My 9^3 Viggen Adventures in Torque
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Every Saab owner knows what an Aero or Viggen is. It is a name reserved for the top performing models of the Saab brand. Before purchasing this 2001 Viggen 3Door Laser Red which is one of only 126, I had owned many other Saabs. All of the previous were Base or SE models. Nothing really special and they "required" a few modifications to make them competitive in SCCA Autocross competition and fun for everyday driving. Upon first drive of the new Viggen it was apparent this was not just another Saab. For the first month the performance was amazing. Both the torque and the braking performance were much better than even the modified cars I was used to. As you are aware performance is addictive and after some time it started to feel slow. Yes I did say that, a slow 230hp 258ft lbs 2.3l turbo in a 3160lb car.

Being in the Saab tuning business we have a large selection of performance parts on hand so I decided on some acoustic modifications first. The stock Viggen was a little too quiet for me. The first change was a Optiflow open air intake system. This allowed some of the desirable compressor sound to escape. It also provided a noticeable reduction in boost lag. The other basic change was deletion of the center exhaust resonator, by replacing it with a factory straight pipe. (This piece was later discontinued.) There was no real increase in overall loudness but the low rumble at idle was increased.

With my aggressive driving style the brakes were becoming a problem. In less than one weeks time the front wheels would be heavily coated with brake dust. Having had great experience with EBC GreenStuff sport brake pads on other cars, I threw a set on. The change was amazing. Along with reduced dusting the pedal was easier to modulate and there was no more fade.

After the first Autocross it was apparent that the stiffer springs and dampers of the Viggen were not enough to prevent the understeer. I replaced the factory 14mm unit with my special rear anti-roll bar. (1.5" x 1.3" Tubular construction.) This was a perfect size for my previous cars but was too much for the Viggen. We replaced it with one of our 22mm production parts and it was a perfect balance. With the torque and larger tires of the Viggen the stock rubbery steering feel was not going to cut it. We fitted a KIC Innovations Billet rack clamp that replaces the soft rubber factory mounts and also adds a bracket to further stiffen this unique Saab firewall mounted rack. This change is immediately noticeable. For the first week I cut corners too tight! It is amazing that the factory did not make these simple changes which completely transform the car. By stiffening the roll moment, the body roll from traction loss is greatly reduced and this, in combination with the more precise steering response, works to reduce the "torque-steer" to nearly nothing. This problem was one of the Viggens most criticized features. One other update is stiffer tires. The Viggen requires reinforced tires with a high load rating for high speed stability.

Now that the handling is sorted for now and I have gotten over my fear of modifying my 3000 mile Viggen I decided to update Saabs exclusive Trionic engine management system with a stage 1 program from Speedparts Sweden. Trionic being a fly by wire torque based system it was said that huge gains cannot be realized without an updated Ecm program. I set out to see if this is true. With the modified ecu there was noticeably more power across the rpm range. It was apparent that most of the boost lag was electronic! What remained, however, needed to be reduced. This was taken care of with a JT 3" turbocharger down pipe including a race catalyst. The problem of boost lag was no longer an issue. Traction was becoming a major issue. I fitted a set of 18x8 wheels with 235x40-18 PZero Rosso tires. This helped wheel spin but the clutch began to slip. At the time there was no upgrade clutch available so we replaced it with a new factory unit. This was not enough, so we contacted SPEC clutches and, working with them, were able to develop a street able clutch system that would be up to transmitting the increased torque.

By now I was getting into this performance game and tried more airflow increasing parts. The stock, cast aluminum AMM to turbocharger inlet pipe is an obvious restriction so it was replaced with a fabricated stainless item with higher flow. By now it was getting into the heat of summer and the increased charge temp was hurting performance of this high compression turbo motor. (9.3/1 & 1.2 bar) Aquamist water injection, sourced from Brad at Georges Imports, was fitted. To accommodate the injection nozzle the stock plastic intercooler to throttle pipe was replaced for the early style 9-5 aluminum version. It was noted that after this change the heat soak in traffic was worse although the increased flow was realized on the dyno. With Trionic 7 it is somewhat tricky to get the water injection set just right, but once T7 adapts there are some noticeable gains. Both on the dyno and at highway speed we noticed the charge temps were still a little higher than ideal. A race intercooler from Kylar Johnson Sweden was fitted. There was an immediate reduction in charge temp and also the increased flow further reduced the boost lag and helped high rpm power. Now we were back to safe charge temps even with high ambient temperatures.

Back to the exhaust, I decided to replace the factory rear muffler and straight center pipe, with the rest of the JT 3" system, including dual inline mufflers. The change was amazing on the dyno 15-20 hp and ft-lb were realized throughout, even though the peak numbers were not much higher it resulted in more usable power. The exhaust note was also slightly quieter.

In an attempt to flatten the torque curve I experimented with a few different pairs of camshafts with good results. I will have more about this in the future since development is still ongoing. Another restriction soon to be addressed is the Turbocharger.

After all this power adding it was time to address the chassis, again. H&R springs were specially imported and fitted. This gives the Viggen a level look instead of the stock wedge. The rear

brakes were updated to 300 mm ventilated sport grooved rotors and larger piston calipers with a special kit developed by Taliaferro. The wheels and tires were swapped for BBS CH 18” x 8” fitted with 225x40-18 PZero competition tires. The grip is phenomenal. Saab Logo caps were even custom made to keep the factory look.

After a pair of motor mount failures it was evident that the factory parts were not up to the task. I developed a polyurethane mount that has proven to not only eliminate failures but also tighten up the stock rubbery shifter feel.

We have a few more projects in different stages of development to address other weaknesses that we have uncovered in our adventures. To avoid confusion I have left out all the concepts we tried that were failures or had negative effects.

Since the Viggen has nearly all the factory accessories and options, there is very little to be changed in the styling department. A factory compact disk changer was added. The front turn lenses were swapped in favor of European code lenses without the orange reflectors. From my personal stash came a long unavailable carbon fiber shift knob. A custom shift boot to compliment the carbon was also fitted. A European spec drivers door mirror with integrated blind spot section was also installed.

Overall I am confident that we have taken an already excellent automobile, fixed a few small flaws and updated some components. The result is an amazing car that is fully drivable and more enjoyable to pilot than the original.