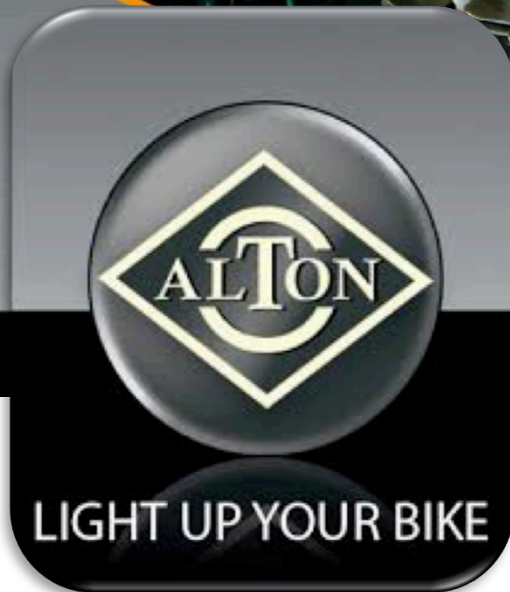


MODERN TECHNOLOGY FOR CLASSIC BIKES



Electric starter kit for Vincent Comet and Meteor
Fitting instructions

MODERN TECHNOLOGY FOR CLASSIC BIKES

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IMPORTANT NOTE:
these fitting instructions
are suitable
for the pre-serie kits only

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Introduction to the Alton electric starter kit for Vincent Comet and Meteor

Thank you for your purchase of the Alton electric start kit for Vincent single cylinder machines. We hope you will be happy with your kit and enjoy using it on a regular basis. Before fitting it, there are a few points to consider.

Please check the contents against the packing list supplied. If you think anything is missing or anything is damaged, contact us with the serial number and the part numbers at paul@alton-france.com

Please read the instructions completely and entirely. The kit is modern technology and you are about to fit it onto a motorcycle that is probably at least 65 years old. In an ideal world, the kit can be fitted and operational in approximately three hours. However, you should be prepared to allow one or two days as you may encounter problems as fitting progresses.

Even if the kit itself can be considered as "bolt on" you may expect some preparation works prior to the installation such as improving the generator and wiring, fitting an isolator switch, changing control cable routes etc.

The kit is NOT a fix for a motorcycle that is difficult to start because of ignition, timing or carburation problems. A motorcycle that is difficult to kick start will just be difficult to electric start unless these issues are addressed.

We also advise you consider your level of mechanical skill. If in any doubt, get professional help to install it. We have some 10 years experience of dealing with starter kits for classic motorcycles (Velocette and Norton Commando). Problems are often partially or entirely due to poor installation. If you think you need help contact your supplier.

The Alton kit is specifically designed to be reversible, except a small modification to primary drive cover T5/4 (see page 12). Owners should store all original parts removed safely to be reinstalled if the starter kit is removed.

On receipt of your kit you should note the serial number (see below) and send, either by post or email, a completed copy of the warranty activation document.

Each kit is a unique craftsman made product and there may be differences in the component parts. In the case of a service request or spares order, the serial number will be necessary.



Introduction to the Alton electric starter kit for Vincent Comet and Meteor

Before fitting the kit, owners should ensure they have a suitable battery in good condition. Failure to use a compliant battery can result in damage to your kit. The battery should be at least equivalent to reference YTX 16BS 12V. If in any doubt consult a reputable battery specialist to be sure of acquiring a suitable model. A lithium-ion battery equivalent to 18Ah has been used successfully, although expensive it is much smaller than a lead battery of similar power.

If you have any doubt or questions on fitting your kit, your first point of contact the distributor from whom you purchased your kit. They should be able to help. In addition you may contact us via our after-sales service on the Alton internet site. We aim to reply to all service requests within 24 hours but at weekends or holiday times this may take slightly longer.

None of the above points affect the purchaser's statutory rights and warranty in any way. This is defined as two years parts, repair or replacement as seen fit by Alton. Any litigation is subject to French law only.

The best email address for questions about fitting the kit is paul@alton-france.com

Organize your workspace

Never install your kit in a rush. Ensure you have a clean, well lit and quiet space in which to work. Lay out your tools in advance ensuring you have everything you need for the job. This may sound evident but parts have been damaged or even gone missing when these suggestions are overlooked. Remember you should never start up your bike in an enclosed, badly ventilated space.

Step 01. Preliminary review

Check the following points to ensure your bike is ready to receive the electric starter kit.

1. Polarity. The kit is designed for 12v negative earth wiring only. If your bike is positive earth, we strongly recommend converting it.
If for some reason you wish to keep your bike positive earthed, please contact us, we can modify the kit, at a cost, to match positive earth use.

2. Generator. Electrical starting requires a well charged battery, hence an efficient charging system on the motorcycle. We warmly recommend fitting an Alton generator (model ACG02-PR01) with the starter kit. Every Alton generator comes with its rectifying-regulator. To install and connect the Alton generator and its control box, refer to specific instruction supplied with it.

3. Exhaust valve lifter. Check that the exhaust valve lifter mechanism, its handlebar lever and its control cable are fully operational. If not replace or fix any faulty parts to make sure they will work perfectly.

