

Thank you for purchasing our DT 12 volt conversion kit. 12 volt systems are more efficient than 6 volt, also the solid state, full wave regulator rectifier makes more power available for battery charging compared to the original one. Indicators become more reliable and the headlamp is noticeably brighter (even when using the same wattage bulb) with a 12 volt system. This kit converts the generator supply to 12 volts and seamlessly blends with standard Yamaha electrical system. We stock 45 watt APF headlamp bulbs, 12 volt batteries (& battery eliminators), bulbs, indicator relay & 12 v horns in handy 'accessory packs' that are cheaper than buying the parts individually.

There are no changes to the ignition which remains as standard in all cases.

DTs have good interchangeability between generators meaning you can swap them between different engine sizes, years and even different models. In the past this lead to generators being swapped between models when one sort failed. Yamaha also issued several service bulletins that altered the original lighting coils so it is common to find a modified or different generator to the one listed for your model. The new 12 volt lighting coil fits all the different generators Yamaha used on the DTs (& some IT, MX and TY bikes too). The wiring is straight forward to do - if done in a methodical manner. We give the kit a level 2 rating as special tools and good technical skills are needed to make a good job of fitting the new parts.

Battery

We have a small 12 volt battery that will fit in to the battery carrier available from our website if the original was 6N2 or 6N4. If the larger 6N6-6 was fitted the Motobatt MB3U is a direct replacement.

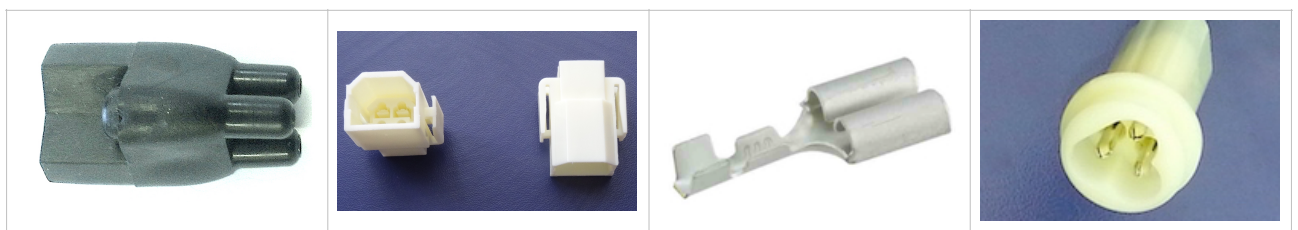
A battery eliminator (BE1 or BE2) neatly avoids having to modify the battery carrier, but lights and indicators will not work well with the engine below 2,000 RPM when using a battery eliminator.

General

As the generator will be removed its a good time to think about the condition of remaining windings and replacing old leads and connectors. Windings with missing or brittle insulation will need rewinding sooner rather than later.

We have fully equipped workshops that can clean and repair parts as well as carry out CNC rewinds should other parts of the generator need attention. Alternately you can take your bike to an approved motorcycle repair shop to fit the new lighting winding. Please note that under no circumstance will PME Ltd accept liability for costs incurred if you decide to have the part fitted by a third party.

These kits are intended to convert the power source of the lighting system from 6 to 12 volts, it is a condition of sale that the installer assumes all responsibility and liability in ensuring that the system complies with local vehicle lighting laws and safety regulations.





DT-12VC

12 volt conversion kit for:
DT250 1974-79, DT360 all, DT400 1975-78

Difficulty rating:



Tools required in addition to a standard mechanic's tool kit:

Air driven or electric impact driver (buzz gun).

Flywheel puller - order number: FWP-1

Multimeter - order number: TM-2

Uninsulated terminal crimping pliers - order number: CP-Pro

Cautions & Safety warnings

Fitting this kit should be done in conjunction with the bike's shop manual, following all safety warnings and cautions. The manual will also have all the torque values for fasteners.

Only use Genuine PME replacement parts with this kit, this includes any battery eliminator. Any commonly available automotive bulbs can be used and it is recommended to use a Motobatt AGM battery. A fuse of the same rating as standard must be fitted.

Only connect equipment or parts in the way specified in this guide. Do not attempt to modify the new parts. This fitting guide assumes the bike has a standard Yamaha wiring loom.

HID 'burner' lamps or LED headlamps must not be used. Use only filament type bulbs. LEDs can be used in the indicators but you may need to fit our "tweak kit" to the warning light.

Never connect 6 volt windings in to the same circuits that are supplied by 12 volt windings. This will cause an imbalance in the generator that will lead to overheating and serious damage.

