Firsts

Full-production vehicles are listed here. Many were preceded by racing-only cars.

Industry

First automobile manufacturer - <u>Panhard et Levassor</u> (1889) (followed by <u>Peugeot</u> in 1891)
First standardized automobile - <u>Benz Yelo</u> (1894) or <u>Duryea Motor Wagon</u> (1893)
First mass-produced automobile - <u>Oldsmobile Curved Dash</u> (1901)
O Honorable Mention - <u>Ford Model T</u>, first car produced on a moving assembly line.
First auto company technical institute - <u>General Motors Institute</u> (now <u>Kettering University</u>)
First automotive proving ground - <u>General Motors Milford Proving Grounds</u>

Engine types

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• <u>V4 engine</u>

• First V4 - 1922 <u>Lancia Lambda</u>
                   ■ Honorable mention - 1903 <u>Marmon</u> (few produced)
          o First 6-cylinder - 1903 Napier & Son

    V6 engi

    First V6 - 1950 Lancia Aurelia

    Honorable mention - 1904 <u>Marmon</u> (few produced)
    First American V6 - 1962 <u>Buick Special</u>
    First Japanese V6 engine - 1983 Nissan's VG engine series
• Straight-8

    First I8 - 1919 <u>Isotta-Fraschini</u>
    Honorable mention - 1920 <u>Duesenberg</u>

    V8 engine

    First V8 - 1910 <u>De Dion-Bouton</u>
    ■ Honorable mention - 1904 <u>Marmon</u> (few produced)

    First mass-produced V8 - 1914 <u>Cadillac Type 51</u>
    First mass-produced monobloc V8 - 1932 <u>Ford Model B</u>
          o First OHV V8 - 1949 Oldsmobile/Cadillac (Not the same engine, but both released the same year)

    First V10 (road car) - 1992 <u>Dodge Viper</u> (Previously V10s were only used in race cars)
    First V10 sedan - 2002 <u>Volkswagen Phaeton</u>

    V12 engine

    First V12 - 1916 Packard "Double-Six"

    W12 er

          o First W12 - 2001 Audi A8 (5998 cc W12 engine - four banks of three cylinders)
o First V16 - 1930 <u>Cadillac V-16</u>
Honorable mention - 1931 <u>Marmon</u> and 1932 <u>Peerless</u>
W16 engine

    First W16 - Bugatti Veyron 16.4
    Jimenez Novia (used a 4.1 L W16 based on four I4 Yamaha motorcycle engines.)

    No production cars yet are known to use a W-18 configuration, however <u>Bugatti</u> has experimented

              with both three-bank and four-bank designs for various concept cars
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Engine technologies

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    First carburetor - 1896 Daimler
    First variable displacement engine - 1905 Sturtevant 38/45 six

