SHERCO

MANUEL D'ATELIER I WORKSHOP MANUAL I MANUAL DE TALLER

ST SERIES

SHERCO

AN EMOTION IS BORN

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FOREWORD

This manual is primarily intended for qualified mechanics working in a properly equipped workshop.
The execution of the various operations requires solid mechanical knowledge and SHERCO tools specific FOR the 125/250/300 ST engines.
This workshop manual complements the user manual for SHERCO 125/250 and 300 ST.

Tools References	Designation
R172	Clutch lock
2080	Water pump bearing tool
2074	Starter shaft seal tool
R232	Water pump tip tool
R465	Barrel bearing tool
2073	Spring block (selection finger)
1821	Engine support
R075	Magnetic flywheel puller
R481	Servant

ENGINE

	125	250	300
Types	Mono-cylinder 2 Stroke liquid cooled		
Displacement	123,70cc	249,70cc	294 CC
Bore / Stroke	54X54 mm	72,8X60 mm	79C60 mm
Fuel	Lead-free with an octane rating of at least 98 mixed with 2-stroke oil (2%)		
Cooling	Liquid with forced circulation		
Ignition	Hidria Digital		
Spark plug	W16EPR-U3021		
Distance between spark plug electrodes	0.7 mm		
Piston	Aluminum foundry with graphic processing		
Engine oil	580 ml ATF type		
Primary transmission	20X76	24X70	24X70
Gear box	5 gears		
1st	13 : 33		
2nd	15 : 35		
3rd	18 : 33		
4th	24 : 26		
5th	31 : 20		
Final transmission	9 X 42	9 X 44	9 X 44
Clutch	Diaphragm system, hydraulic control		
Starter	Retractable gear and kick system		

CYCLE PARTS

Frame	Tubular steel in Chrome-Molybdenum
Front fork	Fork Tech 39mm Aluminum (Factory) / Steel(Racing)
Rear shock	Hydraulic rear shock Reiger 2way (FACTORY) Hydraulic rear shock R16V (RACING) Aluminium swing arm
Forward / reverse stroke	FACTORY 165/175mm RACING 165/175mm
Front brake	Disc Ø 185mm
Rear brake	Disc Ø 145mm
Front tire	2,75-21''
Rear tire	4,00-18''
Tire pressure	0.4/0.3 bar
Fuel capacity	Capacity 2,4L
Wheelbase	1322mm
Weight	68 kg

CARBURETOR

	125	250	300
Carburetor type	KEIHIN 28	KEIHIN 28	KEIHIN 28
Needle position	P5	P2+0.5	P4+0.5
Needle	JJH	JJH	JJH
Main jet	KEA 122	KEA 125	KEA 125
Idle jet	KEP 50	KEP 45	KEP 45
Air screw position	Between 0.5 et 1 turn	Between 0.5 et 1 turn	Between 0.5 et 1 turn

Sea level	Settings	125	250	300
More to 2 000 m	Air screw	**O.5 TO 1**	0.5 TO 1	0.5 T0 1
	Idle jet	**55**	**48**	**48**
	Needle	**JJK**	**JJK**	**JJK**
	Needle position	**4**	**4**	**4**
	Main jet	**118**	**120**	**120**
2 000 m to 1 000 m	Air screw	**0.5 T0 1**	**0.5 T0 1**	**0.5 T0 1**
	Idle jet	**55**	**48**	**48**
	Needle	**JJJ**	**JJJ**	**JJJ**
	Needle position	**4**	**4**	**4**
	Main jet	**120**	**122**	**122**
0m to 1000 m	Air screw	**0.5 T0 1**	**0.5 T0 1**	**0.5 T0 1**
	Idle jet	**50**	**45**	**45**
	Needle	**JJH**	**JJH**	**JJH**
	Needle position	**5**	**4**	**4**
	Main jet	**122**	**125**	**125**

FRONT FORK

Settings– Fork Tech 39mm

Spring preload	Starting from the fully open position, turn 5.5 turns
Extension	Starting from the fully closed position, open 19 clicks
Limit adjustment	Starting from the fully closed position, open 2.5 turns
Hydraulic compression	Starting from the fully closed position, open 1.75 turns
Left arm oil level	130 mm
Right arm oil level	75 mm

REAR SHOCK

Settings Factory – shock REIGER

Spring	65 N/mm	
Preload spring	7.0mm +/- 0.8mm	
Restrictor	1.55 mm	
Rebound	32 clicks open	50 clicks max.

Setting Racing – Shock OLLE

Spring	6.2kg/mm

WARNING

Before any operation, make sure that the motorcycle is properly fixed and that it cannot fall

I FRONT

1.1 Replacement of wheel bearings

- Loosen the locking screw located on the right tube.
- Loosen the axle, using a BTR key and remove it.
- Take out the wheel.

Front wheel axle tightening : **100Nm**

- Use a heat gun to heat the bearing surface on the hub.
- Remove the bearings using a flush valve and then replace them with new ones, reference 0175.

WARNING

Using a caliper, check the size of the internal spacer reference 5930 on the front wheel and replace it if necessary.

Minimum tolerance: 67.5mm

1.2 Front disc replacement

- When replacing the front brake disc, apply when reassembling the Loctite 243 and on the screws and tighten to a torque of **12Nm**
- Proceed in the reverse process and lightly grease the front axle.

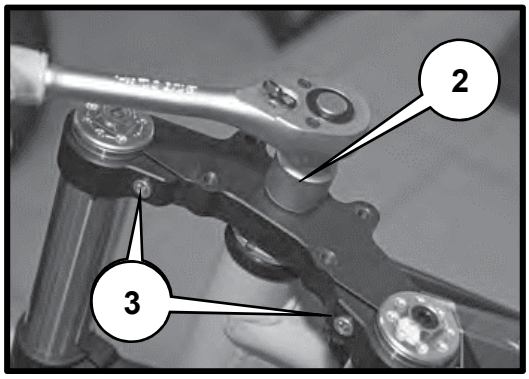
1.3 Disassembly of the fork and replacement of the bearings

- Remove the two M8 screws **[1]** and remove the caliper.

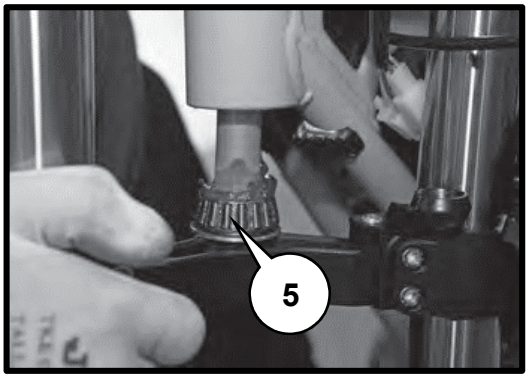
Caliper screws : 24 Nm

- Check the thickness of the brake pads. Tolerated limit**: 1mm**

- Loosen the 4 M8 screws of the handlebar holder then remove the handlebars.
- Loosen the steering column nut [2], the M8 screws [3] of the upper triple clamp then remove it.
- **Triple clamp screw : 24 Nm**



- Loosen the steering column lock nut [4] and its dust cover, then separate the complete Fork of the frame



- Replace the bearings located in the upper part of the frame and on the part lower of the steering column **[5]** by brand new reference C009 taking care of grease them.
- When reassembling, install the steering column lock nut and tighten it so that that the fork turns freely and without hard point. Then place the top triple clamp and tighten the upper steering column nut to **20 Nm**.

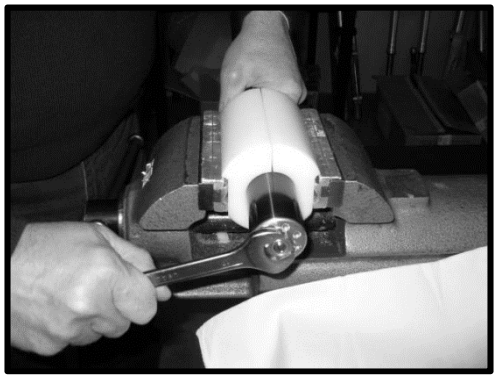
1.4 TECH fork maintenance

WARNING

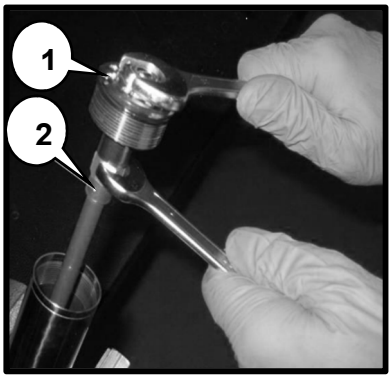
Service the fork every 20 hours or every 6 months

1.4.1 Right side oil change

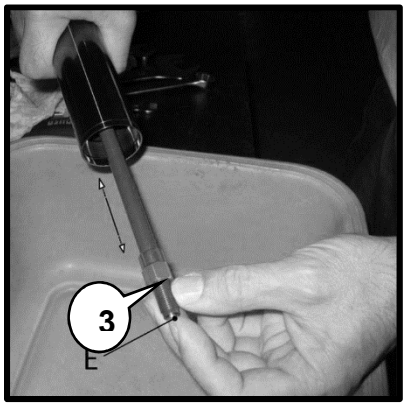
- Place the fork tube in a vice with a suitable support so as not to damage it.
- Using a 17mm wrench, loosen the plug.



- Remove the plug **[1]** from the fork tube so that you have access to the nut **[2]**
- . Hold the plug [1] and loosen the nut [2] using a 14mm wrench
- . Remove the plug from the diving tube.



- Hold the rod inside the axle [3] then empty the oil in a container by moving back and forth as shown in the photo.



- Place the suspension arm vertically and pour 250cc of new oil inside.

WARNING

Use oil type SAE 5.

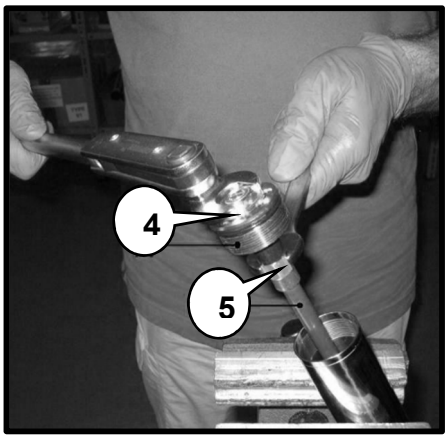
- Perform an up and down movement as shown in the photo so the hydraulic system has primed. Stop when you feel slight resistance.

- Compress the tube and the rod to the maximum stop.

Measure the oil level from the top of the tube, top up until you reach the desired value.

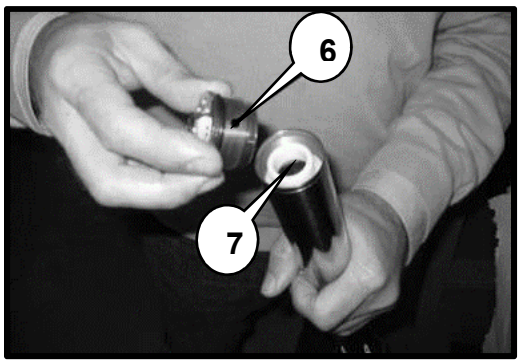
Oil level : 75mm

- Unscrew the diving rod nut as much as possible and install the plug.
- Tighten the plug [4] with the nut [5] to a torque of **12Nm**
- Tighten the plug on the tube to a torque of **12Nm**



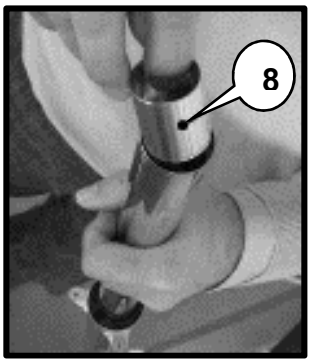
1.4.2 Oil change on the left side

- Unscrew the cap [6] using a 17mm wrench.
- Remove the tapered spacer **[7]**.



- Remove the spacer **[8]** and the washer between it and the spring

.



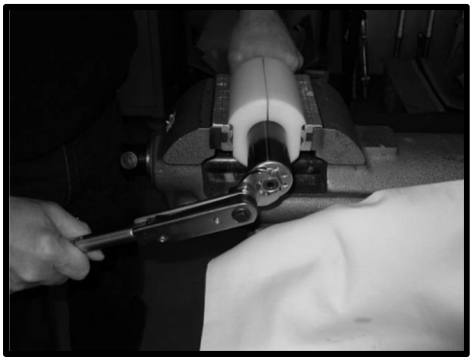
- Take the spring **[9]** out of the fork tube, taking care to dry it with a cloth.
- Drain the oil from the fork tube.

- Fill the arm with 250cc of new oil.
- Pump the tube several times then place it in the maximum compression position.
- Measure the volume from the top of the tube and top up with oil until you reach the desired level.

Oil level : 130mm

- Reassemble in order, the spring, the washer, the spacer, the conical spacer then the top cap

- Place the fork in a vice using a protection for the tube and tighten the plug to **12N m.**



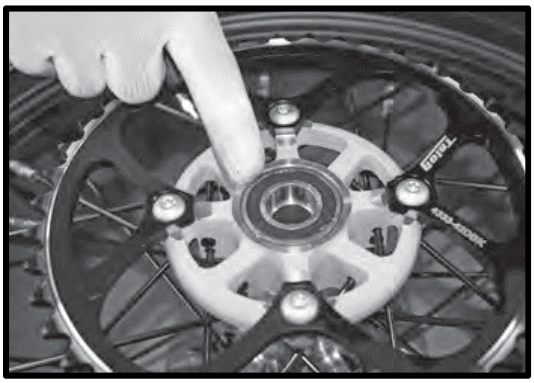
❱I REAR

2.1 Replacement of wheel bearings

- Hold the wheel axle on the left side and loosen the nut on the right side
- Remove the axle from the left.
- Take out the wheel and remove the spacers.

Rear wheel tightening : 100 Nm

- Heat the hub at the bearing seat using a heat gun.
- Extract the bearings using a ø 20 flush.
- Replace the bearings with new ones, reference 0175.



WARNING

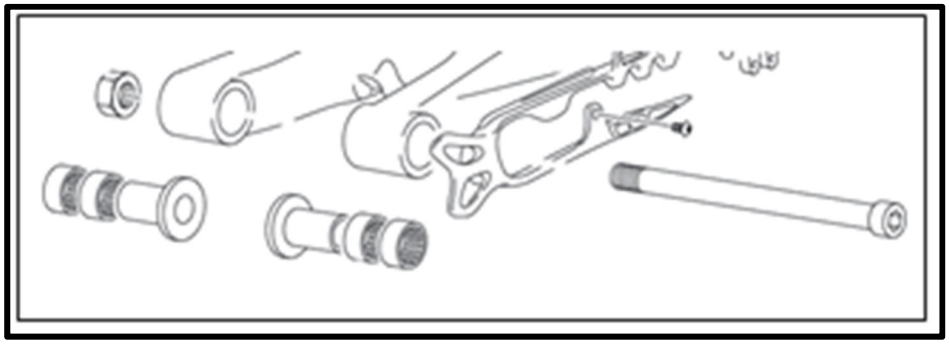
Using a caliper, check the size of the internal spacer reference 5931 on the rear wheel and replace it if necessary.

