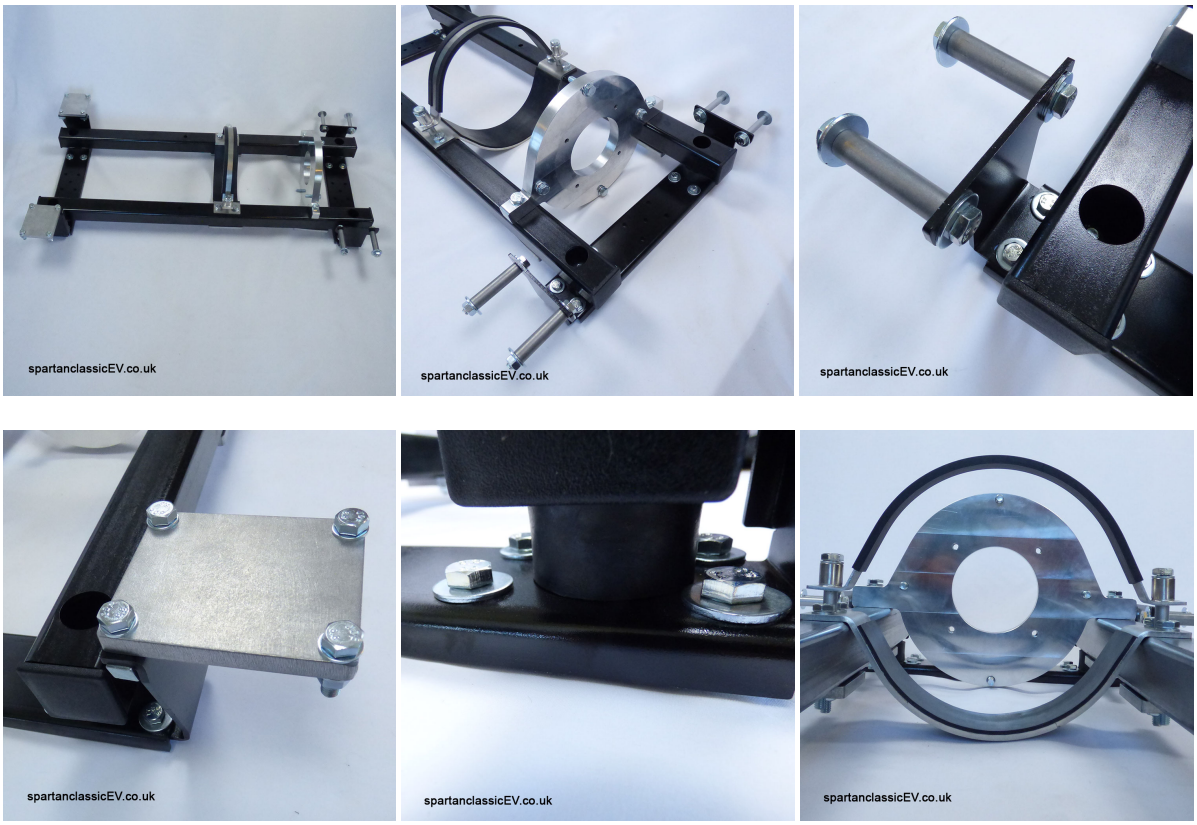
Dependable by design

Sales
01631 700209
sales@spartanclassicEV.co.uk

Spartan Classic EV Limited
PO Box 9683
Dalmally
Argyll
Scotland

www.spartanclassicEV.co.uk



AS31320: Motor mount Netgain Hyper 9 SRIPM Morris Minor

KIT CONTENTS:
Rail brackets, front, pair
Rail bracket front top plate x 2
Rail bracket front retaining bar x 2
Rail bracket rear x 2
Lateral channel x 2
Motor rail x 2
Motor rail end plug x 4
Motor rail reinforcement plate x 4
Motor mount plate rear x 1
Netgain saddle and strap kit x 1
Chassis leg spacer x 2
Mount rubber x 4
Brake lever pivot kit x 1
Fastener kit x 1 (fitted to relevant components)

INSTRUCTIONS:
This kit is designed to mount the Netgain Hyper 9 motor into Morris Minors of all years. No drilling, cutting or other modifications to your car are required in order to fit the kit and your motor.

All fasteners are supplied and are fitted to individual components before despatch for clarity.
The mounting brackets have slotted mount holes for the channels, which allow for inconsistences in horizontal dimensions between your chassis rails. We also supply shims to adjust the height of the brackets to allow for vertical differences between your chassis rails so check alignment before you start and contact us if there are any problems in this area that you can see. Historical bumps and mechanical mishandling can lead to these differences over the years.
All fasteners use one washer at the head end of the bolt and one at the nut end unless otherwise stated.
The photographs above will give good guidance when fitting the motor mount.

Preparing the car

It is likely that this is the first physical job that you are doing for your EV conversion. We recommend removing all the redundant components at this point to give better access and also removing a generous amount of other components to improve access further. This is only a guide; everybody's conversion is their own.

