



GASGAS



Workshop Manual 2018

TXT SERIES

TRIAL 80-125-250-280-300CC

2017 GAS GAS

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The models in the images may appear with special equipment that does not come with the standard model.

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GENERAL INFORMATION

Introduction

TORROT ELECTRIC EUROPA S.A. thanks you for your confidence.

This manual was created by TORROT ELECTRIC EUROPA S.A. to be used by official services of the GAS GAS (GG) brand. It is assumed that whoever reads this publication for enjoyment or for the repair of GG vehicles has a basic knowledge of the principles of mechanics and the methods used in the repair of these vehicles.

Any major changes in the characteristics of the vehicles or in specific repair operations will be communicated through updates of this manual.

It is important to note that a completely satisfactory job cannot be carried out if appropriate facilities and tools are not available, which is why we invite you to consult the pages of this manual that refer to specific tools and equipment.

In it, you will find precise instructions for carrying out all repairs, as well as the necessary technical data to perform maintenance on the motorcycles.

It also has extensive information about special GG tools that will be of great help to optimise each repair process.


By choosing the new GG, you have just joined the great GG team and, as a user of the number one brand of off-road motorcycles, you deserve the special care that we would like to offer you, both after purchasing your GG and in the explanations that we set out in this manual.


Legal notices

In the interests of technical development, GG reserves the right to change the construction, equipment and accessories of the motorcycle without prior notice. Measurements, weight and power data are understood to include the respective tolerances. Depending on the volume of equipment and accessories of your GG, as well as in the approved versions in accordance with the different laws of each state, there may be variations with respect to the descriptions and illustrations. Therefore, the photographs contained in this manual may not correspond to the model purchased. For this reason no liability shall be derived for error, printing error or omission.

Notices and warnings

Please read this manual thoroughly, paying particular attention to the following warnings:

 **DANGER**
Warning about a hazard that could lead to serious injury or even death.

 **WARNING**
Notices regarding danger that could result in personal injury and/or damage to the vehicle.

Safety rules



DANGER

It is necessary to follow certain safety and maintenance rules when doing repair work on vehicles.

Here are some of the most important:

SAFETY

- If it is necessary to carry out work on the engine while it is still running, make sure that the premises have adequate ventilation and, if necessary, use smoke extractors. Never leave the engine running in closed premises. Exhaust gases contain CO (carbon monoxide), which can cause loss of consciousness and **death by inhalation**.
- The electrolyte in batteries contains sulphuric acid. Protect your eyes, clothes and skin. Sulphuric acid is highly corrosive; if it comes into contact with your eyes or skin, flush the area with plenty of water and seek medical advice immediately. If you have accidentally swallowed electrolyte, drink large amounts of water or milk and seek medical advice immediately.
- Batteries produce hydrogen, a gas that can be highly explosive. Do not smoke and ensure that no flames or sparks come near the battery, especially during recharging operations.
- Petrol is extremely flammable and can be explosive under certain conditions. Do not smoke in the work area and make sure that no naked flames or sparks are produced.
- Avoid prolonged contact of used engine oil on your skin; use gloves or wash your hands immediately after use to remove any oil.
- Carry out the cleaning of the brake pads in a ventilated location; DO NOT USE compressed air to clean the pads or brake caliper. Although the powder does not contain asbestos, its inhalation can cause respiratory diseases.
- Brake fluid is extremely aggressive; avoid contact with painted surfaces. Protect painted elements with a clean cloth when performing operations with brake fluid. Use gloves if possible, as contact of brake fluid with the skin is not recommended.
- Make sure that coolant does not spill onto hot parts, as this produces an invisible flame that cannot be seen and can cause burning.
- Do not remove the radiator cap when the engine is still hot, as the coolant is under pressure and at high temperature, which can cause severe burns.
- If coolant comes into contact with your eyes, flush them immediately with fresh water and seek medical advice.
- During normal operation, the exhaust system and engine are at high temperature. If you have to perform operations on them, wait until they have cooled down or use suitable gloves to avoid burns.
- Avoid wearing loose clothing that could get caught on parts of the vehicle or surroundings. Although total safety is impossible, the use of adequate equipment reduces the possibility and/or severity of injuries.

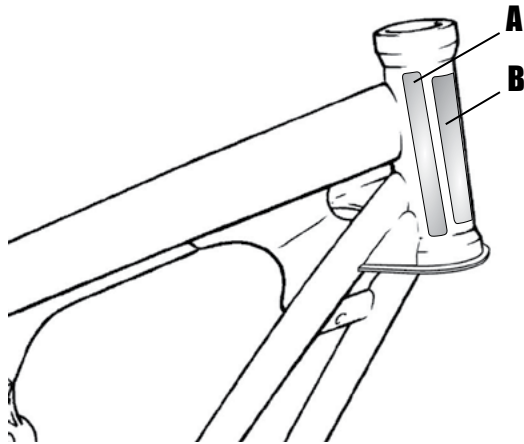
Maintenance

- Always use original GG spare parts and lubricants recommended by the manufacturer. Non-original spare parts can damage the engine.
- Only use tools specifically designed for this vehicle.
- Always replace gaskets, seals and O-rings during servicing and assembly.
- After disassembly, clean the components with non-flammable solvents.
- Lubricate all work surfaces prior to assembly, excluding conical couplings.
- Apply oil to all pairs of parts and bearings during assembly.
- Only use tools with metric measurements during disassembling, servicing and assembling operations. Metric screws, nuts and bolts are not interchangeable with connecting elements with imperial measurements.
- All surfaces that receive gaskets, seals and O-rings must be cleaned with special care.
- Carefully examine all retaining rings prior to assembly and replace any deformed ones. Always replace piston pin retaining rings after each use.
- After assembly, check that all components have been properly fitted and that all mechanisms work correctly.

Recommended “work method”

- Remove all dirt, mud, dust and other foreign material before disassembly. Use appropriate tools and cleaning equipment.
- When removing parts, always keep them together in their pairs. This includes gears, cylinders, pistons and other parts subjected to natural wear in their pairs. Pairs of parts should always be replaced together.
- While removing parts, clean them and place them in trays in their order of removal. This will speed up reassembly and ensure that all parts are properly fitted.
- Use original GG spare parts and GG recommended lubricants. Non-original or non-compliant spare parts can damage the vehicle. Other brands may look similar in function and appearance, but are inferior in quality.
- Carefully check all circlips before assembly. Always replace the pin circlips after each use. Replace any deformed circlips. When installing a circlip, make sure that the sharp edge is on the side opposite to where force is applied.
- Replace all gaskets, seals and O-rings when servicing the engine. All surfaces that support gaskets, seals and O-rings should be cleaned.
- After removing them, replace all sealing/spacer washers and external tooth lock washers.
- Fit bearings and seals in such a way that the manufacturers’ brands are visible. When fitting seals, apply a thin layer of light grease with a lithium soap base on their lips. If necessary, apply plenty of oil when fitting bearings.
- When fitting bearings and seals, ensure that uniform pressure is exerted on both tracks in order not to damage them.
- During assembly, always use new gaskets, seals, compression rings and pins.
- After disassembly, clean the components with non-flammable or non-high flash point solvents. Grease all work surfaces prior to assembly, excluding conical fittings.
- After assembly, check that all components have been properly fitted and that they work correctly.
- Only use metric tools during disassembly, servicing and assembly operations. Metric screws, nuts and bolts are not interchangeable with connecting elements that have imperial measurements. Using inappropriate tools and connecting elements may damage the vehicle.
- If working on the vehicle’s electrical system, check that the electrical connections are correct, especially earth connections.

Vehicle / engine identification



Make a note of the vehicle's identification number (serial no.), information on the model label and key identification details in the spaces provided for this purpose for ease of ordering spare parts or as a reference in the event of theft of the motorcycle.

- All GG motorcycles have an official authorisation plate. (B) where the following information is detailed: Manufacturer, frame number, authorisation number and sound emission level, all of which must match the documentation.
- The frame number is also stamped on the right-hand side of the steering column (A).



You can identify your specific engine model by means of a code located on the front of the engine below the exhaust elbow, as shown in the image (1).

- Always quote the engine serial number when ordering an original GG spare part for the engine.

Tightening torque

GENERAL TIGHTENING TORQUES

The following table specifies tightening torques for nuts or screws with ISO threads.

Tightening torques for special components or assemblies are indicated in the respective repair processes of this manual.

To prevent deformation, tighten the assemblies with several nuts or screws progressively and in a diagonal or alternating sequence until the specified torque is reached. Threads have to be clean and dry to apply the tightening torques described below. Components should be at room temperature.

| TYPE | ASSEMBLY PHASE | MEASUREMENT | RATED TORQUE (Nm) |
|-----------|------------------------------------|-------------|-------------------|
| SCREW | Rear lower handlebar clamp | M8 | 20 |
| SCREW | Front upper handlebar clamp | M8 | 25 |
| SCREW | Clutch pump clamp | M5 | 6 |
| SCREW | Front wheel axle | M18x1.5 | 50 |
| SCREW | Suspension mudguard support | M6 | 12 |
| SCREW | Bottom suspension clamp | M6 | 10 |
| SCREW | Top suspension clamp | M6 | 12 |
| NUT | Top steering cap nut | M20x1 | 50 |
| SCREW | Rear wheel axle | M10 | 50 |
| SCREW | Shock absorber top fixing | M10 | 50 |
| SCREW | Shock absorber bottom fixing | M10 | 45 |
| SCREW/NUT | Rocker arm to swinging arm fixing | M10 | 45 |
| SCREW/NUT | Tie rod-rocker arm coupling | M10 | 45 |
| SCREW/NUT | Tie rod to frame fixing | M8 | 30 |
| SCREW | Swinging arm shaft | M14x1.5 | 50 |
| SCREW | Rear brake hose guide fixing | M4 | 5 |
| SCREW | Chain tensioner | M8 | 20 |
| SCREW | Swinging arm to chain guard fixing | M5 | 6 |
| SCREW | Sprocket protector fixing | M5 | 6 |
| SCREW | Rear brake caliper guide | M8 | 25 |
| SCREW | Rear brake caliper retainer | M6 | 12 |
| SCREW | Stand guide bushing | M8 | 25 |
| SCREW | Stand (bottom) | M8 | 25 |
| SCREW | Stand (int. swinging arm) | M6 | 12 |
| SCREW | Front brake pump clamp | M5 | 6 |
| SCREW | Front brake caliper fixing | M8 | 25 |
| SCREW | Rear brake pedal shaft fixing | M8 | 25 |
| SCREW | Rear brake pump fixing | M6 | 10 |
| SCREW | CDI support fixing | M6 | 12 |
| SCREW/NUT | Cylinder to frame tie rod fixing | M8 | 25 |
| SCREW/NUT | Engine to frame fixing | M10 | 50 |
| SCREW | Crankcase guard fixing | M8 | 25 |
| SCREW | Frame-chain protector fixing | M6 | 12 |
| SCREW | Steering stop | M6 | 12 |
| SCREW | Rear mudguard (central) | M6 | 10 |
| SCREW/NUT | Rear mudguard (sides) | M6 | 6 |
| SCREW | Rear disc protector (front) | M6 | 12 |
| SCREW | Rear disc protector (rear) | M5 | 6 |
| SCREW | Filter box to frame fixing | M6 | 8 |
| SCREW | Fuel tank vent hose | M6 | 8 |
| SCREW | Radiator to frame fixing | M6 | 10 |
| SCREW | Radiator safety valve | M8 | 5 |
| SCREW | Exhaust elbow to cylinder fixing | M8 | 12 |
| SCREW | Exhaust to frame fixing | M6 | 12 |
| SCREW | Brake discs | M6 | 12 |
| RACORD | CLUTCH PUMP | M10 | 18 |
| RACORD | CLUTCH COVER RACORD | M10 | 20 |



SPECIAL TOOLS

Special tools



- Magneto flywheel puller.
Ref: **MT280234045**



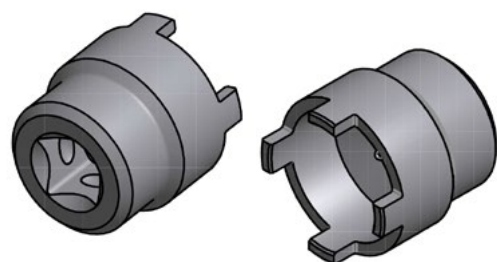
- Primary transmission sprocket puller.
Ref: **MT280250006**



- Tool set for 250cc-280cc-300cc engines.
Ref: **865207**



- Primary sprocket puller.
Ref: **MT95005GG-CHA-1**



- Primary nut removal tool.
Ref: **MT95010GG-CHA-1**



MAINTENANCE

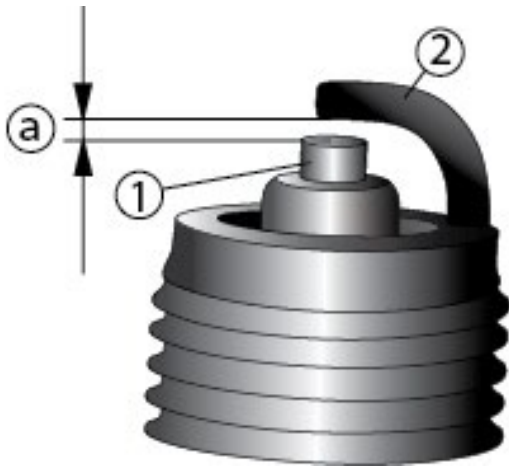
Maintenance programme

| Element | Check / Inspect | Adjust | Replace/Change | Clean | Grease / Lubricate |
|---|-----------------|-----------------|------------------|------------|--------------------|
| Throttle operation | Every race | If is necessary | - | - | Every race |
| Carburettor / Jet | Every race | If is necessary | - | 30 hours | - |
| Air filter | Every race | - | If is necessary | Every race | Every wash |
| Reed block | 30 hours | - | If is necessary | 30 hours | - |
| Spark plug | Every race | 30 hours | 60 hours | 15 hours | - |
| Transmission oil | 30 hours | - | 60 hours | - | - |
| Radiator coolant | Every race | - | 1 year | - | - |
| Cooling system | - | - | If is necessary | - | - |
| Decarbonisation of the cylinder head / Exhaust port | 60 hours | - | - | 60 hours | - |
| Piston | 60 hours | - | 1 year (180 h) | - | - |
| Piston rings | 60 hours | - | Every six months | - | - |
| Cylinder | 60 hours | - | If is necessary | - | - |
| Crankshaft and bearings assembly | 60 hours | - | If is necessary | - | - |
| Kick-starter and gear shift pedal | - | - | - | - | 15 hours |
| Clutch system | - | - | If is necessary | - | - |
| Clutch discs | 60 hours | - | If is necessary | - | - |
| Exhaust system | - | - | If is necessary | - | - |
| Muffler fibre | - | - | 100 hours | - | - |
| Fuel line/tap | Every race | - | If is necessary | - | - |
| General lubrication | Every race | - | - | - | Every wash |
| Chain / secondary transmission | Every race | 15 hours | If is necessary | Every race | Every wash |

Periodic inspection

ATTENTION:

Before removing the spark plug, blow compressed air around it to remove any dirt, making sure that it does not fall into the engine.



Remove:

- Spark plug cap.
- Spark plug.

Check:

- Spark plug type
- Incorrect => Replace

Inspect:

- Electrode (1)
- Damage/wear => Replace
- Insulator (2)
- Abnormal colour => Replace
- Normal colour is light brown

Clean:

- Spark plug
- (Clean spark plug with spark plug cleaner or steel brush)

Measure:

- Play between electrodes (A). (with feeler gauge)
- Out of specification => Adjust play.
- Play between electrodes: 0.7 mm - 0.8 mm

Fit:

- Spark plug
- 1.2 - 1.4 kgf·m (12-14 Nm)



NOTE:

- Before fitting the spark plug, clean the surface of its seating and gasket.
- If you do not have a torque wrench, a good guide for the correct torque is to tighten the spark plug by hand to position (1) and then tighten with a ¼ to ½ turn to position (2).
- Always use a new gasket.

Periodic inspection

AIR FILTER

Cleaning the filter



- It is important to periodically check the air filter.
- Inspect the filter and replace it if damaged to prevent dirt from entering the carburettor.
- To clean it, use water and detergent, dry it and lubricate it with special filter oil.
- Make sure that it is correctly fitted once clean.

ATTENTION:



- A clogged air filter will allow dirt to enter the engine causing excessive wear and damage.
- Inspect it periodically. Clean if necessary.
- Clean the filter in a ventilated area and make sure that there are no sparks or flames near the work place (including strong sources of light). Do not use petrol to clean the filter as this may cause an explosion.

ATTENTION:



- At the bottom of the filter box, there is a flap that functions as a valve for draining liquids and/or elements that accumulate inside the filter box.
- Make sure that this valve is operating correctly.



- Unscrew the cover located on the tail fairing of the motorcycle as shown in the photograph.

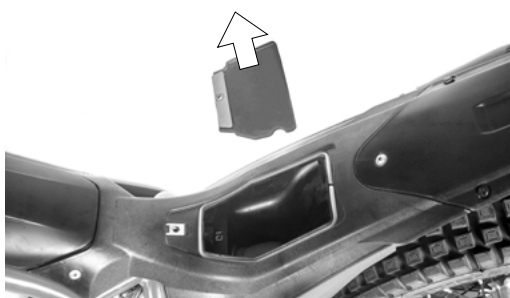


- Remove the cover

Periodic inspection



- Remove the filter rod (arrow) completely.



- Remove the inner visor to access the filter.



- Clean inside the filter box with a damp cloth.
Remove the filter by unscrewing the bar (1)

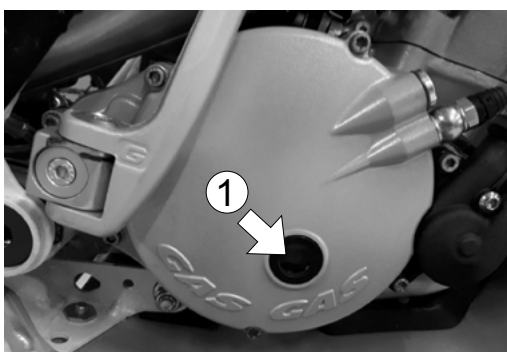


- Remove the cage from the air filter. (2)
Clean the filter in a filter cleaning bath using a soft brush.

Periodic inspection



- View of the filter components once clean.
- For reassembly, follow the same steps in reverse.



TRANSMISSION OIL LEVEL

For the transmission and clutch to work properly, keep the transmission oil at the optimum level and replace it periodically.

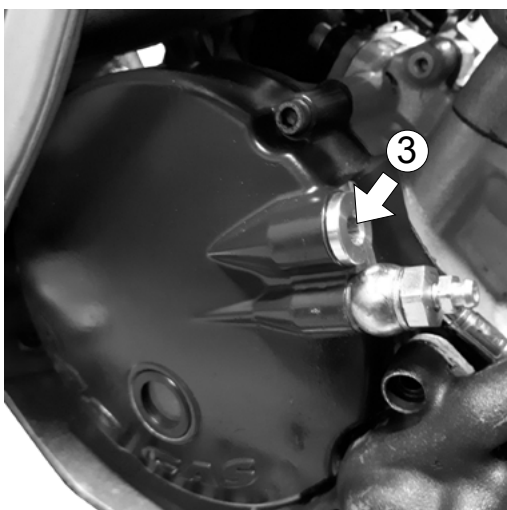
A motorcycle with insufficient, deteriorated or contaminated transmission oil can accelerate wear and damage transmission.

Place the motorcycle on a flat surface.



NOTE

MAKE SURE THAT THE MOTORCYCLE IS PARALLEL TO THE GROUND TO ENSURE CORRECT CHECKING OF THE OIL LEVEL.



Checking the oil level

1. If the motorcycle has just been used, wait a few minutes.
 2. Check the oil level using the level indicator on the lower right-hand side of the engine (1).
 3. The oil level must be between the maximum and minimum.
 4. If the level is too high, remove the excess through the drain plug (2)
 5. If the level is low, open the cap to add the required amount (3).
- Use the same type and brand of oil as you already had in the engine.