Minimum tolerance: 118.5mm

2.2 Disc replacement

- When replacing the rear brake disc, apply when reassembling the Loctite 243 and on the screws and tighten to a torque of **12 Nm**..
- Reassemble the assembly following the reverse process and lightly greasing the rear wheel axle.

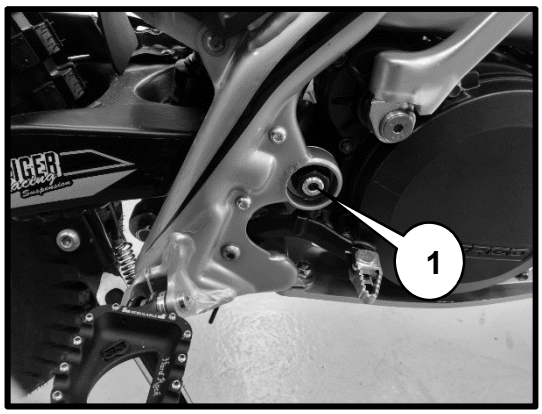
2.3 Swingarm bearings control



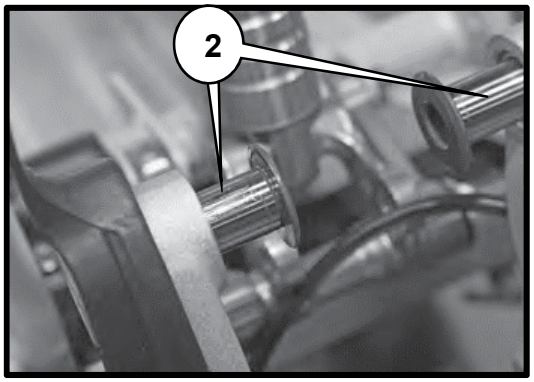
- Loosen the nut on the lower part of the swingarm and remove the link pin.
- Loosen the swingarm **[1]** axle and take it out.

Tightening axle link : 40 Nm

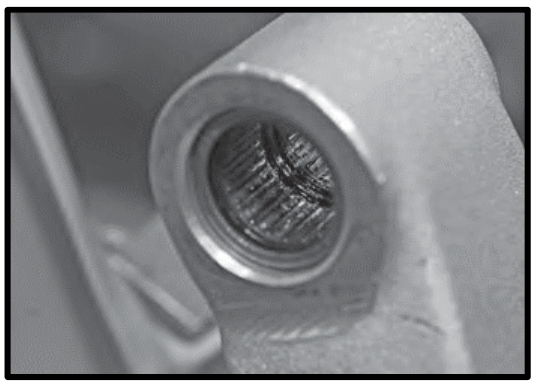
Swingarm tightening: 50 Nm



- Take out the swingarm and remove the two internal spacers **[2]**.

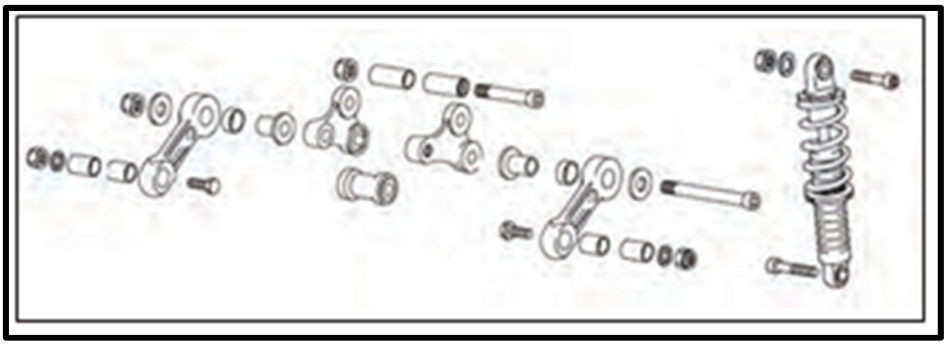


- Check the needle cages on each side of the arm. In case of corrosion, replace them with new references C151, otherwise grease them before reassembly



- Reassemble the assembly following the reverse process and lightly greasing the swingarm and connecting rod pins.

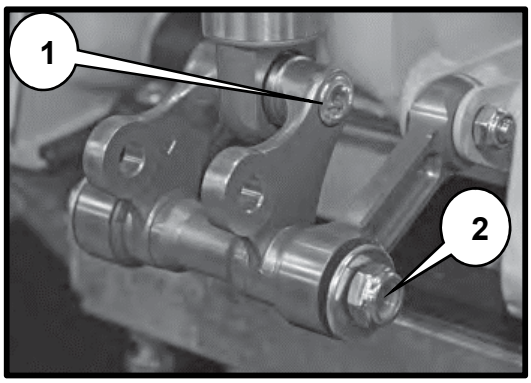
2.4 Control of suspension links



- Loosen, respectively, the lower suspension axle **[1]** and the link axle nut **[2].**
- Remove the two axes and take out the delta links.
- Check the needle cages, in the event of corrosion or signs of wear, replace them with new ones. Grease during reassembly.

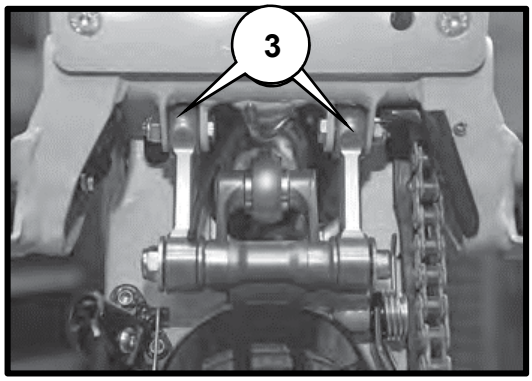
Shock absorber axle tightening : 40 Nm

Tightening Axle link : 40 Nm

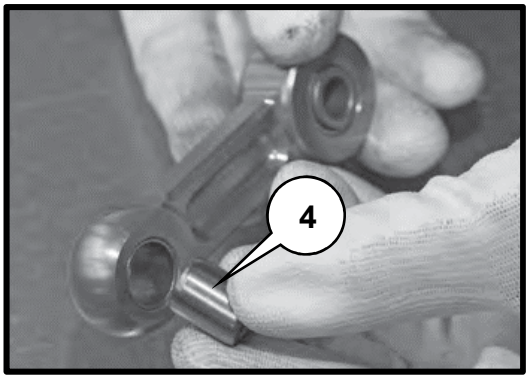


- Remove the two axes of rear link **[3].**

Link axles : 40 Nm



- Remove the spacers from the links and check the friction rings [4]. If there is any wear, replace them with new ones.
- Reassemble the assembly by following the reverse process and taking care to grease all the axes and bearings.



	Operation requiring engine removal	Operation not requiring engine removal
Crankshaft (including connecting rod kit)	•	
Complete gearbox	•	
Crankshaft bearing	•	
Gearbox bearing	•	
Piston		•
Cylinder		•
Head cylinder		•
Ignition		•
Kick starter		•
clutch		•
Water pump		•
Gearbox selection		•

ENGINE REMOVAL

WARNING

To remove the engine, you must remove the pivot axle of the swing arm, which allows you to detach the rear wheel / swing arm assembly. To prevent the motorcycle from overturning, make sure that it is held by the chassis.

- Drain the coolant (see user manual)Déposer la boite à air.
- Remove the air box and the tank.
- Disconnect the entire electrical harness connected to the engine (alternator, spark plug cap, CDI)
- Remove the exhaust.
- Remove the coil.
- Remove the carburetor.
- Remove the secondary transmission chain (quick coupler).
- Remove the slave cylinder
- Remove the water hoses connected to the engine.
- Loosen all the engine screws.
- Remove the swingarm.
- Remove the cylinder head mounting bracket.
- Remove the motor axles.

WARNING

When the clutch receiver is removed, the piston is no longer held. Hold the piston down with a plastic collar.

- Take out the engine.

REASSEMBLY OF THE ENGINE IN THE FRAME

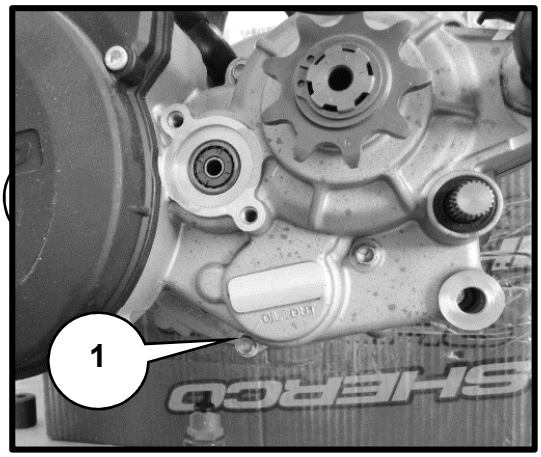
For reassembly proceed in the reverse direction to disassembly respecting the tightening torques of the screws and nuts

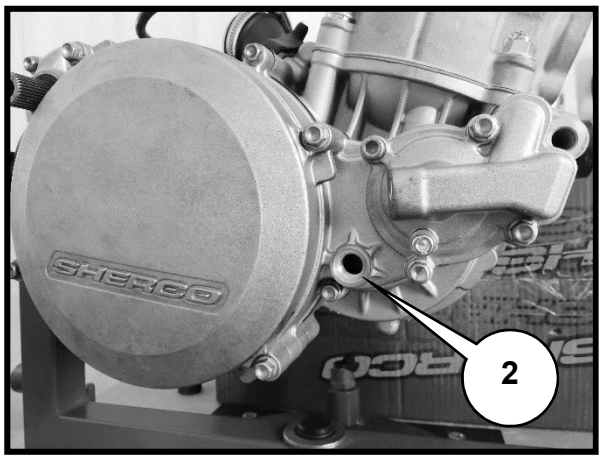
Tightening torque:

Engine axles : 40Nm
Swingarm nut : 50 Nm
Slave cylinder screws: 10 Nm
Head cylinder holder screws : 23Nm
Exhaust screws: 10Nm

❱| Oil drain

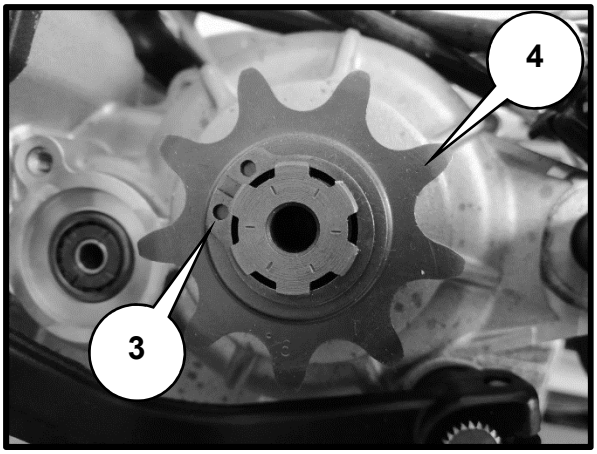
- Remove the drain screw [1] and the plug [2], allow the oil to drain by tilting the motorcycle.

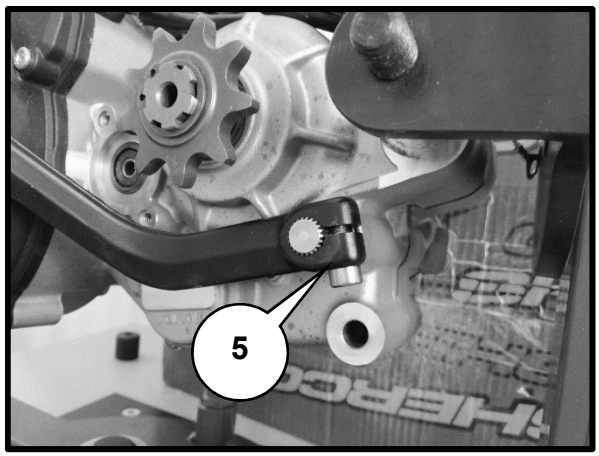




❱| Removal of front sprocket and selector

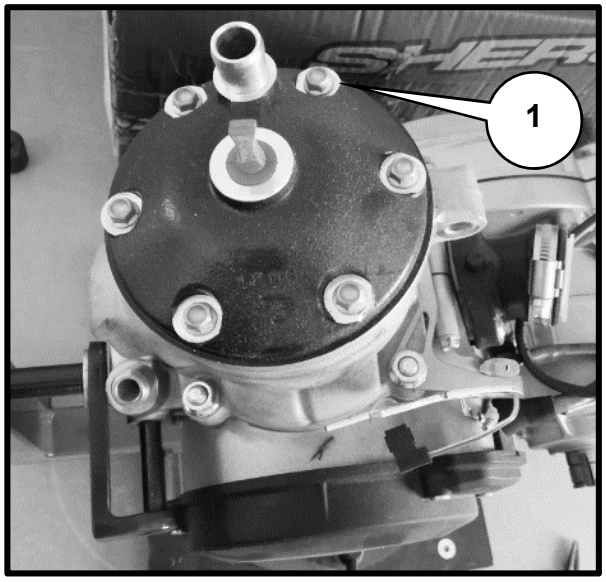
- Remove the pin [3]
- Remove the front sprocket **[4].**
- Remove the screw **[5]** and take out the selector.
- Remove the clutch push rod.



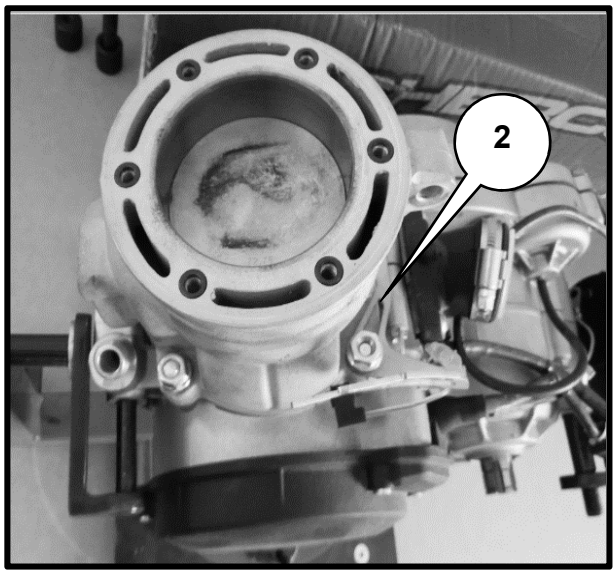


❱| Removing the cylinder head, cylinder and piston

- Remove the M6 screws **[1]** and remove the cylinder head and the O-rings.



- Remove the 4 cylinder nuts **[2].**
- Remove the cylinder.
- Hide the housing.



- Remove the piston pin clips.
- Remove the piston pin.
- Remove the piston and take out the needle bearing from the big end.
- Remove the base gasket.

❱| Removing the clutch cover

- Remove the screws and the water pump cover. Remove the seal.