4. General conditions. If you are satisfied that the motorcycle engine and ignition are in good condition and there are no issues related to timing and fuel supply that could cause big backfires or misfiring on a regular basis, you can start installing the kit. Otherwise fix these problems first.

Step 02. Removing original parts

Remove original parts and prepare the space for the kit.

Support the bike on the rear stand and support the engine with a jack or wood blocks.

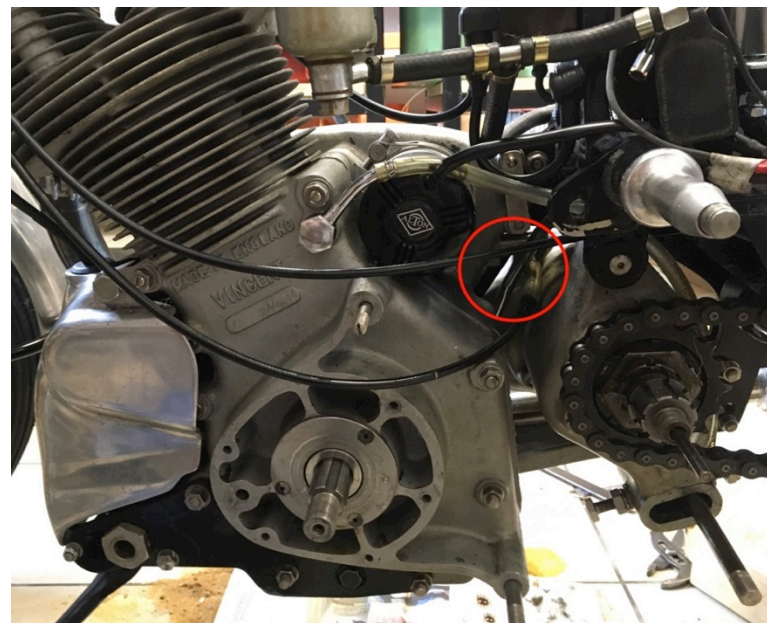
Firstly, disconnect the battery. Dismantle the original primary drive assembly including the shock absorber, the primary chain, the complete clutch assembly and the inner case T4/2.

As the starter motor will seat very close to the generator body you must remove the original dynamo clamp and fitting studs to make way for the starter motor. Mark the position of the generator body then remove the dynamo clamp ET176/2 and dynamo studs E109/10 and E109/5. Replace them with the thin stainless-steel strap supplied with the kit plus stud, dowel, nut and screw as shown on picture.



This will give room for the starter motor. If the generator has moved during installation you should remove the timing cover and reset the position.

Note carefully the location of the starter motor. The breather pipe and clutch cable could interfere and make installation of the kit tricky. Make sure to make a clear space for the starter motor.



Step 03. The preassembled kit

Fit the new inner case and starter kit.

Tip: it is a good idea to connect the power cable to the terminal of the starter motor and the earth cable to the lug on the back of the inner cover before installing the kit because the access to these terminals will be difficult when the kit is in place. Remember to fit the insulation covers.

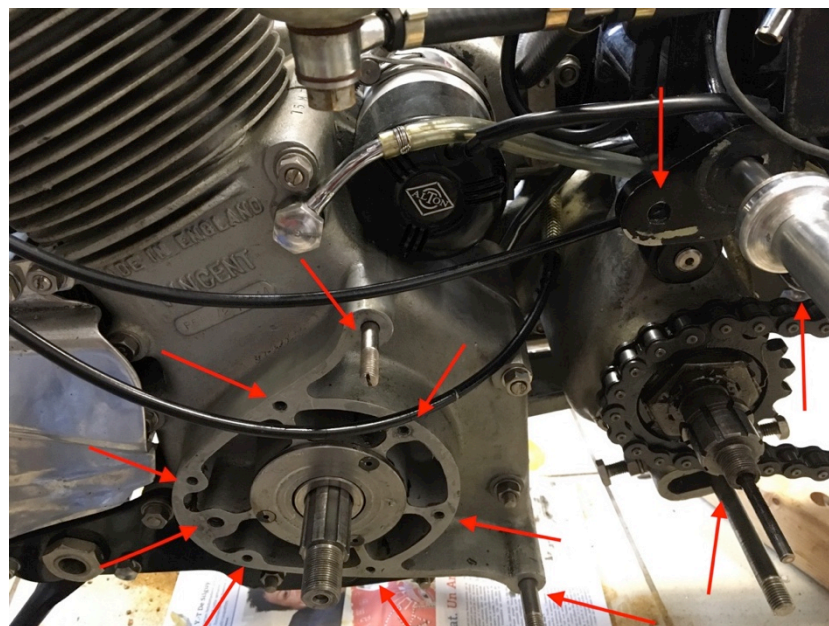
Apply gasket sealant to the joint with the crankcase and offer the kit carefully in to position. Make sure that there is nothing interfering with the kit. It could be necessary to wiggle the case in to place on to the FT33, ET109/8 and F48/6 studs but the kit should find its place without forcing. The fitting holes in the case are machined in the same locations as in the original, so that the original studs and spindles should match without problems.

When the kit is aligned fit the two countersunk screws (UNC 1/4" x 5/8", ref. 02 page 15). Only use Loctite when final tightening takes place.

