

Braking Zone

Fusion Racecars Newsletter



September 1, 2006

Volume 1, Issue 1

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Fusion FRC-06 Racecar

With any major racecar project, it seems there is a big void (assuming you take the time for a proper design phase) between the decision to start and when you are finally getting your hands dirty. It has been the better part of 10 months since we first announced our intentions with that small blurb in the SCCA buyer's guide. In hindsight, it was probably a little premature to say anything but it was either jump in back then or wait another year, and we were confident the car would be on the track before the next buyers guide issue.

Well the good news is we are now getting our hands dirty. So I thought I would take this opportunity to give you some back round on the project and the motivation behind our design before all this space is taken up with progress reports on the build.

When we first set out to design the FRC there were a few primary objectives we focused on. I think it goes without saying in this age that our first priority was safety. So we made the concept decision that the new car would have an enclosed cockpit in addition to well design crush zones. One only has to look as far as the Rolex series to validate the increased safety of the enclosed chassis. They decided after an open cockpit fatality in 2001 Rolex 24, that they would never have another open car.

(Continued on page 2)

Feature Supplier, Ohlin's Dampers

Early on in this process we had decided that we wanted high quality components in the car. With that in mind Ohlin's was selected as the damper of choice.

Since 1976, Öhlins' Racing has been producing quality racing dampers. And since 1978, they have been winning with them; claiming more than 100 World Championships and other major titles in the 30 year history of the company. With a business firmly established in the Motocross world, Öhlins' did not reach out to the car market until the early 1990s.

The challenges of a new market and the technical expertise of the engineers at Öhlins' brought about rapid success. As a direct result of that initial success and Öhlins' dedication to advancing technology; unique high performance adjustable dampers continue to be developed by Öhlins to suit a wide range of auto racing applications.



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FRC-06 continued

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Almost on a par with safety was a true 2 seat design. This would give the car the flexibility to serve in a track day capacity as well as pureblood racer. So we created a cockpit that will comfortably accommodate at least a 6'4" 250lb driver & passenger. The chassis also had to have room for both Motorcycle engine/Quaife LSD or Automotive engine/transaxle combinations.

Now we get to the fun part....performance. Our engineer, Titus Midgley, started with the suspension. Utilizing software that analyzed all key segments of cornering, 2 months and hundreds of tweaks later he had a design that had less than .3 of a degree of camber change and a roll center that moved less than 25 thousands of an inch over the full range of suspension travel.

During that time we also finalized a number of other performance components. The C-sports moto engine would be the awesome new Kawasaki ZX-14R and it's power would be transferred to the rear wheels via a Quaife gear driven LSD with reverse (designed for Fusion). Brakes will be courtesy of AP Racing and are based on their F3 technology, dampers will be Ohlin's and a whole shopping list of other components.

There are hundreds of other little details I could ramble on about here but I will force myself to save that for future issues. Below is a progress report of where we are at the time of this writing.

Progress to date;

- The entire chassis and virtually all sub-components created in CAD.
- The body has been created in CAD and we have completed CFD analysis (Computation Fluid Dynamics) and initial molds are being milled on a large scale CNC in Washington
- CAD files have been converted to laser cutting files.
- All chassis manufacturing jigs have been designed and laser cut. By laser cutting the jigs our assembly tolerance will be +/- of 2 thousands of an inch.
- Chromoly Steel tubing for the first 2 chassis (001 & 002) has been received, laser cut and bent.
- Welding of the first chassis is under way and expected to be completed by the end of



Front clip in chassis jig



Front Roll hoop



Front Roll hoop & front clip

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FRC-06 continued

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August. Chassis 002 should be completed by September 10.

- Most of the sub-component suppliers have been identified, components designed and in stock or ordered.
- Our first customer car has been sold to a party that will also be our dealer in the North Eastern USA.

Watch our following issues for progress updates.



Cockpit & Front Assembly

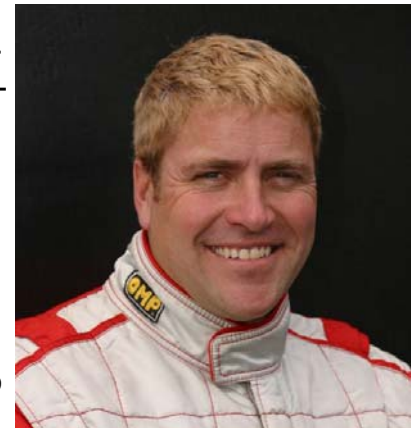
Fusion Team Spotlight

Each issue we will introduce you to a key member of the Fusion Team

Dennis Bainbridge is an experienced race driver, trainer and the president of Fusion Racing. A father of 2 rapidly growing boys (12 & 14) and husband to Wendy for 18 years. With more than 30 years of Motorsports experience, Dennis has a very diverse background that includes technology, aviation, event organizing, public speaking and of course a lifelong involvement and passion for Racing. Motorcycles, cars, karts, he's raced just about everything.

