



compiled by  
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## AUTOMOBILE DICTIONARY

### A

1. Abbreviation or symbol for
  - **absorption coefficient**
  - **acceleration**
  - **ampere**
  - **attenuation coefficient**
  - **fine-structure constant**
  - **helmhotz free energy**
  - **magnetic vector potential**
2. Designation for **A roads** in Britain

### **A-2 tire**

Tire sizes 16.00 and larger in nominal cross section.

- Also called **earthmover**, **off-road**, or **off-the-road** tire.

### **A4R70W**

Acronym for **Automatic Overdrive Electronic Wide Ratio Transmission**

### **AA**

Acronym for **Automobile Association** a term used in Britain.

### **AAA**

Acronym for **American Automobile Association**

### **AABM**

- AAC** Acronym for **Association of American Battery Manufacturers, Inc.**
- AADT** Acronym for **Auxiliary Air Control Valve**
- AAE** Acronym for **Annual Average Daily Traffic** -- a measure of traffic flow.
- AAIA** Acronym for **Association of Automotive Employers** (Poland).
- AAIA** Acronym for **Automotive Aftermarket Industry Association.**
- AAIA** Acronym for **Automotive Aftermarket Industry Association.**
- AAM** Acronym for **American Automobile Labeling Act**
- AAM** Acronym for **Alliance of Automobile Manufacturers.**
- AAP** Acronym for **auxiliary acceleration pump**

#### **A arm**

See

- **a-arm**

#### **A-arm**

### **A-arm**

A **suspension** linkage formed in the shape of an **A** or **V** found commonly on the **front suspension**.

- The sides of the two legs of the A-arm are connected to the **chassis** by rubber **bushings** and the peak of the A-arm is attached to the wheel assembly.
- In this way, the wheel can freely move up and down.
- Sometimes there is an upper A-arm, a lower A-arm, or both upper and lower A-arms.
- The British call it a **wishbone**.

Also see

- **double wishbone**
- **double a-arm**

#### **A-arm suspension**

See

- **double wishbone**

### AAS

Acronym for **air aspirator system**.

### AASHTO

Acronym for **American Association of State Highway and Transportation Officials**

### AAV

Acronym for **Anti-Afterburning Valve** (Mazda)

### AAWF

Acronym for **Annual Average Weekday Flows** -- a measure of traffic flow.

### AAWT

Acronym for **Annual Average Weekday Traffic** -- a measure of traffic flow.

### Abaft

Toward the back of a ship

### abandonment

1. The act of a transporting company (bus, courier, railway, ship, etc.) in which it will no longer service a previously serviced route. In some cases abandonment must be approved by the ICC
2. The act of a shipper or consignee who refuses to accept delivery
3. The act of relinquishing title to damaged or lost property by claiming a total loss.

### Abarth



**Click image for books on Abarth**

A model of car produced by **Fiat**

### AB-screw

A screw used in sheet metal but rarely in stainless steel.

- The **AB** designation is made because it has a pointed end similar to a **type-A screw** and thread dimensions similar to a **type-B screw**.

## ABC

1. Acronym for **aerial bunched conductors**
2. Acronym for **automatic beam control**.

## ABC Classification

An inventory classification system

- A system for classifying inventory or parts within a warehouse where fast moving products are designated as "A" items, while "B" and "C" items are not as fast moving.
- In some warehouses, however, "A" items are those with the best profit margins.

## ABCV

Acronym for **Air Bleed Control Valve** (Ford)

## ABDC

Acronym for **after bottom dead center**.

- A term used in **timing** the relation of the **spark** and the **crankshaft**
- measured in degrees of rotation.

## Abel flashpoint apparatus

A device for testing the **flash point** of gasoline.

## Abel tester

A closed-cup flash tester for kerosene and other oils

## Aberration

A deviation from normal standards

### Also see

- **chromatic aberration**

## Abhere

To refuse to stick together.

- Opposite to **adhere**

## Abhesive

A substance which does not allow two materials to stick together

- e.g., **teflon**® on frying pans does not allow eggs to stick to its surface.
- Opposite of **adhesive**

## A-bike



## A-bike

A light-weight: (5.5 kg) folding bicycle invented by Sir Clive Sinclair in the United Kingdom

### Ability

See

- **climbing ability**
- **cold cranking ability**

### Aboard

See

- **lighter aboard ship**

### Aboard ship

See

- **lighter aboard ship**

### A bone

Nickname for a **Ford Model "A"**

### ABPV

Acronym for **air bypass valve**.

### Abradant

A grinding powder

**Also see**

- **abrasive**

### **Abrade**

To grind or roughen up a surface by rubbing

### **Abrasion**

The action of removing some of the surface through rubbing friction.

### **Abrasion hardness**

The ability of something (e.g., metal, ceramic) to resist abrasion.

### **abrasive**

1. A hard grit used for sanding or grinding.
  - Usually a powder e.g., silicon carbide powder.
2. Materials such as sand or chipped rock that are spread on paved roads to increase vehicle traction.
  - Also called **aggregates**

### **Also see**

- **bonded abrasive**
- **coated abrasive**
- **non-woven abrasive**

### **abrasive blast cleaning**

A process of cleaning with gusts of fine particles

- In order to clean steel or remove rust from iron or scale from metal, sand or some other powder substance is forced by air pressure through a **nozzle**.
- In this way the small particles of abrasive can penetrate the metal where sanding with sandpaper cannot.
- Also, very small craters are formed on the surface of the metal from the blasting action.
- When thoroughly cleaned the metal is ready for painting.
- Paint adheres better to these **craters and imperfections** than to a perfectly smooth surface.

### **abrasive cleaner**

A cleaning paste with some hard grit.

- It is used to remove the grime and oils from a surface or from your hands.

### **abrasive disc**

**abrasive disc**

A circular plate (often made of plastic with hard grit embedded into it) used for grinding or sanding.

**abrasive paper**

Sandpaper (a paper upon which sand or hard grit has been glued) used for sanding or grinding.

**Abreast**

Side by side

**ABS**

Acronym for **anti-lock brake system**.

- The acronym ABS comes from the German *anti blockier system*.
- A computer, sensors, and solenoid valves work together to sense wheel speed in order to modulate braking force if wheels lockup during braking.
- ABS can help the driver retain control of the vehicle during heavy braking on slippery roads.
- It works on the principle of braking a wheel until it just begins to skid (this is the point where braking efficiency would drop off dramatically) and then releasing the brake pressure and re-applying the brakes.
- Wheel speed sensors identify the skid point and trigger a release in brake pressure.
- The cycle is repeated many times a second.
- The driver will feel a rapid pulsing at the brake pedal and hear a chattering noise as ABS is applied.

**Also see**

- **cadence braking**
- **four-wheel ABS**
- **independent ABS**
- **integral ABS**
- **two-wheel ABS**

**Absolute**

**See**

- **manifold absolute pressure sensor**
- **pilot Operated Absolute Valve**
- **POA suction throttling valve**

**Absolute ampere**

The metric standard unit of electric current which replaced the international unit in 1948

**Absolute humidity**

The ratio of the mass of water vapor in a sample of moist air to the volume of the sample.

**Absolute Liability**

The shipping carrier assumes responsibility for all damages and for late shipment, etc. and is not protected by normal exemptions found in a bill of lading or common law liability.

### **Absolute pressure**

1. Pressure measured from a starting point of zero in perfect vacuum.
  - When measured by the absolute pressure scale, atmospheric pressure is 14.7 psi or 29.92 inches of mercury (in-Hg).
2. Total pressure equal to gauge pressure plus 14.7 lbs./sq. in. at sea level.

#### **Also see**

- **barometric Absolute Pressure Sensor**
- **barometric And Manifold Absolute Pressure Sensor**
- **manifold Absolute Pressure Sensor**
- **zero Absolute Pressure**

### **Absolute pressure sensor**

#### **See**

- **barometric Absolute Pressure Sensor**
- **barometric And Manifold Absolute Pressure Sensor**
- **manifold Absolute Pressure Sensor**

### **Absolute temperature**

The temperature above **absolute zero**

- The temperature plus 273°C.

### **Absolute Valve**

#### **See**

- **pilot Operated Absolute Valve**

### **Absolute weight**

The weight (or mass) of a body in a vacuum.

### **Absolute zero**

The point at which there is a total absence of heat, -273.15°C.

### **absorbent**

A substance with the property of assimilating another substance (e.g., sponge and water).

#### **Also see**

- **liquid absorbent**

### **Absorber**

Something which converts the dynamic energy of motion into potential energy (e.g., of a spring) such as in a shock absorber.



## Also see

- **air shock absorber**
- **adjustable shock absorbers**
- **damper**
- **direct-acting shock absorber**
- **double-tube shock absorber**
- **friction shock absorber**
- **gas shock absorber**
- **impact absorber**
- **lever-type shock absorber**
- **shock absorber**
- **single-tube shock absorber**
- **telescopic shock absorber**
- **uV absorber**

## Absorber Surface

See

- **selective Absorber Surface**

## Absorber tower

See

- **shock absorber tower**

## Absorbing

See

- **energy absorbing steering column**
- **bumper system**

## Absorbing bumper

See

- **bumper system**

## Absorbing steering

See

- **energy absorbing steering column**

## Absorbing steering column

See

- **energy absorbing steering column**

## Absorption

The use of a chemical or filter to remove unwanted particles or characteristics from something.

### Also see

- **bouguer Law Of Absorption**
- **sound absorption**

## Absorption capacitor

A **capacitor** connected across a spark gap to reduce the discharge.

## Absorption coefficient

1. The volume of gas, measured at **STP**, dissolved by unit volume of a liquid under normal pressure (i.e., one atmosphere).
2. The fraction of the energy which is absorbed.

## Absorption dynamometer

A measuring device which absorbs and dissipates power, e.g., the ordinary rope brake and the Froude hydraulic brake.

## Absorption hygrometer

An instrument that measures the amount of moisture in the atmosphere

## Absorption refrigerator

A refrigerator which creates low temperatures by using the cooling effect formed when a refrigerant is absorbed by chemical substance

## ABS override button

A button or switch which disengages the automatic anti-lock braking system so that the driver can operate the brakes himself.

## ABS relay valve

An electrically controlled valve which modulates the air pressure in the anti-lock braking system.

## ABSV

Acronym for **Air Bypass Solenoid Valve** (Mazda)

## Abut

The action of two gear teeth making contact.

## abutment

1. A part which stops the motion of another part from proceeding any farther.
2. The contact made between opposing teeth of two gears.
3. The structure that supports the end of a bridge.

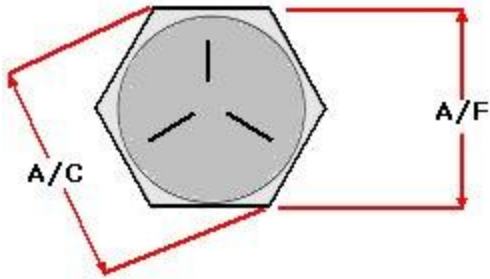
## Abutting edge

The edge or side of a panel which joins the edge or side of another panel.

## ABV

Acronym for **air bypass valve**.

## A/C



## Across Corners

An abbreviation for ***across corners***

1. An abbreviation for ***across corners***
  - Indicates the distance on a nut or bolt head from one corner to the opposite corner rather than the distance from one flat surface (A/F) to the opposite.
  - The A/F measurement determines the size of wrench needed to install or remove the nut or bolt.
  - The A/C measurement determines the size of hole needed to insert a recessed nut or bolt head.
2. Acronym for **alternating current**.
3. Acronym for **air conditioning** or **air conditioner**.
  - Sometimes spelled "A/C" or "A.C."
4. Symbol for **actinium**
5. The transformation temperature on heating of the phase changes of iron or steel, subscripts indicating the designated change, e.g.,  $Ac_1$  is the eutectoid ( $723^{\circ}\text{C}$ ) and  $Ac_3$  the ferrite/austenite phase boundary.
6. Acronym for **Asphaltic concrete**.
  - A mixture of asphalt cement, graded aggregate, mineral filler, and additives.

## AC

A vehicle brand built by the AC Cars Group, Limited of which the 1925-48 models are **classic cars**.

## AC Ace



## 1956 AC Ace

A vehicle brand built by the AC Cars Group, Limited of which the 1954-61 Aceca models are **milestone cars**.

### AC Aceca

#### AC Aceca

A vehicle brand built by the AC Cars Group, Limited

- Pronounced ah-SEEK-uh
- The 1955-61 Aceca models are **milestone cars**.

### ACAP

Acronym for **Associação do comércio automóvel de Portugal**

### AC balancer

An arrangement of transformers used to equalize the voltages between the wires of a multiple-wire system.

### AC Buckland



#### AC Buckland

A vehicle brand of which the 1949 Buckland Open Tourer is a **milestone car**.

### Acc

Abbreviation for **accessories**.

### ACC

1. Acronym for **Automatic Cruise Control**.
2. A term found on a **Cruise control** switch which indicates the direction the switch needs to be moved to increase the speed (**accelerate**) of the vehicle.
3. Acronym for **Air Conditioning Clutch**
4. Acronym for **Automatic Climate Control**

### ACCC

Acronym for **air conditioner clutch compressor signal**  
**accelerate**

1. To increase the speed of a vehicle. Opposite of **Decelerate**.
2. To increase the speed of a chemical reaction
  - To speed up the chemical reaction or curing process of an **adhesive**.
  - For example, you can speed up the drying time of an adhesive or sealer by increasing the temperature or by adding a chemical curing agent, or accelerator, to a base compound.

### **Accelerating machine**

**See**

- **accelerator**

### **Accelerating-well ports**

These ports or passageways in the **Carburetor** prevent momentary leanness during the period that occurs between the opening of the air valve and the actual discharge of fuel from the secondary nozzles.

### **Acceleration**

The rate of change of velocity or **speed**.

- Velocity is steady and is measured in distance per time (e.g., feet per second, miles per hour, kilometers per hour).
- Acceleration keeps increasing and is measured in velocity per time (e.g., feet (or meters) per second per second or feet (or meters) per second squared).
- It is a vector quantity and has both magnitude and direction.
- It may be positive or negative depending upon whether the object is speeding up or slowing down.
- The latter is often called **Deceleration**.

**Also see**

- **Lateral acceleration**
- **Sluggish acceleration**
- **Yaw acceleration**

### **Acceleration enrichment**

The action of increasing the fuel/air mixture during acceleration in order to improve the vehicle's speed and its smooth response.

### **Acceleration pump**

**See**

- **auxiliary acceleration pump**

### **Acceleration Sensor**

**See**

- **Lateral Acceleration Sensor**

### **Acceleration slip regulation**

(ASR) The Bosch term for traction control.

### **Acceleration stress**

The influence of acceleration (or deceleration) on certain physiological parameters of the human body.

- The degree of tolerance depends on the magnitude and duration of the acceleration as well as the direction of the force against his body.

### **Acceleration Switch**

**See**

- **Lateral Acceleration Switch**

### **Acceleration tolerance**

The maximum acceleration force that a person can withstand before **blacking out** or otherwise losing control.

### **Accelerator**

**Click image to supersize**

1. In automobiles, this is the **gas pedal** which is attached by **Linkage** to the **Throttle** in the **Carburetor** or to the **Fuel injection** system.
  - It regulates the amount of fuel which is sent to the engine.
  - In **Motorcycles**, the accelerator is located on the right-hand twist grip or an actuating lever.
  - Also called **throttle linkage**.

### **Also see**

- **Depress the accelerator**
- **Ease up on the accelerator**
- **Step on the accelerator**
- **Take foot off the accelerator**

2. A chemical which is added to something to make a process happen more quickly.
  - For example, a chemical may be added to paint to cause it to dry faster.
  - The opposite is **retarder**.
  - A material added to an adhesive to speed up its cure or to chemically convert the whole mass to a solid.
  - Accelerators differ from **catalysts** in that they are a part of the chemical reaction and lose their chemical identity as a result.
3. Any substance increasing the speed of the vulcanization process of rubber.

### **Accelerator interlock**

A connection between the gas pedal and the automatic transmission.

### **Accelerator pedal**

The **accelerator**, **Gas pedal**, or **Throttle pedal**.

### **Accelerator pump**

An auxiliary carburetor pump

- A small cylinder and piston usually located inside the **carburetor** that sprays an extra amount of fuel into the engine during **acceleration**.
- It improves acceleration by giving more boost and reducing a momentary lag in power.
- It is actuated by fully depressing the throttle pedal.

### **Accelerometer**

An instrument which measures the amount of **acceleration** in a specific direction.

### **Acceptable quality level**

(AQL) A manufactured good that may not be perfect but does reach a level of shape, size, and performance, etc. that will make it work and last as long as the manufacturer expects.

### **Acceptance**

1. The act of receiving and signing for a shipment by the consignee which terminates the carrier's contract and obligation.
2. A consignee's promise to pay the shipping costs by signing and dating the bill for the goods and acknowledging any indebtedness to the company who shipped the goods.

### **Acceptance test**

An examination of a part or its assembly to determine if it meets a prescribed standard.

### **Access**

A way of reaching something that is usually hidden or covered.

#### **Also see**

- **access panel**

## Access Cab

A pickup truck (by Toyota) which has a second row of seating

- Unlike a **crew cab** (which has four full size doors) it has a **half-door** that can be opened only after the main door is opened.
- The seating is usually a little more cramped than in a **crew cab**.
- Other manufacturers call it
  - **Club Cab**
  - **Extended Cab**
  - **King Cab**
  - **Xtracab**
  - **Supercab**
  - **Cab Plus**

### Also see

- **Easy Access Cab**

## Access hole

An opening through which you can reach something

- It is usually covered with a removable **panel** for aesthetic or safety reasons to hide wiring, hoses, etc.

## Accessible

See

- **Readily Accessible**
- **Reasonably Accessible**

## Accessible hermetic

Assembly of motor and compressor inside a single bolted housing unit.

## Accessorial

An extra activity or material beyond normal handling and storage for which the client will be billed.

## Accessorial Charge

The amount the client must pay for providing extra service or materials.

## Accessories

Items and packages of equipment which are beyond the standard equipment supplied in a new vehicle.

## Accessory

See

- **accessories**

## Accessory gearbox



A transmission, driven remotely from the main engine, to which other items (e.g., generator, pumps) are mounted.

### **Accessory package**

A set of features or appointments which may be ordered at extra cost on a new vehicle.

### **Access panel**

1. The **Cover** which conceals the engine on a **Mid-engine** vehicle.
  - Also called **Engine cover**
2. A decorative plate which covers an **access hole**

### **Also see**

- **Hood**

### **Access road**

A temporary or permanent road over which timber is transported from a loading site to a public road.

- Also called a **haul road**

### **Access slots**

Openings in the brake backing plates or brake drums that allow you to reach the **Star-wheel adjusters**

### **Accident**

#### **See**

- **Car accident**

### **Accident damage**

The destruction caused to a vehicle's bodywork when it is involved in an accident.

### **AC circuit**

A circuit which passes only alternating current as opposed to direct current, e.g., it may have a capacitor in series, which blocks direct current.

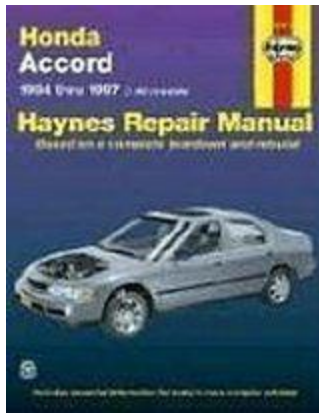
### **Accommodation Ladder**

A portable set of steps attached to the side of a ship to permit people to board from small boats or from a pier.

### **AC commutator motor**

An AC motor which has a commutator as an essential part of its construction.

### **Accord**



**Click image for books on  
Honda Accord**

A model of automobile manufactured by Honda.

## **ACCS**

Acronym for A/C Cycling Clutch Switch

## **Accumulator**

1. A storage battery for an electric car.
2. A part of a hydraulic system filled with nitrogen gas and used to store high pressure fluid to provide pressure assistance for system operation.
3. A pressurized container for an automatic leveling suspension system.
4. A part of the hydraulic system which is charged by the fluid pump, absorbs fluctuating fluid delivery, stores fluid at pressure, and can provide a rapid flow of fluid under pressure.
5. A device in the fuel line between the pump and filter that keep up the fuel pressure when the fuel pump is off thus preventing vapor lock and excessive fuel pump noise in having to build up pressure when needed
6. A vessel that stores hydraulic fluid under pressure.
7. A storage tank which receives liquid refrigerant from the evaporator and prevents it from flowing into the suction line before vaporizing.
8. A refrigerant storage device used on General Motors and Ford systems that receives vapor and liquid refrigerant from the evaporator.
  - The accumulator, which contains **desiccant**, performs a function similar to that of a receiver-drier it separates liquid from the vapor, retains the liquid and releases the vapor to the compressor.
  - Always located on the low side of the system.

## **Also see**

- **accumulator piston**
- **Fuel accumulator**
- **Hydraulic accumulator**
- **Pressure accumulator**

**Accumulator battery**

A storage battery (i.e., the main battery in your vehicle).

**Accumulator box**

A vessel usually made of plastic which contains the plates and electrolyte of an accumulator.

**Accumulator drier**

A device which is part of the air conditioning system.

- It is made up of a tank, filter, drying agent, and a vapor return tube.
- It is usually found on the evaporator outlet.
- It stores the excess refrigerant and removes the moisture from the refrigerant (thus the name *drier*).

**Also see**

- [Receiver-drier](#)

**Accumulator grid**

The lead grid which forms one of the plates of a lead-acid accumulator having pasted plates.

**Accumulator piston**

A unit found in the [automatic transmission](#) to assist the [Servo](#) to apply the [Brake band](#) quickly and smoothly.

**Accumulator system**

In an automatic transmission, it includes a hydraulic [accumulator piston](#) which is controlled by a valve.

**Accumulator traction**

See

- [Battery traction](#)

**Accumulator valve**

A device which operates the hydraulic [accumulator piston](#) in an automatic transmission.

**Accumulator vehicle**

See

- [Battery traction](#)

**AC Current**

See

- [Sine Wave AC Current](#)

**AC current sine wave**

Wave form of single frequency alternating current; wave whose displacement is sine of angle proportional to time or distance.

**ACD**

Acronym for **Air Conditioning Demand Switch**

## **Ace**

An American trucker's colloquial term for someone with a class **A** license.

**Also see**

- **AC Ace**

## **ACEA**

Acronym for **Association des Constructeurs européens d'Automobiles** (i.e., European Automobile Manufacturers' Association).

## **Aceca**

**See**

- **AC Aceca**

## **Acetate**

**Also see**

- **Calcium magnesium acetate**
- **Magnesium acetate**

## **Acetone**

A fast drying solvent used in some rapid drying adhesives, such as nitrile rubber, or vinyl resin-based types

## **Acetylene**

A gas composed of two parts of carbon and two parts of hydrogen.

- When burned in an atmosphere of oxygen, it produces one of the highest flame temperatures obtainable for welding.

**Also see**

- **Oxygen acetylene cutting**

## **Acetylene bottle**

**See**

- **acetylene cylinder**

## **Acetylene cutting**

**See**

- **Oxygen acetylene cutting**

## **Acetylene cylinder**

## Acetylene Cylinder

A specially built container manufactured according to I.C.C. Standards.

- Used to store and ship acetylene.
- Also called **acetylene tank** or **acetylene bottle**

### Acetylene hose

A flexible medium used to carry gases from regulators to the torch.

- It is made of fabric and rubber.

### Acetylene regulator

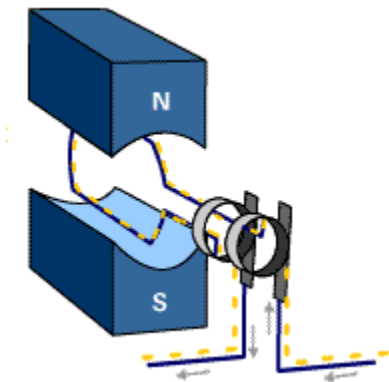
An automatic valve used to reduce acetylene cylinder pressures to torch pressures and to keep the pressures constant.

### Acetylene tank

See

- **acetylene cylinder.**

### AC generator



## AC Generator

1. An electromagnetic generator for producing alternating EMF and delivering AC to an outside circuit.
2. A generator produces direct current (DC) while an alternator produces alternating current (AC).
  - Because alternators were introduced to automobile electrical systems after generators had been in use for some time, some people referred to the new alternator as **AC generator**.

## Ache

See

- [Headache rack](#)

## Ache rack

See

- [Headache rack](#)

## Achieva

**Click image for books on Oldsmobile Achieva**

A model of automobile built by [Oldsmobile](#) from 1992-98. Built on the N-chassis.

## Acid

See

- [Battery acid](#)
- [Chromic acid](#)
- [Oxalic acid](#)

## Acid deposition

After acid compounds are sent into the atmosphere (e.g., through a smokestack), it returns to the surface mixed with the rain.

**Also see**

- [acid rain.](#)

## Acid Fuel Cell

See

- [Phosphoric Acid Fuel Cell](#)

## Acidity

The presence of acid-type constituents whose concentration is usually defined in terms of [Neutralization number](#).

- The constituents vary in nature and may or may not markedly influence the behavior of the oil.

## Acid mine drainage

Water pollution that results when sulfur-bearing minerals associated with coal are exposed to air and water and form sulfuric acid and ferrous sulfate.

- The ferrous sulfate can further react to form ferric hydroxide, or yellowboy, a yellow-orange iron precipitate found in streams and rivers polluted by acid mine drainage.

### **Acid precipitation**

**See**

- **acid rain**

### **Acid process**

A way of making steel where the iron has a low level of phosphorous and the furnace is lined with silicon.

**Also see**

- **Basic process**

### **Acid rain**

1. When the smoke created by factories and vehicle exhausts is taken by the wind and joined with rain clouds, the mixture is often acidic.
  - As a result the rain that falls to the ground (and even on your car) may damage whatever it strikes.
2. A form of wet deposition in which acid molecules or particles in the atmosphere are returned to the surface having been washed out by rain or snow as it falls.
  - The unnatural acidity (pH 3-5.5) is caused mainly by the oxides of sulfur and nitrogen from the burning of coal and oil.
3. Precipitation containing harmful amounts of nitric and sulfuric acids formed primarily by sulfur dioxide and nitrogen oxides released into the atmosphere when fossil fuels are burned.
  - It can be wet precipitation (rain, snow, or fog) or dry precipitation (absorbed gaseous and particulate matter, aerosol particles or dust).
  - Acid rain has a pH below 5.6.
  - Normal rain has a pH of about 5.6, which is slightly acidic.
  - The term pH is a measure of acidity or alkalinity and ranges from 0 to 14.
  - A pH measurement of 7 is regarded as neutral.
  - Measurements below 7 indicate increased acidity, while those above indicate increased alkalinity.
  - Also called acid precipitation or acid deposition

### **Acid Rechargeable Battery**

**See**

- **Lead Acid Rechargeable Battery**

## Acid Tester

See

- [Battery Acid Tester](#)

## AC Ignition System

See

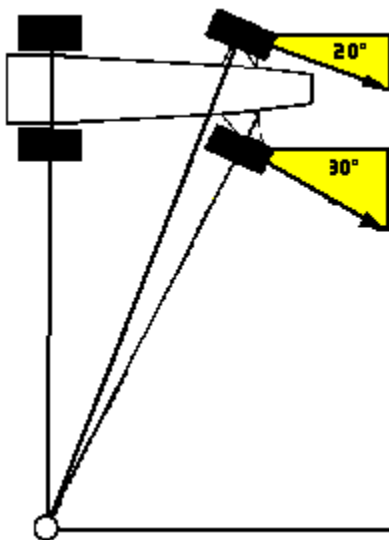
- [Continuous AC Ignition System](#)

## Ackermann

See

- [Ackermann steering](#)

### Ackermann steering



### Ackermann steering

1. A double-pivoting steering system where the outer ends of the **Steering arms** are bent slightly inward so that when the vehicle is making a turn, the inside wheel will turn more sharply than the outer wheel.
  - This is done to compensate for the greater distance the outside wheel must travel.
  - Notice 20 degrees on left wheel and 30 degrees on right wheel
2. Arrangement whereby a line extended from the track-arms, when the wheels are set straight ahead, should meet on the chassis centerline at  $\frac{2}{3}$  of the wheelbase from the front, allowing the inner stub-axle to move through a greater angle than the outer.



### **Ackermann angle**

The toe-out or toe-in of a vehicle with **Ackermann steering** when the wheels are positioned straight ahead.

### **Ackermann axle**

In a vehicle with **Ackermann steering** (at the front of the vehicle), it is a non-rotating axle that is steerable and has two pivot points (one on each end of the axle) with vertical **Kingpins**.

### **ACL BI-MET**

Acronym for **air cleaner bi-metal sensor**.

### **ACL DV**

Acronym for **air cleaner duct and valve vacuum motor**.

### **AC motor**

An electric motor which operates from a single or polyphase alternating current supply.

#### **Also see**

- **Capacitor motor**
- **Induction motor**
- **Synchronous motor**

### **ACON**

Acronym for **Air Conditioning On Signal**

### **Acorn Die**

A form of threading die for use in screw machines.

- The cutting portion resembles an acorn.

### **Acorn Nut**

A blind tapped hex nut with an acorn shaped top.

- Provides sealing for projecting threaded parts.

### **Acoustic amplifier**

A device or system that increases mechanical vibrations

### **Acoustics**

1. The science of sound waves including production and propagation properties.
2. The characteristics of the interior of a car which determine the quality of sound transmission inside.

#### **Also see**

- **architectural acoustics**
- **atmospheric acoustics**

### **ACP**

Acronym for **Air Conditioning Pressure Signal**

### **ACPSW**

Acronym for **Air Conditioning Pressure Switch**

### Acquisition fee

A charge for processing a vehicle lease and is probably not negotiable.

- On a shorter term lease, the acquisition fee can have a large impact on the cost of the lease.

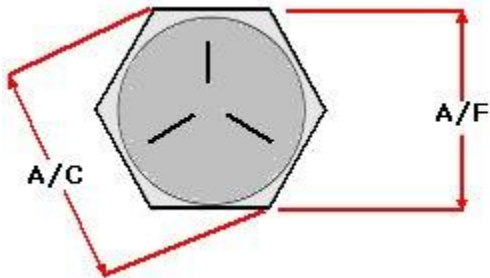
### ACR

Acronym for **Air Conditioning Relay**

### ACR4

Acronym for **Air Conditioning Refrigerant, Recovery, Recycling, Recharging**

### Across corners

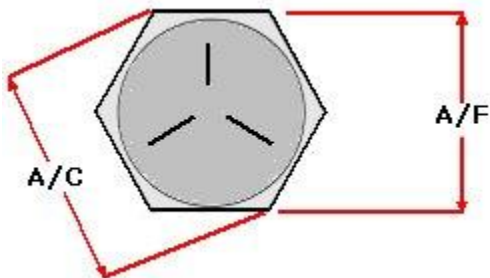


### Across Corners

(A/C) The distance on a nut (for instance) from one corner to the opposite corner rather than the distance from one flat surface (A/F) to the opposite (which would be the size of wrench needed to install or remove the nut).

- The purpose of the A/C dimension is to know how large a hole might be needed to insert a recessed nut.

### Across flats



### Across Flats

(A/F) The distance on a nut (for instance) from one flat surface to the opposite flat surface, i.e., this is the size of the wrench needed to install or remove the nut.

**Also see**

- **across corners.**

### **ACRS**

Acronym for ***Air Cushion Restraint System***

### **ACR tubing**

Acronym for ***Air conditioning and refrigeration*** tubing.

- The ends are sealed to keep tubing clean and dry.

### **Acrylate**

A polymer used to strengthen rubber (e.g., **Ethyl acrylate**).