            Honorable mention - 1917 Enger Twin-Unit Twelve

    First twin-spark engine - 1921 Bentley 3 Litre
    First Diecy Cengine - 1921 Balot (automobile) (Peugeot had a DOHC 4-valve Grand Prix car in 1913).
    First Diecy Cengine - 1921 Balot (automobile) (Peugeot had a DOHC 4-valve Grand Prix car in 1913).
    First Diesel-engined production car — 1936 Mercedes 260D.
    Multi-valve engines
    First 3-valve engine - 1924 Bugatti Type 35 (Type 18 had a 3-valve in 1912, but only 6 or 7 were made. Type 35 used the engine from the 1922 Type 22 racing car.)
    First 4-valve engine - 1921 Bentley 3 Litre
    Honorable mentions - 1931 Bugatti Type 51 DOHC. An SOHC 4-valve engine appeared in 1910s Type 13 racing car, while a 4-valve straight-4 was also developed by Bugatti in 1914. The Linthwaite-Hussey Motor Company of Los Angeles manufactured and advertized a four-valve straight-4 engine in 1916.
    First 5-valve engine - 1989 Mitsubishi Minica 548 cc 3G81 l3 (Peugeot had a triple overhead cam 5-valve Grand Prix car in 1921).
    First 4-valve Diesel - 1989 Citroën XM
    First 3-valve Diesel - 1989 Citroën XM
    First 4-valve Diesel - 1994 Mercedes Benz E-Class
    First multi-valve turbocharged engine - 1984 Saab 900 8202
    First carburetor air filter - 1915 Packard Twin Six
    Honorable mention - 1922 Rickenbacker had a modern dry element
    First carburetor air filter - 1915 Packard Twin Six
    Honorable mention - 1922 Rickenbacker had a modern dry element
    First ton-Diesel Field Field
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First point ignition - 1910 <u>Cadillac Model Thirty/Delco</u>
First electronic ignition - 1960 <u>General Motors/Delco</u>
First alternator - 1960 <u>Chrysler Corporation</u>, <u>Plymouth Valiant</u>
First flat-engine - 1905 <u>Knox</u>
First <u>square</u> engine - 1906 <u>Premier</u>
First monobloc engine with removable cylinder head - 1908 <u>Ford Model T</u>

    First counterbalanced <u>crankshaft</u> - 1908 <u>Mercer</u> Type 35
    First <u>split-plane crankshaft</u> - 1923 <u>Cadillac V8 engine</u>

    First VVT engine - 1980 Alfa Romeo Spider 2.0 L
    First electronic VVT - 1987 Nissan 300ZX VG30DE NVCS V6

               • First gas turbine car - 1950 Rover JET 1 (Experimental only; no gas turbine car ever reached real
                        production)

    Wankel engines
    First Wankel engine - 1964 NSU Spider
    First 2-rotor Wankel engine - 1965 Mazda Cosmo (60 preproduction examples were produced and

    Honorable mention - 1966 NSU Ro 80
    First front-wheel drive Wankel engine - 1966 NSU Ro 80
    First 3-rotor Wankel engine - 1991 Mazda Cosmo
    Honorable mentions - 1969 Mercedes-Benz C111 and 1970 Felix Wankel
                       o First turbo Wankel engine - 1982 Mazda Luce/Cosmo
First Miller cycle engine - 1996 Mazda Millenia

    First Atkinson cycle engine - 2004 Toyota Prius
    First Hydrogen vehicle - 2006 Mazda RX-8 (Japan commercial leases only)
    First California ULEV emissions compliant - 1995 Honda Accord
 Hybrid vehicles

First gas-electric hybrid - 1899 Lohner-Porsche Mixte (about 300 produced)
First modern hybrid car - 1904 Auto-Mixte (Belgium)
First modern hybrid car - 1997 Toyota Prius NHW10/Honda Insight (Japan)
First hybrid bus - 1997 Hino (Japan)
First all-wheel drive hybrid, first hybrid SUV - 2004 Ford Escape Hybrid
First hybrid luxury car - 2005 Lexus RX 400h (introduced January 2004)
First hybrid pickup truck - 2005 Chevrolet Silverado/GMC Sierra Hybrid
First rear-wheel drive hybrid car - 2007 Lexus GS450h (on sale March 16, 2006 in Japan)
First four-cylinder hybrid - 1997 Toyota Prius NHW10 (Japan)
First four-cylinder hybrid - 2005 Lexus RX 400h (introduced January 2004)
               • First six-cylinder hybrid - 2005 Lexus RX 400h (introduced January 2004)
Body