Transmission oil

Recommended oil: NILS FOR TX CLUTCH

Capacity: 375 cc

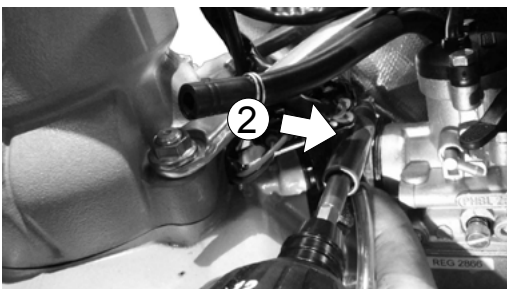
Carburettor disassembly and inspection

CARBURETTOR

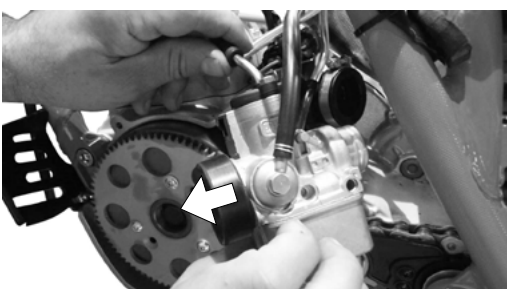
- Disconnect the fuel line and fuel tap, and remove the carburettor.



- Loosen securing clamps (1) and (2) of the carburettor from the inlet and air filter nozzles.



- Remove the carburettor.

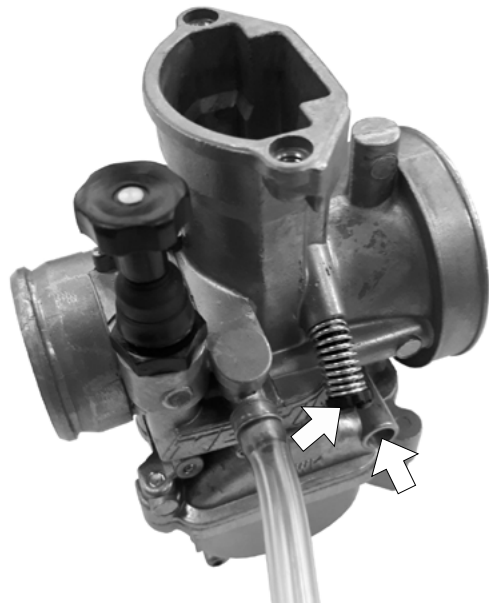


Carburettor disassembly and inspection

* For models with Keihin PWK28 carburettor



- Compress the gas valve return spring against the cover and remove the throttle cable terminal through the channel in the gas valve.



- Remove the securing clamp from the piston valve of the cold start system. (starter) and remove the assembly (1).

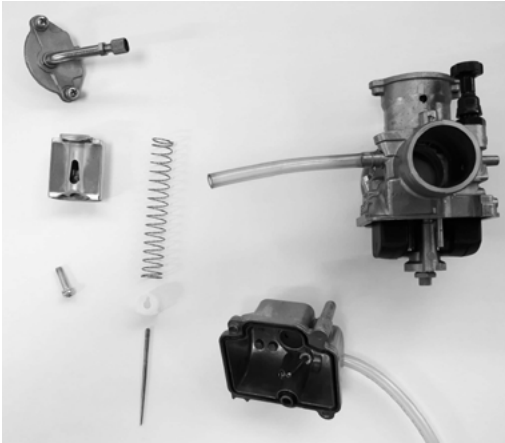


- Before removing the air volume adjustment screw (compensator) from the low speed (idle) circuit (2), check its position by counting the necessary turns to screw it to the stop (without forcing it). Note down this measurement and remove it by unscrewing it (If in doubt, consult the vehicle characteristics table to determine the standard position of this screw).

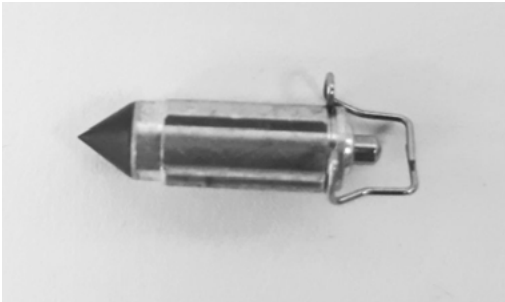


- Loosen the screws of the carburettor float chamber and remove to access the jets: maximum (1), minimum (2) and cold start (2), as well as the float and its shut-off valve.

Carburettor disassembly and inspection



- Check that the cone at the end of the fuel flow control pin and the float connector stud spring are in good condition, if not, replace with new ones.



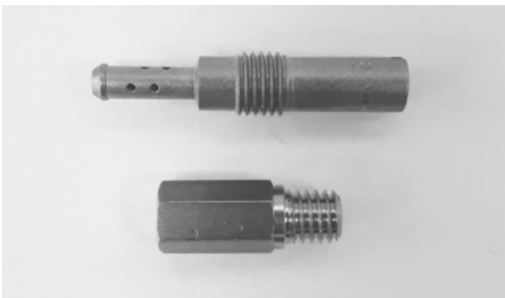
- Check the condition of the fuel flow system piston valve. Replace it if there is any damage to the vulcanised sealing seating or on the metal body of the piston itself (scratches and/or corrosion exceeding 25% of its total surface area).

- Thoroughly clean all of the components of the carburettor with solvent (take care not to damage the carburettor float chamber gasket or the cold start piston valve O-ring).

- With compressed air, thoroughly blow clean all air and fuel flow holes.

- With a set of scales, check the weight of the float against what is marked on it. Replace if that weight is exceeded.

- Check the sizing of the jets against the numbering marked on them, fit appropriate ones (see settings table), otherwise the performance of the engine will be affected.



Carburettor disassembly and inspection



- Check the position of the circlip on the conical dosing needle.
- By moving the circlip upwards on the needle, a weaker mixture will be produced and, by moving it downwards on the needle, a richer mixture will be obtained; this allows adjustments for very extreme weather conditions.



- Replace the conical dosing needle if there is any damage to its circumference.
- Check that there are no scratches on the conical tip of the minimum circuit air adjustment screw, as this would affect its performance.



- Also check for scratches on the slide valve. Replace if the scratches cover more than 25% of its total surface area.



- Make sure that one with the same characteristics is fitted (see marking on its base).

Carburettor disassembly and inspection

- Reassemble the carburettor completely. Re-mount the carburettor onto the engine, making sure that the fuel lines and tap depressor activation are properly connected.
- Check that the air volume adjustment screw (compensator) on the low speed (idle) circuit is in the same position as before it was removed (if in doubt, consult the vehicle characteristics table to determine the standard position).
- Check that the travel of the throttle cable is correct and that it does not become caught or stiff at any point.
- Adjust the play on the throttle grip by tightening or slackening the throttle cable cover tensioner located beside the throttle control until a play of 3 to 5 mm is obtained.
- Remove the foam from the air filter, wash in a mixture of soap and water, drain and dry completely, then soak with special filter oil and reinsert it.
- Adjust the idle speed following the procedure below:
 1. Start the engine.
 2. Turn the slide valve rest position screw until the engine does not stall (screw in).
 3. Turn the slide valve rest position screw again, slowly screwing in and out, until a stable idle speed of 1,600 +- 200 rpm is obtained (use an external rev counter).
 4. Quickly perform the engine firmly using the throttle control and check that the engine accelerates and decelerates smoothly and quickly with no gaps, otherwise, change the position of the minimum circuit air adjustment screw (TA) by a ¼ turn to point 3.
By screwing in the TA, a richer mixture will be obtained (with more fuel), while unscrewing it will weaken the mixture (less fuel).

Carburation table

| | | |
|--------------------|----------------------------|-------------------|
| Competition | | 125 cc |
| | Type of carburettor | KEIHIN PWK28 |
| | Main jet | 125 |
| | Idle jet | 52 |
| | Needle | JJH |
| | Needle position | 3rd from above |
| | Throttle valve | 3.5 |
| | Air screw | 1v+1/4v , 1v+1/2v |
| | Float level | |

| | | | |
|--------------------|----------------------------|--------------------|---------------------|
| Competition | | 250 cc | |
| | Type of carburettor | Dell'Orto PHBL26BS | KEHIN PWK28 |
| | Main jet | 120 | 125 |
| | Idle jet | 35 | 45 |
| | Needle | D36 | JJH |
| | Needle position | 3rd from above | 3rd from above |
| | Emulsion tube | 270K | |
| | Throttle valve | 60 | 3.5 |
| | Air screw | | 1v+1/4v from closed |
| | Float level | | |

| | | |
|--------------------|----------------------------|-----------------|
| Competition | | 280 cc |
| | Type of carburettor | Keihin PWK 28 |
| | Main jet | 125 |
| | Idle jet | 45 |
| | Needle | JJH |
| | Needle position | 3rd from above |
| | Emulsion tube | |
| | Throttle valve | 3.5 |
| | Air screw | 1 v from closed |
| Float level | | |

| | | |
|--------------------|----------------------------|---------------------|
| Competition | | 300 cc |
| | Type of carburettor | Keihin PWK 28 |
| | Main jet | 125 |
| | Idle jet | 48 |
| | Needle | JJH |
| | Needle position | 4th above |
| | Emulsion tube | |
| | Throttle valve | 3.5 |
| | Air screw | 1v+1/4v from closed |
| Float level | | |

Reed block disassembly and inspection



REED BLOCK

- Remove the carburettor from the engine.
- Remove the inlet nozzle securing screws, after which you can release the reed valve.



- Check that the reed petals are not cracked, deformed or broken. If they are, replace them.



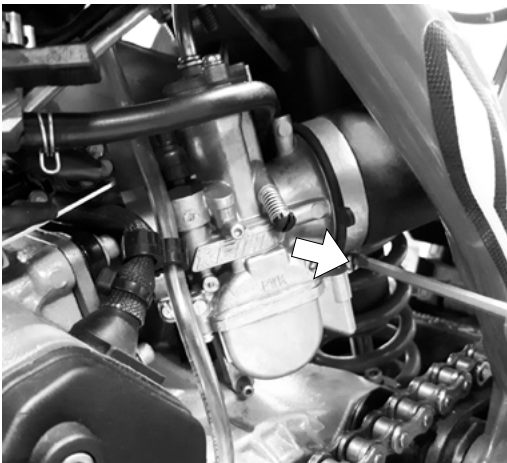
- Remove the fixing screws of the opening limiter and the petals of the inlet reed, and check that there are no cracks in the mounting base of the petals; if there are, replace the reeds.

Exhaust system disassembly and inspection



EXHAUST SYSTEM

- Remove the rear structure of the motorcycle by unscrewing the bolts that hold it.



- Disconnect the clamp that secures the air filter to the carburettor.



- Remove the filter box structure by disconnecting the electrical wiring.

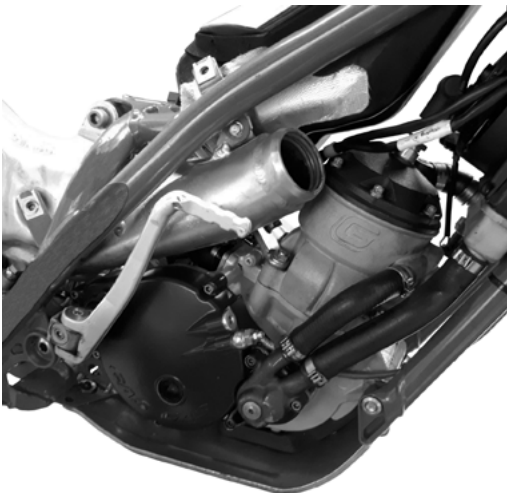
Exhaust system disassembly and inspection



- Unscrew the bolts that hold the exhaust elbow to the cylinder.



- Once the previous step has been carried out, release the exhaust elbow from the muffler by pulling it, as shown in the photograph.

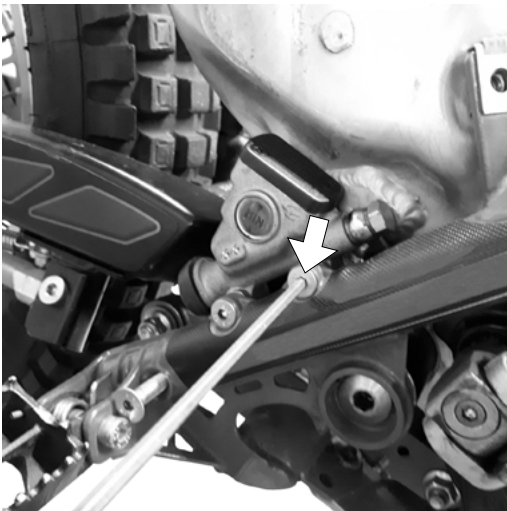


- Then remove the muffler.

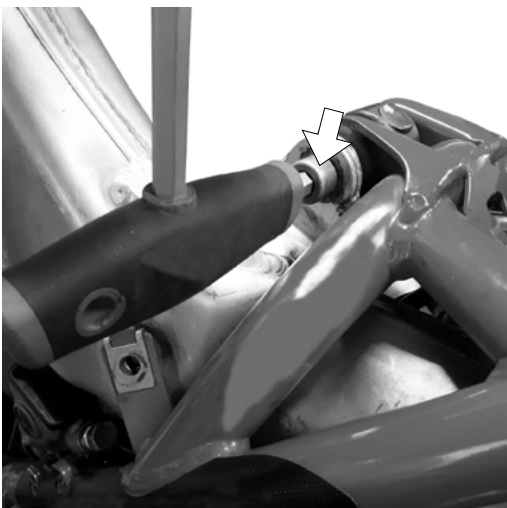
Exhaust system disassembly and inspection



- Release the muffler from the screw that holds it at the top, as shown in the image.

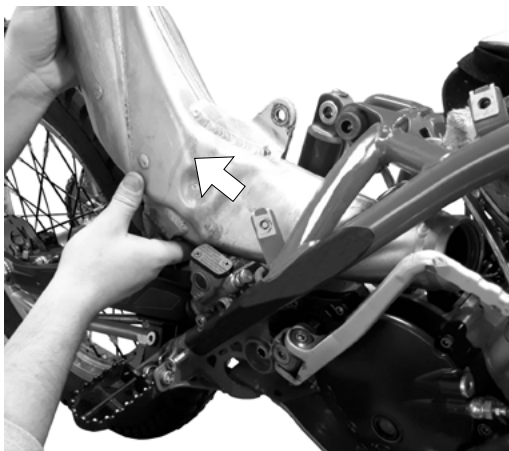


- Continue unscrewing the upper bolt from the rear brake pump to release the muffler from the bottom.



- Then extract the screw from the shock absorber that secures the muffler to the frame.

Exhaust system disassembly and inspection



- Once the bolts have been removed, extract the muffler from the rear part of the motorcycle frame.



- Once the exhaust assembly has been removed from the motorcycle, check that the system's gaskets and couplings are in good condition to prevent leaks.



- Also check the exhaust system for any deformations, dents or cracks which could affect its proper functioning.

Exhaust system disassembly and inspection



- To change the exhaust fibre, remove the screws that secure the rear plastic part of the muffer to the metal part (see photograph).
- Then, with a nylon hammer, carefully tap the metal part downwards, as shown in the photograph.

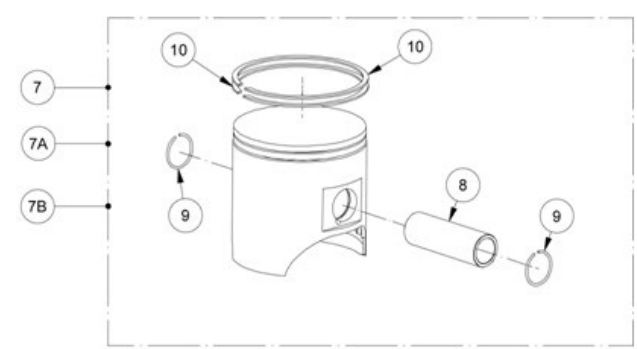
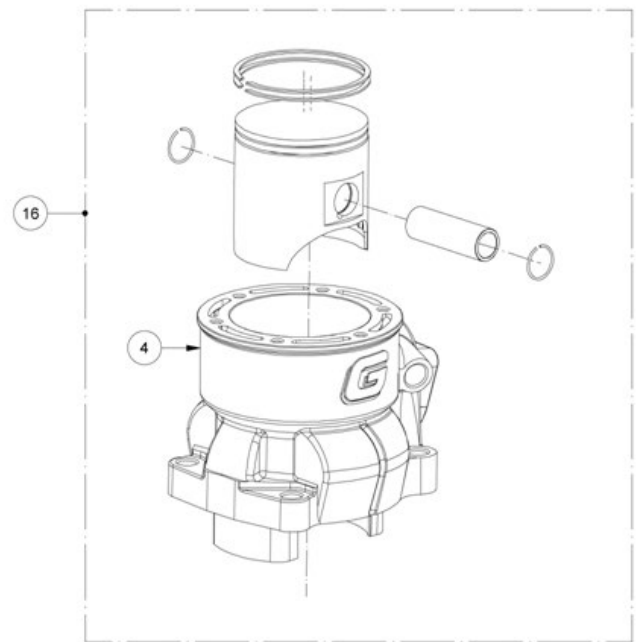
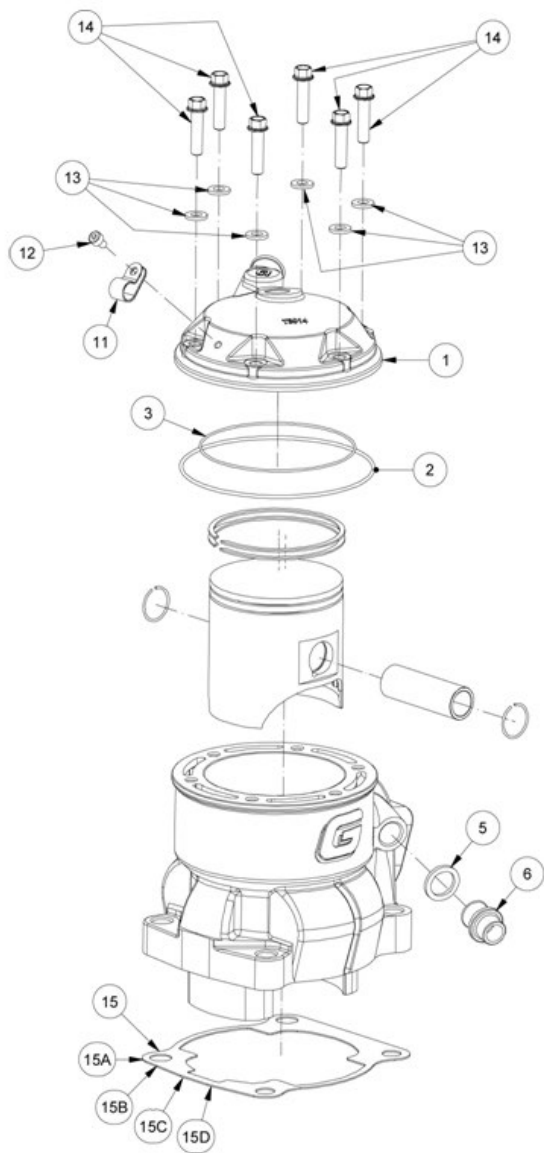


- Once the back part of the muffer has been removed from the exhaust system, the fibre can be extracted.

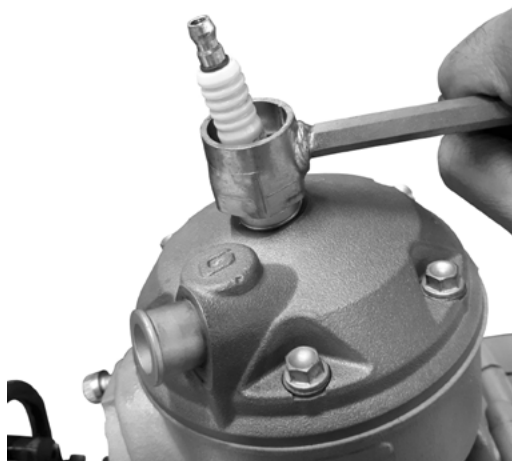


- Replace the fibre with another one in good condition. To assemble the exhaust, repeat the process described above in reverse.

