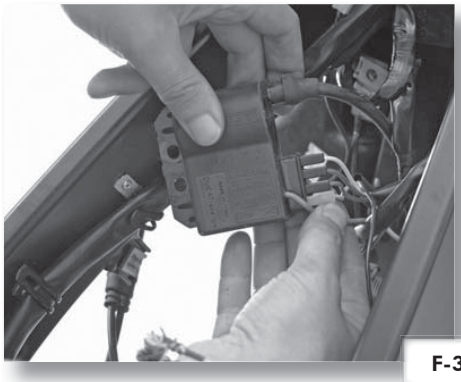
18. ECU UNIT

* Remove the seat and the fuel tank (only move it away).

Unscrew the 2 fixing bolts (A/F-31) and then disconnect the main wiring.



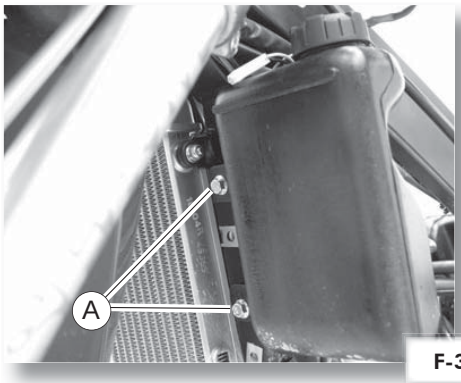
F-31



F-32

19. OIL TANK

* Remove the seat, the left front lateral cover and disconnect the level sensor wire and the oil filter.
Unscrew the 2 bolts (A/F-33) that fix the tank to the chassis and remove it.



F-33

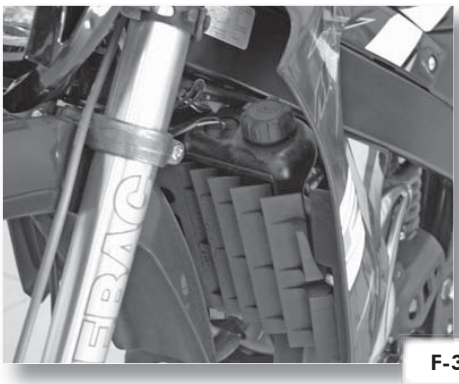
ATTENTION: Before disassembly, empty the oil tank through the filter hole.

F-34

20. OIL LEVEL SENSOR WIRE

* Remove the seat, the left front cover, the level sensor wire and the oil filter.
Unscrew the 2 bolts that attach the tank to the chassis and remove it.

F-35



F-36

21. OIL FILTER

* Remove the left front cover.
Loosen the hose clamp and the clamp that hold the filter onto the oil tank.
To extract it, pull it outward.

ATTENTION: Place a tray under the oil tank to collect the oil.

F-37

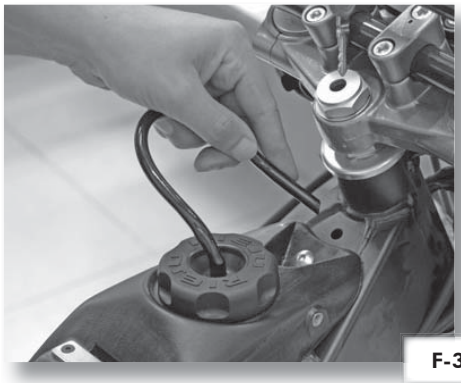
22. FUEL TANK

* Remove the seat and the front lateral covers.

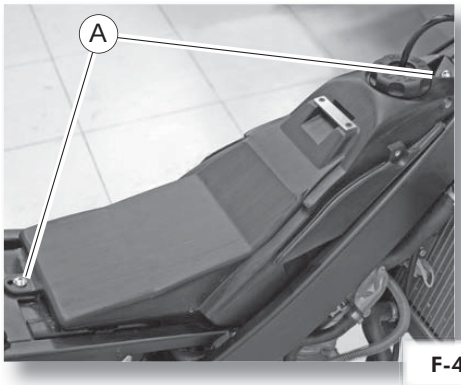
ATTENTION: Before disassembly, close the fuel cock.

Extract the vent tube.
Unscrew the 2 bolts (A/F-40) that fix the tank to the chassis.
Following, remove the tank pulling it upwards.