First motorized truck — October 1896 Daimler
First production closed-body car - 1910 Cadillac Model Thirty
First monocoque - 1924 Lancia Lambda
O Honorable mentions - 1917 Ruler Four (few produced), 1934 Citroën Traction Avant
First shatter-resistant windshield glass - 1926 Cadillac
First coupé convertible - 1934 Peugeot 401 D Eclipse
First Pickup / Utility (Ube) - 1934 Ford Australia
First sidety windshield - 1948 Tucker Torpedo (popout safety glass) [7]
First fiberglass body - 1953 Chevrolet Corvette and Kaiser Darrin
First MPY - 1956 Fiat 600 Multipla
First retractable hardtop - 1930s Lancia
O Honorable mention - 1957 Ford Skyliner
First hatchback - 1953 Aston Martin DB2/4
O Honorable mention - 1958 Austin A40 Farina, 1962 Innocenti Combinata, and 1965 Renault 16
First fiberglass monocoque - 1956 Berkeley T60
O Honorable mention - 1959 Lotus Elite
First SUV - 1942 Dodge Carryall

    First SUV - 1942 Dodge Carryall
    First SUV - 1942 Dodge Carryall
    O Honorable mention - 1957 Moskvitch 410 (first crossover SUV/XUV)

First all-aluminum body - 1961 Lagonda Rapide
    O Honorable mention - 1947 Land Rover (used Birmabright, an aluminum alloy)
    First all-aluminum space frame - 1990 Honda NSX

First carbon fiber monocoque - 1991 McLaren F1

First aerodynamic design - 1921 Rumpler Tropfenwagen
  Transmission

    Manual transmissions

    qual transmissions

    • First synchronized transmission - 1929 Cadillac

    • First synchronized transmission - 1929 Cadillac

    • First synchronized transmission - 1952 Porsche 356

    • First speed manual - 1953 Ferrari 212

    • First 6-speed manual - 1986 Honda Civic Wagon 4WD

    • Honorable mention - 1986 Porsche 959 (introduced at 1985 Frankfurt Motor Show but first customer deliveries were delayed until 1987)[8]

    • Honorable mention - 1957 Moskvitch 410/411 (three forward gears with high and low collection)

                                                                         selection)
                                       o First 8-speed manual - 1960 Moskvitch 410/411
o First 16-speed manual - 1913 David
                                      omatic transmissions

First automatic transmission - May 1939 Oldsmobile Hydra-Matic (also the first 4-speed automatic)

Honorable mention - 1934 REO (a pair of self-shifting manuals)

Honorable mention - 1937 Oldsmobile Automatic Safety Transmission

First torque converter automatic - 1948 Buick Dynaflow

Honorable mention - 1949 Packard Ultramatic (torque converter automatic)

Honorable mention - 1946 Chrysler Presto-Matic (torque converter manual)

First non-planetary automatic - 1968 Honda Hondamatic

First 5-speed automatic - 1991 BwW E34 5-Series and E36 320i/325i ZF 5HP18

First 6-speed automatic - 1999 Jeep Grand Cheroke 45RFE had an automatic transmission with 3 planetary generater capable of its speeds, but only 5 were used, and the company advertised
                                                                        planetary gearsets capable of six speeds, but only 5 were used, and the company advertised it as a 4-speed.
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Layout

First 7-speed automatic - 2003 Mercedes-Benz 7G-TRONIC
 First 8-speed automatic - 2007 Lexus LS 460
 First Limited slip differential - 1956 Studebaker
 First Continuously variable transmission - 1958 DAF 600 "A-Type"

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First FR layout car - 1895 Panhard et Levassor

    First FK layout car - 1895 Panhard et Levassor
    First RR car - 1896 Hertel
    First front-wheel drive - 1924 Tracta (Gregoire-Tracta)
    Honorable mention - 1900 Pennington and 1928 Alvis (did not sell more than 150 units)
    Honorable mention - 1934 Citroën Traction Avant
    Honorable mention - 1929 Cord Automobile L-29
    Honorable mention - 1920 Ruxton
    Honorable mention - 1923 LT (only three made)

First transverse front-wheel drive - 1931 DKW F1[citation needed]

Honorable mention - 1923 LT (only three made)

First transverse front-wheel drive - 1931 DKW F1[citation needed]

