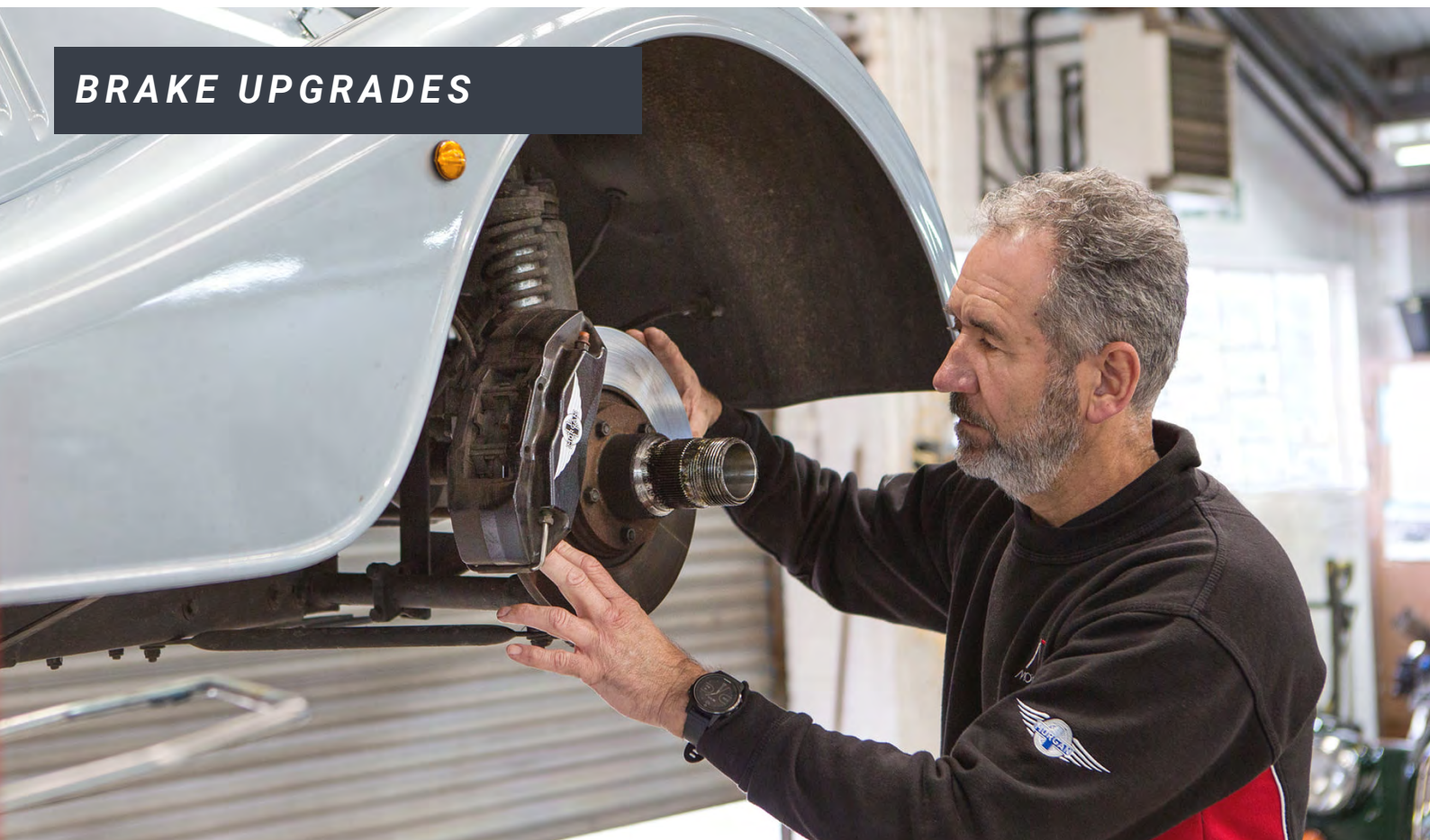




Morgan Upgrades

A GUIDE TO IMPROVING THE
BRAKES OF CLASSIC MORGANS

BRAKE 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 brake upgrades that can be made to Morgans. 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 brakes, they carry out all types of work from routine servicing and maintenance, to the fitting of accessories to full, ground up restorations.