F-38



F-39

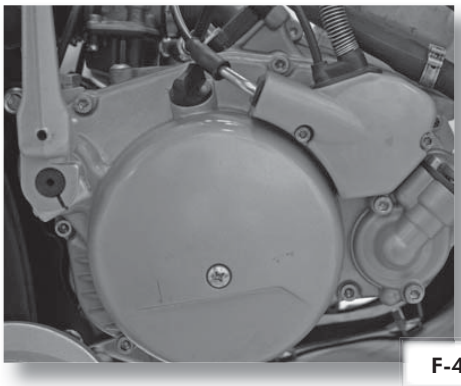


F-40

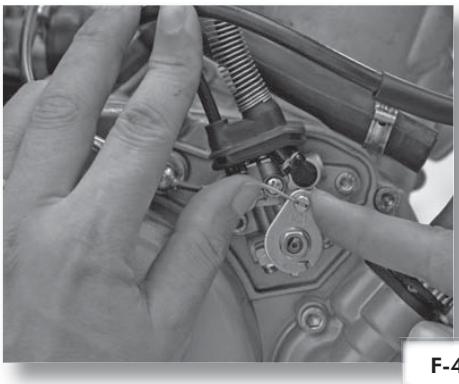
F-41

23. TRANSMISSION/OIL MIXING

Unscrew the 2 bolts of the cover.
Move the tensor backwards and remove the throttle cable.



F-42

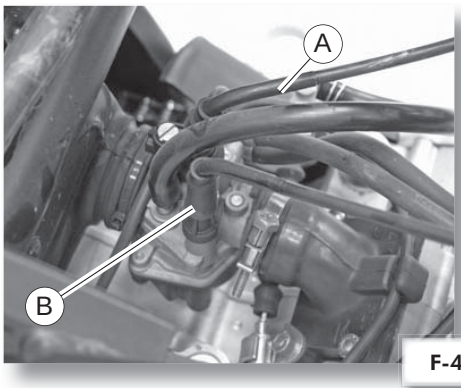


F-43

24. CARBURETTOR

* Remove the seat, the front cowlings and the fuel tank (only move it away).
Cut the hose clamp that hold the carburettor onto the filter box.
Unscrew the top cover of the carburettor and extract it.
Likewise, disconnect the air intake sleeve and the rest of tubes.

ATTENTION: Pay attention to the position of the tubes for the later assembly.



F-44

25. ENGINE

* Remove the seat, the front and rear lateral covers, the fuel tank and the transmission chain.
Disconnect the 2 tubes of the cylinder head heater, unscrew the bolts of the air intake tube (A/F-46) and separate the join from the spark plug.
Disconnect the thermocontact lead.
Disconnect the neutral gear lead located at the lower part of the engine, the flywheel.
Magneto lead and the ECU leads.
Unscrew the bolts of the oil mixing cover and disconnect the transmission.

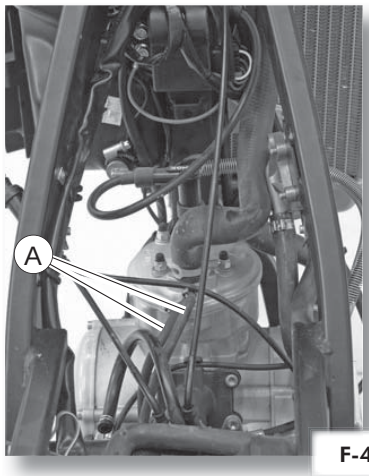
Empty the cooling circuit by loosening the drain screw (B/F-47).

Disconnect the hose of the cylinder head-radiator (C/F-47) and pump-radiator.

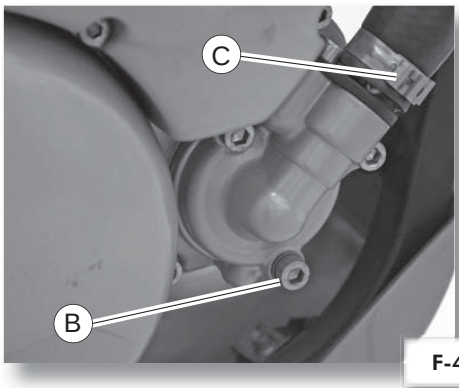
Remove the 3 lock nuts and the 3 screws (D/F-48) that fix the engine.

