

TECH

THE COILOVER CONUNDRUM



Story & Photography by Micky Slinger



GETTING DOWN WITH GRASSROOTS PERFORMANCE



THERE MAY BE ONE THING WORSE THAN ROLLING ON CRAP COILOVERS, AND THAT'S SUFFERING THROUGH THE EXPERIENCE OF DRIVING AROUND ON BROKEN ONES. UNFORTUNATELY, THAT WAS MY REALITY, AS MY THREE-YEAR-OLD WINTER-DRIVEN COILOVERS HAD SEIZED UP, WITH AT LEAST ONE BLOWN. YOU CAN IMAGINE THE RIDE QUALITY. NOT ABLE TO STAND IT ANYMORE, I REACHED OUT TO GRASSROOTS PERFORMANCE TO SEE IF THEIR NEW LINE OF COILOVERS WERE READY TO GO, AND TO MY SURPRISE, THE FIRST SET OF FR-S/BRZ/86 TYPE 1 COILOVERS WERE ON THEIR WAY OVER AND THEY WERE LOOKING FOR A CAR TO TEST THEM ON.

Before I agreed, I had to make sure that I wasn't making the same mistake again. Here is what I was looking for after my experience with my last set:

✓ **REGULAR MONOTUBE DESIGN**

My last set were monotube [great], but they were inverted [not so great]. Having the damping adjustments under the coilover that could only be accessed with an allen key was an annoyance.

✓ **BETTER FINISH**

Select parts of my previous coilovers were anodized, but other areas were left untreated, which made them prone to abuse by the elements. Even after coating them with protectants before each winter, the bare metal had rusted all the way from the threads to the camber plates, eventually seizing all four.

✓ **SOMETHING STREETABLE**

I have a minimum hour-and-a-half commute that I make almost everyday into the office, so I need my suspension to be able to handle the occasional bump or pothole that I miss steering around. Riding on something so stiff it shakes my car's ball joints out isn't something I'm game for.



COILOVERS: WHAT TO LOOK FOR

MONOTUBE OR TWIN TUBE

Monotube construction is the superior choice for performance, while twin tube construction is usually found in economy/comfort units. If you're looking for a coilover that has a sportier feel through the bends and can handle the occasional track day if need be, monotube should be your aim. Coilovers are going to be stiffer than your OEM strut and spring combo regardless, but if comfort is your aim, stick with the twin.

DAMPING

How much do you want to fine-tune your ride? Some coilover kits come pre-valved, which offer no adjustment, so you better like your ride with those. Most others, like Grassroots' Type 1, offer around 30 steps of adjustment. That's 15 steps softer and 15 steps stiffer to get something perfect for you. More track-focused coilovers will offer around 40-way adjustability. Bonus points of you're able to easily get to the tuning knobs on top.

TOP PLATES

Camber adjustment and pillow ball top plates are becoming standard on more and more coilover kits, which is great for those looking to dial in camber after lowering. With more on the market though, there are usually shortcuts, so be sure to stay away from any units with rough casting or lower quality top hats and poor hardware. You don't want to dial out what you just dialed in.



"SO WE SET OUT TO GIVE THE PEOPLE WHAT THEY WANTED - AFFORDABLE COILOVERS THAT PUT IN WORK."

Sure, it's easy on the wallet, but they fall short on the performance and custom side. We also tried high-end top-of-the-line coilovers, and they were so responsive and so aggressive, but also just so expensive that they weren't tangible or reasonable for a daily driver. So, we compared our findings and tried to combine the best of both worlds. "Type 1" was the creation.

When you combined the "best of both worlds," which features made it to the Type 1 coilover?

We kept the most important features of high-end coilovers, such as adjustable camber plates with individual bolt slots,

opposed to just grooves that could easily come out of tune, and we kept the thicker piston shaft and polyurethane bushings. We also decided to finish the coilovers in black powder coat for protection, not just anodized bits and pieces, and go with internal top-mount damping adjustments, which make for a more reliable setup with less chance of failure or defects. To finish it off, we calculated each spring rate in regards to our street and track testing to provide a sporty feel when tuned in a high-damping setting, and road-worthy comfort when damping is turned down for street use. The combination of these key points are what make up the Type 1 coilover.

Thankfully, after a talk with Paul Nigro, the man with the plan at Grassroots, all of my needs were met. Here's how that went:

How did Grassroots decide to get in on the coilover game?

The main reason for Grassroots dabbling in the suspension game was, straight-up, the demand. I would get parts lists and, time and time again, I would see "coilovers." They were a big ticket item that we were missing out on, so we set out to give the people what they wanted - affordable coilovers that put in work.

With so much out there, where did you guys start development when looking to produce a performance street coilover?

Over an 18-month period, we tested a handful of manufacturers' coilovers and various component setups, and our findings were pretty black and white: the "affordable" line just didn't cut it.

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An easy install process later, thanks to the experienced hands of master technician, Alex Frost, the only painful part was looking at the rusted coilovers coming out of my car, one of which was completely blown and had leaked its shock fluid all over itself. Technically, any coilover would be an improvement, but I'm happy to report that the Grassroots Type 1s are an even better upgrade.

Featuring a straight up-and-down monotube design with 30-way damping adjustments made on top of each coilover, high-quality, floating-piston gas struts with seven-kilogram front springs and six-kilogram rears, and what isn't anodized in black is powder coated in black - the Type 1s checked off every wanted item on my list. They're accessible for adjustments, set up for comfortable commuting and spirited driving, and coated the weather the storm that is Canada's

DURABILITY

Coilovers are an investment, so longevity and durability of your suspension should not be overlooked. Watch out for kits that are simply painted steel, as these tend to rust and get cruddy pretty quickly. Anodizing and powder coating are both better practices to protect against heating and cooling abuse from brakes and any dirt and debris the units may come into contact with. If you can get total coverage from both anodizing and powder coating, that's even better. Coilover sleeves are also a great idea if you're planning to drive on your coilovers through the rougher winter months.

SPRING RATES

Spring rates are a huge deal on any type of coilover, since these will lay the groundwork for how your car will ride. What you should look for is something that's specced for response under load and deliver comfort for city street driving. If you're going to daily your car and want some type of decent ride, we'd stay under 10-kg for springs. If you're tracking or being "stancy," you'll want to go over, but you'll know what you need at that point.

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weather. On top of that, adjustable camber plates, pillow ball mounts and height adjustability allow for a completely tailored ride and look.

After setting them up conservatively, preparing for spring sag and the ride height to drop a bit, we were surprised to see that the Type 1s held their ground and their settings, which called for another round of adjustment to get to my desired look. My commute has vastly improved, as my spine no longer feels like it's being compressed going over bumps, and I'm finally confident enough to start throwing my car into on-ramps and back-road corners without worrying that my suspension will shake itself free. The FR-S is back on rails, as it's meant to be. **PAS**