Do not attempt to power the bike entirely on the DC output from the rectifier.

Ensure all 6 volt parts are replaced with 12 volt parts before applying 12 volts to the system.

Serious injury and/or damage to your motorcycle can result if you apply 12 volts to a 6 volt battery. With the new winding fitted, turning or running the engine will supply 12 volts. Batteries can explode or leak acid if the wrong voltage is applied to them. Battery acid can cause serious chemical burns when in contact with skin.

Getting Started

Begin by fitting the new regulator/rectifier. This is important to start by doing this so you know in advance what connections to make at the stator.

Option 1:

For bikes with a 6 volt regulator shown in the parts book a yellow wire and a single green (or green/white) coming from the stator.

Option 2:

For bikes without a regulator shown in the parts book, a yellow & 2 green wires coming from the stator (one green/white one green/red trace, one may be plain green).





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If needed, use the shop manual to locate the rectifier and any regulators fitted on your model. These may be located under the fuel tank, behind the engine, on the battery carrier or in the headlamp - fitted under a factory re-call (use option 2 in this case). Standard regulators have one yellow wire and the case is the earthed, aftermarket ones may have an additional black wire, this is simply an earth. Rectifiers have two wires, normally a red and a white. You may encounter a green/white wire and a red connected to the rectifier, treat the green wire as a if is white.

Option 1

Remove the 6 volt rectifier. The new 12 v regulator/rectifier should be mounted at or near to where the 6 volt rectifier was if possible (usually on the battery carrier or under the tank). Plug in the new white and red wires to the bike's wiring.

Remove the 6 volt regulator. Route the yellow wire from the 12 volt regulator/rectifier to the point where the 6 volt regulator was connected. Cut the wire to length and add an appropriate connector from the terminal set. Connect the new stator green to the bike's green/white and the yellow to the bike's yellow wire. The black wire from the regulator must be connected to the wiring loom's main earth or the negative battery terminal.

Option 2

Remove the 6 volt rectifier. The new 12 v regulator/rectifier should be mounted at or near to where the 6 volt rectifier was if possible (usually on the battery carrier or under the tank). Plug in the new white and red wires to the bike's rectifier wiring. Check for a 6 volt regulator, even if the parts book shows no regulator fitted on your model, many where fitted under a factory re-call or by a previous owner.

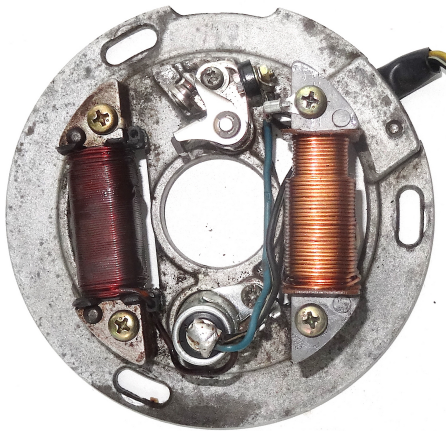
Run the yellow wire from the 12 volt regulator/rectifier down to where the wiring loom wire connects to the stator wires. There is often a rubber shroud over these connections, cut the wire so it sits inside the shroud and add a male bullet connector & its insulator. If the pre-existing yellow wire does not have a male bullet terminal, remove the connector fitted and crimp on a male bullet (& insulator). Both these yellow wires will connect to the yellow wire on the stator via a double connector. Both the green wires will also connect to the green coming from the stator using a the same type of double connector. The black wire from the regulator must be connected to the wiring loom's main earth or the negative battery terminal.

Fitting the new Lighting coil

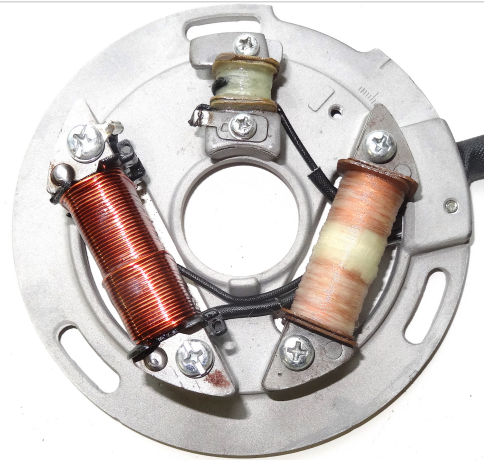
Whether the bike has points or electronic ignition or if the windings are parallel or in a "V" formation the procedure for fitting the new 12 volt lighting coil is virtually the same for all stator types. The new 12 volt coil fits all these different stators.

