

Driving a Manual Transmission Vehicle

A lot of new manual transmission vehicles are now coming out with a 'no roll back' feature. This should make manual transmission vehicles much more popular. It may also make some of what I am telling you obsolete. I imagine, though, that many dyed-in-the-wool manual drivers will not opt for the 'no roll back' feature. They will probably feel that it is too sissified. Therefore, I also imagine that regular manuals will be around for a while.

The information that follows is for manuals without the 'no roll back' feature.

Parking and Starting the vehicle

Normally when you park a manual transmission vehicle, you leave it in either low or reverse with the parking brake set. Therefore when you start the vehicle you would put the clutch in and shift it to Neutral. Start the vehicle with the clutch in. After you have started the vehicle, if you want to leave it running you can gradually release the clutch while keeping the foot brake on. In this way, if you make a mistake and the vehicle is not in neutral, it will stall rather than run into something. Make sure that anyone else who is driving the vehicle is doing the same thing.

Getting the Vehicle Moving Without Rolling Back or Stalling

I think that most people feel that if they could just get the vehicle moving without rolling back, or stalling, that they would be all right. As for the rest of it, they could 'fake it until the make it'.

The vehicle stalls when you bring the clutch too high, before the vehicle gets moving. In fact, most new drivers of manuals will have a hard time believing this but, you absolutely cannot stall a manual transmission vehicle when it is moving. This is assuming of course that there are no other problems with it, such as being out of gas.

Want proof; try this. In a quiet area, while moving forward, put the clutch in and turn off the ignition. Make sure that you don't turn the key to the lock position. You still need to steer. Now turn the key back to the on position and gradually let out the clutch. The vehicle's engine will start.

Here are the steps to follow in order to avoid stalling:

Flat Surfaces

- With the vehicle in first gear, bring the clutch up to the **friction point**. The friction point is that point at which you feel the vehicle start to pull forward. When you are at the friction point you should also hear a change in the sound of the engine, and the tachometer will start to drop. Don't let the tachometer drop below 500 revolutions per minute. That is half way between the '0' and the '1' on most tachometers. If the tachometer gets below the 500 rpm mark, the vehicle will probably stall.

- Usually you have a bit of warning that the vehicle is about to stall. The vehicle will start to shake. If this happens, don't panic. Simply lower the clutch a little until the vehicle quits shaking. In most cases the vehicle won't stall. If it does stall in traffic, simply lower the clutch to the floor and restart the engine. Then bring the clutch back up to the friction point and try again.
- Once you have the clutch at the friction point, step on the accelerator. If the vehicle doesn't move forward bring the clutch just a bit higher until it moves.
- **Now, this is the important part.** Hold the clutch there until the vehicle is moving enough to start bringing the clutch higher. The big mistake most beginners make is that when they step down on the gas, they immediately begin to bring the clutch up higher. This causes the vehicle to stall. You have to hold the clutch at the friction point until the vehicle is moving. Usually about 5mph or about 8kmh is enough. That is it. It is really that simple.
- Once your foot is completely off of the clutch and the clutch is in its fully raised position, rest your foot on the floor. Don't keep it poised over the clutch. I will explain this more in the section on shifting.

Here are the steps to follow in order to avoid rolling back:

Small Inclines

- If you are on a small incline you can do the following. Simply keep your foot on the brake until you have brought the clutch to the friction point. At this point you can take your foot off of the brake and move it to the gas. You don't have to do this quickly. Just move your foot to the accelerator. If at this point the vehicle does start to roll back, don't panic. Just bring your clutch a little bit higher. The vehicle will quit rolling back.
- Stop bringing the clutch up when the vehicle quits rolling back. You may have to give a bit more gas than you did on the flat surface, but do not bring the clutch up until you are moving enough to avoid stalling.

Steeper inclines

On steeper inclines you will want to use the parking brake to keep you from rolling back. The key to using the parking brake is to remember that the parking brake has nothing to do with going forward. It is only used to keep you from rolling back.