Place the four socket head cap screws (UNC 1/4" x 2.1/2" ref. 01 page 15) but only finger tight to check if their holes are aligned with threaded holes in crankcase.

Fit the bolts and spindles to hold the inner case in its position. Don't forget that some of these contribute to the structure and the general geometry of the motorcycle. Make sure they are all correctly tightened.

Refit the two countersunk screws with Loctite and remove the four socket head cap screws, they will be replaced later with the primary drive outer cover.



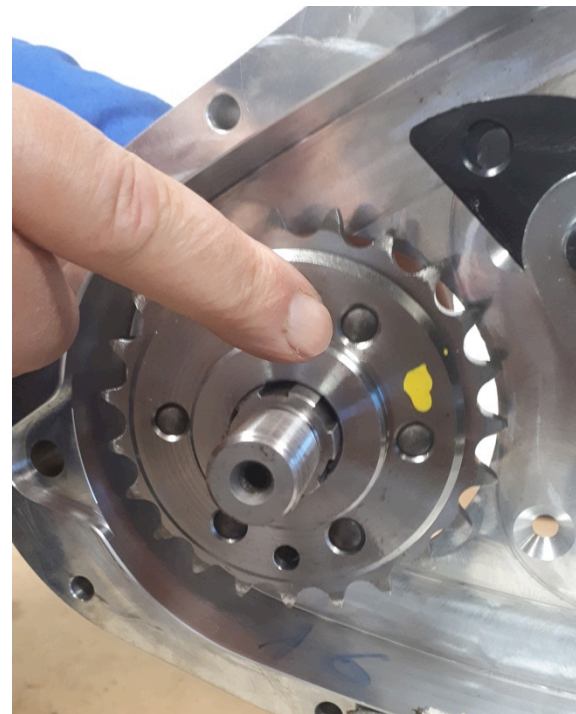
Main fitting interface points

Step 04. Clutch and primary drive

Replace the clutch and primary drive.

Note that the new engine sprocket assembly includes a specifically designed shock absorber to replace the typical multi-spring system of original Vincent primary drives.

The sprocket assembly should be fitted so that the yellow dot is on the outside. The sprocket seats normally in the same location on the crankshaft as the original but check carefully the alignment of the primary drive sprockets and correct to within $\pm 0.40''$ or 1mm using E76 shims as necessary. Ensure the new sprocket is seating on the main shaft spacer particularly if there is a main shaft oil seal fitted. Refit original clutch assembly and primary chain.



Step 05. Sprag clutch assembly and starter chain

The Sprag clutch (One-Way-Clutch) assembly and the starter chain.

Familiarise yourself with the sprag clutch assembly. The sprag clutch is a high-precision part generally not well known among classic motorcycle enthusiasts. It should be handled and fitted with care. You must use the 'C' spanner extractor supplied every time you need to remove it. NEVER use any kind of tyre lever or a screwdriver to force. Never apply any stress on the sprocket. When the sprag clutch is in place it does not require any maintenance, the oil in the primary drive as recommended by Vincent manuals is enough to lubricate it.

Firstly, fit the shouldered spacer with its shoulder facing outward, fit sprag clutch assembly with the crankshaft nut finger tight and check starter sprocket alignment.

The other spacer may be needed to obtain a correct chain correct using E76 shims, if necessary, to within ± 0.40 " or 1mm. Fit any extra shims BEHIND the spacer with its shoulder still facing outward. A dry fit without the starter chain may be convenient to proceed this step more easily. That way you can check anytime the free rotation of the sprag clutch sprocket. If the starter chain guide (black polyamide block) and steady plate is fitted to the inner cover kit remove the four screws and watch for the 3mm spacer plate. When you get the alignment correct, the starter chain can be fitted, with its removable link correctly oriented. Fit the crankshaft nut. Finger tighten it in place.



Step 06. Starter chain guide

Fit the starter chain guide (black polyamide block), the steady plate and the 3 mm spacer with the four screws.

The tension of the starter chain can be adjusted with a small rotation of the black polyamide block. If necessary, drill the upper hole of the polyamide block up to 7 or 8mm in diameter to provide an adequate location.

When an up and down movement of about 1/8" or 3mm is obtained, the crankshaft nut must be fully tightened with a drop of Loctite on its thread. Use the extractor lever to hold the sprag clutch assembly (picture).

Do not forget to remove the extractor lever and its screws when the job is done!

To check proper reversible movement, turn the crankshaft clockwise to check it rotates freely in this direction. You may feel the system resisting in this reverse direction, but it should not be locked in anyway.



Step 07. First tests. **Be careful, safety first!**

Be careful, safety first. Watch your fingers!

At this point, you can do the first test with "direct feed". This is not actually a starting test of the bike but a preliminary test in order to check all driving parts of the kit are correctly fitted to work properly later. These first tests should be done with ignition disconnected and spark plug removed.