Some generators had an additional auxiliary lighting coil mounted over the ignition source coil. Yamaha found these windings caused a lot of problems and discontinued their use after a short time. To avoid any conflict these are completely removed.

1. Following the bike's shop manual remove the stator from the bike.
2. Identify the main lighting coil. When fitted to the bike, most points ignition generators have this on the right of the stator plate while electronic ignitions had it mounted on the left side. The lighting coil has green and yellow wires connected to it. Be sure you correctly distinguish it from the ignition source coil which remains fitted. Make careful notes on how the wires are run and in which positions they go in connectors.



Points ignition stator, the lighting coil is on the right.



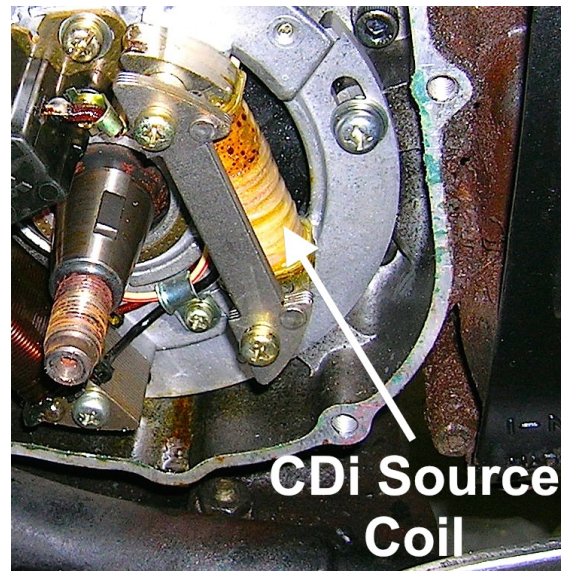
Factory & PME electronic ignition, the lighting coil is on the left

3. Unscrew the lighting coil and cut the wires. Discard this winding. Pull the wires through the sleeving and cut them away from the block connector. If the sleeving is hard and brittle, remove the remaining connectors and remove it. There is new sleeve in the kit and this will make the job a lot easier.

Auxiliary Lighting Coils



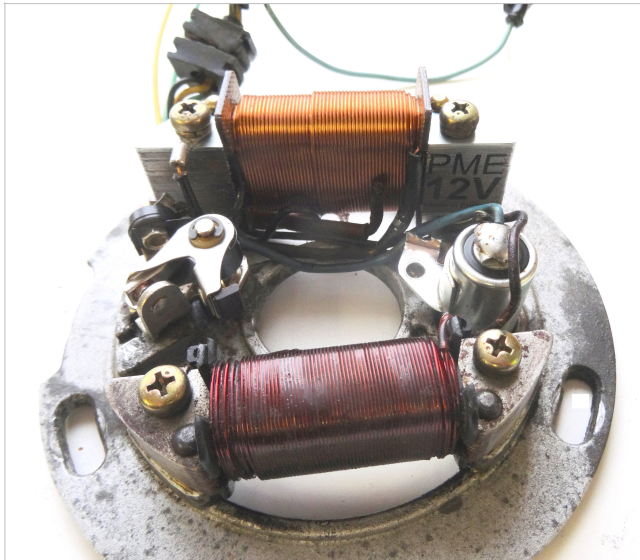
Auxiliary lighting winding above ignition source coil



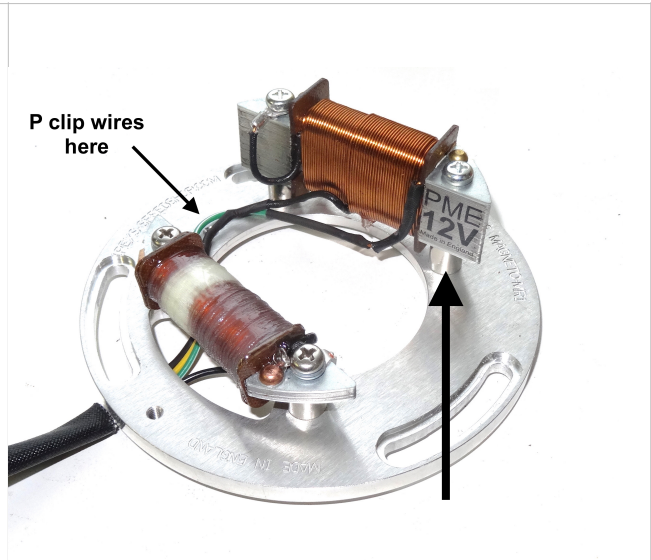
Auxiliary cleaned & refitted with windings removed

Remove the auxiliary lighting coil and unwind the copper wire from it. Remove any base insulation and clean the laminates. The generator can be re-assembled with the original hardware and the empty laminates refitted over the source coil. If you do not want to un-wind the copper, obtain some shorter M5 screws with locking washers and secure the source coil to the stator minus the auxiliary winding and its spacers. Remove the wiring from the stator's loom.

