

# SHERCO

MANUEL D'ATELIER | WORKSHOP MANUAL | MANUAL DE TALLER

**125 SE-R**

**125 SE FACTORY**



**AN EMOTION IS BORN**



# TECHNICAL SPECIFICATION

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The present manual is primarily intended for certified mechanics working in an appropriately equipped workshop.

Performing the various operations requires both a solid knowledge in mechanics and the set of SHERCO tools specific to the 125 SE-R engines.

This workshop manual serves as a complement to the SHERCO 125 SE-R user's manual



# TOOLS LIST 125SE-R

Tooling reference	Designation
<b>1814</b>	Clutch drum block
<b>1815</b>	Ignition block
<b>2067</b>	Oscillating arm shaft tool
<b>2072</b>	Right-hand casing primary shaft bearing tool
<b>2074</b>	Secondary shaft bearing tool
<b>R467</b>	Out-of-gearbox shaft bearing tool
<b>2069</b>	Out-of-gearbox gasket tool
<b>2071</b>	Right-hand drum bearing selection tool
<b>5398</b>	Left-hand drum bearing selection tool
<b>5399</b>	Crankshaft bearing tool
<b>2069</b>	Crankshaft gasket tool
<b>5402</b>	HK0808 needle bearing cage tool (water pump, starter)
<b>1968</b>	Water pump gasket tool
<b>1821</b>	Engine support
<b>1817</b>	Primary pinion block tool
<b>2073</b>	Spring block (finger pointing device)
<b>R462</b>	Magnetic wheel wrench
<b>R464</b>	Crankshaft ring extractor
<b>R453</b>	Selected shaft bearing assembly tool
<b>R444</b>	Gasket selector tool

# TECHNICAL SPECIFICATION

## ENGINE

Type	Liquidcooled,2-strokingle cylinder
Displacement	124.81CC
Bore diameter/Stroke	54/54.5mm
Gasoline	Unleadedwithanoctaneindexofatleast95mixedwithtwo-stroke oil (2%)
Coolant	With forced circulation
Ignition system	ADC-CDI without a contact breaker, digital advance
Sparkplug	NGKBR9ECMIX
Distance between spark plug electrodes	0.7mm
Piston	Forge aluminum
Motor oil	500mlSAE10W40
Main transmission	20x72
Gearbox: 1 <sup>st</sup> 2 <sup>nd</sup> 3 <sup>rd</sup> 4 <sup>th</sup> 5 <sup>th</sup> 6 <sup>th</sup>	6speeds 15:33 17:30 19:28 21:26 23:24 25:22
Final transmission	13x51
Clutch	Multi-disc in an oil bath, hydraulic controls
Ignition	Electric starter
Battery	12V4Ah
Alternator	220W

## CARBURETOR

Type of carburetor	KEIHIN PWK36 SAG
Needle position	3 <sup>rd</sup> position from the top
Injector needle	N1EG
Main injector	KEA168(KEA115)
Braking injector	KEP42(KEA38)
Starter injector	85(50)
Opening of the air regulator screws	1T1/4
Sliding gate section	5.5



# TECHNICAL SPECIFICATION

## CYCLE PART

Frame	Semi-perimeter CrMo steel with aluminum sub frame
Fork	KAYABA USD Ø48mm Closed cartridge(FACTORY) WP XPLOR USD Ø48mm (RACING)
Rear suspension	KAYABA suspension with separate cylinder WP suspension with separate cylinder, Aluminum swing arm
Travel Front/Rear	FACTORY 330/330mm RACING 300/330mm
Front brake	rotor Ø 260mm
Rear brake	rotor Ø 220mm
Brake disc	Limit : 2.7mm front et 3.6mm rear
Front tire	90/90-21"
Rear tyre	140/80-18"
Pressure front / Rear	0.9 bar
Fuel tank capacity	10.4LI with1 liter of reserve
Angle of the steering column	25.9°
Wheel base	1465mm
Weight (without fuel)	95 kg

# STANDARD ADJUSTMENT

## FORK

**Factory settings** – Fork KAYABA USD Ø48 mm

Compression	Comfort	20 clicks back
	Standard	13 clicks back
	Sport	8 clicks back
Rebound	Comfort	18 clicks back
	Standard	13 clicks back
	Sport	10 clicks back
Spring	Rider weight: 65-75 kg	4.0N/mm (Original)
	Rider weight: 75-85 kg	4.2N/m
	Rider weight: 85-95	4.4N/m
Fork oil	01M	345 CC

**Racing settings** – Fork WP XPLOR suspension USD Ø48mm

Compression	Comfort	18 clicks back
	Standard	15 clicks back
	Sport	12 clicks back
Rebound	Comfort	18 clicks back
	Standard	15 clicks back
	Sport	12 clicks back
Preload	Comfort	+0 tours
	Standard	+0 tours
	Sport	+6 tours
Spring stiffness	Rider weight: 65 - 75 kg	4.2N/mm
	Rider weight: 75 - 85 kg	4.4N/mm (Original)
	Rider weight: 85 - 95 kg	4.6N/mm
Type of oil		SAE 4
Spring length with preload spacer		474 mm
Quantity of oil		606ml
Oil level measurement (fork compressed and spring removed) from the top of the fork tube		100mm (min30-max 120 mm)



# STANDARD ADJUSTMENT

## SHOCK ABSORBER

### Factory Settings – KAYABA shock absorber

Low-speed compression	Comfort	20 clicks back
	Standard	14 clicks back
	Sport	12 clicks back
High-speed compression	Comfort	2,5 turns back
	Standard	1.5 turns back
	Sport	1 turn back
Rebound	Comfort	15 clicks back
	Standard	13 clicks back
	Sport	11 clicks back
Spring stiffness	Rider weight : 65-75 kg	46N/mm
	Rider weight : 75-85 kg	48N/mm (original)
	Rider weight : 85-95 kg	50N/mm
Type of oil		K2C

### Racing Settings – WP suspension shock absorber

Low-speed compression	Comfort	17 clicks back
	Standard	12 clicks back
	Sport	9 clicks back
High-speed compression	Comfort	2 turns back
	Standard	1.5 turns back
	Sport	1 turn back
Rebound	Comfort	16 clicks back
	Standard	14 clicks back
	Sport	12 clicks back
Spring stiffness	Rider weight : 65-75 kg	51N/mm
	Rider weight : 75-85 kg	54N/mm (original)
	Rider weight : 85-95 kg	57N/mm

# OPERATIONS REQUIRING DISASSEMBLY OR NOT ENGINE

	Operation requiring engine removal	Operation not requiring engine removal
Crankshaft (including the crank kit)	•	
Complete gearbox	•	
Crankshaft bearing	•	
Gearbox bearing	•	
Piston		•
Cylinder		•
Cylinder head		•
Ignition		•
Starter gear set		•
Complete clutch		•
Water pump		•
Speed selection assembly		•



# REMOVING / REINSTALLING THE ENGINE

## REMOVING THE ENGINE

### WARNING

*To remove the engine, you must remove the swing arm axle, the swing arm and the rear wheel. To keep the bike from falling, remember to support the chassis with an appropriate jack.*

- Drain (refer to the owner's manual)
  - the engine oil
  - the engine coolant
- Remove the seat.
- Disconnect the battery.
- Remove the fuel tank and its covers.
- Disconnect all the electrical wiring connectors from the engine.  
(Starter, TPS sensor, water temperature sensor, coil, fuel injector)
- Remove the exhaust.
- Remove the ignition coil.
- Remove the fuel injector body.
- Remove the chain.
- Remove the chain guard.
- Remove the clutch actuating cylinder.

### WARNING

*When the clutch actuating cylinder is removed the piston is loose. Hold the piston in place using a plastic strap.*

- Remove all of the water hoses connected to the motor.
- Remove the left radiator.
- Loosen all of the engine bolts.
- Loosen the swing arm bolt.
- Remove the brackets that attach the cylinder head to the chassis.
- Remove the motor mounting bolts.
- Remove the swing arm bolt.
- Remove the motor.

## REINSTALLING THE ENGINE

The motor should be reinstalled in the frame in the reverse order of how it was removed. The following torque values should be utilized.

### Tightening torques:

**Motor mounting bolts: 60Nm**

**Swing arm axle nut: 100 Nm**

**Clutch receiver screws: 10 Nm**

**Cylinder head bracket bolts: 23Nm**

**Exhaust mounting bolts: 10Nm**

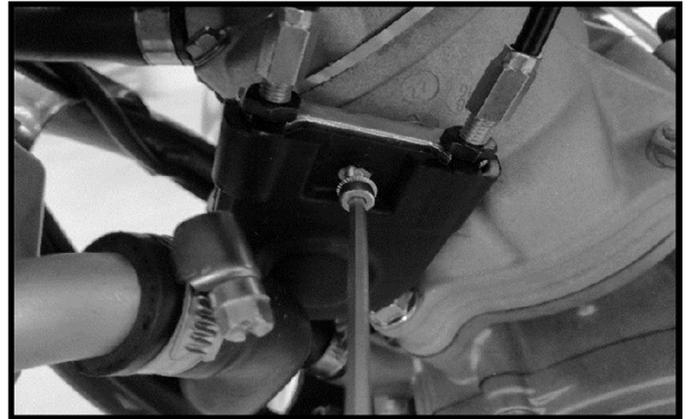
# REMOVING / REINSTALLING THE ENGINE

## » Reassembly of the engine into the frame

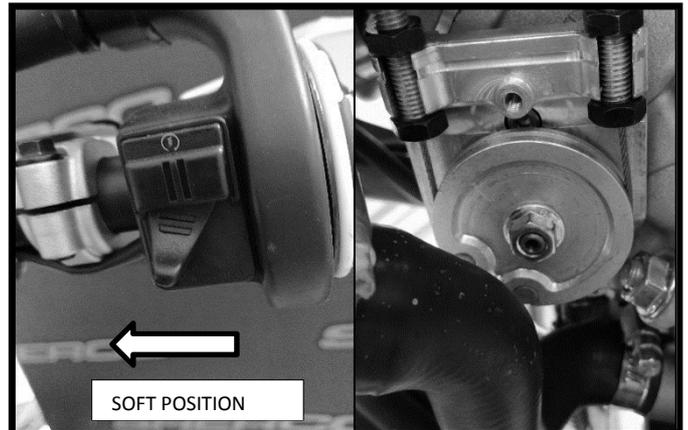
### WARNING

During engine reassembly in the frame, the valve cable tension is very high to ensure proper engine operations, with sufficient resistance in the valve drive cables and mechanism over time. Follow the procedure indicated below in order to properly tension the cable.

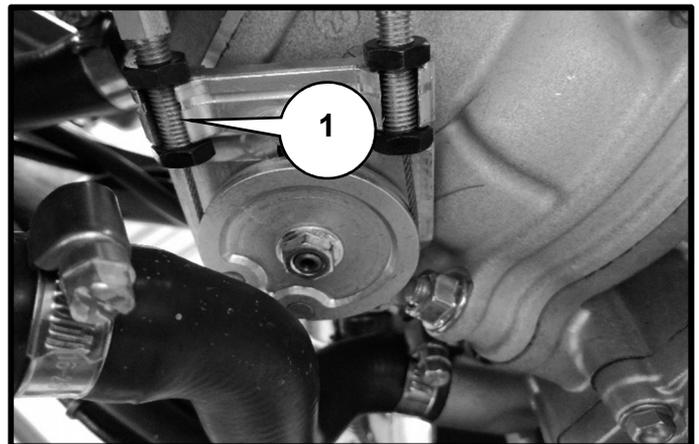
Remove the two M4 screws and withdraw the valve pulley cover plate



- Place the mapping contactor in the “Soft” position (toward the left) and place the motorcycle contact switch in the ON position.
- Wait for completion of the electric engine valve initialization and its subsequent shut-off.
- Turn off the motorcycle contact switch and check that the pulley is correctly positioned facing left.

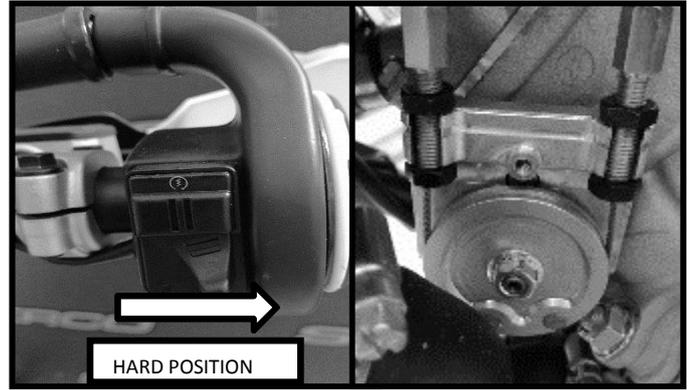


- Proceed with the left cable tension adjustment **[1]** so as to remove all slack from the pulley.