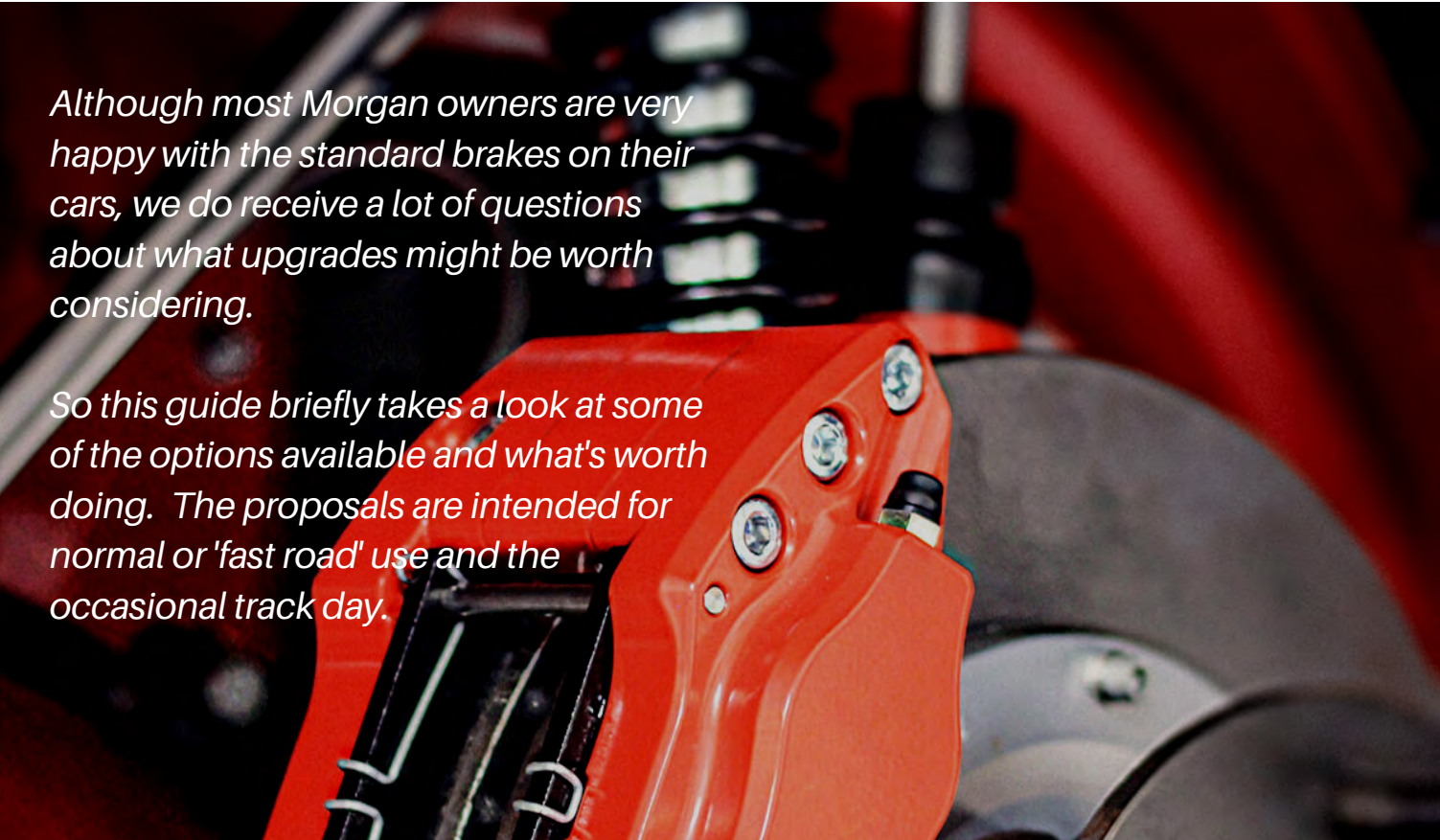
In terms of our in-house skills, we are also the only Morgan dealer in the UK to have their own coach trimming workshop. This specialises in repairing, upgrading and restoring interiors and hoods.

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 suspension, 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.

John Bellenger
Director



Although most Morgan owners are very happy with the standard brakes on their cars, we do receive a lot of questions about what upgrades might be worth considering.

So this guide briefly takes a look at some of the options available and what's worth doing. The proposals are intended for normal or 'fast road' use and the occasional track day.

As standard, the brakes in classic Morgans could be considered a little unfashionable as for most models they comprise disc brakes at the front and drum brakes at the rear (modern cars normally have discs front and rear).

However, bearing in mind the light weight of the cars and the fact that many aren't driven that hard, the standard set-up works pretty well. But if you're looking for a little more 'bite' and effectiveness, what should you consider?

Basically, there are 3 factors that affect how well brakes perform:

- The pressure applied to the brakes
- The ability to dissipate heat
- The brake surface area

This guide looks at how to influence these areas.