Honorable mention - 1959 Mini

First transverse FWD 15 - 1993 Volvo 850

First transverse FWD 15 - 1993 Volvo 850

First transverse FWD 16 - 1970 Austin Kimberley and Austin Tasman

Honorable mention - 1959 Saab Monster (Not a production vehicle)

First transverse FWD 18 - 1985 Cadillac DeVille

First transverse all-wheel drive - 1968 Austin Ant

First four-wheel drive vehicle - 1910 Caldwell Vale or 1911 Four Wheel Drive

First all-wheel drive car - 1966 Jensen FF

Honorable mention - 1901 Lohner-Porsche (One produced), electric 4WD

Honorable mention - 1902 Jacobus Spyker (One produced), first mechanical 4WD

Honorable mention - 1932 Bugatit Type 53 (Three produced)

Honorable mention - 1958 Citroën 2CV Sahara (Dual-engine all wheel drive)

First FR transaxle - 1950 Lancia Aurelia (the 1914 Stutz Bearcat featured a primitive transaxle)

First MR Car - 1901 Rumpler Tropfenwagen

First MR AWD car - 1909 Panther Solo 2

Honorable mention - 1985 Ford RS200 (Homologation special, only 200 road cars produced for Group B regulations.)
                               Group B regulations.)

Honorable mention - 1985 Peugeot 205 Turbo-16 (Homologation special, only 200 road cars
                               produced for <u>Group B</u> regulations.)

O Honorable mention - 1985 <u>Lancia Delta S4</u> (Homologation special, only 200 road cars produced for
                               Group B regulations.)

Honorable mention - 1985 Rover Metro 6R4 (Homologation special, only 200 road cars produced for Group B regulations.)
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Suspension

First torsion bar suspension - 1921 Leyland
First front independent suspension - 1924 Lancia Lambda
First front independent suspension - 1924 Lancia Lambda
First hydraulic shock absorbers - 1933 Hudson (Monroe)
First coil spring/shock absorber suspension - 1934 Cadillac, Chrysler, and Hudson
First MacPherson strut suspension - 1936 Tord Vedette
First chapman strut suspension - 1958 Lotus Elite
First air suspension - 1958 Cadillac Brougham
O Honorable mentions - 1999 Cowley and 1933 Stout-Scarab (Firestone)
First self-levelling suspension - 1955 Citroën DS
O Honorable mention - 1954 Citroën Traction Avant 15HHydropneumatic
First fully active suspension - 1990 Nissan Infiniti Q45, 1991 Toyota Soarer [9]
O Honorable mention - 1981 Suspension - 1991 Toyota Celica (300 experimental vehicles produced)
First active anti-roll bars - 1994 Citroen Xantia Activa (Active Roll Stabilization)
First sactive differential - 1995 Nissan Skyline GT-R Vspec - Active LSD
O Honorable mention - 1986 Porsche 959 PSK (limited production of 200 vehicles)
Honorable mention - 1986 Porsche 959 PSK (limited production of 200 vehicles)
Honorable mention - 1996 Missubish Lancer EVO IV, AYC is a factory option. Became standard in EVO V. Honorable mention - 2005 Ferrari F430 and Acura RL feature fully-integrated electronic

Brakes

differentials

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First power brakes - 1919 Hispano-Suiza H6 (mechanically assisted)

Honorable mention - 1921 Duesenberg Model A
First vacuum-assist power brakes - 1928 Pierce-Arrow
First standard disc brakes - 1952 Citroën DS

Honorable mentions - 1956 (HRG twincam) used helicopter disc brakes Triumph TR3, Girling

O Honorable mentions - 1956 (HRG twincam) used helicopter disc brakes Triumph TR3, Girling (Jaguar pioneered disc brakes at Le Mans in 1953)

First antilock braking system - 1966 Jensen FF (Dunlop Maxaret system, previously used in aviation)

First electrical antilock braking system - 1969 Lincoln Continental Mark III

Honorable mention - 1970 Cadillac (rear only)