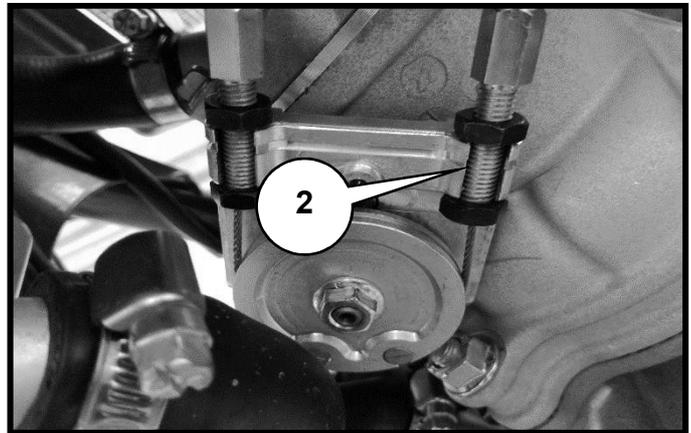


# REMOVING / REINSTALLING THE ENGINE

- Place the mapping contactor in the “Hard” position (toward the right) and turn on the motorcycle contact switch.
- Wait for completion of the electric engine valve initialisation and its subsequent shut-off.
- Turn off the motorcycle contact switch and check that the pulley is correctly positioned facing right.



- Proceed with the right cable tension adjustment [2] so as to remove all slack from the pulley.

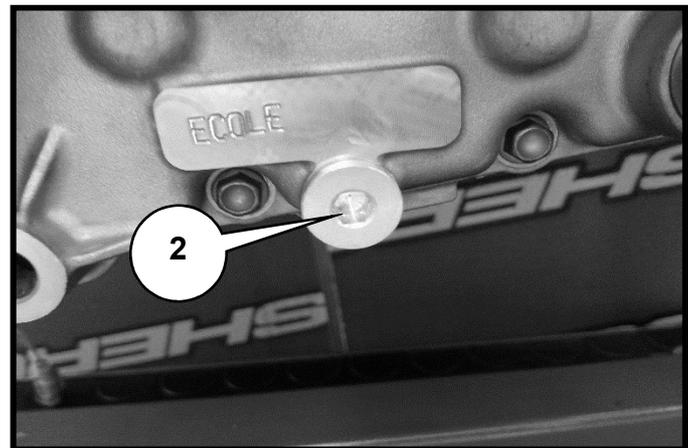
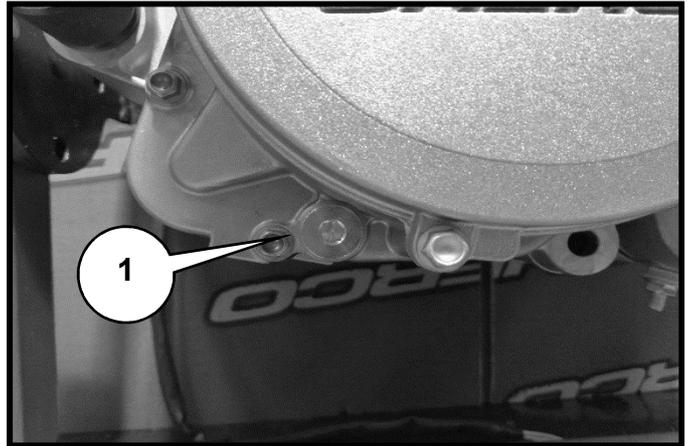


Verify the effective operations of valves by placing the motorcycle contact switch in the ON position and transitioning from the “Hard” curve to the “Soft” curve

# ENGINE DISASSEMBLY

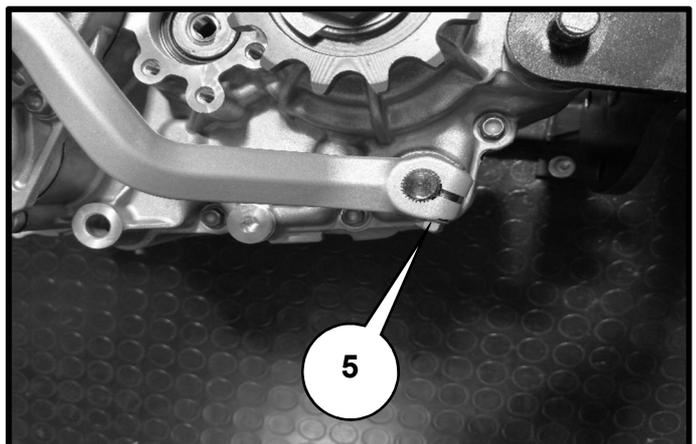
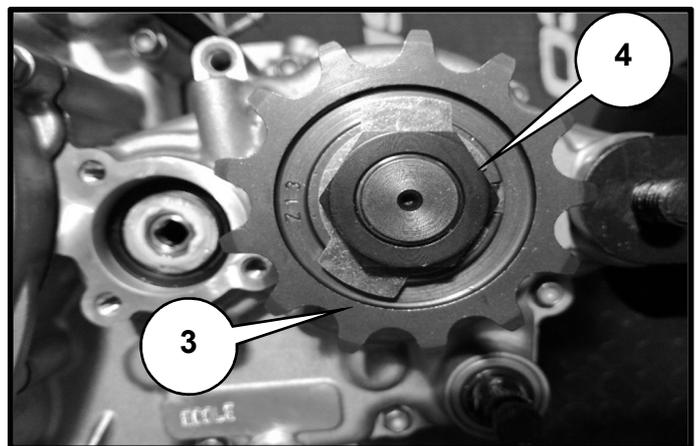
## » Gear box drainage

- Remove drainage plugs [1] and [2], let the oil flow out.



## » Gear box drainage

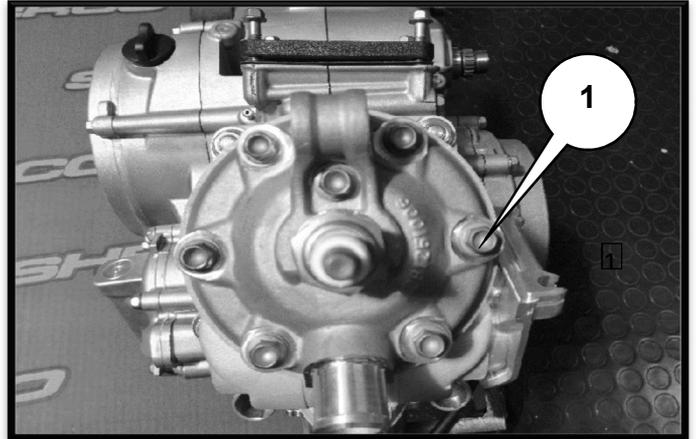
- Unfold the safety washertab [3] using a pushing device.
- Remove the gearbox output pinion [4].
- Remove the screw first [5] first and then the selector.
- Release the clutch control rod.



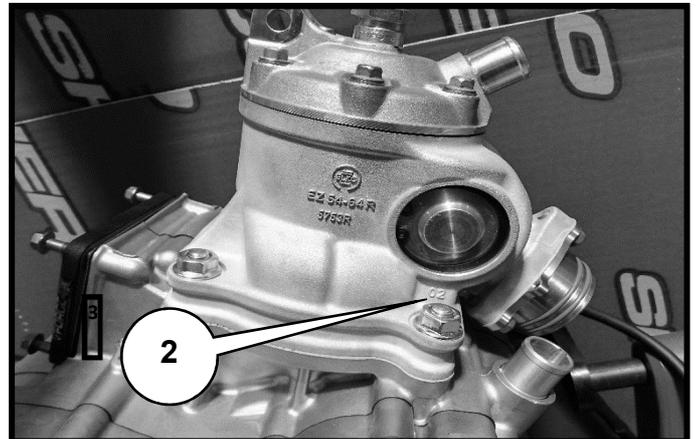
# ENGINE DISASSEMBLY

## ›| Removal of the cylinder head / the cylinder / the piston

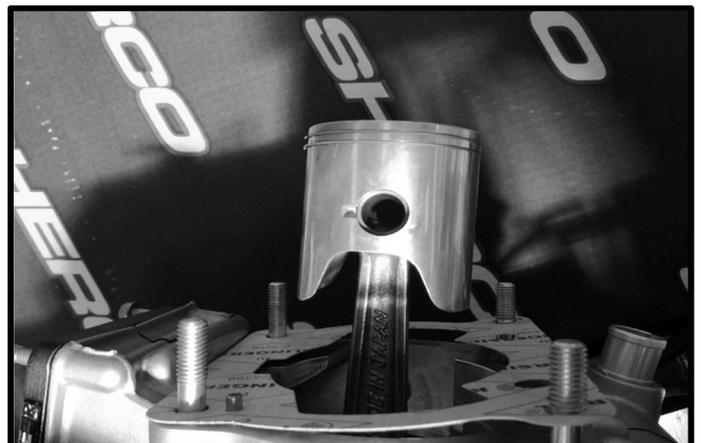
- Remove the shoulder screws **[1]** and release both the cylinder head and the two O-rings



- Remove all four nuts **[2]** and the cylinder
- Cover the casing.



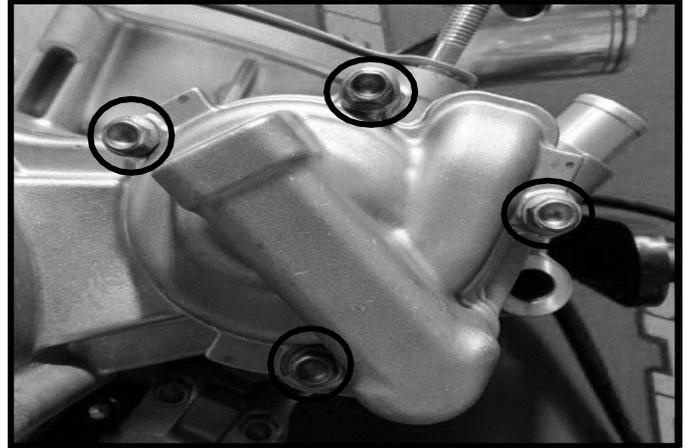
- Remove the piston shaft clips.
- Release the piston shaft.
- Remove the piston and extract the needle bearing from the connecting rod eye.
- Remove the base joint.



# ENGINE DISASSEMBLY

## ›| Disassemble the clutch cover

- Unscrew the water pump screws and cover. Remove the formjoint

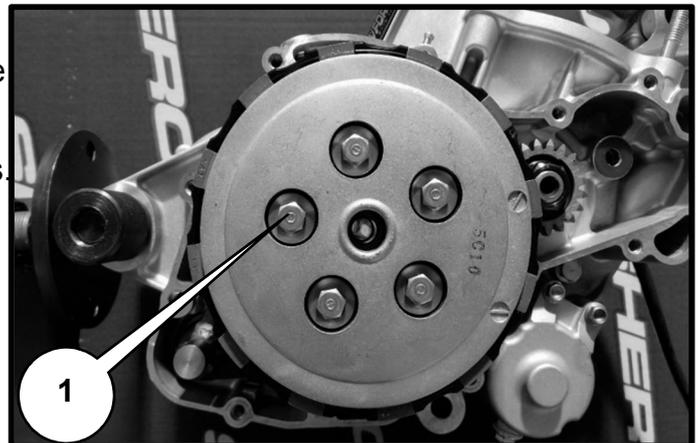


- Remove the screws first and then the clutch casing. Extract the joint.

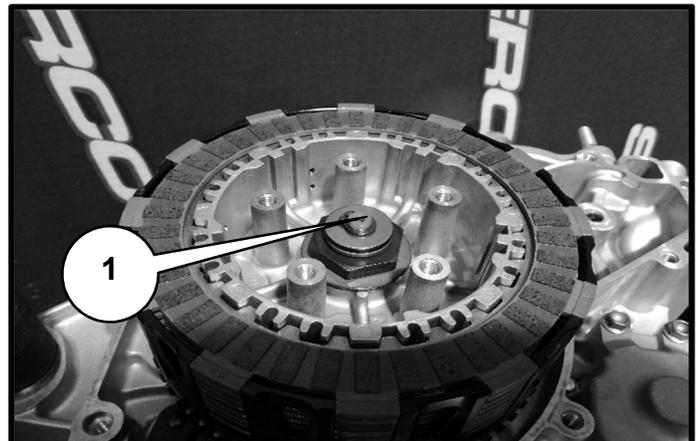


## ›| Removal of both the pressure tray and discs

- Loosen the screws of the clutch pressure plate [1].
- Remove the screws, springs and spring plates.