ATTENTION: Screw the bolt of the front the last.

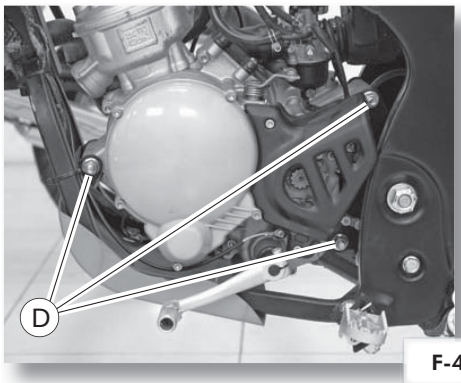
F-45



F-46



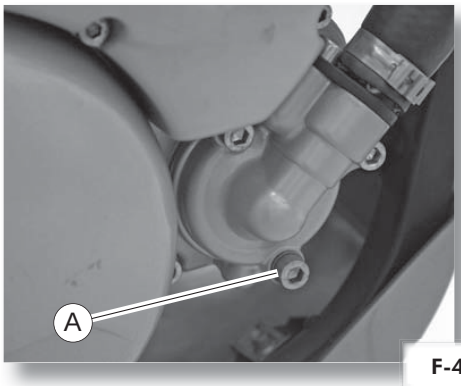
F-47



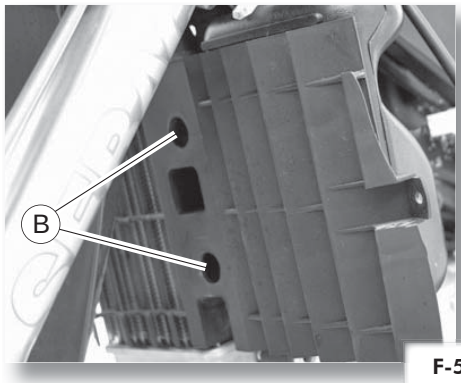
F-48

26. RADIATOR

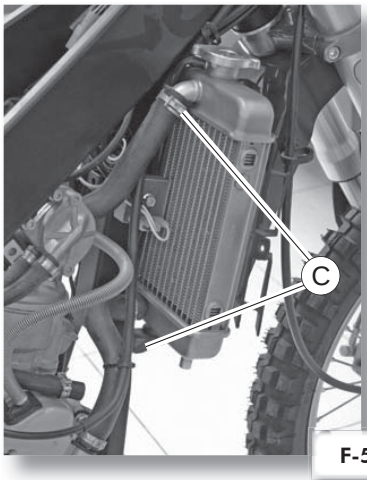
* Remove the seat and the front lateral covers.
Empty the cooling circuit loosening the drain screw (A/F-49).
Unscrew the 2 bolts (B/F-50) that hold the air intake radiator.
Loosen the clamps that hold the engine hoses to the radiator (C/F-51).
After, unscrew the bolt (D/F-52) that attach the radiator to the chassis and remove it pulling upwards.



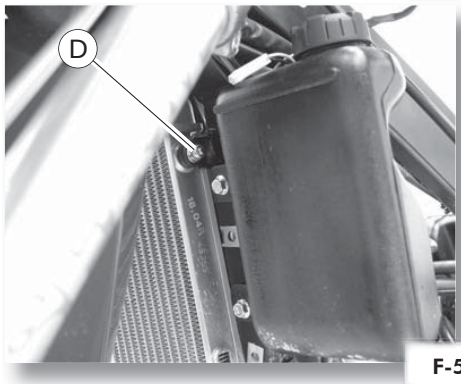
F-49



F-50



F-51

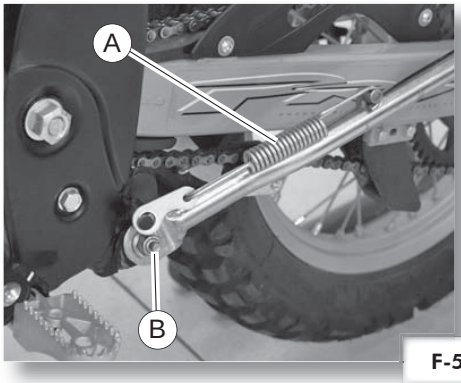


F-52

27. SIDE STAND

ATTENTION: Hold the motorcycle before carrying out

Remove the tensioning spring (A/F -53).
Following, unscrew the nut (B/F -53) holding the screw on the inside.



