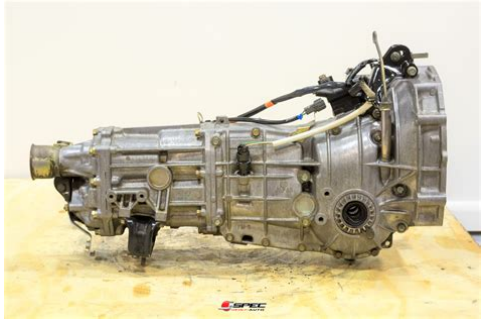
4 speed manual transmission vs 5 speed



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And rightly so, because both the automatic and manual transmission variants offer an outstanding performance.At low speeds, however, the Automatic Transmission is incredibly smooth and responds with the slightest throttle inputs. Therefore, thanks to the automatic transmission variant, crawling in slow traffic is a child’s play. The Ciaz 4speed automatic gearbox has a 2 and L button on the gearlever for the ease of driving. It is used to lock it at lower gears for max thrust and there is a button to lock it at a higher gear as well. The Ciaz petrol automatic is a superb cruiser overall and sits well at high speeds. The Ciaz automatic variant is also more refined. To add to the performance and overall driving experience, Maruti Suzuki Ciaz also added a hillhold function. It holds the brake until the clutch is at the friction point, making it easier to start uphill from a stop in manual and automatic transmission automobiles. And here too, both the Ciaz automatic and manual variants dont fail to impress. The Ciaz automatic garnered positive reviews and hence they give you just the assurance you need. They cruise well, are fairly silent and ride with only a slight firm edge. The superb ground clearance of the sedan allows for a smooth drive dodging all bumps that come your way. As for the other changes, the new grille and the shiny new chrome is tailored to make the interior look more plush. The rearseat comfort remains the best in class.Be it the Ciaz petrol automatic transmission or the Ciaz manual transmission variant, these are sure to provide a powerpacked and smooth drive.Due to the ongoing COVID19 situation, we are putting the health and wellbeing of our employees and customers above everything else. Please expect a delay in response at this time. We would urge you to practice social distancing, stay at home, and follow the Government’s directives to help contain the spread.

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In the meanwhile, you can explore the NEXA website and configure your favourite NEXA Car using

the car configurator Come, be a part of our world. Come, be a part of our world. It uses a driveroperated clutch, usually engaged and disengaged by a foot pedal or hand lever, for regulating torque transfer from the engine to the transmission; and a gear selector that can be operated by hands.Higherend vehicles, such as sports cars and luxury cars are often usually equipped with a 6speed transmission for the base model. Automatic transmissions are commonly used instead of manual transmissions; common types of automatic transmissions are the hydraulic automatic transmission, automated manual transmission, dualclutch transmission and the continuously variable transmission CVT. The number of forward gear ratios is often expressed for automatic transmissions as well e.g., 9speed automatic.Most manual transmissions for cars allow the driver to select any gear ratio at any time, for example shifting from 2nd to 4th gear, or 5th to 3rd gear. However, sequential manual transmissions, which are commonly used in motorcycles and racing cars, only allow the driver to select the nexthigher or nextlower gear.A clutch sits between the flywheel and the transmission input shaft, controlling whether the transmission is connected to the engine clutch engaged the clutch pedal is not being pressed or not connected to the engine clutch disengaged the clutch pedal is being pressed down. When the engine is running and the clutch is engaged i.e., clutch pedal up, the flywheel spins the clutch plate and hence the transmission.This is a fundamental difference compared with a typical hydraulic automatic transmission, which uses an epicyclic planetary design.

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Some automatic transmissions are based on the mechanical build and internal design of a manual transmission, but have added components such as servocontrolled actuators and sensors which automatically control the gear shifts and clutch; this design is typically called an automated manual transmission or a clutchless manual transmission .Operating such transmissions often uses the same pattern of shifter movement with a single or multiple switches to engage the next sequence of gears.The driver was therefore required to use careful timing and throttle manipulation when shifting, so the gears would be spinning at roughly the same speed when engaged; otherwise, the teeth would refuse to mesh.Fivespeed transmissions became widespread during the 1980s, as did the use of synchromesh on all forward gears.This allows for a narrower transmission since the length of each countershaft is halved compared with one that contains four gears and two shifters.For example, a fivespeed transmission might have the firsttosecond selectors on the countershaft, but the thirdtofourth selector and the fifth selector on the main shaft. This means that when the vehicle is stopped and idling in neutral with the clutch engaged and the input shaft spinning, the third, fourth, and fifthgear pairs do not rotate.For reverse gear, an idler gear is used to reverse the direction in which the output shaft rotates. In many transmissions, the input and output shafts can be directly locked together bypassing the countershaft to create a 11 gear ratio which is referred to as direct drive.The assembly consisting of both the input and output shafts is referred to as the main shaft although sometimes this term refers to just the input shaft or output shaft. Independent rotation of the input and output shafts is made possibly by one shaft being located inside the hollow bore of the other shaft, with a bearing located between the two shafts.