Cylinder head disassembly and inspection

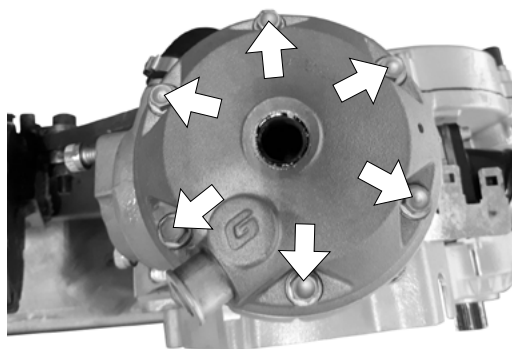


Cylinder head disassembly and inspection

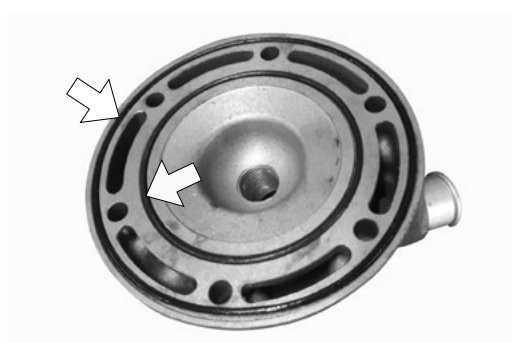


CYLINDER HEAD

- Empty the coolant by removing the hose located in the water pump.
- Place a tray underneath to collect it.
- Remove the hose between the cylinder head and radiator.
- Disconnect the high-voltage cable from the spark plug (cap), and remove it.



- First loosen and then diagonally remove the 6 M6 screws and remove the cylinder head cover.

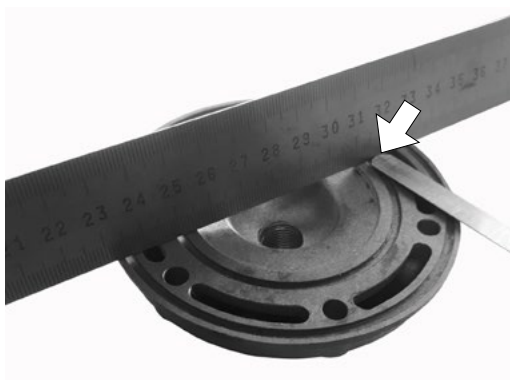


Remove the cylinder head and its O-ring.



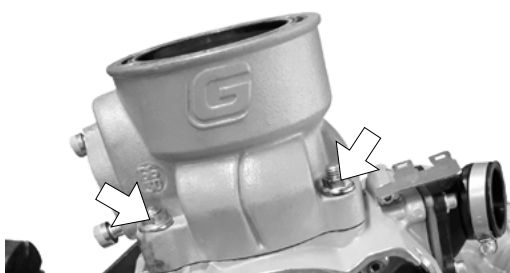
- Clean the carbon deposits without scratching or scouring the surfaces.

Cylinder head disassembly and inspection



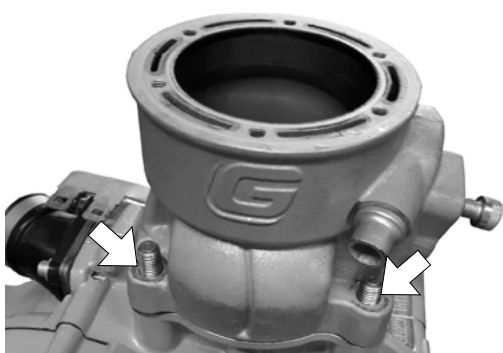
- Using a feeler gauge and straight edge ruler, check for warping on the bearing planes, both on the cylinder head and on the cylinder.
- Maximum warpage 0.05 mm.

Cylinder and piston disassembly and inspection



CYLINDER AND PISTON

- Drain the coolant from the engine.
- Remove the cylinder head cover from the cylinder head.

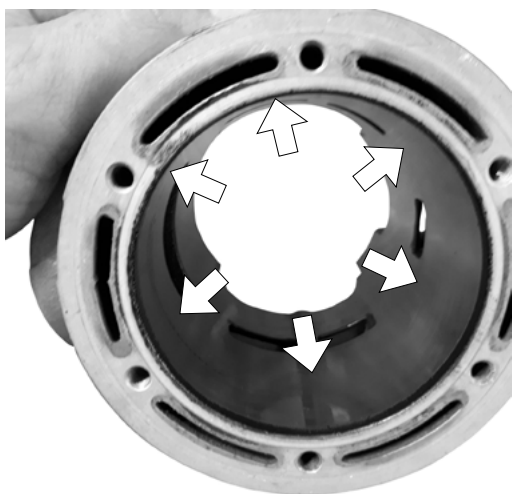


- Release the cylinder by unscrewing the 4 nuts that secure it (as shown in the images).



- Remove the cylinder by pulling it upwards.

Cylinder and piston disassembly and inspection

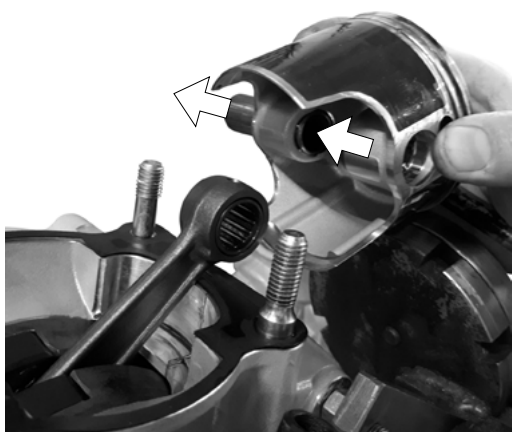


- Check the cylinder on the inside and make sure it is not scratched. If there are any scratches or signs of wear, replace it.



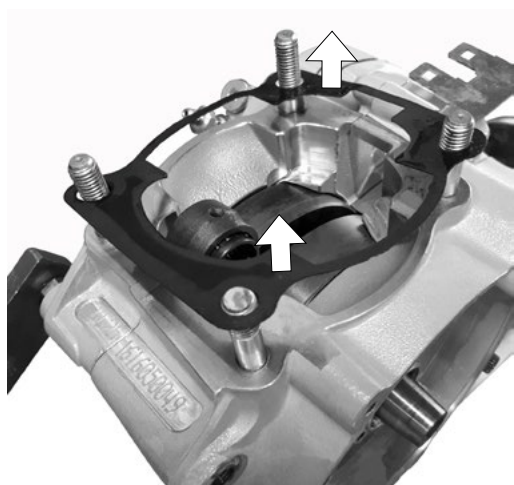
- Place a clean cloth in the opening of the crankcase to prevent objects from accidentally falling inside.

- Remove the circlips from the pin, and then continue with the pin, piston and connecting rod end bearing.



- If it is necessary to push the pin out to remove it, hold the connecting rod firmly and in the opposite direction to the pushing in order to avoid damaging or deforming it.

Cylinder and piston disassembly and inspection



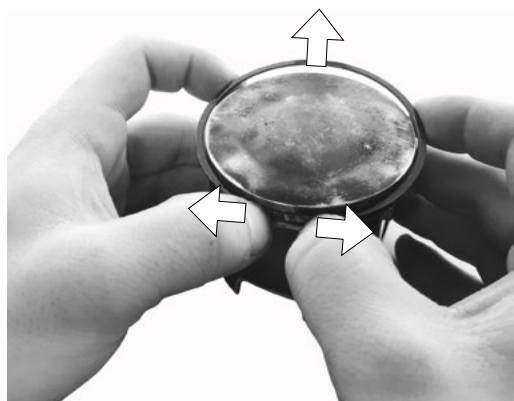
- Remove the gasket from the base of the cylinder.



- Gently clean and remove any gasket debris and carbon deposits (avoid scratching the circumference of the piston).

- Visually check the condition of the connecting rod end. If there is damage to the surface from contact with the needle roller bearing, replace it.

- Visually check the condition of the needle roller bearing of the connecting rod end; if there is damage to the needles or cracks in the cage, replace it.



- Remove the rings by opening them from their tips and lifting them by the part opposite them.

Cylinder and piston disassembly and inspection



- Verify the distance between the tips of the rings (0.15mm/0.35mm), inserting them in an aligned manner inside the cylinder and checking the distance with a feeler gauge.



- Check the cylinder's degree of wear with an alesometer. Calibrate it beforehand using the dimensions contained in the cylinder-piston families table.
- Carry out the check on two axes and at three heights.



- Check the diameter of the piston on the axis transverse to the pin at a distance of 15 mm from the lower end of the piston skirt.

Cylinder and piston disassembly and inspection

| 80cc MODEL FAMILY | | | | |
|--------------------|--------------|--------|-----------|---------|
| Tolerance category | CYLINDER | PISTON | CLEARANCE | |
| | | | ASSEMBLY | MAXIMUM |
| A | 42.970 +0.01 | 42.940 | 0.030 | 0.080 |
| B | 42.980 +0.01 | 42.950 | 0.030 | 0.080 |
| C | 42.990 +0.01 | 42.960 | 0.030 | 0.080 |
| D | 43.000 +0.01 | 42.970 | 0.030 | 0.080 |

| 125cc MODEL FAMILY | | | | |
|--------------------|---------------|-----------|-----------|---------|
| CYLINDER | PISTON | CLEARANCE | CLEARANCE | |
| | | | ASSEMBLY | MAXIMUM |
| 53.970 ±0.005 | 53.950 ±0.005 | 0.020 | 0.080 | 0.080 |
| 53.980 ±0.005 | 53.960 ±0.005 | 0.020 | 0.080 | 0.080 |
| 53.990 ±0.005 | 53.970 ±0.005 | 0.020 | 0.080 | 0.080 |
| 54.000 ±0.005 | 53.980 ±0.005 | 0.020 | 0.080 | 0.080 |

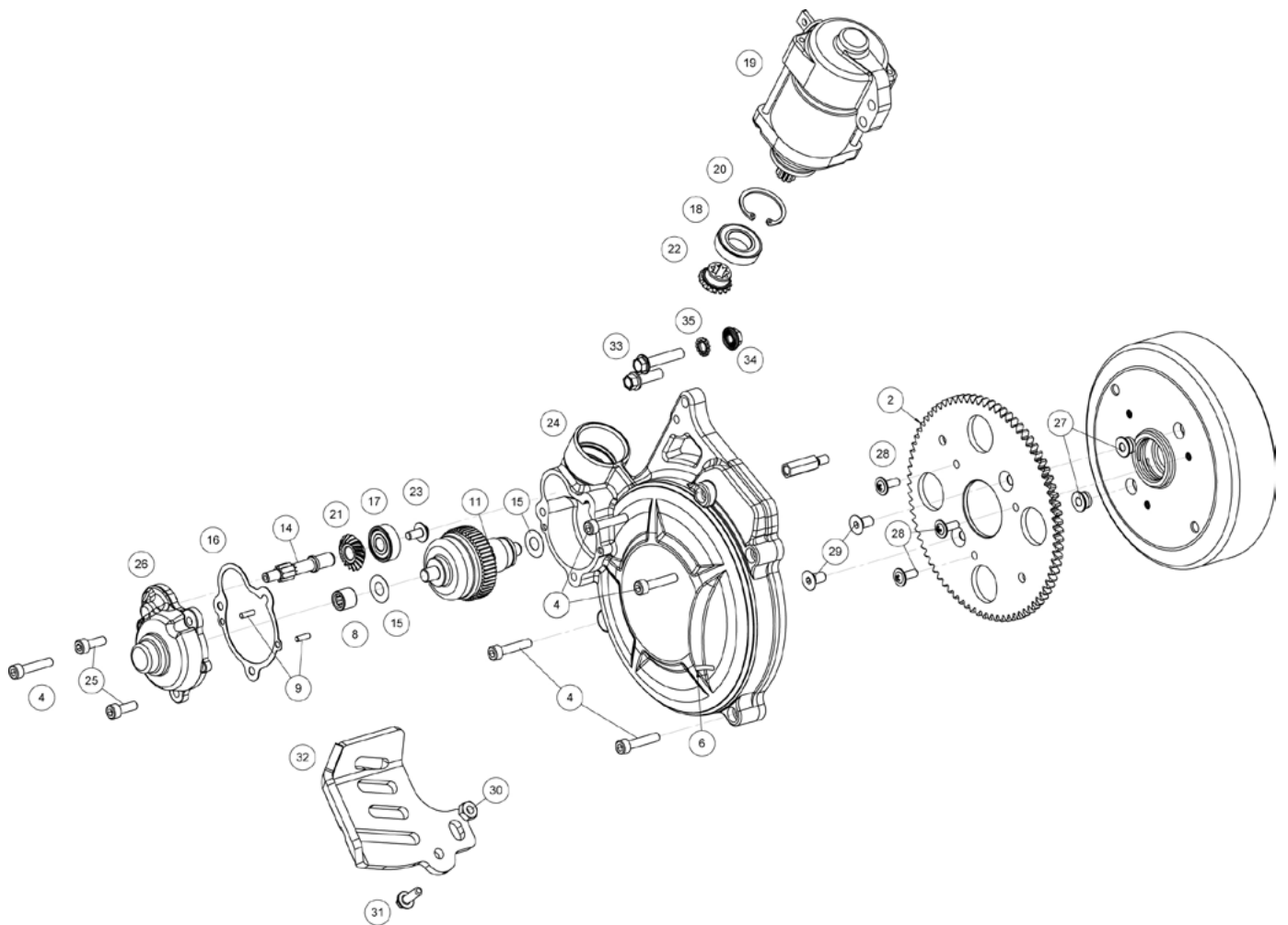
| 250cc MODEL FAMILY | | | | |
|--------------------|---------------|-----------|-----------|---------|
| CYLINDER | PISTON | CLEARANCE | CLEARANCE | |
| | | | ASSEMBLY | MAXIMUM |
| 72.510 ±0.005 | 72.460 ±0.005 | 0.050 | 0.100 | 0.080 |
| 72.520 ±0.005 | 72.470 ±0.005 | 0.050 | 0.100 | 0.080 |
| 72.530 ±0.005 | 72.480 ±0.005 | 0.050 | 0.100 | 0.080 |
| 72.540 ±0.005 | 72.490 ±0.005 | 0.050 | 0.100 | 0.080 |

| 280cc MODEL FAMILY | | | | |
|--------------------|---------------|-----------|-----------|---------|
| CYLINDER | PISTON | CLEARANCE | CLEARANCE | |
| | | | ASSEMBLY | MAXIMUM |
| 76.005 ±0.005 | 75.950 ±0.005 | 0.055 | 0.100 | 0.080 |
| 76.015 ±0.005 | 75.950 ±0.005 | 0.055 | 0.100 | 0.080 |
| 76.025 ±0.005 | 75.950 ±0.005 | 0.055 | 0.100 | 0.080 |
| 76.035 ±0.005 | 75.950 ±0.005 | 0.055 | 0.100 | 0.080 |

| 300cc MODEL FAMILY | | | | |
|--------------------|-----------|-----------|-----------|---------|
| PISTON | CLEARANCE | CLEARANCE | CLEARANCE | |
| | | | ASSEMBLY | MAXIMUM |
| 78.950 ±0.006 | 0.056 | 0.100 | 0.100 | 0.080 |
| 78.960 ±0.006 | 0.058 | 0.100 | 0.100 | 0.080 |
| 78.970 ±0.006 | 0.060 | 0.100 | 0.100 | 0.080 |
| 78.980 ±0.006 | 0.060 | 0.100 | 0.100 | 0.080 |

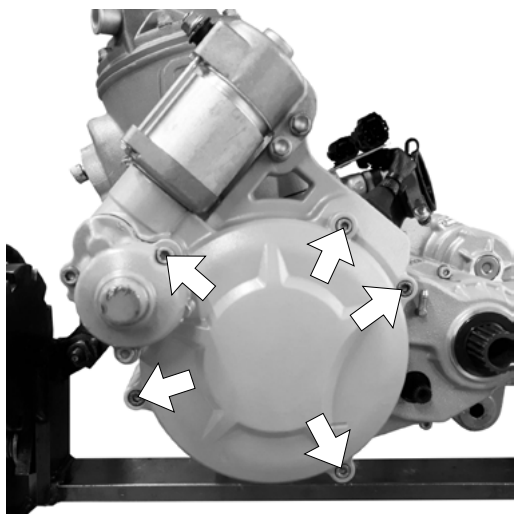
Starter system disassembly and inspection

* For models with electric starter



Starter system disassembly and inspection

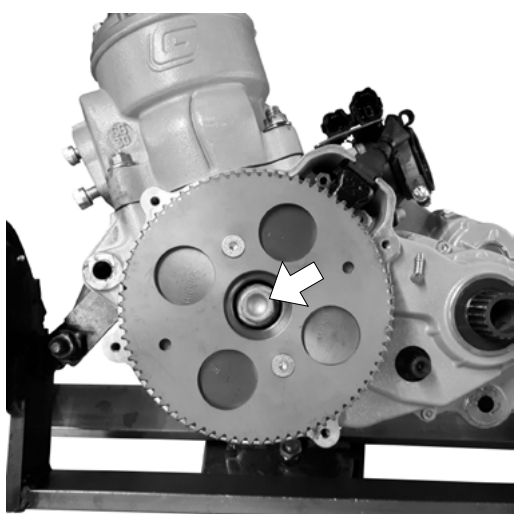
* For models with electric starter



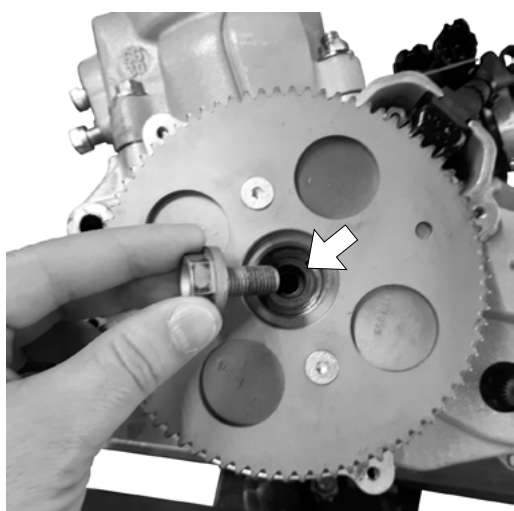
STARTER SYSTEM

- Remove the gear shift pedal and the magneto flywheel alternator cover on the left-hand side of the engine.

- To release the magneto flywheel cover, remove the screws marked with arrows in the photograph.

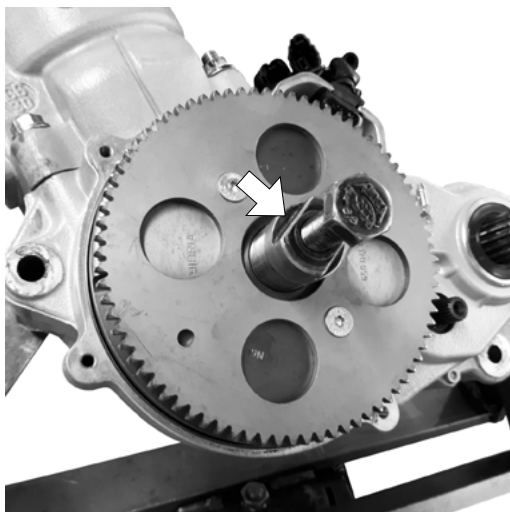


- Unscrew the bolt located in the centre of the flywheel.

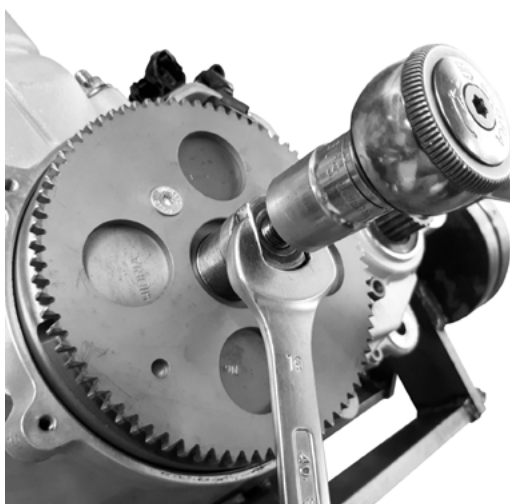


- Once the bolt is removed, you can access the nut that secures the flywheel.