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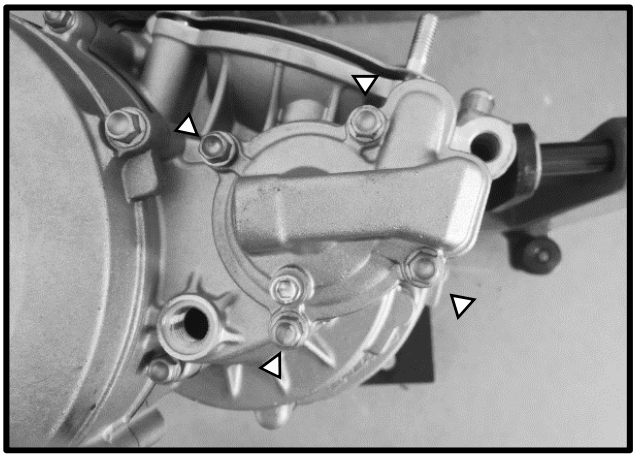
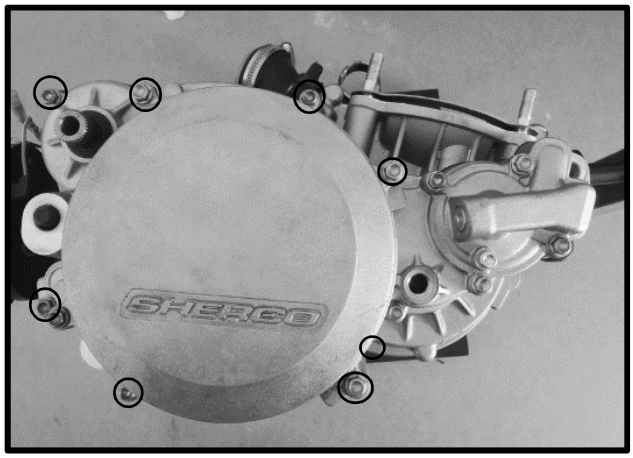
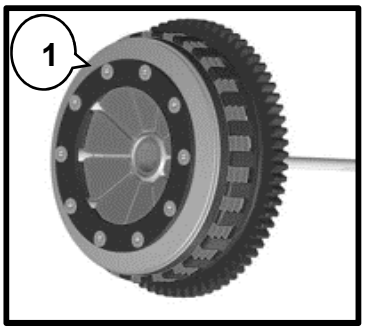


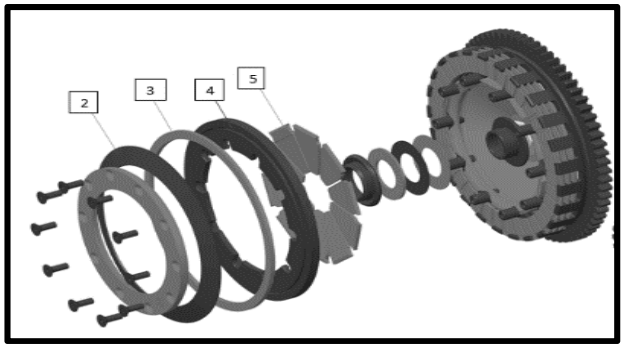
- Remove the screws and remove the clutch cover.
- Remove the gasket.



❱| Clutch and primary gear removal



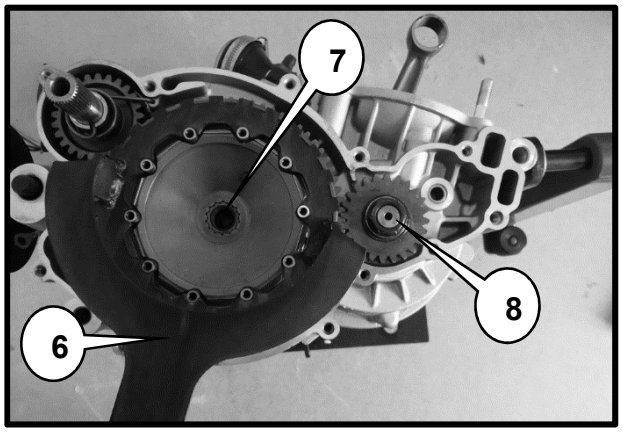
- Loosen the Torx screws **[1]** of the cup and remove it
- Successively remove the spring washer **[2],** the preloading washer **[3],** the pressure plate **[4],** and the levers **[5].**



- Take the discs out of the boss clutch and place the tool R172 **[6]** then remove the clutch nut **[7]** and the primary gear nut **[8].**

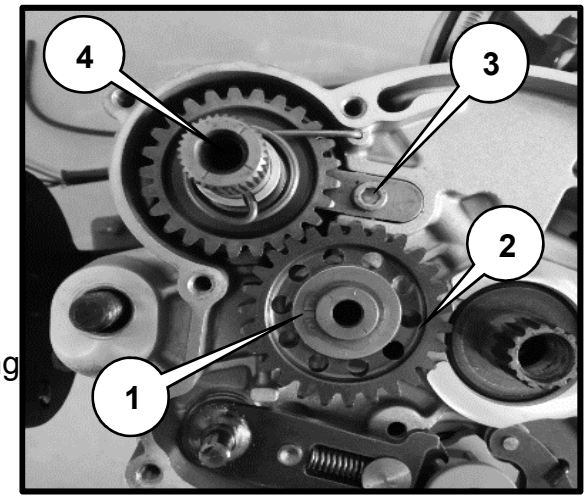
WARNING

At the same time, loosen the flywheel nut while you lock the engine using tool R172.



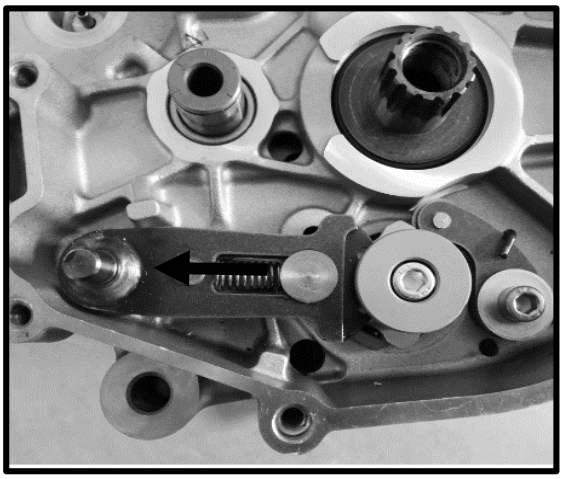
❱| Kick axle removal

- Remove the clip **[1]** then remove the idler gear **[2]**
- Remove the M6 screw **[3]** and the retaining plate
- Take out the kick axle **[4]** paying attention to the spring

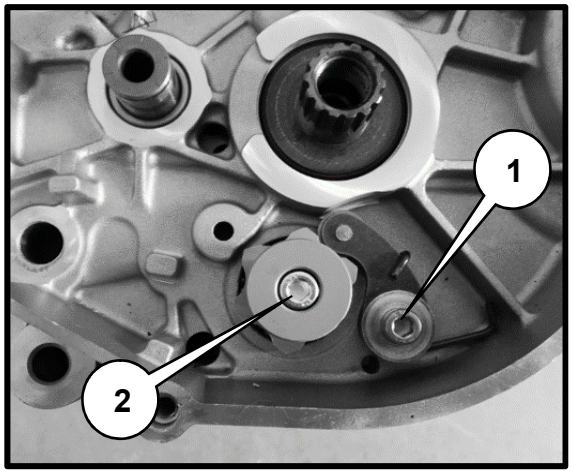


❱| Disassembly selection

- Push the scorpion of the selection axle to the left and remove the axle from its housing



- Loosen the M6 screw **[1]** then take out the selection finger.
- Loosen the M6 screw [2] then remove the selection star.

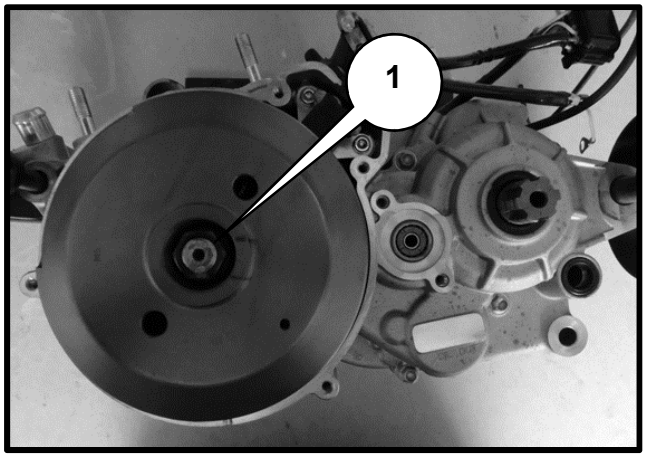


WARNING

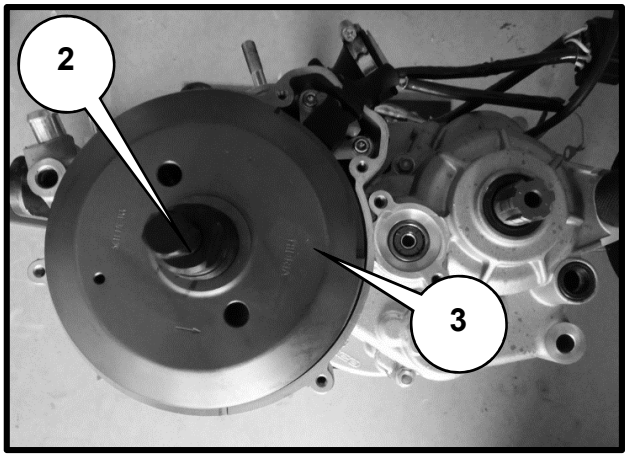
Be careful not to lose the needle on the back of the selection star

❱| Ignition Removal

- Remove the previously loosened nut **[1].**



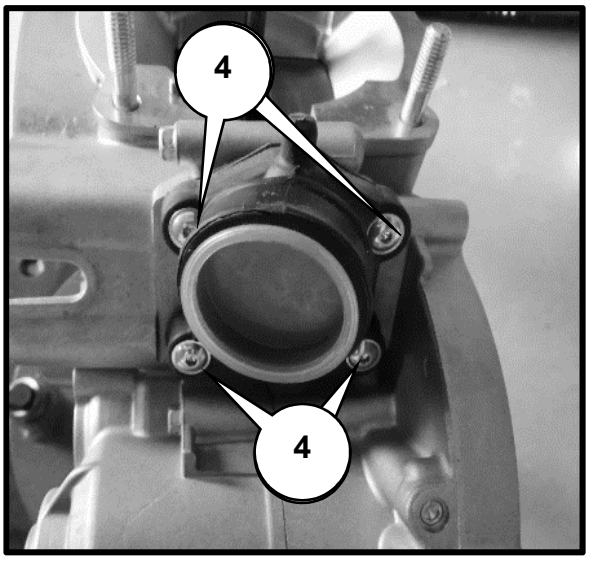
- Fit the extractor **[2]** reference R075 and tear off the magnetic flywheel **[3].**



❱| Intake pipe and reed box

- Remove the 4 screws M5 **[4]**

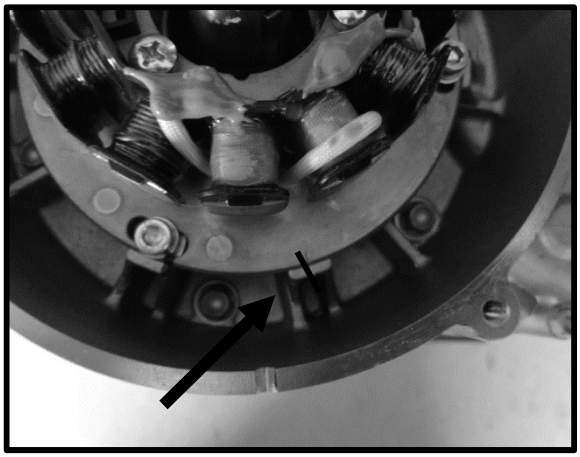
- Remove the intake pipe, reed box and gaskets.



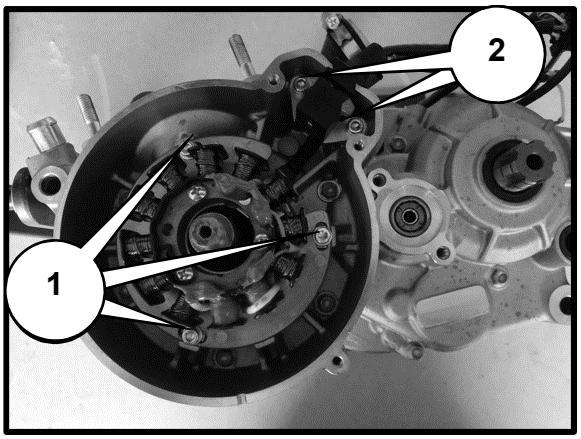
❱I Removing the stator

- Before removing the stator, mark it in line with the mark on the crankcase

.

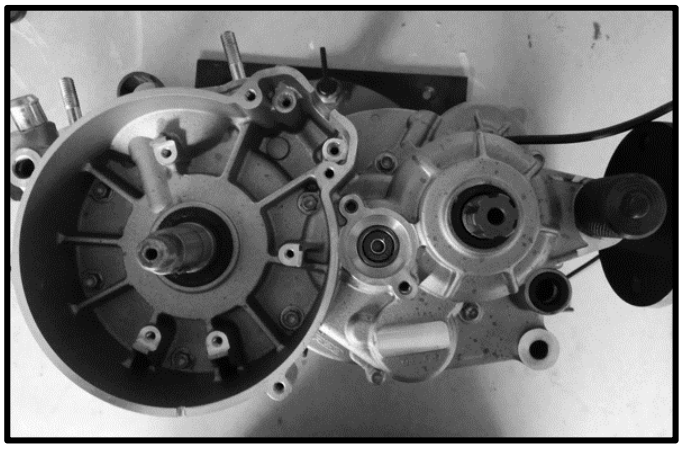


- Remove the three M6 screws **[1]** for fixing the stator then the two M5 screws **[2]** for fixing the pick-up sensor and take out the assembly.



❱I Separate the crankcase

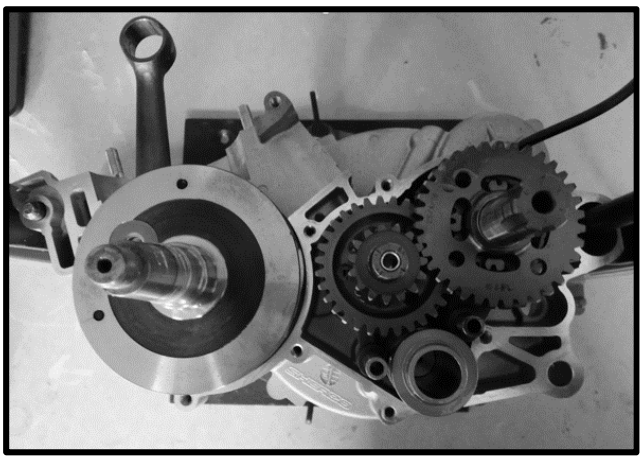
- Tilt the engine so that the ignition side is facing you.
- Remove the 10 fixing screws.
- Raise the left crankcase with small plastic hammer on the gearbox output shaft to separate from the other half.



- Remove the crankcase and the central gasket.

WARNING

Avoid as much as possible the insertion of a screwdriver or any other tool between the crankcases to separate it. You risk damaging the joint planes.