### **Acrylic**

A term relating to a type of paint made by polymerizing acrylonitrile.

### **Acrylic fibers**

Continuous long filaments or fibers from linear polymers.

### **Acrylic finish**

A final coating of paint which uses **acrylic paint**, often where the pigment and an acrylic paint are mixed together.

### **Also see**

- **Two-pack paint.**

### **Acrylic paint**

A type of paint made by polymerizing acrylonitrile.

### **Acrylic resin**

A thermoplastic synthetic polymer made by polymerizing an acrylic derivative such as acrylonitrile, acrylic acid, ethyl acrylate, and methacrylate.

- It is used for adhesives, protective coatings, and paint finishes.

### **ACS**

1. Acronym for **active control system**
2. Acronym for **air conditioning** system
3. Acronym for **attitude control system**

### **AC Shelby Cobra**



## AC Shelby Cobra

A vehicle brand of which the 1962-67 Shelby Cobra models are **milestone cars**.

### ACT

1. Acronym for **air charge temperature**.
2. Acronym for **active control technology**

### Acting

See

- **Double-acting**
- **Dual-acting**
- **Single-acting**

### Action

See

- **Capillary Action**
- **Caster action**
- **Galvanic Action**
- **Mist Action**
- **Oscillating action**
- **Parallel action locking pliers**
- **Reciprocating action**
- **Self-energizing Action**
- **Servo Action**

### Action brakes

See

- **Servo action brakes**

### Action locking

See

- **Parallel action locking pliers**

### Action locking pliers

See

- **Parallel action locking pliers**

### Activate

To change an adhesive film from a dry or inactive state to a useful, sticky state.

### Activated

See

- **Cable activated**

### **Activated alumina**

Chemical which is a form of aluminum oxide.

- It is used as a drier or **desiccant**

### **Activated carbon**

A very porous carbon that is used to strain liquid leaving behind impurities on the carbon and the pure substance going through it

### **Activated carbon canister**

An automotive filter in which **activated carbon** has been placed so that gas tank fuel vapors, which have accumulated when the vehicle is not running, are trapped in the filter.

- When the engine is running, hot air is forced into the filter and push out the vapors into the engine.
- In this way, pollution is reduced and conservation of the fuel is maintained.
- Also called **activated charcoal trap** or **charcoal canister**.

### **Activated charcoal**

Charcoal treated with acid to increase its adsorptive power

Also see

- **activated carbon**
- **Charcoal**

### **Activated charcoal trap**

See

- **activated carbon canister**

### **Activating agent**

A substance which is used to speed up the process of curing a tire.

- Also called an **activator**

### **Activator**

A substance which is used to speed up the process of curing a tire.

- Also called **activating agent**.

### **Activation**

See

- **Chemical Activation**
- **Electrical Activation**

### **Activation polarization**

Activation polarization is present when the rate of electrochemical reaction at an electrode surface is controlled by sluggish electrode kinetics.

- This is similar to chemical reactions where the reacting species must overcome an activation barrier.
- For **Fuel cells**, this region is characterized by a drop from the theoretical EMF or ideal voltage prior to electron or ion flow.

### **Activators**

**See**

- **Vacuum Activators**

### **Active Area cell**

The surface area of an individual **Fuel cell** that is available for chemical reaction.

- The active area is typically less than the total area of a cell to accommodate cooling, distribution, and sealing mechanisms.

### **Active braking time**

The length of time (excluding the driver's reaction time) a vehicle takes to come to a complete stop after the brakes are applied.

### **Active control system**

(ACS) A flight control system designed to improve the performance and behavior of an airplane.

### **Active Gases**

**See**

- **Radiatively Active Gases**

### **Active material**

In a storage battery, the brown peroxide of lead of the positive plates and the gray metallic lead of the negative plates upon which the sulfuric acid acts.

### **Active noise control system**

**See**

- **anti-noise system**

### **Active power**

The component of electric power that performs work, typically measured in kilowatts (kW) or megawatts (MW).

- Also known as **Real power**.

## Also see

- **apparent Power**
- **Reactive Power**

## Active safety

The opposite of passive safety.

- Passive safety involves **Seat belts, airbags, Bumpers**, etc. so that in the event of an accident the passengers are protected.
- Active safety involves factors which will assist the **Driver** in avoiding an accident.
- They include brakes, steering, handling response, **acceleration**, etc.

## Active solar

Energy from the sun collected and stored using mechanical pumps or fans to circulate heat-laden fluids or air between solar collectors and a building or vehicle.

## Active suspension

While conventional **Suspension** uses springs and **Shock absorbers** to isolate the vehicle from the bouncing movement of the wheels when it contacts rough roads, active suspension uses power actuators which are controlled by a **Computer**.

- These actuators place the wheels of the vehicle in the best position to accommodate rough roads as well as compensate for different load **Levels**.

## Activities

See

- **Kaizen Activities**

## Activity

See

- **Catalytic Activity**
- **Low Temperature Activity**
- **Specific Activity**
- **Temperature Activity**

## Activity factor

See

- **Blade activity factor**

## AC transformer

An electromagnetic device which alters the voltage and current of an alternating current supply in inverse ratio to one another.

- It has no moving parts and is very efficient.

## ACTS

Acronym for **air charge temperature sensor**.

### Actual cash value

(ACV) The amount of money a dealer has invested in the purchase of a used vehicle plus any additional costs to repair the unit in order to get it ready for resale.

### Actuate

The action of bringing something into operation.

### Actuating lever

A triggering device used to bring something into operation.

### Actuating switch

A triggering device used to bring something into operation.

### Actuating system

The parts of a brake system that transmit the braking force applied at the brake pedal to the wheel friction assemblies and increase it to a usable level.

### Actuation

See

- **Valve Actuation**
- **Variable valve actuation**

### Actuation Distance

See

- **Brake System Actuation Distance**

### Actuation Time

See

- **Brake System Actuation Time**

### Actuator

1. A device which controls or operates another device.
2. A regulating valve which converts a form of energy into mechanical motion to open or close the valve seats
3. A device which responds to an output signal from a computer.
4. The portion of a regulating valve which converts mechanical fluid, thermal energy, or electrical energy into mechanical motion to open or close the valve seats

Also see

- **Brake Actuator**
- **Electrohydraulic Actuator**
- **Feedback Carburetor Actuator**
- **Hydraulic Actuator**



- **Idle Speed Actuator**
- **Spring Type Brake Actuator**

### **Actuator arm**

A linkage connecting the diaphragm to the contact breaker platform in an advance mechanism of a distributor.

- Also called *diaphragm link*.

### **Acura**



**Click logo for books on Acura**

An upscale series of vehicles from the Honda manufacturers. It includes the following:

- CL (1997-2003)
- **Integra** (1988-2001)
- **Legend** (1988-95)
- **MDX** (2001-07)
- **NSX** (1991-2005)
- **RDX** (2007-2009)
- RL (1996-2008)
- **RSX** (2002-06)
- SLX (1996-99)
- TL (1995-2008)
- **TSX** (2004-08)
- **Vigor** (1992-94)

### **ACV**

1. Acronym for **actual cash value**
2. Acronym for **air control valve**
3. Acronym for **air cushion vehicle** (i.e., hovercraft).

## Ad

An abbreviation for a *classified advertisement*

## A/D

Acronym for *Analog to Digital Converter*

## Adapter (Also spelled *adaptor*)

1. A device used to connect two different types or sizes of electrical terminals
2. A **Connector** which links two items usually of dissimilar structure or size.
3. A **Bracket** on **Disc brakes** on which the **Caliper** mounts, or slides or floats.
  - Bolted to the **Spindle** or **Steering knuckle**, or the **Rear axle** or **Control arm**.

### Also see

- **Bit adapter**
- **Caliper mounting bracket**
- **Carburetor adapter**
- **Engine adapter**
- **Increasing adapter**
- **Ratchet adapter**
- **Reducing adapter**
- **Transmission adapter**
- **Wheel adapter**

## Adapter carburetor

A device attached to a gasoline carburetor which permits an internal combustion engine to run either on gas or liquefied petroleum gas (LP gas).

## Adapter Controller Module

### See

- **Digital Ratio Adapter Controller Module**

## Adapter plate

A flat piece of material which is placed between two different parts in order to join them.

### Also see

- **Transfer plate**

## Adaptive control

1. A control device which learns from repeated input so that under particular circumstances the control gives the learned response.
2. The ability of a control unit to adapt its closed-loop operation to changing operating conditions, such as engine wear, fuel quality or altitude, to maintain

proper air-fuel mixture control, ignition timing or idle rpm. Also referred to as **self-learning**

## Adaptor

See

- **Adapter**

## Adcock antenna

A directional antenna with pairs of vertical wires used for direction finding.

## A/D converter

Circuitry to convert analog information into numeric form for use in a digital computer

## Addition agent

A substance added to the electrolyte in an electrodeposition process to improve the formed deposit

## Additive

A substance (liquid or powder) which is added to **Gasoline** or oil and is intended to improve the characteristics of the original product.

Also see

- **Anti-knock additive**
- **Fuel additive**
- **Oil additive**

## Add-on

An accessory.

## ADEFA

Acronym for **Asociacion de Fabricas de Automotores** (Argentina).

## ADF

Acronym for **Automatic direction finding**.

## Adhere

To stick or be glued to something.

- Opposite to **abhere**

## Adherend

1. Each surface that is to stick to another
2. A material which is stuck together by an adhesive.

## Adhesion

1. The force which causes two surfaces to stick together
2. The sticking together of surfaces in contact with each other
3. The bonding of materials with adhesives (glues, cements, binders, etc), in which the intermolecular forces between **Adhesive** and **adherend** provide the bonds.

4. The sticking together of two metals as a result of compressing them together
5. The sticking together of two dissimilar metals because of electrical transference of electrons.
6. The ability of paint, **Primer**, or glue to stick to the surface to which it is applied.
7. The ability of a tire to grip the surface of the road.
8. Mutual forces between two magnetic bodies linked by magnetic flux, or between two charged non-conducting bodies which keeps them in contact
9. Intermolecular forces which hold matter together, particularly closely contiguous surfaces of neighboring media, e.g., liquid in contact with a solid.

#### Also see

- **Intercoat adhesion failure**
- **Limits of adhesion**

#### Adhesion failure

##### See

- **Intercoat adhesion failure**

#### Adhesive

1. A substance (like glue) that is used to join two substances.
  - An adhesive must bond both mating surfaces through specific adhesion (molecular attraction), through mechanical anchoring (by flowing into holes in porous surfaces), or through fusion (partial solution of both surfaces in the adhesive or its solvent vehicle).
  - Various descriptive adjectives are used with the term adhesive to indicate types, such as

##### **a. physical form**

Liquid adhesive, film adhesive, etc.

##### **b. composition**

Resin adhesive, rubber adhesive, silicone based, mastic, etc.

##### **c. end use**

Metal-to-metal adhesive, plastic adhesive, rubber adhesive

##### **d. application**

Sprayable adhesive, hot melt adhesive, etc.

2. Agent for joining materials by adhesion, usually polymeric material.
  - May be based on thermoplastic resin (e.g., polystyrene cement) or thermoset (e.g., epoxy resin).
  - Viscosity is important for gap filling (high, as in epoxies) or surface penetration (low, as in cyano-acrylates).
  - Also called **binder**, **cement**, or **glue**

#### Also see

- **Adhesive film**
- **Automotive adhesive**
- **Air drying adhesives**
- **Epoxy Adhesive**
- **Heat Curing Adhesives**
- **Impact adhesive**
- **Pressure Sensitive Adhesive**
- **Separate-application adhesive**
- **Silicone Adhesives**

### **Adhesive bonding**

The union of two materials with some chemical **adhesive** between them

### **Adhesive film**

A thin layer of dried **Adhesive**.

- Also describes a class of adhesives provided in dry film form with or without reinforcing fabric and which are cured by means of heat and pressure

### **Adhesive tape**

A tape with a sticky substance on one side.

- It usually comes in a roll of various widths.
- Sometimes used to insulate electrical wires (e.g., electrical tape) or to wrap a larger object (e.g., duct tape).
- Often the non-sticky side is shiny (but not always) to distinguish it from the sticky side.

### **Adhesive weight**

Lead wheel weights which have a sticky backing.

- It comes in strips and is applied to a wheel rim to balance the wheel.
- Also called **tape weight**.

### **Adiabatic**

A property of being able to maintain heat evenly.

- It does not gain any heat or lose it

### **Also see**

- **Thermal efficiency**

### **Adiabatic change**

Without changing the temperature of an enclosure or its surroundings, there is a change in the volume and pressure of the contents of the enclosure.

### **Adiabatic compression**

Compressing refrigerant gas without removing or adding heat.

### **Adiabatic efficiency**

The ratio of that work required to compress a gas adiabatically to the work actually done by the compressor piston or impeller.

### **Adiabatic engine**

An engine which is very efficient in transferring combustion heat to those parts of the engine which are being cooled by the flow of anti-freeze coolant -- thus maintaining an even temperature of the engine.

- In this way the engine is warm enough for efficient running and it does not overheat.

### **ADJ**

**See**

- **OCT ADJ**

### **Adjust**

The action of putting something into its proper alignment or position.

- It may involve one component (e.g., He adjusted the gasket to fit properly.) or a series of components (e.g., He adjusted the poor idle -- might mean he set the ignition timing, adjusted the carburetor screws, changed the choke setting, cleaned or replaced the spark plugs, etc.)

**Also see**

- **Tweak**

### **Adjustable**

A characteristic of something that can be changed, removed, or given different properties.

**Also see**

- **Height adjustable steering column**

### **Adjustable bottom bracket**

A component of a bicycle through which the crank is mounted.

- It has two bearing cups on either side.
- One cup is fixed in place while the other is removable or adjustable.
- This is the older type of **Bottom bracket** before sealed cartridge bottom brackets became prevalent.
- The adjustable bottom bracket requires fixed and adjustable cup tools to properly tension the bearings.
- The bearings are not sealed, but they are easily accessible for cleaning and lubrication.

### **Adjustable cup**

The left-hand **Cup** in a **Bottom bracket** of a **Bicycle**, used in adjusting the **Bottom bracket** bearings and removed during **Bottom bracket Overhaul**. The other cup is the **Fixed cup**.

### **Adjustable off-idle air bleed**

An air adjustment screw

- Some emissions-era Rochester carburetors have a separate air passage to bleed air past an adjustment screw into the idle system.
- This screw is preset by the factory to produce precise off-idle air/fuel mixture ratios to meet emission-control requirements.

### **Adjustable part throttle**

(APT) a supplementary circuit on some carburetors

- The APT can be adjusted to control part-throttle mixtures more accurately than a fixed orifice.
- The APT detours around the main jet, going directly from the float bowl to the discharge nozzle feed well.

### **Adjustable-pitch propeller**

See

- **Propeller**

### **Adjustable-port proportioning valve**

Air and fuel valves for oil or gas burners, motor operated in unison by automatic temperature-control equipment.

### **Adjustable rocker arm**

A type of rocker arm with an adjusting nut that can be tightened or loosened to adjust valve lash.

### **Adjustable shock**

See

- **Adjustable shocks**

### **Adjustable shock absorbers**

Shocks with adjustable jounce and rebound characteristics can be stiffened to compensate for wear or to fine tune a suspension for a particular application such as rough roads, heavy loads, or racing.

### **Adjustable shocks**



**Click to supersize  
Adjustable shock absorber**

A type of **Shock absorber** which can compensate for varying needs of stiffness or softness.

- Manual types (especially on motorcycles) require that you physically make the adjustment from one **Level** to another by rotating securing rings.
- Automatic types are controlled by a **computer** as it senses particular changes in road condition.

### Adjustable spanner

British term for **Adjustable wrench**.

### Adjustable speed drives

Drives that save energy by ensuring the electric motor's speed is properly matched to the load placed on the motor. Terms used to describe this category include

- **Polyphase motors**
- motor oversizing
- motor rewinding

### Adjustable steering

See

- **Height adjustable steering column**

### Adjustable steering column

See

- **Height adjustable steering column**

### Adjustable variable exhaust port

A device used on **Two-stroke** engines which automatically alters or varies the **Exhaust port** size.

### Adjustable wrench



## Adjustable Wrench

A **Crescent®** wrench or **Pipe wrench**.

- A tool which has a fixed jaw and a movable jaw which is controlled by a spiral gear or slide.



- It is used to install or remove bolts and nuts of various sizes.
- The wrench itself comes in a variety of lengths and jaw sizes.
- A crescent wrench has smooth jaws while a pipe wrench has serrated jaws.
- British term is ***adjustable spanner***

## Adjusted

See

- **Factory adjusted**

## Adjusted electricity

A measurement of electricity that includes the approximate amount of energy used to generate electricity. To approximate the adjusted amount of electricity, the site-value of the electricity is multiplied by a factor of 3. This conversion factor of 3 is a rough approximation of the Btu value of raw fuels used to generate electricity in a steam-generation power plant.

## Adjuster

A device for moving something into the correct position or into a different position -- usually a better position.

Also see

- **Automatic adjuster**
- **Automatic wear adjuster**
- **Brake adjuster**
- **Horizontal adjuster**
- **Inter-cable Adjuster**
- **Jet adjuster**
- **Manual Adjuster**
- **Ride-height adjuster**
- **Seat adjuster**
- **Slack Adjuster**
- **Snail-cam Chain Adjuster**
- **Star-wheel Adjuster**

## Adjuster cam

A device for moving the shoes on drum brakes closer to the drum itself so that there is less travel when the brakes are applied.

## Adjuster mechanism

A mechanism used with **Drum brakes** that maintains the proper **Lining** clearance as wear takes place.

## Adjusting

See

- **Electrode adjusting tool**
- **Headlight adjusting screw**
- **Self-adjusting**

### Adjusting cams

**Eccentric bolts** that adjust the shoe-to-drum clearance. Located in the **Backing plate** of **Drum brakes**, the cam positions the shoe(s) closer to the drum. Some adjust automatically and some manually.

### Adjusting gage

See

- **Adjusting gauge**

### Adjusting gauge

A tool used to determine the small distance between two parts so that they can be brought within specifications.

### Adjusting screw

A small screw usually found on carburetors, brakes, or headlights which change the way something operates, such as increasing or decreasing the amount of fuel entering the engine; or changing the idle speed; or tightening up the brakes; or changing the setting on rocker arms; or the level of the headlights.

Also see

- **Headlight adjusting screw**
- **Valve adjusting screw**

### Adjusting shim

A thin washer or plate which reduces or increases the clearance between two components (depending upon where they are placed). While some valves are adjusted by screws on the rocker arm, others are set by inserting a shim to make the same adjustment.

### Adjusting sleeve

A small threaded cylinder on the end of the tie rod which shortens or lengthens the rod to make changes in the **Toe-in** and **Toe-out**.

### Adjusting spanner

See

- **Brake adjusting spanner**

### Adjusting tool

See

- **Brake adjusting wrench**
- **Electrode adjusting tool**

### Adjusting wrench

See

- **Brake adjusting wrench**

### Adjustment

1. Changing or modifying the position or alignment of two components.
2. The distance of travel that a component has.

#### Also see

- **Fore and aft adjustment**
- **Idle mixture screw**
- **Idle speed adjustment**

#### Adjustment Factor

##### See

- **Reactivity Adjustment Factor**

#### Adjustment screw

##### See

- **Idle mixture screw**

#### Adler

The brand name of a vehicle. With required application the 1928-1934 Standard 8 models are **classic cars**.

#### Admiralty brass

##### Also see

- **Tobin bronze**

#### Admission

The point in the working cycles of a steam or internal-combustion engine at which the intake valve allows entry of the working fluid into the cylinder.

#### A-Dolly

This **converter dolly** has an "A" shaped drawbar that joins at a single connection point to the trailer ahead of it. These dollies can have one or more axles and are the most common in use.

##### Also see

- **Dolly**

#### Adopt-A-Highway program

A volunteer program organized to keep roads and highways litter-free.

- Groups, organizations, or individuals volunteer to clean a defined stretch periodically.

#### A-dos

##### See

- **Dos-a-dos**

## A-drier

See

- **A-dryer**

## A-dryer

A paint dryer which has the heating elements below the paint drying line.

## ADS

1. Acronym for **Association of Diesel Specialists**.
2. Acronym for **Air data system**

## Adsorbent

Substance with the property to hold molecules of fluids without causing a chemical or physical change.

## Adsorption

The bonding that takes place when a gas or vapor comes into contact with a solid. The opposite is **Desorption**.

## Adsorption canister

See

- **Activated carbon canister**

## ADT

Acronym for **Average Daily Traffic** -- The total traffic volume during a given period (from 1 to 364 days) divided by the number of days in that period.

## ADU

Acronym for **Analog-Digital Unit**

## Ad Valorem

Latin for "according to value" indicating that the freight rate is determined as a fixed percentage of the value of articles being shipped.

## Advance

1. The act of changing the **Ignition timing** so that the **Spark** occurs earlier in the cycle.
  - The opposite is **Retard**.
2. It may refer to the device which makes this adjustment.
3. The length of railway track beyond a signal which is covered by that signal

## Also see

- **Angle of advance**
- **Automatic advance**
- **Centrifugal advance**
- **Electronic spark advance**
- **Ignition advance**

- **Ported vacuum advance**
- **Spark advance**
- **Speed control vacuum advance**
- **Vacuum advance**

### **Advance capsule**

**See**

- **Vacuum advance**

### **Advance Control**

**See**

- **Orifice Spark Advance Control**

### **Advance curve**

As the speed of the engine increases the ignition advance also increases.

- On paper, a pattern is drawn as a curve to represent this relationship.

### **Advanced**

1. A condition in which something occurs early.
2. A product which is on the cutting edge of technology and shows the latest in new ideas and concepts.

### **Advanced Charge**

1. Pre-paid shipping costs paid by the shipper
2. Freight costs advanced by one transportation company to another.

### **Advanced rim taper**

A rim where both bead seats are tapered 5°.

### **Advanced Stop Lines**

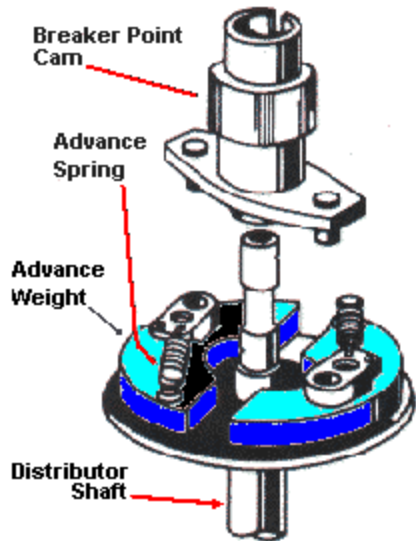
Stop line for cyclists ahead of other vehicle stop line at traffic signals.

### **Advance mechanism**

**See**

- **Vacuum advance**

### **Advance spring**



## Advance spring

Located in the **Distributor**, one of two small springs which pulls the advance weight back as the engine slows down.

### Advance System

See

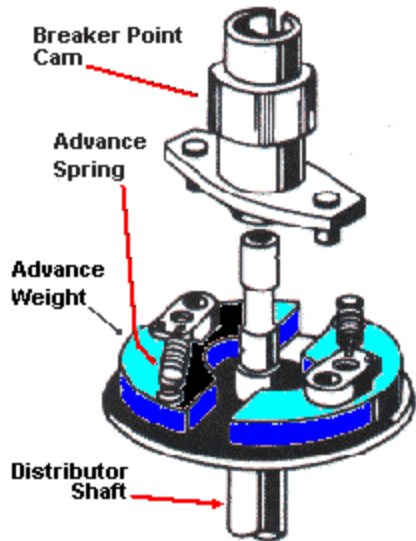
- **Fuel Advance System**

### Advance unit

See

- **Vacuum advance**

### Advance weight



## Advance weight

One of two small weights located in a centrifugal advance assembly of a distributor.

### Advantage

See

- **Mechanical Advantage**

### Advertising

A colloquial term for a police car with its emergency lights flashing.

### Advice Of Shipment

Information sent ahead of the shipment indicating its impending arrival.

- Sometimes supplied with a copy of the invoice and/or the bill of lading.

### Advisory Cycle Lane

Cycle lane, marked by a broken line, into which it is not an offence for other vehicles to enter.

### AEA

1. Acronym for **Automotive Electric Association**
2. **Automotive Electronic Association.**

### AERA

Acronym for **Automotive Engine Rebuilders Association.**

### Aeration

1. Act of combining substance with air

2. A foaming of a liquid because air has been introduced into the fluid.
  - When it occurs in certain liquids, it decreases the efficiency of the liquid.

### **Aeration test burner**

(ATB) A burner for measuring the features of the combustion of commercial gases

### **Aerial**

British term for **Antenna**.

#### **Also see**

- **Retractable aerial**
- **Whip aerial**

### **Aerial bunched conductors**

(ABC) Method of power transmission where the three conductors are twisted into a thicker insulated cable.

- More expensive but better at surviving blizzard conditions than normal separate conductors.

### **AERO**

Acronym for **Air Education and Recreation Organization** in the UK.

### **Aero-**

Prefix from Greek  $\langle \Sigma \rangle$  (*aer*) indicating *air*

### **Aerobar**



### **Aerobar**

An extension to bicycle handlebars which project forward to give the rider an alternate riding position and a lower, more aerodynamic position.

- His elbows rest in the pads while he grabs the upright ends of the bars.
- Aerobars were popularized by triathletes and Greg LeMond.

### **Aerobars**

Sometimes referred to as Tri bars.



- Aerobars popularized by triathletes and Greg LeMond, are attached to handlebars in order to provide a rider with a lower, more aerodynamic position.

### **Aerobic sealer**

A substance, such as room temperature vulcanizing (RTV), a common silicone rubber sealing compound) that requires the presence of oxygen to hold parts together.

#### **Also see**

- **Anaerobic sealer**

### **Aerodynamic**

The efficient flow of air around an object.

### **Aerodynamic balance**

A balance, usually but not necessarily in a wind tunnel, designed for measuring aerodynamic forces or moments.

### **Aerodynamic center**

The point about which the pitching moment coefficient is constant for a range of airfoil incidence.

### **Aerodynamic drag**

The **Resistance** of the air to forward movement, sometimes called **Air resistance**.

- This is a factor of
  - the shape of the vehicle (**drag coefficient** and frontal area)
  - the objects which stick out (i.e., mirrors, **mufflers**, **bumpers**)
  - the amount of turbulence at the rear of the vehicle
  - the nature of the vehicle's skin surface
  - the amount of air going through the vehicle for cooling and **ventilation**.
- The faster you go, the greater the air **friction** (air friction = velocity x velocity).
- The faster you go, the greater the amount of power needed to overcome this **drag** (power = velocity x velocity x velocity).

### **Aerodynamic heating**

The heating of a vehicle passing through the atmosphere, caused by friction and compression of air (or other gas).

### **Aerodynamics**

The study of the flow of air as it passes over and around a moving object as well as the forces which the air makes on the object.

- An airplane, for instance, needs positive lift to get it airborne and negative lift to help it land.
- Thus the shape of a land vehicle (car, **bicycle**, etc.) either promotes positive or negative lift.
- Race cars may use **spoilers** and wings (**Air foils**) to control lift.

- In vehicle design, the airflow is monitored in a wind tunnel.
- As well, aerodynamics also studies the most efficient shapes for increased **speed** and **fuel economy**.

### **Aerodynamic stance**

In order to create less **Drag**, the vehicle is lowered closer to the ground.

- This improves the flow of air over the vehicle.
- A better aerodynamic stance helps the vehicle to go faster when it is going in a straight line as well as give better **Fuel economy**.
- Also, when a vehicle sits lower to the ground, it has a low **center of gravity** which makes it more stable when going through turns and enables the **driver** to maintain a higher **speed**.

### **Aero-engine**

The power unit of a small aircraft.

#### **Also see**

- **Gas turbine**

### **Aerofoil**

British spelling for airfoil a body or body panel shaped like a wing so as to produce an aerodynamic reaction (lift) normal to its direction of motion, for a small resistance (drag), in that plane; e.g., a wing, plane, aileron, tailplane, rudder, or elevator.

#### **Also see**

- **Air foil**

### **Aero lever**

One of a pair of road bike brake levers employing hidden cables that travel out the back of the level body and under the handlebar tape.

### **Aeroplane**

British spelling for airplane.

### **Aero system**

A roof rack designed for cars without external rain gutters. The rack is held on by clips that extend down into the door.

### **Aether**

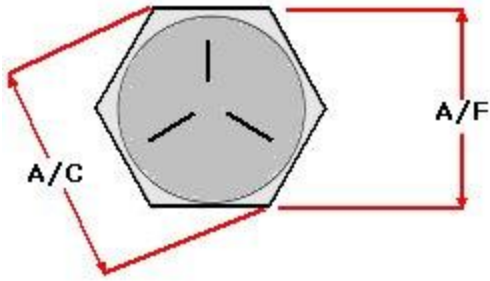
#### **See**

- **Ether**

### **AEV**

Acronym for **Automatic expansion valve**.

### **A/F**



## Across Flats

1. Abbreviation for **across flats** which is the distance on a nut (for instance) from one flat surface to the opposite flat surface, i.e., this is the size of the wrench needed to install or remove the nut.

### Also see

- **Across corners**
2. Abbreviation for **air/fuel**

### Also see

- **Air-fuel ratio**
3. Abbreviation for **Automatic focusing**
  4. Abbreviation for **Audio-frequency**.

## AFB

Acronym for **Aluminum four-barrel**, as in **Carter AFB carburetor**.

## AFC

1. Acronym for **Air Flow Control**
2. Acronym for **Air flow controlled** fuel injection
3. Acronym for **Automatic frequency control**

## AFCS

Acronym for **Automatic flight control system**

## AFDC

Acronym for **Alternative Fuels Data Center**

## AFM

1. Acronym for **Audio-frequency modulation**.
2. Acronym for **Air Flow Meter**

## AFR

Acronym for **Air Fuel Ratio**

## A-frame

A chassis frame which is shaped like the letter **A** where the crossbar is often the axle. It is usually found as the frame of a trailer.

## A-frame barricade



### A-frame barricade

A traffic marker indicating that the road is not usable.

## A/F ratio

See

- **Air-fuel ratio**

## AFS

Acronym for *Air Flow Sensor*

## Aft

The back of a vessel.

Also see

- **abaft**
- **Fore and aft adjustment**

## Aft adjustment

See

- **Fore and aft adjustment**

## After

Nearer stern (i.e., back of the ship).

## After bottom dead center

(ABDC) The position of the **Piston** as it starts its way up.

## Afterburner

A device for burning excess **Carbon** wastes produced by the engine so that **Air pollution** is reduced.

## Afterburning

In an internal-combustion engine, persistence of the combustion process beyond the period proper to the working cycle, i.e., into the expansion period.

## Afterburst

Delayed further collapse of underground workings after a rockburst.

## Aftercooler

1. A device in a diesel engine which removes the relatively warm air which enters the engine.
2. Chamber in which heat generated during compression of air is removed, allowing cool air to be piped underground.

### **Aftercooling**

Cooling the engine intake air after the **Turbocharger** and prior to introduction into the cylinder. Aftercooling increases engine power and lowers NOx emissions.

Also called **Intercooling**

### **Afterglow**

1. The period during which the glow plugs of a diesel engine continue to operate after the engine is started.
2. The glow of a gaseous medium immediately after the cessation of electric current or downstream of an electric discharge.

### **Aftermarket**

All products and services used in the repair and maintenance of vehicles after the vehicle has been sold.

### **Aftermarket converted vehicle**

A standard conventionally fueled, factory-produced vehicle to which equipment has been added that enables the vehicle to operate on alternative fuel.

### **Aftermarket equipment**

Accessories and replacement parts added to a vehicle after it has been sold.