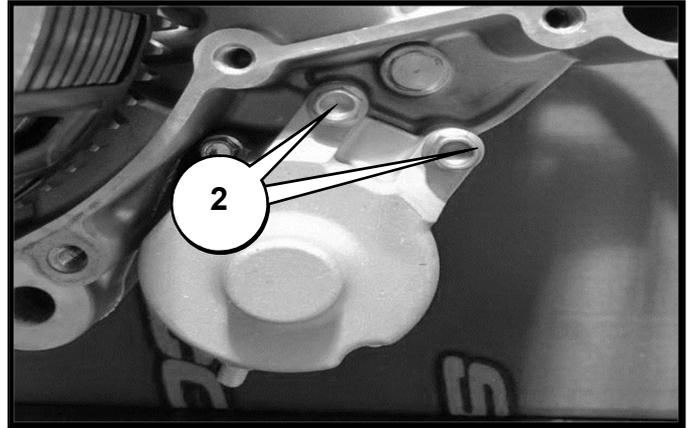
- Release both the pressure plate and discs from the housing.
- Remove the support part [1] positioned in the primary shaft.



# ENGINE DISASSEMBLY

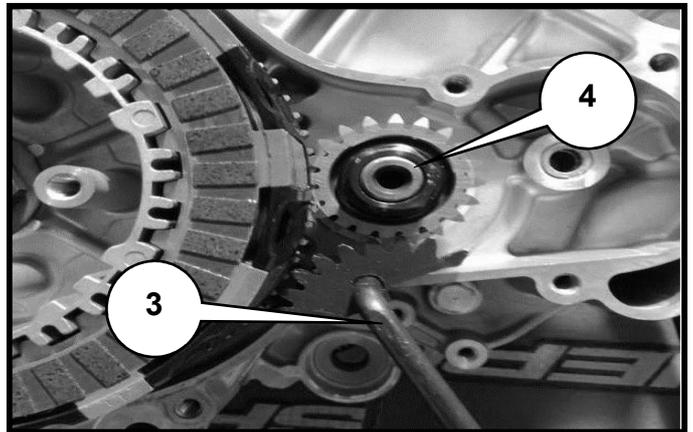
## ›| Removal of the electric starter

- Unscrew both screws [2]

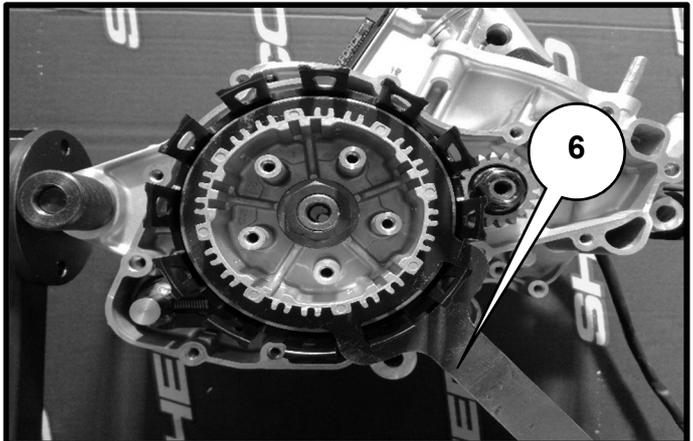


## ›| Removal of the main transmission

- Block the pinion at the end of the crankshaft using tool reference 1817 [3].
- Unscrew the main transmission nut [4] and then remove it with the tapered washer.



- Insert tool reference 1814 [6], which serves to hold the drum and loosen the nut.
- Remove the tool.
- Remove the drum, the toothed washer, the housing with the needle cage.



- Removal of the main transmission pinion

### CAUTION

At the wedge and O-ring.  
The main transmission pinion and clutch housing crown match, which is why they cannot be changed separately. They must always be renewed as a pair.



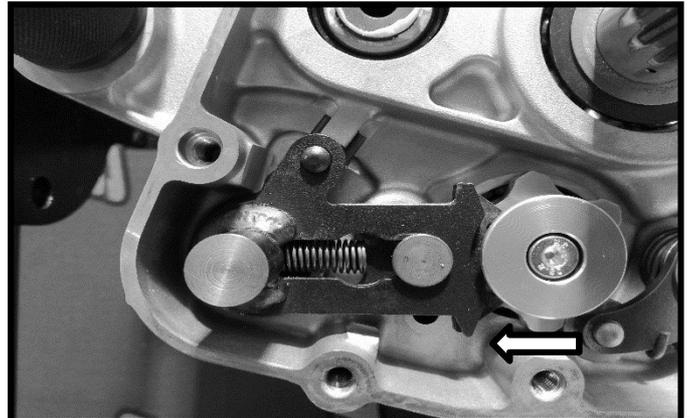
# ENGINE DISASSEMBLY

## › Removal of the locking mechanism

- With a screwdriver, push back on the scorpion so that it no longer makes contact with the selection star; next, remove the selection shaft

### CAUTION

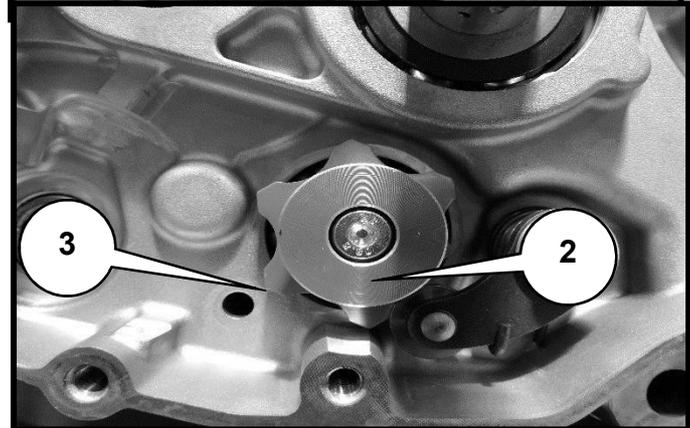
Be extremely careful with the washer left at the casing bottom.



- Unscrew the hex socket screw [2] and remove the selection star [3].

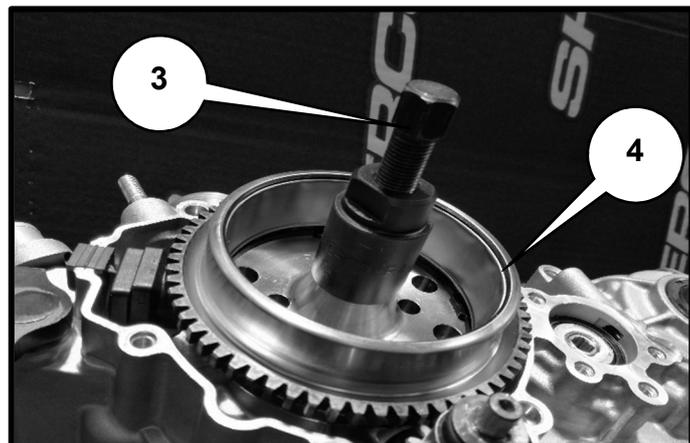
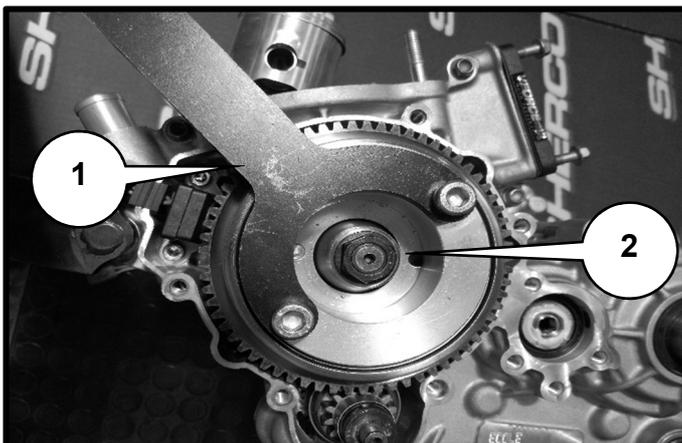
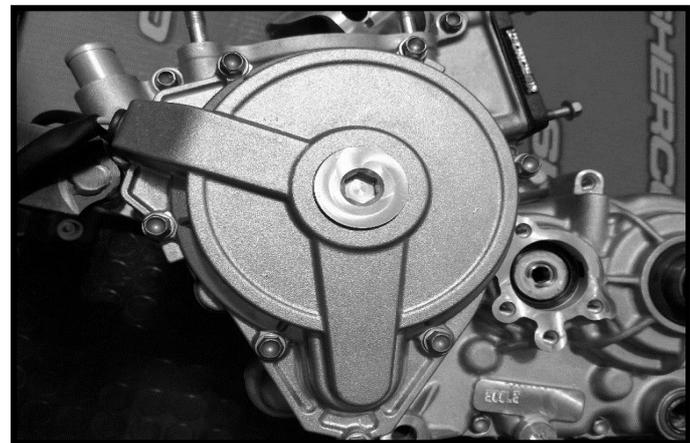
### CAUTION

When handling the selection star indexation slug. The locking lever arm must only be retracted when changing the casing.



## › Removal of the ignition

- Hold the steering wheel with tool 1815 [1] and unscrew the shoulder nut [2].
- Introduce extractor R462 [3] and tear out the magnetic wheel [4].



# ENGINE DISASSEMBLY

## ›| Removal of the starter

- Take out the starter [1]



## ›| Intake pipe and clapper box

- Remove all 4 screws [2]
- Remove the pipe clapper box and the gasket



## ›| Separate out the half casings

- Reposition the engine so that the ignition side is facing you.
- Remove all the fastening screws.
- Now lift the left half-casing by gently striking the gearbox output shaft with a plastic mallet in order to dislodge the other half-casing.

### CAUTION

Avoid to the greatest extent possible introducing a screwdriver or any tool between the half-casings for the purpose of separating them. You might damage the parting surface.

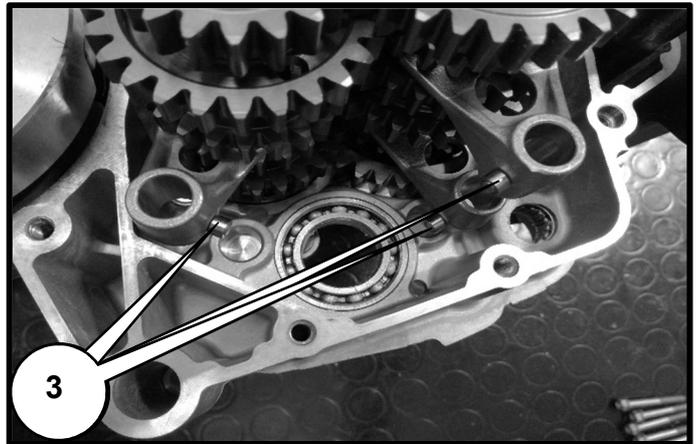
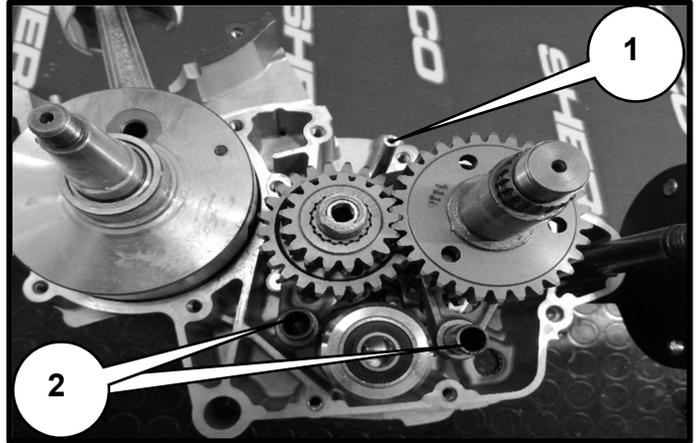
### CAUTION

Be careful when working with the set rings of gearbox shafts. They might stay stuck inside the casing.