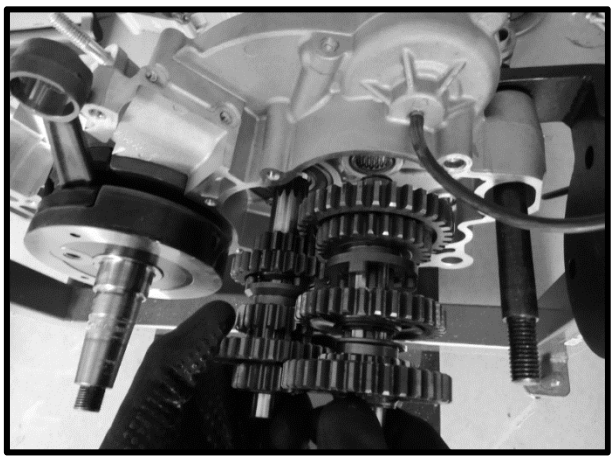


WARNING

Pay attention to the shims of the gearbox shafts. They can remain stuck inside the casings.

❱| Removal of the gearbox

- Take out the two fork axles and push the forks sideways to free them from the barrel.
- Take out the left fork and the central fork.
- Remove all of their bearings, the primary, secondary shaft, barrel and right fork simultaneously.



WARNING

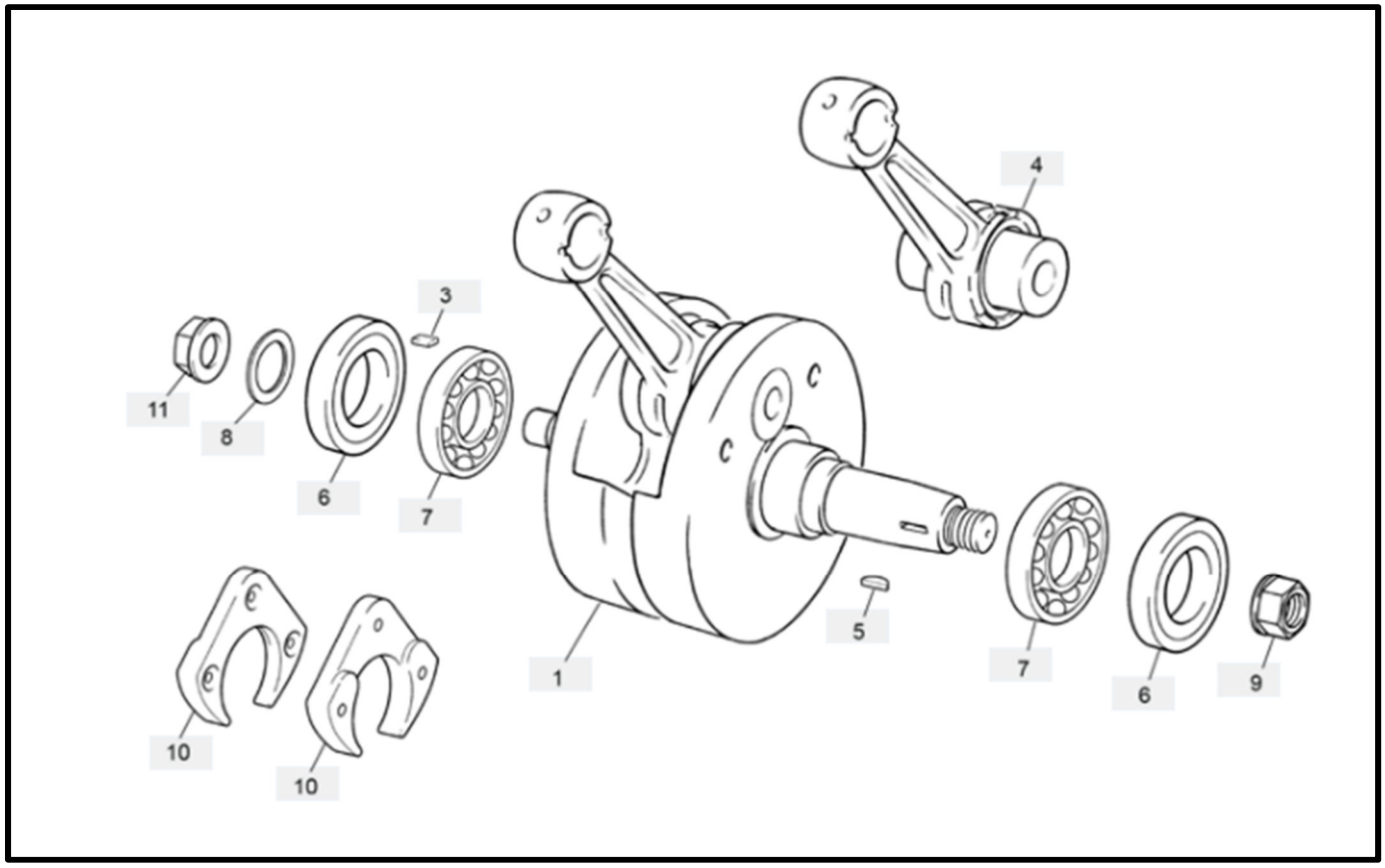
When removing, take care to identify the location of the washers at the end of the shaft.

❱| Removing the connecting rod assembly

- Remove the crankshaft from its bearing (possibly by tapping lightly with a plastic mallet at the end of the crankshaft).
- Clean all the parts and check if they are worn, replace them if necessary.

WARNING

When the engine is completely dismantled, it is preferable to replace all gaskets, oil seals, O-rings as well as the bearings.



❱| Balancing weight, external dimension control

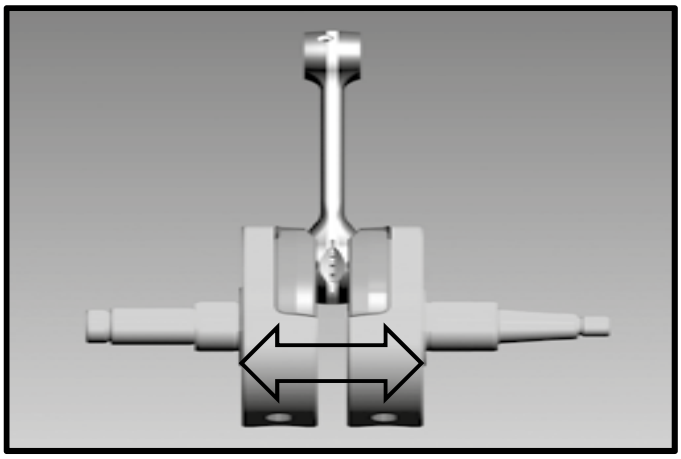
- With a caliper, measure the outside distance of the balancing weights

.

External value :

125cc → 54.85mm +0 / -0.2

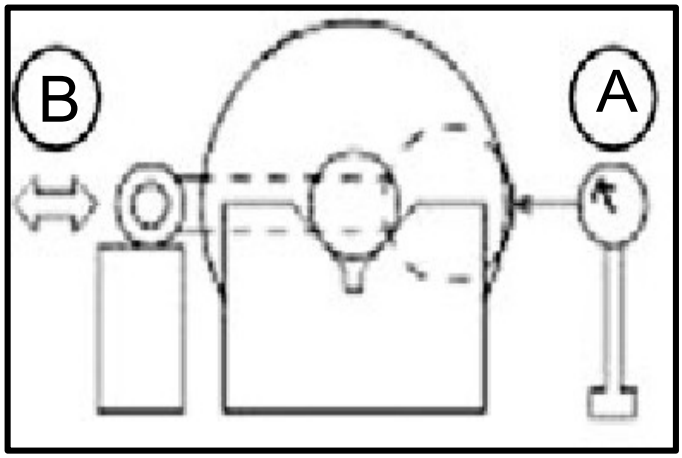
250/300cc → 60.00mm +0 / -0.2



❱| Connecting rod radial clearance

- Place the crankshaft on V and place a dial gauge [A] against the big end.
- Push [B] the big end towards the gauge, then in the opposite direction.
- The difference between these two measurements corresponds to the radial clearance.

Connecting rod radial clearance:
Standard : 0.015 mm – 0.025 mm
Limit : 0.06 mm
If the radial clearance is greater than the tolerated limit, the crankshaft must be replaced



❱| Connecting rod end side clearance

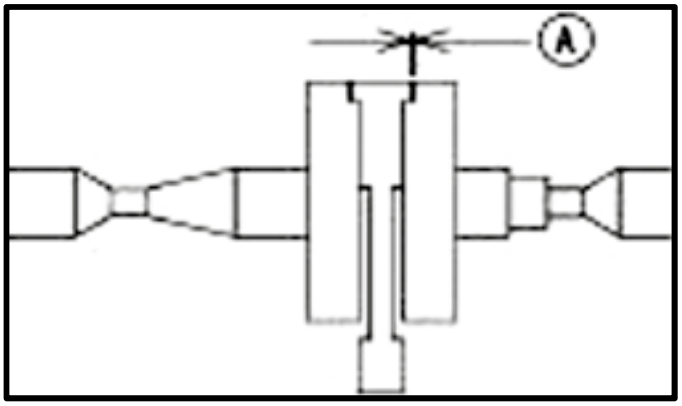
- Measure the side play of the big end **[A]**

Connecting rod end side clearance :

Standard : 0.4 mm – 0.6 mm

Limit : 0.8 mm

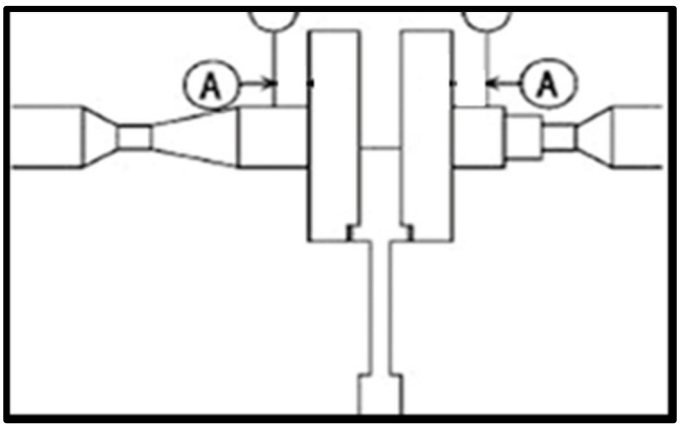
If the play is above the tolerated limit, replace the crankshaft



❱| Crankshaft runout control

- Place the crankshaft on an alignment device or V-shaped shims, and place a comparator as shown in the image in position [A].
- Then slowly turn the crankshaft. The maximum difference between the measurements corresponds to the offset of the crankshaft.

Crankshaft Offset:
Standard: 0.03 mm **Limit: 0.05 mm**

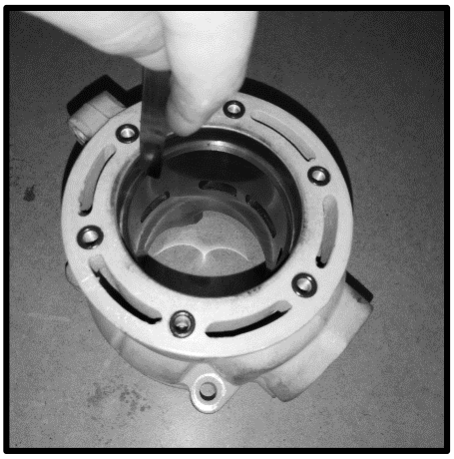


❱| Piston

- When reassembling a worn piston, check the following points:
- Look for any traces (tightening). Light traces can be removed.
- Ring emplacement: The rings must not get stuck in their emplacement. To clean it, you can use an old segment or sand paper (400)
- The segment retainers must be securely fastened and must not be worn.
- Rings: Check the condition and end gap.

❱| End gap control

- Thread the segment into the cylinder and place it with the piston (approximately 10 mm from the upper edge of the cylinder).
- With a shim we measure the clearance.



End gap:

Standard 0.35-0.45mm ,

Limit 0.65mm.

WARNING

If the clearance is greater than indicated, the condition of the cylinder and the piston must be checked. If these remain within the tolerance limits, replace only the rings.

❱| Piston pin control

Piston pin diameter for 125cc:

Standard : 14,998 mm

Limit: 14,995 mm

Piston pin diameter for 250/300cc :

Standard : 17,998 mm

Limit : 17,995mm

Piston pin hole diameter for 125cc :

Standard : 15,003mm

Limit : 15,007mm

Piston pin hole diameter for 250/300cc :

Standard : 18.002 mm

Limit : 18.006 mm

❱| Checking the cylinder / piston wear condition

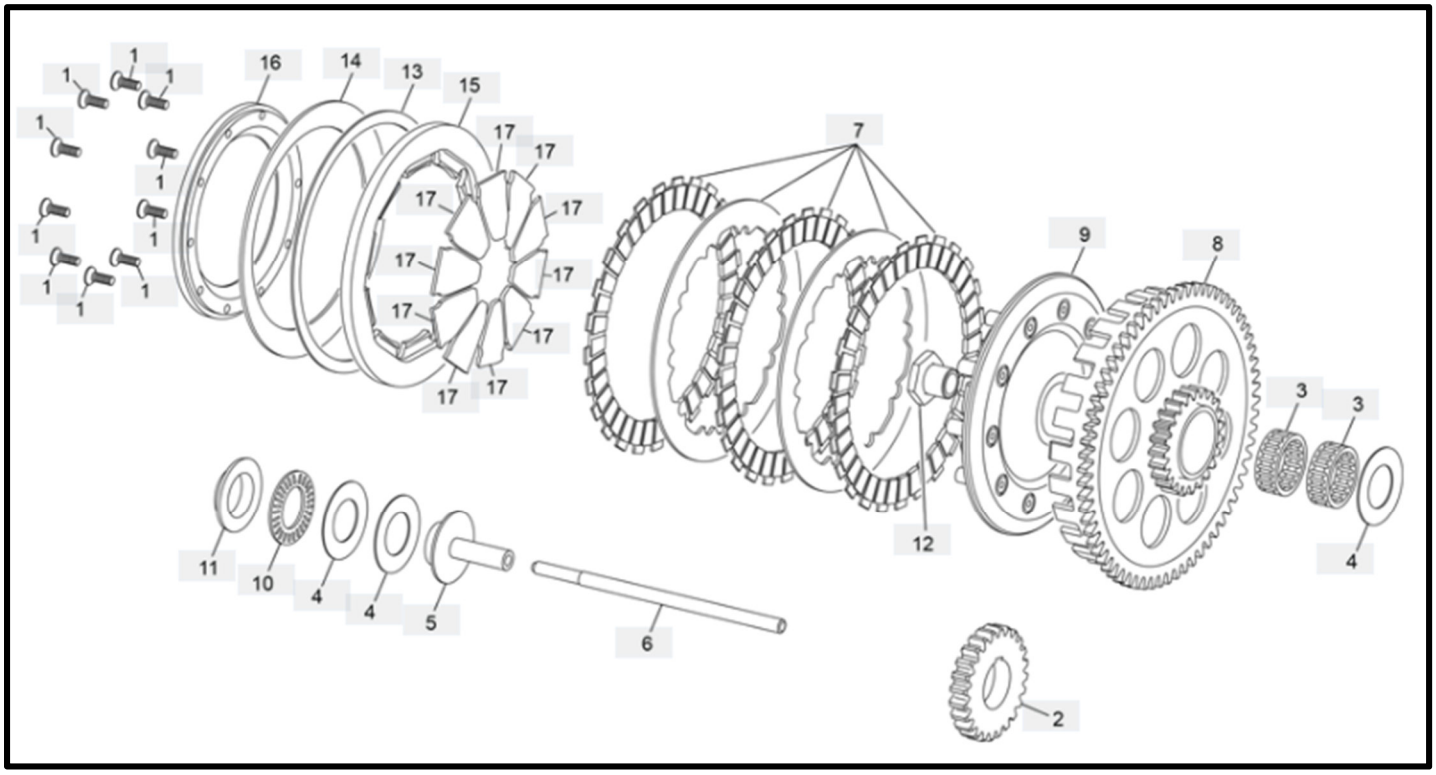
- To detect wear on the cylinder, measure the bore with a bore gauge approximately 10 mm from the upper edge of the cylinder. Take a reading in both directions to identify a possible ovality.

