VERUS AERODYNAMIC PACKAGE

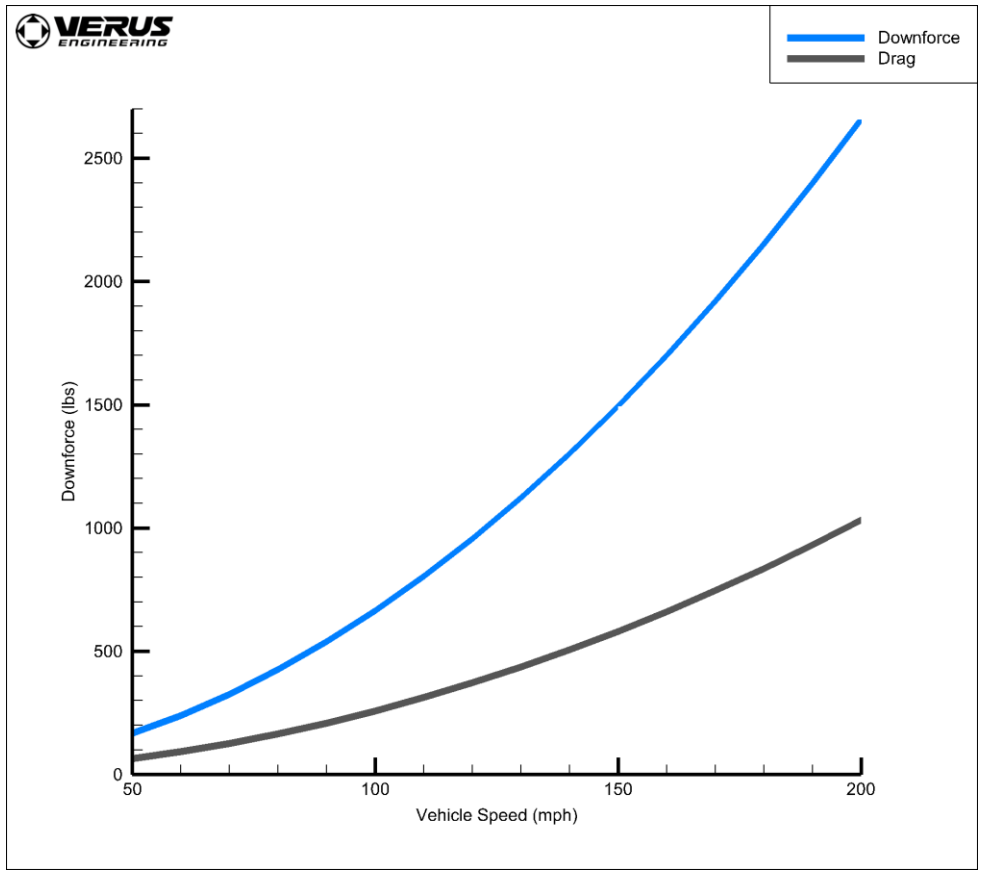
PORSCHE 987 CAYMAN INFORMATIVE PACKET

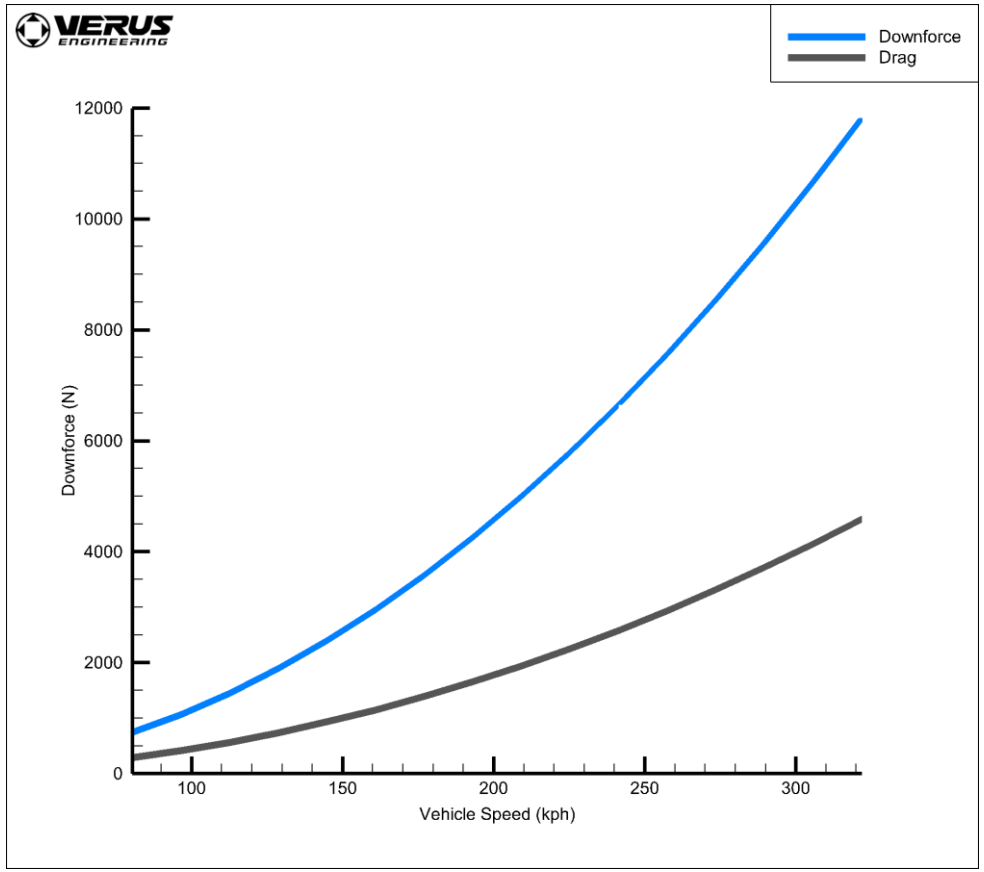
OVERVIEW

This is an informative packet on the Verus Engineering Aerodynamic Package for the Porsche 987 Cayman, with information on testing and data gathering.

AERODYNAMIC PERFORMANCE

The data was calculated at 10 degrees angle of attack, ride height of 90mm FRH/205mm RRH, and at standard temperature and pressure. For more detailed data, please see our setup pdf.