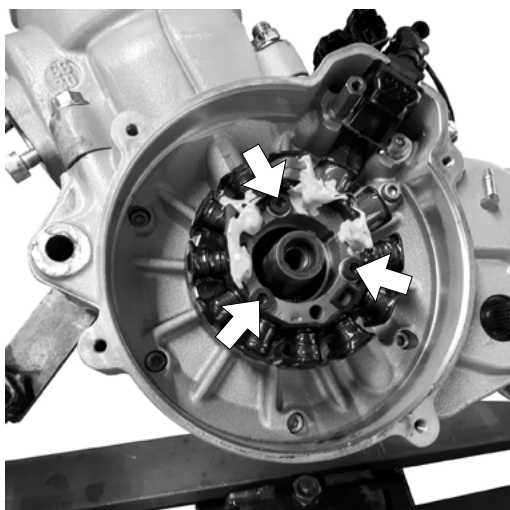
Starter system disassembly and inspection



- To unscrew the central nut, you will need puller Ref: **MT280234045**

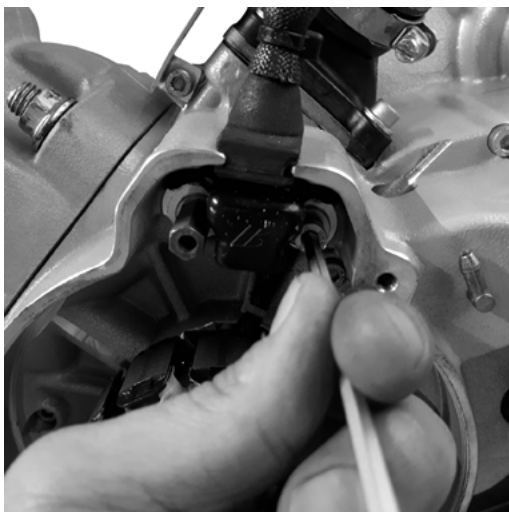


- Using the extractor, a spanner and a ratchet, unscrew the central nut and release the starter sprocket and ignition rotor.

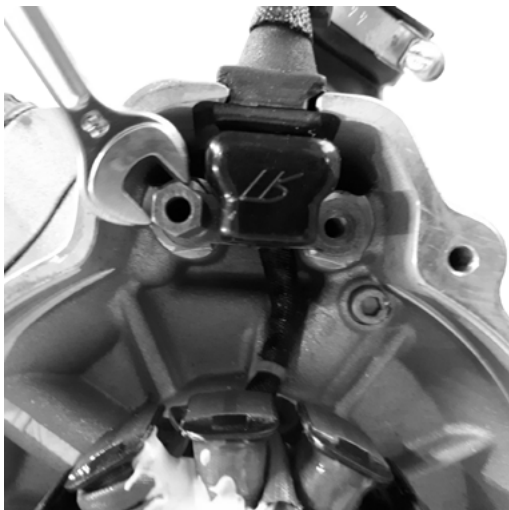
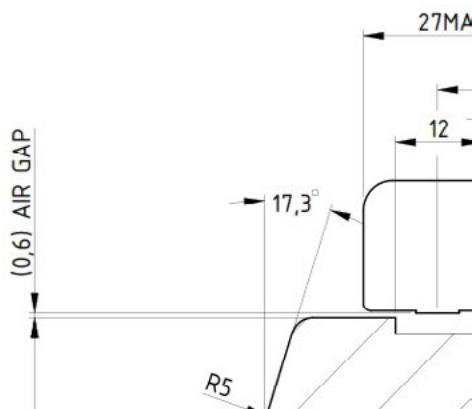


- To remove the stator coil assembly, loosen and remove the screws (marked with arrows in the photograph) that secure it to its support.

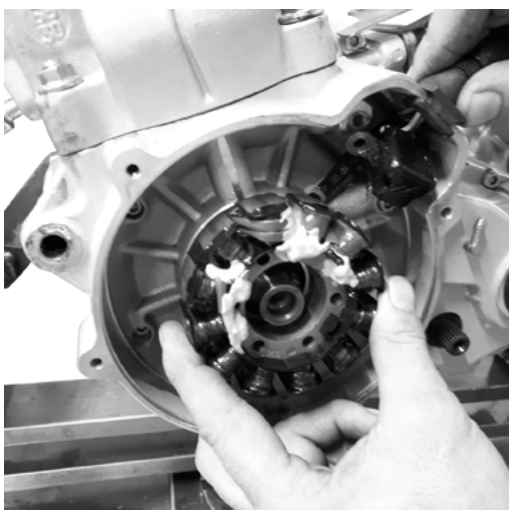
Starter system disassembly and inspection



- Release the ignition pick-up.



- Loosening and extracting the two bolts that secure it to the semi-crankcase.



- Once all of the fixing bolts are released, you can remove the stator assembly and ignition pick-up.

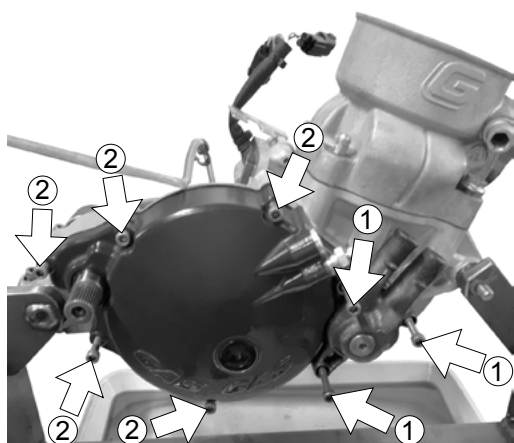
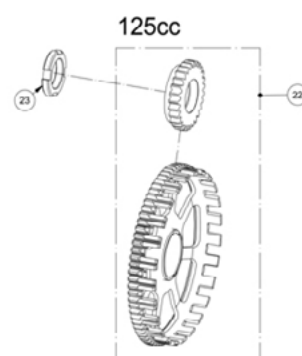
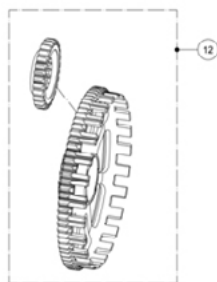
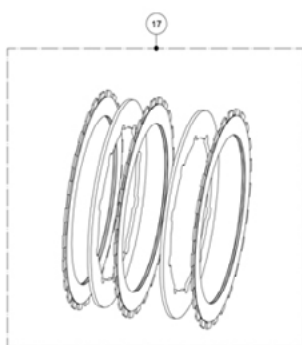
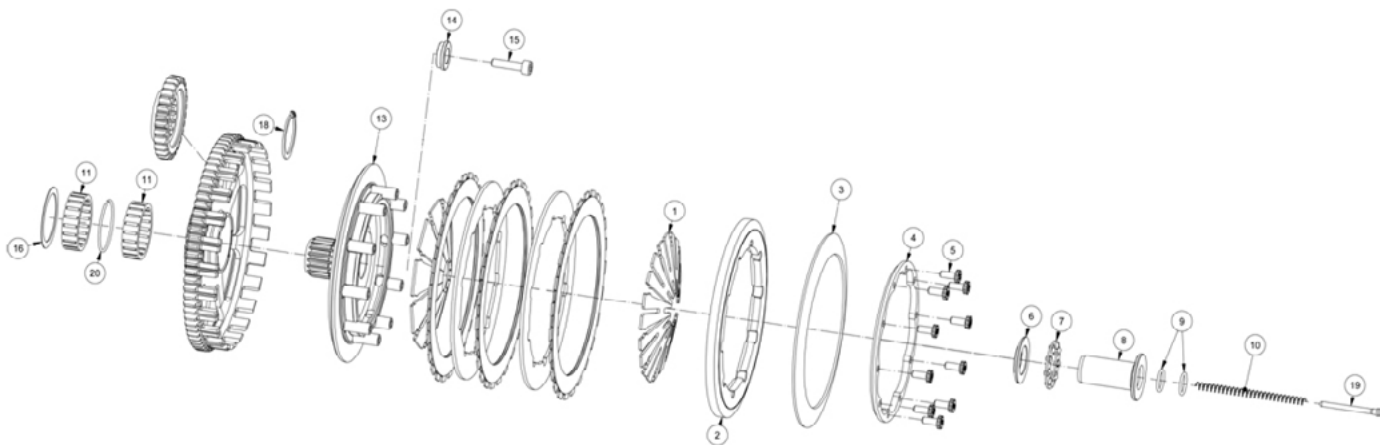
Check for proper operation and, in the event of a fault, replace altogether the component where the problem is located.

- Reassemble the assembly, paying special attention to the condition of the cotter pin on the end of the crankshaft. Replace if it shows damage.

- To reassemble the components, follow the same steps in reverse.

| | |
|-------------------------|----------------|
| Generator Coil | 0.7Ω+ 0.07 Ω |
| Capacitor Charging Coil | 15.8Ω +- 1.6 Ω |
| Pick Up Coil | 101Ω +- 20% Ω |

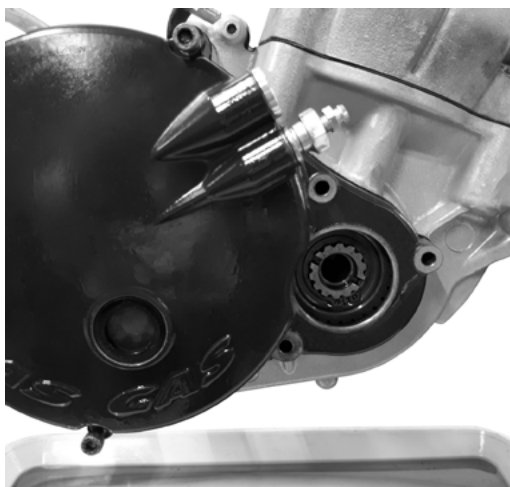
Clutch assembly disassembly and inspection



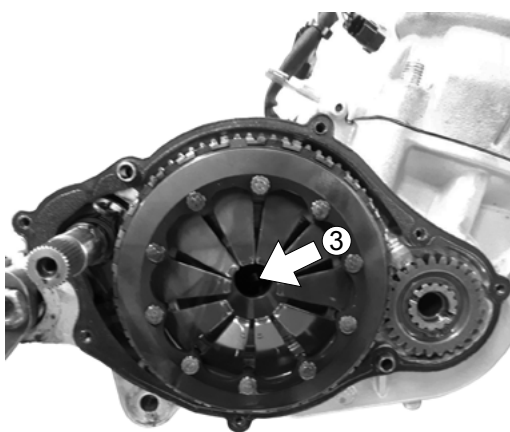
CLUTCH ASSEMBLY

- Drain the coolant from the engine.
- Drain the transmission oil by removing the two plugs (clutch semi-crankcase and crankcase base).
- Remove the water pump assembly. (1)

Clutch assembly disassembly and inspection

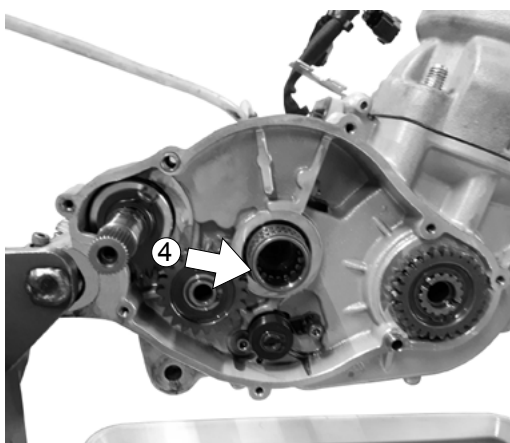


- Remove the screws from the clutch cover (2), cover and gasket. This will provide access to the assembly of primary transmission elements, and clutch.



- Remove the clutch assembly by removing the central nut that secures the clutch. (3)

- Remove the driven clutch plate.



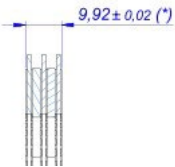
- Pay attention to the central bushing and set of washers (4).

Clutch assembly disassembly and inspection



- Extract the driving clutch plate, and remove all of the screws to access the discs.

(*) NOTE
Check pack height
dimension under a
load of $1600N \pm 100N$



- Replace the disc if it has lost some of its lining, has thermal fatigue (coloured) or is deformed, or its external crenellation is damaged.

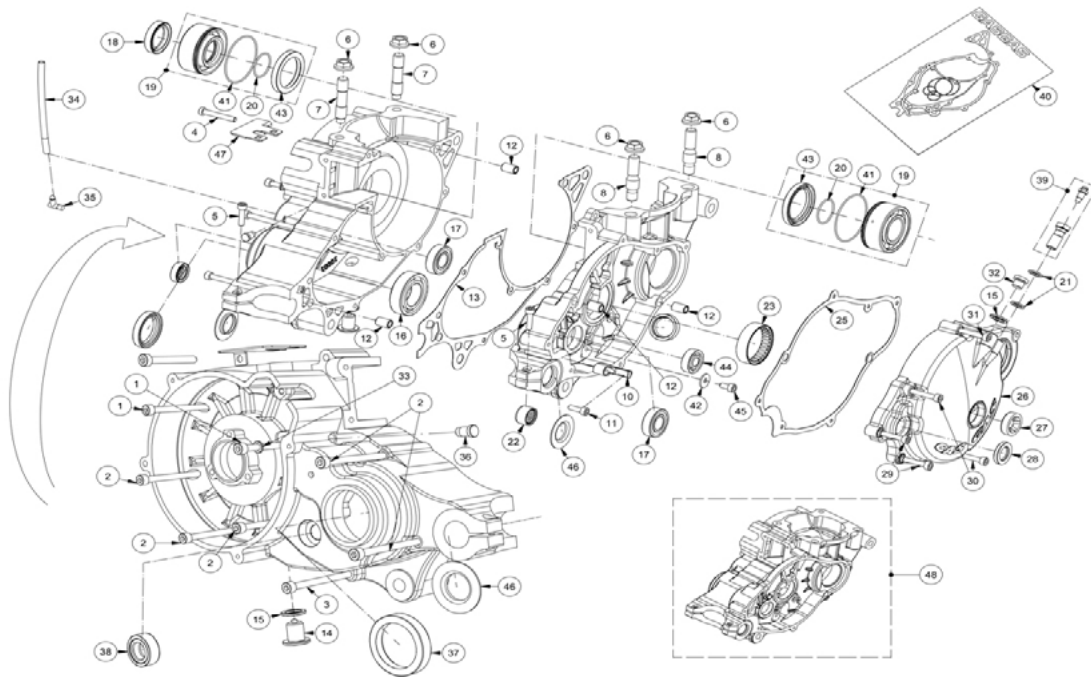


- Check the clutch discs for warpage, max. 0.05mm using a gauge on a flat surface.



- Visually check the teeth. If there are any signs of thermal fatigue (coloured), loss of surface hardness coating or irregular wear of the teeth (sharpening), replace the damaged components.

Crankcase disassembly and inspection

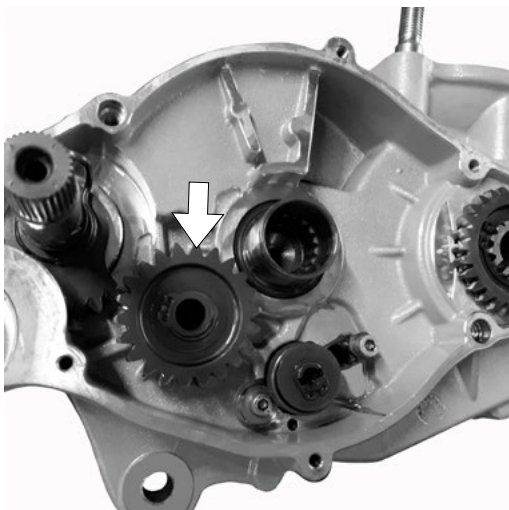


CRANKCASES

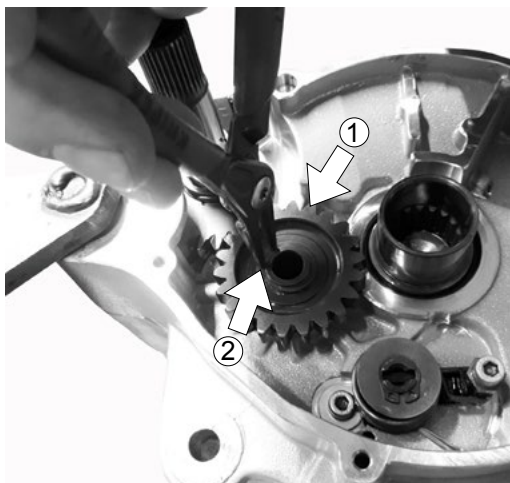
- Remove the thermodynamic assembly (cylinder head, cylinder and piston).
- Remove the magneto flywheel alternator.
- Extract the bearing from the clutch sprocket, remove the circlip and then the needle bearing.



- Once the needle bearings have been extracted, we will remove the kick-start sprocket assembly.



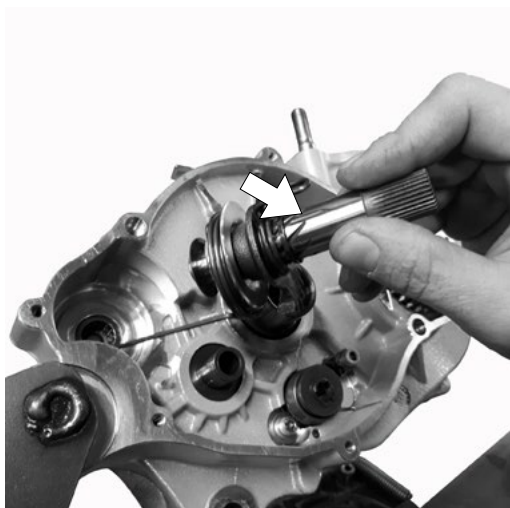
Crankcase disassembly and inspection



- To remove the intermediate kick-start sprocket assembly (1), release the seeger (2) and, once the washer has been removed, extract the kick-start sprocket assembly.

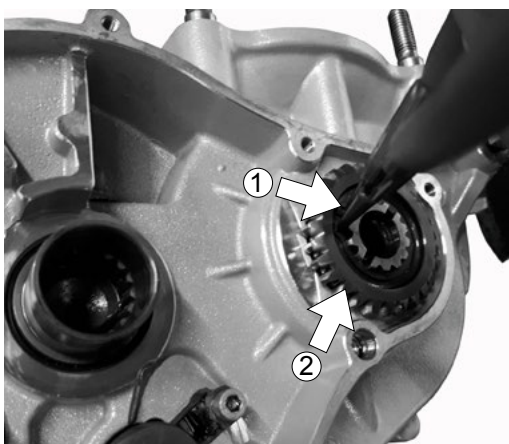


- Once the above operation has been carried out, you can remove the bearing and the corresponding washer.

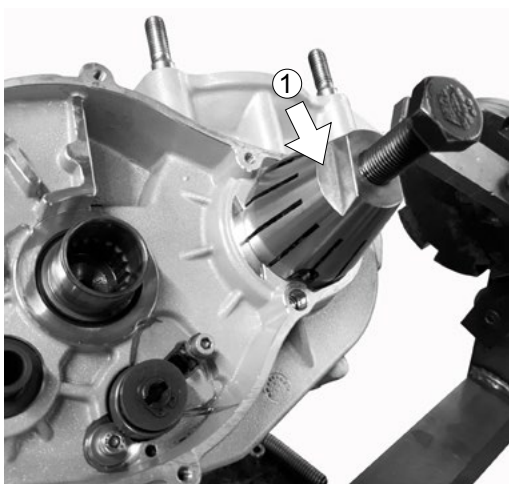


- You can then remove the kick-start shaft.

Crankcase disassembly and inspection



- To be able to remove the sprocket (2), you must first extract the seeger (1)

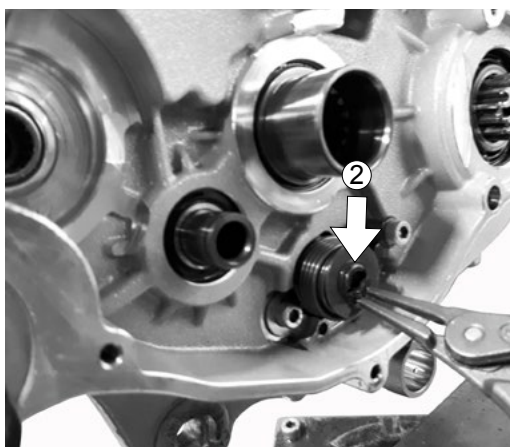


- Once the above operation has been carried out, you can remove the sprocket, using puller (1) Ref: **MT280250006**

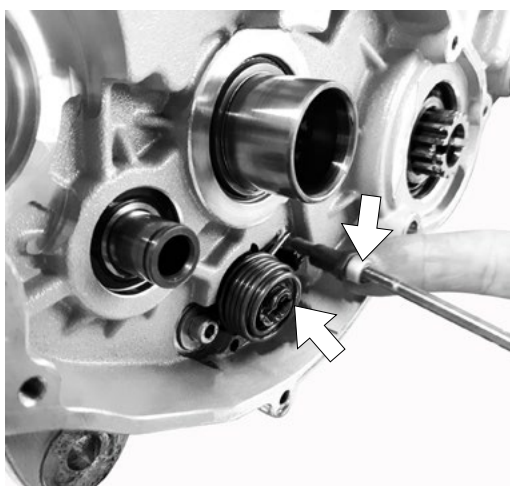


- This is how it should be left after the sprocket has been removed.