A lot of students will try to use it for going forward. What they do is bring the clutch up, above the friction point, at the same time that they take the parking brake off. This will cause the vehicle to stall.

So, here is how we do it:

- With the vehicle in first gear we hold the parking brake up with the button pushed in. With the parking brake on, we can then move our right foot to the accelerator.

- Bring the clutch to the friction point and give some gas.
- When you feel the vehicle start to pull forward take the parking brake off. Remember to keep the clutch at the friction point. Do not try to bring it up yet.
- The vehicle should start to move forward. If it doesn't, or if it starts to roll back, don't panic and start all over. Simply bring the clutch up just enough for it to catch and then stop bringing it up. At the same time give more gas as needed. Don't overdo it.
- Once the vehicle is moving enough, gradually bring the clutch the rest of the way up.

A lot of instructors teach their students to always start out as if they were on a steep hill. There are some good reasons for doing it this way.

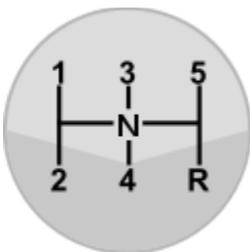
- First of all, the student is always practicing not rolling back. This means that when the student does get on a hill, they already know how to do it.
- Secondly, this method gives the student the best method to avoid stalling.
- Thirdly, the student only has to learn one way to do it. I am sure that once they are driving on a regular basis, they will figure out the other methods.

Starting off on a downhill slant

Starting off on a downhill slant is easy. Simply take the brake off first. Once the vehicle is moving, gradually bring the clutch up while giving some gas. That's it.

Shifting Gears

First, let's look at the shift patterns for most vehicles.



Five Speed

The picture above shows one of the most common shift patterns. The shift pattern will usually be printed on the top of the shift knob.

For the purpose of this explanation, we are using this pattern.

When the shifter is in neutral the shifter sits between 3rd and 4th. That is the place where the 'N' (for Neutral) is in the picture above. It is spring loaded to sit there. You work against the spring to put the lever into all of the gears except 3rd and 4th. This makes it easier to shift.

I recommend an open palm system. Keep it light. You don't need to use too much muscle.

When putting the shifter into first, pull the shifter toward you and up.

When putting the shifter into second, pull the shifter toward you and down using just your fingers.

When shifting from second to third simply pop the lever into neutral. Remember that it will position itself under third. Then, just push the lever forward with the palm of your hand.

From Third to fourth, keep your palm in a downward position and simply pull the lever straight down.

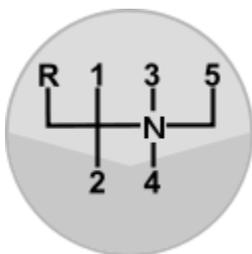
For fifth gear you have to work against the spring again. Pop it into neutral, turn you hand counter clock wise, so that your thumb is facing downward, and push the lever to the right and up.

For Reverse; the lever will not go directly into reverse from any forward gear. You have to put the shifter into neutral for a moment and then into reverse. It also will not go into reverse while the vehicle is moving forward. From neutral turn your hand open palm so that the thumb is facing down and push the lever to the right and down.

Here are some other common shift patterns that you may encounter. The open palm system works for all of them.



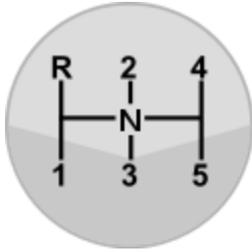
Four-Speed



Five-Speed

I really dislike having reverse in this position

It is too easy to put it into Reverse by mistake, instead of First



Five-Speed



Six Speed

Up Shifts

This system works for shifting from any lower gear to a higher gear. The secret to making any up-shift smooth is to do the shift quickly enough that you don't lose momentum. This means that if you are making an up-shift while climbing a hill, you will need even more momentum than usual.