The basics

The cheapest upgrade is just to change brake pads. This can give a better feel or 'bite' when applying brakes and upgraded pad materials can also be more resistant to brake fade.

Fitting braided brake hoses to replace the standard rubber hoses, is another easy job. This is beneficial in giving a firmer pedal feel under hard braking.

Brake fluid absorbs water over time. This reduces its boiling point and under hard use, the water in the fluid boils and turns to steam. As gases are more compressible than fluids, the brake pedal can go to the floor - disconcerting at best, dangerous at worst, as braking effect is seriously reduced.

Brake fluid should be changed regularly to counteract the effect of water absorption. Ideally every couple of years or more frequently if doing track days or 'serious' driving. Higher boiling point, race spec brake fluids are available if needed.

Brake servos

The purpose of a brake servo is to reduce the pressure that is needed on the brake pedal to achieve the desired braking effect.

All later Morgans have brake servos and the pedal pressure is about right. Yes, a firm push is needed, but that's sensible on a car without ABS. You don't want brakes that are too sensitive and easy to lock.

Earlier Morgans (pre 1992) do not have servos and as a result, some people find the pedal pressure needed to stop the car, unacceptably high.

Although servos can be fitted, it's tricky and time-consuming as there's little room to retro fit a servo. So the best way to improve brake performance on pre 1992 cars is to fit larger front brake calipers.



Front brake upgrades

A key stage in achieving better braking is to change the size of the calipers and/or change the size of the discs. These modifications will increase the pressure that can be applied, increase brake surface area and improve heat dissipation.

For pre 1992 Morgans, replacing the 2 pot (i.e. 2 piston) front brake calipers with 4 pot calipers allows brake pads with significantly increased surface area and this gives much improved braking for less pedal pressure.

From 1992, larger diameter vented 300mm front discs can be fitted (normal diameter is 280mm) to classic Morgans and this increase in diameter allows greater braking force. The venting aids cooling and so reduces brake fade.

For the later classic Morgans (typically from 2007), new 4 pot calipers have to be fitted along with the 300mm discs as the standard calipers won't fit. These new calipers can also be worth fitting to the cars from 1992 onwards as the original calipers will be rather long in the tooth and so at the very least in need of reconditioning.

The 300mm discs and new 4 pot calipers provide front brakes to the same specification as used by Morgan on the 'Baby Doll' racers.





Front brake upgrades (cont.)

Front brake discs can be cross drilled or grooved which can help keep the discs clean of brake dust and reduce the build up of hot gases between pad and disc (which gives brake fade).

Brake reaction stays

Under hard braking, the front cross frame of classic Morgans can flex and cause steering judder which is unpleasant in feel and can upset handling.

Fitting 'brake reaction stays' helps prevent this and is essential if fitting uprated front brakes.

Rear brake upgrades

Unless a car is driven particularly hard, for example serious track day driving, upgrading the rear brakes on a classic Morgan is arguably not worth the expense.

This is because under hard braking, most of the weight of a car transfers to the front end which leaves less work for the rear brakes to do. And with such a light car as a Morgan, the standard rear brakes can therefore cope with the demands typically put upon them.

However, if required there are some upgrade options.

The simplest and cheapest is to fit upgraded brake shoes, and is often done in conjunction with upgraded front brake pads.

Another option is to fit finned brake drums. These increase surface area and hence the brakes stay cooler under hard use and are less prone to brake fade.

The other, and expensive option, is to convert the rear drums to disc brakes. This is very effective in terms of braking efficiency, but the handbrake (which always operates on the rear wheels) is not as good as for drum brakes.

General maintenance

The wheel cylinders that operate the rear brakes can seize or leak over time. This is often due to lack of use and replacement is the best cure as overhauling tends not to give satisfactory results.

Also over time, front brake calipers can seize or become 'sticky' in operation and an overhaul or reconditioning will sort things out.

Fixing both types of fault are, for us, relatively straightforward jobs and ones we find ourselves doing on a regular basis.

Pedals

In classic Morgans, there's not a lot of spare room within the footwells.

As such, the position of the pedals can be a little compromised for smooth and comfortable operation. Also, there's no obvious place to put one's clutch foot, other than rest it on the clutch pedal.

A pedal upgrade kit is available which allows the pedals to be moved relative to one another, be it in terms of height or from side to side. It also does away with the standard pedal rubbers that are prone to coming off (an MOT failure).

And finally...

When it comes to braking systems, different Morgans and their owners will be looking for, or needing, different results. Not everything in this guide 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 available 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



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