### **Aftermarket overdrive**

An overdrive device which is not original equipment, but has been added after it has been sold.

### **Aftermarket part**

Goods not for use as original equipment in the production of light-duty vehicles or heavy-duty vehicles, i.e., products and services used in the repair and maintenance of these vehicles.

### **Aftermarket rustproofing**

Although most vehicles come from the manufacturer with some rustproofing, there is no guarantee that every part of the exposed chassis and frame will be protected from the elements and the possibility of rust. Therefore rustproofing is applied by the owner of the vehicle to reduce the possibility of rust. If this rustproofing is not done when the vehicle is new, it might seal in the rust and create a greater problem.

### **Aftermarket vehicle converter**

An organization or individual that modifies OEM vehicles after first use or sale to operate on a different fuel (or fuels).

### **Aftermost**

Nearest the back of the ship

### **After Peak**

The compartment in the narrow part of the stern, aft of the last water-tight bulkhead.

### **After Perpendicular**

A vertical straight line at, or near the after edge of rudder post.

### **After-start enrichment**

When an engine is first started, it needs a little richer fuel-air mixture (i.e., more fuel, less air). In a carbureted engine, this is accomplished by the choke (which restricts

the amount of air). In a fuel injected engine, the after-start enrichment device increases the amount of fuel. As the engine warms up, the device gradually reduces the amount of enrichment. Some devices just reduce the amount gradually over time without sensing the temperature of the engine.

### **After top dead center**

(ATDC) A term used in **Timing** the relation of the **Spark** and the **Crankshaft**. The position of the **Piston** as it starts its way down.

### **Aftertreatment Devices**

Devices which remove pollutants from exhaust gases after the gas leaves combustion chamber (e.g., **Catalytic converters** or **Diesel particulate filters**). The term *exhaust gas aftertreatment* is considered derogatory by some in the emission control industry, but there is no consensus on the use of such alternatives as *post-combustion treatment* or *exhaust emission control*

### **AFUP**

Acronym for **Alternative Fuels Utilization Program**

### **AFV**

Acronym for **Alternative-Fuel Vehicle** -- a vehicle powered by a fuel other than gasoline or diesel.

### **AG**

Acronym for **Air-guard**.

### **AGA**

Acronym for **American Gas Association**

### **AGC**

Acronym for **Automatic gain control**.

### **Age harden**

To use modified heat treatments at various temperatures over a period of time to harden and strengthen metal.

### **Age Hardening**

A process of aging that increases hardness and strength, and ordinarily decreases ductility. Age hardening usually follows rapid cooling or cold working.

### **Ageing**

See

- **Aging**

### **Agency**

See

- **Driver and Vehicle Licensing Agency**
- **Energy Protection Agency**
- **U.S. Environmental Protection Agency**

### **Agent**

1. An intermediary with legal authority to operate on behalf of the manufacturer.
2. A chemical substance with a designated purpose

#### Also see

- **Activating agent**
- **Addition agent**
- **Air-entraining agent**
- **Anti-knock agent**
- **Bonding agent**
- **Curing Agents**
- **Degreasing agent**
- **Desiccant**
- **Drying Agent**
- **Oxidizing agent**
- **Plasticizer**
- **Reducing agent**
- **Release agent**
- **Rustproofing agent**
- **Softening agent**

#### Agent fee

Although you can register your vehicle and obtain your license from a government office, some states and provinces permit an agent to perform that same service and allow the agent to collect an extra fee for the service. In this way the lineup at the government office is reduced.

#### Aggregate

1. Rock of specified quality and gradation.
2. Materials such as sand or chipped rock that are spread on paved roads to increase vehicle traction. Also called **abrasives**

#### Aggressive

A French expression to indicate the reinforced front, rear, and side safety structures of a vehicle. If the strengthened structure causes more than normal damage to another vehicle, a pedestrian, or the occupants of the vehicle, then that structure is aggressive.

#### Aggressive driving

A driving style in which the driver exceeds the speed limit, tailgates, weaves through traffic, fails to signal lane changes, fails to obey traffic signs and signals. May lead to or cause **road rage**.

#### Aging

1. The cracking, checking, or general deterioration produced by exposure of an adhesive, coating or sealer to the weather or some other given set of conditions for a length of time

2. The deterioration of rubber properties by oxidation over a period of time.
3. A change in the properties of some metals after heat treatment or cold working (i.e., hammering or bending when metal is cold).
4. The final stage of **precipitation hardening**, producing an increase in strength and hardness in metal alloys, due to precipitation of second phase particles from supersaturated solid solution over a period of days at room temperature, or several hours at an elevated temperature (called **Artificial aging**)
5. Loss of strength in the cladding or the pressure vessel in a nuclear reactor due to irradiation. Artificial aging would be the simulation of such processes by increasing the rate of irradiation to obtain information more rapidly
6. Change in the properties of a substance with time. A change in the magnetic properties of iron, e.g., increase of hysteresis loss of sheet-steel laminations; also the process whereby the subpermanent magnetism can be removed in the manufacture of permanent magnets

### **Agitation cup**

A type of spray gun paint container which has an agitator.

### **Agitator**

1. A device used to cause motion in confined fluid
2. A device for mixing paint by shaking the container.
3. A tank, usually cylindrical, which has a mixing device such as a propeller or airlift pump near the bottom. Finely ground mineral slurries (the aqueous component perhaps being a leaching solution) are exposed to appropriate chemicals for purpose of extraction of gold, uranium, or other valuable constituents. Types include **pachuca tank** or **Brown agitator**.

### **AGO**

Acronym for **Automotive gas oil**.

### **AGR**

Acronym for **Advanced gas-cooled reactor**.

### **Aground**

See

- **Hard aground**

### **AGS**

Acronym for **Aircraft general standard**.

### **AGVS**

Acronym for **Automated Guided Vehicle System**.

### **A.h.**

Abbreviation for ampere-hour.

### **AHAI**

Acronym for **Association of the Hungarian Automotive Industry**.

### **AHAP**

Acronym for **As High As Possible**.



**AHARA**

Acronym for *As High As Reasonably Achievable*.

**Ahead Set**

A type of **Headset** made by Dia-Compe that fits on a **Fork** that has a nonthreaded **steerer**

**Ahm**

Abbreviation for **Ampere-hour meter**.

**Ahoogah**

The sound of a particular kind of **horn** found on early model vehicles

**AHRA**

Acronym for *American Hot Rod Association*.

**AH Rim**

A wheel rim which is able to run even when the tire is flat and provides safety in case of a puncture.

**AI**

Acronym for *Air Injection*

**AIAA**

Acronym for *American Institute of Aeronautics and Astronautics*.

**AIADA**

Acronym for **American International Automobile Dealers Association**.

**AIAM**

Acronym for **Association of International Automobile Manufacturers**.

**AIA-SAP**

Acronym for **Automotive Industry Association** (Czech Republic).

**AIA-ZAP**

Acronym for *Automotive Industry Association* (Slovakia).

**AIC**

Acronym for *Automatic Idling Control Valve*

**AIMA**

Acronym for *Associação dos Industriais de Montagem de Automóveis* (Portugal).

**Aimer****Headlight Aimer**

A tool for aiming a vehicle's headlights.

### **Aiming**

Adjusting the direction of the headlight beams to shine without blinding oncoming traffic and yet providing the maximum illumination whether in low beam or high beam.

### **Air**

1. Abbreviation for **Air conditioner**.
2. A bicycling or motorcycling term describing the space or gap between the tires and the ground when the bike takes a jump. Both tires must be off the ground before it can be called "air" as in the expression, "I really caught air on that last jump."
3. A gas containing approximately 80% nitrogen, 20% oxygen, and a small portion of other gases and water vapor. One of the essential factors in a **Combustion engine** (fuel, air, proper proportion of mixture, **Compression**, **Timing**, and **Spark**).
4. A gas for combustion, heating, cooling, ventilation, breathing, and other uses.

### **Also see**

- **Ambient air**
- **Atmospheric Air**
- **Charge air**
- **Cold air**
- **Dilution Air**
- **Discharge Air**
- **Driver air bag**
- **Electric air control valve**
- **Electric air switching valve**
- **External mix air cap**
- **False Air**
- **Fuel air mixture**
- **Fuel-air ratio**
- **Furnace Central Warm Air**
- **Heater air pipe**
- **Idle air bleed screw**
- **Idle air jet**
- **Internal mix air cap**
- **L-jetronic air flow meter**
- **Lateral air passage**
- **Low-profile air cleaner**
- **Modular air strut**
- **Oil bath air cleaner**
- **Paper air cleaner**
- **Passenger-side air bag**
- **Primary Air**

- **Propane Air**
- **Proper proportion of air and fuel**
- **Pulse air principle**
- **Pulse air system**
- **Ram air**
- **Recirculated Air**
- **Return Air**
- **Secondary air**
- **Standard Air**
- **Stratification Of Air**
- **Supply Air**
- **Ventilation Air**

## **AIR**

An acronym for **Air Injection Reactor** system of reducing objectionable **Exhaust emissions**. A belt-driven pump sends air through a pipe to the exhaust manifold and/or catalytic converter to help control emissions. Replacement for the term EAC

**Also see**

- **Air injection**

## **Air Act**

**See**

- **Clean Air Act**

## **Air Act Amendments of 1990**

**See**

- **Clean Air Act Amendments of 1990**

## **Air and fuel**

**See**

- **Proper proportion of air and fuel**

## **Air Anti-backfire Valve**

**See**

- **Secondary Air Anti-backfire Valve**

## **Air aspirator system**

(AAS) A passive air injection system that uses a one-way valve instead of an air pump to introduce extra air into the exhaust stream.

## **Air aspirator valve**

A device that uses a diaphragm to draw air into the exhaust system to reduce emission. If a large volume of air is needed, an **Air pump** is used instead

### **Air-assisted hydraulic brake system**

A hydraulic-type brake system actuated by an air hydraulic power unit.

### **AIRB**

Acronym for ***Air Bypass Solenoid***

### **Air bag**

1. A device which is part of the passive safety system. In the event of a collision, **Sensors** will cause the air bag to be deployed so that your head will be pillowed by the bag instead of hitting the **Dash** or windshield.
2. A durable, inflatable bag used to force and secure freight to the inside walls of a trailer.

#### **Also see**

- **Driver air bag**
- **Passenger-side air bag**
- **Side impact air bag**

### **Airbag**

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#### **Also see**

- **Driver air bag**
- **Passenger-side air bag**
- **Side impact air bag**

### **Airbag module**

All the components that make up the airbag system Airbag, inflator, cover, and sensor. Also called ***airbag unit***.

### **Airbag restraint system**

A system which uses an airbag to restrain occupants in the event of a collision. They may be placed on the dash or doors or even in the shoulder strap. Also called ***passive restraint system***.

### **Air-bag system**

**See**

- **Restraint Inflatable Air-bag System**
- **Supplemental restraint inflatable air-bag system**

### **Airbag unit**

All the components that make up the airbag system Airbag, inflator, cover, and sensor. Also called ***airbag module***.

### **Air bellows**

A rubber bladder or sleeve filled with compressed gas or air. Found on some suspension systems to provide cushioning.

#### **Also see**

- **Air suspension**

### **Air bleed**

**See**

- **Adjustable off-idle air bleed**
- **Auxiliary air bleeds**
- **Compensating jet**
- **Idle air bleed screw**

### **Air bleed screw**

**See**

- **Idle air bleed screw**

### **Airbox**

The container which holds the air filter.

### **Air brake**

1. A system of braking which is usually found on large truck in which compressed air pushes against a brake piston or diaphragm in order to apply the brakes to stop or slow the vehicle.
2. An extendable device, most commonly a hinged flap on wing or fuselage, controlled by the pilot, to increase the drag of an aircraft. Originally a means of slowing bombers to enable them to dive more steeply, it is an essential flight control on clean jet aircraft and sailplanes
3. A mechanical brake operated by air-pressure acting on a piston
4. An absorption dynamometer in which the power is dissipated through the rotation of a fan or propeller.

### **Air break**

An inverted opening placed in the chimney of a gas furnace to prevent back pressure from outside wind from reaching the furnace flame or pilot

### **Airbrush**

1. A paint spray gun used for precise detailing work and custom painting.
2. The act of using an airbrush.

### **Air Bypass Solenoid**

**See**

- **Thermactor Air Bypass Solenoid**

### **Air bypass valve**

(ABPV or ABV) a backfire-suppressor valve used in air injection systems. During high engine vacuum conditions such as deceleration, it vents pressurized air from the air pump to the atmosphere in order to prevent backfiring. At other times, it sends air to the exhaust manifold. On vehicles with a three-way catalyst, it sends air to the

oxidation catalyst only when the engine warms up. Also called an **anti-backfire valve**, **diverter valve**, or **gulp valve**.

Also see

- **Secondary Air Bypass Valve**

### **Air Can Trailer**

Colloquial term for a pneumatic tank trailer for transporting **solids in bulk cargo**

Also see

- **Dry bulk tanker**

### **Air cap**

See

- **External mix air cap**
- **Internal mix air cap**

### **Air capacitor**

A capacitor in which the dielectric is nearly all air, for tuning electrical circuits with minimum dielectric loss.

### **Air capacity**

See

- **Breathing capacity**

### **Air cell**

A small auxiliary combustion chamber used in certain types of compression-ignition engines, for promoting turbulence and improving combustion.

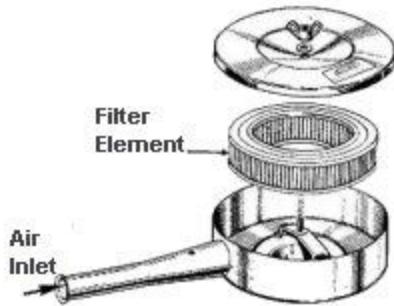
### **Air charge temperature**

(ACT) The temperature of the air being forced into the carburetor or fuel injection system. An ACT sensor measures this temperature.

### **Air charge temperature sensor**

(ACTS) a thermistor sensor that inputs the temperature of the incoming air stream in the air filter or intake manifold to the computer. It can be located in the intake manifold (EFI systems) or the air cleaner. On carbureted vehicles, if the air is cold, it signals the choke to let off slowly. It then alters engine speed after the choke is off and below a certain temperature, dumps air from the air injection system to the atmosphere for catalyst protection.

### **Air cleaner**



## Air filter

1. A device which filters the air entering the engine to remove airborne impurities, dust, dirt, and bumblebees. Also called **air filter**.
2. A device using filters or electrostatic precipitators to remove indoor-air pollutants such as tobacco smoke, dust, and pollen. Most portable units are 40 watts when operated on low speed and 100 watts on high speed.

### Also see

- [Low-profile air cleaner](#)
- [Oil bath air cleaner](#)
- [Paper air cleaner](#)
- [Thermostatic air cleaner](#)

### Air cleaner bi-metal sensor

(ACL BI-MET) a component of a thermostatic air cleaner system. It senses the temperature of incoming fresh air and bleeds off vacuum when the air is warm. When the air is cold, the sensor directs vacuum to the air cleaner vacuum motor.

### Air cleaner duct and valve vacuum motor

(ACL DV) a component of thermostatic air cleaner systems. It opens and closes the air duct valve to provide heated or unheated air to the engine in accordance with the temperature of the incoming air.

### Air cleaner element



## Air filter element

The replaceable filter which prevents impurities from the air which enters the combustion chamber. Also called **air filter element**.

### **Air cleaner horn**

Many air cleaner **Canisters** have a spout or horn extending from the edge of the **Canister** into which the air is taken in.

#### **Also see**

- **Heated intake**

### **Air cleaner intake**

The neck, called a snorkel, into which air flows en route to the throttle body

### **Air coil**

Coil on some types of heat pumps used either as an evaporator or a condenser.

### **Air collector**

A medium-temperature collector used predominantly in space heating, utilizing pumped air as the heat-transfer medium.

### **Air compressor**

A device which compresses air and stores the air into a tank so that the compressed air can be used in a shop to fill tires, run tools, spray paint, etc. In a vehicle, it can be used in brake systems, leveling systems, automatic tire inflation systems, and air supply systems.

### **Air-conditioned**

The state of exchanging warm air for cold so that a vehicle or home is cooler than the outside temperature.

### **Air conditioner**

(A/C) or (Air)

1. A device used to control temperature, humidity, cleanliness, and movement and sometimes the air purity, in an enclosed space
2. A system of devices which causes a reduction or control of the temperature and humidity within the cab of a vehicle. It was first offered on the 1941 Packard. Two types are used in vehicles: receiver-dryer type and accumulator type.

#### **Also see**

- **Compressor**
- **Condenser**

### **Air conditioner clutch compressor signal**

(ACCC signal) the input to the computer regarding the status of the air conditioner clutch (engaged or disengaged).

### **Air-conditioning**

A system or process for controlling the temperature, humidity, air movement, and sometimes the purity of the air in an enclosed space by use of a refrigeration unit powered by electricity or natural gas. Note Fans, blowers, and evaporative cooling systems (**swamp coolers**) that are not connected to a refrigeration unit are excluded..



## Also see

- [Automatic air-conditioning](#)

## Air conditioning compressor

1. Pump of a refrigerating mechanism which draws a low pressure on cooling side of refrigerant cycle and squeezes or compresses the gas into the high-pressure or condensing side of the cycle.
2. An air conditioning component which pumps, circulates, and increases the pressure of refrigerant vapor

## Air conditioning sensor

A [Sensor](#) which provides information that the [Air conditioning compressor](#) is operating for [Idle speed control](#).

## Air control

### See

- [Electric air control valve](#)

## Air Control Solenoid Vacuum Valve Assembly

### See

- [Thermactor Air Control Solenoid Vacuum Valve Assembly](#)

## Air control valve

(ACV) a vacuum-controlled diverter valve (or a combination bypass/diverter valve) in an air injection system that diverts air pump air to either the upstream (exhaust manifold) or downstream (oxidation catalyst) air injection points as necessary.

### Also see

- [Auxiliary Air Control Valve](#)
- [Electric Air Control Valve](#)
- [Electronic Air Control Valve](#)
- [Idle Air Control Valve](#)
- [Thermactor Air Control Valve](#)

## Air-cooled

Any device whose produced heat is reduced by the flow of air around it

## Air-cooled apparatus

An electric apparatus in the heat caused by the losses is removed solely by natural or fan-assisted air flow.

## Air-cooled condenser

A heat exchanger which transfers the heat of compression from condensing coils to surrounding air. This may be done either by convection or by a fan or blower.

## Air cooled engine



## Air cooled engine

An engine which generally has large fins or ribs and is often exposed to the outside air. The heat of the engine is dissipated through the fins of the engine. In contrast, the heat in a liquid-cooled engine is reduced by **Channels** throughout the inside of the engine through which liquid (**Antifreeze**) passes. Most older Volkswagens and **Motorcycles** use air cooled engines.

### Air-cooled engine

See

- **Air cooled engine**

### Air-cooled machine

A machine in which the heat caused by the losses is removed solely by natural or fan-assisted air flow.

### Air cooler

1. Mechanism designed to lower temperature of air passing through it
2. The cold **accumulator** used in the **Lindé process** of air liquefaction for the preliminary cooling of the air.

### Air cooling

The cooling of hot bodies by a stream of cold air, instead of liquid (water) cooling.

Also see

- **Charge air cooling**

### Air core

Coil of wire not having a metal core.

### Air core solenoid

Solenoid which has a hollow core instead of a solid core.

### Air correction jet

A small orifice which permits air to enter the emulsion tube of a carburetor.

### Aircraft

Any mechanically driven heavier-than-air flying machine with wings of fixed or variable sweep angle. Subdivision landplane, seaplane (float seaplane and flying boat), amphibian.

### **Aircraft quality**

Fasteners made with a particularly high level of attention in manufacture and inspection.

### **Air cushion**

See

- **Airbag**

### **AIRD**

Acronym for **AIR Diverter Solenoid**

### **Air dam**

An attachment called a **spoiler** which is usually located below the front **bumper**. Its design, shape, and placement helps to reduce the flow of air under the vehicle. It may help to increase the flow of air to the **radiator** and engine compartment, affect **aerodynamic drag**, or affect positive and negative lift.

### **Air deflector**

A panel which is positioned at an angle on the roof of a truck or on the front of the hood to cause the air to flow over the vehicle. The hood air deflector (often made of transparent plastic) is designed to prevent bugs from hitting the windshield. British term is "air shield."

### **Air diffuser**

Air distribution outlet or grille designed to direct airflow into desired patterns.

### **Air Diverter Solenoid**

See

- **Thermactor Air Diverter Solenoid**

### **Air drag**

Resistance to the motion of a body passing through the Earth's atmosphere, most serious in the lower regions, producing changes in the geometry of the orbit, even causing the body to re-enter. More generally the term atmospheric drag is used in reference to other planets.

### **Air dry**

Allowing paint to dry at ambient (surrounding) temperatures, without the aid of an external heat source.

### **Air-dry**

Allowing paint to dry at ambient (surrounding) temperatures, without the aid of an external heat source.

### **Air drying adhesives**

Adhesives that can be dried at room temperature without the use of heat. This type of adhesive consists of solid particles dissolved or dispersed in a liquid. When the liquid evaporates, it leaves the dry adhesive film. Most elastomer based adhesives are of this type.

### **Air duct**

A tube or channel which permits heated and ventilated air to enter the passenger compartment, building, or machinery to provide heating, cooling, or ventilation.

### **Aired up**

Said of an oil plunger pump which no longer sucks because gas or air has filled the suction chamber.

### **Air ejector**

A type of air pump used for maintaining a partial vacuum in a vessel through the agency of a high-velocity steam jet which **Entrains** the air and exhausts it against atmospheric pressure.

### **Air engine**

1. An engine in which air is used as the working substance. Rapid heating from an external source expands the air in the cylinder with consequent motion being imparted to a piston. After transfer to a compression cylinder, for rapid cooling, the air is returned to the working cylinder for the next cycle. Also called **hot-air engine**.
2. A small reciprocating engine driven by compressed air.

### **Also see**

- **Stirling engine**

### **Air-entraining agent**

Resin added to cement or concrete to trap small air bubbles

### **Air exhauster**

1. A suction fan.
2. A vacuum pump.

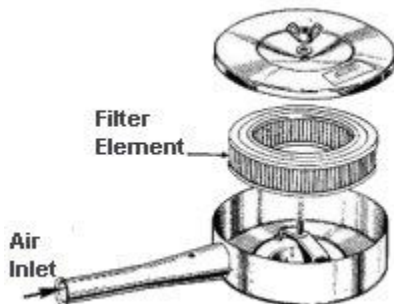
### **Air filter**

A device for removing impurities from the air which enters the combustion chamber.

### **Also see**

- **Air cleaner**
- **Centrifugal force air filter**

### **Air filter element**



### **Air Filter Element**

The replaceable filter which prevents impurities from the air which enters the combustion chamber. Also called **Air cleaner element**.

### **Air filtration**

**See**

- **Air filtration system**

### **Air filtration system**

A system that cleans **Smog**, pollen, **Exhaust** smoke, and odors out of the air. Cleans both interior circulated air and that coming from the outside.

### **Airflow**

The passage of air which moves around an object (esp. a vehicle) or through an **Air duct** (e.g., ventilation system or exhaust system).

**Also see**

- **L-jetronic air flow meter**
- **Hot-wire airflow meter**
- **Mass airflow meter**

### **Air flow controlled fuel injection**

(AFC) a Bosch term for its early pulse fuel injection systems; usually refers particularly to the system which uses an L-Jetronic air mass sensor.

### **Air flow meter**

1. A meter which measures the rate at which air enters the engine. In Bosch systems, any device that measures the amount of air being used by the engine. The control unit uses this information to determine the load on the engine. The two most common examples of airflow meters are the air-flow sensor used in the Bosch L-Jetronic and the air mass sensor used in the Bosch LH-Jetronic systems.
2. An instrument, mainly experimental, for measuring the airflow in ducts

**Also see**

- **L-jetronic Air Flow Meter**
- **Hot-wire airflow meter**
- **Mass airflow meter**
- **Vane Air-flow Meter**

### **Airflow meter**

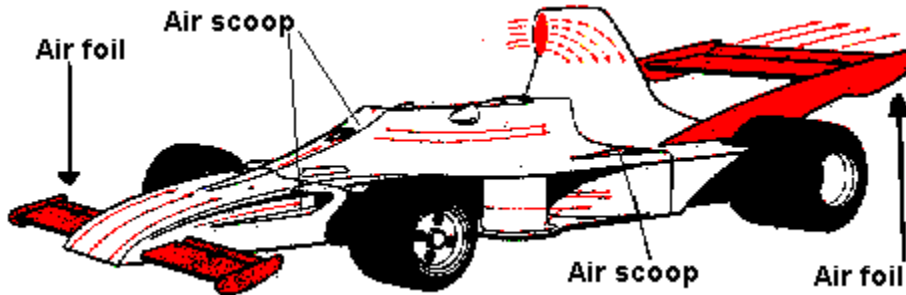
**See**

- **Air flow meter**

### **Air flow sensor**

1. A device in an electronically controlled fuel injection system which detects the amount of air entering the combustion chambers. Continuous injection systems use an airflow sensor plate to measure airflow volume; electronic systems use a vane or flap-type airflow sensor.
2. A **Sensor** that provides information on the volume flow or mass flow rate of the intake air to the engine.

### Air foil



### Air foil

An aerodynamic device used to improve **Traction** by increasing the downward force on either end of the car. It can be compared to an airplane wing with this primary difference A wing is designed to provide lift so it can fly; the air foil pushes the vehicle closer to the ground. Although they may be called "wings," they are properly air foils. They increase the cornering ability, improve **Stability**, but add **drag**.

### Airfoil section

The cross-sectional shape or profile of an airfoil.

### Air Freight Container

A smaller and lighter cargo container often made out of fiberglass designed to hold cargos that are shipped in airplanes.

### Air fuel

See

- **Air-fuel ratio**

### Air-fuel

See

- **Air-fuel ratio**

### Air/fuel

See

- **Air-fuel ratio**

### Air-fuel mixture

**See**

- **Lean air-fuel mixture**
- **Rich air-fuel mixture**

### **Air fuel ratio**

**See**

- **Air-fuel ratio**

### **Air-fuel ratio**

(A/F ratio) The mass of air supplied to the engine divided by the mass of fuel supplied in the same period of time (i.e., ratio of air weight to fuel weight). The **Stoichiometric**, or chemically correct, air-fuel ratio is the exact ratio necessary to burn all the **Carbon** and **Hydrogen** in the fuel to carbon dioxide and water with no **Oxygen** remaining. The **Fuel-air ratio** is the reciprocal of the air-fuel ratio.

**Also see**

- **Lean air-fuel mixture**
- **Rich air-fuel mixture**

### **Air Furnace**

**See**

- **Central Warm Air Furnace**

### **Air gap**

1. The space between the magnetic poles or between rotating and stationary assemblies in a motor or generator
2. In a **Regulator** it is the distance between the contact **Armature** and the iron **Core** that when magnetized, draws the armature down.
3. The distance or space between the **Reluctor** tooth and **Pick up coil**
4. The distance between the two **Electrodes** of a **Spark plug**.

**Also see**

- **Spark air gap**
5. Gap with points or knobs, adjusted to breakdown at a specified voltage and hence limit voltages to this value.
  6. Section of air, usually short, in a magnetic circuit, esp. in a motor or generator, a relay, or a choke. The main flux passes through the gap, with leakage outside depending on dimensions and permeability.

### **Air-guard**

(AG) An American Motors air injection system that uses an air pump to supply air into the exhaust manifold to reduce HC and CO emissions.

### **Air gulp system**

A system in vehicles with secondary air injection or induction, which prevents an very rich mixture of air-fuel from entering the inlet manifold during deceleration. If it did enter, unburned fuel would be forced over the hot exhaust system causing backfiring (i.e., uncontrolled detonation). The air gulp system prevents this condition by allowing a quantity of air to combine with the rich mixture in the inlet manifold.

### **Air gulp valve**

A diverter valve which adds an amount of air to the rich air-fuel mixture entering the intake manifold during deceleration.

### **Air gun**

See

- **Air hammer**

### **Air hammer**



### **Air Hammer**

A hammer-tool that is powered by compressed air and used for riveting, or chipping. Sometimes called an *air gun* or *gun*.

### **Air handler**

Fan-blower, heat transfer coil, filter, and housing parts of a system.

### **Airheads**

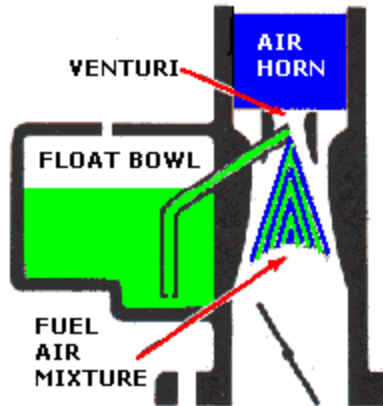
A term for older, air-cooled BMW Boxer Twin motorcycles.

### **Air hold fitting**

A tool which uses air pressure to keep the valves closed when working on an OHV engine. The device is screwed into the spark plug holes and air pressure keeps the valves from dropping down. In this way the valve seal or valve spring can be replaced without removing the cylinder head.

### **Air horn**





## Carburetor Air Horn

1. The upper part of a **Carburetor** into which the air is drawn. The **Choke butterfly** is located in this air horn.
2. It is also a term used for a warning horn which is operated by forcing compressed air through a reed.

### Air horn baffle

Used on some Rochester Quadrajet carburetors to prevent incoming air from forcing fuel into the secondary wells through the bleed tubes. Prevents secondary-nozzle lag during heavy acceleration.

### Air hydraulic brake power-assist unit

A unit consisting of an air cylinder or chamber, hydraulic cylinder(s) and control valve in which driver effort is combined with force from the cylinder piston or chamber diaphragm to displace fluid under pressure for actuation of the brake(s).

### Air-hydraulic system

An air brake system that uses a single air chamber to power a hydraulic master cylinder that applies the wheel friction assemblies through conventional brake calipers and wheel cylinders.

### Air induction

See

- **Air injection**
- **Cold air induction**

### Air infiltration

Leakage of air into rooms through cracks, windows, doors, and other openings.

### Air injection

A system that injects fresh air into the **Exhaust ports** or a **Thermal reactor**, for additional conversion of **Carbon monoxide** to carbon dioxide and **Combustion** of unburned **Hydrocarbons** (unburned fuel vapors) found in the **Exhaust gases** as it comes in contact with the high heat in the **Exhaust manifold**. Also called *air induction*.

### **Air injection manifold**

The duct inside the cylinder head or the tube outside the cylinder head feeding secondary air into the exhaust ports.

### **Air injection reaction**

See

- **Air Injection Reaction system**

### **Air injection reaction system**

(AIR system) The AIR system helps to reduce **Hydrocarbons** and **Carbon monoxide** levels in the **Exhaust** by injecting air into the **Exhaust ports** of each **Cylinder** during cold engine operation, or directly into the **Catalytic converter** during normal operation. It also helps the **Catalytic converter** to reach proper operating temperature quickly during warm-up. If a GM car has an **Air pump**, the system is an AIR otherwise it is a **PULSAIR** system.

### **Air injection system**

(AIS) any system that injects air into the exhaust stream to promote more complete oxidation of unburned exhaust gases.

### **air inlet**

See

- **Primary air inlet**

### **Air Inlet System**

See

- **Heated Air Inlet System**

### **Air inlet valve**

An adjustable door, often vacuum operated, in the plenum blower assembly that permits election of outside or inside air for automotive heating and cooling systems.

### **Air intake**

1. Any opening introducing air into an aircraft; the opening for the main engine air is usually implied if unqualified.
2. The opening through which air enters a component such as the carburetor, fuel injection system, radiator, heating system, or ventilation system.
3. Vent in a carburetor through which air is sucked to mix with the gasoline vapor from the jet.