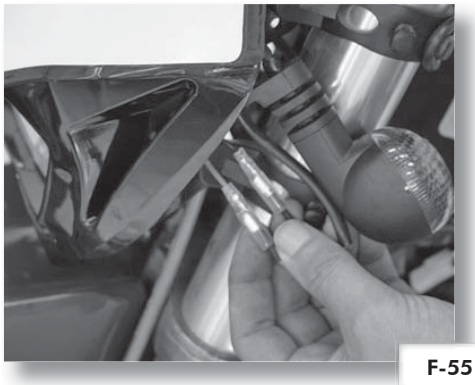
F-53

28. FRONT TURN SIGNALS

Unscrew the bolt holding the nut on the inside.
After, turn the light off in the wiring.

ATTENTION: Pay attention to the position of the leads for the later assembly

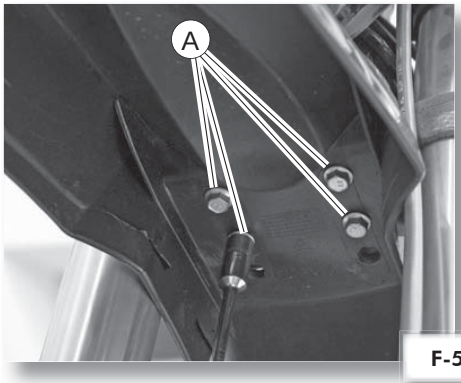
F-54



F-55

29. FRONT MUDGUARDS

Unscrew the 4 bolts (A/F -56) located at the lower part of the mudguards.



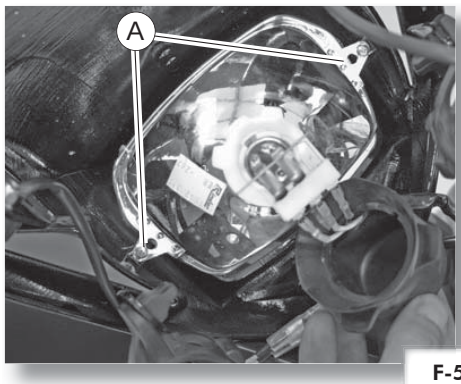
F-56

30. HEADLIGHT

Loosen the 4 rubber clamps that hold the headlight cover to the front fork.
To facilitate the task, tilt the headlight.
Unscrew the 2 bolts (A/F-58) that fix the headlight to its cover.
After, remove the rubber from the headlight cover and disconnect the leads.

ATTENTION: Pay attention to the lead position for the later assembly.


F-57

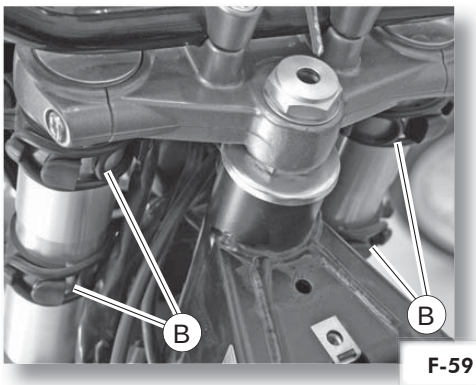


F-58

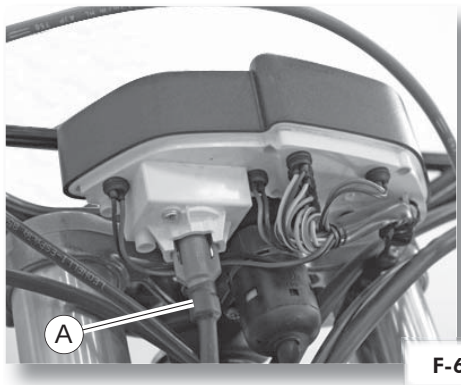
31. DASHBOARD

Loosen the 4 rubber clamps of the headlight cover and tilt it to facilitate the task.

Disconnect the odometer lead (A/F-60) and the LEDs leads(B/F-59).
Following, unscrew the 2 top bolts (C/F-61) that fix the screen to the chassis.