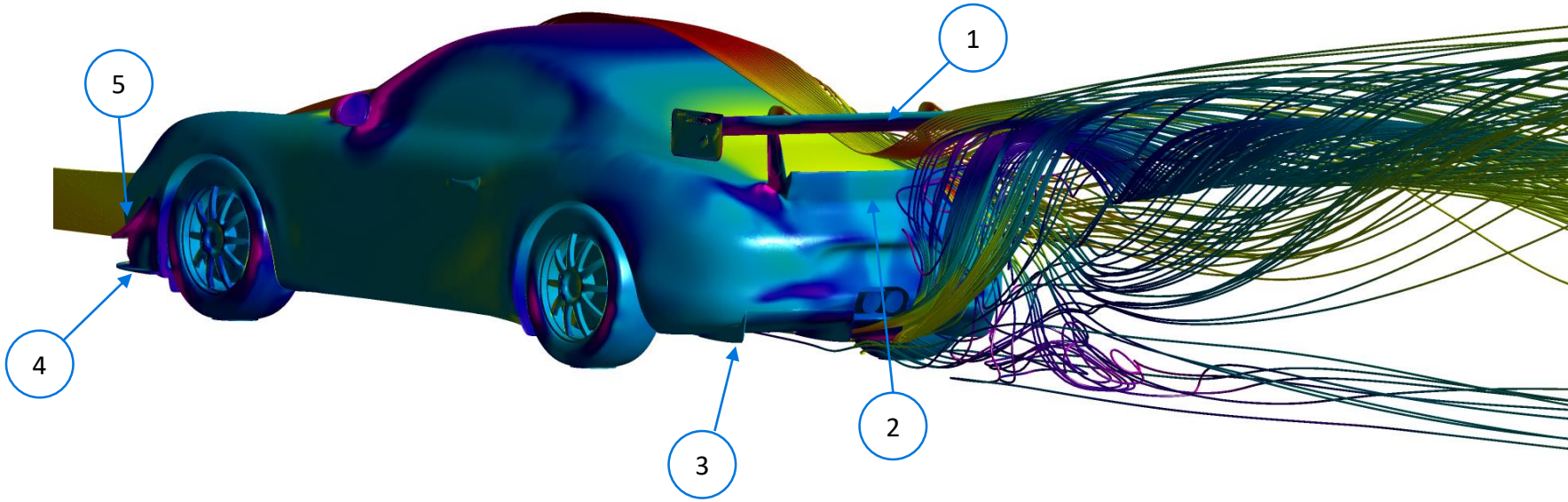




PACKAGED COMPONENTS

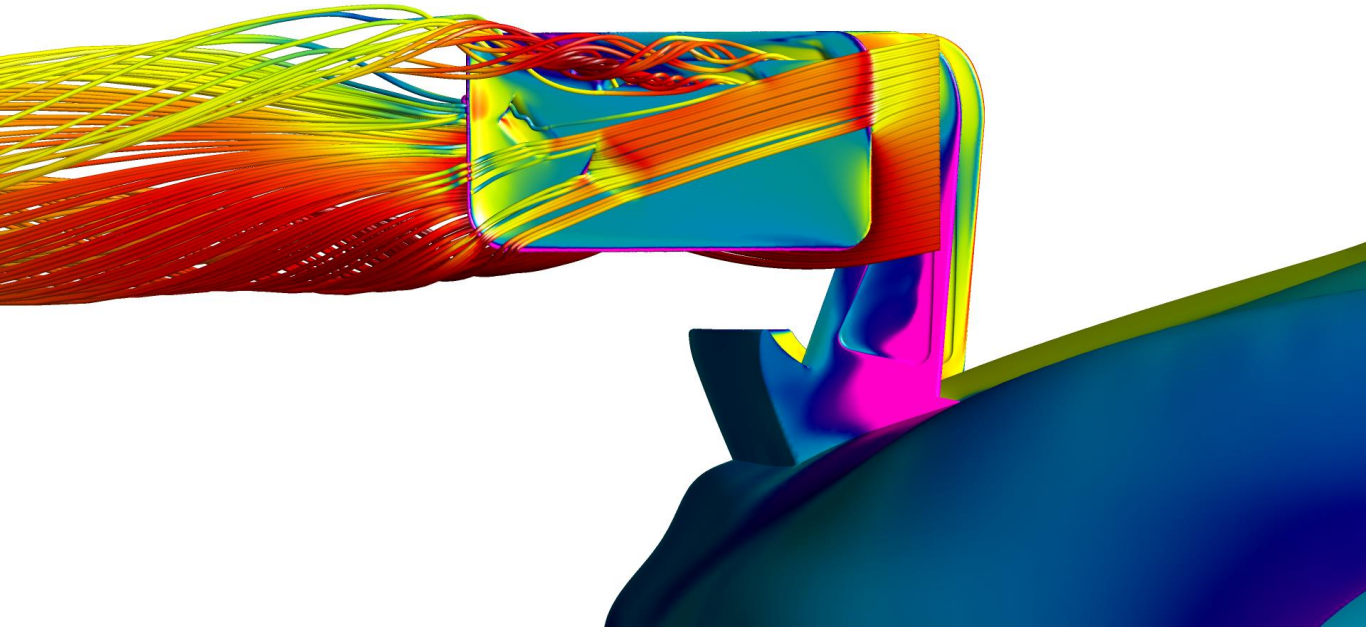
This packaged was designed to enhance the track performance of your Porsche 987 Cayman by providing proven aerodynamic gains. All the components are designed to work together as a system to improve your track times.

