



# *Morgan Upgrades*

A GUIDE TO IMPROVING THE  
SUSPENSION OF CLASSIC MORGANS



## SUSPENSION UPGRADES



As befits a bespoke, hand built car, there is a myriad of ways to personalise, change and make a 'classic' Morgan even better.

This guide gives general background to, and advice on, some of the suspension modifications that can be made to a Morgan. It doesn't attempt to cover off all the options, but is intended to give a bit of a feel for what can be done.

There is no right answer when it comes to what's the 'perfect' Morgan, but as the longest established Morgan dealer in the world, we have a lot of experience we can call upon when it comes to advising on options.

In our workshop we employ highly experienced, Morgan Factory trained Technicians. In addition to working on suspension, they carry out all types of work from routine servicing and maintenance, to the fitting of accessories to full, ground up restorations.

In terms of our in-house skills, we are also the only Morgan dealer in the UK to have their own coach trimming workshop. This specialises in repairing, upgrading and restoring interiors and hoods.

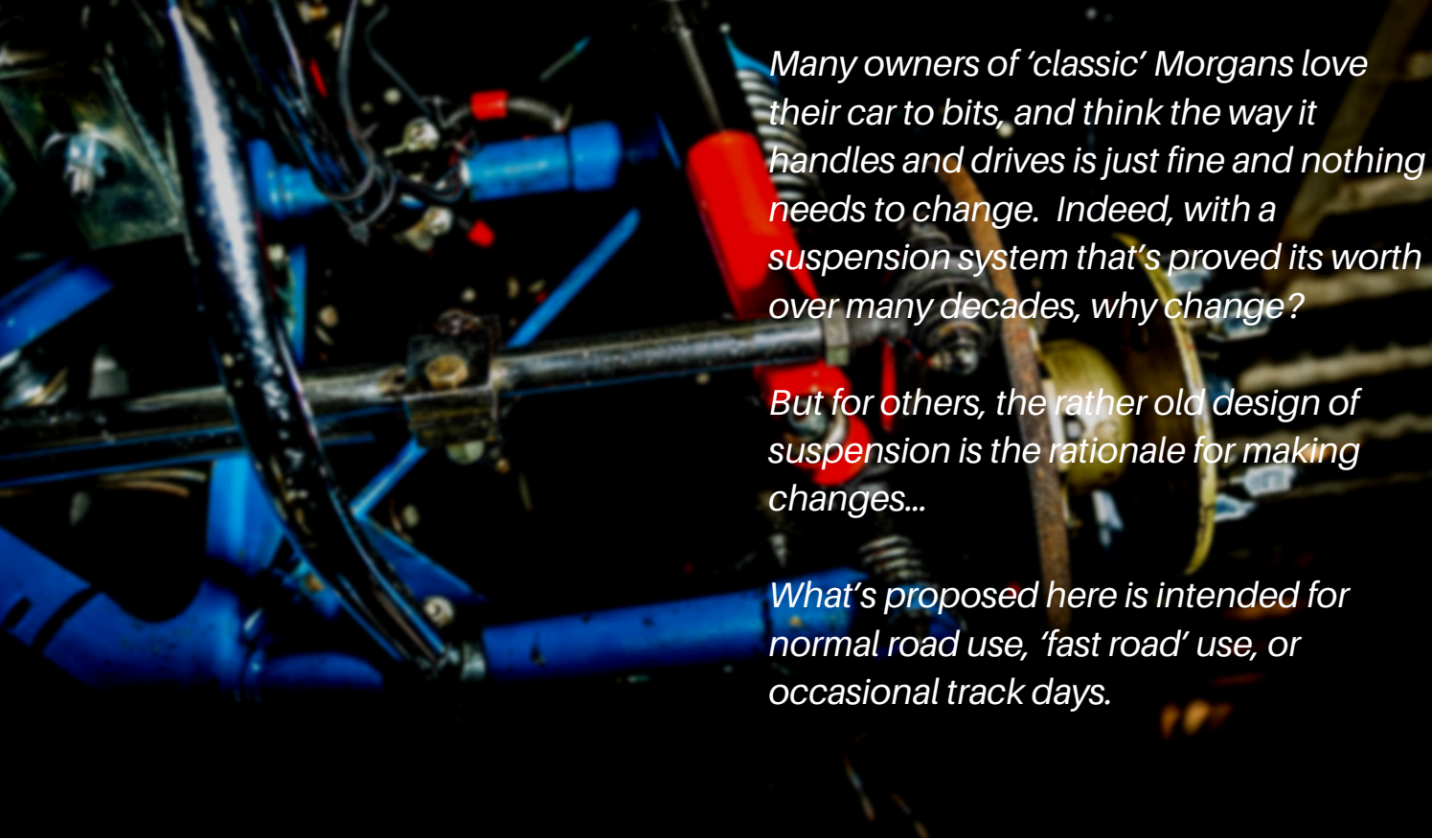
We're always delighted to talk through work, giving objective advice, detailing out the pros and cons of different options, and of course providing estimates for likely costs.