	125cc		250cc		300cc	
	A	B	A	B	A	B
Ø Piston	53,96	53,97	72,75	72,76	78,95	78,96
Ø Cylinder	53,975	53,985	72,79	72,802	79	79,012
Free play	0,015	0,015	0,04	0,042	0,05	0,052

❱| Reed box, inlet pipe

- Over time the carbon reeds gradually lose their elasticity, which causes a loss of power.
- Replace the worn or damaged reed.
- Check the condition of the intake pipe, especially if it is not cracked.

Clutch

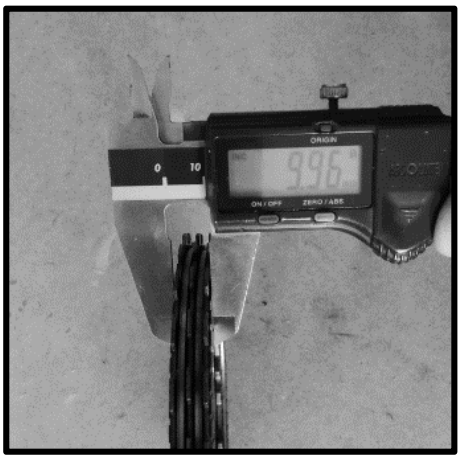


- Stopper **[5]** check for wear.
- Shaft **[6]** check for wear, size limit : **136,3 mm.**
- Levers **[17]** check for wear or abnormal marks.
- Clutch holder **[8]** Check that there are no signs of wear on the trimmed disc guides.
- Clutch hub **[9]** Check the wear of the smooth disc seats

Disc control

- On diaphragm clutches, the thickness of the discs is checked on the complete assembly and not individually.

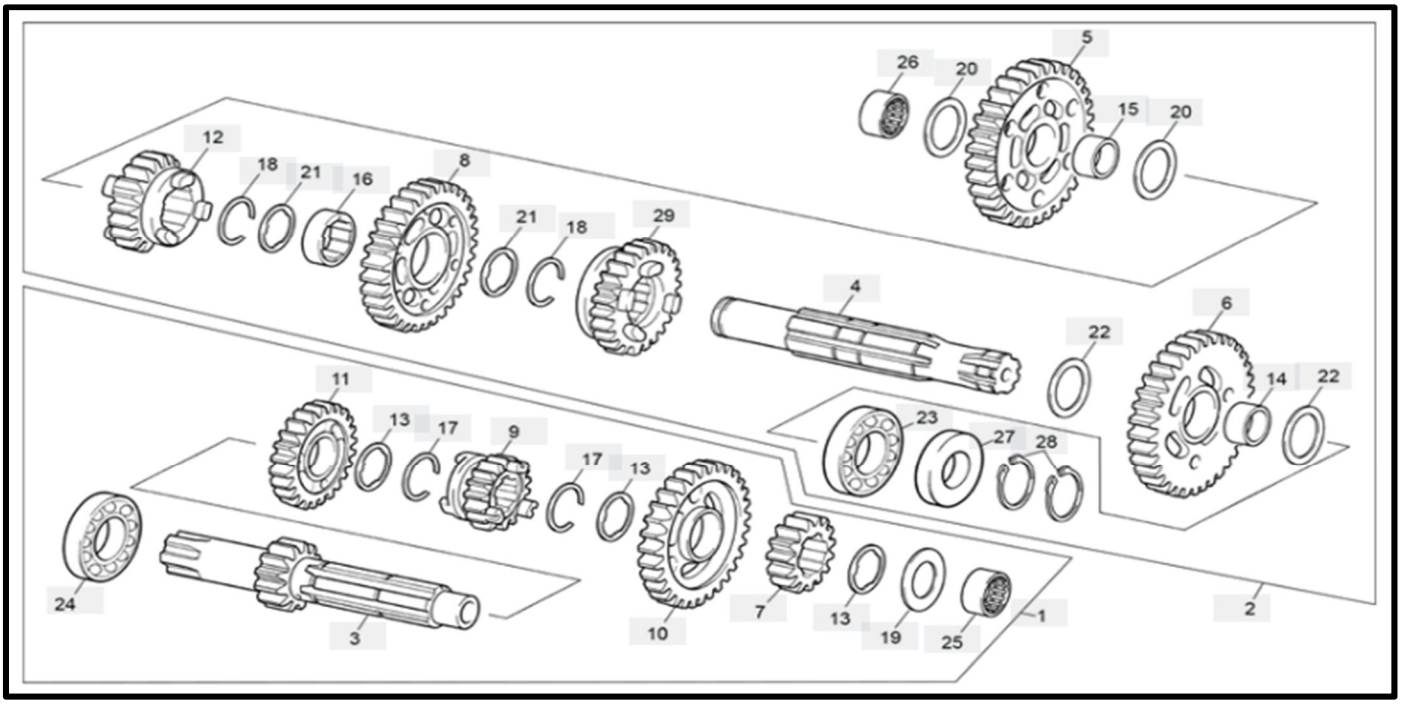
Minimum thickness : **9,92 mm**



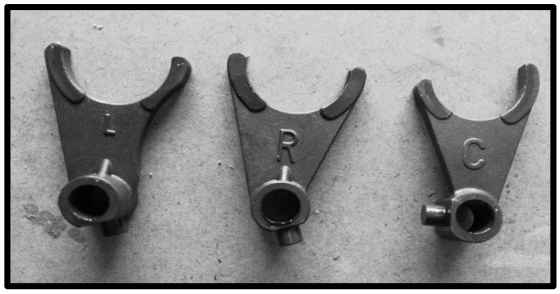
WARNING

When disassembling the discs, hold them with a plastic collar so as to maintain their position and order of assembly. Worn discs which are not reassembled strictly in the same way can cause vibrations in the clutch.

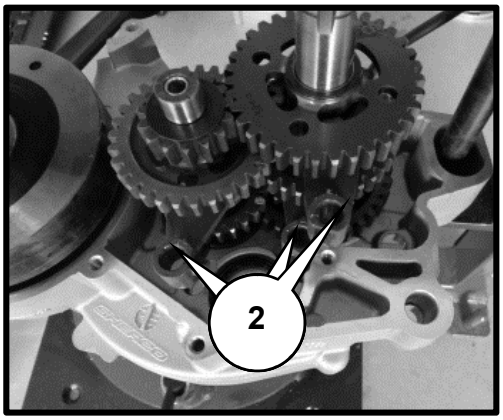
Gearbox



- The assembly order of the forks is marked on each of them :
  L → Left
  C → Center
  R → Right



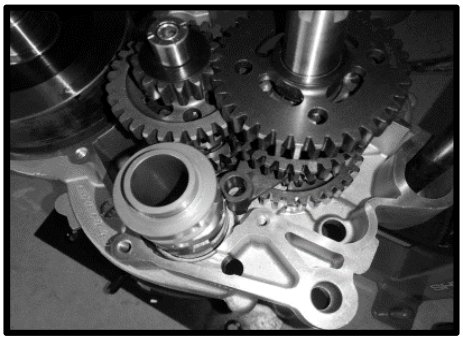
- Insert the forks **[2]** on the gears and mount the gearbox / fork assembly in the crankcase.



WARNING

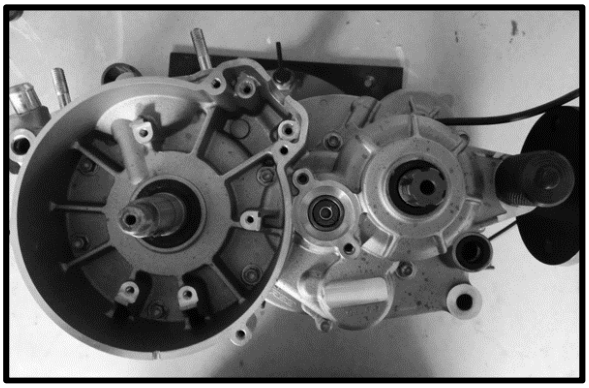
Make sure that the shafts shims are in place.

- Slightly pull out the secondary shaft and hold the 4th gear up so that the fork is in place in the barrel track. Then insert the assembly into the crankcase bearings.



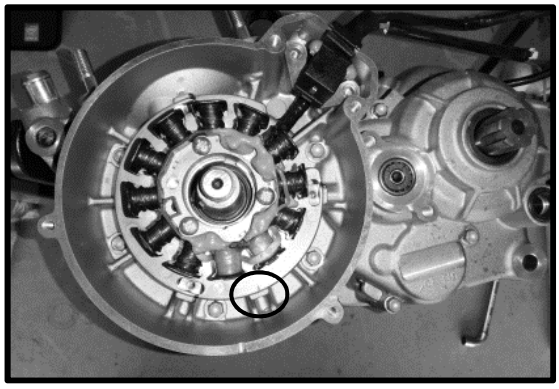
❱| Crankcases assembly

- Make sure that the centering rings are in place on the right crankcase and that the washers of the gearbox shafts are also in place.
- Grease the oil seals of the left crankcase and put it in place.
- Put the screws and tighten to **10 Nm**.
- Then tap lightly with a plastic mallet on the crankshaft and check that the shafts turn without any hard point.

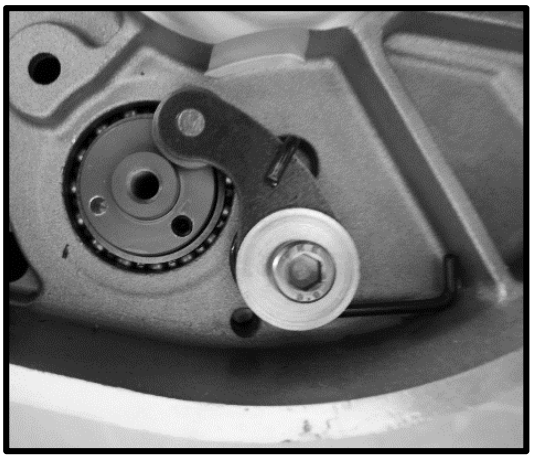


❱| Ignition assembly

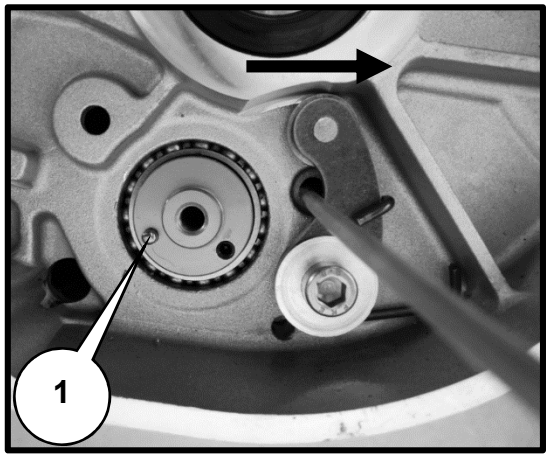
- Mount the stator on the crankcase and make sure that the marks are aligned. Tighten the 3 M6 screws to **10 Nm.**
- Position the hall sensor and tighten the two screws to **8 Nm**.



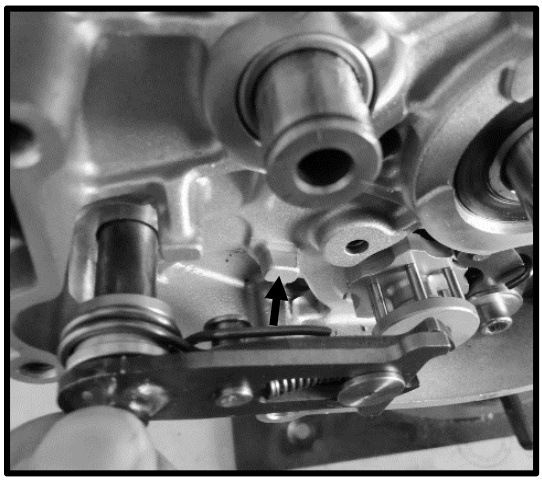
Selection mechanism



- Place the spring, the locking finger and the spacer as in the photo.
- Coat the M6 screw with blue thread lock then tighten it to **10Nm**.

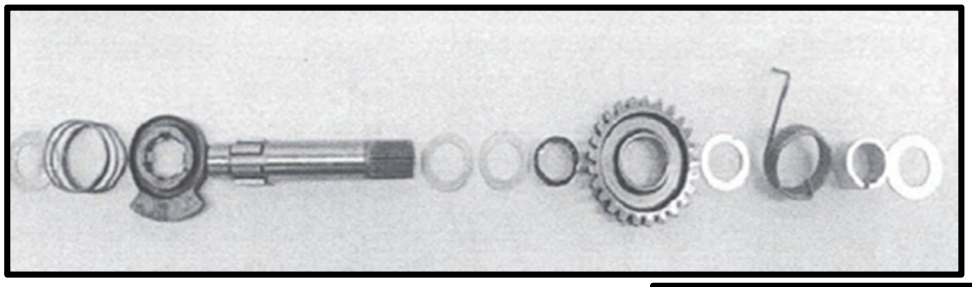


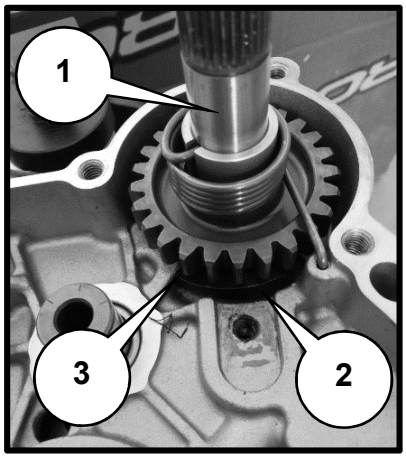
- Put the indexing pin **[1]** of the selection star on the drum.
- Pull the locking lever back to place the selection star.
- Coat of blue thread lock the screw and assemble the selection star on the drum. Tighten the M6 screw to **10 Nm**.



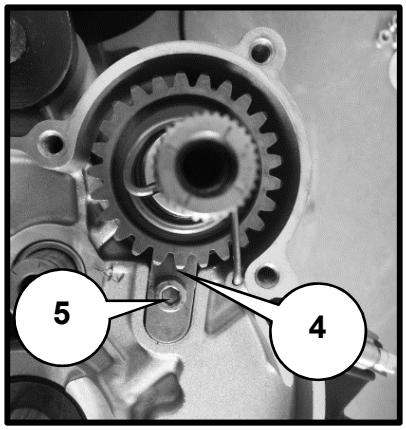
- Grease the already assembled selection shaft and thread it into the needle bearings without forgetting the setting washer.
- When the claw comes to press on the selection star push it back so that you can lower the shaft fully.
- Check if the springs of the return spring are against the finger in the crankcase on each side.
- Fit the selector and shift all gears. (rotate the gearbox shafts to facilitate shifting).
- Remove the selector again.