Also see

- **Auxiliary air intake**
- **Cold air intake**

### **Air-intake guide vanes**

Radial, toroidal or volute vanes which guide the air into the compressor of a gas turbine, or the supercharger of a reciprocating engine.

## Air jet

See

- **Idle air jet**

## Airless spraying

A paint spraying process where the coating material (i.e., paint) is not atomized by a stream of air. Instead, it is subjected to high pressure and forced through a narrow jet or nozzle which causes it to be atomized.

## Airless spray gun



## Airless spray gun

A paint spraying tool used in **Airless spraying**.

## Air Lift Axle

An air-powered axle which, when lowered, will both convert a vehicle into a multi-axle unit and provide greater load carrying capacity

## Air line

1. A pipe, hose, or duct in a vehicle which permits the flow of air or vacuum.
2. The supply line coming from an air compression tank to drive air tools or inflate tires.
3. Straight line drawn on the magnetization curve of a motor, or other electrical apparatus, expressing the magnetizing force necessary to maintain the magnetic flux across an air-gap in the magnetic circuit.

## Air liquefier

A type of gas refrigerating machine based on the **Sterling** or hot-air engine cycle.

## Air lock

1. A bubble of air trapped in a fluid circuit which interferes with normal circulation of the fluid.
2. Device by which access is obtained to the working chamber (filled with compressed air to prevent entry of water) at the base of a hollow **caisson**. The worker at surface enters and is shut in an air-tight chamber filled with air at

atmospheric pressure. Pressure within this air-lock is gradually raised to that used in the working chamber, so that the worker can pass out through another door and communicate with the working chamber.

**Air management system**

(AMS) used to control the injected air to the exhaust manifold and catalytic converter. This improves the pollutant conversion efficiency in the converter.

**Air management unit**

(AMU) -- An assembly of pressure switches, and other valves located in a chassis cross-member, designed to control the pneumatic accessory functions of a vehicle using the multiplex electrical system.

**Air mass flow**

In a gas turbine power plant, the quantity of air which is ingested by the compressor, normally expressed in pounds or kilograms per second.

**Air mass meter**

An instrument which measures both engine intake air mass and factors which affect air density, such as temperature, humidity, and pressure.

**Air mass sensor**

An airflow meter that uses the changing resistance of a heated wire in the intake airstream to measure the mass of the air being drawn into the engine. Also referred to as a hot-wire sensor.

**Air meter**

An apparatus used to measure the rate of flow of air or gas.

**Air micrometer**

A control in a paint spray gun which adjusts the amount of air.

**Air mixture**

See

- **Fuel air mixture**

**Air outlet**

The vent or opening where the passage of air exits -- especially in systems for air conditioning, ventilation, and defrosting as air enters the passenger compartment or flows out of the compartment.

**Air outlet valve**

A vacuum operated door which directs air flow into the heater core or ducts, usually located in or near the plenum blower assembly. A vacuum operated door which directs air flow into the heater core or ducts, usually located in or near the plenum blower assembly.

**Air Over**

(AO) An electric motor intended for **Fan** and **Blower** service and cooled by the air stream from the fan or blower

**Air passage**

See

- **Lateral air passage**

**Air pipe**

See

- **Heater air pipe**

### **Air pollution**

Contamination of the earth's atmosphere by various natural and man-made pollutants such as smoke, gases, dust, etc.

### **Air Port**

A circular opening or window through the side of a ship or deck house to provide light or ventilation.

### **Air pressure**

1. The **Atmospheric pressure**.
2. Tire pressure.
3. The force of air coming from a compressor used to power air tools or apply air brakes.

### **Air Principle**

See

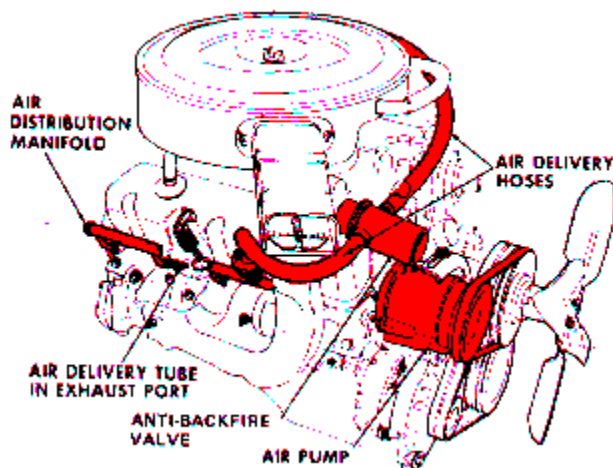
- **Pulse Air Principle**

### **Air Pulse Valve**

See

- **Secondary Air Pulse Valve**

### **Air pump**



### **Air pump (Air Injection system)**

1. The device that supplies the fresh air needed by the **Air injection** system.



2.

### Air pump

A reciprocating or centrifugal pump used to remove air, and sometimes the condensate, from the condenser of a steam plant.

### Also see

- **Air ejector**

3. Any device used for transferring air from one place to another. A compressor increases the pressure, a **Vacuum pump** reduces the pressure and a blower causes a rapidly moving air blast

### Air quality

The extent to which air is free from contaminants, conventionally taken to be the respiratory irritants nitrogen dioxide and sulfur dioxide.

### Air Quality Management District

(AQMD) A term used principally in California to describe administrative districts organized to control air pollution. Nationwide, AQMDs are parallel to the areas designated for classification against the National Ambient Air Quality Standards (NAAQS). Generally, AQMDs and their national parallel encompass multiple jurisdictions and closely follow the definition of Consolidated Metropolitan Statistical Areas and Metropolitan Statistical Areas.

### Air Quality Standards

#### See

- **National Ambient Air Quality Standards**

### Air ratchet



## Air ratchet

A **Ratchet** tool powered by air pressure from an air compressor

### Air ratio

The ratio of actual intake air volume to the air volume theoretically needed for complete combustion of a particular amount of the fuel. This ratio is represented by the Greek letter lambda  $\lambda$  (which looks like the letter  $\nu$  upside-down).

#### Also see

- **Fuel air ratio**

### Air receiver

An air tank which holds the compressed air created by a compressor.

### Air-recirculation system

#### See

- **Automatic air-recirculation system**

### Air Regulator

#### See

- **Auxiliary Air Regulator**

### Air resistance

The **Resistance** of the air to forward movement, sometimes called **Aerodynamic drag**. This is a factor of the shape of the vehicle, the objects which stick out (i.e., mirrors, **Mufflers**, **Bumpers**), the amount of turbulence at the rear of the vehicle, the nature of the vehicle's skin surface, and the amount of air going through the vehicle for cooling and **Ventilation**. The faster you go, the greater the air **Friction** (air friction = velocity x velocity). The faster you go, the greater the amount of power needed to overcome this **Drag** (power = velocity x velocity x velocity).

### Air Resources Board

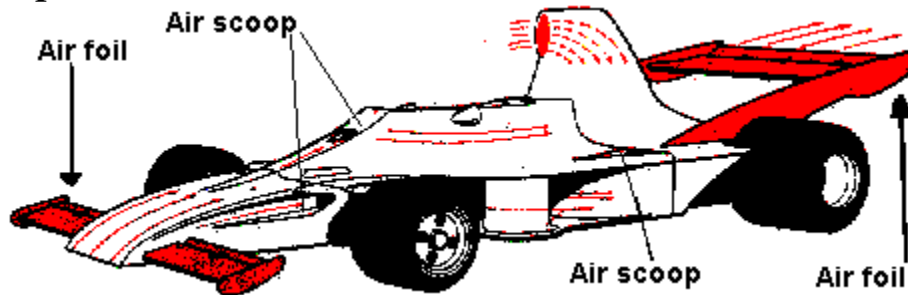
#### See

- **California Air Resources Board**

### **Air Ride Suspension**

(ARS) A suspension system in which the load is supported on air-filled rubber bags rather than steel springs. The engine's air compressor fills the reservoir tanks which supplies air for the suspension and the air brake system.

### **Air scoop**



### **Air Scoop**

A forward facing aerodynamic device or opening used to **Duct** cool outside air to some part of the vehicle such as the **Carburetor Intake**, the brakes, the **Radiator**, or an **Oil cooler**.

### **Airscoop**

See

- **Air scoop**

### **Air screw**

Any type of screw designed to rotate in air; defined in 1951. Term now obsolete and replaced by **Propeller**, a device for propelling aircraft, and **Fan**, a rotating bladed device for moving air in ducts or wind tunnels.

Also see

- **Bypass air screw**
- **Rotor**

### **Air select valve**

A valve in a two-stage catalytic converter with secondary air injection. It is operated by a solenoid and is triggered by the electronic control module. It directs air to the exhaust valve ports or to the midbed catalytic converter, depending on operating conditions.

### **Air-sensing thermostat**

The unit in which sensing element is located in refrigerated space.

### **Air sensor**



1. A device which checks for the presence of air pollutants entering the passenger compartment. If the pollutant concentration is too high, it operates flaps to cut off the external air to the air conditioning system.
2. An air cone with a floating plate which measures air flow and determines plunger position on **K-Jetronic** type systems

**Air shield**

British term for **Air deflector**.

**Air shock absorber**

A shock absorber or damper which has a rubber bladder filled with compressed air. As the air pressure increases the vehicle is raised. The system is used in automatic leveling suspensions.

**air shutter**

An adjustable device for varying the size of the **Air inlet(s)** regulating primary or secondary air.

**Air silencer**

A device which is placed in the air cleaner assembly to reduce the sucking noise that air makes as it enters.

**Air solenoid**

See

- **Bypass air solenoid**

**Air-spaced coil**

Inductance coil in which the adjacent turns are spaced (instead of being wound close together) to reduce self-capacitance and dielectric loss.

**Airspeed**

See

- **Calibrated Airspeed**

**Air spring**

A high pressure air-filled spring used in the suspension fork of some bicycles or the suspension of some cars.

Also see

- **Air bellows**
- **Air suspension**

**Air springing**

See

- **Air suspension**

**Air standard cycle**

A standard cycle of reference by which the performance of different internal-combustion engines may be compared, and their relative efficiencies calculated.

**Air standard efficiency**

The thermal efficiency of an internal-combustion engine working on the appropriate air standard cycle.

**Air stop**

A registered trademark for Michelin tubes.

**Air Strut**

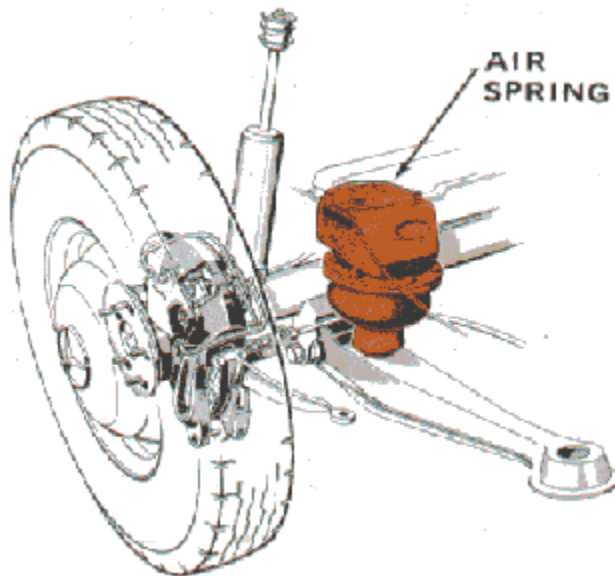
See

- **Self-leveling suspension strut**

**Air-suspended power booster**

A type of power booster that contains atmospheric pressure in both chambers of the booster when the brake pedal is at rest. When the pedal is applied, the front chamber is opened to manifold vacuum, causing the diaphragm of the booster to move toward the master cylinder which assist the driver in the application of the brakes.

**Air suspension**



**Air suspension**

A **Suspension system** using air rather than metal springs to support the vehicle and control ride motions. Air springing results in a smoother ride, because the natural frequency of vibration of an air spring does not vary with loading as it does with metal springs. Air springs can be made very soft for the lightly loaded condition and the pressure automatically increased to match any increase in load, thus maintaining a constant spring vibration period any load.

**Air suspension power booster**

A type of power booster that contains atmospheric pressure in both chambers of the booster when the brake pedal is at rest. When the pedal is applied, the front chamber is opened to manifold vacuum causing the diaphragm of the booster to move toward the master cylinder which assists the driver in the application of the brakes.

**Air switching**

**See**

- **Electric air switching valve**

### **Air switching valve**

(ASV) a valve in an air injection system that senses intake manifold vacuum and during heavy loads, dumps part of the air pump output to the air cleaner to reduce air injections system pressure.

**Also see**

- **Electric air switching valve**
- **Secondary Air Switching Valve**

### **AIR system**

**See**

- **Air injection reaction system**

### **Air system**

**See**

- **Pulse air system**

### **Air tank**

An air container which holds the compressed air created by a compressor.

### **Air temperature**

**See**

- **Ambient air temperature**

### **Air temperature sensor**

(ATS) A device which detects the fluctuation of temperature in the air conditioning system so that the temperature in the cab of a vehicle can be maintained.

**Also see**

- **Intake Air Temperature Sensor**
- **Manifold Air Temperature Sensor**
- **Vane Air Temperature Sensor**

### **Air-to-air intercooler**

A heat exchanger used on a turbocharged engine, which uses liquid coolant from the rad to cool the air coming from the turbo into the intake manifold.

### **Air tool**

A tool such as an impact driver or drill which is powered not by electricity, but by air pressure coming from an air compressor.

### **Air Toxics**

Toxic air pollutants defined under Title II of the CAA, including benzene, formaldehyde, acetaldehyde, 1-3 butadiene and polycyclic organic matter (POM).

Benzene is a constituent of motor vehicle exhaust, evaporative and refueling emissions. The other compounds are exhaust pollutants.

### **Air transformer**

A device which is placed between the compressor and a paint spray gun to provide clean spraying air and to regulate the oil pressure.

### **Air valve**

A valve in a spray gun which controls the flow of air by the operation of the trigger.

#### **Also see**

- **Auxiliary air valve**

### **Air valve carburetor**

#### **See**

- **Air-valve carburetor**

### **Air-valve carburetor**

A type in which a spring-closed or weight-closed air valve opens in response to engine demand. This valve, through suitable **Linkage**, varies the fuel-orifice opening to secure the desired mixture ratio throughout the range of operation. SU and Stromberg CD **Carburetors** operate on this principle, referred to also as **Constant-vacuum**, **Constant-depression**, or variable-**Venturi**.

### **Air vent**

A valve, either manual or automatic, used to remove air from the highest point of a coil or piping assembly

### **Air volume**

The amount of air.

#### **Also see**

- **Variable Air Volume**

### **Air Volume Controller**

#### **See**

- **Variable Air Volume Controller**

### **Air volume spraying**

A method of spray application which involves higher volume and lower pressure of air than high-pressure air spraying.

### **Air washer**

A device used to clean air while increasing or lowering its humidity

### **Airway**

A passageway that allows air to enter.

### **AIS**

1. Acronym for **Air injection system**.
2. Acronym for **Automatic Idle Speed** motor

## AIT

Acronym for **Air Inlet Temperature sensor**--Used to measures inlet air temperature for fueling

## AIV

1. Acronym for **atmospheric/automatic inlet valve**, a system used on early motorcycle engines in which the intake valve is held shut by a weak spring and opens by atmospheric pressure when the falling piston creates a vacuum in the cylinder.
2. Acronym for **air injection valve**

## AKI

Acronym for **Anti-knock Index** -- the average of the RON and MON. This is the number posted on the retail gasoline pumps normally indicating 87, 89, or 92 octane. Racing gasoline have AKI's from 100 to 118.

## Alain

See

- **Prost, Alain**

## ALAP

Acronym for **As Low As Possible**.

## ALARA

Acronym for **As Low As Reasonably Achievable**. Used of radiation levels or decontamination.

## Alarm

A warning sound made by a security or safety device to warn off thieves, alert the driver to take some preventative measures (e.g., secure the seat belts), or warn those around the vehicle (e.g., backup warning alarm). Alarms may sound as a buzzer, a chime, or a human voice.

Also see

- **Back Up Alarm**
- **Car alarm**
- **Freezer Alarm**
- **Voice alert system**

## Alarm system

A theft protection system which may do one or more of the following Sound the horn or an auxiliary siren, flash the lights, lock the hood and trunk, make the ignition inoperative, put the engine in a **Limp-home mode**, notify the police, and alert the vehicle owner.

## Alarmed

The condition of a vehicle which is protected by an alarm system.

## Albedo

See

- **Planetary Albedo**

## Alberta Motor Association

(AMA) An **Automobile Association** in the Canadian province of Alberta affiliated with the **American Automobile Association**

## ALC

Acronym for **Automatic Level Control**

## ALCL

Acronym for **Assembly Line Communications Link** (GM)

## Alcohol

1. A general term for compounds formed from hydroxyl groups attached to carbon atoms in place of hydrogen atoms. The series of molecules vary in chain length and are composed of a hydrocarbon plus a hydroxyl group;  $\text{CH}_3\text{-(CH}_2\text{)}_n\text{-OH}$  (e.g., **Methanol**, **Ethanol**, and **Tertiary butyl alcohol**). It may be used as a fuel.

### Also see

- **Butyl Alcohol**
- **Denatured Alcohol**
- **Grain Alcohol**
- **Methyl Alcohol**
- **Wood alcohol**

2. A beverage which impairs a driver's skill in operating a vehicle safely. Although the law has set down limits of the amount of alcohol allowable in the bloodstream before a person is considered drunk, the effects of the slightest amount of alcohol can impair one's driving skill.

## Alcohol brine

Water and alcohol solution which remains a liquid below 0°C

## Alcohol content

See

- **Blood alcohol content**

## Alcohol-ethyl Hexanol

See

- **Octyl Alcohol-ethyl Hexanol**

## Alcohol fuel

Volatile liquid fuel consisting wholly or partly of alcohol, able to withstand high-compression ratios without detonation.

**Also see**

- [Neat Alcohol Fuel](#)

## Alcohol level

**See**

- [Blood alcohol level](#)

## Aldehyde

A class of organic compounds derived by removing the hydrogen atoms from an alcohol. Aldehydes can be produced from the oxidation of an alcohol.

## ALDL

1. Acronym for [Assembly Line Data Link connector](#) a diagnostic connector.
2. Acronym for *assembly line data link*.

## Alero

**Click image for books on Oldsmobile Alero**

A model of automobile built by [Oldsmobile](#) from 1999-2004

## Alert

**See**

- [Deer alert](#)
- [Voice alert system](#)

## Alert system

**See**

- [Voice alert system](#)

## Alfa-Romeo



**Click logo for books on  
Alfa-Romeo**

A vehicle brand of which all 1925-48 models are **classic cars**. The following models are **milestone cars**:

- All 1956-64 Giuletta Spider models
- All 1959-61 Giuletta/Giulia Sprint Speciale models
- All 1949 6C 2500 Super Sport models

Other models include:

- 164 (1991-95)
- **Alfasud**
- **Alfetta**
- **Berlina**
- **Giulia**
- **GTA**
- Milano (1988-89)
- **Montreal**
- **Spider** (1988-94)

## Alfa Romeo

See

- **Alfa-Romeo**

## Alfasud

**Click image for books on  
Alfasud**



A model of automobile from [Alfa-Romeo](#)

## Alfetta

**Click image for books on Alfetta**

A model of automobile from [Alfa-Romeo](#)

## Al fresco driving

Driving in a convertible with the top down.

## Algae

Low form of plant life, found floating free in water and can accumulate in vehicle vents

## A-license

Basic private pilot's license in the UK.

### Also see

- [Class A driver's license](#)

## Align

1. Process of bringing two or more items into mating conjunction so that all the bolt holes and locating pins fit properly.
2. Process of adjusting the wheels and other devices so that they are in a straight line.

## Align bore

A machining operation which corrects an engine's out-of-round and/or warped main bearing housings. It may be done with either stationary or portable equipment.

### Also see

- [Align hone](#)

## Aligner

### See

- [Wheel aligner](#)

## Align hone

A machining operation which corrects an engine's out-of-round and warped main bearing housings with a special honing mandrel. It must be done with stationary equipment.

## Aligning cups

Devices used in mounting floating drums on the arbor of a brake drum lathe.

## Aligning punch



## Aligning Punch

A tool shaped like a thin rod used to make sure holes line up when assembling two or more components. Especially used on items which may move to one side before the other side can be aligned or another component installed or when the gasket is likely to slip out of place.

### Aligning set

See

- [Clutch aligning set](#)

### Aligning tool

See

- [Clutch aligning tool](#)

### Alignment

1. When referring to wheel alignment, it is the proper adjustment of a vehicle's **Front** or **Rear suspension** for **Camber**, **Toe-in**, **Toe-out**, **Kingpin inclination** or steering axis inclination, and **Turning radius** or **Toe-out on turns**, **Caster**, and **Ride height**. Four-wheel alignment is necessary for **Front-wheel drive** vehicles.
2. The adjustment of two objects to bring them into the proper relation to each other.
3. The setting in line (usually straight) of successive lengths of a railway which is to be constructed
4. The plan of a road or earthwork
5. The setting in a true line of a number of points, e.g., the centers of the bearings supporting an engine crankshaft
6. Process of orientation of e.g., electric or magnetic dipoles when acted on by an external field. During magnetization, the alignment of domains is changed by the magnetizing field
7. Adjustment of preset tuned circuits to give optimum performance
8. The horizontal route or direction of an access road.

### Also see

- [Door alignment](#)
- [Four-wheel alignment](#)
- [Front-end alignment](#)
- [Wheel alignment](#)

**Alignment gap**

The distance between two adjacent auto body panels. When an alignment gap varies too much, it is a sign of poor assembly quality.

**Alignment gauge**

See

- **Wheel alignment gauge**

**Alignment pin**

A pin or stud used to align one part with another, such as the pins used to align a cylinder head on an engine block.

**Alignment stud**

A pin or stud used to align one part with another, such as the pins used to align a cylinder head on an engine block.

**Align ream**

Machining or hand process which enlarges the inside diameter of bushings to the correct size.

**Aliphatic**

A class of saturated or unsaturated carbon compounds, in which the carbon atoms are joined in open chains.

**Alive Memory**

See

- **Keep Alive Memory**

**Alkaline battery**

A storage battery which uses an alkaline electrolyte (dilute potassium hydroxide).

**Alkaline degreasing**

A process of removing an oily or greasy substance with the use of an alkaline solution. Often used in preparing a surface for painting.

**Alkaline fuel cell**

(AFC) A type of hydrogen/oxygen **Fuel cell** in which the **Electrolyte** is concentrated KOH (varies between 35 to 85 percent by weight depending on the intended operating temperature) and hydroxide ions (OH<sup>-</sup>) are transported from the **Cathode** to the **Anode**. Temperature of operation can vary from below 120°C to approximately 250°C depending upon electrolyte concentration.

**Alkylate**

The product of an alkylation reaction. It usually refers to the high-octane product from alkylation units. This alkylate is used in blending high octane gasoline.

**Alkylation**

A refining process for chemically combining **Isobutane** with **Olefin** hydrocarbons (e.g., **Propylene**, **Butylene**) through the control of temperature and pressure in the presence of an acid **Catalyst**, usually sulfuric acid or hydrofluoric acid. The product, alkylate, an isoparaffin, has high octane value and is blended with motor and aviation gasoline to improve the **Antiknock value** of the fuel.

**All-alloy engine**

An engine which uses a light alloy for the block, crankcase, sump, and cylinder head.

**All-aluminum body**

A body shell which is mostly made of aluminum.

### Allanté

**Click image for books on  
Cadillac Allanté**

A model of automobile manufactured by the **Cadillac** division of **General Motors** from 1987-93

### Allan valve

Once popular slide-valve design with an internal passage designed to reduce valve travel and wear.

### Allard

A vehicle brand of which the 1946-56 Series J2, K2, K3 models are **milestone cars**.

### All-Commodity Rate

The fixed charge to transport a number of items in a single vehicle at one time from the consignor (i.e., shipper) to the consignee (i.e., receiver). This rate is based on the actual cost of transportation not the value of service.

### All electronic ignition

See

- **Breakerless transistorized ignition**

### All-electronic ignition

See

- **Breakerless transistorized ignition**

### Allen key

See

- **Allen wrench**

### Allen screw

A fastening device (either a wood screw type or bolt threads) with a recessed hexagon hole in the head. Also called a **hex hole screw**.

### All-enveloping body

A modern passenger car body style in which the fenders, headlamps, and radiator grille are one smooth body line. It contrasts with the style before World War II where the fenders and headlights were separate from the main body.

### Allen wrench

An rod with six sides and often L-shaped. Used to remove certain bolts or screws and fastenings, especially set screws. Sometimes called **hex wrenches** or **Allen key**.

### Alley

1. A privately maintained thoroughfare, tract, or easement, usually narrower than a street, which provides access to the rear boundary of one or more lots and is not intended for general traffic circulation.
2. A public road, usually single lane, which separates rows of houses and is used for access for garbage pickup, etc.

### Also see

- [Shaft Alley](#)

### Alliance



American Motors Corporation

**Click image for books on Alliance**

An automobile manufactured by AMC

### Alliance of Automobile Manufacturers

(AAM) See website [Alliance of Automobile Manufacturers](#).

### Alligator

A colloquial term for a large piece of a tire on the road.

### Alligator clip



### Alligator clips

A small spring clip which is *X-shaped*. As you squeeze the two *legs* of the clip, the other two jaws (usually serrated) open. Used to make temporary electrical connections. Larger ones are used at the ends of [Jumper cables](#). The British call it a *crocodile clip*.

### Alligator hood

The engine bay hood that opens from the front and its hinge is near the firewall. Although it is the most common, older cars opened from the side. Some sports cars and large trucks open with the hinge at the front of the vehicle.

## All-insulated switch

See

- **Shockproof switch**

## All-mountain bike

A **Mountain bicycle** designed to balance climbing and descending abilities with slightly more emphasis on descending prowess; features dual suspension with 4 to 6 inches of **Travel**

## Allocated Inventory

A warehouse term for product which has been ordered for a specific customer or promotional event and is not to be used for other requests. A good WMS will tag the items so that they are not available apart from the designated purpose.

## All-out braking

A situation where the driver uses the maximum braking effort possible. Although this seems to be the best way to stop a vehicle, in fact it may not because there may be the tendency to swerve or the brakes may overheat and lose effectiveness. It is better to pump the brakes (if ABS is not available) to control steering and get maximum braking.

## Allowable working pressure

The maximum gauge pressure at which a part or system may be operated in accordance with the provisions of this standard. It is the pressure used in determining the setting of pressure limiting or relieving devices installed to protect the part or system from accidental overpressuring.

## Allowance

A reduction of the shipping costs if the carrier does not provide the necessary equipment (e.g., pallet jack, crane) and that equipment is supplied instead by the shipper.

Also see

- **Mileage allowance**

## Allowances

Fuel reserves, usually specified as time factors under certain conditions, as distance plus descent, or as a percentage (by weight or volume) of the cruising fuel for a given stage.

## Alloy

A mixture of two or more elements, especially where one is aluminum.

Also see

- **Aluminum alloy**
- **Antimony alloy**
- **Eutectic alloy**
- **Mag Alloy**
- **Minilite alloy wheel**
- **Polymer alloy**
- **Zinc alloy**

### **Alloy cast-iron**

**Cast-iron** containing alloying elements in addition to carbon and the normal low levels of manganese and silicon, usually some combination of nickel, chromium, copper, and molybdenum. These elements may be added to increase the strength of ordinary irons, to facilitate heat treatment, or to obtain martensitic, austenitic, or ferritic irons.

### **Alloy engine**

**See**

- **All-alloy engine**

### **Alloying**

1. The process of making an alloy
2. The addition of one or more elements to a pure metal to alter the pure metal's properties such as strength, elongation, weight reduction, etc.

### **Alloy Layer**

**See**

- **Zinc-iron Alloy Layer**

### **Alloy piston**

A piston made primarily of aluminum.

### **Alloys**

Colloquial term for **Alloy wheels**.

### **Alloy steel**

1. A steel to which elements not present in carbon steel have been added, or in which the content of manganese or silicon is increased above that in carbon steel.
2. Molybdenum alloy steel used in bicycle frames.

**Also see**

- **Nickel steel**
- **Stainless steel**

### **Alloy wheel**



## **Alloy Wheel**

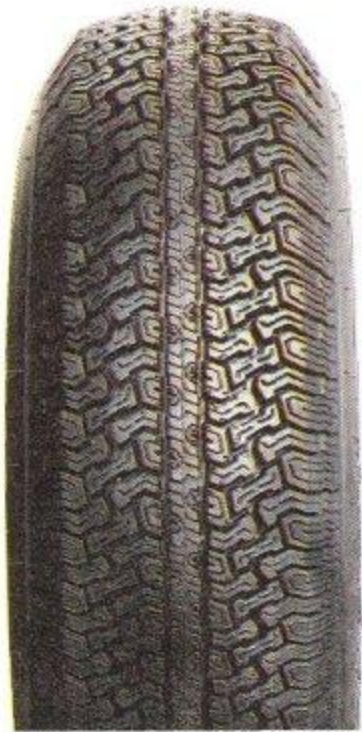
A generic term used to describe any non-steel road wheel usually cast as one piece. The usual alloys are either **Aluminum** or magnesium; the latter material led to the common usage of the term **Mag wheel**, often referring to any non-steel wheel or even a one-piece plastic wheel. Also called **Cast Aluminum Wheel**

### **Also see**

- **Minilite alloy wheel**
- **Three-piece alloy wheel**
- **Two-piece alloy wheel**
- **Two-piece forged alloy wheel**

**All-season tire**





### All-season Tire

A tire that usually has a more aggressive tread pattern than a **Summer tire**, but not nearly as aggressive as a **Mud and snow tire**. Most new automobiles are sold with all-season tires.

### All short

A situation in which none of the freight is received with the movement document.

### All-steel body

A vehicle body shell which is made entirely of steel rather than one with a wooden frame with steel panels or steel frame with aluminum panels.

### All terrain

For use on any kind of ground surface (not on lakes or ocean, though).

### All terrain bike



### All-terrain Bicycle

(ATB) A **Bicycle** with straight **Handlebars**, sturdy fat tires, and **Wide-range gearing** designed for off-road use. Also called **Mountain bike**.

### **All-terrain bike**

(ATB) A **Bicycle** with straight **Handlebars**, sturdy fat tires, and **Wide-range gearing** designed for off-road use. Also called **Mountain bike**.

### **All terrain tire**

A tire which has a number of lugs or knobs used to propel the vehicle over rough surfaces.

### **All terrain vehicle**

A vehicle used in rough surface conditions. Also called **off-road vehicle**.

### **Allure**

A model of automobile from the **Buick** division of **General Motors** from 2005-current. The same model in the United States is called the **LaCrosse** (an offensive term in Quebec). It has a 3.8 Liter V-6 engine and a 4-speed automatic transmission; wheelbase is 2807mm; overall length is 5031mm.

### **Allure libre**

A self-paced long-distance bicycle ride as promoted by the Audax Club Parisien, the Randonneurs Mondiaux, and the Randonneurs USA. You can ride at your own pace so long as you finish within the time limit. This is not a race where riders are recognized for finishing ahead of other riders. The important thing is to finish the ride.

### **All Weather**

An early car term referring to the first convertibles. Commonly used in the twenties and thirties to denote a four door convertible sedan.

### **All-weather tire**

A tire that can be used on roads that are bare or covered with rain, snow, or ice.

### **All wheel drive**

**See**

- **All-wheel drive**

### **All-wheel drive**

(AWD) A variation of **Four-wheel drive** (4WD) designed to improve on-road **Traction** in unfavorable road conditions or for ultra high performance driving. All-Wheel Drive (AWD) reduces wheel slippage and provides greater **Driver** control over the vehicle. AWD usually does not require the **Driver** to actively engage the system and does not have a low range. AWD automatically splits engine **Torque** between the front and rear wheels as needed. All-Wheel Drive is generally an on-road system and is not designed for off-road use.