1. Verus High Downforce Single Element Rear Wing
2. Ducktail that bolts to the factory trunk lid
3. Rear diffuser with undertray
4. Front splitter and air dam
5. Dive Planes



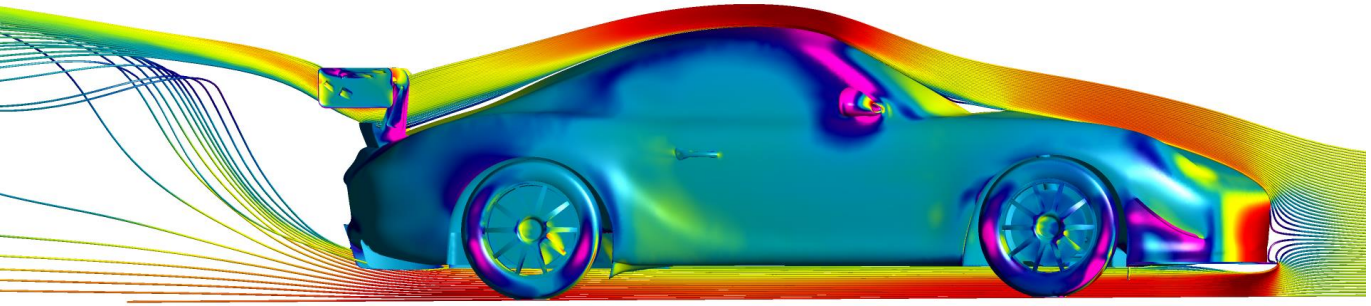
REAR WING

The rear wing is our universal high downforce single element wing. The wing's profile was optimized and developed in house to maximize downforce while still being very efficient. The wing endplates were optimized to increase the efficiency of the wing airfoil to help increase downforce and decreasing drag.



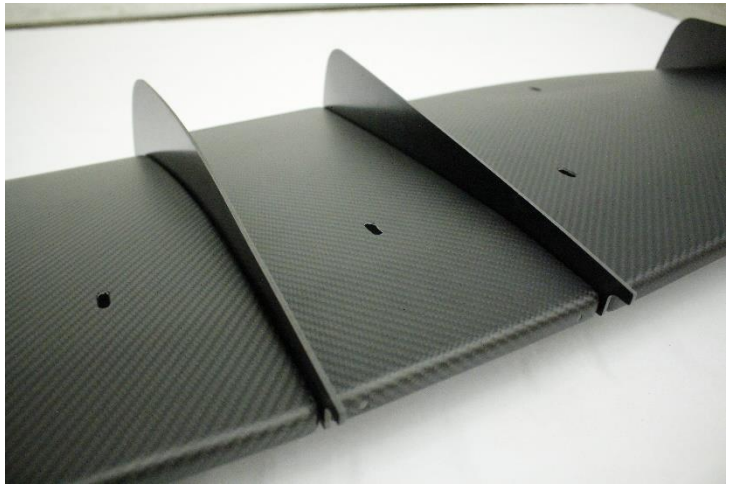
DUCKTAIL WING MOUNT

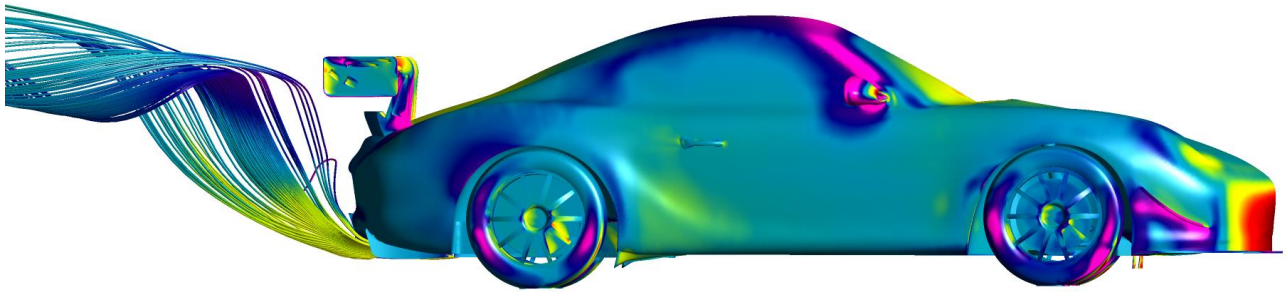
The ducktail wing mount was used to increase the performance of the rear wing and also used as a solid mounting point for the swan / gooseneck mounted wing