His past experience covers competing in a wide variety of race classes from production based cars to prototype sports racers. He worked behind the scenes with Molson Indy

Vancouver organizing one of their support events for the last 10 years of it's existence and was the factory test and development driver for another Canadian designed sports racer prior to launching Fusion.



In addition, Dennis manages the operation of Fusion Racing itself including racing related corporate sponsorship events, multi-media marketing, exploring business prospects and developing new and innovative marketing initiatives.

Ohlin's continued

(Continued from page 1)

When a technical sales and service staff to provide an advanced level of customer support was necessary, Ohlins turned to Indianapolis based Motorsports Spares International, Inc.

MSI's track support program and reputation for selling only the highest quality racing products made a partnership between the two companies an easy sell. Today, MSI supports race teams participating in all levels of Motorsports; from ChampCar and Indy-Car, to SCCA, local club racers and the collegiate based Formula SAE; continuing Ohlins' 30 year winning tradition.

HOW TO REACH US

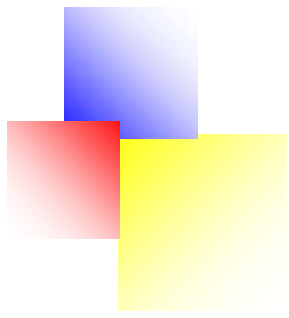
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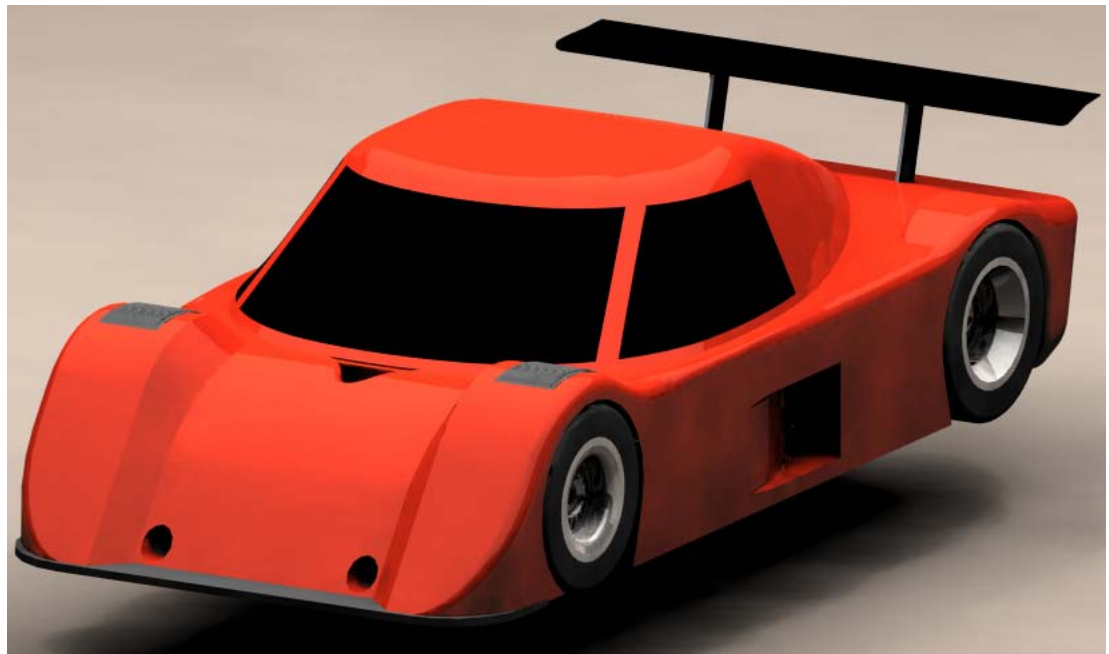
FUSION RACING

PRESENTS THE

Fusion FRC-06

C & D SPORTS RACER

*Professional Quality
and Performance at
an Amateur Price*



The Fusion FRC-06

is a two seat, mid-
engine sports racer

with chromoly space frame, non-stressed engine and full bodywork. Driver protection, structural strength and construction technology comply with SCCA regulations. Low weight, stock motorcycle drive train and off-the-shelf parts yield a unique combination of high performance with economy, making the car affordable to purchase and operate.

Summary of Specification

Dimensions Wheelbase: 95 inches Overall Length: 145 inches
Overall width: 68 inches Roof height: 41 inches
Weight: 910 lbs. *estimated*

Bodywork Fiberglass bodywork. Aluminum and composite floor, Front brake ducts. Dual access doors with windows. 2 external mirrors. Windshield. High intensity rain light/brake lights. Front headlight pods with smoked or clear Perspex covers.