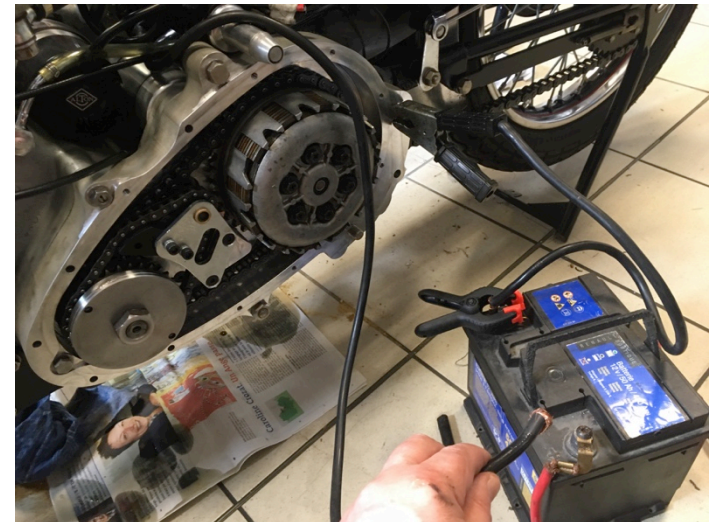
Use a well charged battery. Connect the feed cable of the starter motor to the positive terminal of the battery. Then connect a cable to the negative terminal of the battery and be ready to touch the cable to earth (ground) of the motorcycle.

Caution: that way you are powering the starter motor directly. This means that the starter motor will turn immediately as soon as the cable touches earth.

As you are doing these preliminary tests with the primary drive cover removed, be extremely careful, keep a safe distance and mind your fingers! In the same time, you could be holding the battery and cables, sparks could be generated. Make sure that this cannot cause any fires to the bike or to your workplace.

Perform a test with the spark plug in but ignition still disconnected, you must familiarise yourself with the handling of the valve lifter and its synchronisation with the starter motor.

The starting motions should be smooth and dynamic with no signs of hesitating and not noisy.



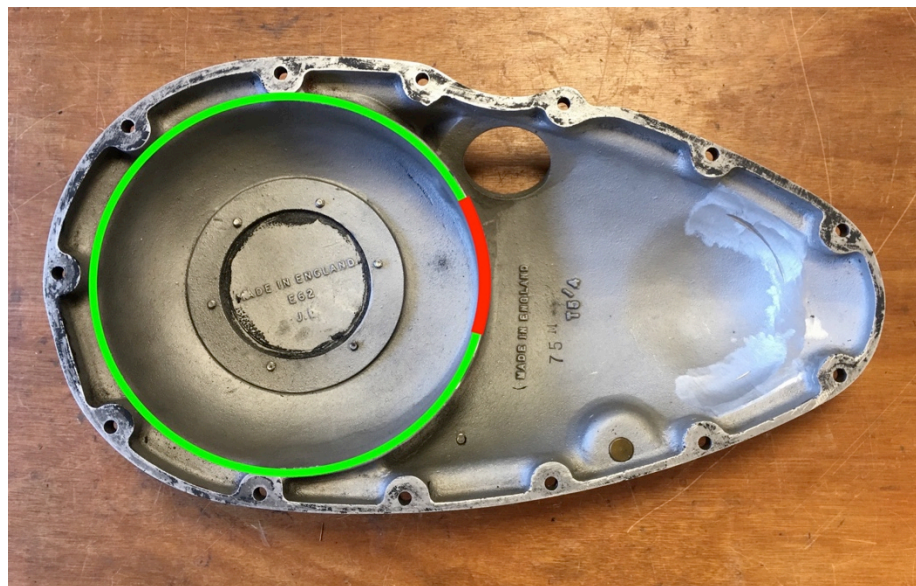
Step 08. Primary drive cover

Remove the inspection cap from the primary drive cover. Insert two of the long screws in the front of the cover and slide into position. Note the interference between the internal structure of the outer cover and the starter chain steady plate.

You must remove a "slice" of this structure, approximately 2cm x 8cm. This is the only irreversible modification needed to fit the Alton kit on the Vincent Comet. Check the outer cover goes flat against the inner case. Due to differences in the casting of the outer cover the sprag clutch is very close to the inner cover and small amounts of metal may need to be removed with a 'Dremel' tool to get the outer cover to fit.

Apply gasket or sealant of your choice, fit the modified cover normally with the four long socket head cap screws (re. 01 page 15), the eight 6mm socket head cap screws (re. 04 page 15) plus the longer 6mm socket head cap screw at the top (re. 03 page 15).

Fill up oil level in the primary drive the same way Vincent manuals recommend.



Step 09. Connecting electrics

Refer to diagrams page 17 to 19 depending on the type of ignition fitted.

Position the battery, modification to the battery strap and platform may needed to be made to accommodate the larger battery. Fit the starter relay to the plate supplied which can also take the regulator supplied with the Alton generator. If you prefer, fit the starter relay elsewhere to suit your installation. Make sure the cable ends are fitted with the insulating covers to prevent shorting out.

You must always use the correct quality heavy duty cables for connecting the kit. We supply cables that conform to our quality and safety standards.

Should you need longer cables than those supplied for a standard installation contact us and we will supply you with the length you require.

Step 10. Starting

While we accept you are now raring to go and see the results of your work, we would like to remind you that certain safety precautions should be taken after any major alterations to your motorcycle whether it be in a private garage or a mechanical workshop.

Don't be in too much of a rush - you are nearly there!