4. Remove any cardboard protective packing from the new PME 12 volt winding and fit it to the stator. Make sure the earthing tag goes under the screw. If retro fitting this lighting coil on to our RMK ignition kits, place the M5 x 10mm spacers under the coil. There are new screws for the lighting coil in the kit. It is important to make sure the new wires exactly follow the route the old ones did and that they are secured away from rotating parts. Where clamped to the stator, wires should be protected in high temperature sleeving supplied in the kit.



With Yamaha stators, secure the new winding using the original screws

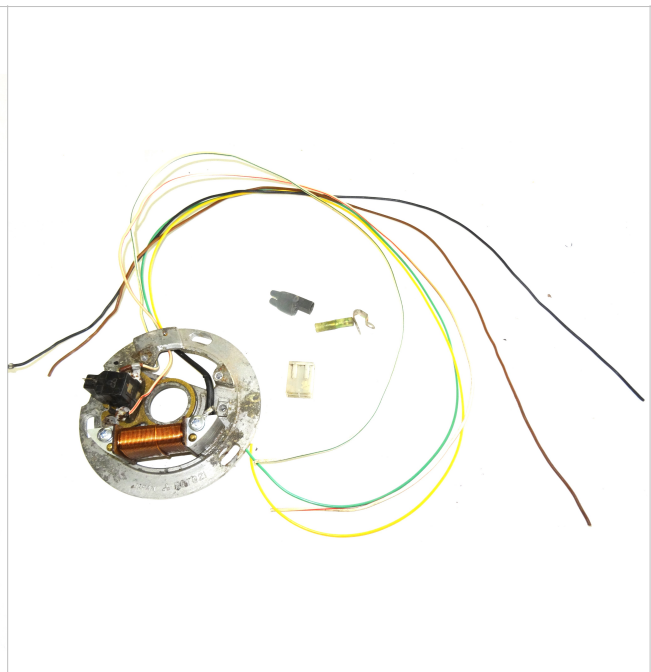


RMK kits: Place the spacers under the winding and secure with the screws from the kit

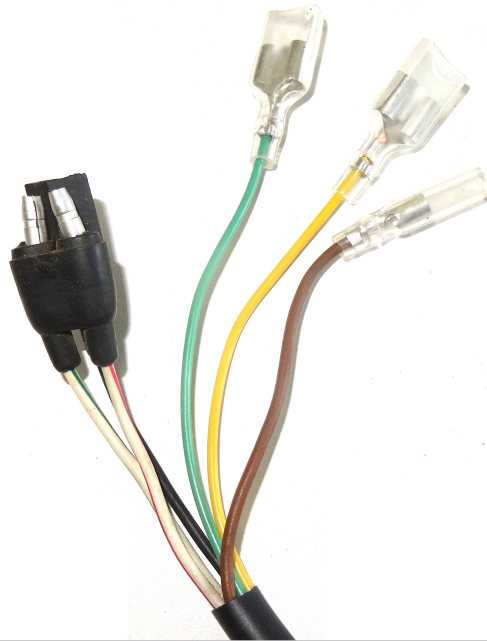
5. Combine the new wires in to the wiring loom. Use the new sleeving if required. Fit suitable connectors to the new yellow and green wires. If this leaves a block connector with just one wire you might like to replace it for a bullet connector, this neatens things up.



Lighting coil removed from stator (source coil also removed for rewinding)



12 volt lighting coil fitted. Connectors and sleeving removed.



New sleeving fitted, connectors replaced and new double connectors on lighting wires (option 2 shown)

6. Option 1 Stator Connections.

Having already set up the new regulator/rectifier will mean that the connectors needed for the stator wires will be known. If using option 1 fit the the correct connectors to suit the single yellow and green wires at the generator/loom connector. We stock many vintage connectors if you don't want to use the bullet terminals from the kit.

7. Option 2 Stator Connections

If using option 2 fit a double female connectors from the kit to the new yellow and green wires coming from the stator.

8. Refit the stator and check that the wires lay correctly and that they will not touch the fly wheel when fitted. Run the loom as it was originally and connect up to the bike's electrical system.