## › Removal of the speed selection

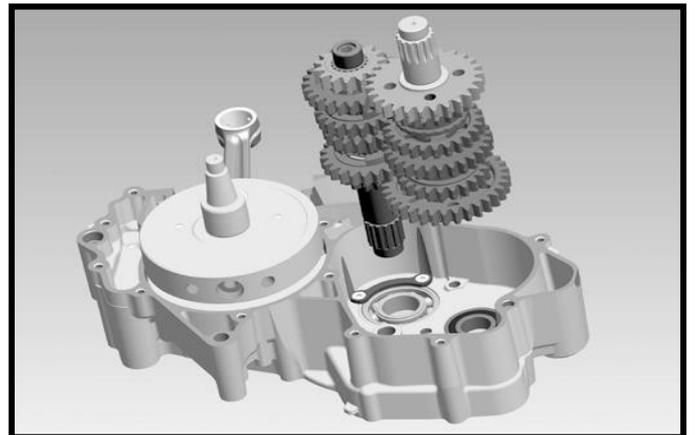
- Remove the transmission gearbox lubrication tube **[1]**.
- Remove the two selector fork shafts **[2]** and push them to the side to free the drum.
- Now disengage the selection drum from its bearing.
- The selector forks. Remove



### CAUTION

During this removal step, be sure not to lose the small rollers **[3]** on the fork caps. Indicate the association of these rollers with the corresponding forks for purposes of reassembly.

- Remove both the primary and secondary shafts from their bearing



# ENGINE PARTS CONTROL

## ›) Connecting rod assembly

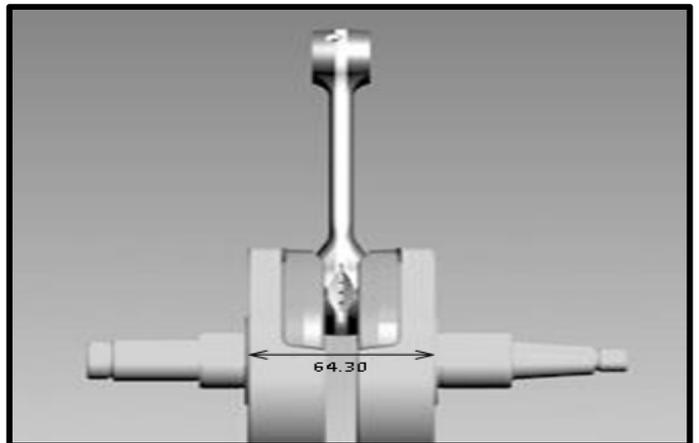
- If the roller bearings have been changed, then the internal ring that sits against the balance weight must also be changed.
- Heat the R464 tool to roughly 150°C, then immediately insert it onto the internal ring.  
Ensure that the tool sits squarely on the ring in order to more effectively transmit the heat and extract the ring
- To install the new ring, heat the tool once again to approx. 150°C. Next, insert the new ring and immediately position it on the reach of the connecting rod assembly



## ›) Balance masses, verification of the exterior side

- Using a caliper, measure the outer distance of the balance masses.

**Exterior value: 57.0 +/- 0.1 mm**



## ›) Radial clearance of the crank head

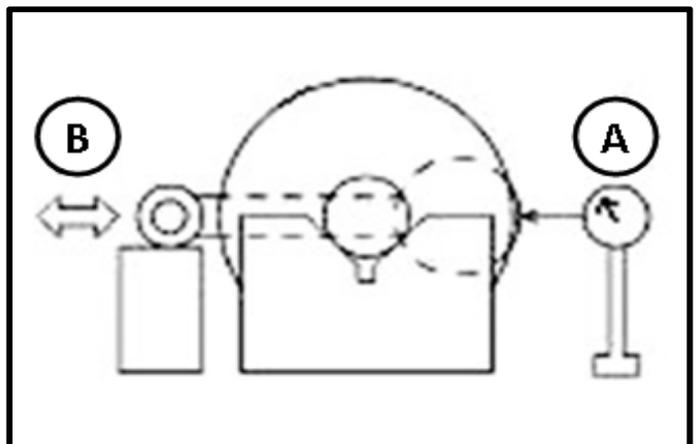
- Install the crankshaft on the V and place a dial gauge [A] against the crank head.
- Push [B] the crank head first toward the gauge and then in the opposite direction. The difference between these two measurements corresponds to the radial clearance.

**Crank head radial clearance:**

**Standard:** 0.015mm - 0.025mm

**Tolerance limit:** 0.06 mm

If the radial clearance exceeds the tolerance limit, the crankshaft must be replaced



## ›) Crank head lateral clearance

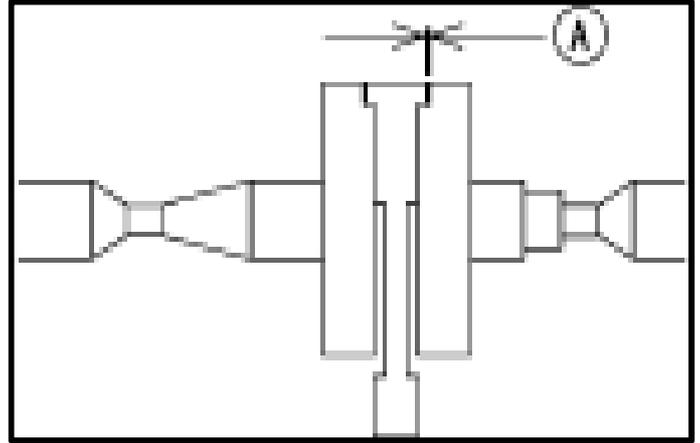
- Measuring the lateral clearance of the crank head [A].

**Crank head lateral clearance:**

**Standard:** 0.7 mm - 0.9 mm

**Tolerance limit:** 1.15 mm

If the clearance exceeds the tolerance limit, replace the crankshaft.



## ›) Control of the crankshaft radial runout

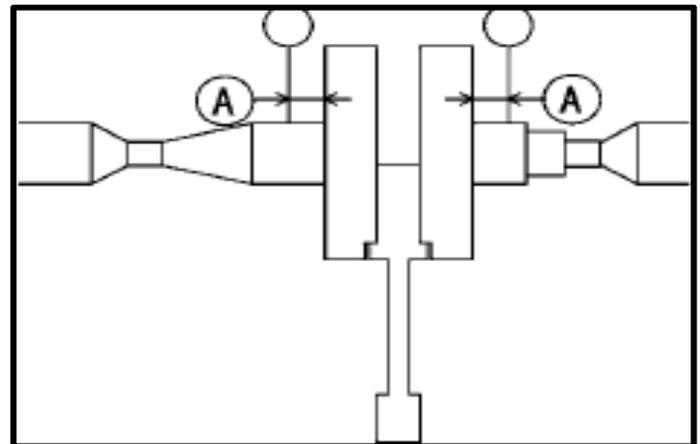
- Set the crankshaft on an alignment device or on shims laid out in a "V" pattern, and place a gauge as shown on the image.
- Now slowly turn the crankshaft. The maximum difference between the measurements corresponds to the level of crankshaft eccentricity.

**Out-of-roundness:**

**Standard:** 0.03 mm maximum

**Tolerance limit:** 0.05 mm

If the eccentricity is incorrect, replace the crankshaft or else align it to ensure lying within the tolerance limits.



## ›) Piston

If you introduce a piston that has already been in use, the following points would need to be verified:

Skirt: search for possible smears (clamping). Slight smears may be removed with a soft stone.

Segment grooves: The segments must not snag in their groove. To clean in this spot, an older segment or emery cloth (400-grain).

The segment retainers must be snugly fastened and not be worn parts.

Segments: Verify the condition and clearance at the cross-section.



# ENGINE PARTS CONTROL

## » Cross sectional clearance

- Insert the segment into the cylinder and install it with the piston (at approx. 10 mm from the upper edge of the cylinder).
- With a shim, it is possible to measure the cross-sectional clearance.  
Cross-sectional clearance: max. 0.40 mm

### CAUTION

Should the clearance be greater than indicated, it would be necessary to check the condition of both the cylinder and piston. If these measurements lie within the tolerance dimensions, replace the segment.

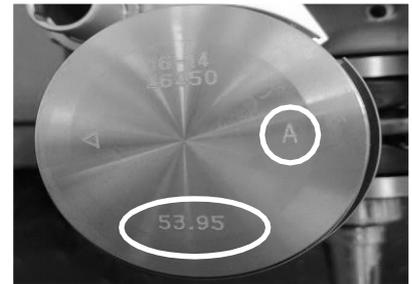
## » Verification of the state of cylinder wear / Piston

- To detect cylinder wear, the bore diameter is measured using a micrometer located approx. 10 mm from the upper edge of the cylinder. Take readings at several spots to identify the potential presence of ovalness

Cylinder	Cylinder bore diameter	Piston
125	54.000 - 54.015	A
	54.010 - 54.025	B

Cylinder	Piston Diameter	Piston
125	53.95	A
	53.96	B



### CAUTION

If the cylinder diameter exceeds for example 54.025 mm, the interior would need to be relined (with Nikasil coating) or the cylinder replaced.

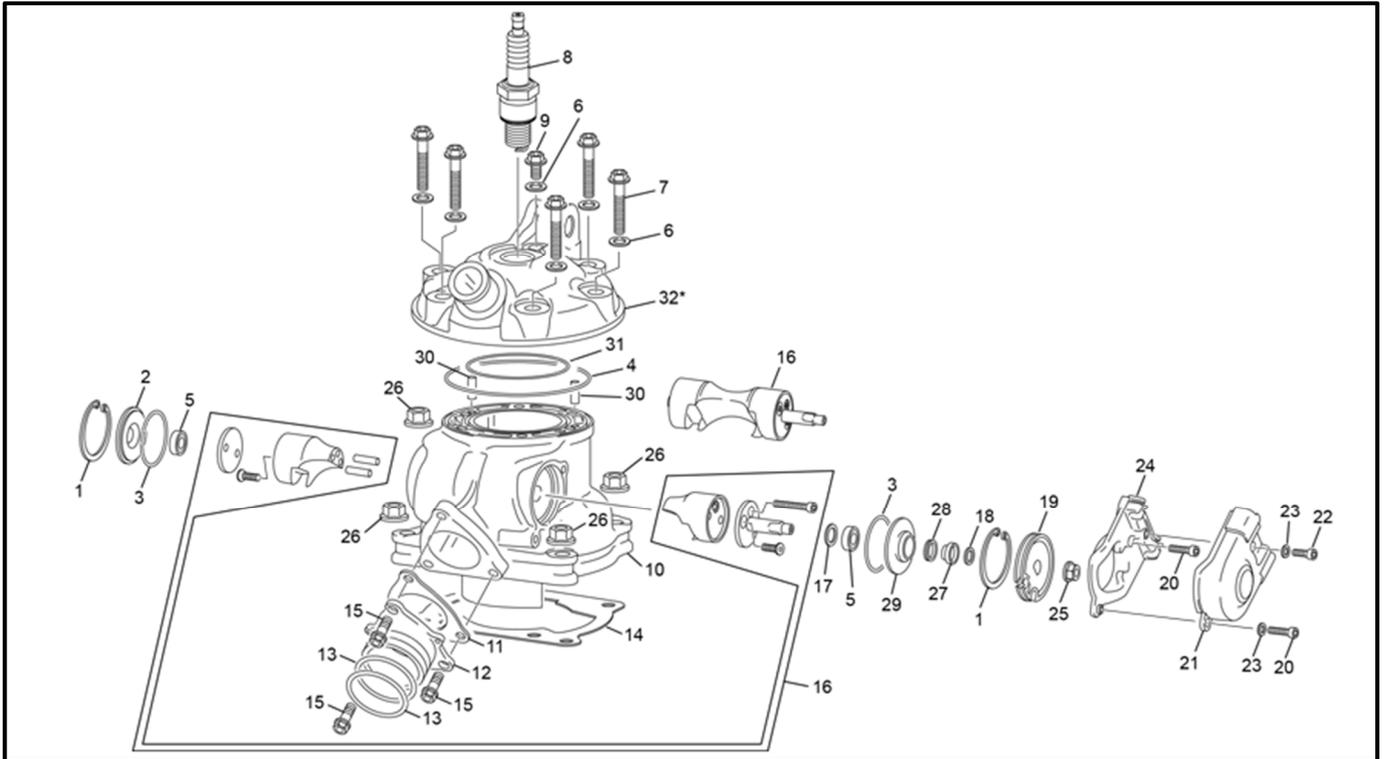
Before relining the cylinder, all exhaust valve parts would need to be disassembled. The piston size is engraved on the top of the piston, and the cylinder dimension is engraved on the right side cylinder.

Using a gauge, measure the height difference between the piston and the cylinder.

The clearance **must be 0**; otherwise, use another head gasket in order to obtain the desired value.