F-59



F-60

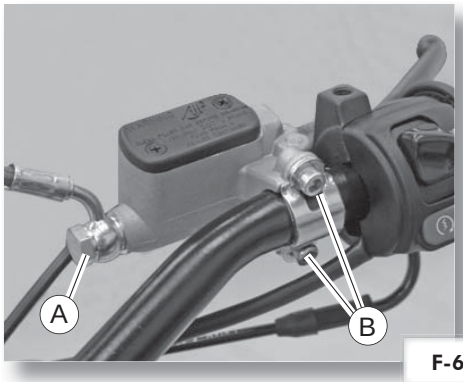
F-61

32. FRONT BRAKE MASTER CYLINDER

Disconnect the micro-switch terminals of the brake light.

Unscrew the join (A/F-62) that holds the hose onto the master cylinder.

After, unscrew the 2 bolts (B/F-62) and remove the front brake master cylinder.



F-62

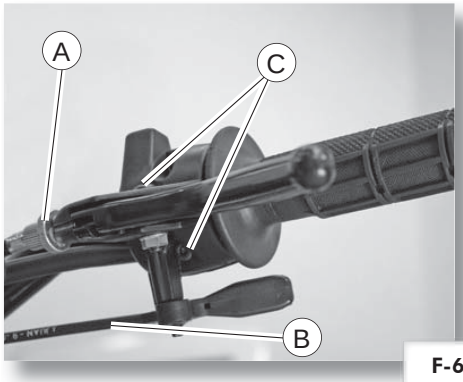
ATTENTION:
For the later assembly, it is advisable to replace the copper gaskets and drain the circuit.

ATTENTION: Brake fluid is abrasive.

33. CLUTCH LEVER

Disconnect the transmission from the clutch (A/F-63) and from the starter (B/F-63).

After, unscrew the 2 bolts (C/F-64) and remove the lever.

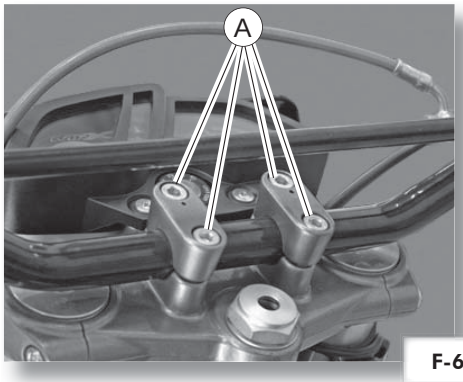


F-63

34. HANDLEBAR

* Remove the controls from each end.

Unscrew the 4 bolts (A/F-64) and remove the handlebar.

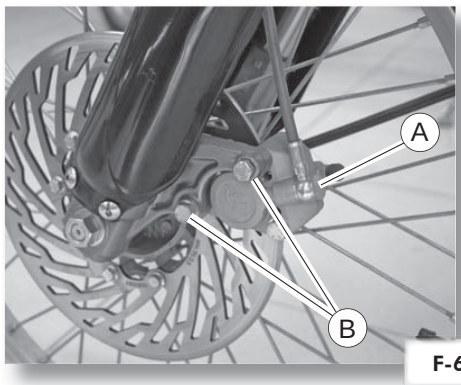


F-64

35. FRONT BRAKE CALIPER

Unscrew the join through the screw (A/F-65).

Following, unscrew the 2 bolts (B/F-65) that fix the CALIPER to the front fork.



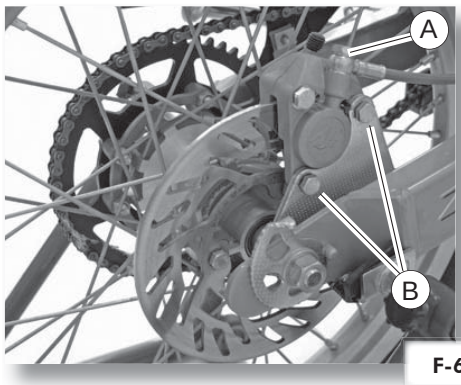
F-65

ATTENTION:
For the later assembly it is advisable to replace the copper gaskets and drain the circuit.

36. REAR BRAKE CALIPER

Unscrew the join through the screw (A/F-66).

Following, unscrew the 2 bolts (B/F -66) that attach the caliper to the calliper bracket.