9. Ensure all the 6 volt parts, horn, indicator relay & lights are replaced with 12 volt ones.

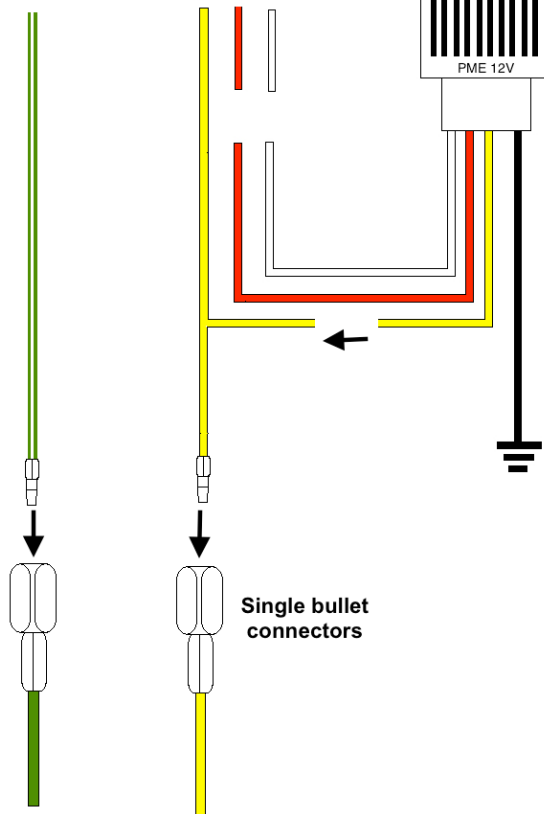
10. Fit a 12 volt battery or BE1 battery eliminator. Start the engine and measure the voltage at the battery terminals. At 2,000 RPM it should be between 13.8 - 14.8 volts with the lights off.

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Option 1 Wiring

Bike's wiring

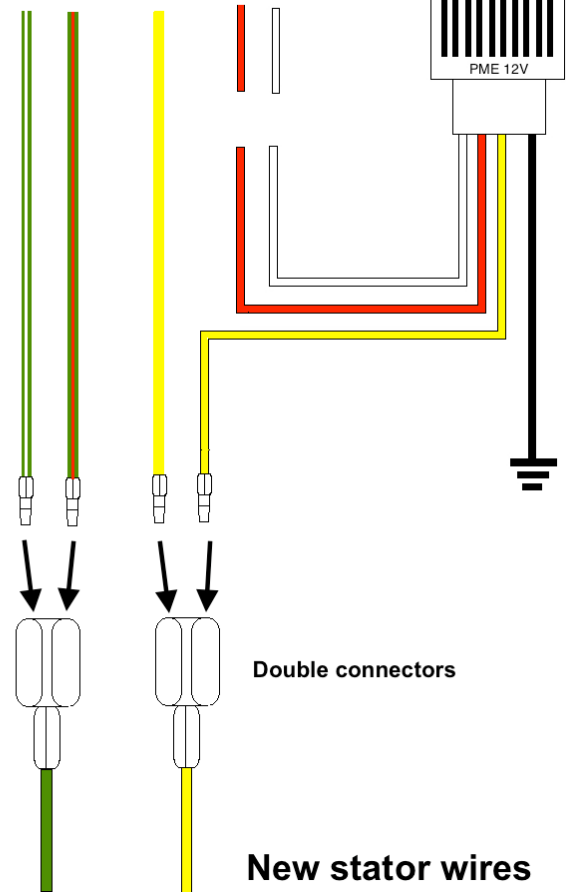


Single bullet connectors

New stator wires

Option 2 Wiring

Bike's wiring



Double connectors

New stator wires

Recommended Batteries	DT12V-1.2, fits in place of 6N6-2 & 6N6-4. If a 6N6-6 was fitted use a Motobatt MB3U
Battery eliminator option	BE1
Recommended headlamp wattage	35 or 45 watts - standard filament type bulb
Replacement regulator	PME P/N: RR12V-1
Lighting coil	LC-3 (85 Watts)
Fuse	10-15 Amps
Trouble shooting	
Over charging with a battery	1. Caused by poor earthing between engine and wiring loom. Common on restored bikes where the frame has been painted. Add an earthing wire between the engine and wiring loom negative. 2. LEDs in lighting circuit, replace with filament bulbs.
Over charging with a battery eliminator	Voltages up to 15.5 v with no load on the system are normal with a battery eliminator fitted. When the lights are on this will settle. Check earthing. LEDs in lighting circuit, replace with filament bulbs.
Blowing bulbs	Poor connections in loom