### **All-wheel steering**

**See**

- **Four-wheel steering**

### **Alnico® magnet**

A high-energy permanent magnet which is an alloy of aluminum, nickel, cobalt, iron, and copper.

## Alongside

1. Point of delivery beside a vessel
2. Statement designating where the title to goods passes from one party to another.

### Also see

- **Free Alongside**

## Alpha brass

An alloy of copper and zinc in which there is up to 38% zinc.

## Alpine gearing

A **Gearing** system in which a shift between **Chainwheels** on a **Bicycle** is equivalent to one-and-a-half shifts on the **Freewheel**.

## ALT

Abbreviation for **Alternator**. Sometimes abbreviated as GEN

## Alternate Routing

A change in the normal direction of a shipment that may be less desirable, but results in identical terms.

## Alteration

### See

- **Load alteration effect**

## Alteration effect

See **Load alteration effect**

## Alternating current

(AC) An electric **Current** that first flows one way in the circuit and then the other at regularly recurring intervals. This is the type used in homes. It contrasts with **Direct current**. It is also the type of current produced by a vehicle's **Alternator**. Since the rest of the vehicle uses direct current, the current coming from the alternator must be changed by the **Rectifier**.

## Alternative Fuel

1. As defined pursuant to the EPACT, **Methanol**, **Denatured ethanol** and other alcohols, separately or in mixtures of 85% by volume or more with gasoline or other fuels, CNG, LNG, LPG, hydrogen, **coal derived liquid fuels**, fuels "other than alcohols" derived from **biological materials**, electricity, neat biodiesel, or any other fuel determined to be **substantially not petroleum** and yielding "substantial energy security benefits and substantial environmental benefits."
2. Low-polluting fuels which are used to propel a vehicle instead of high-sulfur diesel or gasoline. Examples include methanol, ethanol, propane or compressed natural gas, liquid natural gas, low-sulfur or "clean" diesel and electricity.

### **Alternative Fueled Vehicle**

(AFV) Acronym for **Alternative Fueled Vehicle** -- a vehicle powered by a fuel other than gasoline or diesel.

**Also see Nonroad Alternative Fuel Vehicle**

### **Alternative-Fuel Provider**

A fuel provider (or any affiliate or business unit under its control) is an alternative-fuel provider if its principal business is producing, storing, refining, processing, transporting, distributing, importing, or selling (at wholesale or retail) any alternative fuel (other than electricity); or generating, transmitting, importing, or selling (at wholesale and retail) electricity; or if that fuel provider produces, imports, or produces and imports (in combination), an average of 50,000 barrels per day of petroleum and 30% (a substantial portion) or more of its gross annual revenues are derived from producing alternative fuels.

### **Alternative Fuels Data Center**

(AFDC) A program sponsored by DOE to collect emissions, operational and maintenance data on all types of AFVs across the country.

### **Alternative Fuels Utilization Program**

(AFUP) A program managed by DOE with the goals of improving national energy security by displacing imported oil, improving air quality by development and widespread use of alternative fuels for transportation and increasing the production of AFVs.

### **Alternative-Fuel Vehicle**

(AFV)

1. As defined by the Energy Policy Act, any dedicated, flexible-fueled, or dual-fueled vehicle designed to operate on at least one alternative fuel.
2. A vehicle designed to operate on an alternative fuel (e.g., compressed natural gas, methane blend, electricity). The vehicle could be either a dedicated vehicle designed to operate exclusively on alternative fuel or a nondedicated vehicle designed to operate on alternative fuel and/or a traditional fuel.

### **Alternative fuel vehicle converter**

An organization (including companies, government agencies and utilities), or individual that performs conversions involving alternative fuel vehicles. An AFV converter can convert (1) conventionally fueled vehicles to AFVs, (2) AFVs to conventionally fueled vehicles, or (3) AFVs to use another alternative fuel.

### **Alternative Motor Fuels Act of 1988**

(AMFA) Public Law 100-494. Encourages the development, production and demonstration of alternative motor fuels and AFVs.

### **alternative power plant**

Hybrids, fuel cells, and other innovations designed to replace the internal combustion engine.

### **Alternator**



## Alternator

(ALT) A device which produces **AC** by converting the engine's turning (mechanical) energy into alternating electrical current at all **Engine speeds**. The AC must be rectified (converted from AC to DC) by using **Diodes** before reaching the vehicle's **Electrical system**. The alternator is driven by a belt at the front of the engine. Alternators replaced the **Direct-current (DC) Generators** used up to the 1960's because they were less efficient especially at **Idle**. The electrically demanding options like air conditioning forced the use of alternators over generators.

### Alternator regulator

See

- **Integral Alternator regulator**

### Alternator Starter

See

- **Belt Alternator Starter**

### Altima



**Click image for books on Nissan Altima**

A model of automobile manufactured by Nissan in Japan

### Altimeter

1. An instrument to reveal the height (or barometric pressure) above sea level.
2. An aneroid barometer used for measuring altitude by the decrease in atmospheric pressure with height. The dial of the instrument is graduated to

read the altitude directly in feet or meters, the zero being set to ground or aerodrome level.

## **Altitude**

1. The height in feet or meters above sea level. For precision in determining the performance of an aircraft, this must be corrected for the deviation of the meteorological conditions from that of the ***International Standard Atmosphere***.
2. The angular distance of a heavenly body measured on that great circle which passes, perpendicular to the plane of the horizon, through the body and through the zenith. It is measured positively from the horizon to the zenith, from 0° to 90°.
3. The line through the vertex of a geometrical figure or solid perpendicular to its base.
4. The length of the line of definition #3.

### **Also see**

- **Cabin altitude**

## **Altitude compensation system**

A barometric switch and solenoid used to provide better drivability over 4000 feet (1200 meters) above sea level.

## **Altitude compensator**

**See**

- **Aneroid altitude compensator**

## **Altitude correction capsule**

A barometric pressure sensor that detects the change in altitude and sends a signal to the ECU to alter the amount of fuel required for optimum combustion.

## **Altitude valve**

A manually or automatically operated valve fitted to the carburetor of an aero-engine for correcting the mixture strength as air density falls with altitude.

**Also see**

- **Pressure-operated Altitude Valve**

## **Alumina**

**See**

- **Activated alumina**

## **Alumina beads**

Tiny beads of alumina used in some catalytic converters.

## **Aluminium**

British spelling for **Aluminum**. Pronounced al-yoo-MIN-ee-um not ah-LOO-min-um

### **Aluminized**

Something that is coated with aluminum or aluminum paint.

### **Aluminizing**

**See**

- **Hot-dip aluminizing**

### **Aluminum**

(Al or Alum) A silver-white metal which is used in cars because of its lightness. In pure form, it does not have the strength of the same size of iron. Thus vehicle manufacturers use aluminum in an **Alloy** form to produce **Body panels**, wheels, engine **Blocks**, **Transmission housings**, **Differential housings**, and even **Frames**. British spelling adds an extra *i* near the end of the word **aluminium** and pronounces it al-you-MIN-ee-um instead of ah-LOO-min-um.

**Also see**

- **Cast aluminum wheel**
- **Forged Aluminum**

### **Aluminum alloy**

A metal which is formed from aluminum and another metal.

### **Aluminum body**

**See**

- **All-aluminum body**

### **Aluminum oxide**

A metallic **abrasive** used to manufacture sandpaper and sanding **Discs**.

### **Aluminum Arch Culvert**

A large arch installed under the road surface to let a stream flow under the road. An aluminum arch culvert is usually larger than a regular **culvert**

### **Aluminum wheel**



## Aluminum wheel

See

- [Alloy wheel](#)

## Alvis



## Alvis

A vehicle brand of which the Speed 20, 3.5 litre, 25, and 4.3 litre models are **classic cars**.

## AM

Acronym for **Amplitude modulation**.

## AM1

Acronym for **Air Management 1, AIR Bypass**

## AM2

Acronym for **Air Management 2, AIR Diverter**

## AMA

Acronym for **Alberta Motor Association** -- An **Automobile Association** in the Canadian province of Alberta affiliated with the **American Automobile Association**

## AMB

Acronym for **Ambient**

## Ambient

Surrounding on all sides.

## Ambient air

Air outside and surrounding a vehicle or equipment.

## Ambient Air Quality Standards

See

- [National Ambient Air Quality Standards](#)

## Ambient air temperature

The temperature of the surrounding air.

## Ambient noise

1. Random uncontrolled and irreducible noise at a location, or in a valve or circuit.



2. The noise existing in the passenger compartment or any other environment.

**Ambient sensor**

A device which samples and detects changes in the temperature of the air outside the vehicle.

**Ambient switch**

An outside air temperature sensing switch which prevents operation of the compressor and the recirculating air mode below an outside temperature of 5°C.

**Ambient temperature**

1. The surrounding air temperature. The temperature of fluid (usually air) which surrounds an object on all sides.
2. Temperature of the atmosphere, outside of any fuel containers or tanks.
3. The temperature of the surrounding medium, usually used to refer to the temperature of the air in which a structure is situated or a device operates.

**Ambient temperature switch**

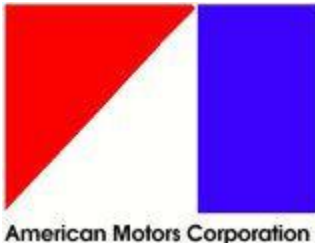
A control device in an air conditioning system which delays the compressor action when the outside temperature is low.

**Ambiophony**

Technique of sound reproduction which creates an illusion to the listener of being in a very large room.

**Ambulance****Ambulance**

A vehicle designed for carrying sick or injured people.

**AMC**

American Motors Corporation

**Click logo for books on AMC**

Acronym for **American Motors Corp** an organization which merged with Chrysler Corporation. Includes the following models:

- **Alliance**
- **AMX**
- **Eagle** (-1988)
- **Encore**
- **Gremlin**
- **Hornet**
- **Javelin**
- **Matador**
- **Pacer**
- **Rebel**
- **Spirit**

### AMC Eagle



**Click image for books on AMC Eagle**

An automobile manufactured by AMC until 1988

### Amendments of 1990

See

- **Clean Air Act Amendments of 1990**

### American Automobile Association

(AAA) A U.S. **Automobile association**

### American Automobile Labeling Act

(AALA) regulations requiring vehicle manufacturers to include content information on vehicle labels for cars and trucks for sale in the U.S. after October 1, 1994.

### American Battery Manufacturers

See

- **Association Of American Battery Manufacturers**

### American Free Trade

See

- **North American Free Trade Agreement**

## American Free Trade Agreement

See

- [North American Free Trade Agreement](#)

## American Industrial Classification

See

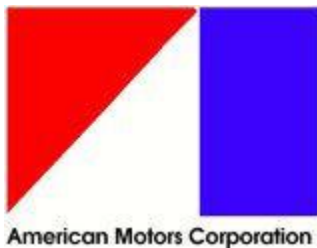
- [North American Industrial Classification System](#)

## American Industrial Classification System

See

- [North American Industrial Classification System](#)

## American Motors



[Click logo for books on AMC](#)

A vehicle brand of which the 1968-70 **AMX** models are **milestone cars**.

## American Petroleum Institute

(API) Was established on March 20, 1919 to work with the federal government to promote the use and trade of petroleum products, oil, and natural gas. [API site](#)

## American produced

See

- [North American produced](#)

## American Society for Testing and Materials

(ASTM) Society for developing and publishing agreed standards. A non-profit organization that provides a management system to develop published technical information. ASTM standards, test methods, specifications and procedures are recognized as definitive guidelines for motor fuel quality as well as a broad range of other products and procedures.

## American standard pipe thread

Type of screw thread commonly used on pipe and fittings to assure a tight seal.

## American Standards

Dimensional standards for fasteners, etc., developed by the American Society of Mechanical Engineers. (ASME)

## American Standard Wire Gauge

See

- **Brown and Sharpe Wire Gauge**

## AMFA

Acronym for **Alternative Motor Fuels Act of 1988**

## AM/FM

A radio capable of receiving **Amplitude modulation** (AM) and **Frequency modulation** (FM) signals.

## AMI

Acronym for **advanced metering infrastructure**

## AMIA

Acronym for **Asociacion Mexicana de la Industria Automotriz**.

## Amidship

The middle portion of a ship or vehicle.

## Amilcar

A vehicle brand of which the Supercharged Sports models with required application are **classic cars**.

## Ammeter

An electric instrument used to measure the rate of electrical **Current** flow scaled in **amperes**.

Also see

- **Recording Ammeter**

## Ammonia

Chemical combination of nitrogen and hydrogen (NH<sub>3</sub>). Ammonia refrigerant is identified as R-117.

## Ammonium Bases

See

- **Quaternary Ammonium Bases**

## Amorphous silicon

An alloy of silica and hydrogen, with a disordered, noncrystalline internal atomic arrangement, that can be deposited in thin-film layers (a few micrometers in thickness) by a number of deposition methods to produce thin-film photovoltaic cells on glass, metal, or plastic substrates.

## Amp

Uncommon abbreviation for **Ampere**. It is preferred to use **A**

## Amperage

The strength of an electric current in amperes. Electron or current flow of one coulomb per second past a given point in circuit.

## Amperage rating

The strength of an electric current in amperes.

## Ampere

1. (A) A unit of measurement used in expressing the rate of electrical **Current** flow in a circuit. It is determined by dividing the **Voltage** by the **Resistance**.
2. A unit of electric current equivalent to flow of one coulomb per second
3. The unit of measurement of electrical current produced in a circuit by 1 volt acting through a resistance of 1 Ohm.
4. That current which, if maintained in two parallel conductors of infinite length, of negligible cross-section, and placed one meter apart in vacuum, would produce between the conductors a force equal to  $2 \times 10^{-7} \text{Nm}^{-1}$ .

#### Also see

- **Absolute ampere**
- **Kilovolt Ampere**

#### Ampere-hour

1. Measurement of the ability of a **Battery** to deliver a stated amount of **Current** for a stated period of time. The higher the amp/hr. rating, the more powerful the battery.
2. Unit of charge equal to 3600 coulombs or 1 ampere flowing for one hour.

#### Ampere hour capacity

A measurement of storage **battery's** ability to deliver a specified **current** over a specified length of time.

#### Ampere-hour efficiency

In an accumulator, the ratio of the ampere-hour output during discharge to the ampere-hour input during charge.

#### Ampere-hour meter

(Ahm) A meter designed to record the product of current and time (ampere-hours) for a given circuit or passing at a given point. If the voltage is constant, the meter can be calibrated as an energy (kilowatt-hour) meter.

#### Ampère's law

The relation between the magnetizing field **H** around a conductor, length **l**, carrying a current **i**, given by the formula

$$\oint H \cdot dl = i$$

#### Ampere turn

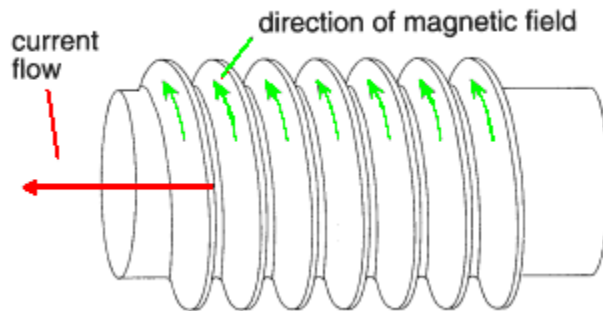
1. The magnetomotive force produced by a current of one ampere in a coil of one turn
2. A term used to measure magnetic force. Represents product of amperes times number of turns in coil of electromagnet

#### Ampere-turns

See

- **Back ampere-turns**

### Ampère's rule



### Ampère's rule

Rule giving the direction of the magnetic field associated with a current. If the conductor is grasped with the right hand, the thumb pointing in the direction of the current, the fingers will curl around the conductor in the direction of the field. Also called **right-hand rule**.

### Ampère's theory of magnetization

A theory based on the assumption that the magnetic property of a magnet is due to currents circulating in the molecules of the magnet.

### Ampere-turn

(At) SI unit of magneto-motive force, which drives flux through magnetic circuits, arising from one ampere flowing around one turn of a conductor.

### Ampere-turn amplification, gain

Ratio of the load ampere-turns to the control ampere-turns in a **magnetic amplifier**.

### Ampere turns

Term used to measure magnetic force. Represents product of amperes times number of turns in coil of electromagnet.

### Ampere-turns per meter

SI unit of magnetizing force, magnetic field intensity.

### Amp/hr. rating

Measurement of the ability of a **Battery** to deliver a stated amount of **Current** for a stated period of time. The higher the amp/hr. rating, the more powerful the **Battery**.

### Amplification Gain

See

- **Ampere-turn Amplification Gain**

### Amplifier

A device used to increase the electron flow in an electric or vacuum circuit. It produces a greater electrical signal such as the radio signal. Most automobile radios have a built-in amplifier; but a few have a separate amplifier which is sometimes located in the trunk.

**Also see**

- **Acoustic amplifier**
- **Audio-frequency Amplifier**
- **Balanced Amplifier**
- **Booster Amplifier**
- **EGR Venturi Vacuum Amplifier**
- **Ignition Amplifier**
- **Quiescent Push-pull Amplifier**
- **Signal Amplifier**
- **Venturi Vacuum Amplifier**

### **Amplitude modulation**

(AM) A type of radio wave in which the amplitude changes rather than the frequency.

**Also see**

- **Quadrature Amplitude Modulation**
- **Frequency modulation**

### **AMPS**

Acronym for *advanced mobile phone system*.

### **Amps**

**See**

- **Cold cranking amps**

### **Amputee spinner**



### **Amputee spinner**

A device which is attached to a steering wheel to allow a disabled person to steer a vehicle.

### **AMR**

Acronym for *automated meter reading*

### **AMS**

Acronym for **Air management system**.

### **AMSL**

Acronym for *above mean sea level*.

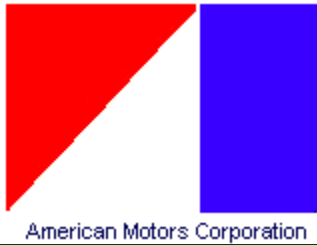
### **AMU**

Acronym for **Air Management Unit** -- An assembly of pressure switches, and other valves located in a chassis cross-member, designed to control the pneumatic accessory functions of a vehicle using the multiplex electrical system.

## AMVIR

Acronym for **Association of Motor Vehicle Importers Representatives** (Greece).

## AMX



**Click image for books on AMX**

An automobile manufactured by AMC. The 1968-70 models are **milestone cars**.

## Amyl Ethyl Ether

See

- **Tertiary Amyl Ethyl Ether**

## Anaerobic sealer

A substance used to prevent bolts and screws from loosening up and backing out. Anaerobic sealers do not require oxygen for activation. The Loctite® brand is the most widely used anaerobic sealer.

## Analog British spelling is *analogue*

1. A display which uses a dial rather than a read-out of numbers (digital).
2. A signal that varies proportionally with the data it measures. In a computer, an analog signal is a constantly fluctuating voltage that ranges from high to low.

## Analog clock

The traditional clock with rotating hands. Contrast with **Digital clock**.

## Analog cluster

An instrument panel display using dials. Opposite to **Electronic cluster**.

## Analog filter

Filter suitable for use with analog signals, i.e., those which are continuous with time. Contrast with **Digital filter**.

## Analog speedometer





## Analog speedometer

A speedometer which shows the speed by a needle on the dial of a gauge. It contrasts with a **Digital speedometer**

### Analogue

British spelling of **Analog**.

### Analogue cluster

See

- **Analog cluster**

### Analysis

See

- **Fe analysis**
- **Finite-element analysis**
- **Qualitative Analysis**
- **Quantitative Analysis**

### Analyzer

A device for evaluating something.

Also see

- **Engine Analyzer**
- **Exhaust-gas Analyzer**
- **Exhaust Gas Analyzer**
- **Four-gas Analyzer**
- **Infrared Analyzer**
- **Ndir analyzer**
- **Non-dispersive Infrared Analyzer**

### Anatomic saddle



## Anatomic saddle

A bicycle seat that is designed with cut out sections or bumps to accommodate your ischial tuberosities (i.e., sit-down bones).

## ANC

Acronym for *at no extra cost*

## Anchor

1. A mounting point on the vehicle frame or unibody for a non-structural but stressed component, such as a seat or seat belt.
2. The stationary portion of a leading/trailing drum brake on which the heels of the brake shoes ride.
3. A heavy hook-shaped device for holding a ship at rest in water. The anchor grips the ocean bottom and is fastened to the ship by a chain.
4. An obsolete, heavy piece of equipment that has no use or function is considered euphemistically as nothing more than a boat anchor.

### Also see

- [Belt Anchor](#)
- [Brake Anchor](#)
- [Fixed Anchor](#)
- [Shoe Anchor](#)

## Anchorage

The point where something is attached -- such as where the seat-belt is attached to the frame.

### Also see

- [Belt anchorage](#)
- [Seat belt anchorage](#)

## Anchor bolt

1. A bolt used to secure frameworks, stanchion bases, etc. to piers or foundations, and having usually a large plate washer built into the latter as anchorage
2. The bolt which goes through a bracket to secure something. British term is *through bolt*.

### **Anchor clamp**

A fitting attached to the overhead contact wire of a tramway or railway to support the wire, and also to take the longitudinal tension and prevent movement of the wire in a direction parallel to the track.

### **Anchor Drum Brake**

See

- **Double Anchor Drum Brake**

### **Anchor end**

The end of a brake shoe that's attached to or positioned against a fixed point on the backing plate.

### **Anchor eyes**

The semi-circular notches at the ends of some shoe webs where they contact the **Shoe anchor** on the **Backing plate**.

### **Anchor gate**

A heavy gate, such as a canal lock gate, which is supported at its upper bearing by an anchorage in the masonry such as an **Anchor bolt**.

### **Anchor pin**

1. The stationary portion of a duo-servo drum brake on which the tops of the brake shoes rest. The secondary shoe bears against the anchor pin when the brakes are applied and the vehicle is moving forward. Conversely, when the vehicle is backing up and the brakes are applied, the primary shoe bears against it.
2. The point in a drum brake system where the braking forces are transmitted to the axle and which prevents the brake shoes from revolving with the drum.

### **Anchor plate**

1. The stationary portion of a leading/trailing drum brake on which the heels of the brake shoes ride.
2. A bracket, solidly attached to the vehicle suspension, on which a floating or sliding **Caliper** mounts

Also see

- **Caliper mounting bracket**

### **Anchor ring**

See

- **Toroid**
- **Torus**

### **Ancien**

A male veteran bicycle rider who has completed a 1200 kilometer randonnée.

### **Ancienne**

A female veteran bicycle rider who has completed a 1200 kilometer randonnée.

### **Ancillaries**

The various components attached to the main part of the engine and driven by the engine itself -- such as the alternator, generator, power steering pump, supercharger, fuel pump, and water pump.

### **Anemometer**

Instrument for measuring the rate of airflow or motion.

### **Aneroid altitude compensator**

A bellows device, installed integrally with the **APT** system on some post-1975 Rochester Quadrajet carburetors, that automatically compensates for changes in altitude by raising or lowering the primary metering rods, thus richening or leaning out the air/fuel mixture in accordance with changes in air pressure.

### **Aneroid barometer**

A device to determine atmospheric pressure with the use of a vacuum chamber or syphon bellows

### **Aneroid-type thermostat**

An older style thermostat located in the engine coolant system. It has a metal expandable bulb partially filled with acetone, alcohol, or another volatile liquid. As the coolant reaches operating temperature, the liquid in the bulb will boil and expand the bulb, closing the valve to allow coolant to the radiator.

### **ANFAC**

Acronym for **Asociacion Espanola de Fabricantes de Automoviles y Camiones** (Spain).

### **ANFAVEA**

Acronym for **Associação Nacional de Veículos Automotores** (Brazil).

### **ANFIA**

Acronym for **Associazione Nazionale Fra Industrie Automobilistiche** (Italy).

### **Angels**

Radar echoes from an invisible and sometimes undefined origin. High-flying birds, insect swarms, and certain atmospheric conditions can be responsible.

### **Angle**

See

- **Ackermann angle**
- **Approach angle**
- **Attack angle**
- **Azimuth angle**
- **Blade angle**
- **Bunching angle**
- **Cam angle**
- **Caster angle**
- **Departure angle**
- **Dwell (angle)**
- **Front triangle**
- **Heading angle**
- **Ignition angle**
- **Included angle**

- **Knuckle Angle**
- **Lock angle**
- **Offset angle**
- **Opening angle**
- **Rake**
- **Ramp-over angle**
- **Rear triangle**
- **Roll angle**
- **Shallow angle**
- **Slip angle**
- **Spark angle**
- **Spark ignition angle**
- **Steep angle**
- **Steering angle**
- **Steering knuckle angle**
- **Swivel angle**
- **Thread angle**
- **Thrust Angle**
- **Tire deviation angle**
- **Tire slip angle**
- **Toe-in angle**
- **Triangle-split system**
- **Valve angle**
- **Yaw angle**

### **Angle bar**

An "L-shape" length of iron.

**See**

- **Angle iron**

### **Angle bearing**

A shaft-bearing in which the joint between base and cap is not perpendicular to the direction of the load, but is set at an angle.

### **Angle block**

1. A cylinder block that doesn't have a **Deck** at 90 degrees to the cylinders
2. A small wooden block used in woodwork to make joints, esp. right-angle joints, more rigid.

### **Angle bracket**

1. A bracket projecting from the corner of a building beneath the eaves, and not at right-angles to the face of the wall.
2. A bracket consisting of two sides set at right angles, often stiffened by a gusset. Also called ***gallows bracket***.

**Angle Clip**

A short piece of **angle bar**

**Angle Collar**

A ring made of **angle bar**

**Angled deck**

British term for **Canted deck**.

**Angledozer**

A **Bulldozer** with a blade able to be set in such a way to push material to the side of the road. Usually called a **Grader** or **Motor grader**.

**Angle elevation**

The vertical angle measured above the horizontal, from the surveyor's instrument to the point observed.

**Angle grinder****Angle grinder**

A power tool (driven by electricity or compressed air) which has **abrasive** discs. The tool helps to remove old paint or rough metal surface

**Angle iron**

Mild steel bar rolled to an L-shaped cross-section, used in structural work. Legs may be equal or unequal and leg lengths up to 800 mm are available. Also called **Angle**, **Angle bar**, **Angle steel**, and **L-iron**.

**Angle-nose pliers****Angle-nose pliers**

A pair of pliers with long jaws that are bent at right angles to aid in gripping something which cannot be reached with regular pliers.

### **Angle of advance**

1. The angle in excess of  $90^\circ$  by which the eccentric throw of a steam-engine valve gear is in advance of the crank.
2. The angle between the position of ignition and outer dead center in a spark-ignition engine, optimizes combustion of the fuel.

### **Angle of attack**

The angle between the **chord line** of an airfoil and the relative airflow. Also called (in error) **angle of incidence**.

### **Angle of contact**

The angle subtended at the center of a pulley by that part of the rim in contact with the driving belt.

### **Angle of Head**

In countersunk heads, the included angles of the conical underportion or bearing surface, usually 82 or 100 degrees.

### **Angle of lock**

The angle between the line through the center of the wheel seen from above when turning a corner and the same line when going straight.

### **Angle of thread**

See

- **Included angle of thread**

### **Angle parking**



**Angle parking**

A system of parking on the side of the street where the car is about 45 degrees from parallel with the edge of the street. The British term is ***echelon parking***

### **Angle screwdriver**

A tool that is shaped like the letter **L** and has a blade at either end.

### **Angle Sensor**

See

- **Crankshaft Angle Sensor**

### **Angle steel**

See

- **Angle iron**

### **Angle stone**

See

- **Quoin**

### **Angle valve**

Type of globe valve design, having pipe openings at right angles to each other. Usually, one opening is on.

### **Angular motion**

See

- **Rotation**

### **Angular thread**

See

- **Vee thread**

### **Angular velocity**

The angular displacement per unit time, measured in degrees per time or radians per time

### **Angular vibration**

Side to side movement or shimmy of a tire.

Also see

- **Dynamic balance**

### **Anhydrous**

A compound that does not contain any water. Ethanol produced for fuel use is often referred to as anhydrous ethanol, as it has had almost all water removed.

### **Anhydrous calcium sulphate**

Dry chemical made of calcium, sulphur, and oxygen (CaSO<sub>4</sub>)

### **Aniline**



An oily liquid poisonous ( $C_6H_5NH_2$ ) obtained especially by the reduction of nitrobenzene and used chiefly in organic synthesis (as of dyes)

### **Aniline Point**

The aniline point of a petroleum product is the minimum equilibrium solution temperature with an equal volume of freshly distilled aniline.

### **Anisotropy**

The characteristic of something (like a crystal) that when light or magnetism passes through it from one angle, it gives a different reading or measurement than when measured from a different angle because the molecules are arranged in a regular lattice which allow or inhibit the light or magnetism.

### **Anneal**

To remove hardness from metal by heating, usually to a red color, then allowing it to cool slowly. Unlike steel, copper is annealed by heating, and then plunging it into cold water. It is the reverse of **Hardening**.

### **Annealed**

**See**

- **Solution annealed**

### **Annealing**

Process of heat treating metal to get desired properties of softness and ductility (easily formed in to a new shape). For example heating and slow cooling of a piece of iron.

**Also see**

- **Back annealing**
- **Box annealing**
- **Bright annealing**
- **Full annealing**

### **Anniversary Billing**

A method of charging a client for the first month of storage and then if it remains in storage it will be charged a monthly rate due on the anniversary of its arrival.

### **Annual Inventory**

A physical count of all product in the warehouse done on a yearly basis.

### **Annular**

Something in the form of a ring.

### **Annular ball bearing**

A ball bearing with a non-adjustable inner and outer race or races.

### **Annular combustion chamber**

A gas turbine combustion chamber in which the perforated flame tube forms a continuous annulus within a cylindrical outer casing.

### **Annular electric brake**

An electric brake design in which the electromagnet is shaped like a circle or ring (annulus) inside the brake shoes.

### **Annular gap**

Something in a circular gap.

### **Annular gear**

A round gear with teeth cut on the outside for engagement with a **Pinion**. Usually shrunk fit on to a mating diameter, e.g., starter ring on automobile flywheel.

### **Annular Nail**

A nail with circular ridges along the shank (like screw threads, but not in a spiral pattern) used in securing a pallet.

### **Annulus**

A hollow gear which is in the form of a ring with internal teeth.

#### **Also see**

- **Epicyclic gearbox**

### **Anode**

1. In an electrical circuit it is the **Positive pole**. It is that part of an electrical circuit to which electrons are flowing.
2. The electrode at which oxidation occurs. For fuel cells that create potential, it is also the electrode towards which negative ions flow.
3. The positive terminal of an electrolytic cell
4. Zinc, aluminum, or an alloy that is attached to the hull of a vessel. As electric current moves from the vessel to the water, the anode is destroyed (oxidized). Without this anode shell, the metal hull plating would be dissolved by electrolysis.

#### **Also see**

- **Sacrificial anode**
- **Soluble anode**

### **Anodic Coating**

#### **See**

- **Hard Anodic Coating**

### **Anodize**

By electrolytic action, this is the process of **Coating** or plating a metal (usually **Aluminum**) with a thin protective film or material such as chrome. It is sometimes applied with colored dye.

### **Anodized**

An electroplating process commonly performed on aluminum parts, which forms a thin protective film on the surface of the metal. Anodizing is sometimes accompanied by the use of a colored dye, which gives a lustrous colored finish to the aluminum parts.

### **Anodizing**

The process by which a hard, non-corroding oxide layer is deposited on aluminum.

