RAC511 6V HIGH TORQUE GEAR REDUCTION STARTER FOR PORSCHE 356 MODELS.

IMPORTANT

CAREFULLY READ ALL INSTRUCTIONS BEFORE FITTING THE UNIT.

Please note: When fitting the new unit it is imperative that any original manufacturers spacers or the original spacer plate fitted between the engine and gearbox are retained, this to give the correct pinion throw and mesh into the ring gear. All units are based around O.E. tolerance's.
If you have any doubt please contact a member of the Powerlite Technical Team for clarification.

6 VOLT STARTER MOTOR

IMPORTANT NOTICE

Always disconnect the battery before undertaking electrical work!

Thank you for buying this Powerlite Starter Motor!

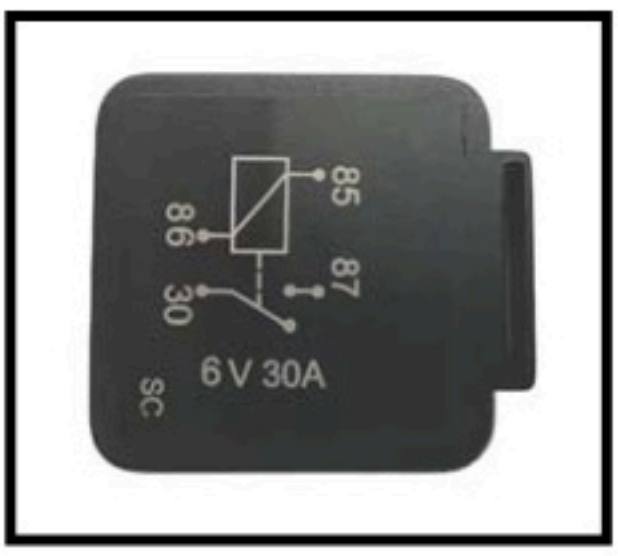
This is a High Torque Gear Reduction Starter Motor. It is a pre-engaged design, with an internal solenoid, high speed motor and all steel gearbox.

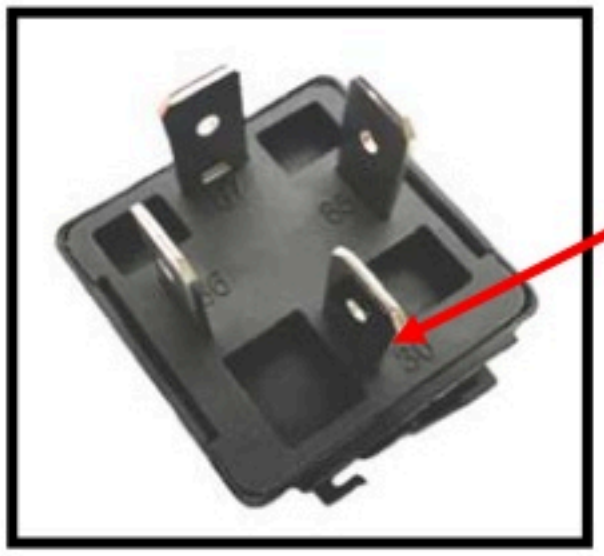
Box contents

Your new starter is supplied with some additional components to aid and assist in its correct fitment to your vehicle. Some items are supplied to assist in the units operation.

Each RAC511 unit will have the following items supplied:

6V 30 Amp Relay

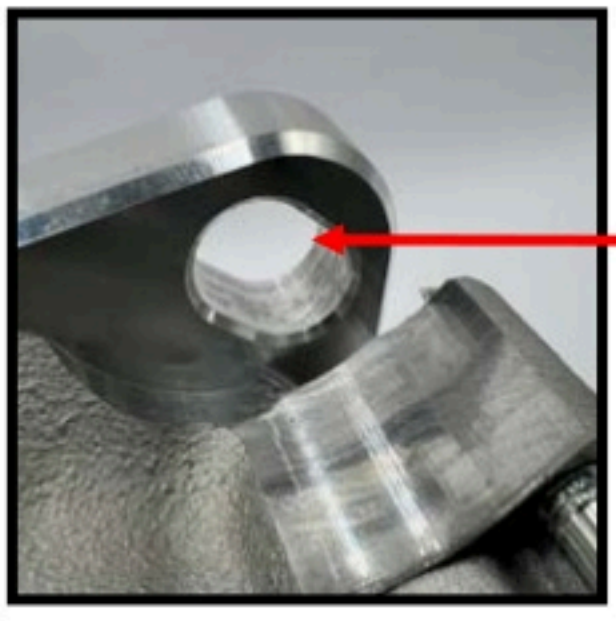




Relay connector ID numbers are embossed into base next to terminals.