Crankcase disassembly and inspection



- Remove the positioner and the selector shaft secured by means of a seeger and washer (2).

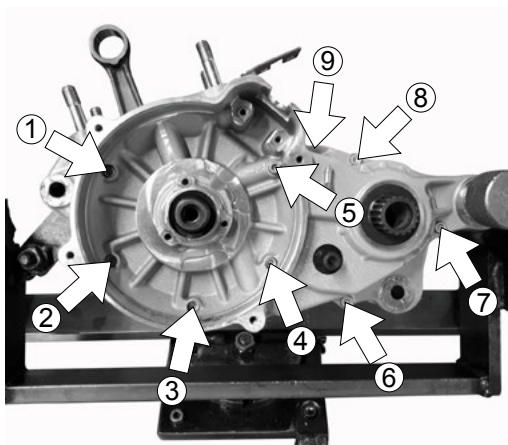


- Once the above operation has been carried out, you can remove the selector spring.

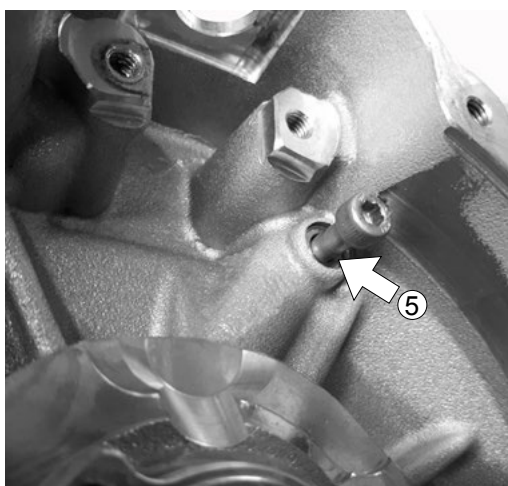


- Once all of the above disassembly steps have been carried out, this is what the crankcase will look like.

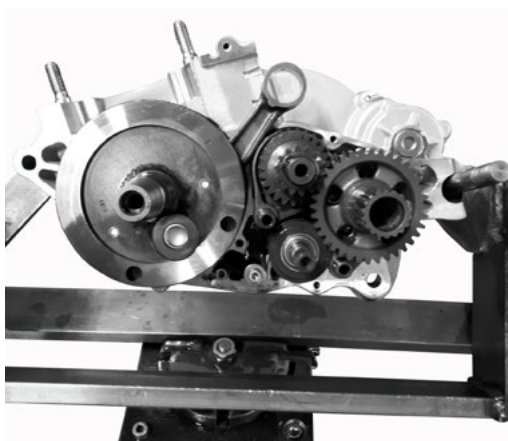
Crankcase disassembly and inspection



- Remove the 9 screws that secure the left-hand crankcase.



- Pay special attention to screw (5). It incorporates a copper washer.



- This is how it should appear after the left-hand crankcase has been removed.
You can now extract the gear shift assembly.

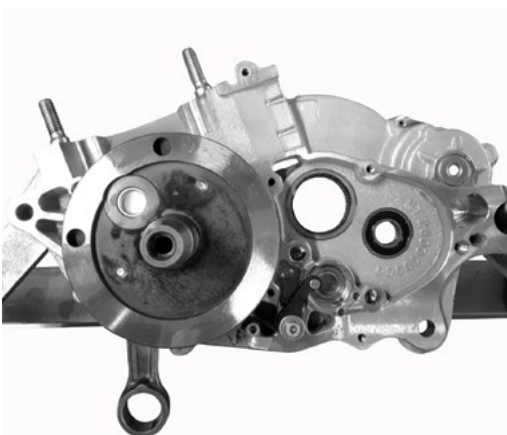
Crankcase disassembly and inspection



- Remove the desmodromic.



- Pay special attention to possible wear of the fork.
If it shows wear, replace it.



- To reassemble, repeat the same steps in reverse.

Maintenance of the frame



BRAKE PADS

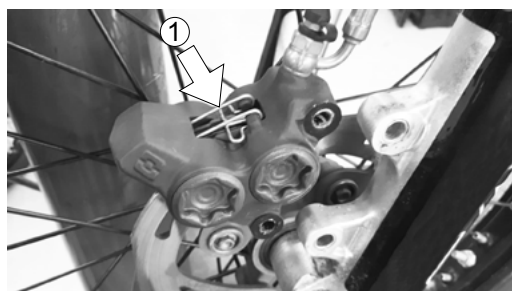
- (1) Pad pin
- (2) Screws
- (3) Disc cover
- (4) Front brake caliper

Changing the front brake pads

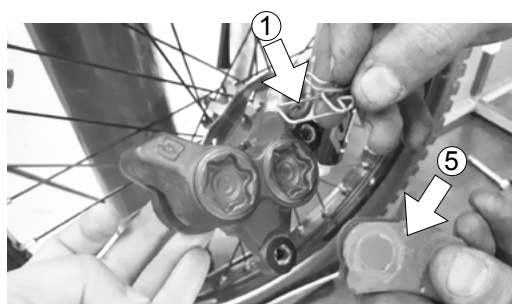
- Clean the brake disc with a high-quality degreasing compound if it is fouled with oil or grease.

Change the pads if they are dirty.

- Loosen the pad pins.
- Remove the brake caliper mounting screws, disc cover, flange bushings and caliper.

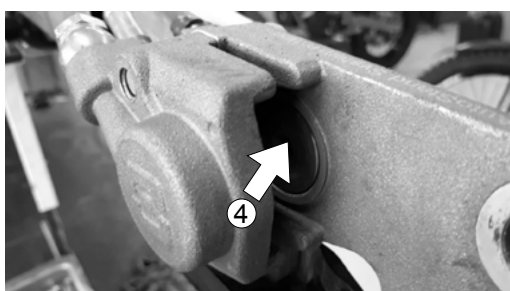
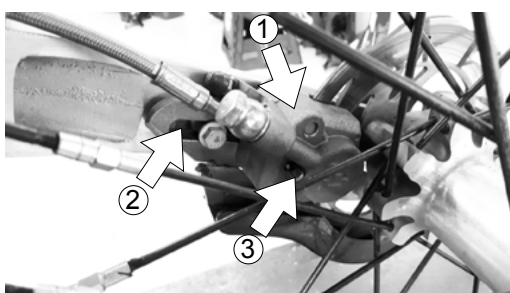
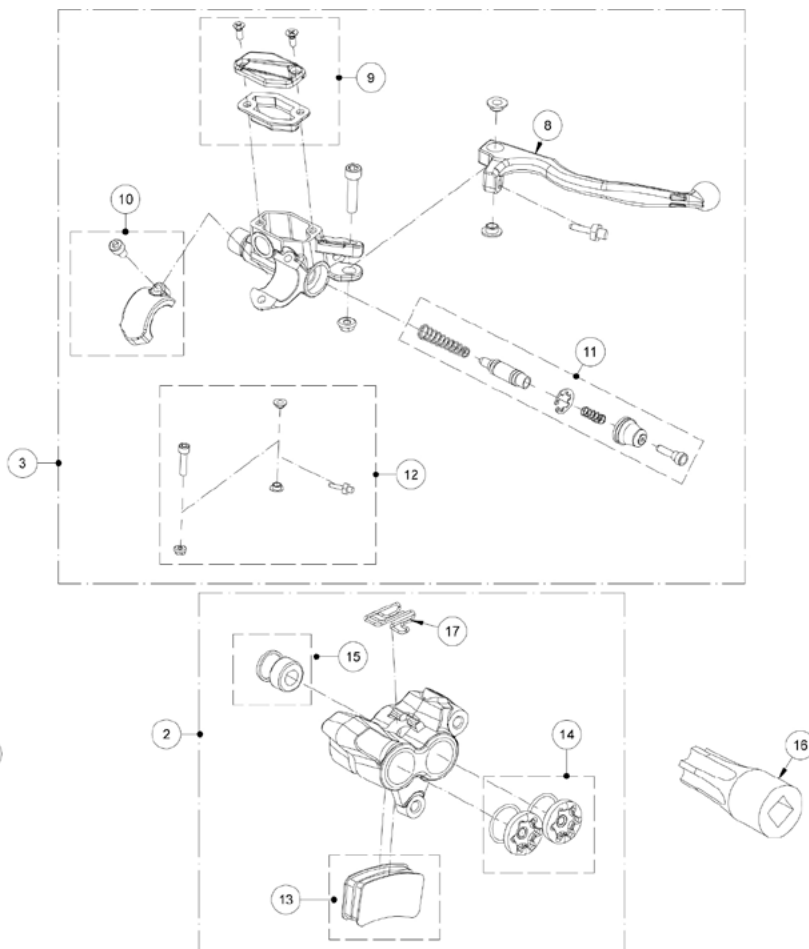
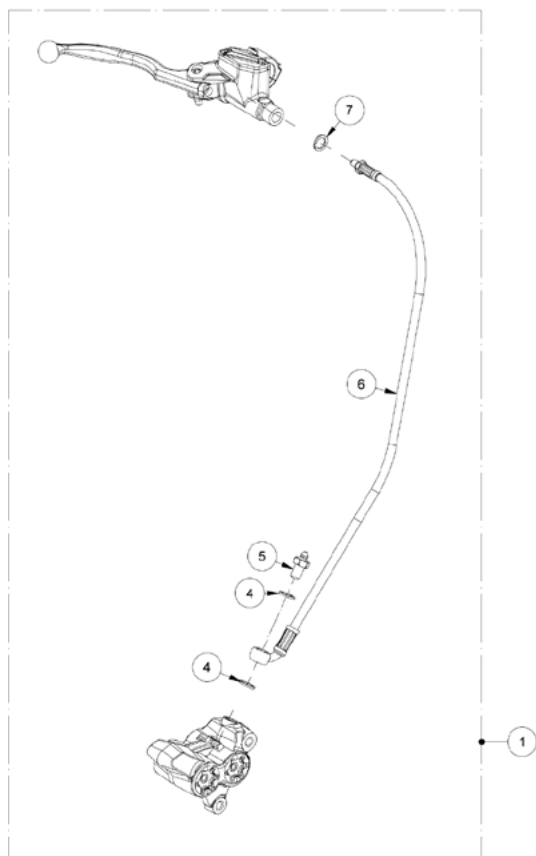


- Push the pistons completely inwards to enable the new brake pads to be fitted.
- Check the brake fluid level in the reservoir, as this operation causes the level to rise.
- Remove pad pins (1) and brake pads (5).
- Clean the inside of the brake caliper, especially around the caliper pistons.



- Fit the new pads and secure them with two pad pins.
- Fit the caliper to the fork so that the disc is positioned between the pads, taking care not to damage the pads.
- Apply a locking agent to the threads of the caliper mounting screws.
- Fit the disc cover and then fix and tighten the mounting screws. Tightening torque: **25 +/- 2 Nm.**
- Engage the brake lever to seat the caliper pistons against the pads.

Maintenance of the frame



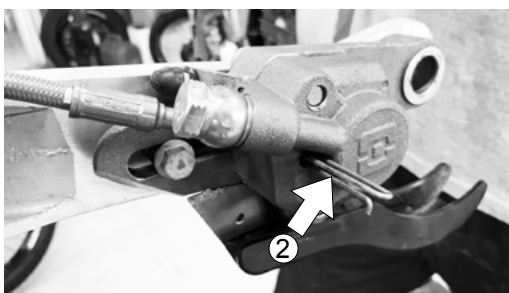
BRAKE PADS

Changing the rear brake pads

- (1) Brake caliper
- (2) Adjustment tab/slot
- (3) Pad pin
- (4) Caliper piston

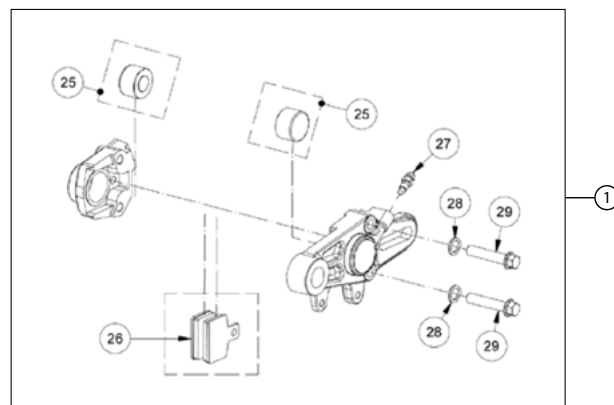
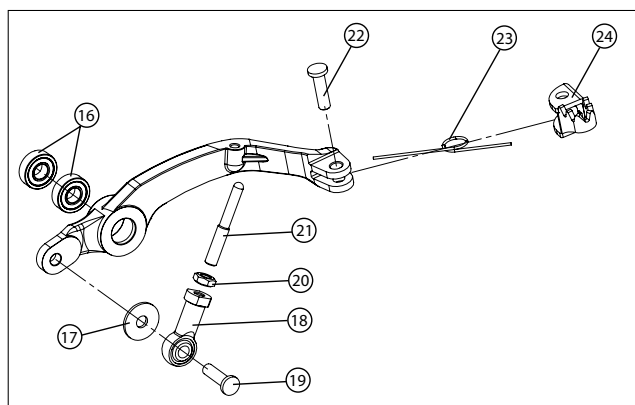
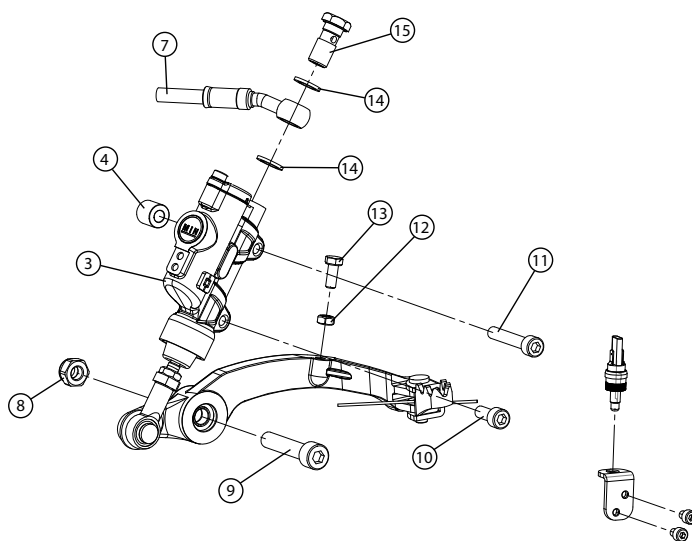
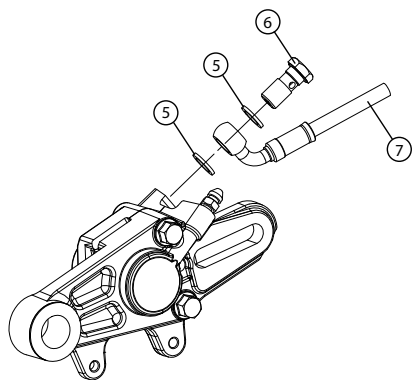
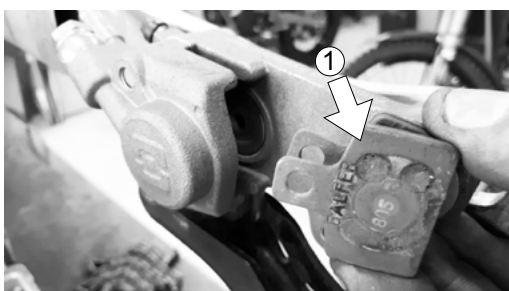
- Remove the rear wheel. (see pp. 54-55)
- Push piston (4) completely inwards to enable the new brake pads to be fitted.
- Check the brake fluid level in the reservoir, as this operation causes the level to rise.
- Remove pad pins (3) and brake pad.
- Clean the inside of the brake caliper, especially around the caliper pistons.

Maintenance of the frame



- (1) Brake pads
- (2) Pad pin

- Fit the new pads and secure them with the pad pins.
- Fit the brake caliper bracket, aligning its slot with the swinging arm tab.
- Fit the rear wheel (see pp. 54-55).
- Engage the brake pedal to seat the caliper pistons against the pads.

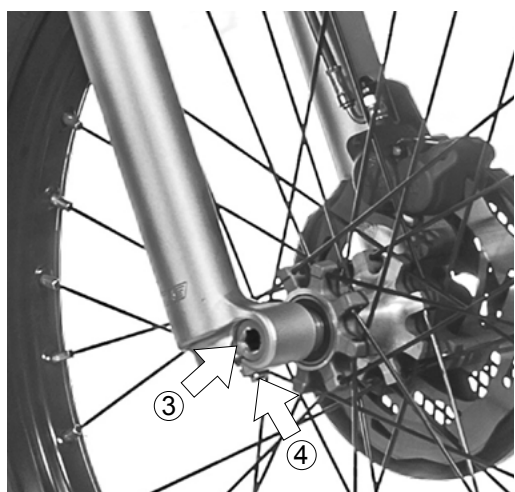


Maintenance of the frame



REMOVING THE FRONT WHEEL

- Remove the fixing screws of brake caliper (1) and (2), and the disc cover.



- Loosen axle fixing screws (3) and (4).

Place the motorcycle on its stand and keep the front wheel off the ground.

Remove the axle and brake caliper to release the front wheel.



Do not engage the brake lever after removing the front wheel.
The caliper pistons would move, making fitting difficult.



WARNING

Dirt on the brake disc or pad reduces braking ability, which could lead to serious injury or death.

Throw away the dirty pads and clean the dirty discs with a high-quality brake degreaser.



FITTING THE FRONT WHEEL

- Clean the contact surfaces between axle (5) and axle clamps (6) then place the front wheel between the fork tubes.

- Apply a thin layer of grease to the surface of the axle.

- Apply grease to the axle threads.

- Fit the axle from the right-hand side through the wheel and left-hand bushing.

- Tighten the axle to the specified torque.

Tightening torque 50 Nm +/- 5

Maintenance of the frame

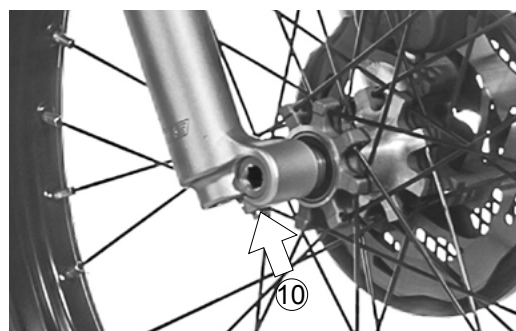


- Fit front brake caliper (7) and the disc cover (8).
- Tighten mounting screws (9) to the specified torque.

Tightening torque 25 Nm. +/-2

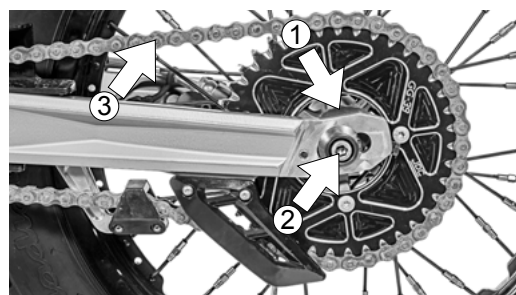


With the front brake engaged, move the fork up and down several times to seat the axle and check the operation of the front brake.



- Keeping the fork in parallel, tighten the axle clamping screw to the specified torque.

