



Honda S2000 Kit update – HOS MI21

Background

The previous Honda S2000 kit, HOS MI20, was developed in 2009. After a while we received feedback that the kit was in need of some improvements. Since 2009 our development process, setting tools and test procedure has improved and we have now an even more thorough development process with a focus more towards track use.

The feedback we got from customers was that the car was too oversteered. With that in mind we decided to bring in a test car again to investigate the handling and performance with our test drivers, at our test track.

The result confirmed the customer opinions, – The car was oversteered and there were several areas for improvements.

Conclusion

The main reason for the car being too oversteered was that the compression stroke from ride height position in the rear was too short. There was approximately 35mm of available compression stroke from ride height. Our bump rubber height is 30mm, so we only had 5mm stroke left before entering the bump rubber. In other words, hitting the bump rubber will happen a lot at the track making the car loose grip in the rear. **Main reason was not that a too stiff rear spring was used.** During the performed tests, we also found some other points to improve on the kit.

We made a complete evaluation of the test car (motion ratios, corner weights, roll center height, CoG height etc.) and with this information we used our latest setting tool to calculate new damper settings and spring choices to test at the test track.

Another thing we noticed when evaluating the car with the old kit, was that there was a risk for the front springs to coil bind with the current damper stroke. That can be dangerous if it occurs, and shall be avoided.



Clarification of product development

October 2018

HOS MI21 updated kit

After some new tests at the test track, and fine tuning of the new setting, our test drivers was 100% satisfied with the handling of the car and how it behaved. We then continued with road tests to verify that the car would still offer enough comfort for public roads, which it did.

To avoid hitting the bump rubber due to the short compression stroke from ride height, we increased the spring preload (raising the car) but decreased the length of the damper (lowering the car again) by adjusting the length adjuster cup keeping the same ride height as before. This way we were able to gain 20mm more compression stroke without changing any hardware on the shock absorber.

The result is that from ride height we now have approximately 50mm of compression stroke and 50mm of rebound stroke.

To avoid coil binding of the front spring we limited the compression stroke on the front shock absorbers by 20mm. Even though limiting the compression stroke, we still have 80mm available compression stroke from ride height which is more than enough!

Summary

The HOS MI21 update improves the handling of the car in several areas. With the new springs, setting and stroke redistribution, the car has now much less oversteering tendencies, better turn in, less roll, better balance and more traction.

Thank you for reading and good luck with the usage of our products!

Best Regards

Development team, Road & Track

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