

MiTo Coilovers vs Lowered Springs

We often have discussions in our Facebook group about lowering springs and coilovers for the MiTo. So this aims to describe the differences and show why buying and fitting lowering springs is a cost-effective solution for everyday use.






Of course, for some uses (like our Scuderia MiTo track car) coilovers are the right answer, and some of you will prefer to fit coilovers for everyday use (or if you do a lot of track days). Coilovers are also a good option if you must replace both your shock absorbers and your springs, and particularly for Cloverleaf or QV models where the adaptive shocks are extremely expensive – the extra cost of coilovers may still be less than the cost of replacing the stock adaptive shocks and springs.

But for most of us, there are benefits to be obtained by performance springs whilst retaining your existing shock absorbers. And fitting is relatively easy if you are confident with tools (and only a couple of hours of labour at your specialist if not).

The Basics

To understand the benefits and the drawbacks of coilovers and springs, I want to very quickly ensure we all understand the basics.

Springs basically absorb loads at the wheels and transfers the energy by compressing.

	Eibach	Spax	H&R	H&R	ST Suspension
	Pro-Kit	SSX	Sports Spring Kit	Sports Spring Kit	Sportsprings
					
Lowering height	30mm	30mm	35-40mm	30mm	30mm
Model	E10-10-008-01-22	S001063	29095-2	29131-2	28215038
Manufactured	Germany	United Kingdom	Germany		Germany
Website	eibachshop.co.uk	spaxperformance.com	hrsuspension.direct		kwsuspensions.co.uk
Price Range	£160	£160	£155	£140	£140

As soon as it can, the spring will decompress, pushing the wheel down. Shock absorbers (or dampers) basically dissipate energy by turning it into heat. If you just had springs, the car would just bounce up and down until the energy dissipated of its own accord. The shock absorber achieves heat dissipation by forcing oil inside the cylinder to pass through small holes of the piston when the springs are moving. They control how much the spring can oscillate and returns it to a stationary position as fast as it can. So combining springs and shock absorbers the car has a consistent ride over most surfaces.

Whatever you may hear, coilovers are rarely the right option for everyday road-use. I appreciate

this will be controversial and, to some, completely incorrect. In fact, I'll change that statement slightly: cheap coilovers are rarely the right option for standard road-use. I'm a firm believer that a quality set of springs is better than a poor quality set of coilovers. But coilovers might be right for you, depending on the advantages and the drawbacks.

Coilovers

The key benefit of coilovers is the ability to adjust them. Most coilovers have adjustable ride-height through a rotating adjustment ring on the cylinder, some coilovers being adjustable by hand but most require a tool. This adjustment allows you to lower or raise your car's height relatively quickly.

But coilovers also allow the adjustment of the damping itself. This is primarily called rebound damping as it controls how fast the damper can extend after the compression. If you go over a bump at speed, you can imagine the spring compresses very fast, but if it decompressed at that fast speed the ride would be pretty terrible, and this adjustment is particularly useful for cornering where you can improve the speed at which the car rolls back to level.

Bump adjustment (only typical-

ly on the expensive coilovers) controls how fast the damper can compress. This can help with too much lean into corners or too much body roll as well as how the MiTo covers bumps or apex curbs on a track to avoid the car bottoming out.

The more expensive coilovers are typically made from stainless steel (so will not rust). Less expensive can be galvanised or protected, but cheap coilovers will have little or no protection, so expect them to look pretty bad in a year or so.

Springs

So coilovers sound really good, right? Lots of adjustment, the perfect ride-height, adjustments for rebound and bump: why would you stick with shocks and springs?

Well, the answer is normally cost. If your existing shock absorbers are perfectly fine, then adding lower or stiffer springs can give a considerable improvement to ride and handling (albeit firmer) for £200, whereas good coilovers start at around £650 or more. Fully adjustable, high-quality coilovers for the MiTo (for example, the KW Version 3) can cost around £1,400. A set of excellent quality Eibach Pro-Kit springs for the MiTo retails at under £160. They are, of



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course, worlds apart, but so is the price.