**SAFETY : MOVE YOUR BIKE OUTSIDE
BEFORE ACTUALLY STARTING IT UP.**

With the plug removed, crank the engine with the electric starter.

If the engine turns smoothly, refit the plug BUT not its cap and crank the engine again with the electric starter using the valve lifter.

If you start a newly rebuilt engine for the first time, it is better to use the kick start to check that all is well and allow the moving parts to run in before using the electric starter kit.

If all the previous tests give satisfactory results, set controls as if you were ready to kick start now you have the green light to start the engine with the electric starter kit.

Initially operating the exhaust valve lifter (only during the very first engine revolutions) will make using the starter very much easier. This method will improve lifespan of the battery and will allow more starting attempts particularly if the engine is newly rebuilt or has a big bore conversion. The kit is designed to cope with the loads placed upon the electrical starting system and very occasional backfires.

01 Vis inox CHC UNC 1/4" x 2"1/2 Qté : 4

02 Vis FHC UNC 1/4" x 5/8" Qté : 2

03 Vis inox CHC M6 x 80 Qté : 1

04 Vis inox CHC M6 x 25 Qté : 8

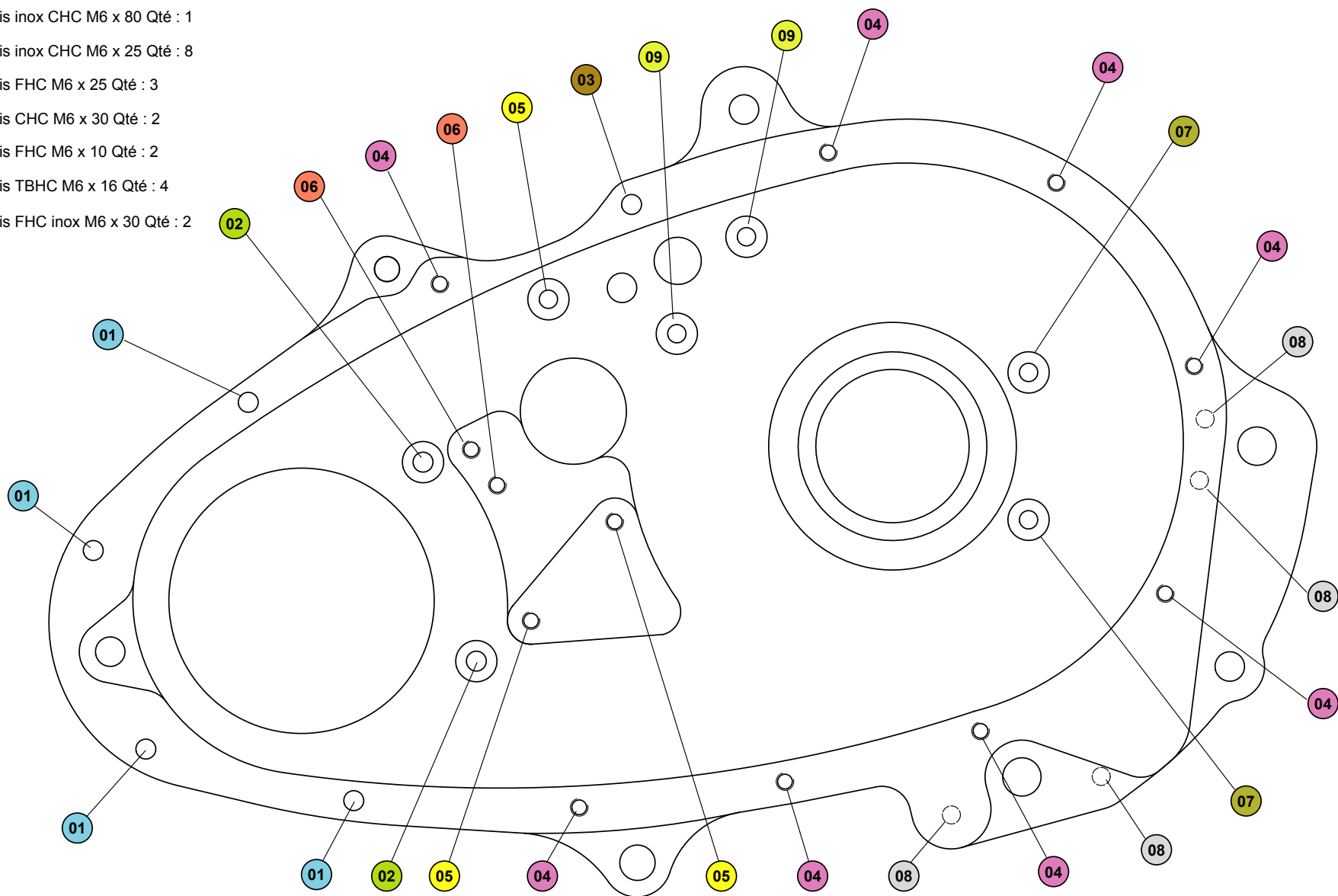