We also have available guides that provide information on other areas such as brakes, engines and accessories.

We pride ourselves on our quality of work and customer service. Needless to say, any work we undertake using parts we source, is fully guaranteed, parts and labour, for 12 months.

A handwritten signature in black ink, reading "John Bellenger".

John Bellenger  
Director



*Many owners of 'classic' Morgans love their car to bits, and think the way it handles and drives is just fine and nothing needs to change. Indeed, with a suspension system that's proved its worth over many decades, why change?*

*But for others, the rather old design of suspension is the rationale for making changes...*

*What's proposed here is intended for normal road use, 'fast road' use, or occasional track days.*

As standard, the classic Morgan has a very traditional (old fashioned!) design of suspension.

The front end is quite unique to Morgans as they have what's called 'sliding pillar' suspension. With this, the wheel hubs slide up and down on 'king pins' with bronze bushes acting between hub and king pin. There's a main spring above each hub, a rebound spring below the hub, and a telescopic shock absorber (damper) keeping things under control.

At the rear end, there's a pair of leaf springs with telescopic shock absorbers on most cars, although the earlier ones have lever-arm shock absorbers.

The classic Morgan suspension system is a bit compromised, leastwise by modern standards. The suspension travel is limited and the springs are firm which mean quite a hard ride. Also the leaf springs at the rear can allow the rear axle to move around a bit under 'spirited' driving which affects handling.

There are a number of improvements that can be made to Morgan suspension in order to improve both ride comfort and handling.

### **Adjustable shock absorbers**

These are worth fitting if you are looking for improved handling as they better control the action of the springs. They may give a slightly softer ride, but their main benefit is in terms of handling.

There are a number of quality makes on the market, but make sure you choose a set that have adjusting knobs that are easily accessible when on the car, e.g. Spax or AVO.

### **Telescopic shock absorber conversion kit**

The earlier Morgans (up to 1992) are fitted with lever arm shock absorbers at the rear. Fitting a conversion kit to enable these to be replaced with more modern telescopic shock absorbers will improve ride comfort and handling.



### SSL front suspension upgrade

The SSL front suspension kit makes a real difference to ride comfort and also handling.

One of the key advantages of the kit is its use of progressive or 'rising rate' springs. This means soft spring rates to smooth out the little bumps and ripples in the road surface, with the spring rates becoming progressively stiffer as suspension travel increases over larger bumps.

This variable springing combined with the kit's uprated Spax adjustable shock absorbers and ability to adjust ride height, ensures better ride quality and improved handling.

The kit also includes roller bearings for the front hubs which help make the steering lighter.



### SSL - 5 link rear suspension upgrade

This is the ultimate upgrade that can be done to Morgan suspension.

