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Glossary of automotive terms

A

A-pillar

The pillar is located at the outer edge of the windshield, connecting the body and the roof.

Aerodynamics

The study of how air moves and influences a car's performance.

Air dam

A vertical panel added to the bottom of the car's front end to aid fuel economy and engine cooling.

Air vent

An opening in the body that relieves pressure from the engine, passenger or wheel well compartments.

Airfoil

The cross-sectional shape of a wing.

Approach angle

The maximum angle a vehicle can climb without damaging the front lower bumper.

Asymmetry

A lack of a mirror image when examining the front or rear of a design from its centreline.

B

B-pillar

The pillar located at the rear edge of the front door, connecting the bodyside and the roof.

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Badge

An identifying trim piece used to promote a vehicle's make, model, or trim level.

Backlight

The back glass of a vehicle's greenhouse.

Beltline

A demarcation between a vehicles body panel and the side windows.

Bevel

An angled cut that adds slope to a surface.

Bezel

The trim that surrounds a light, holds the face of an instrument in position, or decoratively conceals gaps between bodywork and components.

Binnacle

The housing for the instrument cluster on top of or as part of the instrument panel.

Bonnet

The front hood of the vehicle.

Boot

The trunk or liftgate of the vehicle.

Brand character

The visual building blocks of a design that identify a unique automotive brand.

Brightwork

Anything reflective added to a car to enhance appearance.

Body in White (BIW)

The base chassis.

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Butterfly doors

A type of door that moves up and out via hinges along the A-pillar.

Buttress

A solid panel that supports another design element for visual and/or structural purposes.

C

C-pillar

The pillar located behind the rear door or rear side glass, connecting the body to the roof.

Cab

Short for cabin. The enclosed compartment of a vehicle which contains the driver and passengers.

Cab back

The cab of the vehicle is moved towards the rear of the vehicle.

Cab forward

The cab of the vehicle is moved towards the front of the vehicle.

Cant rail

The portion of the roof that connects the A, B, C, and D pillars (when applicable) to each other.

Carrosserie

Bodywork of a vehicle.

Center High-Mounted Stoplight (CHMSL)

The third brake light set higher than those situated within the vehicle's lower corner taillights.

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Centreline

A line that runs through the centre length of the vehicle.

Centre of gravity

The point in space where all the vehicle's mass is located from a theoretical standpoint.

Chamfer

A bevel designed to connect two surfaces.

Character line

A line stamped into a panel to add visual interest and/or improve structural rigidity.

Cladding

Material added to exterior of the car which isn't structurally necessary. May be functional or may be cosmetic.

Clamshell

A full body width hood that opens in the same manner as a clam.

Control panel

Generally used in a vehicle for the adjustment of various functions.

Colour gradient

A set of colours arranged in a specific order of progression, usually pertaining to external or interior graphics.

Contrast

A visual difference in the appearance of distinct elements in a design.

Coupe

Body style comprising of a three-box design with two doors, an aggressively sloped roof, and a significant number of unique body panels relative to a sedan platform with the same DNA from the same manufacturer.

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Cowl

The base of the windshield.

Cut line

Any break in the body used to separate unique features like doors, hoods, trunks and bumpers.

D

Dash-to-Axle ratio

The critical relationship between the front wheel center and the windshield base.

Daylight Opening (DLO)

The glass area of a vehicle's greenhouse as seen from the side.

Daytime Running Lights.

Low intensity, front-mounted lights that increase visibility during the day, when the headlights aren't needed.

Deck

The horizontal surface at the rear of the car, which usually serves as the trunk lid.

Deck lid

The horizontal plane of a conventional trunk on a sedan or coupe.

Departure angle

The maximum angle a vehicle can descend without damaging the rear lower bumper or exhaust.

Design study

A concept rendering 3-D model or full-scale concept car meant for research.

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Diffuser

An aerodynamic panel at the bottom rear of a vehicle, designed to draw air out from underneath to increase downforce.