F-66

ATTENTION:
For the later assembly it is advisable to replace The copper gaskets and drain the circuit.

37. FRONT WHEEL

ATTENTION:
Loosen the fixing bolt (A/F-67) of the axle located at the fork.

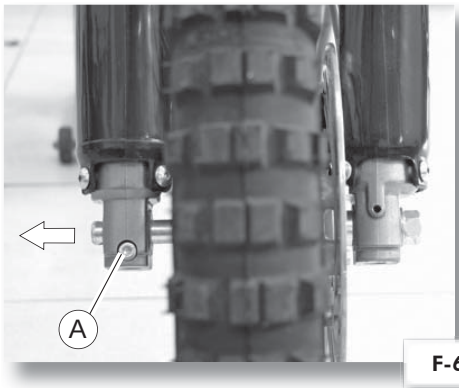
Unscrew the wheel axle and remove it.

F-67

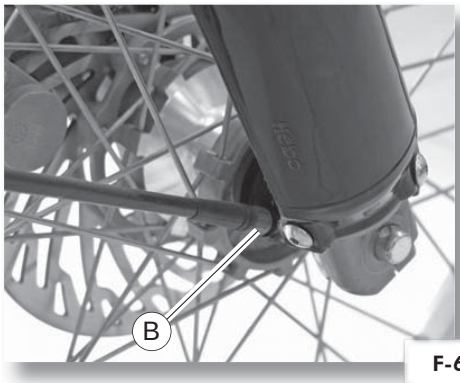
38. ODOMETER SENSOR

ATTENTION: Loose the fixing bolts of the axle located at the fork (A/F-68).

* Remove the front wheel.
Move the front wheel axle away till be able to remove the odometer sensor (B/F-69).



F-68

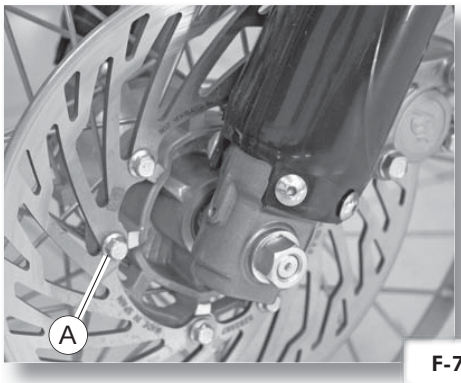


F-69

39. FRONT BRAKE DISC

* Remove the front wheel.

Unscrew the bolts (A/F-70) that fix the disc.



F-70

40. STEERING

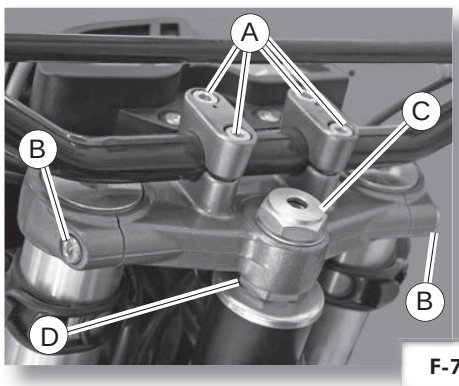
Unscrew the 4 bolts (A/F-71) of the handlebar.

Loosen the 2 lateral screws (B/F-71) to facilitate its removal.

Extract the top nut (C/F-71) and remove the top plate.

To extract the axle, unscrew the nut (D/F-71)

Para extraer el eje desenroscar la tuerca (D/F-71).



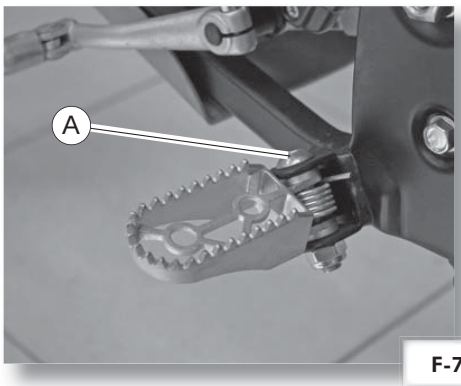
F-71

41. FRONT FOOTREST

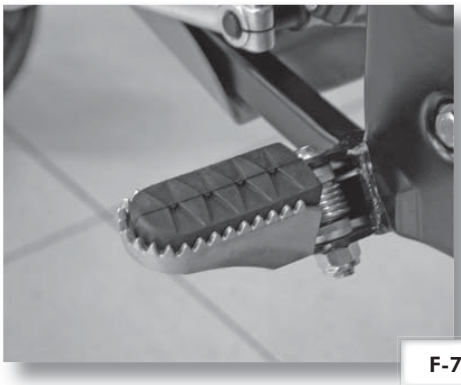
Unscrew the bolt (A/F-72) holding the lower nut.