The fitment of the relay is detailed later within this instruction leaflet.

2 X K Nuts



The K Nut gives additional clearance for ease of adjust-ment and tightening of the unit when fitting.

The above K nuts replace the original securing nuts for the unit, these give additional clearance (due to their smaller head size) and enable the use of a socket to assist in tightening.

IMPORTANT

Additional Guidance

When replacing any electrical components on older classic vehicles you must also take into account the condition of other related ancillaries such as vehicle loom condition, switch gear, battery condition etc.
Failure to check the condition of these items could lead to external factors affecting the newly fitted components performance.
Such instances as poor earth connections, older or worn switch gear can all hinder starter operation.
If you have any doubts of the surrounding components being sub-standard or in poor condition seek addition help from either a qualified auto electrician or contact the factory directly for further advice.

Cleaning and Maintenance

It is imperative that the unit is kept free from **ANY** oil or coolant leaks that may occur on the vehicle. Should any leaks fall directly onto the unit, these must be removed asap so as to not penetrate the unit itself. If this does happen, when cleaning the unit do not use solvents, chemicals or jetwash directly onto the unit. Chemicals can be forced into the unit and cause corrosion internally and lead to premature failure that is not covered by the normal terms of our warranty.
Should you require any help regarding the maintenance of the unit provided please call a member our Technical Team for advice.

YOUR GUARANTEE

We are so confident in our units that each one comes with a **THREE -YEAR WARRANTY** (terms and conditions apply).
In the unlikely event that this unit should fail, please return it to us for inspection and if it is covered under warranty, rest assured we will repair it or replace it Free Of Charge.
Please see our Warranty Policy on our website.

E: sales@powerlite-units.com
W: www.powerlite-units.com
T: 00(44) 1384 261984

Relay Connection Detail

Below is a guide to how the relay and loom are connected to the vehicle

Relay Fitment (engine bay area)

The guide below is a stage by stage instruction on how the relay can be connected within the engine bay area. The photographs are for reference only, using the supplied connection cabling.
The relay is supplied with a mounting block for securing it to an appropriate area for protection against the elements and easy accessibility. We suggest that this is mounted high in the engine bay area to protect the relay from any water ingress.
The relay connections are made via the relay connection block itself.
For engine bay location, the feeds, connections are taken directly from the starter motor as show below.
The cable connection is supplied at a length of 1.2 metres, for engine bay location only.

If you are locating the relay within the dash area, references to the vehicle wiring loom will be required and we suggest that this is only undertaken by a competent auto electrician who has access to vehicles .

Pin 30 (white cable)
A white wire is connected to pin 30 in the relay block. An 8mm ring terminal is connected to the other side of the cable(this fitted to the starter main pole). This cable provides a constant feed to the relay.

Pin 87 (red)
A red wire is connected to pin 87 on the relay block. A white insulated female spade connector is attached to the other end of the cable connecting directly to the Powerlite starter solenoid connection.

Pin 85 (black)
A black wire is connected to pin 85 in the relay block. The other end of the cable has a 6mm ring terminal fitted, this must be grounded to a suitable chassis ground point. This providing the relay earth.

Pin 86 (green)
A green wire is connected to pin 86 in the relay block. The other end of the cable has an insulated male spade terminal. This must be connected to the original solenoid connection from the vehicle loom (this cable originally connected to the OE starter solenoid terminal). This providing the switched feed for the relay to operate.

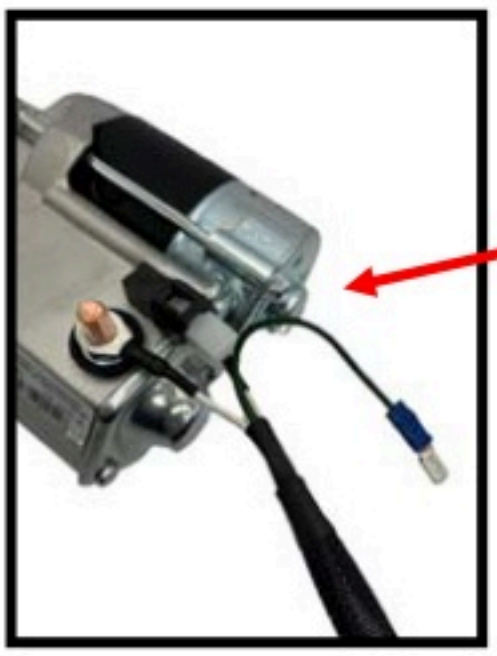
The above is a guide to the connection of the additional relay loom to the vehicle loom electrics

IMPORTANT

Please read all the instructions carefully before commencing fitment !

