

Anatomy of an IndyCar Series Car

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1. Front tire	11. Oil scavenger tower	21. Engine Control Unit
2. Center spine	12. Rear anti-roll bar assembly	22. Water radiator
3. Anti-roll bar adjusters	13. Rear damper/spring assembly	23. Molded seat
4. Refueling adapter	14. Transmission/Gearbox	24. Impact lights
5. Headrest structure	15. Rear wing	25. Exhaust system
6. Oil cooler	16. Front wing	26. Air box
7. Fuel vent	17. Front brake disc	27. Rear brake disc
8. Roll hoop	18. Brack master cylinder	28. Rear attenuator
9. Air jack fitting	19. Front spring/damper unit	29. Rear tire
10. Air inlet	20. Front air jack	

FRONT WING: The front wing (16) works in conjunction with the rear wing to create aerodynamic downforce and balance between the front and the rear of the car. There are two different front wing configurations: speedway and short oval/road course. The front wing can be adjusted during a race to improve handling.

REAR WING: The rear wing (15) works in conjunction with the front wing to create aerodynamic downforce and balance between the front and the rear of the car. There are three different rear wing configurations: superspeedway, intermediate tracks and short ovals/road courses.

CHASSIS: The central part of the car, including the driver's compartment. The chassis is constructed of carbon fiber with an aluminum honeycomb core. As the frame of the car, the chassis houses the center spine (2), anti-roll bar adjusters (3), the refueling adaptor (4), headrest structure (5), fuel vent (7), roll hoop (8), air jack fitting (9), air inlet (10), brake master cylinder (18), front spring/damper unit (19), front air jack (20), molded seat (23) and impact lights (24).

SIDE POD: Also included in the chassis is the side pod, the bodywork on the side of the car covering the oil cooler (6), engine control unit (21) and water radiator (22). The side pod and its components aid in engine cooling, car aerodynamics and driver protection in case of a side impact.

FUEL CELL: The fuel cell is made of rubber and is covered with a Kevlar-fitted blanket for extra protection in side impacts. It holds 22 gallons of 100 percent fuel-grade ethanol.

GEARBOX/BELLHOUSING: An IndyCar Series car features a manual six speed (no reverse) sequential shift gearbox. The gearshift is located on the right side of the cockpit and the driver pushes forward to downshift and pulls back to upshift. The bellhousing connects the gearbox to the engine. Key components of the gearbox/bellhousing include the oil scavenger tower (11), rear anti-roll bar assembly (12), rear damper/spring assembly (13), transmission (14) and rear attenuator (28).

ENGINE: The IndyCar Series utilizes the normally-aspirated, 670 horsepower, 3.5-liter Honda Indy V-8 engine. It has four valves per cylinder. The 3.5 liter provides longer engine life between rebuilds and additional mid-range torque for the varied IndyCar Series schedule – from street/road courses to short ovals to superspeedways. The engine houses the exhaust system (25) and the air box (26).

TIRES: Firestone Firehawk racing radials are mounted on 15-inch rims with front tires (1) approximately 11 inches wide and rear tires (29) approximately 15 inches wide. The weight of an IndyCar Series car at speed is approximately four times the static weight, so the tire sidewalls have to be strong enough to handle the stress, yet thin enough to dissipate heat.

FRONT/REAR SUSPENSION: The front and rear suspension attach the wheels to the chassis. It is designed to withstand all the braking and acceleration loads in addition to vertical loads. The suspension includes the front brake disc (17) and rear brake disc (27).