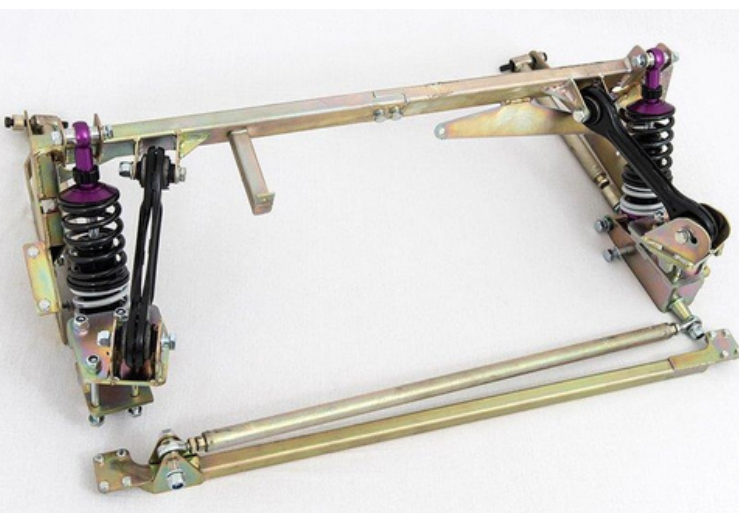
The standard and rather basic leaf springs fitted as standard are replaced by progressive rate coil springs which are complemented by high quality Spax adjustable shock absorbers.

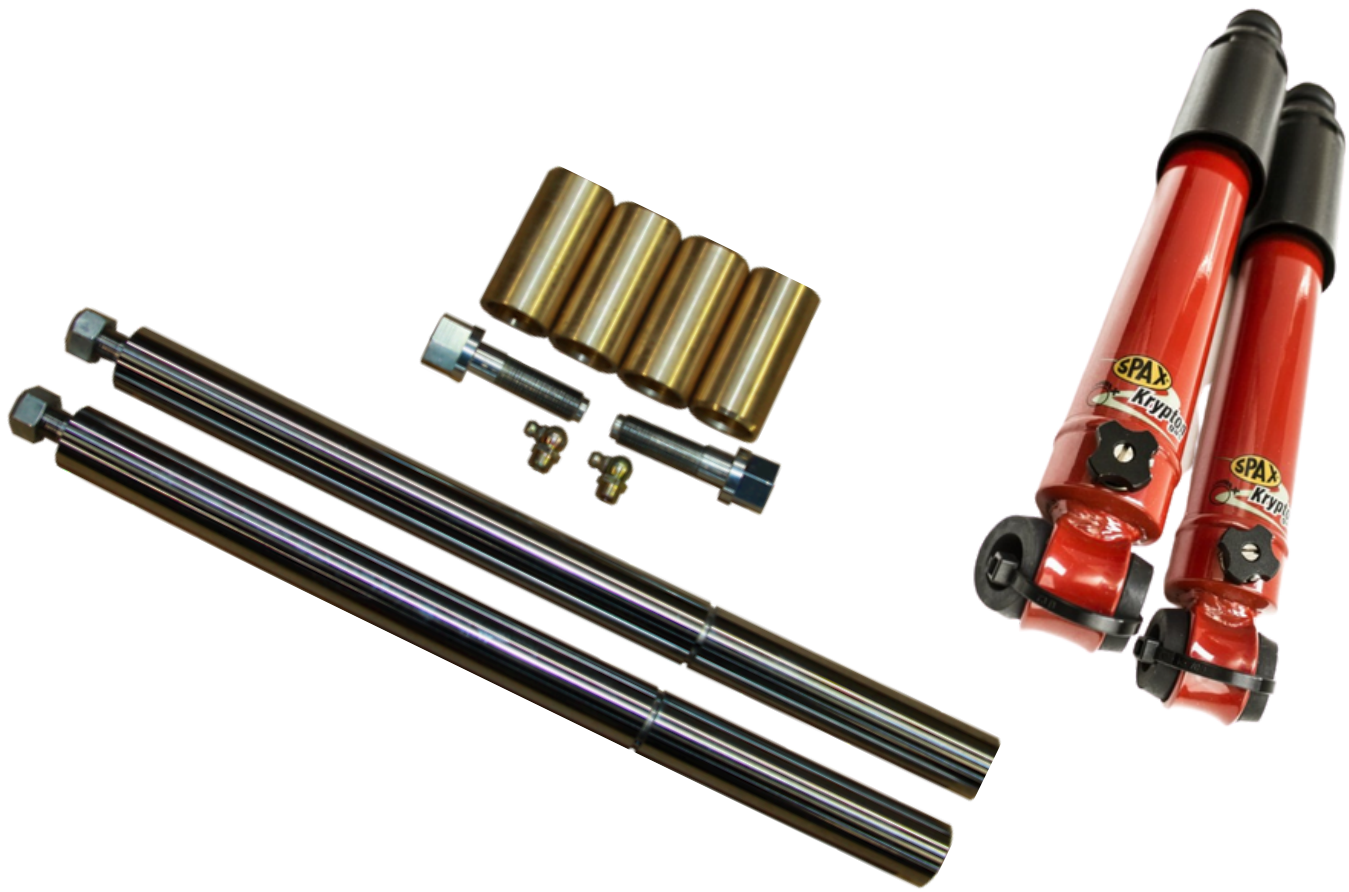
Also, a '5 link' system is used to ensure the rear axle stays correctly in place under all types of driving.