I am not going to give you exact speeds or rpms to do this. Every vehicle is a bit different and I would rather you learn to do it by the sound of the engine. If you want to use specific speeds or rpms for the vehicle you are driving, feel free. You will find it in the owner's manual.

Let's assume that you are starting off in first gear. Once the vehicle is up to speed and you want to shift into second. Follow this system.

- Put your hand on the gear shift lever; remembering to hold your palm open as explained earlier.
- Put the clutch in (down).
- Take your foot off of the accelerator immediately after you put the clutch in. You want to do this at almost the same time that you put the clutch in, but the clutch has to go in first.
- Shift to second.
- Once the lever is second, immediately release the clutch; before you lose momentum.
- Now you can step on the gas again to speed up or maintain your speed.

That is it. Do the same for any up shift.

Down-Shifts

How you do the down-shift will depend on why you are doing it and under what circumstances. Are you slowing down, or are you shifting to a lower gear in order to have more power to climb a hill? We are going to do the shifts slightly differently.

In the first example, let's say that you are slowing down to make a turn. Most turns can be made in second gear unless you have to wait for someone, or come to a complete stop. Normally, if you were driving an automatic you would just slow down in a straight line, coast as you steer into the corner, and then accelerate. We want to do essentially the same thing with a manual transmission, but first, as you slow down, you also want to shift down and release the clutch so that you are turning in-gear. You do not normally want to put the clutch in and coast around the corner. If you have to slow down enough to put the vehicle in first gear, then you will probably be using the clutch.

So in the above example, you would slow the vehicle down. Once the vehicle is slow enough you can shift to second, Ease the clutch off slowly, turn the corner as you would in an automatic, and then accelerate. That's it.

The second example would be when you want to shift to a lower gear in order to have more power to climb a hill. The most common example would probably be shifting from 5th to 4th gear. In this example we do not want to slow the vehicle down, so in order to make a smooth shift, we have to speed the engine up. Here is how we do it.

We start off like an upshift. Put the clutch in, take your gas off, and shift down. Now give some gas, and then ease the clutch off. It is important to give the gas while the clutch is in, and keep the gas on as you gradually release the clutch. It doesn't take very long to learn this. Most students will get the feel for how much gas to give very quickly; usually about 5 or 6 tries and they will have it. It is a very short learning curve.

Stopping

With a car, you don't normally have to down shift to make a stop. Just slow the vehicle down and then put the clutch in. You want to put the clutch in just long enough before you stop so that the stop is smooth.

In the event of an emergency stop, put the clutch in early so that you don't stall the vehicle. Remember, 'When in doubt, both feet out.'

Driving Slow

Sometimes you have to go very slow; as in parallel parking or inching forward to get a better view. Many students will try to ride the clutch while doing this. Try to keep this to a minimum as it can be hard on your clutch. If possible, try to get a bit of momentum and then depress the clutch letting the momentum carry you.

What is ‘Riding the Clutch’ anyway?

In many cases a student has been told time and again about the dangers of ‘riding the clutch’. They have heard this so many times that they are afraid to even use the clutch. Now, because they are so afraid to use the clutch, they end up frequently stalling the vehicle. Stalling the vehicle is not kind to the clutch. The result of all of this is that they are actually damaging the clutch more than if they were less afraid.

Let me state this emphatically,

“Using the clutch is not riding the clutch.”

Riding the clutch is when you rest your foot on the clutch between shifts. This holds the clutch down a little bit. So, between shifts, put your foot on the floor to the left of the clutch. There really is no reason to keep your foot poised over the clutch between shifts. In fact, it tends to make you more nervous; more anxious. Putting their foot on the floor between shifts actually helps you to relax.

A last word

Well, that is about it. I have tried to find a good video on driving a manual, but so far I have had no luck. In the future I will try to put one together for you. If I do, or if I find a good one, I will add it to this Manual.