#### **Also see**

- **Hard anodizing**
- **Integral color anodizing**

**Anodizing bath**

A tub in which the anodizing process is performed.

**Anodizing tank**

A tub in which the anodizing process is performed.

**ANS**

Acronym for *anti-noise system*

**ANSI**

Acronym for *American National Standards Institute*

**ANSI assembly identifier**

The serial numbering scheme adopted by the ANSI to ensure uniqueness of an assembly serial number.

**Ant**

See

- [P. ant](#)

**Antagonizing screws**

See

- [Clip screw](#)

**Antechamber**

A small auxiliary combustion-chamber, used in some compression-ignition engines, in which partial combustion of the fuel is used to force the burning mixture into the cylinder, so promoting more perfect combustion.

**Antenna**

A device which pulls in radio reception. A **Power antenna** automatically rises when the radio is turned on and lowers when it is shut off. Some cars had the antenna wires imbedded in the **Windshield**. Also called *aerial*.

Also see

- [Adcock antenna](#)
- [Artificial antenna](#)
- [Balancing antenna](#)
- [Beam antenna](#)
- [Beavertail antenna](#)
- [Power antenna](#)
- [Quarter-wave Antenna](#)
- [Retractable Antenna](#)
- [Whip antenna](#)

**Antenna changeover switch**

Switch used for transferring an antenna from the transmitting to the receiving equipment, and vice versa, protecting the receiver.

**Antenna download**

Wire running from the elevated part or conductor of an antenna down to the transmitting or receiving equipment.

**Antenna load**

See

- [Dummy load](#)

### **Anthropogenic**

Made or generated by a human or caused by human activity. The term is used in the context of global climate change to refer to gaseous emissions that are the result of human activities, as well as other potentially climate-altering activities, such as deforestation.

### **Antibackfire valve**

See

- [Anti-backfire valve](#)

### **Anti-backfire valve**

(Anti-BFV) Valve used in [Air injection reaction](#) ( [Exhaust emission control](#)) system to prevent backfiring during the period immediately following sudden [Deceleration](#) by diverting the air coming from the [Air pump](#) away from the [Exhaust ports](#). Otherwise the [Exhaust gases](#) which contain unburned [Gasoline](#) could mix with fresh air and cause unwanted backfiring.

Also see

- [Air bypass valve](#)
- [Secondary Air Anti-backfire Valve](#)

### **Anti-BFV**

Acronym for [Anti-backfire valve](#).

### **Anti-chip coating**

A resilient coat of *paint* between the primer and the top coat to protect the body shell from chipping damage caused by gravel or stones.

### **Anticline**

An area of the earth's crust where folding has made a dome like shape in the once flat rock layers. Anticlines often provide an environment where natural gas can become trapped beneath the earth's surface, and extracted.

See also

- [Trap](#)
- [Permeability](#)
- [Porosity](#)

### **Anti-corrosion**

A substance used to protect against rust.

Also see

- [Nordic Anti-Corrosion Code](#)

### **Anti-Corrosion Code**

See

- [Nordic Anti-Corrosion Code](#)

### **Anti-corrosion warranty**

Manufacturers usually state that all body sheet metal components are warranted against rust-through corrosion for 6 years or 160,000 kilometers, whichever comes first.

### **Anti-corrosive**

That which prevents or limits corrosion.

### **Anti-dazzle mirror**

A mirror that can be set to reduce the glare of the lights from a vehicle following your vehicle.

Also see

- [Dimming mirror](#)

### **Anti-dieseling solenoid**

See

- [Idle stop solenoid](#)

### **Antidive**

See

- [Anti-dive system](#)

### **Anti-dive**

See

- [Anti-dive system](#)

### **Anti-dive system**

A **Dive** is the action of the front of the vehicle to point downward during braking. The **Suspension** in cars is designed to remove this tendency.

### **Anti-drum compound**

A sticky material which is applied to the inside of panels to reduce the noise caused by vibration or *drumming*

### **Antifouling composition**

A substance applied in paint form to ships' bottoms and structures subject to the action of sea water, to discourage marine growths.

### **Antifreeze**

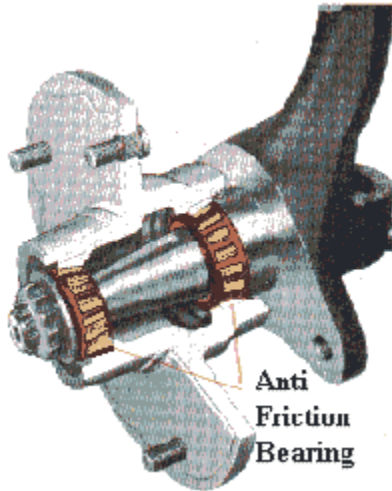
A chemical (usually **Ethylene glycol**) added to the **Cooling system** to prevent the **Coolant** from freezing in cold weather. It also inhibits the formation of rust and other deposits which may clog the **Radiator** and other cooling passageways. Its **Resistance** to freezing is better with a mix of 50-50 with water than 100% antifreeze.

### **Anti-friction bearing**

See

- **Antifriction bearing**

### Antifriction bearing



### Antifriction bearing

A bearing containing **Rollers**, needles, or balls plus an inner and outer **Race**. The bearing is designed to roll instead of slide thus minimizing **Friction** between two moving parts. To avoid disintegration, the bearing must use lubrication (i.e., **Wet friction**)

### Anti-friction metal

See

- **White metal**

### Anti-g

Resistant to the effects of high acceleration, esp. of an astronaut's equipment.

### Anti-g suit

A close-fitting garment covering the legs and abdomen. When inflated, it equalizes the pressure especially around the head and heart during high-speed maneuvers. Colloquially, *g-suit*.

### Anti-icing

The process of applying chemicals such as salt brine, liquid calcium chloride, or calcium magnesium acetate on the ice-covered road surface

### Anti-knock additive

See

- **Anti-knock agent**

### Antiknock agent

See

- [Anti-knock agent](#)

### Anti-knock agent

A substance like [Tetraethyl lead](#) which is added to [Gasoline](#) to raise the [Octane number](#) and reduce the gasoline's tendency to detonate, [Knock](#), or [Ping](#). In [Unleaded gasoline](#), [Tetraethyl lead](#) is not used because of its environmental danger.

### Anti-knock agents

See

- [Anti-knock agent](#)

### Anti-knock index

(AKI) The measure of the anti-knock properties of a brand and type of gasoline. It is defined as half the sum of the research octane number (RON) and motor octane number (MON). This is the number posted on the retail gasoline pumps normally indicating 87, 89, or 92 octane. Racing gasoline have AKI's from 100 to 118.

### Antiknock substances

Substances like lead (IV) ethyl added to fuel to lessen its tendency to detonate or *knock* in an engine.

### Antiknock value

The relative immunity of a volatile liquid fuel from detonation in a gasoline engine as compared with some standard fuel.

Also see

- [Octane number](#)

### Antilift

See

- [Anti-lift](#)

### Anti-lift

Lift is the action of the rear end of the vehicle to rise during braking. The [Suspension](#) in cars is designed to remove this tendency.

### Antilock brake

(ABS)

See

- [Anti-lock brake system](#)

### Anti-lock brake

(ABS)

See

- [Anti-lock brake system](#)

### **Anti-lock brake controller**

(CAB) Chrysler Corporation's term for the electronic control unit.

### **Anti-lock brake system**

(ABS) A device which senses that one or more of the wheels are locking up during braking.

- It monitors the rotational speeds of the wheels and reduces hydraulic pressure to any wheel it senses locking up.
- It is controlled by both mechanical and electronic **components**.
- When you apply the brakes, the ABS will regulate the flow of **brake fluid** being delivered to the brake **calipers**.
- It must be remembered that a wheel cannot be steered unless it is rolling; so if the wheel is locked up, there is no steering control.
- By the use of electronic **computers**, the brakes rapidly alternate (at a rate of 30 times per second) from full pressure to full release.
- This process will also alternate from the left-front wheel and the right-rear wheel and switch to the right-front wheel and left-rear wheel.
- In this way both maximum braking and maximum steering control is allowed during braking.
- Before the advent of ABS, drivers were advised to pump the brakes to maintain the same effect.
- However, the human foot cannot pump the brakes faster than the **computer** control.
- Also, steady application of the brakes without ABS may cause brake failure (i.e., **Brake fade**) because of the excess heat.
- Never pump the brakes if you have ABS.
- When you firmly apply the brakes with ABS, you may feel a pulsing sensation and hear a banging noise.
- The abbreviation ABS comes from the German *anti blockier system*.
- Sometimes called *anti-skid brakes*.

### **Anti-lock braking system**

See

- **Anti-lock brake system**

### **antimony**

(Sb) A pure element, metal, used in alloys

### **Antimony alloy**

A combination of antimony and another substance like aluminum used in bearings and battery plates

### **Antimony black**

When antimony is ground to fine powder, it has a black metallic color.

### **Anti-noise**

See

- **Anti-noise system**



### **Anti-noise system**

(ANS) A noise counteraction system. This is a sophisticated system which has a number of small microphones placed around the vehicle to detect driving noises. A computer microprocessor analyzes these noises and generates matching counter-frequencies which are sent to small speakers located in the passenger compartment. In this way the road noises are cancelled or erased.

### **Antipercolation valve**

See

- **Anti-percolation valve**

### **Anti-percolation valve**

A device for venting vapors from the main discharge tube, or the well, of a **Carburetor**. The vented vapors are not released into the atmosphere, but rerouted into an evaporative emission **Canister** where they are stored until the next time the vehicle is started. Thus it provides a richer mixture needed for starting.

Also see

- **Percolation**

### **Antique Car**

1. A vehicle built prior to 1915 sometimes called the brass era because of the widespread use of fancy brass fittings and brass lanterns that were a natural addition to the new "horseless carriage." The Brass era lasted from around 1905 to 1914. This was the beginning of mass produced affordable vehicles for the common public rather than the domain of the elite.
2. A vehicle built between 1880 and 1916 (inclusive)
3. A vehicle (including hardtop or convertible) built before 1950 and in original form with no modern technology, equipment, or refinements except wheels.

Also see

- **classic car**
- **collectible car**
- **late model car**
- **milestone car**
- **modified car**
- **muscle car**
- **street rod**
- **vintage car**

### **Anti-rattle spring**



### clutch antirattle spring clip

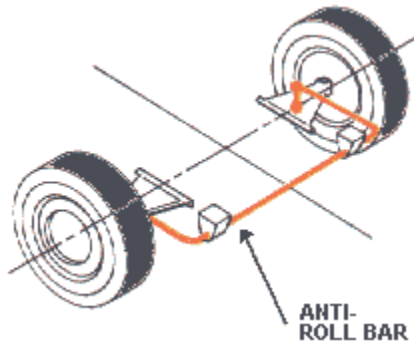
- A specially shaped wire that prevents the clutch plate and spring from making noise when no pressure is applied to the plate.
2. A device that attaches to disc brake pads to keep them from making a rattle noise when the brakes are not applied.
  3. A component in disc brakes shaped like the letter **X** and made of spring steel. It applies radial pressure to the brake pads to prevent rattling. Also called **spreader spring**.

### Antiroll bar

See

- **Anti-roll bar**

### Anti-roll bar



### Anti-roll bar

Sometimes called the **anti-sway bar**, **stabilizer bar**, or even (incorrectly) **roll-bar**. It is usually a round bar which connects the left wheel **Suspension** assembly with the right side. It may be found at the front and/or rear. Its main function is to keep both wheels rolling at the same rate when meeting bumps; but it also affects handling. A front anti-roll bar increases **Understeer** and a rear bar increases **Oversteer**.

### Antiroll device

See

- **Brake anti-roll device**

## Anti-roll device

See

- [Brake anti-roll device](#)

## Anti-rust treatment

See

- [Rustproofing](#)

## Antisag bar

A vertical rod connecting the main tie of a roof truss to the ridge to support it against sagging under its own weight.

## Antiscuffing

The ability of a precision insert bearing to resist scuffing or scratching the shaft journal in the event that the oil surface skin is destroyed.

## Antiseize compound

A paste that is applied to metal parts to keep them from sticking to other metal parts, particularly threaded surfaces such as spark plug threads and wheel studs and bolts

## Anti-siphon bleeds

Small holes drilled into the cluster to prevent main-system fuel from continuing to flow when the throttle is closed, stopping airflow through the carburetor.

## Antiskid

See

- [Anti-skid](#)

## Anti-skid

(ASBS) A computer controlled automotive device which senses when one or more of the wheels are locking up during braking. It eases up on the amount of **Hydraulic** pressure to that wheel. It must be remembered that a wheel cannot be steered unless it is rolling; so if the wheel is locked up, there is no steering control. By the use of electronic **Computers**, the brakes rapidly alternate from full power to none so that both maximum braking and maximum steering control is allowed. If you jam on the brakes, you will feel a pulsing sensation. Sometimes called **Anti-lock brakes**.

## Antiskid brake system

A non-standard term for **Wheel slip brake control system**

## Antismog device

A special part or system designed to reduce or eliminate emission of noxious gases from exhaust of engine.

## Antisolar glass

Glass which absorbs heat from sunshine and reduces glare, but transmits most of the light.

## Antisound

Sound signal with same amplitude but opposite phase of some unwanted sound signal so that both signals cancel each other when superimposed.

## Anti-spin regulation

(ASR) The control or prevention of wheelspin under power, normally by means of electronic sensing and in conjunction with anti-lock brakes.

### **Anti-spin regulation traction control system**

(ASC) The system which prevents wheelspin.

**Also see**

- **Anti-spin regulation**

### **Anti-spray flap**

**See**

- **Mudflap**

### **Antisquat**

**See**

- **Anti-squat system**

### **Anti-squat**

**See**

- **Anti-squat system**

### **Anti-squat system**

**Squat** is the action of the rear end of the vehicle to point downward during hard **Acceleration**. The **Suspension** in cars is designed to remove this tendency. Contrasts with **Anti-dive system**.

### **Anti-squeal shim**

A shim (metal plate) placed behind the brake piston or the brake pad to reduce noise when the brakes are applied.

### **Anti-stall dashpot**

A diaphragm unit mounted on the carburetor that allows air to escape slowly from its vacuum chamber to prevent throttle plate(s) in the carburetor from closing too suddenly--and stalling the engine--during deceleration.

### **Antisurge valve**

A valve for bleeding off surplus compressor air to suppress the unstable airflow due to **Surge** in a gas turbine engine.

### **Anti-sway bar**

**See**

- **Anti-roll bar**

### **Anti-theft system**

Any device (mechanical or electrical) which tends to reduce the theft of a vehicle. It may involve an alarm system, ignition lockouts, steering locks, steering wheel locks, transmission locks, and/or wheel locks.

### **Anti-tipper**

An arm, usually with a small wheel attached at the outer end, which is secured to the back of a wheelchair to prevent the chair from falling on its back and thereby injuring the patient.

## Antitippers

See

- **Anti-tipper**

## Anti-vibration mounting

1. Because the engine, transmission, differential, and other components tend to vibrate when in motion, noise increases and there is possible wear at the points of contact with the frame members. Rubber blocks are used to cushion the vibration at the mounting points.
2. Rubber springs designed to absorb vibrations from engines, etc. Care needed in design and materials selection to match vibration frequency with main damping peak of elastomer.

## AO

Acronym for **Air Over**

## AOD

Acronym for **Automatic Overdrive**

## AODE

Acronym for **Automatic Overdrive Electronic Transmission**

## AODE-W

Acronym for **Automatic Overdrive Electronic Wide** (ratio transmission)

## AOT

Acronym for **Automatic Overdrive Transmission**

## AP

1. Acronym for **Actual Power**

See

- **Power factor**

2. Acronym for **Accelerator Pedal**

## A-panel

The side panel used to fill the gap between the rear edge of the front fender and the front edge of the doors.

## APC

Acronym for *automatic performance control*

## Ape hangers

A term coined at the height of the custom-bike movement to describe tall handlebars that forced the rider to reach skyward to grasp the controls, making the rider adopt an ape-like posture.

## Aperture

A recess in which the propeller is located.

**See**

- **Door Aperture**
- **Lamp Aperture**
- **Valve Aperture**
- **Windshield Aperture**

## Aperture panel

A large side panel of a vehicle making up the rear fender, door frame, and side window frame.

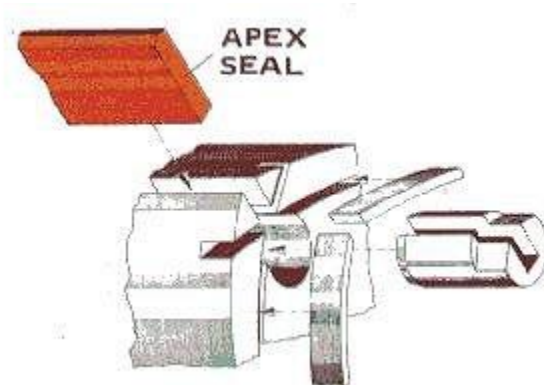
**Also see**

- **Sunroof aperture panel**

## Apex

The top of a triangle. In racing, it is the point or area closest to the inner corner.

## Apex seal



## Apex seal

A **Wedge** shaped device found on the tips of the triangular **Rotor** in rotary (Wankel) engines. Its purpose is to prevent the escape of compressed gas or **Combustion** gases. It may also release engine heat.

## API

Acronym for **American Petroleum Institute**, the organization that classifies oil. **API site**

**Also see**

- **Engine oil classification**

### **APIA**

Acronym for **Association of Automotive Manufacturers and Importers** (Romania).

### **API Gravity**

Gravity (weight per unit volume) of oils as measured by the API scale. This standard was adopted by the API 5/4/22 as the standard for the American petroleum industries. The measuring scale is calibrated in terms of degrees API

### **API scale**

Acronym for **American Petroleum Institute scale**. Scale of relative density, similar to Baumé scale. Degrees API= $(141.5/s)-131s$ , where  $s$  is the relative density of the oil against water at 15°C.

### **A pillar**

**See**

- **A-post**

### **A-pillar**



### **A-pillar**

When you look at the side of a car, the pillar that is attached to the **Windshield** and supports the roof is called the **A-post** or **A-pillar**. There are two to each car. Generally the middle post is the **B-post** and the back post is the **C-post**.

### **Apollo**

The name of a number of vehicles such as the following:

- Gumpert Apollo -- a German sports car
- **Buick Apollo** -- a compact car built from 1973 to 1975

- Apollo -- A car made in the U.S. (1906-07)
- Apollo -- A car made in Germany (1910-27)
- Apollo -- A car made in Britain (1971)
- **Apollo GT** -- A sports car

### Apollo (Buick)

A compact car based on the GM front engine/rear drive "X" car platform and built by **Buick** from 1973-75 that was essentially a re-badged Chevrolet **Nova** like the Oldsmobile **Omega** and Pontiac **Ventura** and later the Cadillac **Seville**.

### Apollo GT

A vehicle brand of which the 1963-66 models are **milestone cars**.

### A post

See

- **A-post**

### A-post



### A-post

When you look at the side of a car, the post that is attached to the **Windshield** and supports the roof is called the **A-post** or **A-pillar**. There are two to each car. Generally the middle post is the **B-post** and the back post is the **C-post**.

### Apparatus

See

- **Air-cooled apparatus**
- **Beckmann apparatus**
- **Distilling Apparatus**
- **Vacuum Sealing Apparatus**

### Apparent power



1. The square root of the sum of the squares of the **Active** and the **Reactive powers**.
2. The product of the voltage (in volts) and the current (in amperes). It comprises both **Active** and **Reactive power**. It is measured in **volt-amperes** and often expressed in **kilovolt-amperes** (k VA) or **megavolt-amperes** (MVA).

#### Also see

- **Power**
- **Real Power**

#### Appendages

Structures extending beyond the main hull. They include items like shafting, rudder, bossing, struts, and bilge keels.

#### Apple paint

##### See

- **Candy apple paint**

#### Appliance

1. A piece of equipment, commonly powered by electricity, used to perform a particular energy-driven function.

##### See

- **Cogeneration appliance**
2. A British term for a **Fire engine**.

#### Appliance flue

The passage(s) within an **Appliance** through which combustion products pass from the combustion chamber of the appliance to the outlet of the appliance.

#### Application

The act of applying adhesives and coatings. The principal methods of application are:

- brushing
- spraying
- dipping
- stenciling
- flowing
- stamp-padding
- roll coating
- knife coating
- squeegeeing
- troweling with spatula or notched trowel

For sealers:

- spatula
- caulking gun
- flow gun
- pressure extrusion units
- spray gun

**Applicator**

A tool for putting something on something else, e.g., a spreader or brush.

**Applied Fender**

A fender that is fastened onto or stamped into the surface of the body.

**Applied stress**

The stress induced in a member under load.

**Applied Trim**

Trim that is fastened onto or stamped into the surface of the body.

**Appiqué**

(appliqué) A sticker or decal which is applied to the body panel of a vehicle.

**Apply**

To put something on something else.

**Approach**

A secondary road leading up to a highway or to a bridge.

**Also see**

- **Arc of approach**

**Approach angle**

1. The most sharply angled incline the vehicle can make without its front scraping the ground. Measured in degrees, it's the angle formed on one side by the horizontal axis, and on the other by a straight line connecting the forward edge of the front tire and the most prominent front-end feature extending beyond that line -- the bumper, fog lamps, tow hook, etc.
2. In side-view, the angle between the ground and a line, ahead of the vehicle, joining the periphery of the front wheel and (typically) the front bumper or other low component. It represents the size or steepness of a slope or obstacle that can be approached or climbed without striking bodywork.

**Approval certificate**

**See**

- **Type approval certificate**

**Approved**

Acceptable to the authority having jurisdiction.

**Aprilia**

A well-regarded Italian motorcycle manufacturer, known for 250 GP race bikes that are tiny and lightweight.

**Apron**

1. The paved area directly below the racing surface that separates the track from the infield.
2. The panel under the vehicle's doors or the panel acting as an air dam at the front of a vehicle.
3. A **Kick panel**.
4. A firm surface of concrete or *tarmac* laid down adjacent to aerodrome buildings to facilitate the movement, loading and unloading of aircraft.
5. The area outside the warehouse or loading dock door which is used by delivery vehicles to park or position for loading and unloading. The apron height matches the height of the floor of the trailer and makes it easy to load and unload merchandise.

#### Also see

- **Fender splash apron**
- **Front apron**
- **Rear apron**
- **Rear valance**
- **Wing Splash Apron**

#### APS

1. Acronym for **Absolute Pressure Sensor** (GM)
2. Acronym for **Atmospheric Pressure Sensor** (Mazda)

#### APT

Acronym for **adjustable part throttle**

#### APTS

Acronym for **Advanced Public Transportation Systems**

#### APU

Acronym for **Auxiliary power unit**

#### APWA

Acronym for **American Public Works Association**

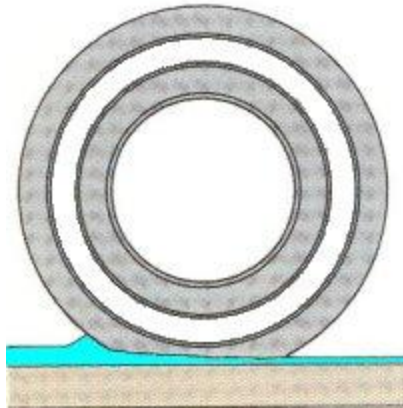
#### AQL

Acronym for **Acceptable quality level**.

#### AQMD

Acronym for **Air Quality Management District**

#### Aquaplaning



### Aquaplaning tire

Also called **hydroplaning**. A dangerous tendency for a tire to ride on a thin film of water, thus creating a loss of **Driver** control until tire contact with the road surface returns.

### Aquatread

A **Tread** pattern of a tire designed to dissipate water lying on the road and provide good **Traction** in the rain.

### ARA

Acronym for **Amsterdam-Rotterdam-Antwerp**

### Aramid fiber

A synthetic product used as a reinforcing agent in **Brake linings**. Aramid fiber has impressive wear properties.

### Arbitrary

1. Charge in addition to regular freight charge to compensate for unusual local conditions.
2. Fixed amount accepted by a carrier when dividing joint rates.

### Arbor

1. A rotating shaft in a lathe or drill.
2. Cylindrical or conical shaft on which a cutting tool or part to be machined is mounted.
3. The axis or shaft upon which a rotatable part is mounted the shaft upon which a gear or wheel is mounted.

### Also see

- **Mandrel**

### Arc

1. The discharge of electric **Current** across a gap of two **Electrodes**. The term given to the flow of electricity through a gaseous space or air gap.
2. A welding term referring to the flow of electricity through the air which produces high temperatures.

#### Also see

- **Arc welding**
- **Carbon Arc**
- **Shielded arc**
- **Short arc**
- **Spray arc**
- **Track arc**

#### ARC

1. Acronym for **Aeronautical Research Council** in the UK.
2. Acronym for **Ames Research Center** in the USA
3. Acronym for **Automatic Ride Control**

#### Arc blow

A welding term referring to the tendency for an arc to wander or whip from its normal course during arc welding. It is caused by magnetic changes.

#### Arc crater

1. Depression formed in electrodes between which an electric arc has been maintained.
2. In arc welding, the depression which occurs in the weld metal.

#### Arc cutting

A welding term referring to making a kerf in a metal using the energy of an electric arc.

#### Arch

##### See

- **Fender arch**
- **Flared wheel arch**
- **Wheel arch**
- **Wing Arch**

#### Arch culvert

Bridge feature that resembles the top half of a large tube. The arch shape makes it easier for fish to swim down the creek that passes under the arch.

#### Arch extension

##### See

- **Wheel arch extension**

## Architectural acoustics

The study of how sound is transmitted and received in various parts of a building or even a vehicle, thus involves the placement of speakers.

## Arch protector

See

- **Undershield**

## Arcing

1. The action of electricity when it leaps the gap between two **Electrodes**. Usually causes premature wear of breaker points.

Also see

- **Electrical Arcing**
2. A faulty paint spraying technique where the spray gun is not moved along the panel surface at a uniform distance. Instead it is moved toward the panel when starting and moved away toward the end of the panel. The result of this technique is an uneven application of paint.
  3. A process where the brake shoes are ground to the proper curvature for the drums they are to be used with. Modern brake shoes are pre-arc'd.

## Arc Lamp

See

- **Automatic Arc Lamp**

## Arc of approach

The arc on the **Pitch circle** of a gearwheel over which two teeth are in contact while approaching the pitch point

## Arc of contact

The arc on the **Pitch circle** of a gearwheel over which two teeth are in contact.

## Arc of recess

The arc on the **Pitch circle** of a gearwheel over which two teeth are in contact while receding from the pitch point.

## Arc process

See

- **Bredig's arc process**

## Arc-suppression coil

### Arc suppressor

A device for automatically grounding the neutral point of an insulated-neutral transmission or distribution line if an arc to ground occurs. Also called **arcing-ground suppressor**

### Arc welding

Welding by using an electric **Current** to melt both the metal to be welded and the welding rod or **Electrode** that is being added.

**Also see**

- **Automatic arc welding**
- **Inert arc welding**
- **Pulse arc welding**

## **Area Cell**

**See**

- **Active Area Cell**

## **Arm**

A part attached to or projecting from something.

**Also see**

- **A-arm**
- **Actuator arm**
- **Adjustable rocker arm**
- **Ball joint rocker arm**
- **Breaker arm**
- **Branch**
- **Check arm**
- **Brush-holder arm**
- **Contact arm**
- **Control arm**
- **Crankarm**
- **Door check arm**
- **Drop arm**
- **Flex arm suspension**
- **Forked rocker arm**
- **High lift rocker arm**
- **Idler arm**
- **Knuckle arm**
- **Lateral arm**
- **Leading arm**
- **Long and short arm suspension**
- **Pitman arm**
- **Radius arm**
- **Rocker arm**
- **Rocker arm cover**
- **Rocker arm shaft**
- **Rotor arm**
- **Semi-trailing arm**
- **Stay**

- **Steering arm**
- **Steering gear arm**
- **Steering knuckle arm**
- **Throttle arm**
- **Tie rod arm**
- **Torque arm**
- **Track control arm**
- **Trailing arm**
- **Transverse arm**

## Armature

1. In a **Relay**, **Regulator**, **Horn**, etc., it is the movable part of the unit which indicates the presence of electric current as the agent of actuation.
2. Piece of low-reluctance ferromagnetic material (keeper) for temporarily bridging the poles of a permanent magnet, to reduce the leakage field and preserve magnetization.
3. In a **Starter** or **Generator**, it is the portion that revolves between the **Pole shoes**, made up of wire windings of copper on an iron **Core** or axle. When it revolves, an electric **Current** is induced.
4. Part of an electric motor, generator, or other device moved by magnetism
5. The wooden, metal, or hard-foam supporting structure under a clay model.

### Also see

- **Bar-wound armature**

## Armature brake

A mechanical or electrical component in a starter used to stop the armature movement after the starter motor has been switched off.

## Armature end plate

The end plate of a laminated armature core. It is of sufficient mechanical strength to enable the laminations to be clamped together tightly to prevent vibration. Also called **Armature head**

## Armature head

See

- **Armature end plate**

## Armature reaction

The electrical current that flows in the armature winding of a DC motor tends to produce magnetic flux in addition to that produced by the field current. This effect, which reduces the torque capacity, is called armature reaction and can affect the commutation and the magnitude of the motor's generated voltage

## Armature relay

A relay operated electromagnetically, thus causing the armature to be magnetically attracted.



**Armature shaft**

The primary shaft on which the armature is mounted in a starter or generator.

**Armature winding**

The complete assembly of conductors carried on the armature and connected to the commutator or to the terminals of the machine.

**Arm cover**

See

- [Rocker arm cover](#)

**Arme**

See

- [Beton Arme](#)

**Armor plate**

Traditionally, specially heavy alloy steel plate hardened on the surface; used for the protection of fighting vehicles and ships. There is also a form of armor plate based on aluminum alloy particularly suitable for fast moving military vehicles.

**Armor-plated**

Panels and glass that are extra thick to be bullet-proof.

**Armour**

British spelling of *armor*

**Armrest**

A projection upon which the occupants can rest or support their arms. Usually located on the door panel and sometimes in the center of the front seats or the center of the rear seat.

**Arms**

See

- [Bracket arms](#)
- [Control arm](#)
- [High lift rocker arms](#)

**Arm shaft**

See

- [Rocker arm shaft](#)

**Armstrong**

A colloquial term for manual steering. Without power assist, steering will need a strong arm, thus the name.

**Armstrong-Siddeley**

A vehicle brand of which the 1924-1933 Model 30 and 1933-1939 Special with required application are [classic cars](#).

**Arm Stud**

See

- **Notched Rocker Arm Stud**

### Arm suspension

See

- **Flex arm suspension**
- **Long and short arm suspension**
- **Semi-trailing arm suspension**
- **Short Arm long Arm Suspension**
- **Swing arm suspension**

### Arnolt

See

- **Arnolt Bristol**

### Arnolt Bristol

A vehicle brand of which the 1952-62 models are **milestone cars**.

### A road

1. Road designation used in Britain
  - They do not have controlled access like **M roads**
  - they range from one-lane roads to two-lane divided highways called "**dual carriageways**"
  - They are the main routes between towns

Also see

- **B road**
- **M road**

### Aromatic Hydrocarbons

See

- **Polynuclear Aromatic Hydrocarbons**

### Aromatics

Hydrocarbons based on the ringed six-carbon benzene series or related organic groups. Benzene, toluene and xylene are the principal aromatics, commonly referred to as the BTX group. They represent one of the heaviest fractions in gasoline. They are called **aromatics** because many of their derivatives have sweet or aromatic odors.