Tightening torque 23Nm. +/-2

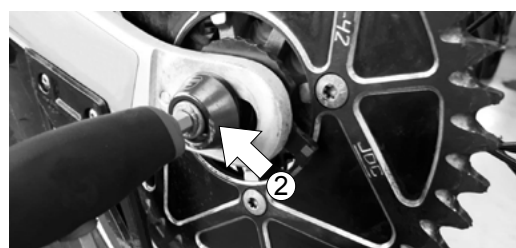


REMOVING THE REAR WHEEL

- Lift the rear wheel off the ground and rest it on a block or maintenance stand positioned under the engine

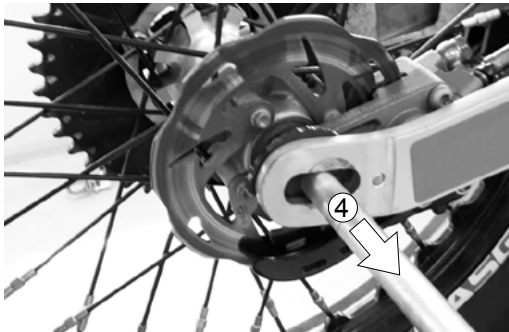
Remove the following components:

- Axle nut (2) and transmission chain adjuster (1).
- Transmission chain (3).
- Axle (4), transmission chain adjuster and rear wheel.



Do not engage the brake pedal after removing the front wheel. The caliper pistons would move, making fitting difficult.

Maintenance of the frame



WARNING

Dirt on the brake disc or pad reduces braking ability, which could lead to serious injury or death.

Throw away the dirty pads and clean the dirty discs with a high-quality brake degreaser.

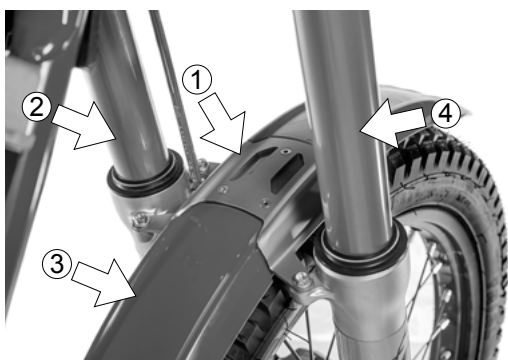
FITTING THE REAR WHEEL

- Fit the rear brake caliper, aligning it with the caliper slide guide.
- Apply a thin layer of grease to the axle.
- Carefully position the rear wheel between the swinging arm so as not to damage the disc.
- Insert the rear axle into the chain's left-hand adjuster, side bushing and wheel.
- Apply grease to the axle nut thread and seating surfaces.
- Fit the chain's right-hand adjuster and axle nut.
- Fit the transmission chain.
- If the master link retaining circlip has been removed, fit the transmission chain with the closed end of the circlip in the direction of wheel rotation.
- Check and adjust the tension of the transmission chain.
- Tighten the axle nut to the specified torque.

Tightening torque 50 Nm +/- 5

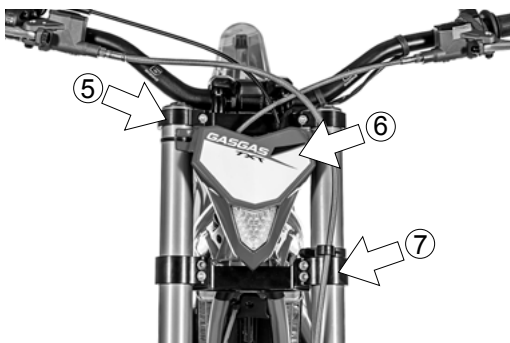
REMOVING THE FORK

1. Front Mudguard Bridge
2. Left-hand suspension bar
3. Front mudguard
4. Right-hand suspension bar



- This is how it should appear after the left-hand crankcase has been removed. You can now extract the gear shift assembly.

Maintenance of the frame



- 5. Top suspension clamp
- 6. Headlight holder
- 7. Bottom suspension clamp

- Remove the front wheel (see p. 53).
- Remove the front headlight holder, bridge and front mudguard.
- Loosen the top and bottom clamp fixing screws.
- Remove the fork tube by pulling downwards.

MAINTENANCE OF THE FORK

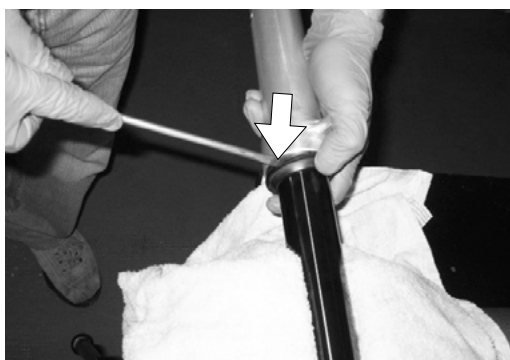
Dust covers

- The table below shows the cleaning intervals for the fork dust covers.



Failure to regularly clean the dust covers will result in dirt entering the fork. This dirt can compromise the smoothness of the fork and cause serious oil losses from the joints.

| Description of the operation | Intervals | |
|-------------------------------|---|---|
| | After every three races with the presence of dirt | After every race with the presence of mud |
| Cleaning the fork dust covers | ✓ | ✓ |

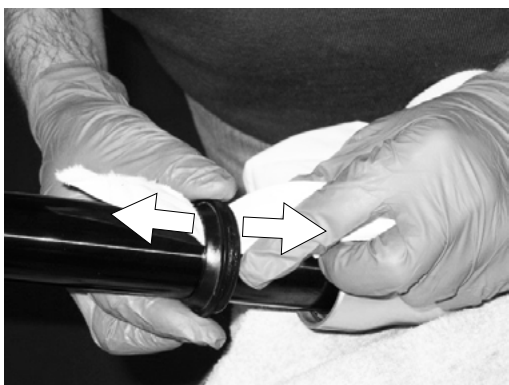


Lift the edge of the dust cover and remove it from the seating of the outer tube.

Maintenance of the frame



- Use a cloth to clean away any traces of mud from the dust cover seating and upper edge of the oil seal.



- Move the dust cover to one side and insert the cloth. Turn the dust cover until all traces of dirt inside the sealing lips are removed.



- Lubricate the tube with a seal grease.



- Fit the dust cover spreading the grease by tuning it from right to left.

Maintenance of the frame



- Insert the dust cover into place, using the flat side of a screwdriver to help position it.

MAINTENANCE OF THE FORK

Oil and seal change, right-hand side

- The table below shows the recommended oil change intervals.



Leaving the oil for too long without changing it leads to reduced fork performance and oil thickening, which can cause leaks.

| Description of the operation | Intervals | |
|------------------------------|--------------------------|----------------|
| | After the first 50 hours | After 6 months |
| Oil change | ✓ | ✓ |

Proceed as follows:

- Perform a general cleaning of the suspension.
- Protect the surface of the pipe before closing it in a vice, as shown in the figure.

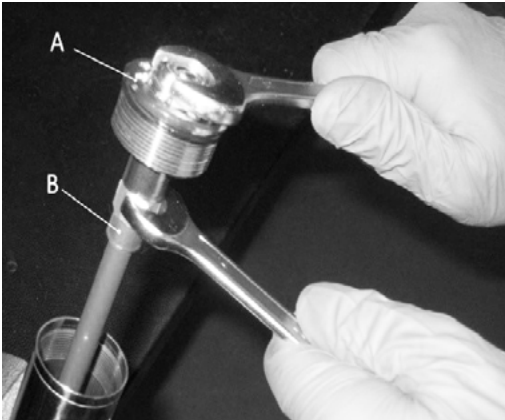


Lightly squeeze the clamp, making sure not to distort the tube.

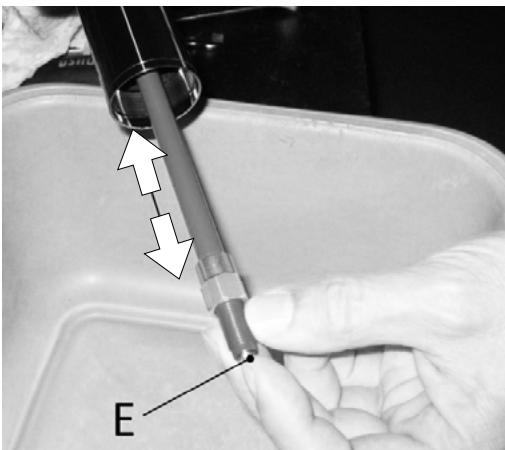


- Use a 17 mm spanner to disengage the cover and fully unscrew it.

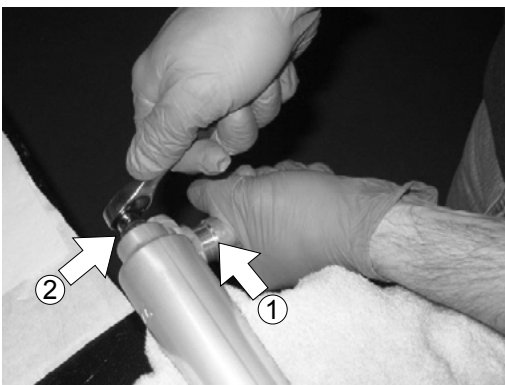
Maintenance of the frame



- Remove cover (A) enough to disengage lock nut (B).
- Insert a 14 mm spanner into lock nut (B) and a 17 mm spanner into cover (A).
- Place the two components in the same clean place.



- Hold rod (E) to prevent it from falling, as shown in the figure.
- Pour the oil into a tray at the same time, move rod (E) back and forth, as shown in the figure.



- Insert a tube into hole in the wheel (1) and unscrew the cover of the cartridge with a 12 mm socket wrench. (2)



- Remove the pump locking screw together with the seal.

Maintenance of the frame



- Remove the cartridge from the tube.



- Turn the fork and remove the hydraulic end of stroke cone.



- Push the compression unit inwards and remove the seeger from its housing.



- Remove the compression assembly.
- Place the cartridge in an oil collection device and have the rod inserted in the cartridge tube for complete drainage of the oil.
- Reinsert the hydraulic unit into the cartridge.
- Reinsert the seeger into its housing (see figure), making sure it is correctly positioned.

Maintenance of the frame



- Insert the end of the cone into the bottom of the cartridge.



- Lift the edge of the dust cover and remove it from the seating of the bar.

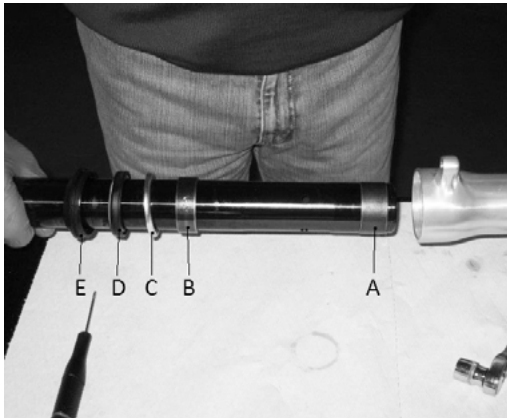


- Remove the seeger from its housing.

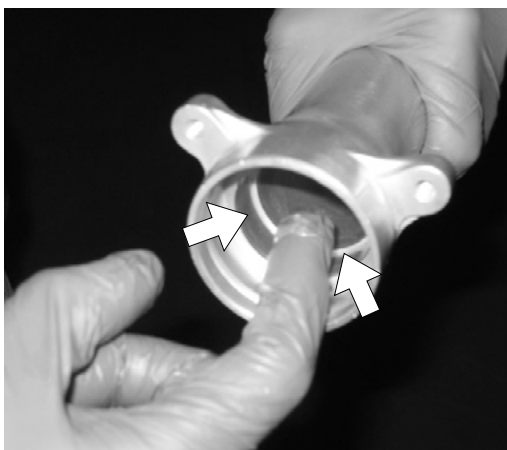


- Secure the tube at the top to protect it (as shown in the figure), while delivering firm blows to the bar.
- Remove the oil seal and outer tube bushing

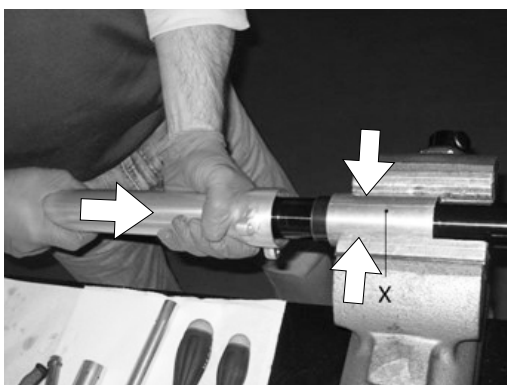
Maintenance of the frame



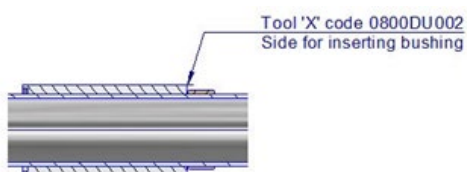
- Remove all insulating parts of the tube (A-B-C-D-E).
Replace part (A) with a new one.



- Grease the bushing seatings and oil seal.



- Squeeze the pipe in a vice, casing (X) checking that the non-discharge side is against bushings (B).
- With firm blows of the outer tube, insert bushing (B) into its place. Check that it is completely inserted.

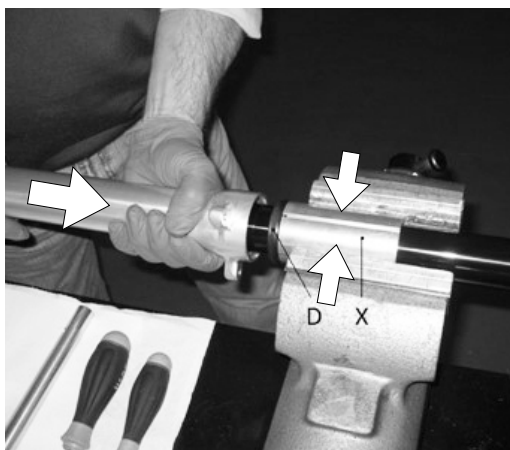


- Secure the tube at the top to protect it (as shown in the figure), while delivering firm blows to the bar.
- Remove the oil seal and outer tube bushing

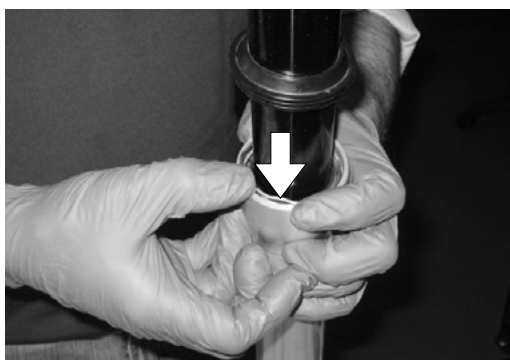
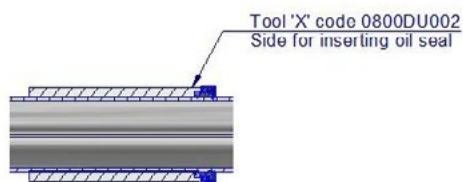
Maintenance of the frame



- Insert ring nut (C) against bushing (B), making sure that the edge of the ring nut is facing upwards.



- Insert the oil seal into the tube (with the spring facing up) and close the tube in a vice with the help of casing (X), with the drainage towards the seal.
- With moderate movements of the outer tube, insert oil seal (D) into its place. This operation does not require much force. Avoid hitting the oil seal once it is in place.



- Insert the seeger into its housing

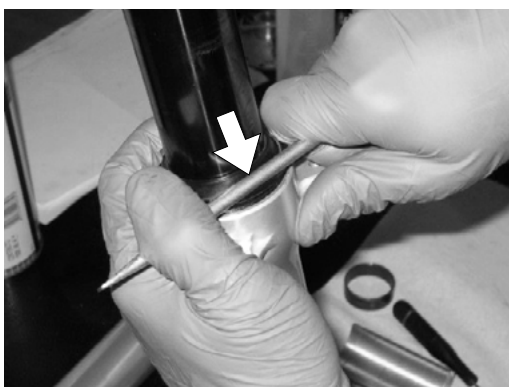
Maintenance of the frame



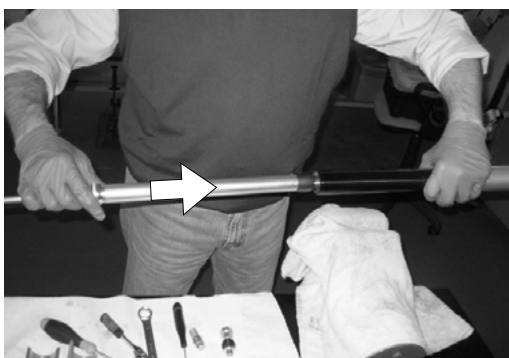
- Grease the tube with grease suitable for seals.



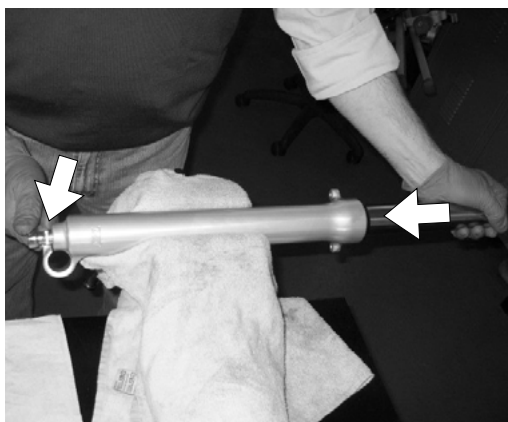
- Fit the dust cover spreading the grease by tuning it from right to left.



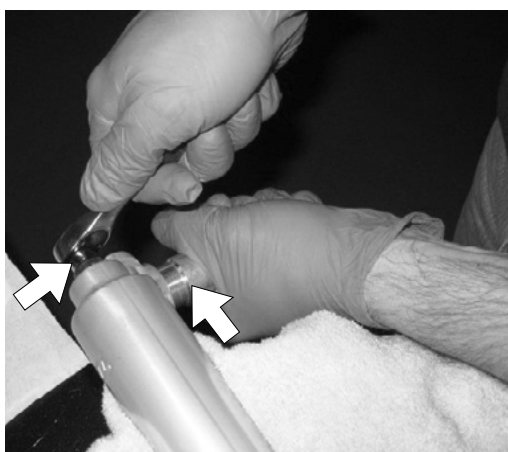
- Insert the dust cover into place, using the flat side of a screwdriver to help position it.



- Insert the cartridge into the tube until it is seated at the bottom of the outer tube.



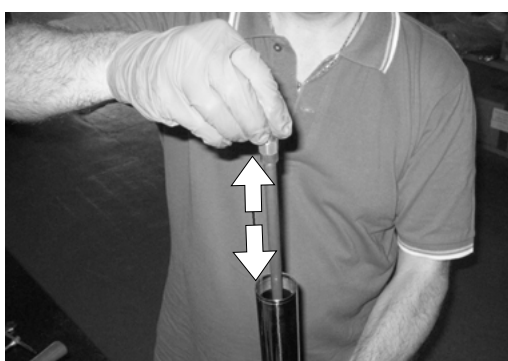
- Press the cartridge axle against the bottom of the outer tube to fix the cartridge screw.



- Lightly squeeze the outer tube in a vice, making sure not to distort it and protecting it with a cloth.
- Insert an axle into the wheel pin hole and fix it with a tightening torque of **23.5 ÷ 25.5 Nm**.

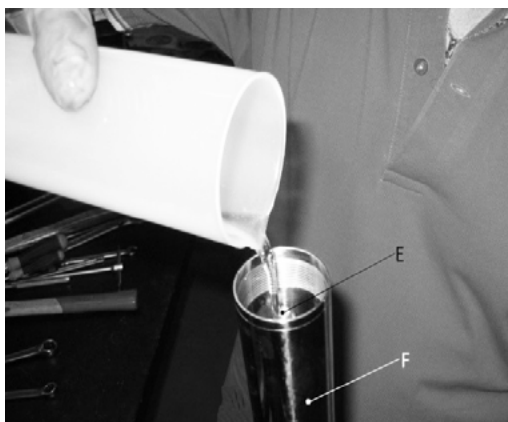


- Place the suspension bar in a vertical position and add approximately 280 cc of oil.
Use OJ 01 (SAE 5) oil.

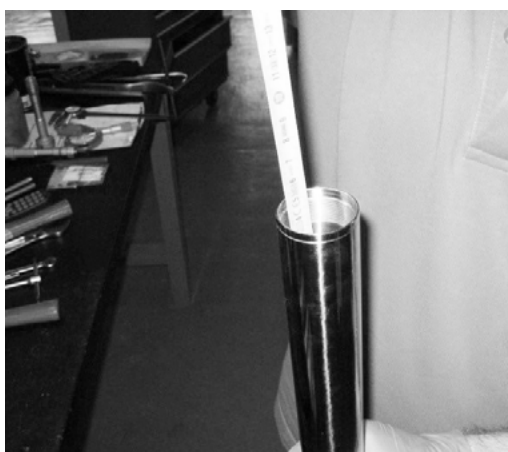


- Pump the rod up and down until gentle braking can be felt during the return stroke.