A key benefit of the SSL rear suspension kit is better ride comfort as the progressive spring rates provide supple springing over small bumps and then become progressively stiffer to cope with larger bumps.

Handling is also significantly improved due to the enhanced springs, better axle location, high quality adjustable shock absorbers, progressive roll stiffness and elimination of axle tramp.

Other benefits of the kit are: it allows power to be more effectively transmitted to the rear wheels when 'pushing on'; ride height, corner weighting and axle alignment can all be adjusted to ensure optimum settings.





### Replacing king pins & bushes

The king pins and bushes wear out over time, and typically will need replacing after 15,000 to 20,000 miles. However, the time and distance varies depending on factors such as: how well maintained and lubricated the suspension is; how hard the car is driven; whether the car is used in all conditions or only fine weather.

If other work is carried out to the front suspension, for example fitting the SSL upgrade kit, this could be a good time to replace the king pins and bushes as a lot the labour involved is being done anyway as part of the upgrade.

When fitting new king pins, it is recommended to go for upgraded hard chrome king pins rather than the standard stainless steel version.

The cost difference is minimal and the hard chrome pins last longer.

### Panhard rod

The design of rear leaf springs means they can't totally prevent the tendency for the axle to move sideways under spirited cornering which does nothing for handling!

Fitting a Panhard rod improves lateral location of the rear axle and so addresses this problem.

### Anti-tramp bars

These are normally fitted in pairs to the rear axle and are beneficial on the higher powered Morgans. They keep the axle in place and stops it trying to twist around its axis under hard acceleration which gives 'tramping'.

So what is tramping? When power is applied suddenly, e.g. from a standing start, the rear leaf springs tend to wind up into an 'S' shape, and then revert to normal in a series of hops. This is 'tramping'.

Anti tramp bars restrict flexing of the front half of the leaf spring under extreme loadings, and so deprived of its natural twisting motion the axle can no longer 'tramp'.

### Brake reaction stays

These are a very simple upgrade that stop the front chassis 'crossframe' distorting under heavy braking. As the hubs and steering are mounted via the crossframe, any movement of it during braking can give unpleasant judder through the steering.



### Power steering

Although Morgan steering is pretty direct and feels nicely weighted when a car is travelling at normal road speeds, the steering can feel heavy when parking or manoeuvring at slow speeds.

Power steering kits are available to be retro-fitted to Morgans and these come as both electric and hydraulic power assist versions. Both are similarly priced and equally effective in the job they do.

The kits are designed to provide variable assistance, i.e. maximum effect at low speed and then becoming progressively less as speed increases. In this way the car still retains the positive elements of the Morgan 'feel' when having fun on winding country roads.

### And finally...

When it comes to steering and suspension, different Morgans and their owners will be looking for, or needing, different results. Not all of the above will be needed on every car, nor does all upgrade work need to be done at once.

We're always happy to talk through options, offer advice, and provide estimates on costs. We also have guides on other areas for improving your Morgan.

So if you'd like some help or wish to discuss possible options further, please just call us on 01234 750205 or email [workshop@allonwhite.co.uk](mailto:workshop@allonwhite.co.uk)



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