

# **What are the different types of automatic gearbox?**

## **What do I need to consider when buying an automatic car?**

The first thing to understand when looking for an automatic car is that there are four different types of automatic gearboxes. You can't tell which type of gearbox a car has by looking at the gearstick. Neither can you base your selection on a manufacturer's name, because most manufacturers use more than one type of automatic gearbox.

The way to tell them apart is to test-drive them. Test number one: on a flat road in drive with the handbrake off and your foot off the footbrake, the car should move forward on its own without pressing the accelerator. This is called creep. This ensures that the car will not roll backwards on hills or at junctions, making it an easier car to drive. Test number two: on a flat road in reverse with the handbrake off and your foot off the footbrake, the car should move backwards on its own without pressing the accelerator. This is called creep. This ensures that the car will not roll the wrong way when parking or reversing on a hill, making it an easier car to park. If the car has an automatic handbrake or electric parking brake, they will both need to be off to allow it to creep forward and backward.

There are four types of automatic gearbox. Each one will behave differently when you drive it. Some are easier to drive than others are. Some have lower fuel consumption than others. Some are quieter than others. You may have heard the phrase semi-automatic gearbox. This is a feature of a gearbox not a type of gearbox. This feature allows the driver to decide when the car changes gear or to override the car's choice of gear. It is popular with drivers, who learned to drive in a manual car, but now drive an automatic car. Any of the four types of gearbox may have this feature.

## **What is a double clutch gearbox?**

This type of automatic gearbox and is a modern design. It creeps forward on hills, it is easy to drive, easy to park and it has low fuel consumption.

It works like this. There are two halves to the gearbox. The odd gears 1 3 5 7 in one-half and the even gears 2 4 6 8 in the other half. Each half of the gearbox has its own clutch. Before the car moves, the cogs are moved in both halves of the gearbox to select two gears, 1 and 2. When the car moves off, the car brings the clutch up for gear 1 so that it can start to move forward. As the car picks up speed, the clutch for gear 1 goes down and the clutch for gear 2 goes up, without the cogs in either half of the gearbox being moved. After the gear change, the half of the gearbox not being used will move the cogs to select gear 3 ready for the next gear change. As the car picks up speed, the clutch for gear 2 goes down and the clutch for gear 3 goes up, without the cogs in either half of the gearbox being moved. The process continues as the car picks up speed or slows down. The cogs are not moved during the gear changes just the two clutches. This gives a fast, smooth, quiet and efficient gear change.

## **What is a torque converter gearbox?**

This is an old design of gearbox that has been around for a long time. It used to be the most common type of automatic gearbox, so you will find it on a lot of older second hand cars. It creeps forward on hills and it's easy to drive and park. Gear changes are smooth, but inefficient. It has the highest fuel consumption of the four types.

It works like this. The gearbox has a torque converter instead of a clutch. The gearbox has only one torque converter. Each time it changes gear, it moves the cogs during the gear change. The torque converter allows the car to maintain its momentum when it moves the cogs during a gear change.

## **What is a constantly variable transmission (CVT) gearbox?**

This is an old design of gearbox that has been around for a long time. Only a few car manufacturers have ever fitted this type of gearbox to their cars. Some versions of this gearbox creep forward on hills and are easy to drive and park. Some versions of this gearbox roll backward on hills making them difficult to drive and park. You will have to test drive the car to find out, which version of CVT gearbox it has. This type of gearbox is very smooth due to it not having any cogs to move. It has low fuel consumption.

It works like this. The gearbox doesn't have cogs, but has a system of belts and pulleys. The belts and pulleys provide one gear, that constantly varies as the car goes faster or slower while the engine revs stay the same.

## **What is an automated manual gearbox?**

This is a modern design, so you will not find it on older second hand cars. The design is based on a manual gearbox, so a car with this type of gearbox may drive and behave like a car with a manual gearbox. They may roll backwards on hills making them difficult to drive and park. They also slow down during gear changes causing problems when you move off at junctions and roundabouts. This type of gearbox is not suitable for pupils learning to drive. Gear changes are not smooth. It has low fuel consumption.

It works like this. This is a manual gearbox fitted with electric motors. The motors move the clutch plates and the cogs when the car changes gear. Even though it is based on a manual gearbox, it is an automatic without a clutch pedal.

## **What is direct drive?**

This is where there is no clutch or gearbox. The car's wheels are connected directly to what's powering the car. Electric cars have direct drive.

# **Choosing an automatic car to adapt**

## **What type of gearbox should I go for?**

Double clutch, torque converter and CVT should all be okay, but drive it first to check. Avoid automated manual gearboxes. A direct drive electric car would be good choice too.

## **Are there special requirements for indicator and wiper stalks?**

Some cars have rotary controls on the end of these stalks for things like lights, rear wiper, front and rear washers. It can be difficult to fit adaptations to these controls, that are located on the end of the stalks. If you're going to buy a car that has these controls check with your fitter, that adaptation can be fitted to them, before you buy the car.

## **Are some adaptations specific to one make of car?**

If you will be fitting adaptations to the car, you need to know whether they will fit any car or whether they are specific to one make of car. Check this with your fitter before you buy a car. The adaptations that may be specific are:

- ▶ Combined accelerator/brake/signal lever.
- ▶ Lodgesons infrared system.
- ▶ Left foot gas pedal.
- ▶ Pedal extensions.

## **What optional extra equipment do I need on the car?**

**Automatic handbrake.** Cars with this type of handbrake put the handbrake on automatically for you when they stop and release it automatically when you press the gas pedal to move off. For pupils, who drive a car with any sort of steering ball or lollipop grip steering ball or have a weak left arm, it is a useful to have this on a car.

**Automatic wipers.** Automatic wipers work by detecting when there is rain on the windscreen. When the car detects rain it will then automatically switch the wipers on or off as necessary, or change the speed of the wipers as necessary. For pupils, who drive a car with any sort of steering ball or lollipop grip steering ball, then it's useful to have this on your car.

**Automatic lights.** Automatic lights work by detecting low light levels and switching the sidelights and headlights on and off automatically. The sidelights and headlights would then work automatically when it becomes dark. For pupils, who drive a car with any sort of steering ball or lollipop grip steering ball, then it's useful to have this on your car.

My car has all four of the extras listed above.

## **My driving school car is a Volkswagen Golf R line ETSI**

**Gearbox:** double clutch 7 speed (DSG).

**Engine:** 1.5 litre fuel injected and turbocharged petrol & electric hybrid (150PS).