

## F2005 – Technical Analysis

*This is a new article on the comparison of the Ferrari F2004 to the F2005*

([PRWEB](#)) March 3, 2005 -- Reflecting on the introduction of the new Ferrari F2005 just unveiled in Maranello, there are a few eye catching details that appear to be innovative yet are cleverly camouflaged by the bodywork & to the uninitiated eye would be passed off as simple aerodynamic streamlining.

Before the car was unveiled an air of mystery surrounded the introduction of Ferrari's entry for the 2005 F1 season. Given the fact that the Scuderia announced that the new car would not be entered officially until the Spanish G.P., one would assume that the F2005 project would be a radical departure from its sisters of the past, yet it seems to be an evolution of last years World Championship winning F2004 however, don't be fooled, it seems that Byrne, Costa, Brawn & Martinelli put pen to paper, or cursor to screen, whatever the case may be and present a completely new and radical departure from the F2004 to meet the new rules & technical changes mandated by Max Mosley and the FIA to arrest Ferrari's domination.

As we hover over the F2005 from nose to tail here is a technical overview of some of the new & interesting details of the F2005;

### Front Wing & Nose

Not much change in the design philosophy of the front wing. Ferrari has decided to retain the now traditional swept back and scooped out front wing with three individual wing elements. Interesting how the nose of the F2005 has been modified to where the bottom part of the nose is now more bulbous than its predecessor. Also interesting how the new mini central front wing has been introduced. These new elements play an important part in cleaning up the airflow to the underside of the car, eliminating undesired turbulence to achieve a more stable & better handling car. This is extremely important given the new rule of increasing the height of the nose & front wing elements. The placement of this mini wing is very important given it need to be set out ahead of the front wing given its lower placement, perfectly legal in interpretation & to the letter of the new rules... I smell a protest coming on in its first outing...

### Front View

Some interesting & subtle changes when viewing the F2005 head on. Most obvious is the higher nose in line with the new rule changes, Shumacher & Barichello will have to get used to the new driving position as a result. The nose has retained its linear look & of course, Ferrari has retained its tried & true front suspension mounting components, eliminating the need for access panels cut into the chassis. Ferrari has maintained a single keel configuration, after the failed BMW Williams experiment of 2004. Frontal area of the side pods appears to be smaller, this is not an illusion, note how the bottom half of the outside walls of the sidepods curve in, an obvious reduction of cooling masses has occurred in the design of this car. The side pods also start further aft than the old model. (This is more noticeable when viewing the F2005 from the side) The width of the airbox also seems to have been subjected to some slimming the sides are also curved in more than last year giving the appearance that the air inlet sits higher above the car than last year. Translation: engine mass has been reduced & the engine probably sits lower and is more compact than its predecessor.

### Chassis & Cockpit

Some interesting features of note here, top of chassis appears a little higher than last years car & doesn't turn down as abruptly as on the F2004, in line with the higher ground height rule of 2005. Barge boards appear to be

a carry over from last year's car. ~~do not~~ consider these to be a finalized version. I am sure their shape will be optimized to work with the new chassis. Note how the side pods start further afterwards than on the F2004. The inlets of the sidepods have changed so much that the F2005 sports much larger pontoons on the leading edges of the sidepods to meet the new FIA regulations. The changes appear to have allowed for a much wider and more comfortable cockpit. Interesting note! Look how much the mirrors are angled to sit over the sidepods so as to meet the shadow plane rule!

### Top View

A few interesting things can be seen from this viewpoint. Firstly, note how much the pontoons in front of the bottom of the sidepods have grown compared to last year. Also the diminutive size of the air inlets in the sidepods. The once chimneys now appear to be vertical stabilizers. (Note there are no exit holes on the trailing edge) the skirts ahead of the rear wheels appear to be higher than last year, this is just an illusion since the sidepods drop off further ahead and lower than last year, concluding that the engine/transmission powerplant package has been reduced in size from last year. Another giveaway is the fact that the engine exhaust outlets are no longer situated in chimneys, but in the bodywork and placed much further ahead than ever seen in a Ferrari. Finally note how the side strakes from inboard of the rear wheels are higher and created a tunnel to channel air above the upper suspension arms and under the upper wing elements!

### Airbox & Rear Wing

Another example of the unaccountable hours of wind tunnel development work. Worth noticing are, once again the sidepod terminal ends, the pronounced side skirts & the strakes inboard of the wheels almost fusing together with the rear wing side boards. As discussed previously note the reduced width of the chimneys, now no more than vertical stabilizers (a la mode of the F18 & Stealth bomber) also how far into the recess the exhaust terminal are located. The rear wing sideboards have been interestingly cut back on the trailing edge and the leading edges now sport three shark fin like cutouts, probably to clean up the airflow in that area & at the same time add stability to the rear end on fast straight aways. The airbox continues to shrink in thickness, this model does not differ in that regard. Interesting the double set of wing elements sitting near the airbox. Whether or not these will be present on all circuits remains to be seen. Finally we see the disappearance of the shark finned hot air exhausts on the radiused tops of the sidepods.

The solution here appears to be that the hot cooling air will exit with the exhausts thru the large black orifices on each side of the airbox.

### Rear End & Gearbox

Let me begin by saying that if the one could personify the rear end of this car then, based on which generation you come from, it would be Sofia Loren or Jennifer Lopez. Except for the rear wing already discussed, the rear end of the F2005 once again shows ongoing refinement of a tried and reliable concept after more hours spent in the Renzo Piano designed wind tunnel. The gearbox casing appears to be slimmer than and terminates further forward than the F2004. The venture tunnels appear to have fewer elements than last year creating a larger open area, hence less restriction to airflow. These elements are continuously developed during the season from circuit to circuit, however it appears that this car, based on what we see in the unveiling, will have a more optimized airflow compared to the F2004. Would we expect anything else?

### Conclusion

What would appear to be a simple restyling of the F2004 is actually more reminiscent of a clean sheet of paper design using tried & proven elements, optimizing each component & subsequently putting it together in one compact & reliable package. Once again the team of Costa, Byrne, Brawn & Martinelli have succeeded at surprising the tifosi and perhaps stumping the competition once again.



The F2005 appears to be the most optimized & nimble F1 package ever to be produced by the Cavallino Rampante. This car should be extremely adaptable to any circuit and/or condition, nimble, easy to set up and the most adaptable to any Grand Prix circuit of any of the F series cars built so far. Hats off to Todt, Byrne, Costa, Brawn & Martinelli and the whole Scuderia Ferrari Technical Department.

In Bocca al Lupo Â□ Forza Ferrari

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