



LOTUS ELISE/EXIGE UPGRADE KITS



www.pilbeamracing.co.uk

Pilbeam Racing Designs provides 3 Kits to improve the racing performance of your Lotus Elise and Exige. All modifications maintain the cars road legality and allow for camber and toe adjustments and especially permit elimination of the usual bump steer.

If you are planning on racing your Lotus we recommend the complete Stage 4 package.

Stage 1

Kit Components:

Stiffer suspension bushes
Front steering arms, plates and track rods
Springs
Dampers
Front anti roll bar.

The roll bar and spring rates have been optimised during a lot of track testing to give very good traction, grip and ride, but they do need to be fitted at the same time to get the most benefit. The new steering arm kit was developed because we found that the standard car tends to suffer from considerable bumpsteer. By utilising our own steering arms we can adjust and optimise this.

The new suspension bushes fit straight into the standard wishbones as a direct replacement for the original items. They are about 60% stiffer, and this reduces unwanted wishbone flexibility by a corresponding amount, allowing the geometry to work as it should do.

This package has been very popular with customers who have found a marked improvement in feel, handling and grip. They have also reported that they no longer have the steering wheel jumping out of their fingers whilst driving on normal roads. These kits work very well on the road, and are also highly enjoyable on the race track, though the majority of Elise racers will move on to Stage 2 or 4.

Stage 2

Kit Components:

Stage 1 components (minus suspension bushes)
Full set of car wishbones
Racecar quality spherical bearings
Bearing plates and spigots

To allow fitment of these to the uprights we supply new bearing plates and spigots to locate in the spherical joints. Thus you do not keep the taper joints that are fitted in the standard cars' upright. The geometry and spring and damper rates are the same as Stage 1, which are the best we have found for the Elise.

We list a different model of Koni damper for the Stage 2 kit, which is more expensive, does perform better and is easier to adjust. A far lower weight is achieved as it is made from aluminium and adjustment bump and rebound adjustment can now be made while completely connected to the car. In practice we are happy to supply either type of damper with any kit. This damper is in the Koni 2812 type, similar to those we fit to our touring

car, Le Mans sportscars and single seaters. The kit can be supplied less dampers if required although we would like to check the suitability of the dampers fitted.

When we sell a suspension kit we do include a full set up sheet which includes ride heights, damper settings, toe-in and camber values so a newly equipped car should be very good straight out of the box. Owners who buy Stage 2 kits still use their cars on the road, but tend to do a higher proportion of track days, and when really pushing hard on a race track, with sticky tyres, the spherical bearings do behave better than the suspension bushes which still do have some compliance.

Stage 4

Kit Components:

Stage 2 Components

Full car set of AP Racing Brakes

Front and Rear Uprights

Centre Locking Wheels (Option)

Stage 4 is a conversion from a road Lotus to a full racecar, while again still remaining road legal. There is also the option of a handbrake. The kit is designed for maximum rigidity to give the car maximum traction and handling.

New Wishbone Suspension:

As with Stage Two, all Lotus wishbones are replaced by Pilbeam's racing suspension. A front anti roll bar can also be supplied.

Centre Locking Wheels:

For the professional racer a modification can be made allowing for centre locking wheels. This allows quick wheel removal by using the large centre nut.

Delivery and Fitting:

We only supply the upright packages fully assembled, using new stub axles and wheel bearings, and this way we can assure the quality a customer expects, fully factory inspected.

Obviously, for all of our suspension kits we can provide a fitting service at our factory, which we do recommend, but it is possible for parts to be fitted by a suitably qualified mechanic.

As Pilbeam are Race Car Manufacturers we are used to shipping worldwide, with many of our cars in America, Australia and Europe.

Engine Tuning:

Although we don't tune engines ourselves, our friends at QED (see the website links page for details) can sort that side of the car for you and between us we can turn an excellent car into an incredible one!

Uprights:

These are much lighter than the Lotus originals and are CNC machined from a solid aluminium block to greatly increase rigidity. The bearing carrier is now incorporated within the upright reducing the required components and fixings, reducing weight and increasing stiffness still further. The uprights solve the common problems with bearings that often trouble Lotus customers. Recent developments with a Lotus have allowed Pilbeam Racing to develop our existing uprights further still.

Rear bearing size is increased to cater for high performance use such as racing and track days.



Brakes:

As well as wanting cars to go fast we like them to stop quickly too, and this task is trusted to a full set of AP brake discs and callipers, using 315mm front and 295mm rear discs. Brake ducts and wheel speed sensors can be fitted, with a handbrake mount as an option.

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STOP PRESS!!

New Lotus Pedal Box announced!

Pilbeam Racing would like to introduce the latest development in their Lotus upgrade conversions.

Several of our customers have been asking for improvements on the Lotus pedal box, so a Pilbeam version has been designed. The entire pedal box comes in under 4 kg.



Importantly the front and rear brakes run on separate cylinders. Coupled with adjustable brake balance bar, the front and rear bias can now be adjusted. A Lotus with our Pedal Box can now have its braking fine tuned, a further balancing aid.

The pedal Box will fit all Lotus Elise and Exige models. To keep costs down the original clutch pedal is kept.



In the case shown a new throttle has been fabricated for a cable connection to the engine. Those customers who are happy with the fly-by-wire arrangement can keep the original throttle, while still replacing the clutch cylinder and brake arrangement.

Cylinders can be purchased separately, but we recommend the AP set to match seamlessly with Pilbeam's AP Racing brake kit.

There is a throttle stop, to avoid stretching or breaking the throttle link and the original Lotus switch is utilised to activate the brake lights.

Quotations are made on request.

