

Manual And Automatic Transmission Comparison

Automatic transmission

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An automatic transmission (AT) or automatic gearbox is a multi-speed transmission used in motor vehicles that does not require any input from the driver to change forward gears under normal driving conditions.

The 1904 Sturtevant "horseless carriage gearbox" is often considered to be the first true automatic transmission. The first mass-produced automatic transmission is the General Motors Hydramatic two-speed hydraulic automatic, which was introduced in 1939.

Automatic transmissions are especially prevalent in vehicular drivetrains, particularly those subject to intense mechanical acceleration and frequent idle/transient operating conditions; commonly commercial/passenger/utility vehicles, such as buses and waste collection vehicles.

Manual transmission

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A manual transmission (MT), also known as manual gearbox, standard transmission (in Canada, the United Kingdom and the United States), or stick shift (in the United States), is a multi-speed motor vehicle transmission system where gear changes require the driver to manually select the gears by operating a gear stick and clutch (which is usually a foot pedal for cars or a hand lever for motorcycles).

Early automobiles used sliding-mesh manual transmissions with up to three forward gear ratios. Since the 1950s, constant-mesh manual transmissions have become increasingly commonplace, and the number of forward ratios has increased to 5-speed and 6-speed manual transmissions for current vehicles.

The alternative to a manual transmission is an automatic transmission. Common types of automatic transmissions...

Non-synchronous transmission

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A non-synchronous transmission, also called a crash gearbox, is a form of manual transmission based on gears that do not use synchronizing mechanisms. They require the driver to manually synchronize the transmission's input speed (engine RPM) and output speed (driveshaft speed).

Non-synchronous transmissions are found primarily in various types of industrial machinery; such as tractors and semi-tractors. Non-synchronous manual transmissions are also found on motorcycles, in the form of constant-mesh sequential manual transmissions. Prior to the 1950s and 1960s, most cars used constant-mesh (and also sliding-mesh) but non-synchronous transmissions.

Continuously variable transmission

component lifespan, and greater durability. Compared to traditional automatic transmissions, it offers lower fuel consumption and is more environmentally

A continuously variable transmission (CVT) is an automated transmission that can change through a continuous range of gear ratios, typically resulting in better fuel economy in gasoline applications. This contrasts with other transmissions that provide a limited number of gear ratios in fixed steps. The flexibility of a CVT with suitable control may allow the engine to operate at a constant angular velocity while the vehicle moves at varying speeds.

Thus, CVT has a simpler structure, longer internal component lifespan, and greater durability. Compared to traditional automatic transmissions, it offers lower fuel consumption and is more environmentally friendly.

CVTs are used in cars, tractors, side-by-sides, motor scooters, snowmobiles, bicycles, and earthmoving equipment. The most common type...

Preselector gearbox

widespread adoption of the automatic transmission, so they were considered in comparison to the "crash gearbox" type of manual transmission. Preselector gearboxes

A preselector gearbox is a type of manual transmission mostly used on passenger cars and racing cars in the 1930s, in buses from 1940–1960 and in armoured vehicles from the 1930s to the 1970s. The defining characteristic of a preselector gearbox is that the gear shift lever allowed the driver to "pre-select" the next gear, usually with the transmission remaining in the current gear until the driver pressed the "gear change pedal" at the desired time.

The design removed the need for the driver to master the timing of using a clutch pedal and shift lever in order to achieve a smooth shift in a non-synchromesh manual transmission. Most pre-selector transmissions avoid a driver-controlled clutch entirely. Some use one solely for starting from a standstill. Preselector gearboxes were most common...

GM 8L transmission

with gearsets 1 and 3 swapped. The 8L90 is the first 8-speed automatic transmission built by General Motors. It debut in 2014 and is designed for use

All 8L transmissions are based on the same globally patented gearset concept as the ZF 8HP from 2008. While fully retaining the same gearset logic, they differ only in the patented arrangement of the components, with gearsets 1 and 3 swapped.

The 8L90 is the first 8-speed automatic transmission built by General Motors. It debut in 2014 and is designed for use in longitudinal engine applications, either attached to the front-located engine with a standard bell housing or mounted in the rear of the car adjacent to the differential (as in the Corvette). It features a hydraulic (Hydramatic) design.

The 8L45 is the smaller variant and debuted in 2015 in the 2016 Cadillac CT6. It is designed for use in longitudinal engine applications attached to the front-located engine with a standard bell housing...

GM 6L transmission

a series of 6-speed longitudinally-mounted automatic transmissions produced by General Motors. The 6L80 and 6L90 were assembled at GM Powertrain plants

The 6LXX family is a series of 6-speed longitudinally-mounted automatic transmissions produced by General Motors. The 6L80 and 6L90 were assembled at GM Powertrain plants in Ypsilanti, MI (Willow Run Transmission), Toledo, Ohio (Toledo Transmission) and Silao, Guanajuato, Mexico, while the smaller 6L45 and 6L50 were produced at those same Toledo and Silao plants, as well as at a GM Powertrain plant in Strasbourg, France. All four models feature clutch to clutch shifting, eliminating the one-way clutches used on older transmission designs.

The series was first launched with the 6L80 in the 2006 Cadillac STS-V, with the remaining three versions all first appearing in 2007 model year vehicles. The 6L90 was a strengthened and uprated version of the 6L80, used primarily in heavy-duty truck/van...

Comparison of BitTorrent clients

The following is a general comparison of BitTorrent clients, which are computer programs designed for peer-to-peer file sharing using the BitTorrent protocol

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The BitTorrent protocol coordinates segmented file transfer among peers connected in a swarm. A BitTorrent client enables a user to exchange data as a peer in one or more swarms. Because BitTorrent is a peer-to-peer communications protocol that does not need a server, the BitTorrent definition of client differs from the conventional meaning expressed in the client-server model.

Bram Cohen, author of the BitTorrent protocol, made the first BitTorrent client, which he also called BitTorrent, and published it in July 2001.

Many BitTorrent programs are open-source software; others are freeware, adware or shareware. Some download managers...

Car controls

developed and adapted to the demands of drivers. For example, manual transmissions became less common as technology relating to automatic transmissions became

Car controls are the components in automobiles and other powered road vehicles, such as trucks and buses, used for driving and parking.

While controls like steering wheels and pedals have existed since the invention of cars, other controls have developed and adapted to the demands of drivers. For example, manual transmissions became

less common as technology relating to automatic transmissions became advanced.

Earlier versions of headlights and signal lights were fueled by acetylene or oil. Acetylene was preferred to oil, because its flame is resistant to both wind and rain. Acetylene headlights, which gave a strong green-tinted light, were popular until after World War I; even though the first electric headlights were introduced in 1898 (and those were battery-powered), it wasn't until high...

Infiniti G Line

standard with a 5-speed manual transmission. The only options to begin with were an automatic transmission, leather interior, and a power glass moonroof;

The Infiniti G Line is a series of compact executive cars manufactured and marketed by Infiniti, a luxury division of Nissan, for the 1991–1996 and 1999–2016 model years — across four generations.

The first two generations of the Infiniti G (P10 and P11) were sedans based on the Nissan Primera. Beginning with its third generation (V35), the Infiniti G have been rebadged versions of the Nissan Skyline line of sedans and coupes that were exported to the United States and Canada. The fourth generation (V36) introduced the hardtop coupe convertible. The Nissan FM platform, used with the third and fourth generations (V35 and V36) of the Infiniti G, also underpins the Nissan 370Z and has shared components with the Infiniti M, Infiniti EX, and Infiniti FX.

Infiniti established a new naming convention...

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