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The input shaft runs the whole length of the gearbox, and there is no separate input pinion.When the dog clutches for all gears are disengaged i.e. when the transmission is in neutral, all of the gears are able to spin freely around the output shaft. When the driver selects a gear, the dog clutch for that gear is engaged via the gear selector rods, locking the transmissions output shaft to a particular gear set.It has teeth to fit into the splines on the shaft, forcing that shaft to rotate at the same speed as the gear hub. However, the clutch can move back and forth on the shaft, to either engage or disengage the splines. This movement is controlled by a selector fork that is linked to the gear lever. The fork does not rotate, so it is attached to a collar bearing on the selector. The selector is typically

symmetric it slides between two gears and has a synchromesh and teeth on each side in order to lock either gear to the shaft. Unlike some other types of clutches such as the footoperated clutch of a manualtransmission car, a dog clutch provides nonslip coupling and is not suited to intentional slipping.These devices automatically match the speed of the input shaft with that of the gear being selected, thus removing the need for the driver to use techniques such as double clutching.Therefore, to speed up or slow down the input shaft as required, coneshaped brass synchronizer rings are attached to each gear. In a modern gearbox, the action of all of these components is so smooth and fast it is hardly noticed. Many transmissions do not include synchromesh on the reverse gear see Reverse gear section below.This is achieved through blocker rings also called baulk rings. The synchro ring rotates slightly because of the frictional torque from the cone clutch. In this position, the dog clutch is prevented from engaging.

Once the speeds are synchronized, friction on the blocker ring is relieved and the blocker ring twists slightly, bringing into alignment certain grooves or notches that allow the dog clutch to fall into the engagement.The latter involves the stamping the piece out of a sheet metal strip and then machining to obtain the exact shape required.These rings and sleeves have to overcome the momentum of the entire input shaft and clutch disk during each gearshift and also the momentum and power of the engine, if the driver attempts a gearshift without fully disengaging the clutch. Larger differences in speed between the input shaft and the gear require higher friction forces from the synchromesh components, potentially increasing their wear rate.This means that moving the gearshift lever into reverse results in gears moving to mesh together. Another unique aspect of the reverse gear is that it consists of two gears— an idler gear on the countershaft and another gear on the output shaft— and both of these are directly fixed to the shaft i.e. they are always rotating at the same speed as the shaft. These gears are usually spur gears with straightcut teeth which— unlike the helical teeth used for forward gear— results in a whining sound as the vehicle moves in reverse.To avoid grinding as the gears begin to the mesh, they need to be stationary. Since the input shaft is often still spinning due to momentum even after the car has stopped, a mechanism is needed to stop the input shaft, such as using the synchronizer rings for 5th gear.This can take the form of a collar underneath the gear knob which needs to be lifted or requiring extra force to push the gearshift lever into the plane of reverse gear.

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Without a clutch, the engine would stall any time the vehicle stopped and changing gears would be difficult deselecting a gear while the transmission requires the driver to adjust the throttle so that the transmission is not under load, and selecting a gear requires the engine RPM to be at the exact speed that matches the road speed for the gear being selected.In most automobiles, the gear stick is often located on the floor between the driver and front passenger, however, some cars have a gear stick that is mounted to the steering column or center console.Gear selection is usually via the left foot pedal with a layout of 1 N 2 3 4 5 6. This was actuated either manually while in high gear by throwing a switch or pressing a button on the gearshift knob or on the steering column, or automatically by momentarily lifting the foot from the accelerator with the vehicle traveling above a certain road speed.When the crankshaft spins as a result of the energy generated by the rolling of the vehicle, the motor is cranked over. This simulates what the starter is intended for and operates in a similar way to crank handles on very old cars from the early 20th century, with the cranking motion being replaced by the pushing of the car.This was often due to the manual transmission having more gear ratios, and the lockup speed of the torque converters in automatic transmissions of the time.The operation of the gearstick— another function that is not required on automatic transmission cars— means that the drive must use take one hand off the steering wheel while changing gears. Another challenge is that smooth driving requires coordinated timing of the clutch,

accelerator, and gearshift inputs. Lastly, a car with an automatic transmission obviously does not require the driver to make any decisions about which gear to use at any given time.This means that the drivers right foot is not needed to operate the brake pedal, freeing it up to be used on the throttle pedal instead.