Supplied 6v Relay and loom

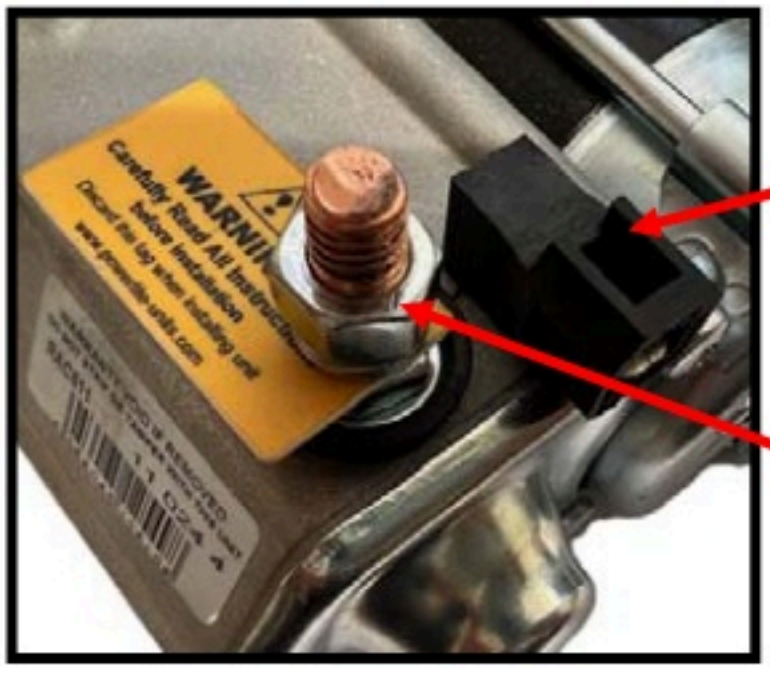
Within the RAC511 box you will find a supplied 6v Relay and loom. The loom has a length of 1.2 metres. This will enable you to position the relay within the engine bay area.



Connections from the Relay at the starter side consist of a n8mm ring terminal, this fitting to the starter main pole. A white insulated female spade terminal, this connecting to the starter solenoid terminal and a male spade terminal. The male spade terminal connects to the original solenoid cable from the vehicle loom.

At the relay end of the loom you will see a 6mm ring terminal, this is a ground (earth) connection and must be connected to a suitable grounding point.

Your Powerlite starter has two connections, an 8mm main pole connection and an insulated spade terminal housing. These are shown in the picture below for identification .



Solenoid Connection (Male spade).

A switched 6v supply actuates the solenoid in operation

Starter Main Pole (8mm)

This has a constant 6v supply. from the vehicle main loom.

Note that there may be additional take off cables fitted to this.

IMPORTANT NOTICE

Always disconnect the battery before undertaking electrical work!

RAC511 High Torque Starter

This unit is designed specifically for the Porsche 356 model and must be fitted in accordance with the instructions below.
Firstly, with the battery disconnected, remove the connections from the original unit paying attention to the cabling connections on the starter. There will be a single cable connection to the original solenoid, label this for easy reference later.
The other cables will be connected to the main post of the starter. This is the larger terminal, connections to this normally having 8mm ring termination at the end of the cables.
Again after removing the cables, label them clearly for easy identification later.