### Array

See

- **Binomial Array**

### Arrestance

See

- **Synthetic Dust Weight Arrestance**

### Arrester

A device which prevents a certain action. For example, a **Spark arrester** is a special pipe mounted in the end of the **Exhaust pipe** which prevents any burning gasses from coming out with the possible danger of igniting any combustibles in the area (i.e., setting the forest on fire).

Also see

- **Spark Arrester**
- **Vibration Arrester**

### Arrival Notice

A shipping report given to the consignee indicating the arrival of freight.

### Arrive

The finish line of a **Brevet** or **Randonnée**.

### ARS

1. Acronym for **Air Ride Suspension** -- a suspension system in which the load is supported on air-filled rubber bags rather than steel springs. The engine's air compressor fills the reservoir tanks which supplies air for the suspension and the air brake system.
2. Acronym for **Automatic Restraint System**

### Arterial highway

A major thoroughfare, used primarily for through traffic rather than for access to adjacent land, that is characterized by high vehicular capacity and continuity of movement.

### Articulated

Jointed. An articulated rod is made of two sections with a moveable **Joint** which permits its shape to go from perfectly straight to right angle.

Also see

- **Articulated bus**
- **Articulated truck**

### Articulated bus



**Articulated bus**

A large public passenger bus, usually more than 55 feet in length, with two connected passenger compartments with an accordion-like section between them which flexes or bends to allow the bus to turn sharply around curves or corners as it bends at that part of the bus.

### **Articulated mounting**

A term used where parts are connected by links and links are anchored to provide a double hinging action.

### **Articulated Pistons**

Two-piece pistons incorporating an entirely separate piston crown or dome with a separate skirt, and linking the two together with the piston pin. Many 1994 and later engines incorporate steel crown/aluminum skirt articulated pistons.

### **Articulated truck**

A large truck with two sections to allow it to turn sharply around corners.

### **Articulation**

1. The space between the power unit and trailer that allows the combination to pivot and turn corners.
2. The ability of one axle to move -- left wheel up, right wheel down or vice versa -- relative to the chassis or its corresponding axle. It is a measure of the ease with which off-road wheels can maintain traction and control in excessively rough terrain.

### **See**

- **Axle Articulation**

### **Artificial aging**

The method of speeding up the process of hardening by subjecting the substance (e.g., aluminum alloy) to a change in temperature or pressure.

### **Artificial antenna**

An electrical unit which simulates an antenna without actually transmitting or receiving a signal. It is used to check or test radios and transmitters.

### **Artificial rubber**

### **See**

- **Synthetic rubber**

### **A/T**

Acronym for **Automatic Transmission**

### **ATA**

1. Acronym for **American Trucking Association** -- a national federation of independent and autonomous truck carrier conferences and state trucking associations. Includes Regular Common Carrier Conference, National Tank Truck Carriers Conference.
2. Acronym for **Air Transport Association**

## ATB



### All-Terrain Bike

1. Acronym for **All-terrain bike**. Sometimes called MTB (mountain bike), but ATB is the preferred acronym.
2. Acronym for **Aeration test burner**

## ATC

1. Acronym for **Automatic temperature control**.
2. Acronym for **air-traffic control**
3. Acronym for **Automatic Traction Control** -- an optional feature based on ABS which prevents spinning of the drive wheels under power on slippery surfaces by braking individual wheels and/or reducing engine throttle. Also called **ASR**, an acronym sometimes loosely translated from the German as anti-spin regulation.

## ATDC

See

- **After top dead center**

## ATE

Acronym for **Automatic test equipment**

## ATF

Acronym for **Automatic Transmission Fluid**

## A thread

See

- **Class A thread**

## Athwart ship

Across the ship, at right angles to the fore-and-aft centerline.

## ATIS

Acronym for **Advance Traveler Information Systems**

## ATM

1. Acronym for **Standard atmosphere**
2. Acronym for **Actuator Test Mode**

### Also see

- **Atmospheric pressure**

## Atmosphere

### See

- **Atmospheric pressure**
- **Standard Atmosphere**

## Atmosphere Burner

### See

- **Injection burner**

## Atmospheric acoustics

The study of how sound is transmitted in the air at different altitudes, weather, humidity, and atmospheric pressure.

## Atmospheric air

Air under the prevailing atmospheric conditions.

## Atmospheric corrosion

**Corrosion** caused by the action of the gaseous elements in the atmosphere including oxygen's rusting action on iron and the effects of **acid rain**

## Atmospheric crude oil distillation

The refining process of separating crude oil components at atmospheric pressure by heating to temperatures of about 316°C to 400°C (depending on the nature of the crude oil and desired products) and subsequent condensing of the fractions by cooling.

## Atmospheric distillation unit

The primary distillation unit that processes crude oil (including mixtures of other hydrocarbons) at approximately atmospheric conditions. It includes a pipe still for vaporizing the crude oil and a fractionation tower for separating the vaporized hydrocarbon components in the crude oil into fractions with different boiling ranges. This is done by continuously vaporizing and condensing the components to separate higher boiling point material. The selected boiling ranges are set by the processing scheme, the properties of the crude oil, and the product specifications.

## Atmospheric dust spot efficiency

A measurement of a device's ability to remove atmospheric air from test air

## Atmospheric engine

Earliest form of practical steam engine, in which a partial vacuum created by steam condensation allowed atmospheric pressure to drive down the piston.

## Atmospheric gas-burner system

A natural-draft burner injector, in which the momentum of the gas passing into the injector throat inspirates part of the air required for combustion.

### **Atmospheric pressure**

1. The force due to atmosphere per unit area. Atmospheric pressure at sea level is 14.7 psi absolute; it decreases as altitude increases.
2. The pressure of the weight of air and water vapor on the surface of the earth at sea level, namely 760 mm mercury column or 101.3 kPa.

### **Atmospheric-suspended power chamber**

A booster power chamber with atmospheric pressure on both sides of its diaphragm when the brakes are not applied.

### **ATMS**

Acronym for **Advance Traffic Management Systems**

### **Atomic Mass**

See

- **Relative Atomic Mass**

### **Atomization**

See

- **Lateral Atomization Orifice**
- **Rotational Atomization Unit**

### **Atomization characteristics**

The ability of an oil to be broken up into a fine spray by some mechanical means.

### **Atomize**

The process of changing liquid to minute particles or a fine spray. The extent to which a spray gun breaks up paint into a fine mist, fog, or spray.

### **Atomized powder**

A powder produced by the dispersion of molten metal or other material by spraying under conditions such that the material breaks down into powder.

### **Atomizer**

A device for producing a fine spray such as used on a paint spray gun.

### **Atomizing pressure**

The pressure needed to atomize a liquid like paint.

### **Atomospherics**

British term for **strays**

### **ATR**

Acronym for **Attenuated total reflection**

### **A-Train**

Colloquial term for a truck tractor pulling more than one trailer connected by **A-dollies**

### **Atramentizing**

A corrosion protection process in which steel is coated with phosphate using a zinc phosphate solution at 90°C.

## ATS

Acronym for **Air temperature sensor**

## Attachment

A fitting or accessory to be used in conjunction with a tool, such as a grinding disc for use with an electric drill.

### Also see

- **Inner attachment face**
- **Split bearing attachment**

## Attachment face

### See

- **Inner attachment face**

## Attack

1. Chemical corrosion of metal.
2. To damage something by corrosion.

### Also see

- **Angle of attack**
- **Pickling attack**

## Attack angle

The angle of the rear spoiler where it is most effective against lift.

## Attendant parking

Parking which is left to a valet and supervised by an attendant.

## Attenuated total reflection

Spectroscopic method of analyzing thin films on reflective substrates, esp. using infrared radiation.

## Attenuation

1. A reduction of noise or emission.
2. General term for reduction in magnitude, amplitude, or intensity of a physical quantity, arising from absorption, scattering, or geometrical dispersion. The latter, arising from diminution by the inverse square law, is not generally considered as attenuation proper.

## Attenuation coefficient

The coefficient which expresses energy losses of electromagnetic radiation due to both absorption and scattering in a medium. Relevant to narrow beam conditions. Also called **total absorption coefficient**

## Attenuation compensation

The use of networks to correct for frequency-dependent attenuation, e.g., in transmission lines.

## Attenuation constant



The real part of  $\alpha$  in the relationship  $\rho = \rho e^{-\alpha x}$ , where  $\rho$  is a physical quantity, such as the amplitude of a wave propagating along a transmission path, and  $x$  is the distance along the path. The imaginary part of  $\alpha$  is known as the **phase constant**. More simply, but less commonly defined by  $\mu = \alpha\lambda$  where  $\mu$  is the attenuation and  $\lambda$  is wavelength, i.e.,  $\alpha$  is the attenuation per wavelength distance of propagation.

**Also see**

- **Decibel**

### **Attenuation distortion**

Distortion of a complex waveform resulting from the differing attenuation of each separate frequency component in the signal. This form of distortion is difficult to avoid, e.g., in transmission lines.

### **Attenuation of X-rays**

Absorption and scattering of X-rays as they pass through an object.

### **Attenuator**

An arrangement of fixed or variable resistive elements designed to reduce the strength of any signal (audio- or radio-frequency) without reducing appreciable distortion. Attenuators also incorporate impedance matching to the transmission lines or circuits to which they are connected, regardless of the attenuation they introduce. For lower frequency applications they may be simply variable or fixed resistances, for high frequencies they may be pieces of resistive material, introduced into transmission lines, stripline, or waveguide. Fixed attenuators are sometimes referred to as **pad**.

### **Attitude**

1. The construction of a vehicle which gives the appearance of a particular characteristic which may be aggressive, intimidating, playful, cheerful, etc.
2. The overall relationship of a vehicle to the ground
3. Of an aircraft in flight, the angle made by its axes with the relative airflow; the aspect is the angle made by its axes with the ground when the aircraft is on the ground.

### **Attitude indicator**

A **gyro horizon** which indicates the true attitude of the aircraft in pitch and roll throughout 360° about these axes.

### **Attracted-disk electrometer**

Fundamental instrument in which potential is measured by the attraction between two oppositely charged disks.

### **Attrition**

A process of wearing out an object by friction.

### **Attrition test**

A test for the determination of the wear-resisting properties of stone, particularly stone for road-making. Pieces of the stone are placed in a closed cylinder, which is then rotated for a given time, after which the loss of weight due to wear is found.

### **ATV**

Acronym for **All Terrain Vehicle** -- a vehicle designated for all types of ground surface.

### **ATX**

Acronym for **Automatic Transaxle**

### At your back door

Trucker slang for **behind your truck** as in "Smokey's at your back door."

### Auburn



[Click image for books on Auburn](#)

A vehicle brand of which all 8 and 12-cylinder models are **classic cars**.

### Audax

A style of group bicycle touring found in Europe (esp. France) where a road captain sets a steady pace for a group of riders. All riders are to finish together, but (unlike regular randonneuring) a sag wagon is permitted.

### Audax Club Parisien

A cycle-touring club in Paris, France which began in 1904 to promote the **Audax** style of

### Audi



[Click image for books on Audi](#)

A German automobile manufacturer which began in 1899 has four interlocking rings as its emblem. These rings represent the 1932 union of four automakers (Audi, **DKW**, **Horch**, and **Wanderer**). Later **NSU** joined in 1969. Audi was owned by Daimler-Benz from 1958 to 1965, and then by Volkswagen. It includes the following:

- 80 (1988-92)
- 90 (1988-95)
- 100 (1989-94)
- 200 (1989-1991)
- 5000 (1988)
- A3 (2006-2008)
- A4 (1996-2008)
- A6 (1995-08)
- A8 (1997-2007)

- Allroad (2001-05)
- Cabriolet (1994-98)
- Q7 (2007)
- Quattro (1990-94)
- RS4 (2007)
- RS6 (2003)
- S4 (1992-2008)
- S6 (1995-2007)
- S8 (2001-2007)
- TT (2000-08)

### Audibility

Ability to be heard; said of faint sounds in the presence of noise. The extreme range of audibility is 20-20,000 Hz in frequency, depending on the applied intensity; and from  $2 \times 10^{-5} \text{Nm}^{-2}(\text{ms})$  at 1000 Hz (the zero of the phon scale, selected as the average for good ears) to 120 dB.

### Audible ringing tone

An audible tone fed back to a caller as an indication that ringing current has been remotely extended to the called subscriber's telephone. On circuits in UK it is heard as a double beat recurring at 2 second intervals. Also called **Audible signal**

### Audible signal

See

- **Audible ringing tone**

### Audio codec

A **codec** for use in a **multimedia** system, designed to handle a range of sound signals in addition to speech

### Audi Rings



### Audi Rings

A logo of four interlocking rings from the German automobile manufacturer Audi. These rings represent the 1932 union of four automakers (Audi, **DKW**, **Horch**, and **Wanderer**). Later **NSU** joined in 1969.

### Au diode

See

- **Backward diode**

### Audio dub

Replacing the existing audio with new

**Audio-frequency**

Frequency which, in an acoustic wave, makes it audible. In general, any wave motion including frequencies in the range of 20 Hz to 20k Hz.

**Audio-frequency amplifier**

Amplifier for frequencies within the audible range.

**Audio-frequency choke**

Inductor with appreciable reactance at audio-frequencies.

**Audio-frequency modulation**

Method of facsimile transmission in which tone values from black to white are represented by a graded system of audio-frequencies

**Audio-frequency transformer**

Transformer for use in a communication channel or amplifier, designed with a specified, normally uniform, response for frequencies used in sound reproduction.

**Audiogram**

Standard graph or chart which indicates the hearing loss (in *bels*) of an individual ear in terms of frequency.

**Audiometer**

Instrument for measurement of acuity of hearing. Specifically to measure the minimum intensities of sounds perceivable by an ear for specified frequencies.

**Audit**

See

- **Energy Audit**

**Auger**

A shaft with a broad spiral flange rotating inside a cylindrical casing to carry bulk material from one end of the shaft to the other. Augers are used to unload cargoes such as grain from grain trailers.

**Auger effect**

For an atom which has been ionized by the ejection of an inner electron, the loss of energy by the ejection of an outer electron. Energies of the Auger electrons emitted are characteristic of the atomic energy levels, provided a method of determining surface composition and character.

**Auger yield**

For a given excited state of an atom of a given element, the probability of de-excitation by Auger process instead of by X-ray emission.

**Augmentor**

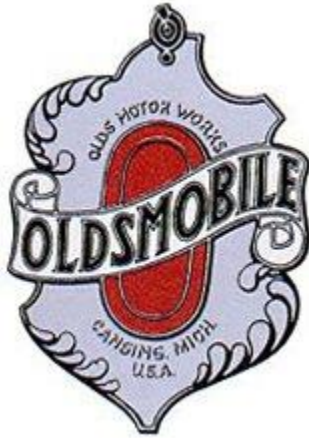
1. Means of increasing forces by afterburning in a gas turbine.
2. Means of increasing forces by induced airflow in a rocket.
3. Means of increasing forces in a wing of **STOL** aircraft by ducting compressed air flow from a gas turbine into circulation-increasing slots and flaps to create high lift coefficients, thereby giving slow landing speeds.

**Aural masking**

**Aureole**

Luminous glow from the outer portion of electric arc which has a spectrum different from that of the highly-ionized core.

## Aurora



[Click image for books on Oldsmobile Aurora](#)

A model of automobile built by **Oldsmobile** from 1995-2003

## Auroral zone

Zone where radio transmission is affected by aurora

## Austenite

The higher density, high-temperature, face-centered cubic,  $\gamma$  form of iron and of solid solutions based on it. In pure iron it is stable between 1183°K and 1663°K.

## Austenitic

A type of stainless alloy named for Sir Robert Williams Austen, an English metallurgist.

## Austin Healey



[Click image for books on Austin Healey](#)

A vehicle brand of which the 100-6 models from 1956-59 are **milestone cars**. The 3000 models from 1959-67 are **milestone cars**. The 100/100M model from 1953-

**Austro-Daimler**

A vehicle brand of which the all models built in the classic era 1925-1948 are designated **classic cars** by the **CCCA**.

**Authentication center**

A node within a *personal communications network* containing the database files needed to check that potential users have authority to use the system.

**Authority**

See

- **Lean Authority Limit Switch**

**Authority Limit**

See

- **Lean Authority Limit Switch**

**Authority Limit Switch**

See

- **Lean Authority Limit Switch**

**Authorized Carrier**

A person or company authorized by the ICC to transport goods as a common or contract carrier.

**Authorized dealer**

A company which sells and services a particular brand of vehicle and is appointed or recommended by a manufacturer.

**Auto**

1. Abbreviation for **Automatic transmission**.
2. Abbreviation for **Automobile**.

**Auto-adhesion**

Bonding together of identical surfaces, as with contact adhesives.

**Auto-assemble**

System of videotape editing in which selected scenes are transferred in their required sequence according to a pre-selected program of time-code information.

**Auto bonnet**

A British term for a **Car cover**.

**Autocapacitance coupling**

Coupling of two circuits by a capacitor included in series with a common branch

## Auto Carrier



### Auto carrier

A cargo body with two decks to carry automobiles. Also called *auto transporter*

## Autochoke

A term for **Automatic choke**.

## Autoclave

A sealable high-pressure container used for polymerization and in tire production.

## Auto coarse pitch

The setting of the blades of a propeller to the minimum drag position if there is a loss of engine power during take-off

## Autocollimator

1. An instrument for accurately measuring small changes in the inclination of reflecting surfaces. Principally used for engineering metrology measurements.
2. A convex mirror used to produce a parallel beam of light from a reflecting telescope. It is placed at the focus of the main mirror.

## Autocorrelation

Technique for detecting weak signals against a strong background level. Signal is subjected to controlled delay, the original delay signals then being fed to the autocorrelation unit which responds strongly only if delay is an exact multiple of signal period.

## Autocross

A timed competition of low-to-medium **Speed** driving, with one **Driver** at a time navigating a small course defined by traffic cones. **Drivers** compete against one another for the fastest timed lap (sometimes multiple laps) through the course.

**Autocue**

A visual prompter which displays a script to persons in front of a TV camera. Normally mounted on the camera to give eye contact with the viewers.

**Autocycle**

An obsolete moped which is a form of a light motorcycle with a small engine (usually below 100cc) that uses pedals to start the engine and provide some extra help getting up hills.

**Auto dealer**

A retail outlet that carries one (or in some cases in the U.S., a number of) manufacturer's product line and sells to general consumers and fleet operators. The outlet will also provide service and sell parts for the brand of vehicle that it carries. In some instances, a dealer may dual for another manufacturer's product line.

**Auto dealership**

A retail outlet that carries one (or in some cases in the U.S., a number of) manufacturer's product line and sells to general consumers and fleet operators. The outlet will also provide service and sell parts for the brand of vehicle that it carries. In some instances, a dealer may dual for another manufacturer's product line.

**Autodyne**

Term describing an electrical circuit in which the same elements and valves are used both as oscillator and detector. Also called *endodyne*, or *self-heterodyne*.

**Autodyne receiver**

A receiver utilizing the principle of beat reception and including an autodyne oscillator.

**Autoflare**

An automatic landing system which operates on the *flare-out* part of the landing, using an accurate radio-altimeter.

**Autofocus assist**

Device which improves autofocus performance in low light by projecting a high contrast light pattern onto the subject.

**Also see**

- **Automatic focusing**

**Auto graveyard**

An auto wrecker where a large number of older or disabled cars and trucks are located.

**Autoignition**

1. The rapid burning of the **Air-fuel mixture** as a result of a flame or hot surface, not from a **Spark plug**.
2. The self-ignition or spontaneous combustion of a fuel when introduced into the heated air charge in the cylinder of a compression-ignition engine. Also called **Automatic ignition**.

**Auto-inductive coupling**

Coupling of two circuits by an inductance included in series with a common branch.



### **Autojumble**

A British term for a *swap meet* where parts for old cars are displayed for sale in various stalls.

### **Autoland**

A landing in which the descent, forward speed, *flare-out*, alignment with the runway, and touchdown are all automatically controlled.

#### **Also see**

- **Autoflare**
- **Autothrottle**

### **Automated guided vehicle system**

(AGVS) Vehicles equipped with automatic guidance equipment which follow a prescribed path, stopping at each machining or assembly station for manual loading and unloading of parts.

### **Automatic**

1. Colloquial term for **Automatic transmission**.
2. Anything that operates without the direct control of the **Driver**.

#### **Also see**

- **Automatic choke**
- **Automatic gearbox**
- **Automatic level control**
- **Automatic temperature control**
- **Automatic transmission**
- **Automatic transmission fluid**

### **Automatic adjuster**

Brake adjusters that are actuated by the application of the park brake or by normal brake operation to compensate for **Lining** wear. At one time, in order to activate the brake adjuster, it was necessary to operate the vehicle in reverse and hit the brakes.

### **Automatic adjusters**

Brake adjusters that are actuated by the application of the parking brake or by normal brake operation, to compensate for lining wear.

### **Automatic advance**

A mechanism which adjusts the ignition advance by means of centrifugal weights or by a diaphragm controlled by intake manifold vacuum.

### **Automatic air-conditioning**

An air-conditioning system which automatically maintains a preset temperature.

#### **Also see**

- **Automatic temperature control**

### **Automatic air-recirculation system**

A heating and ventilation system which automatically switches to the recirculation mode when the pollutant levels of the air inside the vehicle exceed certain levels; but

after a certain period of recirculation, opens the intake air doors again to let some fresh air in, even if its quality is still questionable.

### **Automatic arc lamp**

An arc lamp in which the feeding of the carbons into the arc and the striking of the arc are done automatically, by electromagnetic or other means.

### **Automatic arc welding**

Arc welding carried out in a machine which automatically moves the arc along the joint to be welded, feeds the electrode into the arc, and controls the length of the arc.

### **Automatic beam control**

(ABC) System in a TV camera which momentarily alters the beam current in the camera tube to reduce the tailing effects on moving highlights. Also called **automatic beam optimizer**

### **Automatic beam optimizer**

See

- **Automatic beam control**

### **Automatic brightness control**

Circuit used in some television receivers to keep average brightness levels of screen constant

### **Automatic call distribution**

An **intelligent network** service which takes account of factors such as time of day or caller location to route calls to the appropriate point within an organization.

### **Automatic camera**

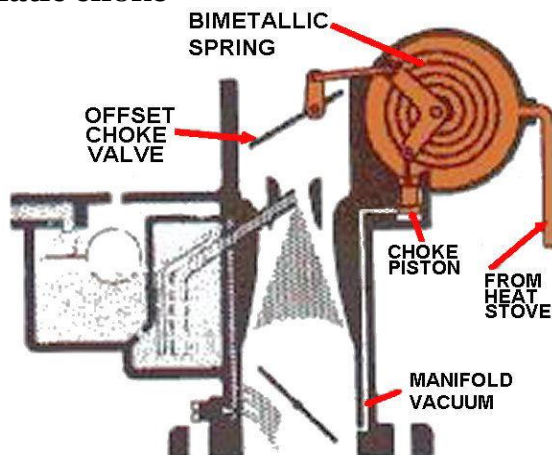
Camera in which the focus lens aperture and shutter speed are selected automatically, film advance by motor drive may also be included. Priority selection may be available, for example, exposure based on either general or spot areas and with aperture or shutter speed limitations.

### **Automatic car wash**

See

- **Car wash**

### **Automatic choke**



## Click to supersize Automatic choke

A device attached to the **Carburetor** that automatically reduces the amount of air entering the **Carburetor** by sensing changes in engine temperature. It is usually controlled by a **Coil spring** which changes length as the engine is warmed or cooled.

### **Automatic circuit-breaker**

A circuit breaker which automatically opens the circuit as soon as certain predetermined conditions (e.g., an overload) occur.

### **Automatic closing system**

A system which automatically closes the doors, windows, sunroof, trunk, and hood.

### **Automatic contrast control**

Form of automatic gain control used in video signal channel of a television receiver.

### **Automatic control**

1. Valve action reached through self-operated or self-actuated means, not requiring manual adjustment.
2. Switching system which operates control switches in correct sequence and at correct intervals automatically.
3. Control system incorporating servomechanism or similar device, so that feedback signal from output of system is used to adjust the controls and maintain optimum operating conditions.

### **Automatic Cruise Control**

(ACC) A term found on a **Cruise control** witch which indicates the direction the switch needs to be moved to increase the speed (**accelerate**) of the vehicle

### **Automatic cut-out**

A term frequently applied to a small automatic circuit breaker suitable for dealing with currents of a few amperes.

### **Automatic defrost**

System of removing ice and frost from evaporators automatically.

### **Automatic direction finding**

(ADF) Airborne navigational aid tuned to radio source of known position. Using rotatable loop aerial mounted above in aircraft to detect the direction of the radio source by rotating until the signal is zero.

### **Automatic expansion valve**

(AEV) pressure-controlled valve which reduces high-pressure liquid refrigerant to low-pressure liquid refrigerant.

### **Also see**

- **Expansion valve**

### **Automatic exposure**

(AE) A control system using a photosensor in the camera to measure scene brightness and automatically set the lens aperture/shutter speed combination.

Refinements include measuring particular areas of the scene and *program exposure modes*. A video camera uses the video signal to determine exposure.

### **Automatic flight control system**

(AFCS) A category of **Automatic pilot** for the control of an aircraft while en route. It can be monitored by speed and altitude data signals, signals from an *instrument landing system* and *VOR*, has automatic approach capability, and is disengaged before landing.

**Also see**

- **Autoflare**
- **Autoland**
- **Autothrottle**

### **Automatic focusing**

(AF) Control system for automatically setting the lens focus to the subject distance; in a simple form, this may be by means of coupled range-finder but advanced types employ completely automatic examination of the image. In an enlarger or rostrum camera, lens focus is mechanically set by the distance from the base.

### **Automatic four-wheel drive**

(A4WD) A driving system that automatically engages 4WD as needed, usually by monitoring differences in individual wheel speeds and thus sensing when a tire is slipping.

### **Automatic frequency control**

(AFC) FM stations tend to drift a little, so radios have incorporated the frequency control to maintain the desired frequency automatically.

### **Automatic frost control**

Control which automatically cycles refrigerating system to remove frost formation on evaporator.

### **Automatic gain control**

(AGC) System in amplifiers which compensates for a wide range of input signals to give a more uniform level of output and thus accommodate for a wide range of conditions including fading, masking of antenna, and ambient light.

### **Automatic gearbox**

**See**

- **Automatic transmission**

### **Automatic generating plant**

A small generating station, e.g., a gasoline or diesel driven generator and battery which is automatically started when the battery voltage falls below a certain value and stopped when it is fully charged. The term is also applied to the plant in small unattended hydroelectric generating stations.

### **Automatic ice cube maker**

Refrigerating mechanism designed to automatically produce ice cubes in quantity.

### **Automatic ignition**

1. Rapid, out of control combustion of the air-fuel mixture in a spark ignition engine, but not caused by an external ignition source such as a spark or flame;

instead, it's caused by a hot spot such as a carbon deposit in the roof of the combustion chamber. Also called **Auto-ignition**.

2. Ignition of fuel at the burner when the fuel controlling device is turned on, including re-ignition if the flames on the burner have been extinguished by means other than by the closing of the fuel controlling device.

### **Automatic ignition system**

A system designed to ignite and re-ignite a main burner.

### **Automatic level control**

A **Component** of the **Suspension** which raises or lowers either (or both) the front or rear of the vehicle when there is a change in the amount of load in the vehicle.

### **Automatic mixture control**

A device for adjusting the fuel delivery to a reciprocating engine in proportion to air density.

### **Automatic muting**

An automobile radio which cancels noise output when you turn the station dial.

### **Automatic observer**

An apparatus for recording, photographically or electronically, the indications of a large number of measuring instruments on experimental research aircraft.

### **Automatic parachute**

A parachute for personnel which is extracted from its pack by a static line attached to the aircraft.

### **Automatic phase control**

In reproducing color TV images, the circuit which interprets the phase of the chrominance signal as a signal to be sent to a matrix.

### **Automatic pilot**

A device for guiding and controlling an aircraft on a given path. It may be set by the pilot or externally by radio control. Also called **autopilot**. Colloquially called **George**

### **Automatic quiet gain control**

Joint use of automatic gain control and muting

### **Automatic reel change**

On rotary machines, equipment to attach a new reel to an old web, without stopping the machine and severing the butt end of the old web. Also called **autopaster** or **flying paster**.

### **Automatic ride control**

Electronically operated soft or firm ride as required.

### **Automatic screw machine**

Fully automatic single-spindle or multiple-spindle bar stock turret lathe.

### **Automatic seat belt**

See

- **Inertia reel seat belt**

### **Automatic shutter**

In a film projector, a shutter which cuts off the light when the mechanism stops, to protect the film from heat.

### **Automatic signaling**

A system of railway signaling, usually with electric control, in which the signals behind a train are automatically put to **danger** as soon as the train has passed, and held in that position until the train has attained the next section of line.

**Automatic slip-control differential**

(ASD) An electronically controlled, automatic locking differential developed by Mercedes-Benz.

**Automatic speed control**

See

- **Cruise control**

**Automatic stabilizer**

A form of automatic pilot, operating about one or more axes, adjusted to counteract dynamic instability. Also called **autostabilizer**.

Also see

- **Damper**

**Automatic starter**

A starter for an electric motor which automatically performs the various starting operations (e.g., cutting out steps of starting resistance) in the correct sequence, after being given an initial impulse by means of a push-button or other similar device.

**Automatic steering effect**

Built in tendency of an automobile to resume travel in a straight line when released from a turn.

**Automatic substation**

A substation containing rotating machinery which, as occasion demands, is started and stopped automatically, e.g., by a voltage relay which operates when the voltage falls below or rises above a certain predetermined value.

**Automatic synchronizer**

A device which performs the process of synchronization in an **AC circuit** automatically

**Automatic tap-changing equipment**

A voltage-regulating device which automatically changes the tapping on the winding of a transformer to regulate the voltage in a desired manner.

**Automatic temperature control**

A system which regulates the **Heater** and **Air conditioner** so that the temperature inside the vehicle meets the preset temperature.

**Automatic test equipment**

(ATE) An electronic equipment for testing ignition, wiring, fuel injection systems, etc.

**Automatic tracking**

Servo control of radar system operated by a received signal, to keep antenna aligned on target.

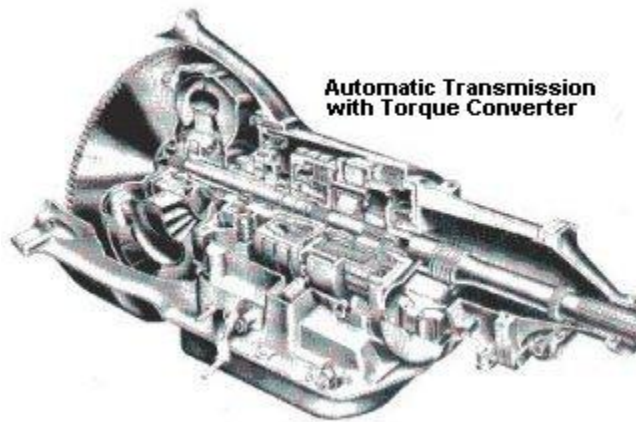
**Automatic Traffic Counter**

A device which determines how many vehicles pass a certain point on a designated road.

**Automatic train stop**

A catch, used in conjunction with an automatic signaling system, which engages a trip-cock on the train passes a signal at danger.

### **Automatic transmission**



### **Automatic transmission**

A mechanism of the **Drivetrain** which takes the power from the engine and transfers it to the **driveshaft** or wheels.

- Without using a **clutch**, it uses a **torque converter** and fluid **coupler** to change the **gear ratio**.
- It automatically effects gear changes to meet varying road and load conditions.
- Gear changing is done through a series of oil operated **Clutches** and **Bands**.

### **Automatic transmission fluid**

(ATF) A very thin **viscosity** liquid designed for use in **automatic transmissions** to transfer the movement of the **torque converter** to the **driveshaft**.