1) To improve access remove:
   Front bumper assembly, grill and grill panel, bonnet
   Seats, carpets, master cylinder floor panel, gearbox cover floor panel
2) Parts you will not need and are worthwhile removing at this stage:
   Battery (do this for safety in any case)
   Entire fuel and intake system
   Entire exhaust system
   Entire cooling system including radiator
   Engine (including mounts, ignition system, dynamo/alternator), clutch and gearbox
3) To fit this conversion you will need to remove:
   Lateral gearbox support bracket
   Clutch lever along with the brake lever pivot (replacement brake lever pivot supplied in kit)

Fitting the front brackets

1) Take one of the brackets along with its alloy plate, retaining bar and fasteners. On each side the angled edge of the bracket goes towards the front of the car and the edge with the reinforcement lip goes towards the rear.
2) First take the alloy top plate, place it on top of the correct chassis rail in the position previously occupied by the front engine mount. Drop the two 30mm bolts through the two outboard holes and put the nuts on finger tight. Drop the 35mm bolts through the inboard holes. These bolts only have washers at the head end.
3) Fit the correct bracket over these bolts from below, then loosely fit the retaining bar onto the bolts. Tighten the bolts evenly to bring the retaining bar up towards the bracket and into place. This is an intentionally tight fit in order to keep the bracket hard against the chassis rail when tightened. When fully tightened the top of the bracket and the chassis ledge should be pressed together.
4) Tighten the two 30mm outboard bolts.
5) Repeat this for the other side.

Fitting the rear brackets

1) The rear brackets are mounted using the brake master cylinder mount holes. One of the rear brackets has spacer tubes fitted to its bolts. This is for the side WITHOUT the master cylinder.
2) On the master cylinder side remove one of the master cylinder retaining bolts. Present the bracket up to the inboard side of the chassis rail and pass one of the replacement bolts through it and then through the chassis rail and master cylinder. Remember – the bolt goes through from the inboard side as it will not pass the torsion bar on the outboard side of the chassis.
3) Remove the second original bolt and repeat the procedure.
4) Fit and fully tighten both nuts.
5) On the opposite side of the car the procedure is the same except that, as there is no master cylinder, THE CHASSIS SPACER TUBES SUPPLIED MUST BE FITTED inside the chassis to avoid crushing the chassis rail.

Fitting the lateral channels

1) These channels are identical and both are fitted with their edges facing downwards (i.e making an 'n', not a 'u'.

2) For each channel remove the nut and bottom washer from each bolt and do the same for the rubber mounts. Place the channels between the two pairs of brackets and replace the washers and nuts loosely, thereby loosely attaching the channels to the brackets. Do not tighten these yet.

Fitting the rails

1) Remove the top nuts and washers from all the rubber mounts.
2) Orientate the two identical rails so that the 10mm holes are more towards the back of the car and the 30mm holes at each end are facing upwards. Lay each rail between a front and a rear rubber mount so that the stud on the mount comes through the slot (front) and hole (rear) on the bottom of the rail.
3) Replace the top nuts and washers on the rubber mounts but do not tighten yet.

Fitting the rear motor mount plate

1) The rear mount plate sits on top of the rails using the rear-most 10mm holes. It is attached with the fasteners supplied and with the rail reinforcement plates underneath the rails. Use the central hole of the reinforcement plate and don't tighten the nuts yet.

Fitting the motor saddle and strap and motor
Note: If you do not yet have the motor skip this stage and go straight on to 'Alignment' below. You can complete the installation of the mount and fit the motor, saddle and strap retrospectively.

1) Ideally use a suitable transmission jack with castors to manoeuvre the motor as it allows complete flexibility in movement and positioning of the motor and is the safest option. Once the motor is in position between the rails loosely fit the 4 bolts (with washers) which hold it to the rear mount plate, leaving a single turn of free play. The motor will be able to move by a few millimetres and enable fitting of the saddle and strap.
2) Fit the saddle to the rails where there are three 10mm holes in each rail grouped together. To do this use the four shorter bolts and the rail reinforcement plates under the rails again. Don't fully tighten the nuts yet.
3) Lower the motor onto the saddle, tighten the 4 bolts attaching the motor to the REAR mount plate and then loosely fit the strap using the 130mm bolts and relevant washers and nuts.

Alignment

The slots in the rails and brackets will allow you to find a settled position for the components, without causing stress in the system, even if there are slight misalignments in the car itself. The universal joints and the splines in the prop shaft mean that the exact position of the output shaft of the motor and the exact angle of the motor in the car are not critical. If the components are straight and symmetrical to the eye then simply tighten all the fasteners (rear mount plate first, followed by the saddle & strap, followed by channels to brackets followed by the rails to mount rubbers) and check the alignment visually again. Also check that the rubber mounts are not being pulled out of shape. When everything is checked fit the rail end caps.
If you can not get things visually aligned loosen all the bolts again plus those connecting the brackets to the chassis rails themselves and try settling things into place.

Don't forget – we are very happy to advise and assist by email or on the phone.