REAR DIFFUSER AND UNDERTRAY

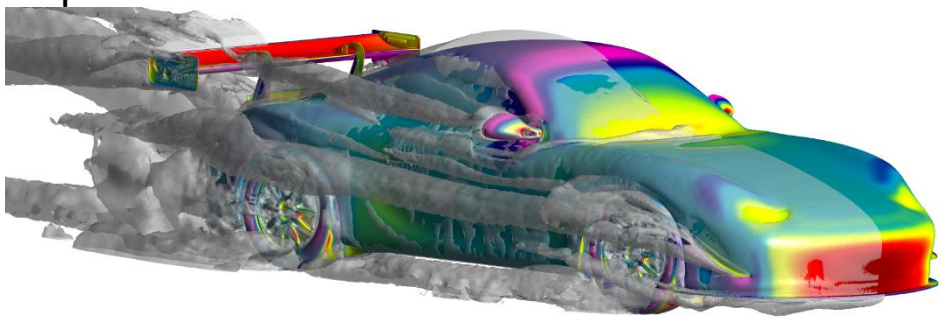
The rear diffuser and undertray was designed to tie together the rear aerodynamic package. The design maximized the area under the car to hit specific performance goals. The diffuser is carbon fiber with high density rubber strakes that will not break or damage. They are also very replaceable.