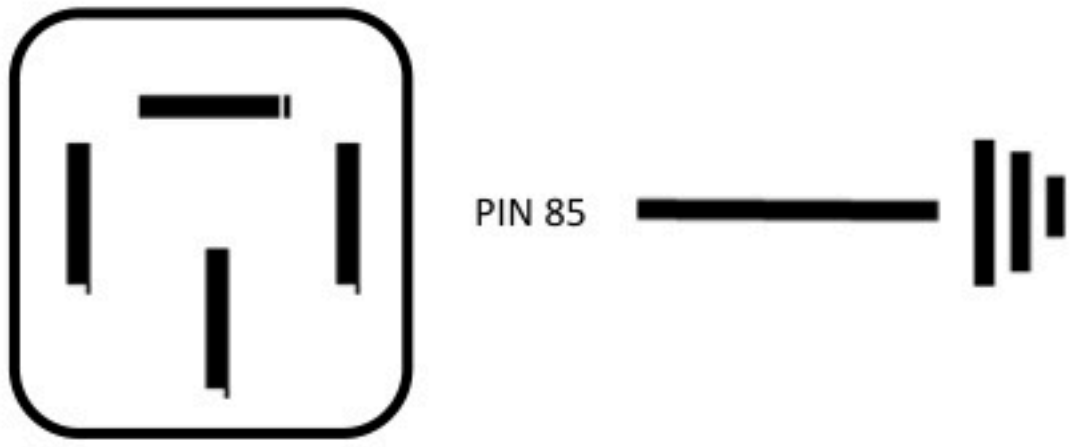
Please note that in some cases there may be more than one connection on the original starters main post, these will all be connected to the large 8mm post connection on the new unit.

Once you have removed all the original starter connections, remove the two securing nuts (17mm spanner or socket required) holding the original unit in place, paying attention to the through bolts passing through the engine and gearbox casings and their original positioning.
With the original starter now removed, carefully position the new starter with the solenoid body positioned downwards towards the ground. This positions the connections on the unit to the left, when viewing the starter motor from the rear.
Within the contents of the starter box you will find two new locknuts (12mm headed k-nuts), these will replace the original securing nuts (17mm head) allowing better access to tighten the unit when in place. Tighten both nuts to 30n/m to hold the unit securely in place.

Also within the contents of the starter box is a 6v relay.
It is recommended to fit this when fitting our high torque starter unit.
Its function is to take any excessive load away from the OE ignition / starter switch.
In some cases especially with older vehicles, worn switches cannot take the loading from the new specification starters solenoid so the relay is fitted to relieve this current loading.

The instructions to the right show how the relay is wired into the existing vehicle wiring loom and its connections to the new starter unit.
It can be mounted either within the starter/engine bay area (with the relay loom supplied) or if preferred behind the dashboard in close proximity to the ignition switch wiring.
In both application areas the wiring used has to meet the same specification as the original cabling fitted, under no circumstance's adapt or use lower rated cabling.
If in doubt please seek advise from either the factory directly or a qualified auto electrician.

Remove original supply cable from the ignition switch down to solenoid connection, make up a new cable from the starter solenoid to pin 87 on



The original solenoid supply connection at the rear of the ignition switch, that connected to the solenoid directly, make a cable and attach this from the switch to pin 85 on the relay. This to actuate the relay.

Connect a battery supply, constant 6v, using the same or higher gauge cable as attached to pin 87 of the relay, this to provide power to the relay. You should be able to pick up this supply from cabling to the ignition switch. If your fitting the relay behind the dash area.

The above diagram represents the connections to and from the supplied relay. The relay will have the PIN reference numbers stamped onto the face of the relay adjacent to the male spade protruding connections .

Please note: If you are fitting the relay within the engine bay area use the supplied loom and make sure that the relay is positioned so it is accessible and more importantly protected from water ingress and corrosion.

If you have any queries, please contact us directly or consult a qualified auto electrician!

PowerLite

Also available from

Powerlite:

HIGH TORQUE
STARTERS

HIGH TORQUE
SLIMLINE STARTERS

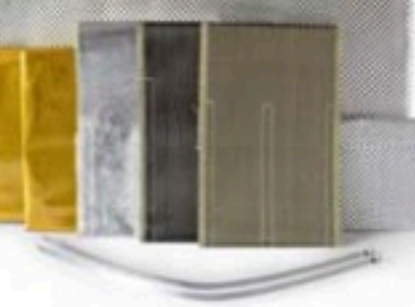
HIGH TORQUE
MicroStart STARTERS

DYNALITE
ALTERNATORS

LIGHTWEIGHT
ALTERNATORS

REMANUFACTURED
WIPER MOTORS

ACCESSORY
RANGE



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If you have any questions at all about our products and fitting, please don't hesitate to contact us.

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Proudly made in the UK

Unit 2-4, Northmoor Industrial Estate,
Moor Street, Brierley Hill,
Dudley, West Midlands,
England DY5 3SU

t +44 (0)1384 261984
e sales@powerlite-units.com
w www.powerlite-units.com