Downforce

The weight of air that pushes down on the front or rear of a vehicle at speed.

Down the Road Graphic

The styling of the front end of the car, which people will instantly recognize and associate with the manufacturer.

Drag

The force of air pushing against a vehicle at speed.

Drag coefficient

A unitless number calculated to determine the wind resistance against a vehicle at speed.

Ducktail

A short, upright spoiler.

E

End plates

The corner of a wing that keeps air moving in the correct direction across the panel and prevent crosswinds from interfering with this engineered airflow.

Ergonomics

The study of designing a vehicle around the person's needs, most frequently described in terms of the driver's and passenger's access points.

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F

Fascia

The body-skin panel at the front of the car.

Fastback

The car body style whose roofline slopes continuously down at the back.

Fender

The body panel covering the wheels of the vehicle,

G

Greenhouse

The glassed-in upper section on the car's body.

Grille

A protective screen between the outside air and the radiator.

Ground effects

Functional extensions added to the rocker panels to generate downforce via low pressure between the chassis and the ground.

Gull-wing door

Car doors that are hinged at the roof rather than the side, opening upwards.

H

Halo vehicle

Marketing term for a vehicle with styling and performance that improves perception of the entire brand.

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Hard point

Location on a body that cannot be changed as per the functional requirements of a vehicle.

Hatchback

A two-box design with rear access via a lift-up access door.

Haunches

The forms of an automobile around the front or rear wheel arches.

Header

The structural roof beam above the windshield.

H-Point or Hip Point

The pivot point between the torso and the upper leg portions of the passenger's body.

Hood (Bonnet)

The vehicle's body panel covering the upper area forward of the passenger compartment.

Horizon line

The line that separates the earth from the sky, used when describing bodyside surface curvature.

HVAC

Heater, ventilation and air conditioning unit.

I

Impact structure

Crush space needed in a body for safety purposes, often related to front and rear overhangs seen in the side view.

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Industrial Design (ID)

The field of study that centres around designing consumer products.

Instrument panel

The component mounted on a vehicle's cowl housing instrumentation, audio, HVAC and touch screen navigation systems.

K

Kammback

Body design featuring a downward sloping roofline and rear deck that abruptly ends with a vertical panel. Proven to reduce aerodynamic drag.

L

Laminar airflow

Streamlined flow whereby all air particles move at the same speed and direction.

Lift

The force acting to pull off the ground at speed, whether at the front or rear axle.

Light catcher

A flick out curvature to the surface in order to capture more light on a panel.

M

Minimalism

A style of visual arts in which fewer elements make a design calmer.

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Molding

A protective or decorative trimming.

N

NACA duct

A distinctively shaped inlet that is flush and begins with a narrow, shallow inset and becomes progressively wider and deeper.

NVH

Field of study aimed at reducing a vehicle's Noise, Vibration, and Harshness characteristics, involving both engineers and designers.

O

One-box design

When viewed from the side, a vehicle that incorporates passengers, cargo and powertrain spaces within a single box's volume.

Overhang

The distance the car's body extends beyond the wheelbase at the front (front overhang) and rear (rear overhang).

Obscuration band

Black printed onto the glass edges to cover unsightly areas.

P

Perspective

The visualization of a 3-D form on a 2-D surface.

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Pillar

A structural member that connects the roof to the body of the car. Pillars are usually notated from front to back alphabetically (e.g., the A-pillar joins the windshield to the frontmost side windows, the B-pillar is next to the front occupants' heads, etc.).

Plenum

The area at the base of the windshield where the wipers are parked.

Power Bulge

A hood with a prodigious swell to provide engine clearance space or to give the visual impression of a powerful engine underneath.

Powertrain

All the components that generate power and deliver it to the tyres.

Product design

The field of study that broadly covers the creation of a product.

Profile view

The side view of a vehicle.

Proportions

The interaction of size between individual styling elements either with the basic shape of a vehicle or amongst other elements in a smaller space.