❱| Kick shaft assembly



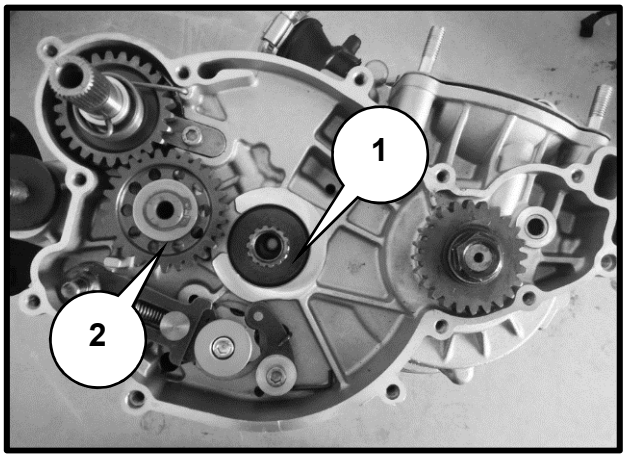


- Fit the shaft **[1]** and its spring so that the slide **[2]** comes against the stop of the housing **[3].**



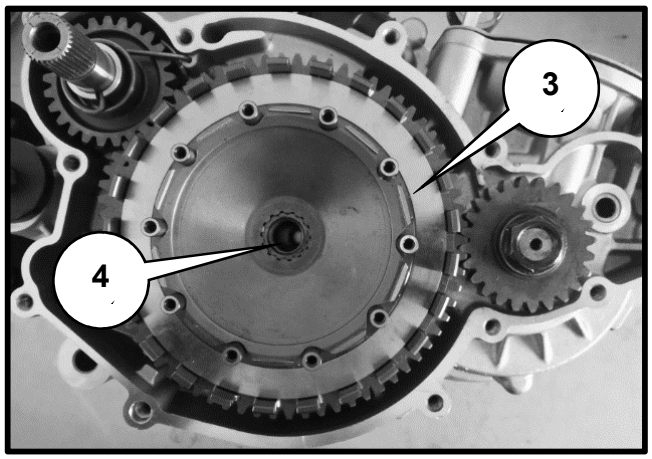
- Put the retaining plate **[4]** and tighten the screw **[5]** M6 to 10Nm.

❱| Primary transmission and clutch

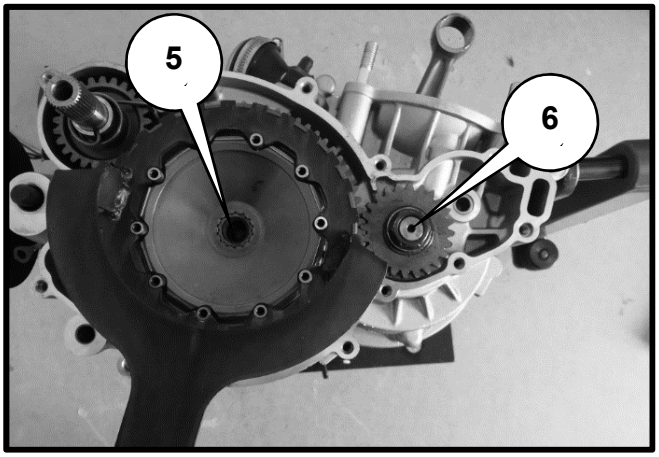


- Place the half-moon key in its housing. Apply loctite 243 to the thread.
- Thread the gear, the washer and the nut on the crankshaft tail.
- Thread the washer onto the primary shaft **[1]**
- Place the idler gear **[2],** making sure to put the lower and upper washers in place and then hold it with its circlip.

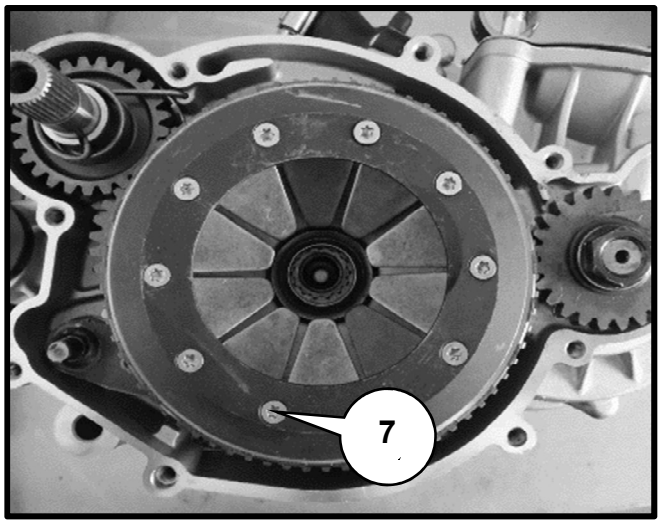
- Fit the clutch assembly **[3],** making sure that it is fully in abutment so as to be aligned with the primary transmission gear.
- Put blue thread locker on the thread **[4]** of the primary shaft.



- Fit tool R172 to hold the clutch and tighten the clutch nut **[5]** to **40 Nm** as well as that of the primary gear **[6]** to **60Nm**.



- Reassemble respectively :
  1 The push rod of the clutch rod with the actuating cup.
  2 Metal and friction discs (in the same order as when disassembled).
  3 Levers (chamfer up)
  4 Pressure plate
  5 Preload washer
  6 Spring
  7 Spring cup



- Tighten the Torx screws **[7]** to **7Nm**.

Clutch cover

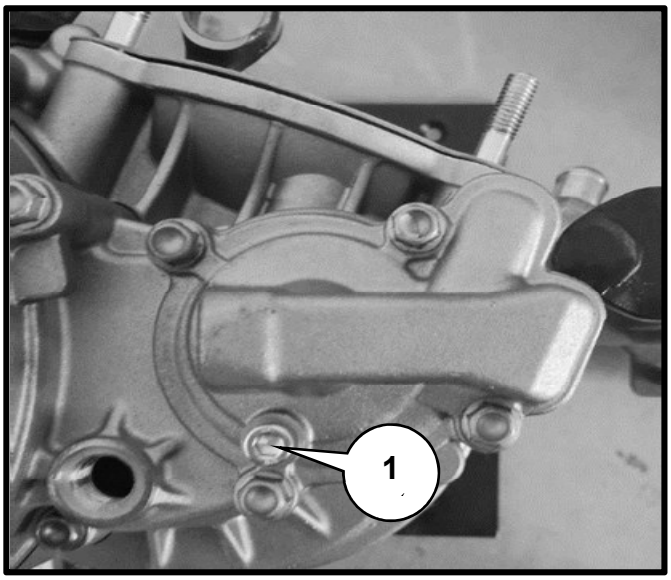
- Check that the two centering sleeves are in place and then place the clutch housing gasket.
  - Present the clutch cover making sure that the water pump assembly is in place. Rotate the rotor so that the water pump gear can mesh with the primary transmission gear
- Put the THEP M6 screws and tighten to **10 Nm**.

Water pump cover

- Place the seal on the water pump cover and stick it with a light layer of grease.
- Position the 4 M6 screws and tighten to **10 Nm**.

WARNING

Always replace the cooling bleed screw seal **[1]** with a new reference M277

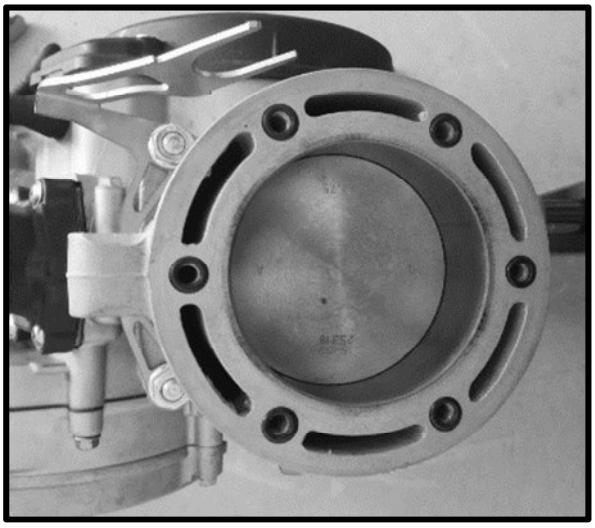


Piston / Cylinder

- Oil the parts well before reassembling.
- Thread the needle bearing into the big end, position the piston (arrow on the exhaust side).
- Put the pin and the clips with the open side down.
- Fit the base gasket.
- Position the segments correctly, (mark N) upwards.
- thread the cylinder.
- Tighten the nuts to 22Nm.

WARNING

Mount a 0.5mm GASKET first to check the value of Squish.



Squish control

- Squish control is done by measuring the distance between the flat of the piston, at top dead center, and the plane of the cylinder head. To do this, use a strand of tin that you will place on the piston. Depending on the value obtained, adjust with one or more base seals.

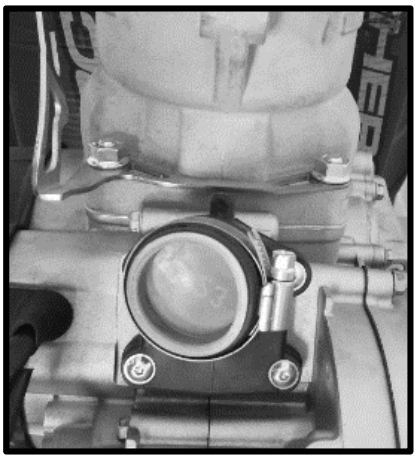
	125cc	250cc	300cc
Squish Mini	0.9 mm	1.25 mm	1.25 mm
Squish Max	1.00 mm	1.35 mm	1.35mm

Head cylinder

- Clean the cylinder and cylinder head gasket surfaces.
- Fit the O-rings (glue them with grease if necessary)
- Fit the head.
- Put new copper washers ref 2390 (Factory only)
- Fit the screws M6
- Tighten crosswise to **10 Nm.**

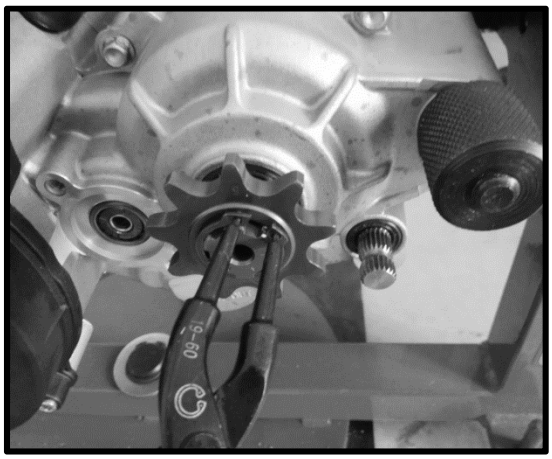
❱| Reed box and intake pipe

- Put a new reed box gasket.
- Put the complete reed box in the intake conduct.
- Put on a new intake pipe gasket.
- Mount the intake pipe with the 4 M5 screws, tighten them to 6Nm.



❱| Front sprocket

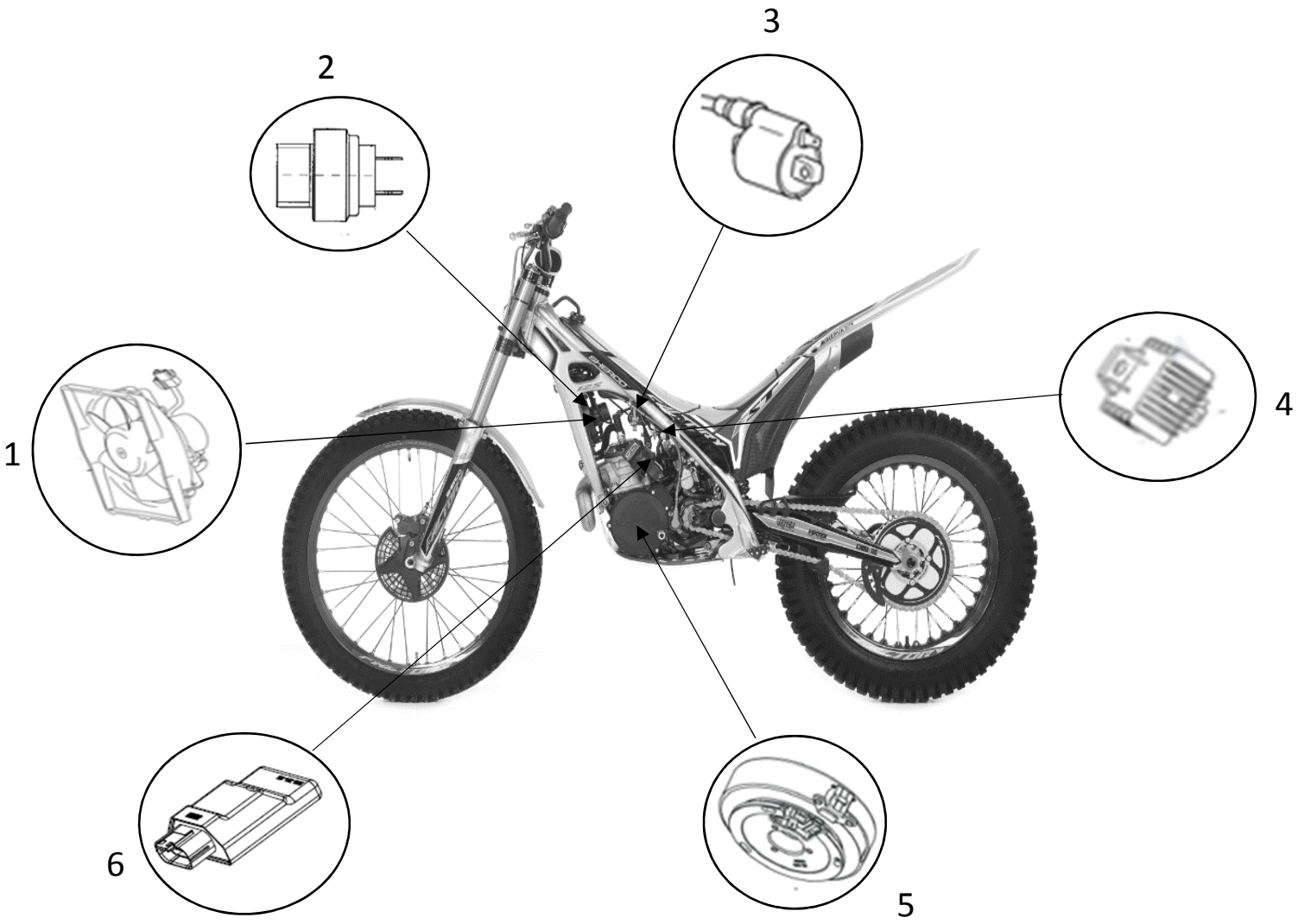
- Fit the retaining circlip on the engine side.
- Fit the front sprocket, number of teeth outwards.
- Fit the retaining ring on the outside.