First electronic antilock braking system - 1986 Lincoln Mark VII/Continental and Chevrolet Corvette

First strict parking brake - 2003 Lincoln LS

First diagonally split, dual brake circuits - 1962 Saab 95/96

First absetos-free brake pads - 1983 Saab Automobile

First electro-hydraulic brakes - 2003 Mercedes-Benz SL-Class

First regenerative brakes - 1997 Toyota Prius
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Driver-aids

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    First standard rear-view mirror - 1912 Marmon
    First power steering - 1951 Imperial

            First cruise control - 1957 Imperial
            Honorable mention - Peerless had a centrifugal governor speed control system in the 1910s

    First traction control - 1987 Bosch Mercedes-Benz S-Class/BMW 7-Series
    First drive-by-wire throttle - 1988 BMW 750IL
    First electrochromic rear-view mirror - 1989 Lexus LS
    First dynamic stability control system/Electronic Stability Program - 1996 BMW 7-Series/Mercedes-Benz CL-Class

    First standard rear-view mirror - 1912 Marmon

First adaptive cruise control - 1997 Toyota Celsior
First heads-up display - 1988 Oldsmobile Cutlass Supreme
First factory GPS navigation - 1990 Mazda Cosmo, 1991 Toyota Soarer
First night vision - 2000 Cadillac DeVille
First power door locks - 1956 Packard

    First integrated car dynamics control system: 2005 <u>Toyota Crown Majesta</u> (Vehicle Dynamics Integrated

          Management)
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Passive restraint

- First <u>airbags</u> 1974 <u>Oldsmobile Toronado</u>
 First car to come standard with dual airbags 1987 <u>Porsche 944 Turbo</u>

• First six-airbag system - 1994 Audi A8 • First head airbags - 1998 BMW 7-Series

Tires

- First use of pneumatic tires 1895 <u>Peugeot</u> L'Eclair (<u>Michelin</u>)
 First standard pneumatic tires 1896 <u>Bollée</u> Voiturette
 First radial-ply tires 1949 <u>Michelin</u> "X" (patented in 1946)
 First self-repairing tires 1950 <u>Goodyear</u>
 First <u>run flat tire</u> 1974 <u>Mini 1275GT</u> (<u>Dunlop</u> Denovo; optional)

Lighting

- First electrical lighting 1898 <u>Columbia</u> electric
 First standard lights 1904 "Prest-O-Lite" <u>acetylene</u>
 First standard electrical lights 1908 <u>Peerless</u>
 First integrated electrical and lighting system 1912 <u>Cadillac Model 1912 Delco</u>
 First "dipping" headlights 1915 Guide Lamp Company
 First dual-beam headlight 1924 Bilux

 First back to the beautiful to 1924 Code
 First "dipping" headlights 1924 Code
 First dual-beam headlight 1924 Bilux

- First retractable headlights 1936 <u>Cord</u>
 First retractable headlights 1936 <u>Ford</u>
 First directional headlamps 1930s <u>Tatra</u>
 Ohonorable mention 1948 <u>Tucker Torpedo</u> (originally designed with swivel lights, but replaced with third "cyclops light" turned on when cornering). third "cyclops light" turned on when cornering).

 First fog lights - 1938 Cadillac
 First auto-dimming headlights - 1952 Cadillac Autronic Eye
 First auto-om/off headlights - 1964 Cadillac Twilight Sentinel
 First halogen headlights - 1965 Hella
 First haddight wipers - 1970 Saab Automobile
 First modern U.S.-market car with sealed beam headlights - 1984 Lincoln Mark VII
 First AC HID lights - 1991 BMW 7-series
 First DC HID lights - 1997 Lincoln Mark VIII
 First neon lights - 1997 Lincoln Mark VIII
 First all-LED tail lights - 1998 Maserati 3200 GT
 First bi-xenon HID headlamps - 2000 Mercedes-Benz CL-Class