ATTENTION: Take into account the position of the spring for the later assembly.

SMX version

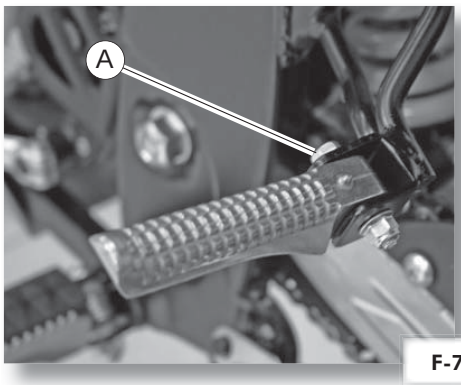


F-72


F-73

42. REAR FOOTREST

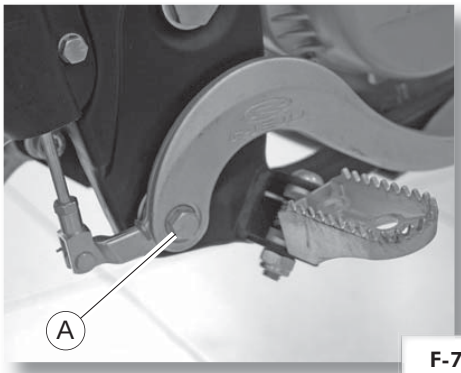
Unscrew the bolt (A/F -74) holding the lower nut.



F-74

43. REAR BRAKE LEVER

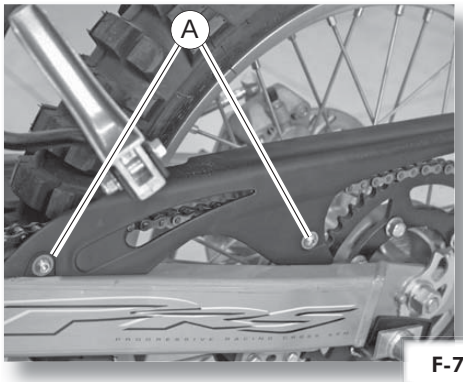
Unscrew the bolt (A/F -75).



F-75

44. DRIVE CHAIN GUARD

Unscrew the 2 bolts (A/F -76) and remove the guard.



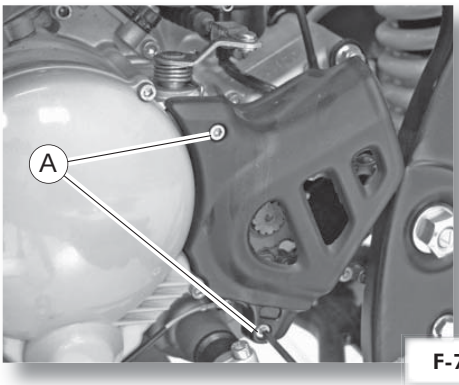
F-76

45. TRANSMISSION CHAIN

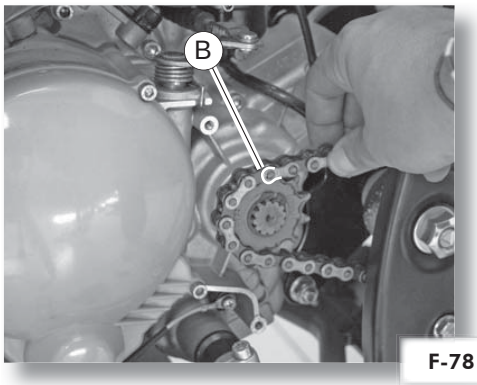
Remove the 2 fixing screws (A/F -77) from the guard and take it out.

Extract the securing clip (B/F-78) of the link and remove it.

Chain tensioning (see page 26).