Q

Quarter panel

When viewed from the side, the part of that body that fills the gap between the rear doors and the rear bumper.

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Quarter window

The glass mounted at the trailing edge of the DLO, either in the C-pillar or in the rear door.

R

Rake

The angle, measured from the horizontal, of a design element when viewed from the side, most notably seen in windscreens and A and C pillars.

Rendering

A concept that's been created in 2D and realistically represents a 3D design.

Rocker

The body section below the base of the door openings, sometimes called the rocker panel or sills.

S

Sail Panel

A triangular panel at the leading edge of the front door and at the base of the A-pillar.

Scoop (Snorkel)

A protruding element designed for the intake of air for cooling/ventilation.

Sectional view

The shape of an object when a surface is sliced through for easier form visualization.

Sedan

Body style comprising of a three-box with two or four doors, whereby both configurations share a large number of body panels. Two door sedans are generally more upright and spacious than their coupe counterparts,

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Shooting brake

A vehicle combining features of a station wagon and a coupe.

Shoulder line

A curve or bend along the beltline that provides visual separation between bodyside and green house.

Sill

The body section below the base of the door openings, also called the 'rocker panel'.

Soft top

A convertible top which is made out of flexible materials.

Spats

Side covers for wheel arches.

Splitter

A front valance that splits air, pushing the higher pressure air over the car to increase downforce at speed.

Spoiler

A barrier mounted on the rear deck to direct air up and away from the car, reducing lift and preventing the turbulence that occurs when high and low-pressure air interact behind the car.

Stance

Refers to a vehicles posture.

Strakes

Slats mounted to a panel to route air flow as desired.

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Streamline

The act of lowering the resistance of a design to aerodynamic drag by removing superfluous elements.

Suicide doors

Rear hinged doors, opening from the front of the car.

Surfacing

The act of contouring a flat piece of sheet metal for visual and/or functional enhancement.

Swage line

Crease or curvature in the side of the body used to create visual distinction.

Symmetry

A mirror image of lines facing each other when comparing the left and the right side of an object relative to its centreline.

T

Texture

The look and feel of a surface.

Three-box design

When viewed from the side, a vehicle that houses passengers, cargo and the powertrain in three individual box spaces.

Three-quarter view

Vantage point that's halfway between the profile and the front or rear of the vehicle.

Track

The distance across the car between the base of the left and right wheels.

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Transportation design

A field of study within the guidelines of Industrial Design that focuses on moving vehicles.

Trunk (Boot)

Compartment for storage of cargo which is separate from the cab.

Tumblehome

A design term applied to show the inward angle of a greenhouse from the beltline to the roof, when viewed from the front or rear of the vehicle.

Turbulent airflow

Inconsistent speeds and directions in an airflow, the opposite of laminar airflow.

Two-box design

When viewed from the side, a vehicle that incorporates passengers and cargo in a singular box, with the powertrain in another box.

V

Vanishing point

A point out in space where seemingly parallel lines on a car would converge, if extended past the body.

Vent

An opening on a surface that is used as a hot-air outlet.

Venturi Effect

An increase in speed when air is forced through a smaller space, with the result of lower air pressure for more downforce.

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Visual weight

The amount of surface on a vehicle dominates heavily, thus altering the apparent balance of the design.

Volumes

The basic shape of a vehicle, the outline of a body of work when seen from the side, front or rear.

Vortex

Airflow pattern where the air rotates around its centreline.

Vortex generators

Small aerodynamics design feature that creates a vortex, when used in a series can reduce drag on a body panel or wing.

W

Wedge

Shape of the car as seen in the side profile. If the front is lower than the rear, then it has a wedge profile.

Wheel arch

The visible opening in the side of a car that allows access to the wheel.

Wheel arch gap

The space between the tyre and the wheel arch.

Wheelbase

The distance front to back measured from where the front and rear wheel centrelines meet the ground.

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Wheel well

The enclosure space for the wheel.

Worm's eye view

Photography term used to show what a vehicle looks like from a low vantage point.