- However it is also recommended for use in the forks of **motorcycles**.
- When poured into the throat of an automobile **carburetor**, it helps to remove a build-up of **carbon** on the **cylinder head** and the **domes of pistons**.

### **Automatic trolley reverser**

An arrangement of the overhead contact line of a tramway, located at terminal points, which ensures that the trolley collector is reversed when the direction of motion of the car is reversed.

### **Automatic tuning**

1. System of tuning in which any of a number of predetermined transmissions may be selected by means of push-buttons or similar devices.
2. Fine tuning of receiver circuits by electronic means, following rough tuning by hand.

### **Automatic voltage regulator**

A voltage regulator which automatically holds the voltage of a distribution circuit or an alternator constant within certain limits, or causes it to vary in a predetermined manner.

#### **Also see**

- **Automatic tap-changing equipment**

### **Automatic volume compression**

Reduction of signal voltage range from sounds which vary widely in volume, e.g., orchestral music. This is necessary before they can be recorded or broadcast but ideally requires corresponding expansion in the reproducing system to compensate.

### **Automatic volume control**

(AVC)

1. Alteration of the contrast (dynamics) of sound during reproduction by any means. By compression (compressor) a higher level of average signal is obtained for modulation of a carrier, the expansion (expander) performing the reverse function at the receiver. In high-fidelity reproduction, arbitrary expansion can be disturbing because of variation in background noise, if present.
2. An automobile radio which automatically limits the maximum volume to a preset level.

#### **Also see**

- **Quiet Automatic Volume Control**

### **Automatic volume expansion**

Expansion of dynamic range, e.g., by keeping peak level constant and automatically reducing the lower levels. Used to counteract loss of dynamic range through studio or recording equipment, or during transmission.

### **Automatic wear adjuster**

A device that automatically compensates for the wear of brakes or clutch.

### **Automatic welding**

Welding in which the work, the torch, and/or the arc is mechanically moved and controls are used to control the speed and/or the direction of travel.

### **Automatic white balance**

(AWB) A self-adjusting balancing system which monitors the lighting and corrects for changes in **color temperature**

### **Automatic wire stripper**





## Wire stripper

A tool which removes the outer insulation from a wire by automatically adjusting to the size of the wire thus avoiding damaging the wires.

### Automixte system

A system of operation of gasoline-electric vehicles in which a battery, connected in parallel with the generator, supplies current during starting and heavy-load periods and is charged by the generator during light-load periods. Also called *Pieper system*

### Automobile

Four-wheeled passenger motor vehicle having a seating capacity for not more than 10 people. It includes police cars and racing cars but not ambulances, hearses, or trucks. In Britain, the word *automobile* is not in frequent use and has been replaced by *motor car*.

### Automobile association

A motoring club which provides assistance to drivers including insurance, maps, travel arrangements, etc.

### Also see

- [AA](#)
- [AAA](#)
- [Royal Automobile Club](#)

### Automobile classification

1. Vehicle classifications for automobiles and light duty trucks issued by the EPA mileage guide book. Almost every year there are small changes in the classifications, therefore the categories change accordingly. The EPA mileage guide can be found at any new car dealership.
2. A designation of vehicles according to size, manufacturer, style, usage, price, age, modifications, etc. Includes the following:
  - [antique car](#)
  - [classic car](#)
  - [collectible car](#)
  - [late model car](#)
  - [milestone car](#)
  - [modified car](#)
  - [muscle car](#)

- [street rod](#)
- [vintage car](#)

### **Automobile Club**

See

- [AA](#)
- [AAA](#)
- [Royal Automobile Club](#)

### **Automobile engineering**

See

- [Automotive engineering](#)

### **Automobile industry**

The manufacturing industry for building automobiles. Also called *motor industry*.

### **Automobile insurance**

A plan which a motorist can purchase for his vehicle which will offset the repair costs of a vehicle which has been involved in an accident. Some plans are offered by a government agency while others are run by independent agencies. All plans offer the basic coverage of property damage and public liability. Others offer extra benefits which cover glass damage, theft, vandalism, etc.

### **Automobile Labeling Act**

See

- [American Automobile Labeling Act](#)

### **Automobile manufacturer**

An company which designs, builds, and distributes cars and trucks. Also called *motor manufacturer*.

Also see

- [Alliance Of Automobile Manufacturers](#)

### **Automobile mechanic**

An individual who repairs and maintains cars and trucks. Also called (especially in Britain) *motor mechanic*.

### **Automobile polish**

A wax or synthetic which is designed to give a glossy, protective finish to a painted surface. Also called *car polish*.

### **Automobile types**

See

- [Car types](#)

**Automotive**

Relating to or occurring in automobiles.

**Automotive adhesive**

A glue used in the manufacturing of automobiles.

**Automotive electrician**

An individual who works with designing the electrical system for automobiles.

**Automotive electronics**

The use of electronic equipment in automobiles.

**Automotive emissions**

All the different types of fumes that are expelled into the atmosphere (exhaust gas, fuel fumes, crankcase fumes) as well as the noise it makes.

**Automotive engineering**

The design and construction of automobiles.

**Automotive Engineers**

See

- [Society of Automotive Engineers](#)

**Automotive gas oil**

(AGO) US term for gas oil used mainly as diesel fuel; same as the UK term **DERV**

**Automotive Repair and Service Council**

See

- [Canadian Automotive Repair and Service Council](#)

**Automotive Research**

See

- [United States Council For Automotive Research](#)

**Automotive Technical Education Foundation**

See

- [National Automotive Technical Education Foundation](#)

**Automotive tool**

Any of the tools used in the construction, maintenance, or repair of automobiles.

**Autonomics**

Study of self-regulating systems for process control, optimizing performance.

**Autonomous vehicle**

Generally unmanned aircraft operating without external assistance

**Auto Pact base year**

With respect to the Auto Pact, the 12 month period beginning on August 1, 1963, and ending on July 31, 1964.

**Auto Pact Canadian value added**

The aggregate of the costs of parts, material, labor costs, and transportation costs that are reasonably attributed to the production of vehicles or parts by manufacturers producing vehicles in Canada.

**Autopar**

Trade name of Chrysler Corp for its automobile parts (i.e., AUTOMobilePARTs). Chrysler also uses the name Mopar to indicate its motor parts (i.e., MOTOorPARTs).

**Auto parts store**

Jobber and retail auto parts stores which primarily sell automotive products and conduct business at the retail level.

**Autopaster**

See

- **Automatic reel change**

**Autopilot**

See

- **Automatic pilot**

**Autoplate**

A machine which can deliver a curved stereoplate for rotary printing; built to suit the requirements of each particular rotary machine.

**Autoradiograph**

Photographic record, usually of a biological specimen, produced by exposure to radiation from self-contained radioactive material which has been injected or absorbed.

**Auto-reclose circuit breaker**

A circuit breaker which, after tripping due to a fault, automatically recloses after a time interval which may be adjusted to have any value between a fraction of a second and 1 or 2 minutes

**Auto reverse**

A feature on a cassette player which will automatically play the next side of a cassette tape when one side is finished.

**Autoration**

1. The spin; continuous rotation of a symmetrical body in a uniform air-stream due entirely to aerodynamic moments.
2. Unpowered rotorcraft flight, in a helicopter with engine stopped, in which the symmetrical airfoil rotates at high incidence parallel with the airflow.

**Autoset level**

A form of dumpy level for rapid operation, in which the essential features are a quick-leveling head, and an optical device which neutralizes errors of leveling so that the bubbles need not be central while an observation is being made.

**Autostabilizer**

See

- **Automatic stabilizer**

### **Autostick**

A trademark name for a form of semi-automatic transmission.

- It combines an **Automatic transmission** with the gear-shifting feature of a **Manual transmission** without the use of a foot-operated **Clutch**.
- In the normal **Automatic transmission** drive mode, the transmission behaves like any other automatic.
- The manual-shifting feature allows more control over the full range of rpms an engine offers.
- **Porsche** and **Audi** offer a related transmission technology called **Tiptronic**.
- The **Lexus GS400** also has a similar transmission but instead of using a stick to change gears it employs **buttons** on the **steering wheel**.
- Several other automakers offer similar technologies.

### **Autothermic piston**

An **aluminum piston** in which steel or **alloyinserts** are **cast** to control **expansion** of the **piston skirt**.

### **Autothrottle**

A device for controlling the power of an aero-engine to keep the approach path angle and speed constant during an automatic blind landing.

### **Autotransductor**

Transducer in which the same winding is used for power transfer and control

### **Autotransformer**

Transformer in which both primary and secondary coils have turns in common. Step-up or step-down of voltage is accomplished by taps on common winding.

### **Autotransformer starter**

A starter for squirrel-cage induction motors, in which the voltage, applied to the motor at starting is reduced by means of an autotransformer.

### **Auto transporter**

See

- **auto carrier**

### **Auto wrecker**

A place where old and disabled cars and truck go. The parts are removed and sold. Also called an **auto graveyard**.

### **AUX**

Abbreviation for **auxiliary** usually indicating those terminals on the fuse panel for non-standard equipment.

### **Auxiliary**

Additionally, supplementary. Equipment or component that is added to the main propulsion unit.

### **Auxiliary acceleration pump**

(AAP) a pump that increases driveability during cold engine operation by providing an extra amount of fuel to the acceleration nozzle to supplement the main acceleration pump.

### **Auxiliary air bleeds**

Used on some idle systems to add air to the idle system downstream from the regular idle air bleed; they act in parallel with idle air bleed.

### **Auxiliary Air Control Valve**

(AAC) A device which allows air to bypass a closed throttle during engine start and warm-up, in order to maintain a higher idle speed. The auxiliary air valve provides extra air into the intake manifold during cold engine starting for a higher idle speed during warm-up.

### **Auxiliary air intake**

1. An air intake for accessories, cooling, cockpit air, etc.
2. Additional intake for turbojet engines when running at full power on the ground, usually spring loaded so that it will open only at a predetermined suction value.

### **Auxiliary air regulator**

A rotary gate valve which stabilizes idle speed during engine warmup

### **Auxiliary air valve**

A device which allows air to bypass a closed throttle during engine start and warm-up, in order to maintain a higher idle speed. The auxiliary air valve provides extra air into the intake manifold during cold engine starting for a higher idle speed during warm-up.

### **Auxiliary brake light**

Additional brake lights mounted at eye level in the rear window or on the rear fenders. They are designed to give a following vehicle more notice of your presence and intention of stopping.

### **Auxiliary contact**

See

- **Auxiliary switch**

### **Auxiliary control valve**

A unit which controls pressure in various portions of the brake system.

### **Auxiliary drive shaft**

A secondary drive shaft which powers the fuel pump, water pump, or distributor.

### **Auxiliary driving lamp**

A light which supplements the headlights such as a fog light or spot light.

### **Auxiliary driving light**

A light which supplements the headlamps such as a fog light or spot light.

### **Auxiliary drum parking brake**

Incorporates an extra parking brake drum inside a rear rotor on some four-wheel drive disc brake systems.

### **Auxiliary gearbox**

An extra gearbox used in conjunction with the main (manual) gearbox to provide an additional range of speeds.

**Auxiliary gauge**

The gauge which indicates compressor inlet pressure on older Chrysler Corporation vehicles with an Evaporator Pressure Regulator (EPR) valve; also used to measure evaporator pressure on some Ford vehicles with a Suction Throttling Valve (STV).

**Auxiliary lane**

The portion of the roadway adjoining the traveled way for parking, turning, or other purposes supplementary to through-traffic movement.

**Auxiliary leaf**

An extra leaf in a set of leaf springs. Also called *helper leaf* or *helper spring*.

**Auxiliary lighting**

Extra **Lighting** such as fog lights, spot light, and driving lights which are intended to improve **Visibility** under adverse conditions.

**Auxiliary plant**

A term used in generating-station practice to cover the condenser pumps, mechanical stokers, feed-water pumps, and other equipment used with the main boiler, turbine, and generator plant.

**Auxiliary pole**

See

- **Compole**

**Auxiliary power**

Power from an independent source that functions as required to augment/support various performance criteria established for the prime power source.

**Auxiliary power unit**

(APU) An independent airborne engine to provide power for ancillary equipment, electrical services, starting, etc. May be a small reciprocating or turbine.

**Auxiliary rotor**

A small rotor mounted at the tail of a helicopter, usually in a perpendicular plane, which counteracts the torque of the main rotor; used to give directional and rotary control to the aircraft.

**Auxiliary shaft**

In an overhead cam engine, a separate shaft that drives devices such as the fuel pump, the oil pump, and the distributor.

**Auxiliary switch**

A small switch operated mechanically from a main switch or circuit breaker; used for operating such auxiliary devices as alarm bells, indicators, etc. Also called *auxiliary contact*

**Auxiliary tanks**

See

- **Fuel tank**

**Auxiliary transmission**

Additional gear box increasing the gear ratio combinations when used with main transmission or multi-speed axles.

## Auxiliary venturi

See

- [Booster venturi](#)

## Auxiliary winding

A special winding on a machine or transformer, additional to the main winding.

## Auxometer

An apparatus for measuring the magnifying power of an optical system

## Available Inventory

The amount of product in the warehouse able to be shipped; does not include product designated as damaged, on hold, or pending shipment.

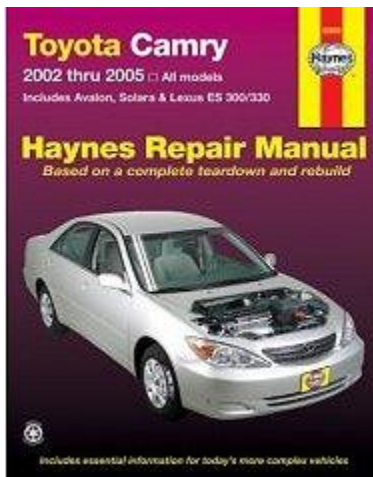
## Available power efficiency

The ratio of electrical power available at the terminals of an electroacoustic **transducer** to the acoustical power output of the transducer. The latter should conform with the reciprocity principle so that the efficiency in sound reception is equal to that in transmission.

## Available power gain

The ratio of the available power output of an amplifier to the input power; equal to **power gain** only when the output of the device or circuit is correctly matched to the load.

## Avalon



[Click image for books on Toyota Avalon](#)

A model of automobile manufactured by Toyota

## Avant

See

- [traction avant](#)



## AVC

Acronym for **automatic volume control**.

## AVCS

Acronym for **Advanced Vehicle Control Systems**

## Aveo



**Click image for books on Chevrolet Aveo**

A model of automobile manufactured by the **Chevrolet** division of **General Motors** from 2004-08. Also includes the Aveo 5.

## Average

1. A calculation in which the mean value or rate is determined. The average speed is determined by dividing the distance by the time (e.g., 273 kilometers divided by 3 hours = 91 kph). Average fuel consumption is determined as a ratio of fuel and distance. In the metric system, this is determined by multiplying the number of liters by 100 and dividing the result by the number of kilometers (e.g., 31.38 liters times 100 divided by 273 kilometers = 11.49 liters / 100 km). In the Imperial system divide the number of miles by the amount of fuel in gallons (e.g., 173 miles divided by 6.9 gallons = 25 mpg).
2. Loss or damage of marine property, less than total compensation payment in proportion to amount insured.

### Average current

The current obtained by adding together the products of currents flowing in a circuit and the times for which they flow and dividing by the total time considered. For direct current the average value is constant; for true alternating current, the average value is zero.

### Average Daily Traffic

(ADT) The total traffic volume during a given period divided by the number of days in that period.

### Average distance traveled

A ratio of the distance traveled over a period of time. For instance during the month of June I traveled 987 miles. My average for the month is (987 divided by 30) 32.9 miles per day.

### Average fuel consumption

A ratio of the distance driven over a set period of time divided by the amount of fuel consumed. For example, during the year the car drove 12,000 miles and consumed 500 gallons yielding an average of (12,000/500) 24 miles per gallon. The same information according to the metric system would consider how many liters consumed for each 100 kilometer traveled. 12000 miles is equal to 19,312 kilometers

and 500 U.S. gallons is equal to 1894 liters. Thus the metric fuel consumption is 1894 divided by 19312 divided by 100 which results in 9.8 l/100 km.

### Average Fuel Economy

See

- **Corporate Average Fuel Economy**

### Average haul distance

The distance between the center of gravity of a cutting and that of the embankment formed from material excavated from the cutting.

### Average power output

In an amplitude-modulated transmission, the radio-frequency power delivered by a transmitter, averaged over one cycle or other specified interval of the modulating signal.

### Average weekly earnings

Gross taxable payrolls divided by the number of employees.

### Avgas

Abbreviation for **aviation gasoline**.

Also see **aviation spirit**

### AVI

Acronym for **Automatic Vehicle Identification** -- a system combining an on-board transponder with roadside receivers to automate identification of vehicles. Uses include electronic toll collection and stolen vehicle detection.

Also see

- **IVHS**

### Aviation bi-phase shift keying

A digital **modulation** scheme in which a **1** is represented by a +90° phase transition and a **0** by a -90° transition of the **carrier**

### Aviation fuel

A high octane fuel used primarily in aircraft but also used in racing vehicles to improve performance. Generally liquid hydrocarbons, because of high heat of combustion per unit of fuel mass (specific energy) and volume (energy density), ease of combustion, moderate volatility and viscosity, and good thermal stability and capacity. Liquid hydrogen and pentaborane (B<sub>5</sub>H<sub>9</sub>) have also been used experimentally.

Also see

- **aviation gasoline**
- **aviation kerosine**

### Aviation gasoline

(AVGAS)

1. Blends of liquid hydrocarbons, almost all petroleum products boiling between 32°C and 220°C, with anti-knock rating from 80 octane number to 145 performance number. Only small quantities are now used.

**Also see**

- [aviation fuel](#)
- [aviation kerosine](#)

2. A complex mixture of relatively volatile hydrocarbons with or without small quantities of additives, blended to form a fuel suitable for use in aviation reciprocating engines. Fuel specifications are provided in ASTM Specification D 910 and Military Specification MIL-G-5572. Note Data on blending components are not counted in data on finished aviation gasoline.

**Aviation gasoline blending components**

Naphthas that will be used for blending or compounding into finished aviation gasoline (e.g., straight run gasoline, alkylate, reformat, benzene, toluene, and xylene). Excludes oxygenates (alcohols, ethers), butane, and pentanes plus. Oxygenates are reported as other hydrocarbons, hydrogen, and oxygenates.

**Aviation kerosine**

For gas turbine engines, fuel which typically boils over the range 144°C - 252°C. Variants include Jet A-1 (AVTUR), the international jet fuel; Jet B (AVTAG), a blend of naphtha with kerosine now being phased out except for use in cold climates; AVCAT, a naval jet fuel with high flash-point for safety in enclosed spaces in ships; AVPIN, an aviation isopropyl nitrate; and AVGARD, trade name for an additive with anti-misting properties.

**Also see**

- [aviation gasoline](#)

**Aviation spirit**

(avgas) A motor fuel with a low initial boiling point and complying with a certain specification, for use in aircraft. Ranges from 73 to 120/130 octane rating.

**Also see**

- [aviation kerosine](#)

**Aviatrix**

Female aviator

**Avionics**

The collective word for a spacecraft or aircraft's subsystem elements which involve electronic principles. A contraction of **aviation electronics**.

**A-vis**

**See**

- [vis-a-vis](#)

**AVL**

Acronym for **Automated Vehicle Location** -- a class of technologies designed to locate vehicles for fleet management purposes and for stolen vehicle recovery. Infrastructure can be land-based radio towers or satellites.

**Also see**

- **IVHS**

**Avoidance system**

**See**

- **collision avoidance system**

**AVOM**

Acronym for **Analog Volt / Ohm Meter**

**Avpin**

Abbreviation for **aviation isopropyl nitrate**

**Avpol**

Abbreviation for **aviation petrol, oil, and lubricant**

**Avtag**

Abbreviation for **aviation wide-cut turbine fuel.**

**Avtur**

Abbreviation for **aviation turbine fuel.**

**Also see**

- **aviation kerosine**

**AWACS**

Acronym for **airborne warning and control system**

**Aware**

**See**

- **environmentally aware**

**Awareness**

**See**

- **sidewall awareness**

**Away**

**See**

- **eat away**
- **pull away**
- **tow away**
- **Tow Away Zone**

**AWB**

Acronym for **automatic white balance**

**AWD**

Acronym for **all-wheel drive**.

**AWG**

Acronym for **American wire gauge system**

**Awl**

A pointed or flat tool used to probe nail holes and injuries as well as for installing a repair plug.

**Awning**

A canvas roof which is stretched out from a parked trailer or camper to give protection from the sun and rain.

**Awning deck**

A superstructure deck, as the name implies. In its simplest form, it is the top deck of a two-deck ship, and places the ship in a certain category for scantling and freeboard.

**AX4S**

Acronym for **Automatic 4-Speed Transmission**

**Axe**

Trade name for a range of digital **switches** manufactured by the Swedish company I. M. Ericsson Telefonaktiebolaget.

**Axes**

Plural of **axis**. When describing points on the body of a vehicle, they can be named from three parameters: its length (longitudinal), height (vertical), and width (cross-car). These three axes or dimensions are labeled X-Y-Z.

**Also see**

- **zero point**

**Axial compressor**

1. A compressor characterized by the unusual piston arrangement. The pistons are arranged horizontally around and parallel to the crankshaft axis or centerline.
2. A multistage, high-efficiency compressor comprising alternate rows of moving and fixed blades attached to a rotor and its casing respectively.

**Axial cooling fins**

Brake drum cooling fins perpendicular to the centerline of the axle.

**Axial engine**

Turbine engine with an axial-flow compressor.

**Axial-flow compressor**

A compressor in which alternate rows of radially-mounted rotating and fixed airfoil blades pass the air through an annular passage of decreasing area in an axial direction.

**Axial-flow turbine**

Characteristic aero-engine turbine, usually of 1-3 rotating stages, in which the gas flow is substantially axial

**Axial pitch**

The distance from any point on one thread or helix to the corresponding point on the next thread or helix measured along the axis of the screw or helix.

**Axial ratio**

Ratio of major to minor axis of polarization ellipse for e.g., a wave propagated in waveguide, polarized light. Also called **ellipticity**

**Axial response**

The response of a microphone or loudspeaker, measured with the sound-measuring device on the axis of the appearance being tested.

**Axial runout**

Variation from the plane normal to its axis of a rotating part. Its wobble, rather than its eccentricity. Compare **radial runout**

**Axiotron**

Valve in which the electron stream to the anode is controlled by the magnetic field of the heating current

**Axis**

1. The centerline, whether real or imaginary, around which a thing rotates.
2. One of the three axes of an aircraft, which are the straight lines through the center of gravity about which change of attitude occurs **longitudinal** or **drag** axis in the plane of symmetry (roll); **normal** or **lift** axis vertically in the plane of symmetry (yaw); and the **lateral** or **pitch** axis transversely (pitch).
3. Of a lens, the line of symmetry of the optical system; the line along which there is no refraction.

**Also see**

- **cam-ground piston**
- **eccentric bolt**
- **Hotchkiss drive**
- **kingpin axis**
- **kingpin inclination**
- **moment of inertia**
- **pivot axis**
- **roll axis**
- **self-aligning torque**
- **static balance**
- **steering-swivel axis**
- **steering axis inclination**
- **steering axis**
- **steering geometry**
- **steering knuckle angle.**
- **swivel axis**
- **torque**
- **trailing arm**

## Axis inclination

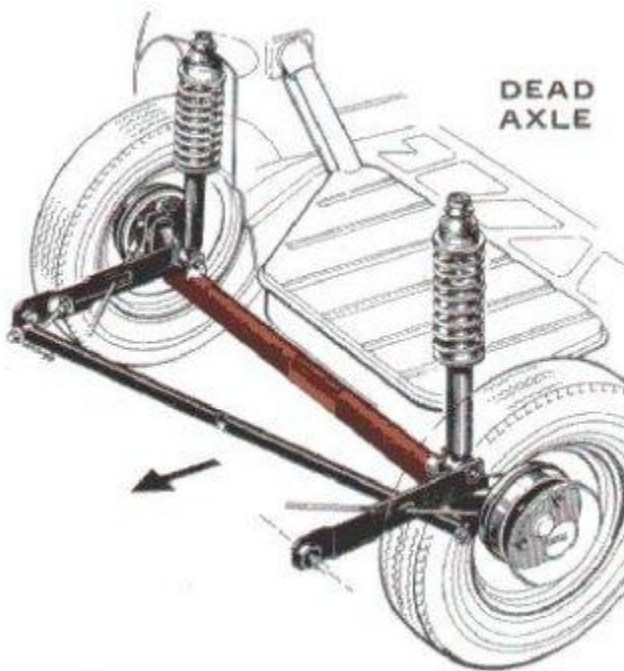
See

- **kingpin inclination**
- **steering axis inclination**
- **swivel axis inclination**

## Axis of a weld

An imaginary line along the center of gravity of the weld metal and perpendicular to a cross section of the weld metal.

## Axle



## Axle

An axle is a shaft on which the wheels revolve. A **full-floating axle** is used to drive the rear wheels. It does not hold them on nor support them. A **semi-floating or one-quarter floating axle** is used to drive the wheels, hold them on, and support them. A three-quarter floating axle is used to drive the rear wheels as well as hold them on, but it does not support them. A **live axle** holds the wheels and transmits power to the wheels. A **dead axle** or **beam axle** merely holds the wheels, but does not transmit power to the wheels.

Also see

- **Ackermann axle**
- **back axle**
- **banjo axle**
- **banjo rear axle housing**
- **beam axle**

- **cambered axle**
- **cheater Axle**
- **dead axle**
- **dead Rear Axle**
- **De Dion axle**
- **double Reduction Axle**
- **drive axle**
- **driven axle**
- **driving axle**
- **drop-center axle**
- **dropped axle**
- **dual Reduction Axle**
- **Elliot axle**
- **front axle**
- **full-floating axle**
- **fully Floating Axle**
- **gross axle weight rating**
- **hypoid axle**
- **lift Axle**
- **live axle**
- **low pivot swing axle**
- **pusher axle**
- **rear axle crossmember**
- **rear axle differential**
- **rear axle housing**
- **rear axle ratio**
- **reverse-Elliot type axle**
- **reversed Elliot axle**
- **rigid axle**
- **rigid axle connection**
- **semi-floating axle**
- **semi-independent suspension**
- **setback Axle**
- **slewed axles**
- **split rear axle housing**
- **spread axle**
- **steer axle**
- **steering axle**
- **stub axle**
- **swing axle**
- **tag axle**
- **tandem axle**
- **three-quarter floating axle**
- **torque tube axle**
- **twist-beam rear axle**
- **two-speed axle**



- [Weissach axle](#)
- [Z-axle](#)

### **Axle and steering**

**See**

- [Jeantaud axle and steering](#)

### **Axle articulation**

The degree to which an axle can move up and down. Off-road vehicles need a great deal of axle articulation to allow for extremely uneven terrain, such as rocks or gullies.

### **Axle-box**

Box-shaped housing containing the axle bearings and lubricant. Constrained laterally on guides and supports the weight of vehicle through springs.

### **Axle casing**

A British term indicating a tubular housing which encloses the differential and half-shafts along with their bearings. The US term is [axle housing](#).

### **Axle center differential**

**See**

- [limited-slip Axle center Differential](#)
- [variable Limited-slip Axle center Differential](#)

### **Axle connection**

**See**

- [rigid axle connection](#)

### **Axle crossmember**

**See**

- [rear axle crossmember](#)

### **Axle designation**

A numeric expression such as "4x2," "6x4," which describes the total number of wheels followed by the number of driven wheels. Thus "4x2" is a vehicle with four wheels on two axles, but only two wheels (on the one axle) drive the vehicle. In contrast, a "4x4" has four wheels on two axles and both sets of axles drive the vehicle.

### **Axle differential**

**See**

- [rear axle differential](#)

### **Axle drive**

The ring gear and pinion inside a differential housing.

**Also see**

- **final drive**

### **Axle end gear**

See

- **axle end gears**

### **Axle end gears**

The two gears, one per axle, that are **splined** to the inner ends of the drive axles.

They mesh with and are driven by the **spider gears**.

### **Axle flange**



### **Axle flange**

A disc to which a road wheel is attached at the end of an axleshaft.

### **Axle housing**

An American term indicating a tubular housing which encloses the differential and half-shafts along with their bearings. The British term is **axle casing**.

Also see

- **banjo rear axle housing**
- **split rear axle housing**

### **Axle Kingpin**

A pin around which a steering axle's wheels pivot

### **Axle load**

See

- **axle weight**

### **Axle parallelism**

Axles are determined to be parallel, thus minimizing tire wear, if a measurement between two or more axles is equal at both ends of the axle.

### **Axle ratio**

See

- **final drive ratio**
- **back axle ratio**
- **rear axle ratio**

## Axles

See

- **tandem axles**

## Axle shaft

1. The short shaft which connects the differential and the drive shaft on each side of an independent suspension configuration.
2. The drive shaft or **halfshaft** of a rigid axle.

## Axle stand



### Axle stand

An adjustable height tripod used to support a vehicle when working underneath it. Although you can raise the car with the jack, use a pair of axle stands for safety. Also called **Jack stand** or **Safety stand**

## Axle track

Distance between centerlines of tire tread measured across axle.

## Axle tramp

A form of wheel hop which is usually found in live rear axle cars. It occurs when sudden **torque** loads on the **suspension** cause the driven wheels to shake violently by slightly rotating the wheels and then springing back.

## Axle tube

The part of the **axle housing** which covers the half-shaft or a tubular rigid axle.

### **Axle weight**

The part of the weight of the vehicle which rests on the wheels of the axle.

**Also see**

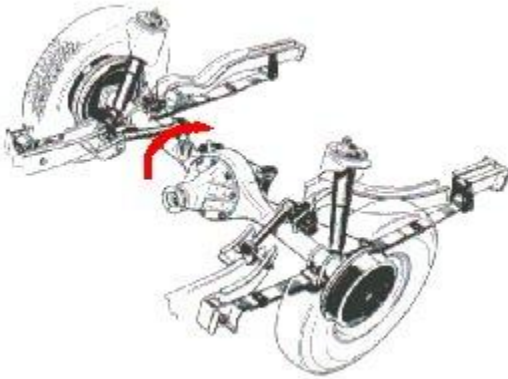
- **gross axle weight rating**

### **Axle weight rating**

**See**

- **gross axle weight rating**

### **Axle wind up**



### **Axle wind up**

The phenomenon in which the **torque** transmitted to the wheels by the axle which causes the **live axle** to turn in its own centerline.

### **AXOD**

Acronym for **Automatic Overdrive Transaxle**

### **AXOD-E**

Acronym for **Automatic Overdrive Transaxle - Electronically Controlled**

### **Axonometry**

Measurement of the axes of crystals

### **Ayrton**

**See**

- **Senna, Ayrton**

### **Azeotrope**

Having constant maximum and minimum boiling points.

### **Azeotropic mixture**

Example of azeotropic mixture refrigerant R-502 is mixture consisting of 48.8% refrigerant R-22 and 51.2% R-115. The refrigerants do not combine chemically, yet azeotropic mixture provides refrigeration characteristics desired

## **Azimuth**

1. The angle between the vertical plane containing a line or celestial body and the plane of the meridian, conventionally measured from north through east in astronomical computations, and from south through west in triangulation and precise traverse work.

### **Also see**

- **azimuth angle**

2. The angle, normally  $90^\circ$ , between the direction of motion of the film or tape and the slit or gap in the optical or magnetic head.

### **Also see**

- **bearing**

## **Azimuthal power instability**

Abnormal neutron behavior which results in uneven nuclear conditions in the reactor

## **Azimuth angle**

Horizontal angle of observed line with reference to true north.

## **Aztek**



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