Good quality springs which lower a car by up to 30mm are designed to work with original shock absorbers so can be a direct replacement of your existing springs. But, quite obviously, once they are on they are on – there is no adjustment. Lowered springs are actually pre-compressed and are therefore stiffer, so you need to accept that the ride will be a little firmer, particularly if you have adaptive suspension.

Things to Bear in Mind

Lowering your MiTo naturally means that the gap between the top of your tyres and your wheel arch is narrower, but it also means the underside of your car is lower to the ground. Typical lowering of 25-30mm will not affect how you address speed bumps noticeably. On occasion, the protective rubber strips under your front bumper may touch the top of a speed bump but your actual car will not.

Lowering more than 30mm should ideally be done with either coilovers or different, performance shock absorbers. Simply applying lower and lower springs to the standard MiTo shock absorbers will result in a very poor ride. Excessive lowering (with coilovers or springs) also bring numerous other problems including stress and early failure of suspension and

drive-shaft components, the need to fit shorter drop links along with difficulty with bottoming out, wheel-arch rubbing and long detours to avoid speed bumps, so do so at your peril. A low budget lowering may result in high repair costs which far exceed your initial investment.

Because of the MiTo's centre of gravity and weight distribution, the rear suspension of the MiTo does sit very slightly higher than the front, so even with lowering springs the rear will always be slightly higher. I would not be tempted to fit lower springs on the rear to "level" the car – it is not supposed to be level.

It is also a bit of a myth these days that new performance springs will "settle" or lower even more after a day or so. Good quality springs do not do that as they are pre-compressed to full coil bind and tested before leaving the factory.

Remember, if you have adaptive suspension (Cloverleaf/QV models) then fitting coilovers will negate the active damping functionality and you will require a cancellation kit to fool the MiTo

ECU into thinking all is well. This typically adds £200 to the cost of the coilover kit and is not available from all manufacturers.

I have used Eibach springs on many cars for many years and I personally would only use Eibach. However, H&R receive very good reviews and are another German manufacturer where testing is rigorous. If you are on a budget, choose carefully. If you have never heard of the manufacturer it probably means they don't invest hugely in testing either, and a TUV type approval is not an indicator of great performance in the real-world.

Ideally if you have changed your springs, you should have your alignment done again just to be sure. Chances are it will be fine if all you've done is change your springs, but it's probably a good time to have it checked anyway (only the front can be aligned on the MiTo so never pay for a "4 wheel alignment" - it can't be done).

One final point: never, ever cut springs down to lower them. This is extremely dangerous and somewhat stupid.

Summary

As part of running a MiTo in circuit racing, I have learned a lot about fully adjustable coilovers. They are absolutely superb for track use.

But I have also learned that there is no perfect setup – we adjust the suspension at every track because each track is different. So I am even less convinced that coilovers for road use isn't more trouble than they are worth. I would spend every weekend fine-tuning the adjustments and still never reach an optimal setting as I don't drive on the same roads every day – all roads are different so however much money the coilovers cost they would always be a compromise.

And on that basis I think I would rather have a compromise at £160 rather than a compromise at £1,000 or more.

But you may have a different view of course. Or more money. But choose the solution to suit your own driving needs and consider the long-term use of your MiTo, and your driving comfort.

	KW Suspension			Eibach	KW Suspension	Bilstein	
	V3	V2	V1	Pro Street S	ST STR X	B14	B12
Height Adjustment	20-50mm (F) 30-55mm (R)			20-50mm (F) 30-55mm (R)	20-50mm (F) 30-55mm (R)	30-50mm	Up to 50mm
Adjustable Dampening	Yes	Yes	No	No	No	No	No
Bump Adjustment	Yes	No	No	No	No	No	No
Adaptive Suspension	Yes (+£195)			Yes (+£300)	No	No	No
Protection	Stainless Steel			Stainless Steel	Galvanized	Triple-Coated Zinc	None
Notes	Separate adaptive suspension module			Adaptive suspension requires the Pro-Tronic Module	Made by KW but not stainless steel		
Manufactured	Germany			Germany	Germany	Germany	
Website	kwsuspensions.co.uk			eibachshop.co.uk	kwsuspensions.co.uk	bilstein.com/uk/en/	
Price Range	£1,500	£1,150	£850	£900	£650	£650	£600