05 Vis FHC M6 x 25 Qté : 3

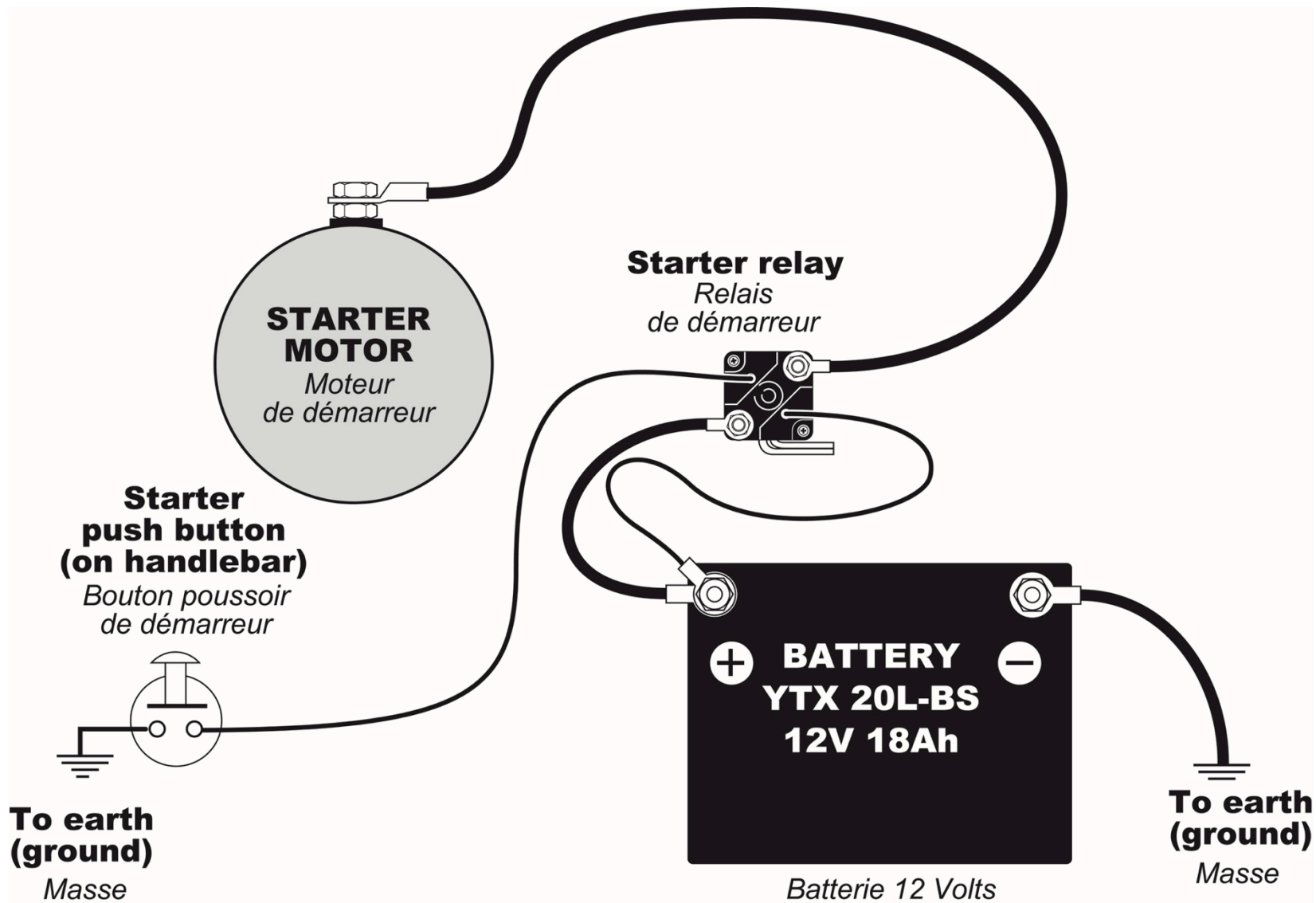
06 Vis CHC M6 x 30 Qté : 2

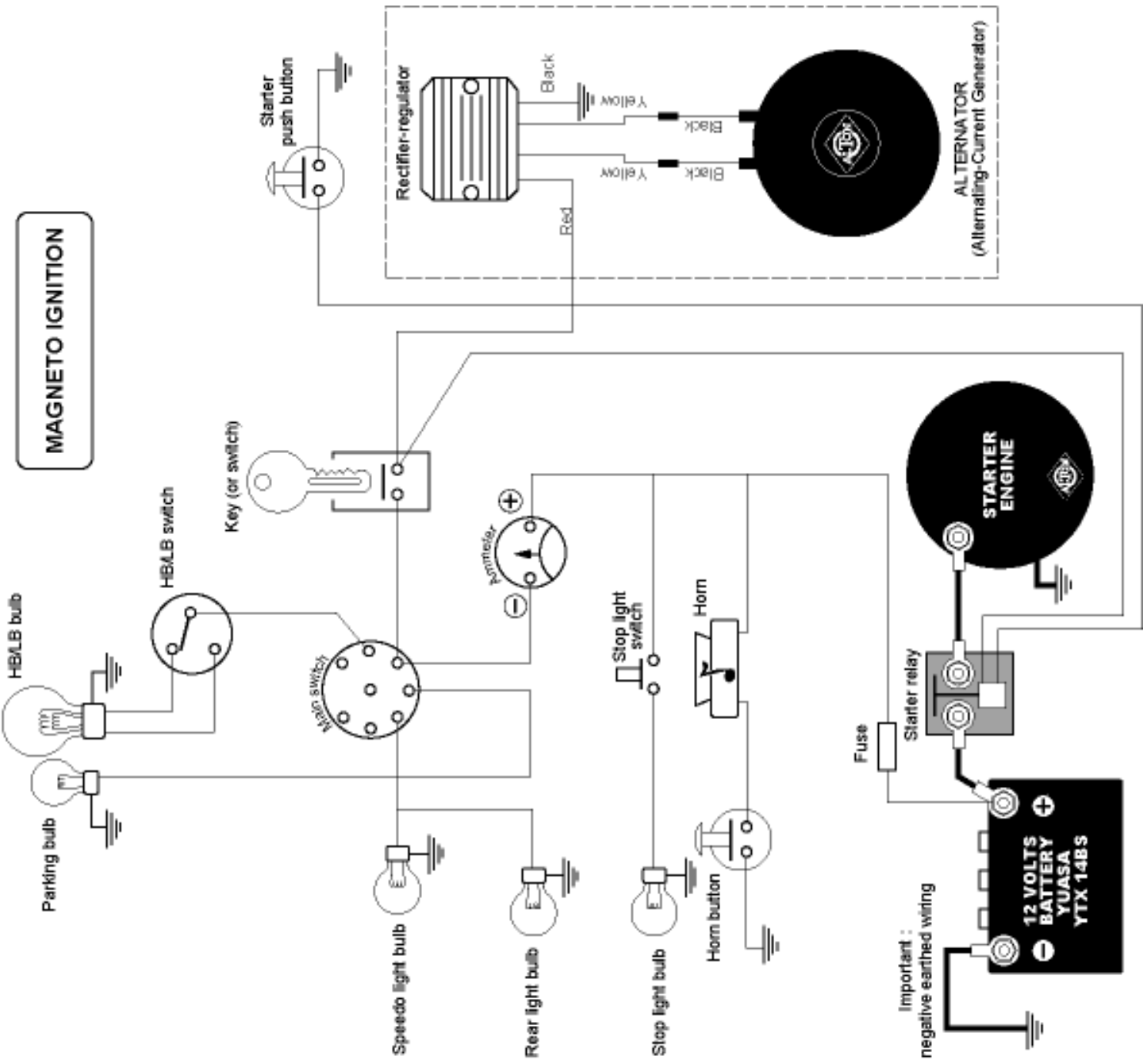
07 Vis FHC M6 x 10 Qté : 2

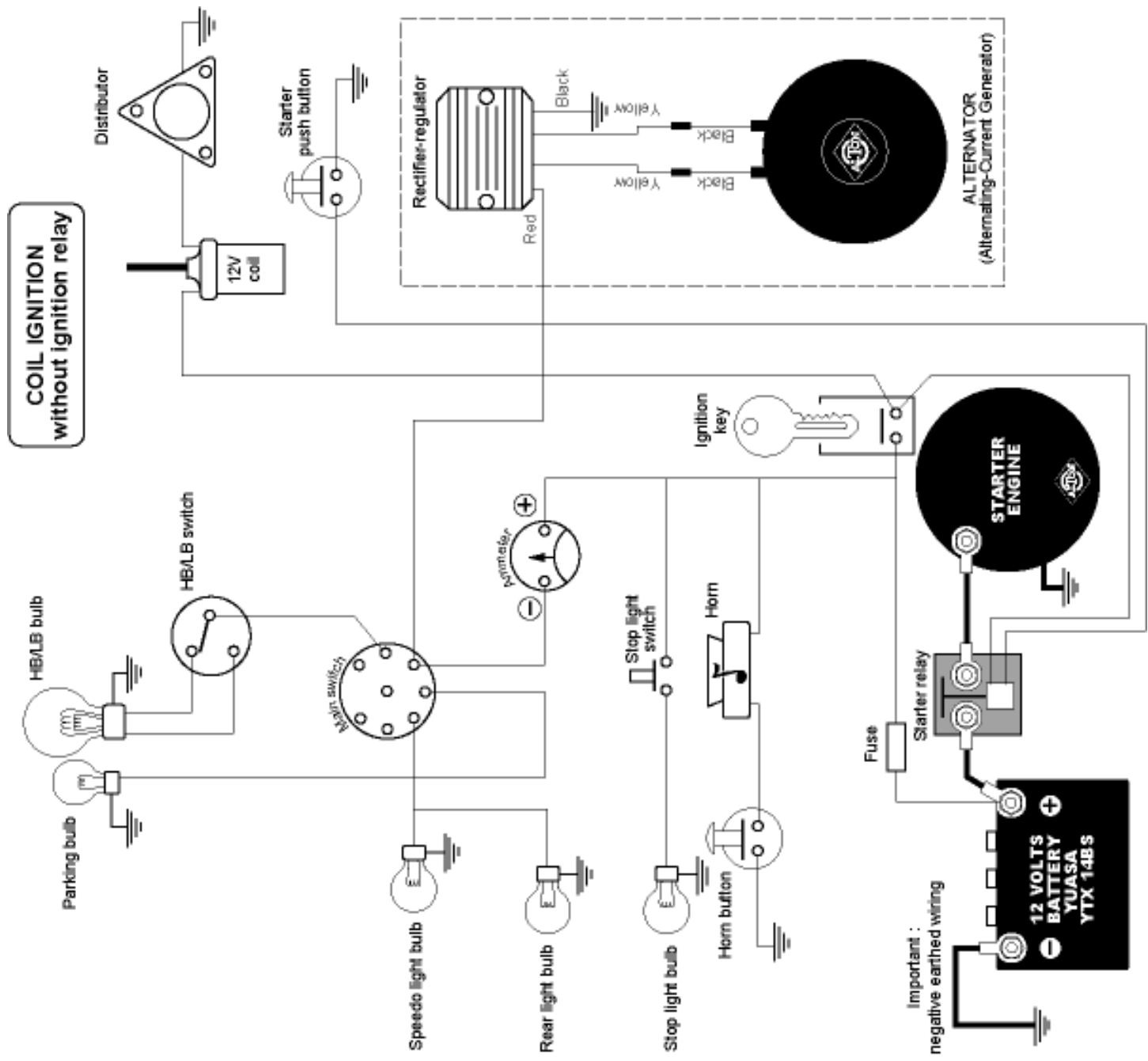
08 Vis TBHC M6 x 16 Qté : 4

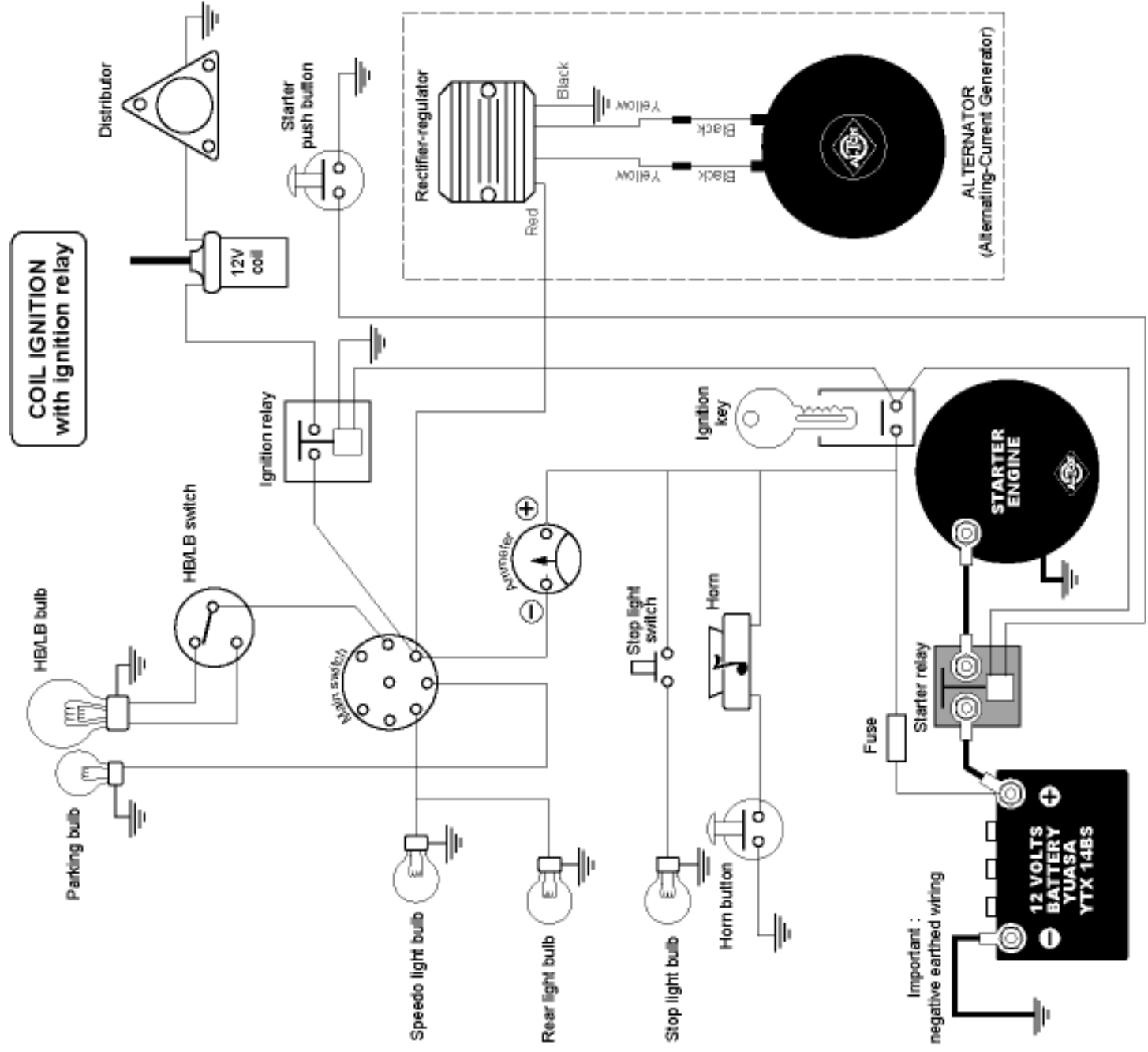
09 Vis FHC inox M6 x 30 Qté : 2











Contact (English/Spanish spoken)

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