

## Heel and Toe

What exactly is heel and toe and why would you want to do it? When done properly, this technique allows the driver to downshift the car with exceptional smoothness. In addition, this technique reduces the amount of wear and tear on your engine, clutch, transmission and drive shafts. As a result, your repair bills and lap times can both drop. The heel and toe technique is executed while the driver is reducing the speed of the car allowing the driver to be in the proper gear when it comes time to accelerate. Here is an overview of the steps:

1. While braking with your right foot.
2. Depress the clutch pedal with your left foot.
3. Move the shift lever into neutral.
4. Move the shift lever into a lower gear. This step will overlap with step 5.
5. While continuing to brake, roll part of the right foot to the gas peddle and blip the throttle.<sup>1</sup> Depending on the peddle setup of the car and the driver's preference, the simultaneous use of both gas and brake peddles can be accomplished by straddling both peddles across the width of the foot or the length (heel to toe) of the foot. The second method is why the technique is referred to as heel and heel.<sup>2</sup>
6. During the higher revs resulting from the throttle blip in step 5, release the clutch pedal. The intent is to release the clutch peddle at the exact point in which the higher engine revs match that needed by the lower transmission gear.
7. Repeat steps 2 through 6 for each low gear engaged. Based on driver preference, you may skip gears or engage each lower gear in sequence.
8. Release the brake pedal and you are ready to accelerate.

Where should you practice heel and toe? First - the racetrack is not the place to learn the technique but a place to perfect the timing of the technique at speed. To learn the technique, find yourself a long, straight and lonely road. Get the car up to 40-45 mph in a taller gear and go through the above steps – WITHOUT – pressing on the brake pedal. Practice these steps until the car gives you no discernable feedback that you have engaged the lower gear other than seeing the shift lever in that lower gear position and the tachometer indicating higher revs. In other words, once you can't feel the car jerk or buck **at all** when down shifting, you're ready to move on to the next exercise.

Now that you have this mastered, practice the steps above including depressing the brake. You know you have it down when you can go down through all the gears and come to a complete stop while threshold braking. However, you don't need to wait until you've completely mastered the technique before you test your skills at the track. Feel free to heel and toe at the track once you are reasonably comfortable with the process and you are smooth enough to not create a safety hazard on the track.

## Double Clutch Heel and Toe

What about double clutching? Some might say you if you are going to go through the effort of learning to heel and toe you might as well complete the process and learn the

double clutch at the same time. Both are difficult to learn and not very intuitive. That said, it is not that much more difficult to learn how to double clutch while you are learning to heel and toe. If you are going to take the time to learn how to heel and toe, I say learn the double clutch at the same time. Here is an overview of the steps including the 3 additional steps required for the double clutch:

1. While braking with your right foot.
2. Depress the clutch pedal with your left foot.
3. Move the shift lever into neutral.
4. Roll part of the right foot to the gas peddle and blip the throttle.
5. During the higher revs resulting from the throttle blip in step 5, release the clutch pedal. Yes, the gear selector is still in neutral. This release allows the internals of the transmission to match the revs of the low gear you will be selecting in step 7.
6. Once again, depress the clutch pedal with your left foot.
7. Move the shift lever into a lower gear. This step will overlap with step 5.
8. While continuing to brake, roll part of the right foot to the gas peddle and blip the throttle.<sup>1</sup> Depending on the peddle setup of the car and the driver's preference, the simultaneous use of both gas and brake peddles can be accomplished by straddling both peddles across the width of the foot or the length (heel to toe) of the foot. The second method is why the technique is referred to as heel and heel.<sup>2</sup>
9. During the higher revs resulting from the throttle blip in step 5, release the clutch pedal. The intent is to release the clutch peddle at the exact point in which the higher engine revs match that needed by the lower transmission gear.
10. Repeat steps 2 through 9 for each low gear engaged. Based on driver preference, you may skip gears or engage each lower gear in sequence.
11. Release the brake pedal and you are ready to accelerate.

Practice the double clutch technique using the same exercises cover for heel and toe above.

1. This is what makes the maneuver difficult. The skill set takes a similar amount of effort as learning to ride a bike. And similar to that process once you have it down you won't forget how to do it. It will also become second nature and you won't even think about it when you do it. It is not easy to learn but stick to it – your wallet and lap times will both thank you.
2. How do you depress the brake and blip the throttle at the same time? Same way you get to Carnegie Hall. Practice practice practice. Place the ball of your right foot on the left lower corner of the brake pedal and depress the brake pedal. Quickly pivot your foot at the ankle and blip the throttle pedal with the right side of your right foot with your little toe and the underside edge of your right foot. You might need to make some changes to the pedal surfaces or placement of the pedals to do this. Ask your local mechanic or car geek for help. There are also other methods and foot placements for depressing the brake and throttle at the same time (like using the heel on the gas and toe on the brake (or visa versa) - hence the name heel and toe). But I find the other methods more difficult. You might not though – just Google heel and toe and see if any of these other methods might be easier for you.