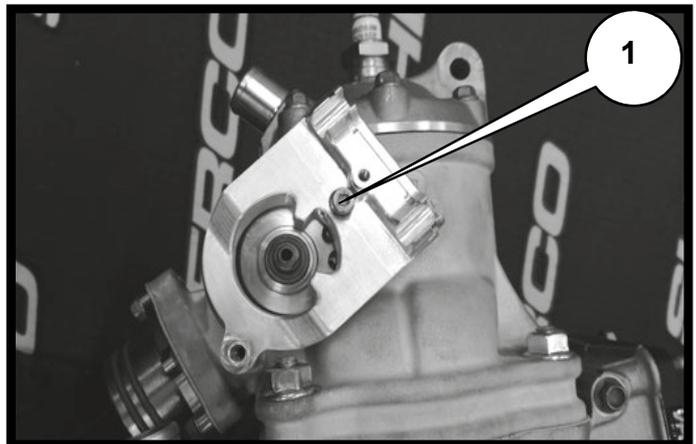


## › Disassemble the exhaust valve system



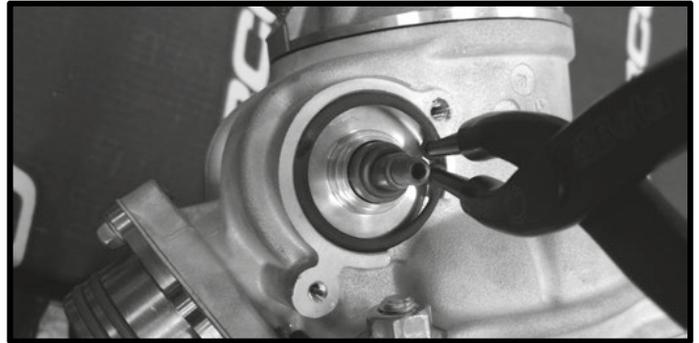
Disassemble all parts, clean them, and verify their condition and state of wear. For this step, follow the disassembly and control procedure.

- Remove the valve control protective cover.
- Loosen the control cables and remove them from the pulley.
- Take off the nut and withdraw the pulley.
- Remove first the M4 screw **[1]** and then the cable support and pulley stop assembly



# ENGINE PARTS CONTROL

- Remove the retaining rings on both sides of the valve



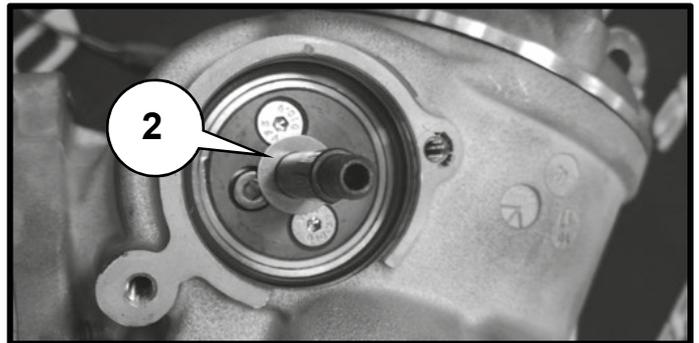
- Remove the O-ring and pulley spacer.



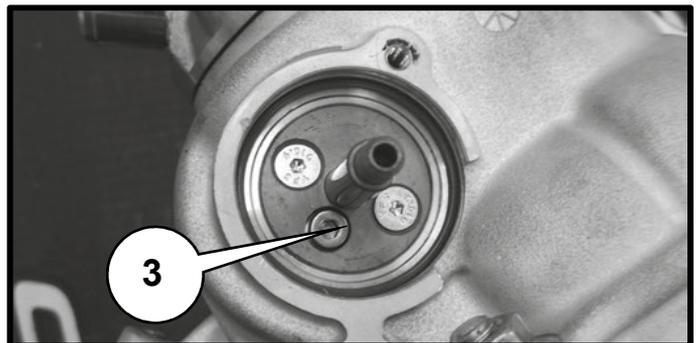
- Remove the lids from each side of the valve

## CAUTION

During the reassembly step reposition the O-rings with precision in back of each lid along with the set-ring on the left side [2]



- Remove the M4 connecting screw [3]

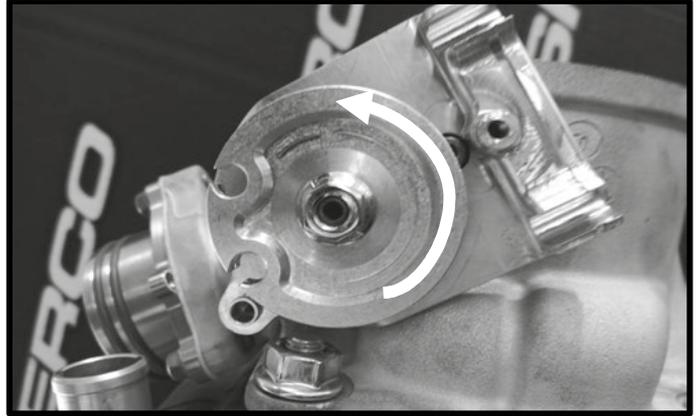


- Remove the valve by disassembling both parts.



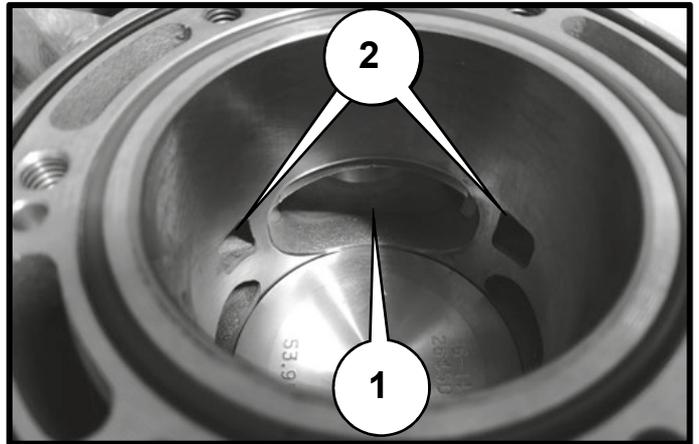
## ›) Control of valve operations

- Turn the control as far as possible in the counter-clockwise direction

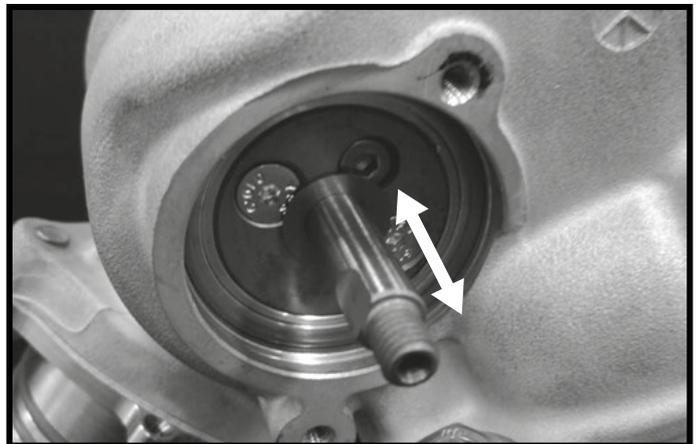


- Ensure that the central valve **[1]** and 2<sup>nd</sup> stage booster **[2]** are fully open

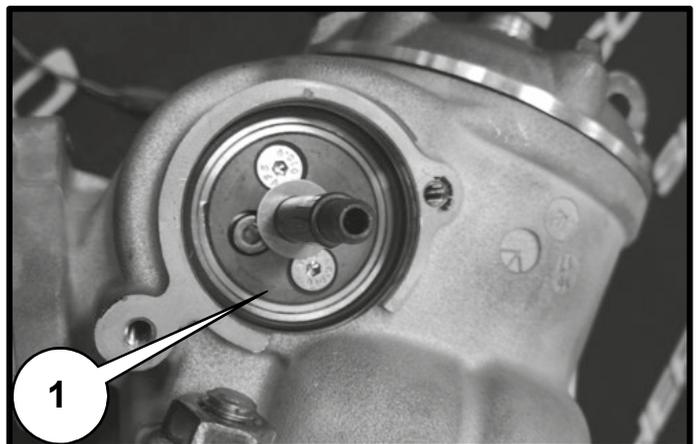
*If it's not the case refer to the exhaust valve's height setting (P 26)*



- Control the lateral clearance of the valve in ensuring the absence of any hard points when rotating

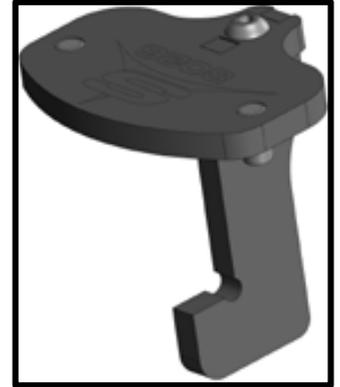


- Should you observe an abnormal clearance or a hard point at the level of rotation replace the set ring **[3]** in order to obtain optimal operations.



## › Exhaust valve setting

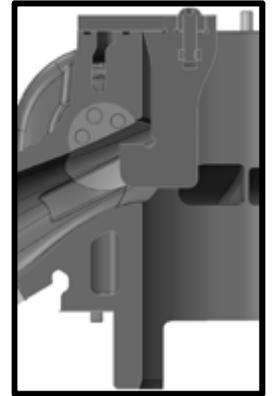
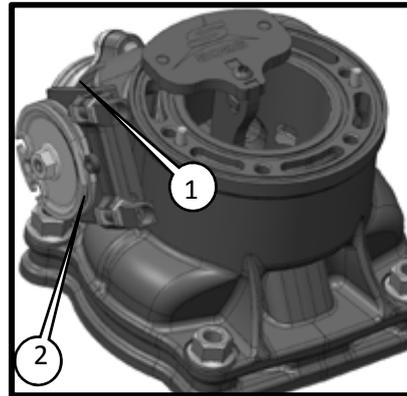
When setting the valve to low position when putting the cylinder back, you must use the tool intended for the purpose (ref.: 8026):



This tool is positioned in the cylinder as shown below.

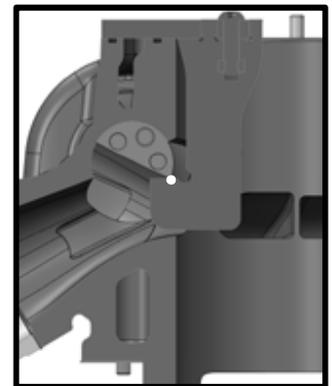
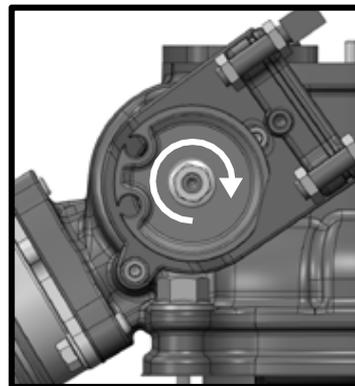
Remove the o-rings from the cylinder head surface to enable the tool to position itself better.

Place the valve in open position to be able to run the bottom of the tool into the exhaust port



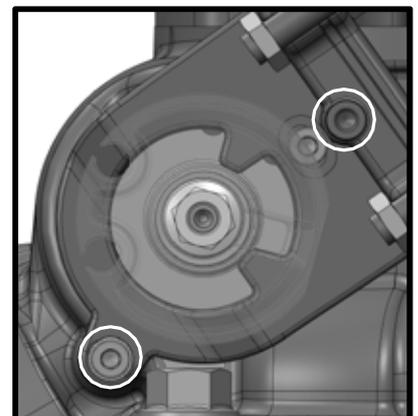
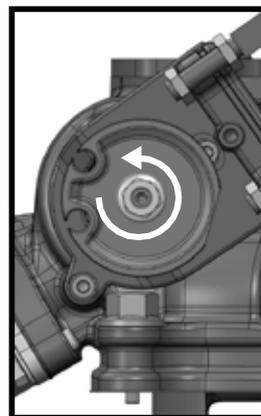
Once the tool is in place, make sure that the 2 CHC screws are slightly loosened to enable the cable support to move.

Then turn pulley **[1]** clockwise until the valve comes into contact with the tool.



Once the valve is in contact on the tool, maintain the pulley in this position.

Turn support **[2]** anti-clockwise until the support's lower stop comes into contact with the flat side of the pulley. Once the 2 contacts (shown by white dots) are held at the same time, lock the support with the bottom CHC screw, then move pulley **[1]** to access 2nd screw.