Maintenance of the frame



- Complete the filling of the oil and proceed as indicated below
- Holding the suspension in a vertical position, compress tube (F) and rod (E) until the end of the stroke.

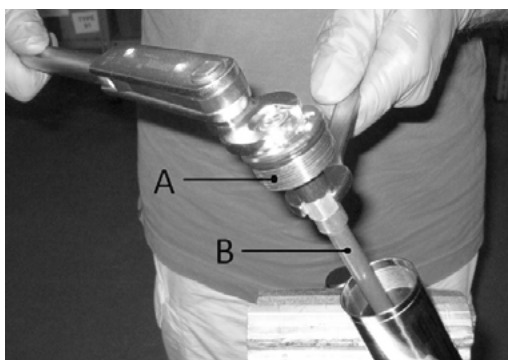


- Bring the oil up to the proper level (see table below) from the top edge of the pipe (keep the tube and rod at the end of the stroke).

| Motorcycle model | Year | Oil level | Type of oil |
|--------------------|------|-----------|-------------|
| GasGas | 2012 | 55 | OJ 01 |
| GasGas (aluminium) | 2013 | 75 | OJ 01 |



- Screw the cover completely by hand (after having the lock nut in the fully unscrewed position) on rod (E), as shown in the figure.



- Hold cover (A) and screw it against lock nut (B) with a **tightening torque of 14.7 Nm**, as shown in the figure.

Maintenance of the frame



- Completely tighten the tube cover with a 17 mm spanner at a torque of **11.7 ÷ 13.7 Nm**.

MAINTENANCE OF THE FORK

Oil and seal change, left-hand side

- The table below shows the recommended oil change intervals.



Leaving the oil for too long without changing it leads to reduced fork performance and oil thickening, which can cause leaks.

| Description of the operation | Intervals | |
|------------------------------|--------------------------|----------------|
| | After the first 50 hours | After 6 months |
| Oil change | ✓ | ✓ |

Proceed as follows:

- Perform a general cleaning of the suspension.
- Protect the surface of the pipe before closing it in a vice, as shown in the figure.

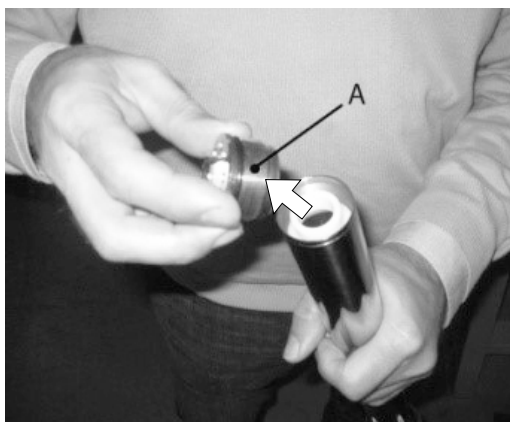


Lightly squeeze the clamp, making sure not to distort the tube.

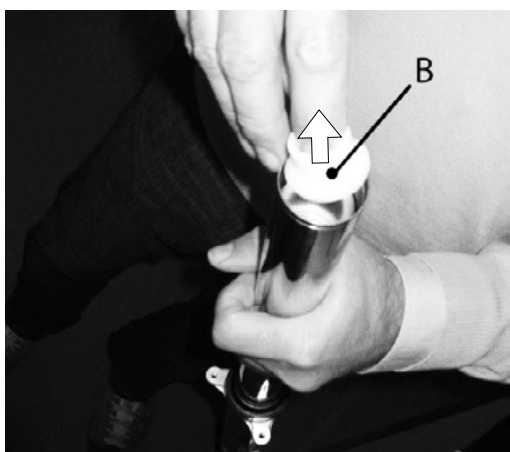


- Use a 17 mm spanner to disengage the cover and fully unscrew it.

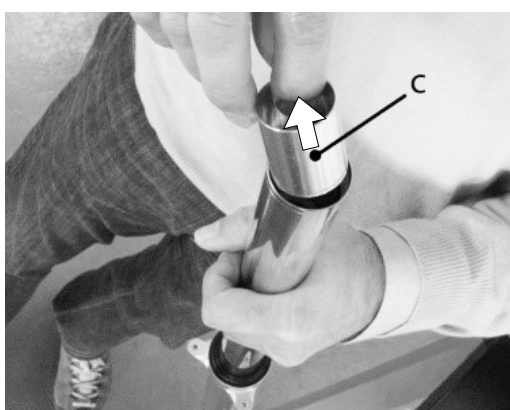
Maintenance of the frame



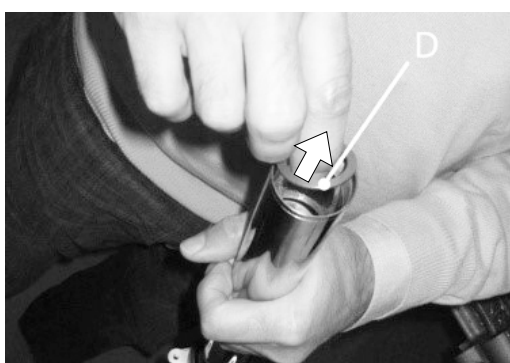
- Completely remove cover (A) and put it in a clean place.



- Remove tapered spacer (B) and put it in a clean place.



- Remove spacer (C) and put it in a clean place.



- Remove washer (D) and put it in a clean place.

Maintenance of the frame



- Slowly extract spring (E).



- Wipe off oil from the spring with a cloth.



- Put all parts in a clean place.



- Pour the oil into a container as shown in the figure.

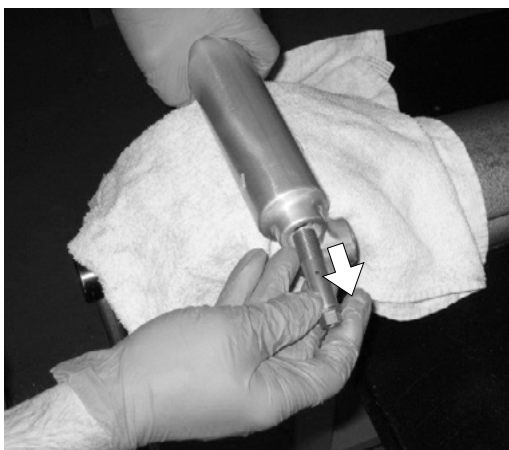


To prevent damage to the environment, collect the used oil and send it to a waste treatment centre.

Maintenance of the frame



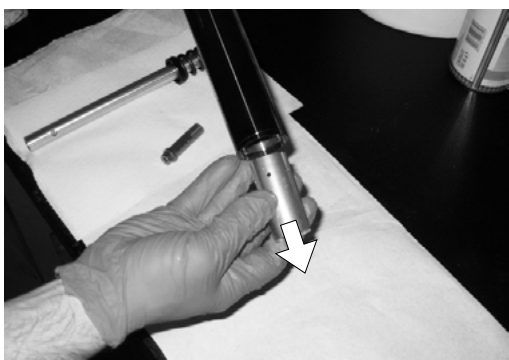
- Squeeze the two clamps in a vice, protecting them with a cloth.
- Unscrew the pump nut with a 12 mm spanner.



- Remove the screw and oil seal.

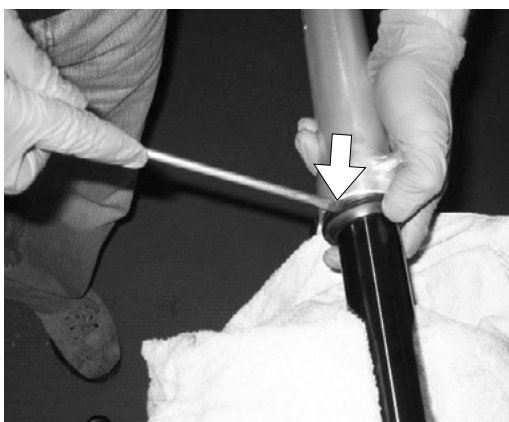


- Remove the complete pump unit.



- Turn the fork the opposite way and remove the end of the stroke cone.

Maintenance of the frame



- Lift the edge of the dust cover and remove it from the seating of the bar.

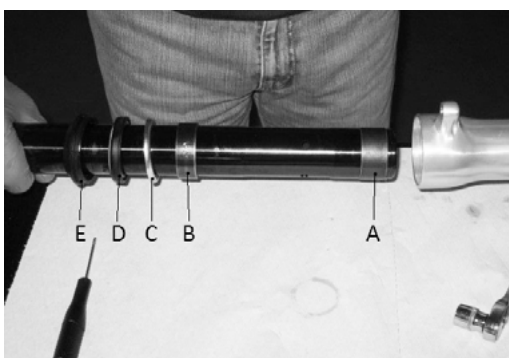


- Remove the seeger from its housing.



- Secure the tube at the top to protect it (as shown in the figure), while delivering firm blows to the bar.

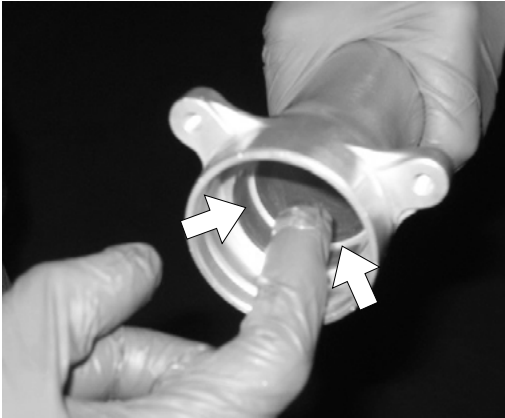
- Remove the oil seal and outer tube bushing



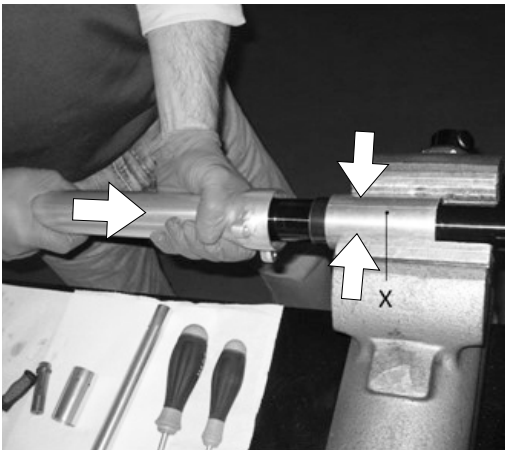
- Remove all insulating parts of the tube (A-B-C-D-E).

Replace part (A) with a new one.

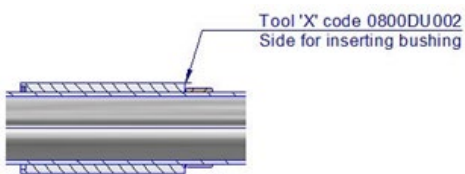
Maintenance of the frame



- Grease the bushing seatings and oil seal.



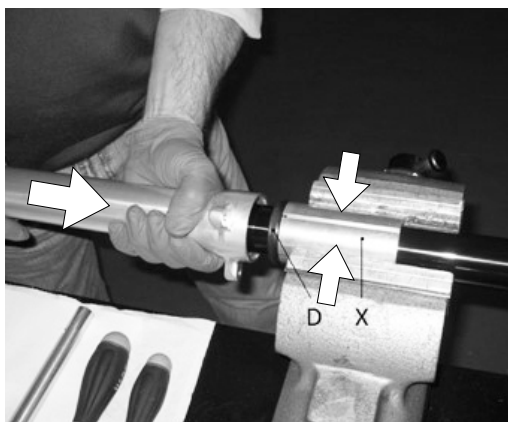
- Squeeze the pipe in a vice, casing (X) checking that the non-discharge side is against bushings (B).
- With firm blows of the outer tube, insert bushing (B) into its place. Check that it is completely inserted.



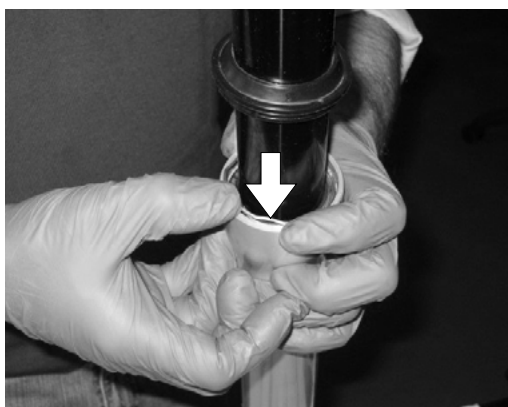
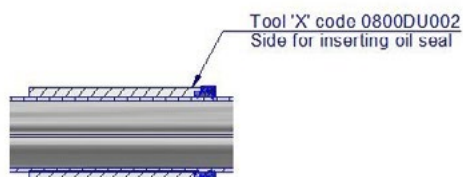
- Insert ring nut (C) against bushing (B), making sure that the edge of the ring nut is facing upwards.

Insert the seeger into its housing

Maintenance of the frame



- Insert the oil seal into the tube (with the spring facing up) and close the tube in a vice with the help of casing (X), with the drainage towards the seal.
- With moderate movements of the outer tube, insert oil seal (D) into its place. This operation does not require much force. Avoid hitting the oil seal once it is in place.



- Insert the seeger into its housing



- Grease the tube with grease suitable for seals.

Maintenance of the frame



- Fit the dust cover spreading the grease by tuning it from right to left.



- Insert the dust cover into place, using the flat side of a screwdriver to help position it.



- Insert the end of the cone and then the cartridge into the outer tube.



- Squeeze the outer tube in a vice, protecting it with a cloth.
Hold the tube at the end of the stroke and, using the fork spring, fix the pump screw.

Maintenance of the frame



- Screw the plug with a **tightening torque of 23.5 ÷ 25.5 Nm**.



- Place the suspension in a vertical position and add some new oil. **Use OJ 01 (SAE 5) oil.**

| Motorcycle model | Year | Oil level | Type of oil |
|--------------------|------|-----------|-------------|
| GasGas | 2012 | 110 | OJ 01 |
| GasGas (aluminium) | 2013 | 130 | OJ 01 |

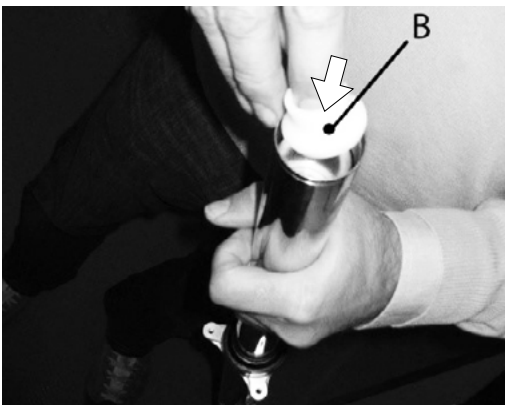
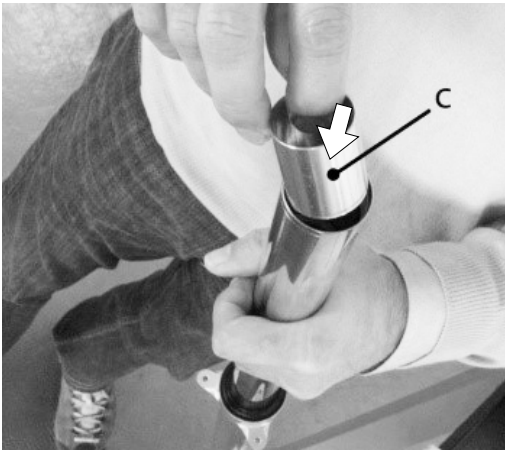


- Pump the tube several times and position it at the end of the stop. Bring the oil up to the proper level (see table below) from the edge to the top of the tube.



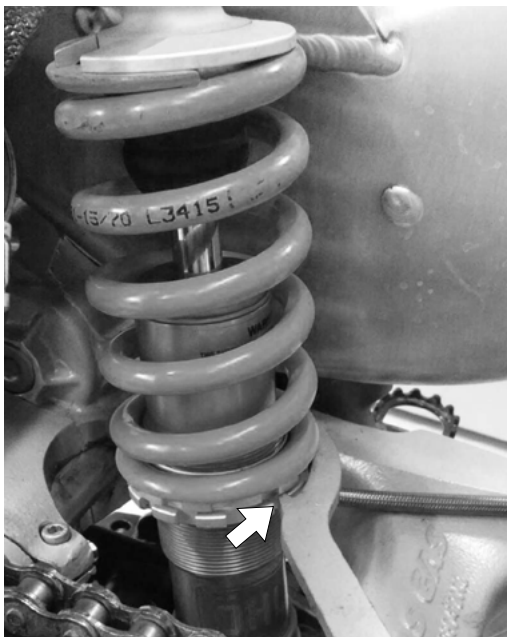
- Following the sequence shown in the photographs below, insert spring (E), washer (D), spacer (C) and finally tapered spacer (B).

Maintenance of the frame



- Completely tighten the tube cover using a 17 mm spanner with a tightening torque of $11.7 \div 13.7$ Nm.

Maintenance of the frame



REAR SHOCK ABSORBER

Settings and configuration

- The preloading of the shock absorber is adjusted by rotating toothed rings (C) with two special spanners.
- Starting from the standard preloading of 7.5 mm for 300-280-250 and 7 mm for 125, tighten or loosen, depending on the weight of the rider, reaching a maximum of 9 mm of preloading. (see spring and preloading table).
- Preloading is the difference in length in mm between a spring when it is tensioned and when it is at rest.

| ÖHLINS SHOCK ABSORBER | | |
|-------------------------------------|-----------------|------------------------|
| Rider weight without equipment (Kg) | K (N/mm) spring | Spring preloading (mm) |
| Up to 70 | 65 | 7 |
| From 70 to 85 | 70 | 7.5 |
| Over 85 | 75 | From 7 to 8.5 |

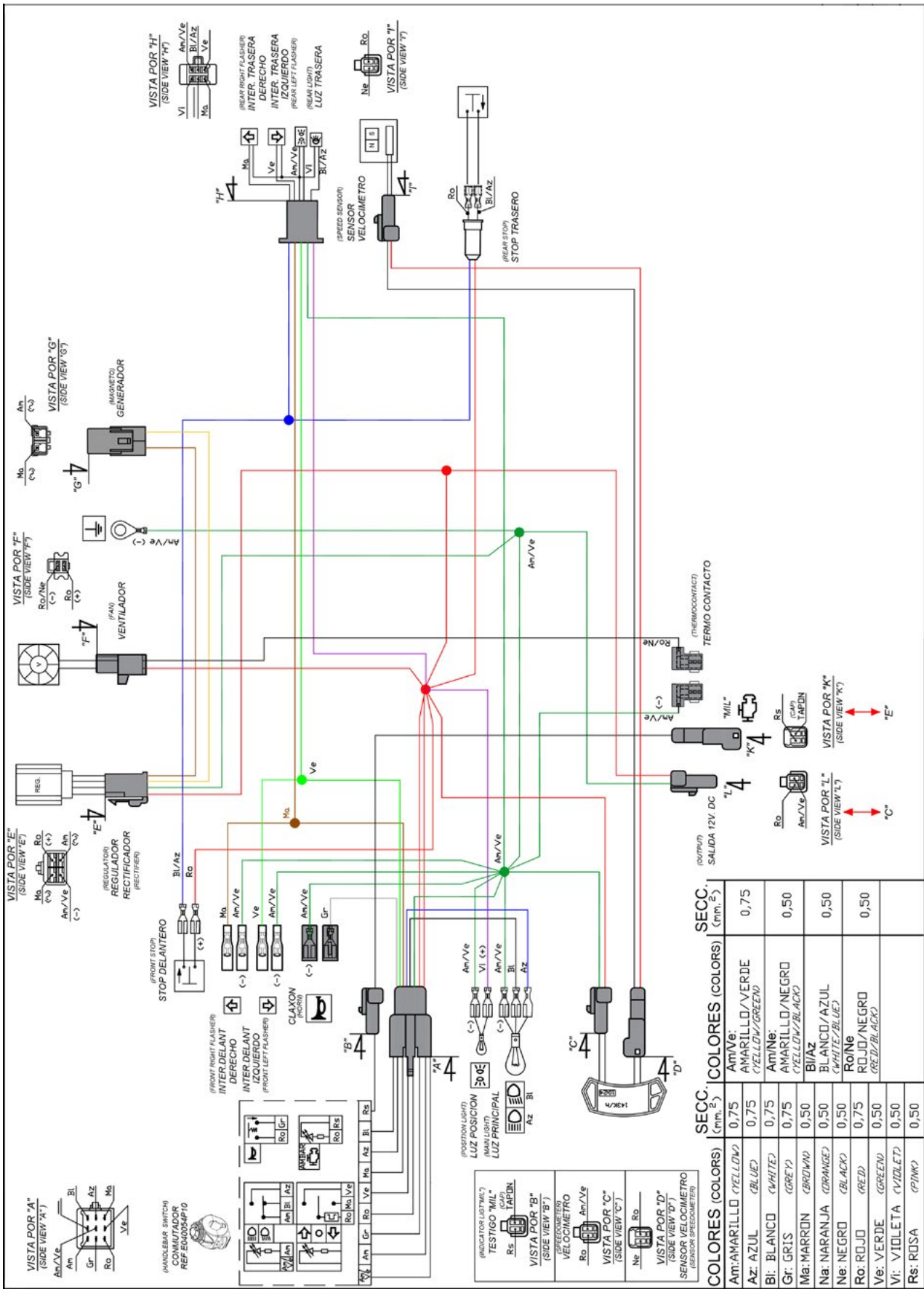


- The rebound or extension is adjusted with the screw. Its standard position is 20 clicks from closed. From this starting position, open clicks if faster extension or rebound is sought and close clicks if slower extension or rebound is desired.