F-77

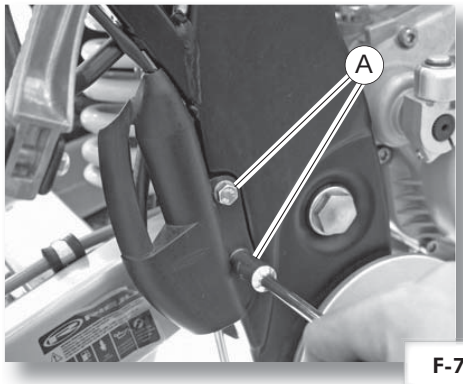


F-78

46. REAR BRAKE MASTER CYLINDER

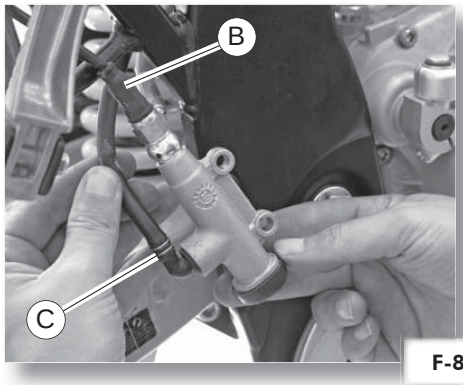
Remove the rear brake master cylinder cover taking the 2 bolts out (A/F-79).

To remove the master cylinder is necessary to disconnect the STOP switch lead (B/F-80) and unscrew it.



F-79

Remove the clamp (C/F-80) of the brake fluid delivery pipe and empty it in a tray.



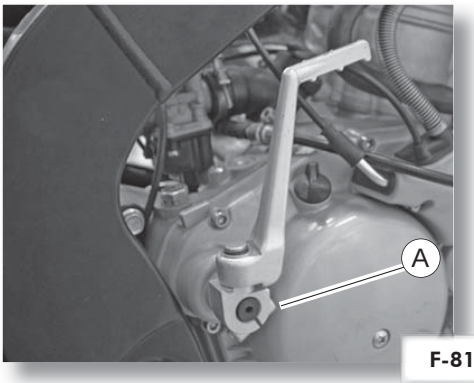
F-80

ATTENTION: Brake fluid is abrasive.

47. KICK-STARTER

Unscrew the nut (A/F-81) and pull the lever to remove it.

ATTENTION: The assembly in a different position from the original one, can reduce the stroke when starting.

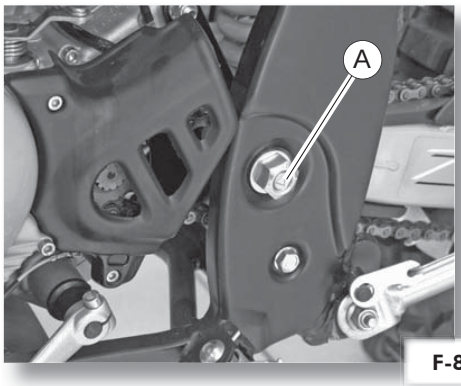


F-81

48. SWING ARM

* Remove the chain, the rear brake caliper, the rear wheel and the shock absorber.

Unscrew the nut (A/F-82) and remove the axle on the right side.



F-82

49. PARES DE APRIETE

TORQUE TABLE			
Element	**N*m**	**Kg*m**	**Notes**
Front wheel bolt	38 - 52	3,8 - 5,2	
Front wheel lock bolt	17 - 23	1,7 - 2,3	G
Rear front bolt	72 - 98	7,2 - 9,8	G
Front/Rear brake caliper	24 - 36	2,4 - 3,6	
Muffler	6 - 10	0,6 - 1,0	
Lateral coupling of the exhaust muffler	6 - 10	0,6 - 1,0	
Engine fixing screws	20 - 26	2,0 - 2,6	
Handlebar control screw	2 - 4	0,2 - 0,4	
Shock absorber screws	38 - 52	3,8 - 5,2	
Fork bolt	51 - 69	5,1 - 6,9	G
Handlebar fixing bolt	18 - 24	1,8 - 2,4	
Steering top nut	18 - 24	1,8 - 2,4	
Steering middle nut	25 - 34	2,5 - 3,4	G
Swing arm bolt	60 - 75	9,0 - 7,5	

G Grease