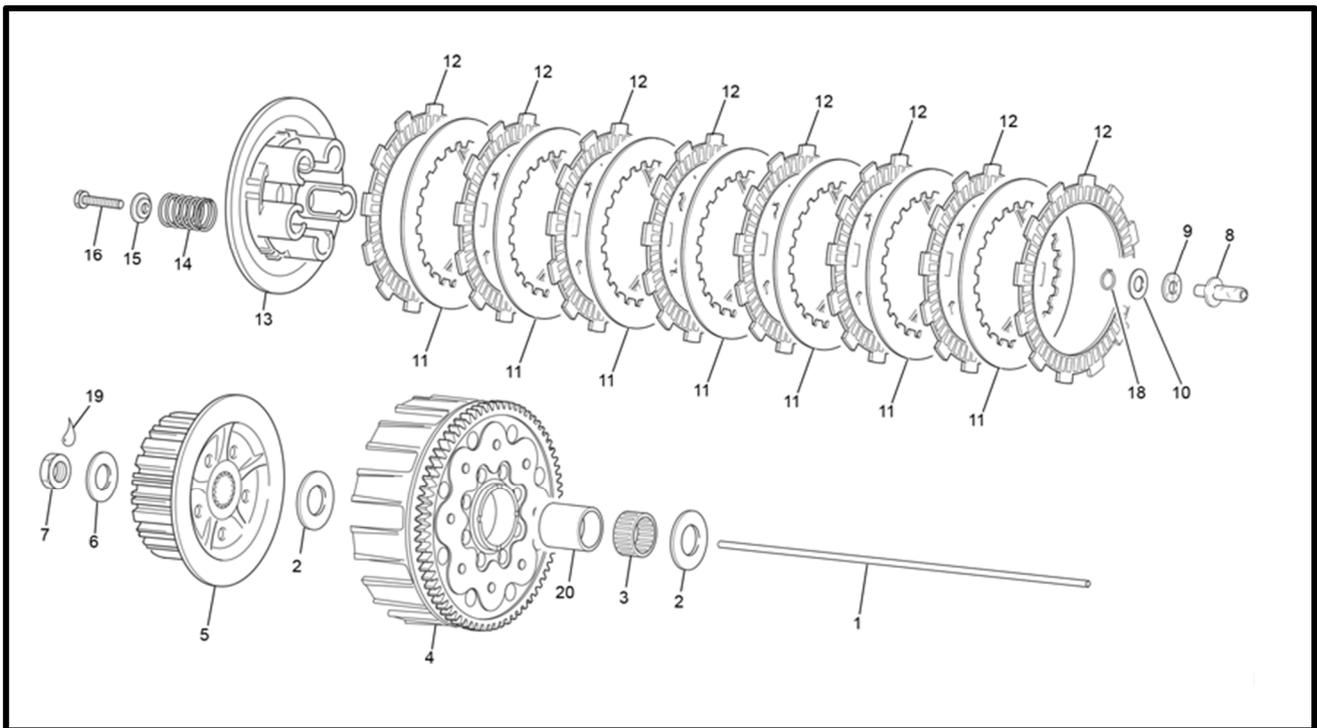


## ›| Clapper box pipe, Pipe intake sleeve

- Over time, the carbon tabs gradually lose their elasticity, which in turn causes a loss in power.
- Replace the worn or damaged gearbox.
- Verifier the condition of the intake sleeve, especially if it is not split.



## ›| Clutch



- Needle **[3]**: verify state of wear.
- Push Rod **[1]** : Verify the state of wear:  
**Minimum length = 162,5mm**
- Springs **[14]**:Verify the length.  
**Minimum spring length 37,5mm**
- 8 lined discs **[12]**: **Standard thickness:** 2.95 mm / **threshold thickness:** 2.7 mm / deformation threshold: 0.3 mm
- 7 smooth discs **[11]**: **Standard thickness:** 1.4 mm / **threshold thickness:** 1.3 mm / deformation threshold: 0.3 mm



# ENGINE REASSEMBLY

For the blow-up drawings, please refer to the 125SE-R spare parts catalogue

## » Connecting Rod Assembly

- Insert the connecting rod assembly into the ball bearing by the top, in exercising precaution, until reaching the stop

### CAUTION

The crank must be positioned on the cylinder side.

## » Transmission Gearbox

- Coat lubricant on the fork guiding tip and insert the rings [1] from the top
- Fasten the supporting washer[2] onto the secondary shaft
- Present the primary and secondary shafts together, then drive them into their respective bearings until reaching the stop.

### CAUTION

Any fork used must be paired with its original pinion as well as its roller.

- Hook the forks into the grooves of the moving pinions and insert the drum into its bearing

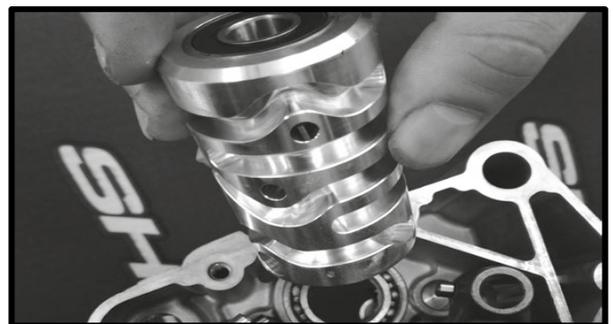
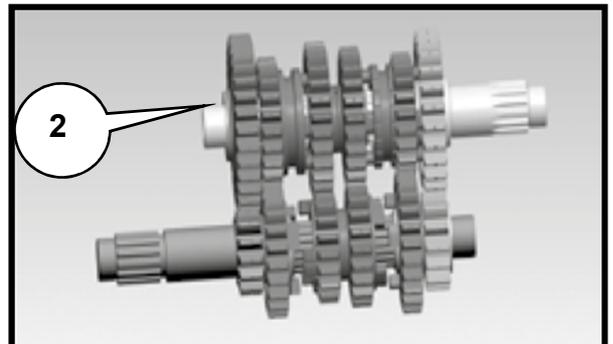
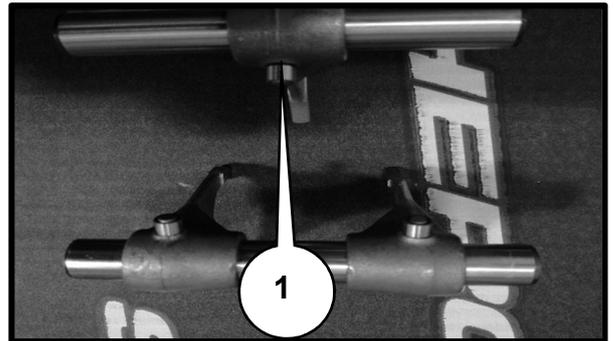
### CAUTION

When hooking the forks into the drum pay special attention to prevent the rollers from falling off of the tips

- Lubricate the fork axes and insert them into the forks. Drive the forks into their housing in the casing until reaching the stop

### CAUTION

The gearbox shafts must now turn without hitting any hard points



# ENGINE REASSEMBLY

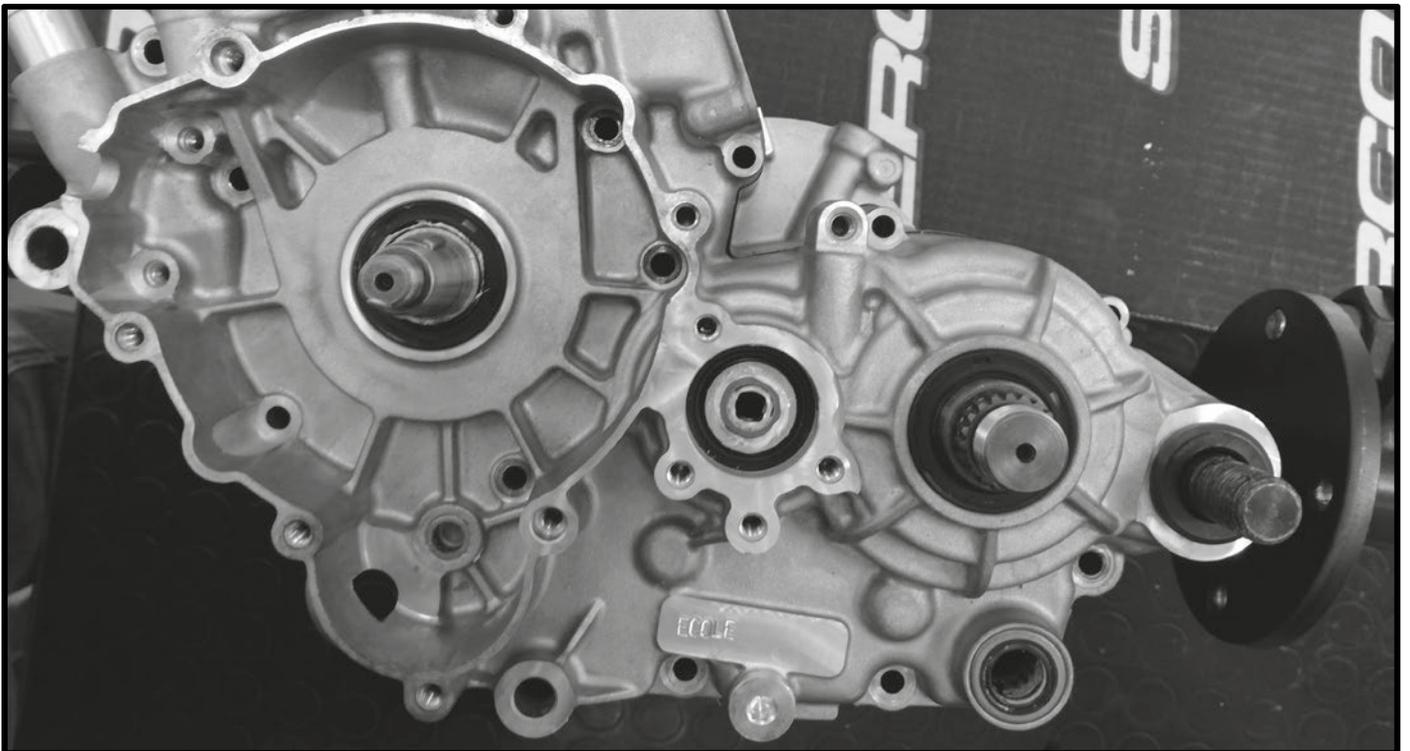
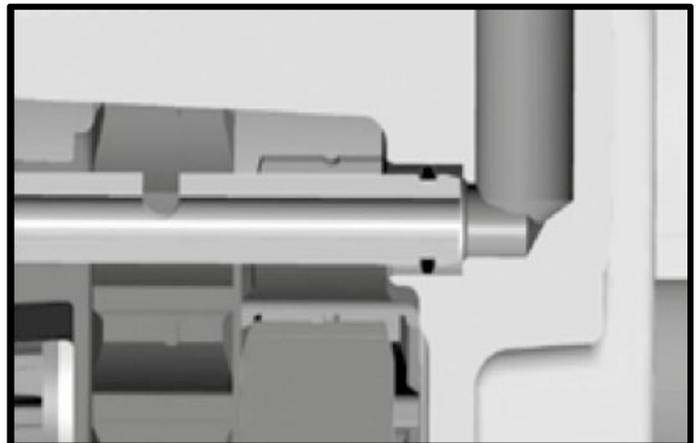
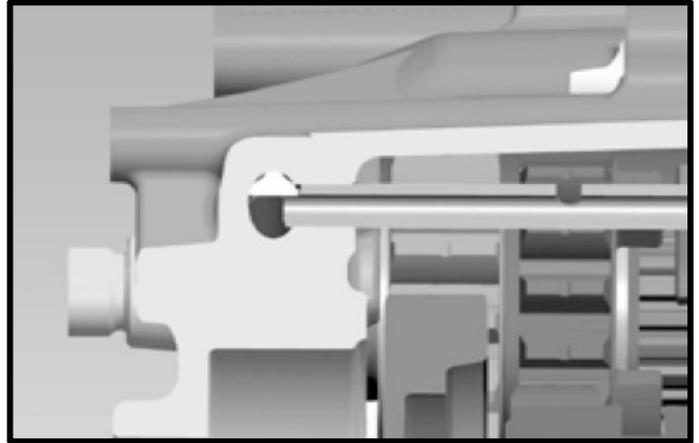
## ›) Assembly of the half casings

- Install the transmission gearbox lubrication tube on the right-hand half-casing.
- Install the O-ring on the gearbox lubrication tube.

### CAUTION.

Beware of the tube indexation, flat spot on the oil plug rivet side.