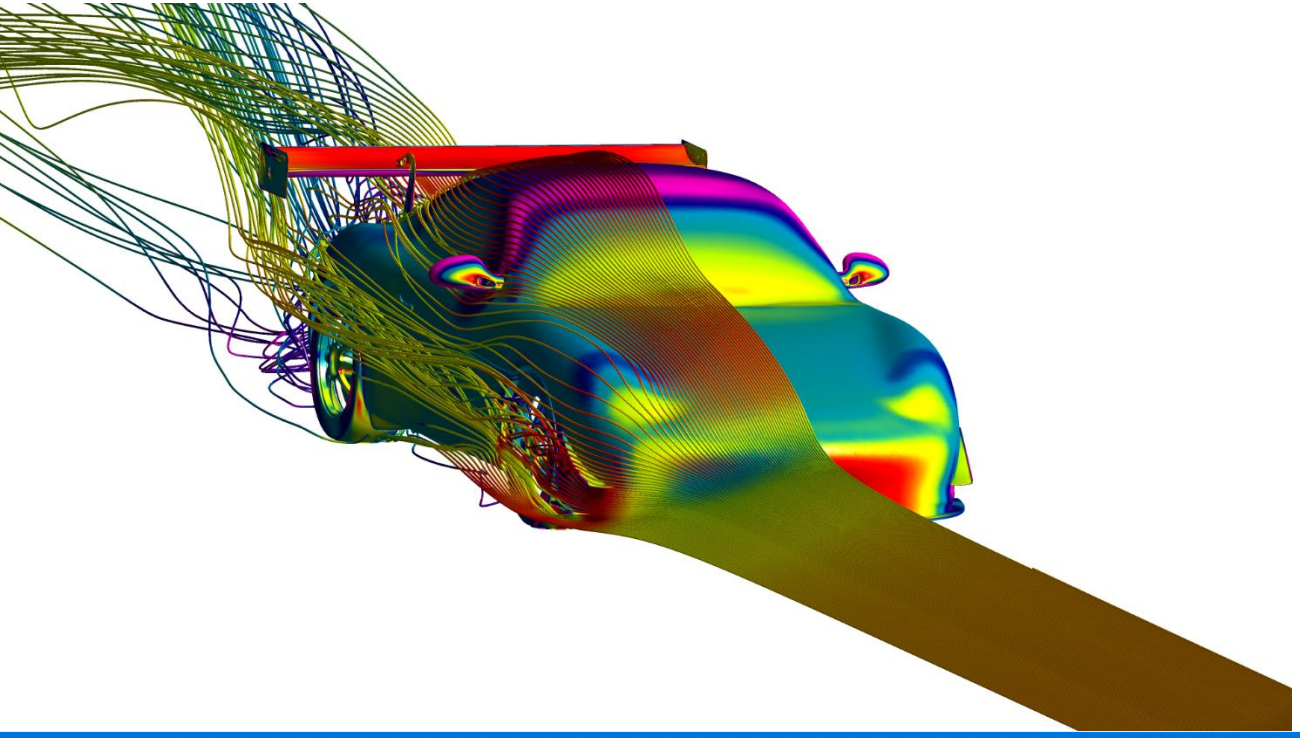
FRONT SPLITTER AND AIR DAM

The front splitter is a specialty carbon fiber which does not shatter and break with impacts. The splitter will take a huge beating on the track without failing. The splitter is designed to aid the rear diffuser and front diffusers to maximize performance. The air dam is carbon fiber and designed to help the front splitter and aid the airflow around the car.