Aerodynamics Flat bottom between axles or SCCA GCR-compliant semi-tunnel floor with rear diffuser and 3 inch front splitter. Ground clearance: 1.5 inches rear, 1.5 inches front. Single element down-force rear wing. Rear deck winglet.

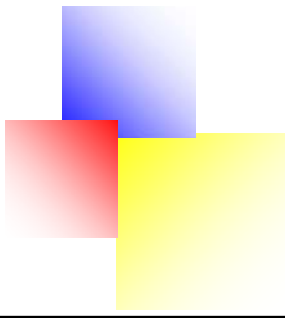
Drive train *Moto-* 2 engine combinations to select; Kawasaki ZX-14R (200HP) or Kawasaki ZX-10R (175HP). Fuel injected, naturally aspirated. Stock integral 6-speed sequential gearbox and racing clutch. Both paired with a Quaife limited slip torque biasing differential.
Auto- 200+ HP automotive engine with Hewland s-speed FTR transaxle.

**FUSION
RACING**

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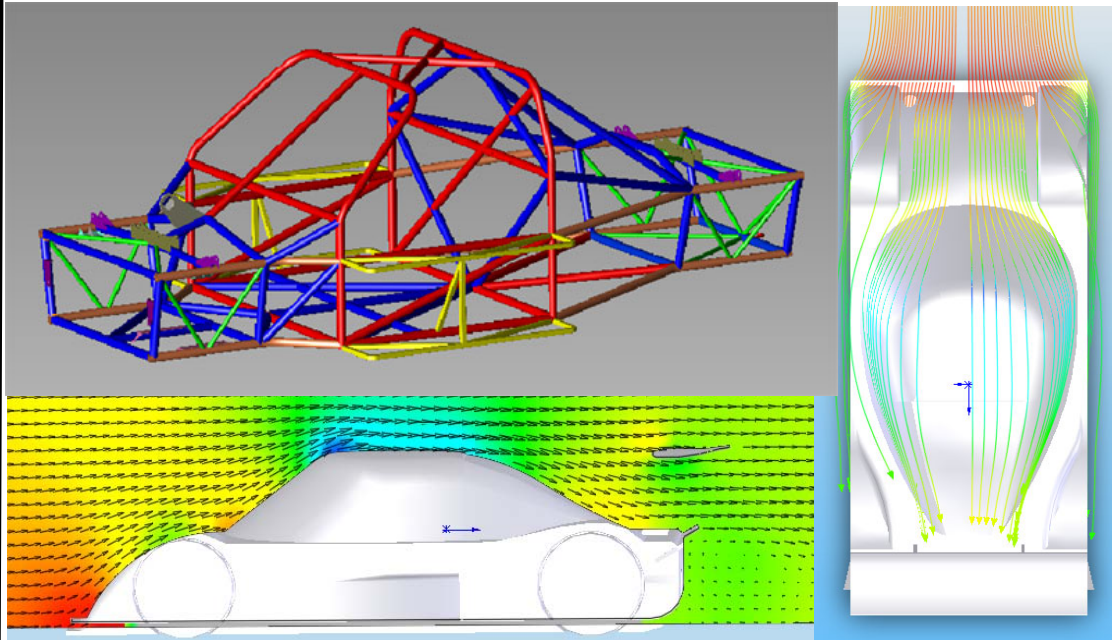
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PRESENTS THE

Fusion FRC-06

C & D SPORTS RACER

*Professional Quality
and Performance at
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Top Left: CAD designed chassis, Btm: CFD analysis on the body side view, Left: CFD top view

- Fuel Cell** ATL 11 U.S. gallon capacity wedge tank with integral fuel pump and 3 door surge tank. Non-return valve in air vent.
- Brakes** AP 4 piston calipers c/w 11.3" vented rotors on all 4 wheels. Cockpit adjustable mechanical brake balance.
- Suspension** IRS and pushrod operated coil-overs c/w spec Ohlins dampers Front anti-roll bar (optional cockpit adjustable).
- Chassis** Steel space frame c/w interconnected front and rear 1.375 inch OD 0.08 inch wall seamless 4130 Chromoly tube roll hoops. Driver's feet behind front axle centerline. Protective side crush zones.
- Cockpit** Molded race seat with driver 5 point harness SCCA/FIA spec. Sequential 6 speed shifter and reverse selector. Adjustable pedal box, quick release steering wheel.
- Instrumentation** AIM MyChron 3 Digital dash and data logger featuring a tachometer, 4 analog inputs (temp & pressure), speed, G sensor, and lap timer, fully configurable display, 4 configurable alarm LED's, backlight, and USB connector.

Pricing (est.) Roller, with everything except engine package **\$56,995 USD**
with ZX-14R & Quaife LSD **\$69,995 USD**
with Auto Power **\$79,995 USD est**

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