

AERO 101

We apologize for the lack of posts and updates. Issues in our personal lives have caused us to take a step back from social media, but not that it's all resolved, we're back at it again! This week, we will cover the Elan Motorsports NP01, the very much hyped up "affordable" prototype race car!



The NP01 is dubbed the affordable prototype race car because quite frankly, it is! Compared to the 999 Motorsports Supersport and the Radicals, the NP01 comes out on top in terms of price for sure. Let's take a look at the aerodynamics of the NP01. Starting at the front, the NP01 is shaped like many of the pro team LMP cars. An aerodynamic nose sits on top of a splitter, with wheel arches protruding from either side of the car. Elan Motorsports claims the splitter is functional, however we question how effective it really is. The only true flat portion of the splitter does not appear to be more than 3" long, and then it blends into a convex shape similar to that of the wheel arches. An LMP1 car has the opposite shape, with a large flat section blending into a

concave shape, similar to the wing found on the back of the car. Why they chose to go with the former rather than the latter is puzzling, but it might have to do with the way things are packaged in there. The air that makes its way on top of the splitter continues through a channel and feeds air into the bodywork around the cockpit. The cockpit is streamlined into a shark fin, which helps air remain attached or follow the shape as it makes its way to the back of the car. This is referred to as the Coanda Effect.



Each front wheel arch is vented to prevent pressure from building up inside. Air from on top of the splitter is also channeled through to the fender vents to help with the extraction of air inside the arches. As we move towards the rear of the car, we will see that the rear fenders are also aerodynamically shaped to cut through the air with as little turbulence as possible. It is not visible, but the underside of the car is completely flat, which helps create downforce substantially. With a smooth underbody, air can

move quickly and without creating any turbulence or unwanted drag. On top of the car, at the front of the shark fin is the airbox scoop.



Finally, let's move to the rear of the car. The NP01 features an adjustable rear wing, mounted straight to the gearbox, using solid wing mounts without cutouts to decrease drag. The endplates bolt onto the rear fenders to increase the efficiency of the rear wing. What is startling, however, is that the NP01 does not use a rear diffuser at all. There is plenty of room to run one, and it would create more downforce if one were incorporated into the design. Whatever the reason, the NP01 is still a force to be reckoned with.

Photos courtesy of Jeff Naeyaert