TIGHTENING TORQUES

Cylinder head screw	10 N·m
Cylinder nuts	22 N·m
Magnetic flywheel cover screw	0,7 N·m
Stator screw	0,7 N·m
Magnetic flywheel nut	100 N·m
Clutch spring screws	0,7 N·m
Clutch nut	40 N·m (Loctite 243)
Screw intake pipe	0,7 N·m
Crankcase screw	15 N·m
Primary gear nut	60 N·m
Screws M-5	0,6 N·m
Screws M-6	12 N·m
Screws M-8	24 N·m
Screws M-10	40 N·m
Rear wheel axle nut	100 N·m
Front wheel axle	100 N·m
Lower steering nut	20 N·m
Upper steering nut	20 N·m
Swing arm	50 N·m

❱I Electrical components



Position	Designation
1	Ventilator
2	T° Sensor
3	Ignition coil
4	Regulator
5	Ignition
6	CDI

❱| Ignition stator control

(Engine off)

- Resistance values of the stator windings: Measurement of the resistance between each winding.

Winding resistances :

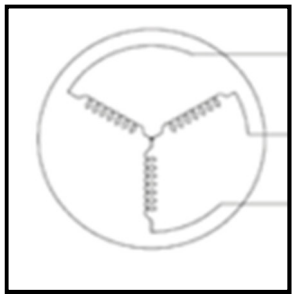
wire red – blue → 15.7 Ω +/- 20%

250/300cc

Wire Yellow – Yellow/white 0.7 a 1.5 Ω

125cc

Wire Yellow – Yellow 0.7 à 1.5 Ω



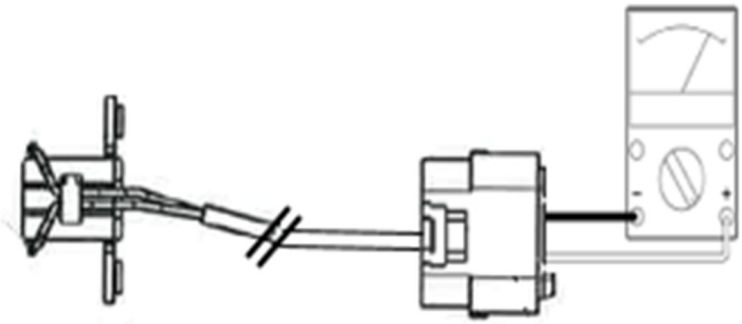
❱| Hall sensor control

- Disconnect the CDI connector.
- Connect a multimeter to the hall sensor terminals. (10/11)
- Measure with the multimeter the resistance between the white and black wire.

Sensor resistance:

Wire black – white → 197 Ω +/- 20%

Wire brown – white → 101 Ω +/- 20%

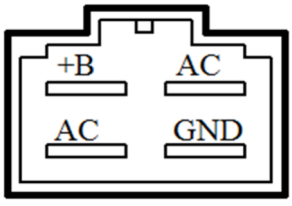


❱| Voltage Regulator

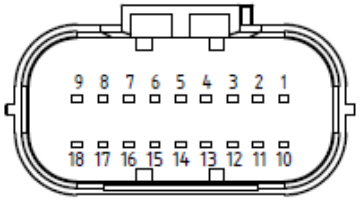
- Voltage regulator:
  On regulator output (Caliber 20V continuous)
  At 3500 RPM: 14.4V +/- 0.5V

  Maximum output current : 15 A

  Max operating temperature : 110°C

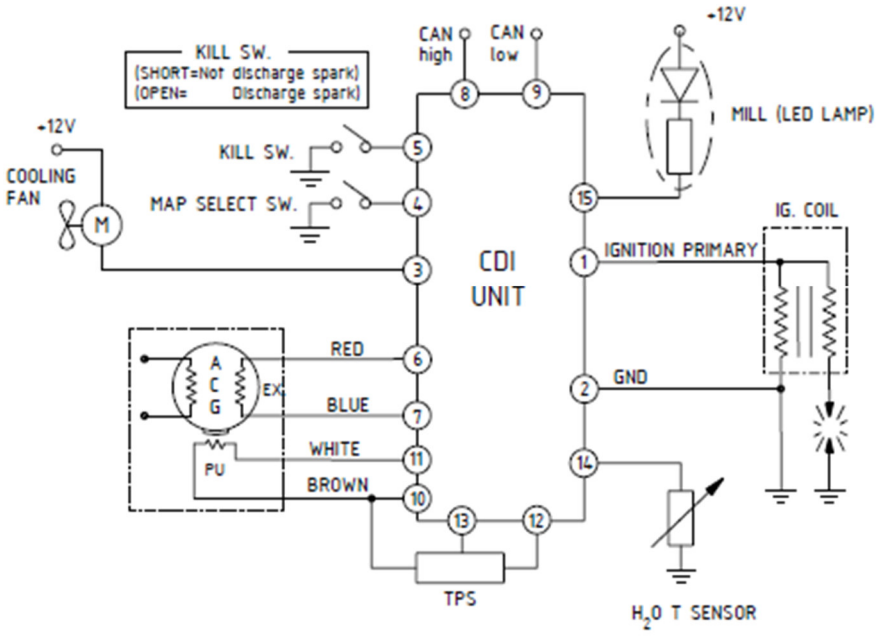


❱ CDI unit



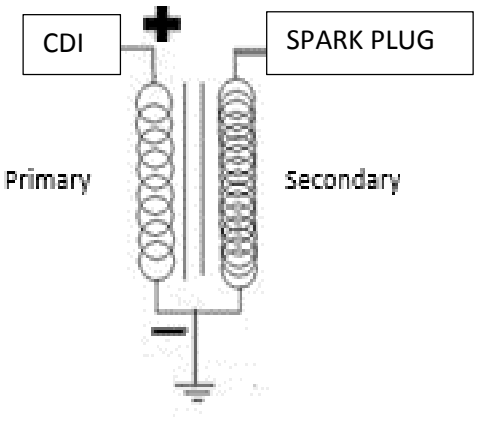
NO.	CORD NAME	NO.	CORD NAME
1	IGNITION PRIMARY	10	PULSER - (BROWN)
2	GND	11	PULSER + (WHITE)
3	COOLING FAN	12	TPS+
4	MAP SELECT SW.	13	TPS
5	KILL SW.	14	H_2O T SENSOR
6	EXCITER + (RED)	15	MILL (LED LAMP)
7	EXCITER - (BLUE)	16	Programming
8	CAN HIGH	17	Programming
9	CAN LOW	18	V batt. +12V

WIRING DIAGRAM



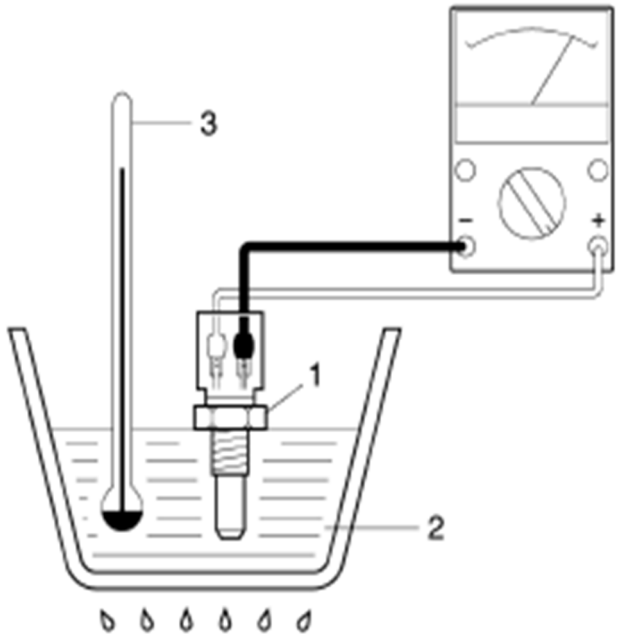
❱I Ignition coil

- Remove the ignition coil.
- Using a multimeter measure the resistance of the primary coil as follows.
- Primary coil: measure the resistance between the ground and the coil output to the CDI.
- Secondary coil: measure the resistance between the ground and the output to the spark plug.
- **Primary resistance : O.25 KΩ +/- 15% à 20°C**
- **Secondary resistance: 4.78 KΩ +/- 20% à 20°C**



Temperature sensor

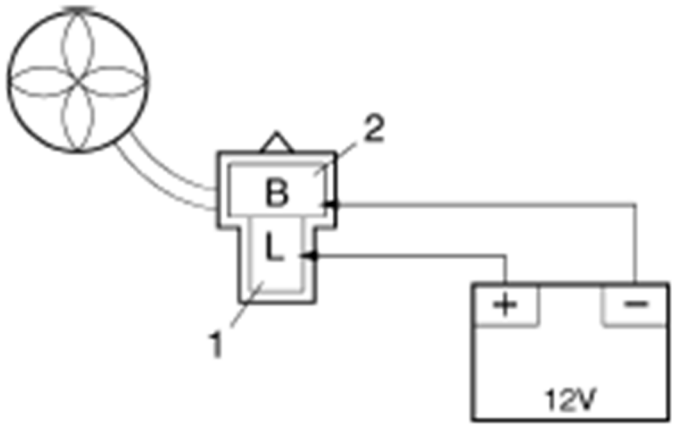
- Drain the coolant.
- Remove the radiator temperature sensor.
- Immerse the sensor **[1]** in a container filled with coolant **[2],** making sure to leave the terminals asleep with the liquid.
- Immerse a thermometer **[3]** in the liquid so as to control its temperature.
- Heat the liquid slowly and check the resistance of the sensor using a connected multimeter as in the diagram according to the temperature of the liquid, refer to the table below.



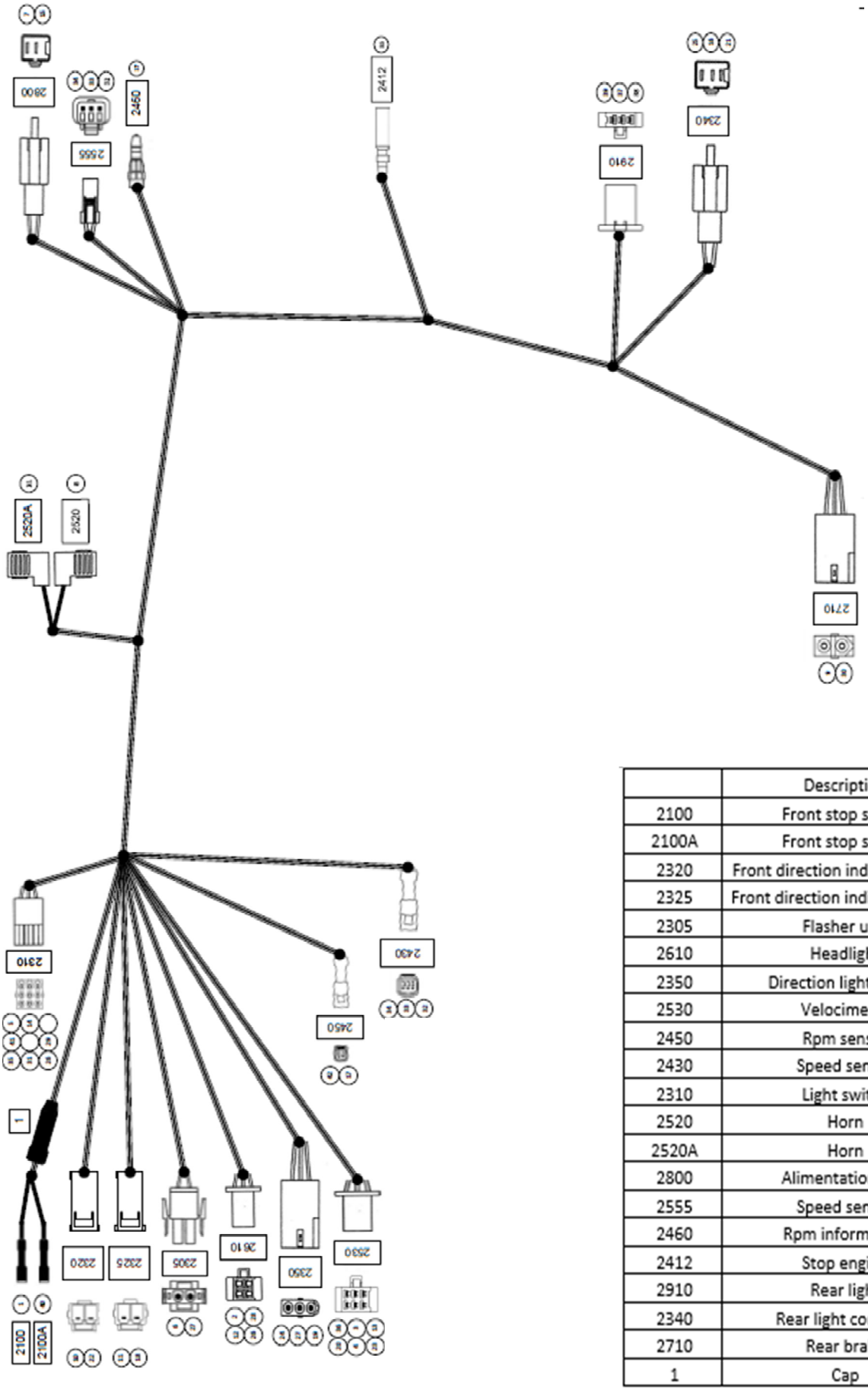
TEMPS (°C)	RESISTANCE (Ω)
25	3000
30	2415
40	1620
50	1081
60	748
70	528
80	379
90	278
100	206

Ventilator

- Disconnect the fan from the harness.
- Connect a 12V battery directly to the fan as shown in the diagram.
- Check that the fan rotates correctly without any hard point or abnormal noise.