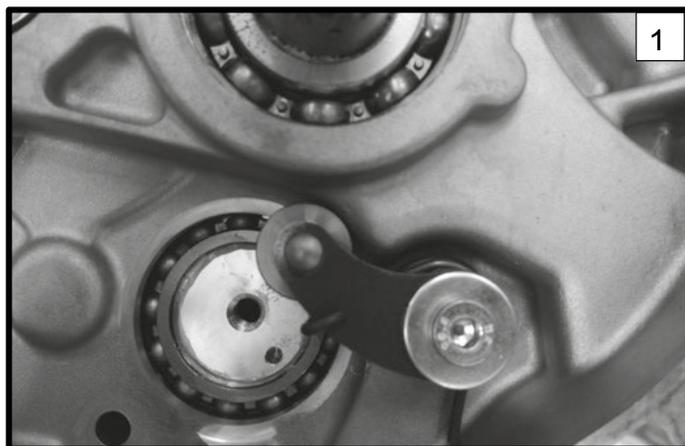
- Ensure that the centering rings are in place on the right half-casing and moreover that the gearbox shaft washers are in their appropriate place.
- Lubricate the gaskets of the left half-casing and proceed with installation of this half-casing.
- Introduce the screws and tighten them to 10 N-m.
- Next, use a plastic mallet to lightly strike the connecting rod assembly and verify that the shafts are turning without any hard point.



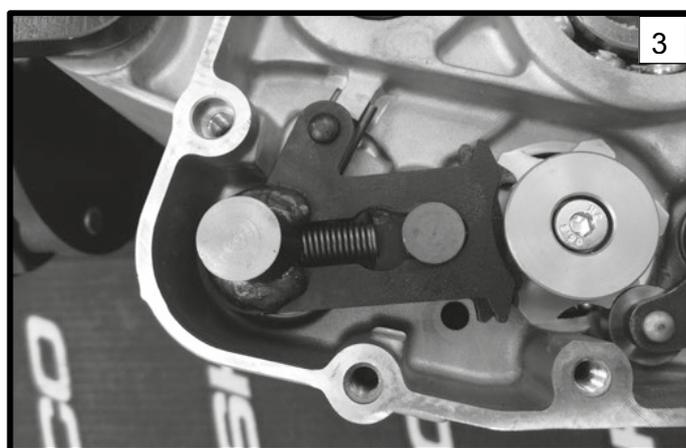
# ENGINE REASSEMBLY

## › Selection mechanism

- Place the spring into the casing with the curved strand pointing upwards.
- Insert the spacer, the locking finger and the washer, then coat the CHC M6 x 20 screw with blue brake fluid and assemble all the parts.
- Hook the spring to the lever arm.  
The other end of the spring must lean against the casing [1].
- Install the selection star indexation slug on the drum.
- Pull the locking lever arm backward in order to install the selection star.
- Coat the screw with blue brake fluid and then assemble the selection star on the drum. [2]



- Lubricate the axis of the now assembled selection and insert it into the needle bearings without neglecting the set ring.
- When the prong abuts the selection star, push it so that the shaft drops all the way to the bottom. [3]

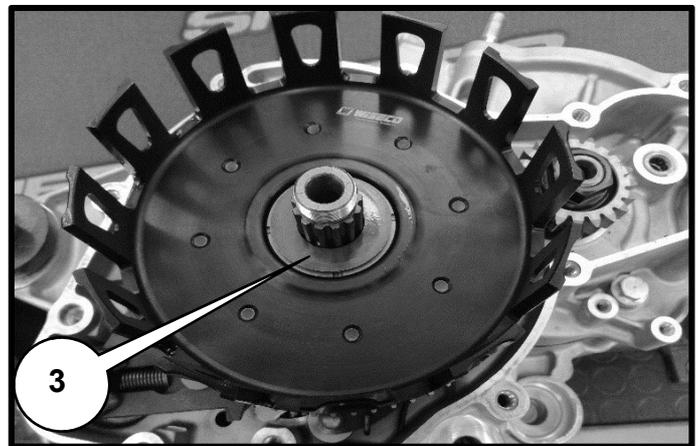
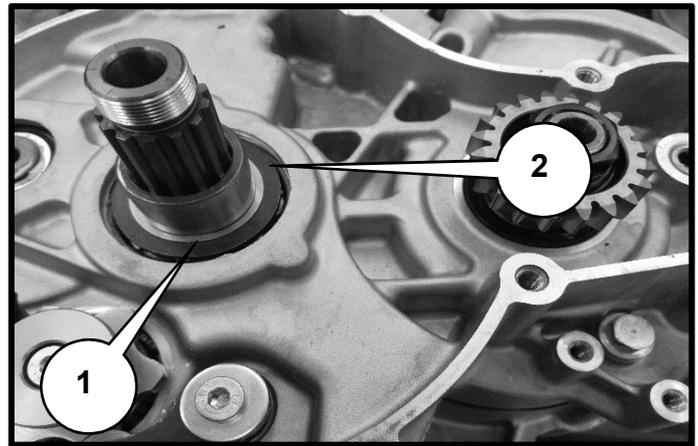


- Verify whether the return spring strands are positioned against the finger in the casing on both sides [4]
- Install the selector and shift through all the speeds. Upon shifting through the entire range of speeds, the transmission gearbox shaft output needs to be rotated. Remove the selector once again.



## › Main transmission and clutch

- Lubricate the connecting rod assembly gasket.
- Install the half-moon wedge in its housing.
- Insert the pinion with the shoulder in a downward position onto the crankshaft shank.
- Insert the washer [1], housing spacer and pre-lubricated needle cage [2] on the main shaft.
- Raise the clutch housing and its washer [3].
- Place the blue brake fluid on the main shaft threading.



- Assemble the clutch drum and its nut on the main shaft in applying red brake fluid and a new safety washer.
- Introduce tool reference 1814 and tighten the nut to **100 N-m**.
- Apply blue brake fluid on the crankshaft threading.
- Raise both the tapered washer and the nut.
- Block the main transmission using tool 1814 and then tighten the pinion nut at the end of the crankshaft to 100 N-m in adding red brake fluid.
- Remove tool 1814 and verify the absence of any hard point in the main transmission by turning the connecting rod assembly



# ENGINE REASSEMBLY

## ›| Clutch discs pressure plate

- Oil the push finger [1] and insert it onto the main shaft.
- Prior to the assembly step, oil the lined discs.
- Begin with a lined disc. The 8 lined discs and the 7 smooth discs are positioned in an alternating pattern.
- Install the pressure plate along with the springs, the spring plates and the screws.
- Tighten the screws to **10 Nm** in a cross pattern.



## ›| Clutch casing

- Verify whether the two centering bushings are indeed well installed.
- Introduce the casing joint and hold it in place with a bit of lubricant.
- Stick the water pump set ring [2] with a bit of lubricant.
- Present the clutch casing while ensuring that the water pump assembly has been properly installed. The connecting rod assembly needs to be rotated so that the water pump can mesh at the end of the crankshaft.
- Install the M6 hex sprocket screws and tighten to **10 Nm**.
- Verify that all shafts rotate without encountering any hard point



### CAUTION.

Install a new joint on the M6X40 screw and on the coolant drainage screw.



## ›| Piston and cylinder

- Oil the parts well before lifting.
- Insert the needle bearing into the foot crank, position the piston (the arrow on top of the piston is pointed toward the exhaust).
- Place the shaft and clips with the open side downward.
- Install the base joint.
- Properly position the segments, with the reference pointing upward.
- Insert the pre-fitted cylinder, fasten the cylinder with 2 nuts on opposite sides.
- Raise the other two screws and washers, then tighten to **20 Nm**.



## ›| Cylinder head

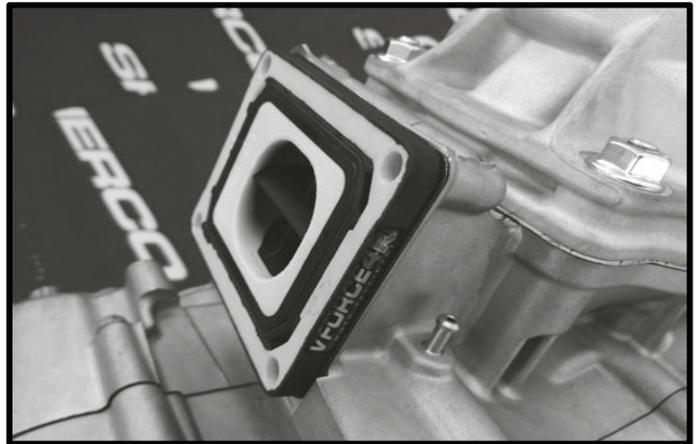
- Clean the parting surfaces of the cylinder as well as the cylinder head.
- Position the 2 centering slugs on the cylinder.
- Install the cylinder head.
- Place the M8 shoulder screws with new copper washers.
- Tighten three times and in a cross to 10 N-m.



# ENGINE REASSEMBLY

## ›| Clapper box and pipe intake

- Install a gearbox joint with new clappers.
- Place the complete clapper box into the intake pipe.
- Assemble the intake pipe with the four M6 screws and its metal collar.



## ›| Gearbox output pinion

- Place the gearbox output pinion on the secondary shaft.
- Apply blue brake fluid on the threading.
- Insert the safety washer.
- Install the nut and tighten to 100 N-m.
- Re-bend the safety washer release finger on the nut



## ›| Assembly of the ignition starter

- Install the ignition starter.
- Lubricate the pinions using spay-on grease.



## › Ignition assembly and its cover

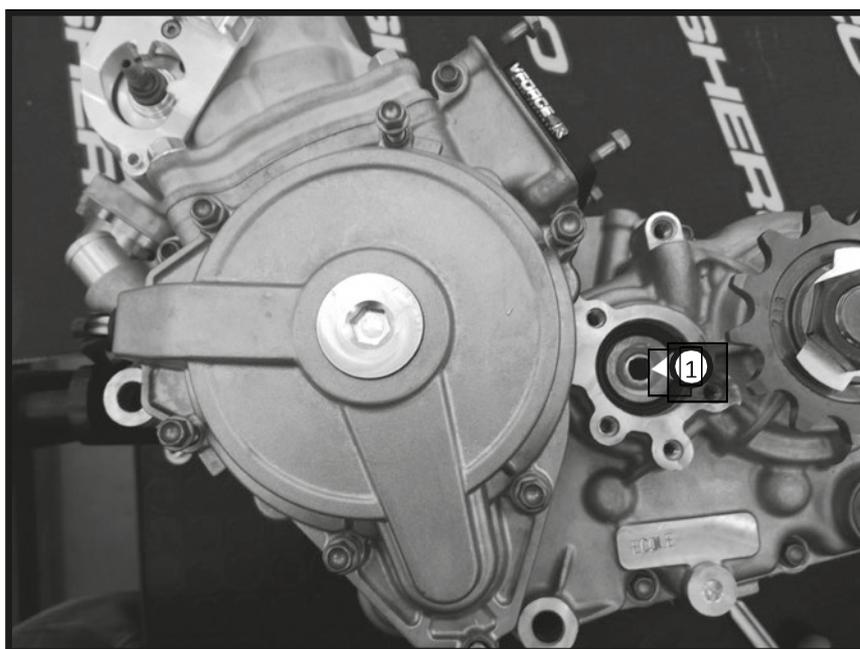
- Place the half-moon wedge in its housing on the connecting rod assembly.
- Insert the rotor on the connecting rod assembly.
- Apply blue brake fluid on the threading.
- Insert tool 1815, install the nut and tighten to 80 N-m.
- Set up the 2 centering bushings.
- Introduce a new joint and fasten the ignition cover.