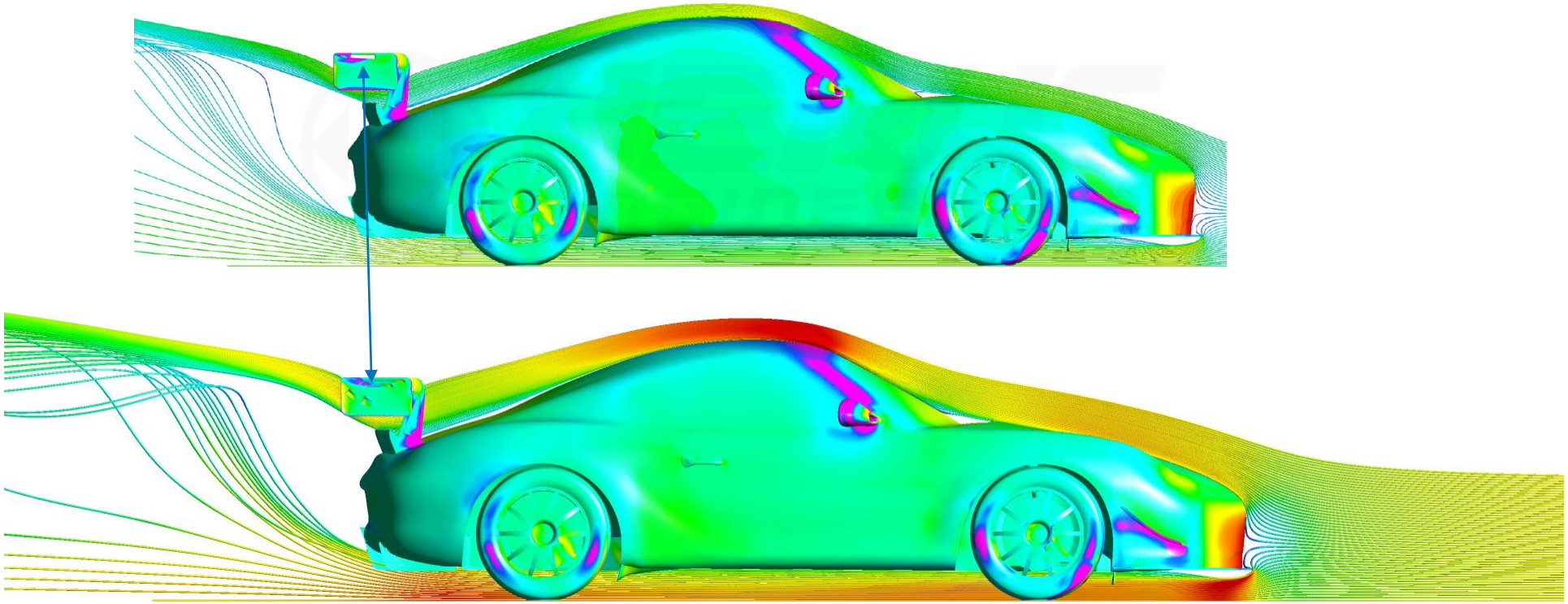
DIVE PLANES

The dive planes are to help tune the aerodynamic balance and shift the balance forward without the need of a larger front splitter. Larger front splitter can be prohibitive to driving the car on the street.



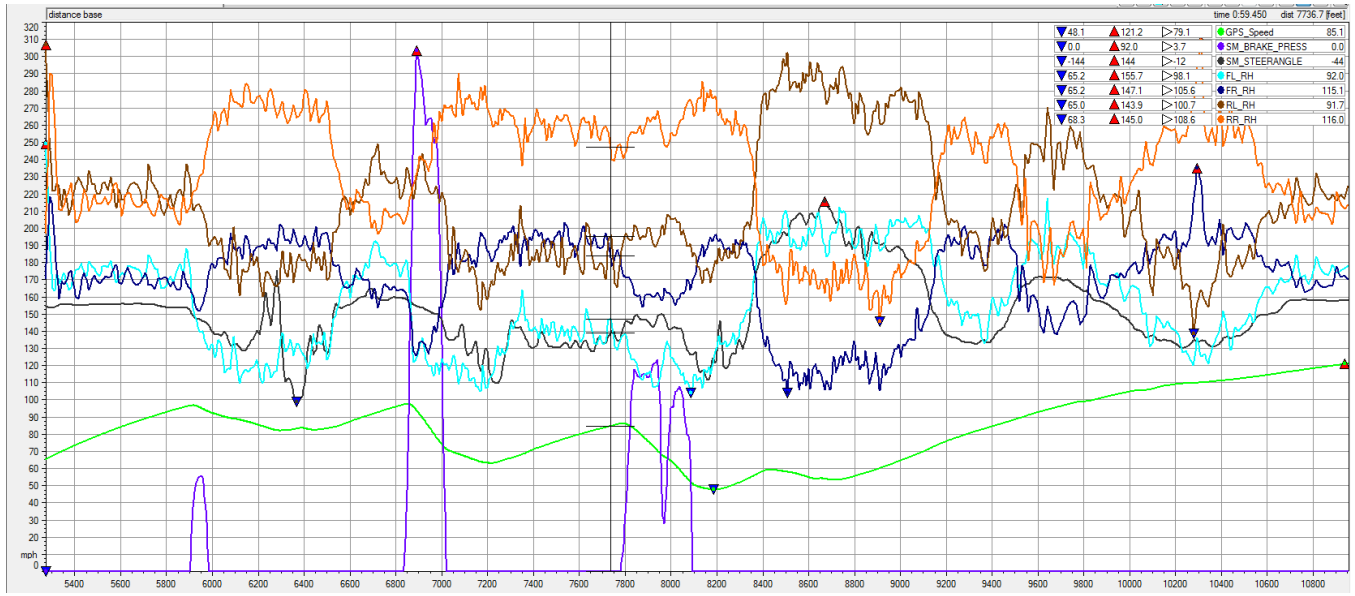
DEVELOPMENT TESTING

During the development of the kit, computational fluid dynamics (CFD) was used. We use ANSYS Fluent for all CFD which is industry standard and used throughout professional motorsports. We use CFD because it allows us to direct design changes for better performance.



VALIDATION

The aerodynamic kit was then fully tested on the track during the summer of 2018. The car was fashioned with data acquisition system to collect data which included 3 laser ride height sensors.



Ride heights correlated with downforce numbers when corrected for weight transfer and roll. We are still working on optimizing suspension setup to go with the added downforce.