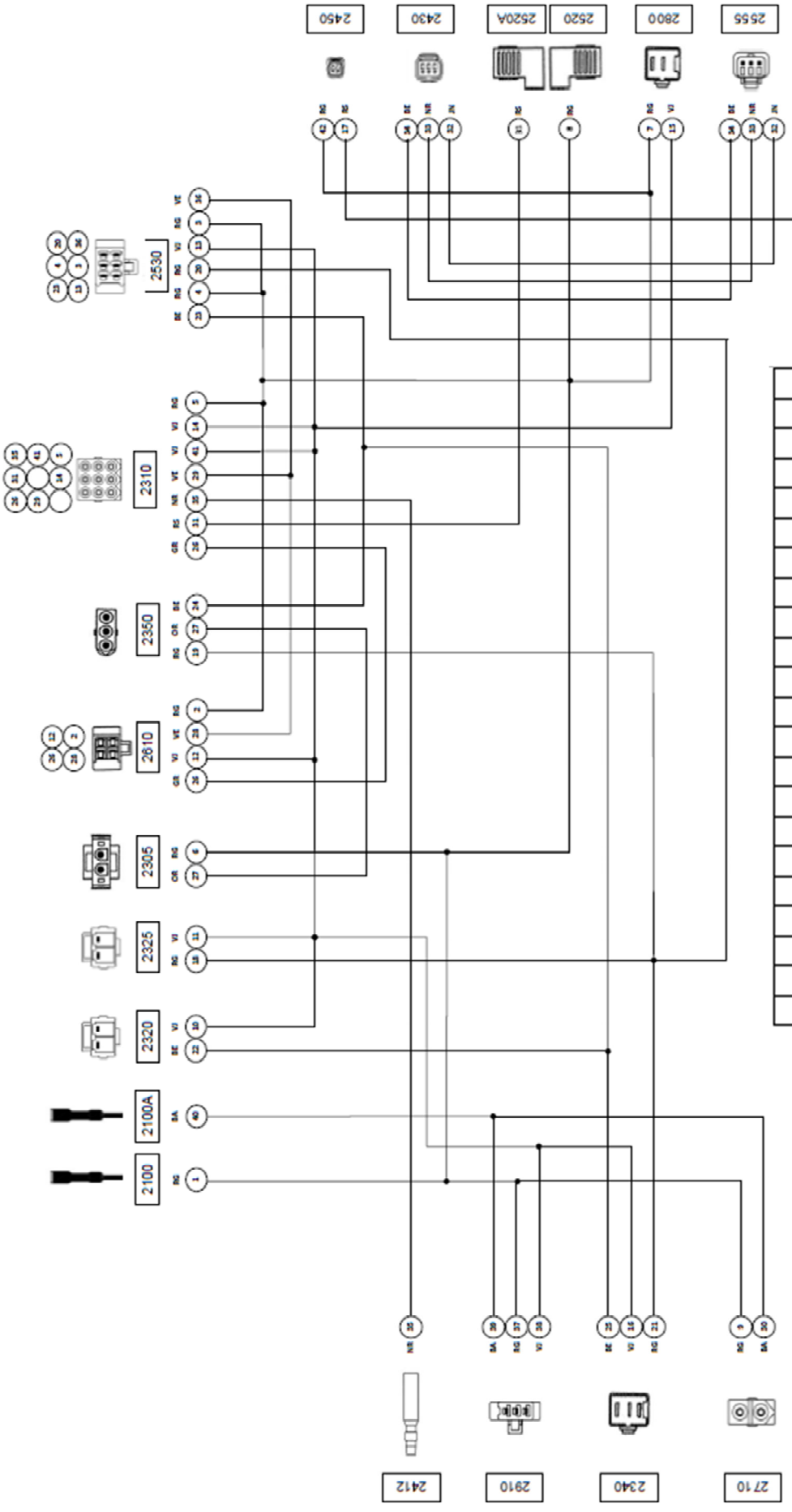


❱I Homologated light harness



	Description
2100	Front stop switch
2100A	Front stop switch
2320	Front direction indicator light L
2325	Front direction indicator light R
2305	Flasher unit
2610	Headlight
2350	Direction light switch
2530	Velocimeter
2450	Rpm sensor
2430	Speed sensor
2310	Light switch
2520	Horn
2520A	Horn
2800	Alimentation 12V
2555	Speed sensor
2460	Rpm information
2412	Stop engine
2910	Rear light
2340	Rear light conector
2710	Rear brake
1	Cap

❱I Homologated light harness



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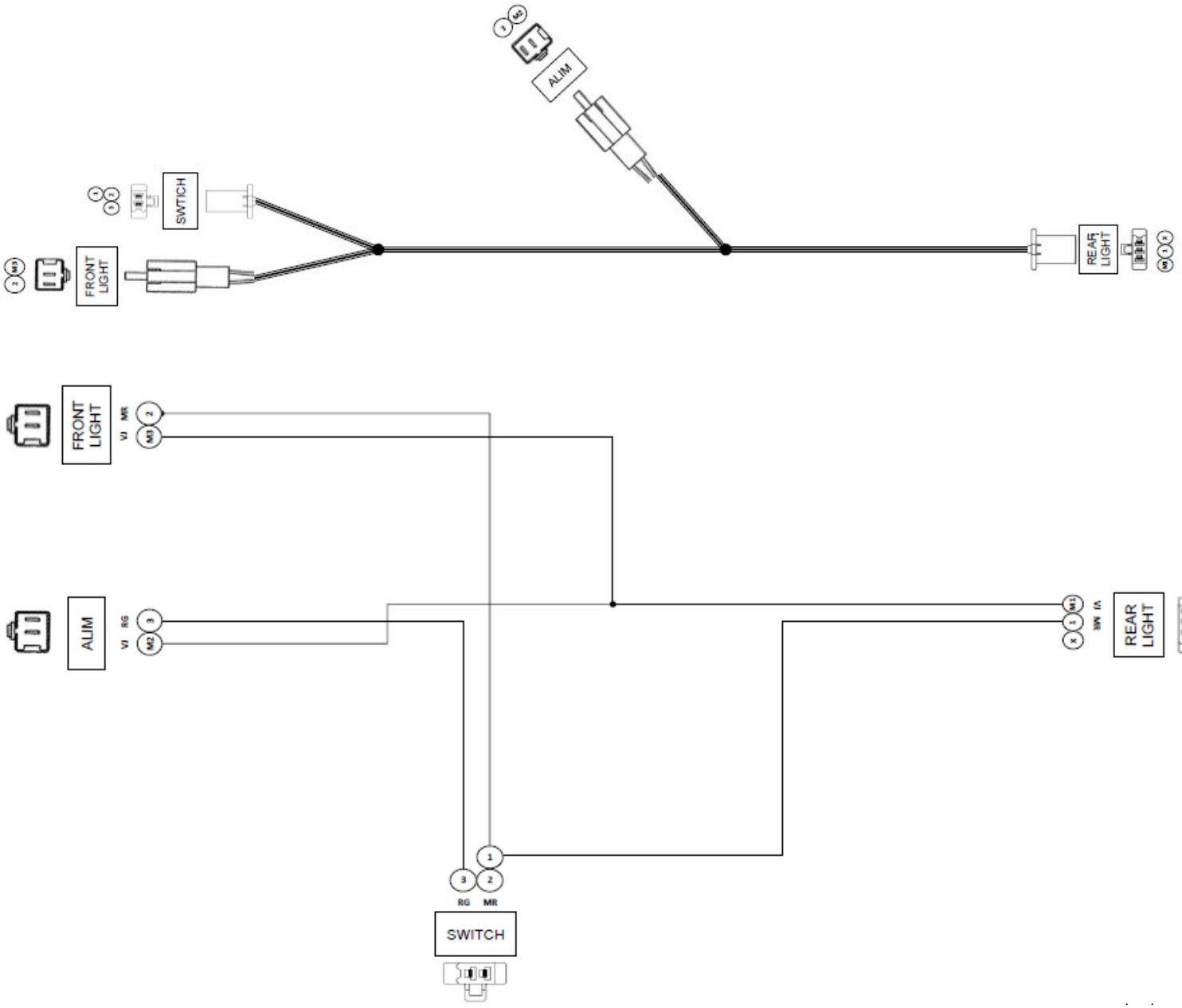
	CODE COULEUR	
	FR	GB
BA	Blanc	White
BE	Bleu	Blue
GR	Gris	Grey
JN	Jaune	Yellow
MR	Marron	Brown
NR	Noir	Black
OR	Orange	Orange
RG	Rouge	Red
RS	Rose	Pink
VE	Vert	Green
VI	Violet	Violet
VJ	Vert/Jaune	Green/Yellow

❱I Racing light harness



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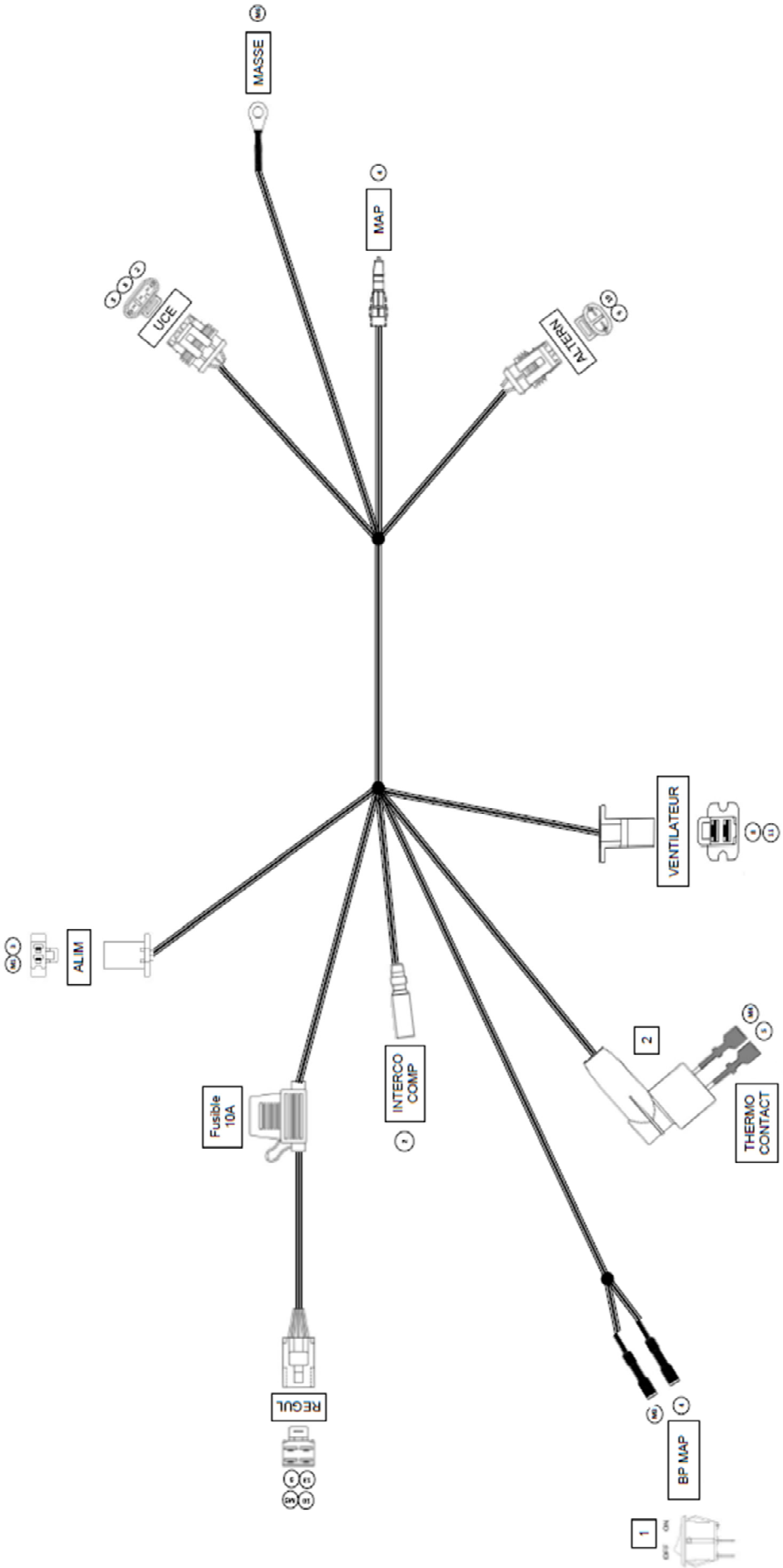
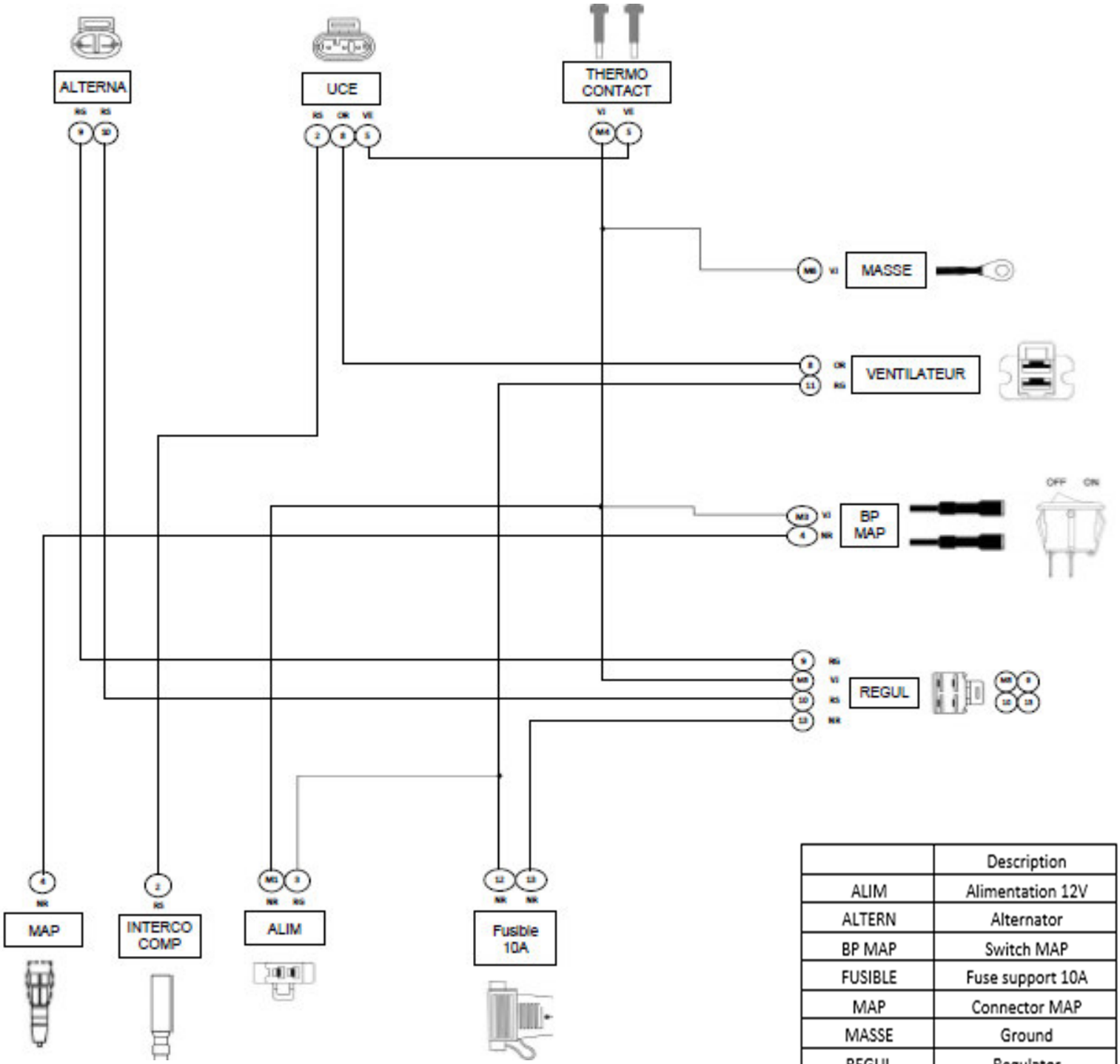
RS	Rose	Pink
VE	Vert	Green
VI	Violet	Violet
VJ	Vert/Jaune	Green/Yellow

I Principal harness



	Description
ALIM	Alimentation 12V
ALTERN	Alternator
BP MAP	Switch MAP
FUSIBLE	Fuse support 10A
MAP	Connector MAP
MASSE	Ground
REGUL	Regulator
THERMO CONTACT	Water temperature sensor
UCE	CDI
VENTILATEUR	Ventilator
INTERCO COMP	RPM Sensor
1	Switch
2	Cap

I Principal harness



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