## › Assembly of the electric starter

- Replace the O-ring on the starter by a new joint.
- Apply a bit of lubricant on the O-ring.
- Insert the starter into the right-hand casing.
- Fasten the starter with the 2 hex sprocket screws.
- Finish the step by oiling and then inserting the clutch control rod into the main shaft **[1]**.
- Assemble the speed selector with its screw and washer.
- Assemble the two drainage plugs with a new joint

### CAUTION.

The transmission gearbox needs to be filled when the engine is returned to its frame; otherwise, a portion of the oil will leak from the main shaft



# TABLE OF TIGHTENING TORQUES

Standard tightening torque	Brake fluid	
M5	6 Nm	
M6	10 Nm	
M8	24 Nm	
Chassis tightening torque	Brake fluid	
Rear wheel nut	100 Nm	
Rear cradle fastening screw	24 Nm	•
Front wheel nut	40 Nm	
Yoke foot clamping screw	15 Nm	
Brake pad axis screw	8 Nm	•
Lower yoke tee clamping screw	12 Nm	
Upper yoke tee clamping screw	17 Nm	
Engine screw	60 Nm	
Oscillating arm nut	100 Nm	
Cylinder head - frame screw	24 Nm	

Engine tightening torque	Break fluid	
Revolution sensor screw	8 Nm	•
Coolant drainage screw	10 Nm	
Clutch slave cylinder screw	10 Nm	
Cylinder head, cross-patterned tightening torque	10 Nm	
Crankshaft inspection plug	8 Nm	
Clutch pressure plate screw	10 Nm	
Water pump casing screw	10 Nm	
Ignition wheel nut	80 Nm	•
Clutch drum nut	100 Nm	•
Main transmission pinion nut	100 Nm	•
Ignition casing screw	10 Nm	
Central casing screw	10 Nm	
Drum screw	10 Nm	•
Starter screw	10 Nm	
Cylinder screw	20 Nm	
Gearbox output pinion nut	100 Nm	•

# TABLE OF CARBURETOR SETTINGS

Sea level	Temperature	-20°C ... -7°C	-6°C ... 5°C	6°C ... 15°C	16°C ... 24°C	25°C ... 36°C	37°C ... 49°C
3 000 m to 2 301 m	Air screw adjustment Slow injector Needle Needle position Main injector	1T1/4 42 N1EG 3 168	1T3/4 42 N1EG 2 165	1T3/4 40 N1EH 2 162	2T1/4 38 N1EH 2 160	2T1/4 36 N1EI 2 158	
2 300 m to 1 501 m	Air screw adjustment Slow injector Needle Needle position Main injector	1T1/4 45 N1EG 3 168	1T1/4 42 N1EG 3 168	1T3/4 42 N1EG 2 165	1T3/4 40 N1EH 2 162	2T1/4 38 N1EH 2 160	2T1/4 36 N1EI 2 158
1 500 m to 751 m	Air screw adjustment Slow injector Needle Needle position Main injector	1T 45 N1EF 3 170	1T1/4 45 N1EG 3 168	1T1/4 42 N1EG 3 168	1T3/4 42 N1EG 2 165	1T3/4 40 N1EH 2 162	2T1/4 38 N1EH 2 160
750 m to 301 m	Air screw adjustment Slow injector Needle Needle position Main injector	1T 48 N1EF 4 172	1T 45 N1EF 3 170	1T1/4 45 N1EG 3 168	1T1/4 42 N1EG 3 168	1T3/4 42 N1EG 2 165	1T3/4 40 N1EH 2 162
300 m to 0 m	Air screw adjustment Slow injector Needle Needle position Main injector	1T 50 N1EE 4 175	1T 48 N1EF 4 172	1T 45 N1EF 3 170	1T/4 42 N1EG 3 168	1T1/4 42 N1EG 3 168	1T3/4 42 N1EG 2 165

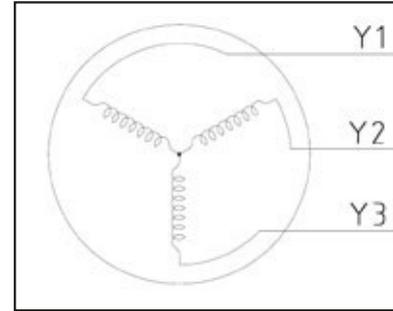


# LOAD CIRCUIT CONTROL

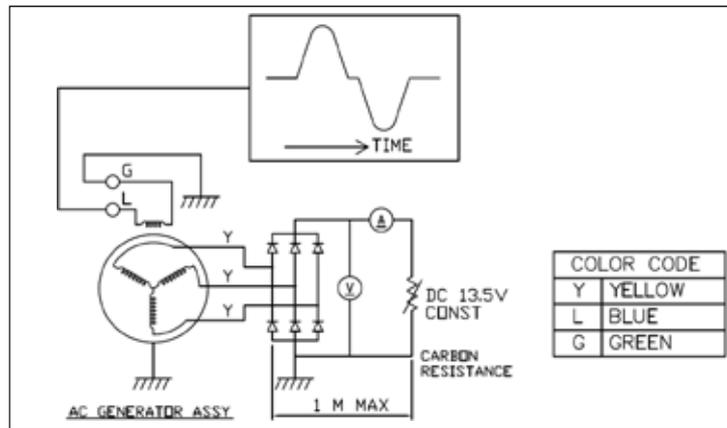
## STATIC CONTROL VALUES (ENGINE TURNED OFF) 125 SE-R

- Battery voltage > 12.5V
- Stator winding resistance values: Measurement of the resistance between each winding.

Y1-Y2	0.30 $\Omega$ $\pm$ 15% (à 20°C)
Y2-Y3	
Y1-Y3	



- Verify the absence of continuity between the windings and the motorcycle mass.



- Resistance of the "Pick UP" (regime) sensor:  
Red ~ Greens 120  $\Omega$   $\pm$  20% (at 20°C)
- High-voltage coil  
Primary coil 0.30  $\Omega$   $\pm$  15% (at 20°C)  
Secondary coil 6.3 k $\Omega$   $\pm$  20% (at 20°C)

## DYNAMIC CONTROL VALUES

- Voltage regulator:  
Alternating current (alternating 200-V rating)  
In slowdown mode 22  $\pm$  2 V At  
6,000 rev/min: 77 V  $\pm$  3 V  
Continuous current  
On the regulator outlet (continuous 20-V rating)  
At 4,000 rev/min: 14.6 V + Red/White, - Green

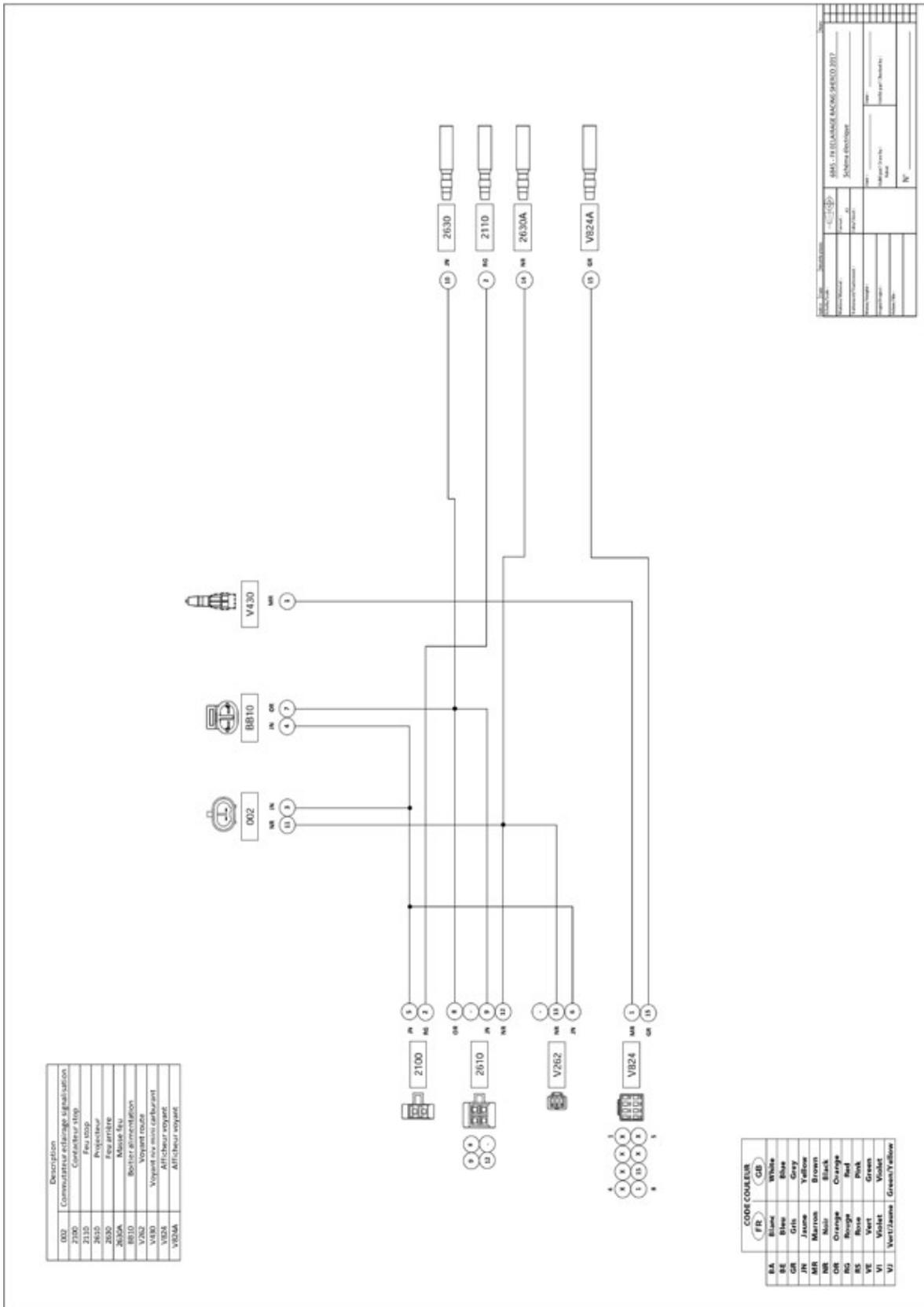






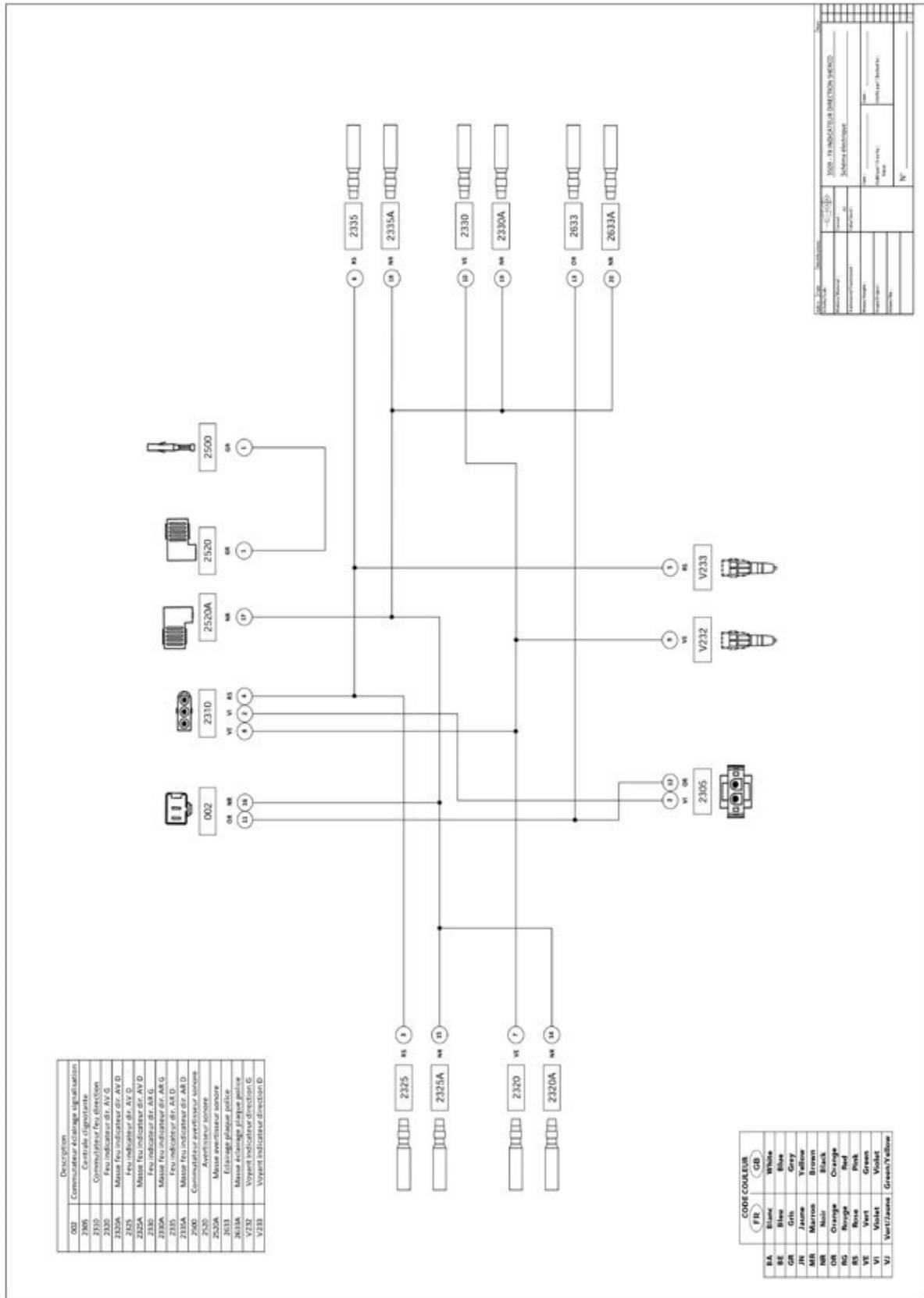
# WIRE MAP

## RACING LIGHT BEAM 125 SE-R



# WIRE MAP

## ACCESSORY BUNDLE



# SHERCO

[WWW.SHERCO.COM](http://WWW.SHERCO.COM)