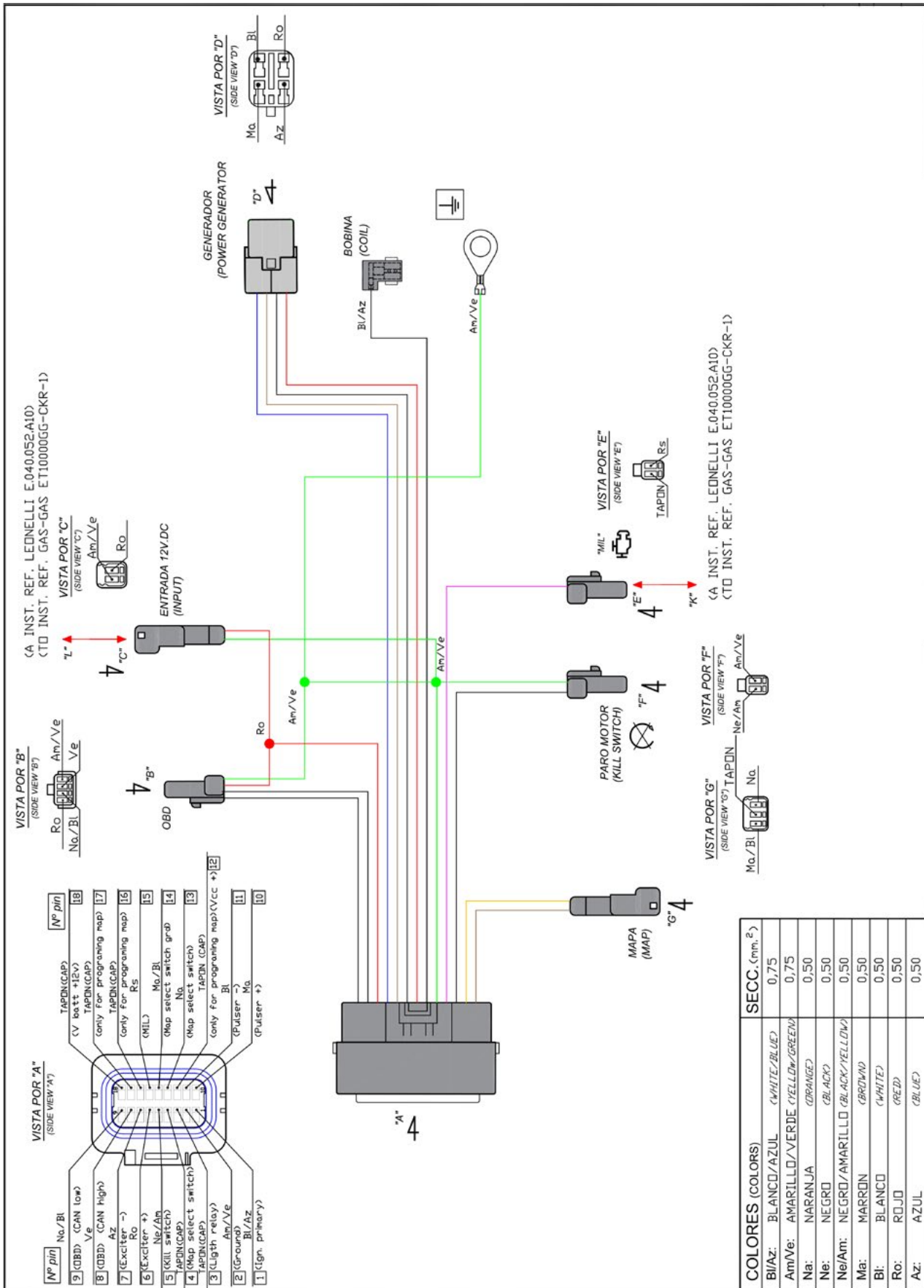


ELECTRICAL DIAGRAMS

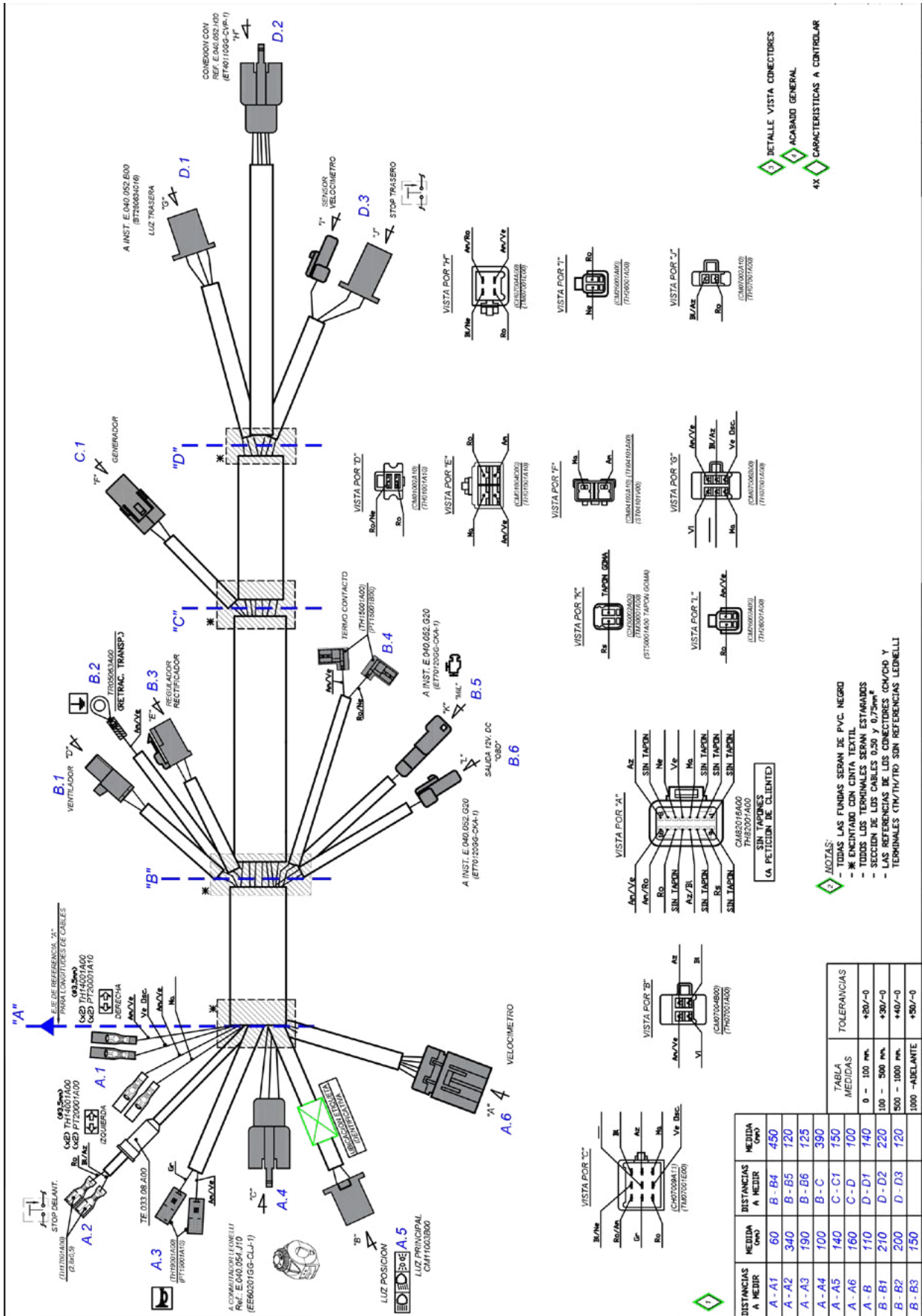
TXT approved electrical system



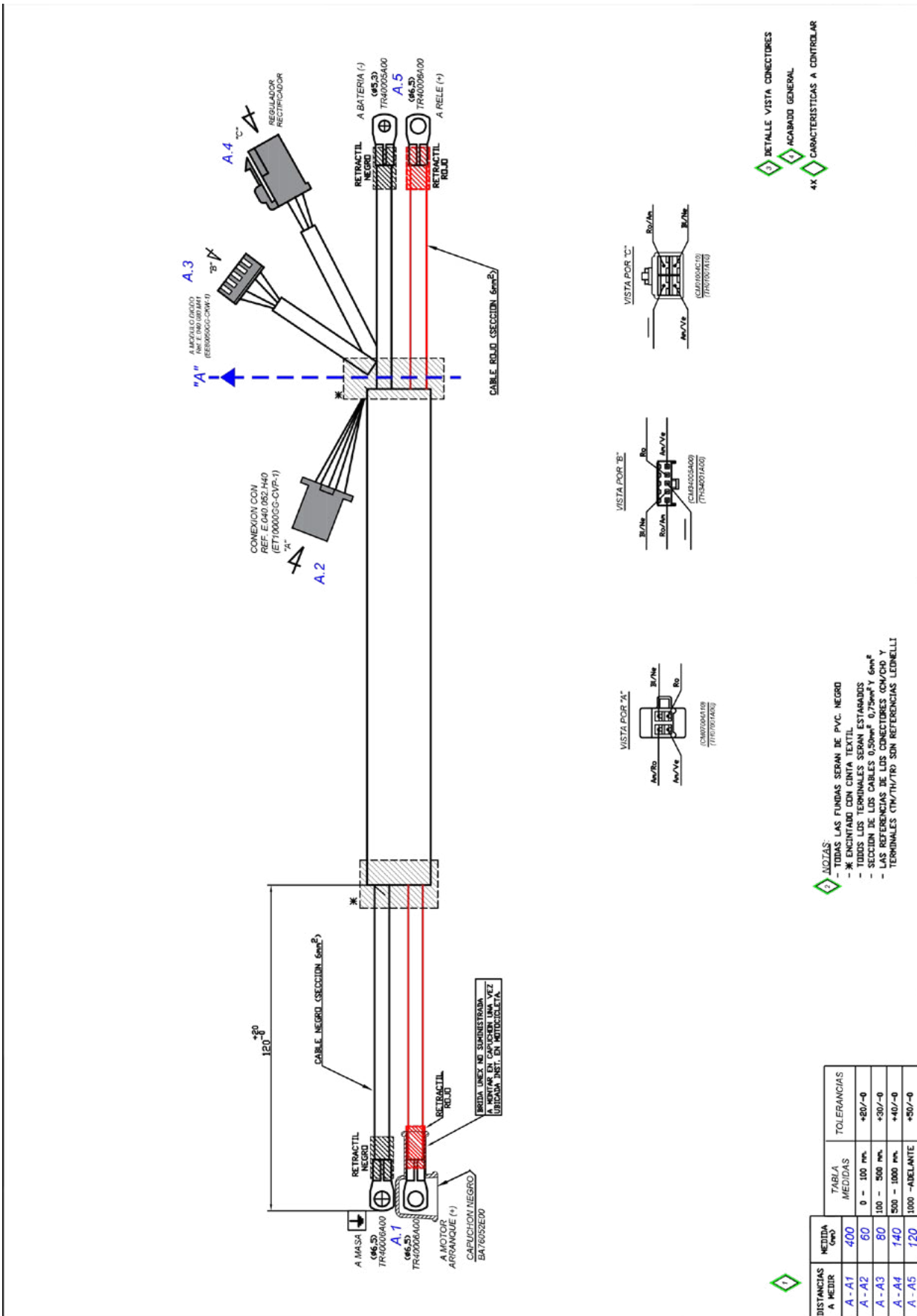
TXT ignition electrical system



CONTACT approved electrical system



CONTACT ignition electrical system



DETALLE VISTA CONECTORES
ACABADO GENERAL
4X
CARACTERISTICAS A CONTROLAR

- NOTAS**
- TODAS LAS FUNDAS SERAN DE PVC NEGRO
 - * ENCINTADO CON CINTA TEXTIL
 - SECCION DE LOS CABLES 0,50mm² Y 0,75mm² Y 6mm²
 - LAS REFERENCIAS DE LOS CONECTORES GM/CHO Y TERMINALES (TW/TH/TR) SON REFERENCIAS LEIDNELL

| DISTANCIAS A MEDIR | MEJORA (mm) | TABLA MEDIDAS | TOLERANCIAS |
|--------------------|-------------|-----------------|-------------|
| A-A1 | 400 | 0 - 100 mm. | +20/-0 |
| A-A2 | 60 | 100 - 500 mm. | +30/-0 |
| A-A3 | 80 | 500 - 1000 mm. | +40/-0 |
| A-A4 | 140 | 1000 - INFINITO | +50/-0 |

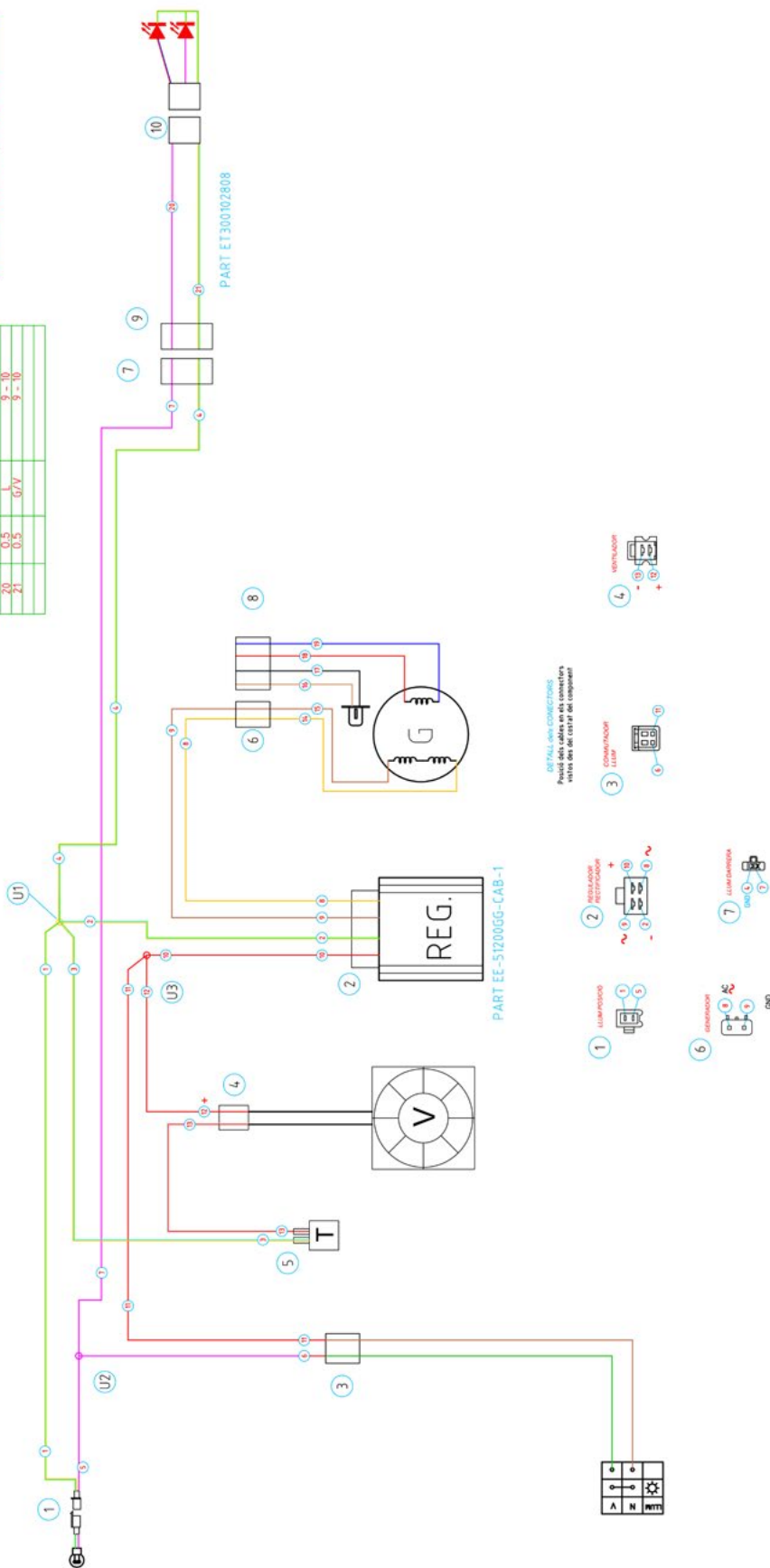
TXT - 80 - School electrical system

TAULA DE COLORS

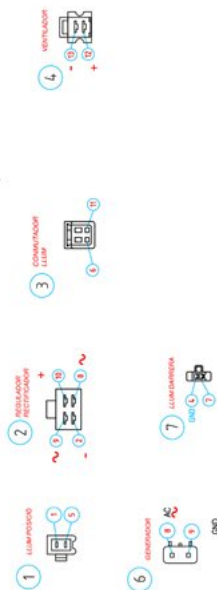
| | | | | |
|----|---|-------------------|---|--------|
| B | - | BLANC | / | WHITE |
| BL | - | BLAU | / | BLUE |
| G | - | GROC | / | YELLOW |
| GR | - | GRIS | / | GREY |
| L | - | LILA | / | LILAC |
| M | - | MARRON | / | BROWN |
| MC | - | MARRON CLAR/LIGHT | / | BROWN |
| N | - | NEGRE | / | BLACK |
| V | - | VERD | / | GREEN |
| VF | - | VERD FOSC/DARK | / | GREEN |
| VR | - | VERMELL | / | RED |
| T | - | TARONJA | / | ORANGE |

TAULA DE FILS

| Nr. | Fl. | Seccio | Color | Conn. |
|-----|-----|--------|-------|------------|
| 1 | | 0,5 | G/V | 1-A UNIO 1 |
| 2 | | 0,75 | G/V | 2-A UNIO 1 |
| 3 | | 0,75 | G/V | 3-A UNIO 1 |
| 4 | | 0,5 | G/V | 7-A UNIO 1 |
| 5 | | 0,5 | L | 1-A UNIO 2 |
| 6 | | 0,5 | L | 3-A UNIO 2 |
| 7 | | 0,5 | L | 7-A UNIO 2 |
| 8 | | 0,5 | G | 2-6 |
| 9 | | 1 | M | 2-6 |
| 10 | | 1 | VR | 2-A UNIO 3 |
| 11 | | 0,5 | VR | 2-A UNIO 3 |
| 12 | | 0,5 | VR | 3-A UNIO 3 |
| 13 | | 0,75 | N/VR | 4-5 |
| 14 | | 1 | G | 6-6 |
| 15 | | 1 | V | 6-6 |
| 16 | | 1 | MC | 9-6 |
| 17 | | 1 | B | 7-6 |
| 18 | | 1 | VR | 7-6 |
| 19 | | 1 | BL | 7-6 |
| 20 | | 0,5 | L | 9-10 |
| 21 | | 0,5 | G/V | 9-10 |



DETALL dels CONNECTORS
 Posició dels cables en els connectors
 segons les dades del cablejat dels components





TXT SERIES