Electrical system

- First electric self-starter 1911 <u>Cadillac</u>
 First electric windows 1938 Buick Y

- First electric windows 1938 Buick Y
 First combination key and ignition switch 1949 <u>Chrysler</u>
 First AC <u>alternator</u> 1960 <u>Valiant</u>
 First sealed <u>battery</u> 1971 <u>Pontiac</u> "Freedom Battery"
 First multiplexed wiring 1987 <u>Cadillac Allanté</u>
 First integrated car systems control 1990 <u>Mazda Eunos Cosmo</u> (*Car Control System*)

 Honorable mention 1991 <u>Toyota Soarer</u> (*Electro Multi Vision*)

 First built-in 110V AC inverter 2000 <u>Toyota Avalon</u>

Climate control

- First windshield defroster 1928 <u>Studebaker</u>
 First windshield washer 1937 <u>Studebaker</u>
 First <u>air conditioning</u> 1938 <u>Studebaker Commander</u>
 O Honorable mention 1939 <u>Packard</u> and 1941 <u>Cadillac</u>
- First rear window defogger 1948 Cadillac
 First rear window defogger 1948 Cadillac
 First heated seats 1966 Cadillac
 O Honorable mention (first electrically heated) 1972 Saab 99
 First automatic climate control 1964 Cadillac
 First digital climate control 1975 Rolls-Royce Camargue
 First ventilated seats 1997 Saab 9-5

In-car electronics and entertainment

- First original-equipment radio 1923 Springfield
- First original-equipment radio 1923 Springfield
 First navigation system August 1981 Honda Accord (analog, dealer-installed) [11]
 First navigation system with acoustic output 1989 Infiniti Q45
 First digital navigation system 1990 Acura Legend
 First GPS navigation system 1990 Acura Legend
 First GPS navigation system 1990 Mazda Eunos Cosmo
 Honorable mention 1991 Toyota Soarer [12]
 Honorable mention 1990 Pioneer Electronics/Trimble (aftermarket)
 First active audio volume control 1990 Chevrolet Corvette Bose/Delco Gold Series
 First telematics assist system 1996 tie 1997-model Cadillac Seville (OnStar) and Lincoln Continental (Motorola RESCU)
 First DVD navigation system 1996 Matsushita/Pioneer Electronics (aftermarket)
- (Motorola RESCU)

 First DVD navigation system 1996 Matsushita/Pioneer Electronics (aftermarket)

 First DVD navigation system 1996 (aftermarket)

 First In-car PC 1997 Microsoft Auto PC (aftermarket)

 First Bluetooth-capable audio system 2000 Chrysler

 First THX-certified stereo system 2003 Lincoln LS

 First in-car karaoke machine 2003 Geely BL

 First active noise cancellation 2005 Acura RL

 First digital television reception 2006 Mercedes-Benz S-Class

Other

- First steering wheel 1899 Packard
 First speedometer 1901 Oldsmobile
 First tilt-away steering wheel 1912 Peerless
 First tilt-away steering column 1928 Buick
 First dash-mounted fuel tank gauge 1914 Studebaker
 First tilt-away steering column 1928 Buick
 First spit folding rear seats 1961 Renault 4 (Fiat patented the system in 1978)
 First tilt/telescope steering wheel 1965 Cadillac
 First four wheel steering 1985 Nissan Skyline HICAS
 O Honorable mention 1983 Mercedes 170VL (miltitary truck only)
 O Honorable mention 1987 Honda Predude 4WS
 First composite wheels 1989 Shelby CSX
- First composite wheels 1989 Shelby
 First capless fuel filler 2005 Ford GT

American types

- First standardized American automobile <u>Duryea Motor Wagon</u> (1896)
 First American <u>electric car</u> <u>Detroit Electric</u> (1907)
 First American <u>hybrid SUV</u> <u>Ford Escape Hybrid</u>
 First Chinese-made vehicle sold in America 2006 <u>Miles ZX40</u>