Once the required engine RPM is obtained, the driver can release the clutch, also releasing the parking brake as the clutch engages.Please help improve it by rewriting it in an encyclopedic style. June 2020 Learn how and when to remove this template message Multicontrol transmissions are built in much higher power ratings but rarely use synchromesh.Usual types areThe first through fourth gears are accessed when low range is selected. To access the fifth through eighth gears, the range selector is moved to high range, and the gear lever again shifted through the first through fourth gear positions. In high range, the first gear position becomes fifth, the second gear position becomes sixth, and so on. This allows even more gear ratios. Both a range selector and a splitter selector are provided. In older trucks using floormounted levers, a bigger problem is common gear shifts require the drivers to move their hands between shift levers in a single shift, and without synchromesh, shifts must be carefully timed or the transmission will not engage. Also, each can be split using the thumbactuated underoverdrive lever on the left side of the knob while in high range. L cannot be split using the thumb lever in either the 13 or 18speed. The 9speed transmission is basically a 13speed without the underoverdrive thumb lever.Transmissions may be in separate cases with a shaft in between; in separate cases bolted together; or all in one case, using the same lubricating oil. With a third transmission, gears are multiplied yet again, giving greater range or closer spacing. Some trucks thus have dozens of gear positions, although most are duplicates. Twospeed differentials are always splitters. In newer transmissions, there may be two countershafts, so each main shaft gear can be driven from one or the other countershaft; this allows construction with short and robust countershafts, while still allowing many gear combinations inside a single gear case.

One argument is synchromesh adds weight that could be payload, is one more thing to fail, and drivers spend thousands of hours driving so can take the time to learn to drive efficiently with a nonsynchromesh transmission. Since the clutch is not used, it is easy to mismatch speeds of gears, and the driver can quickly cause major and expensive damage to the gears and the transmission.Since few heavyduty transmissions have synchromesh, automatic transmissions are commonly used instead, despite their increased weight, cost, and loss of efficiency.Diesel truck engines from the 1970s and earlier tend to have a narrow power band, so they need many closespaced gears. Starting with the 1968 Maxidyne, diesel truck engines have increasingly used turbochargers and electronic controls that widen the power band, allowing fewer and fewer gear ratios. A transmission with fewer ratios is lighter and may be more efficient because there are fewer transmissions in series. Fewer shifts also make the truck more drivable.Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. June 2020 Learn how and when to remove this template message Gear oil has a characteristic aroma because it contains added sulfurbearing antiwear compounds. These compounds are used to reduce the high sliding friction by the helical gear cut of the teeth this cut eliminates the characteristic whine of straight cut spur gears .Retrieved 10 March 2020. By using this site, you agree to the Terms of Use and Privacy Policy. I am planning to purchase a new car and my shortlisted car has 4 speed automatic and 1.6 litre engine. So my questions are My search revealed that the 1.3 litre 4 speed automatic version is underpowered even within the city, but I have driven the 5 speed manual one and it was OK. Is it because of the smaller engine or the 4 speed transmission The car I am considering is Toyota Corolla Altis 1.

6 Below this gear speed your power is low have you ever tried to accelerate in 5th from stationary And above it you hit the speed limitations of the engine. But as the gear ratios are so close it takes a

long time to get up to the top speed. All that is important for the top speed is the power and max speed of the engine and the gear ratio of your top gear. Question 3 far too broad a question to cover here. Id suggest removing that one you should only ask one question at a time The 4th gear may very well topout. Even changing the final drive ratio in a car changes the functional range, and can even increase the top speed.Not really applicable to normal road cars, which is the general case I am answering here. I ride an old 2 stroke RXZ which has a 5 speed transmission compared to an RX135 which has 4 with the engine and everything else being the same between the 2. The main purpose of it is to keep the engine in its torque band. This is the area where the engine is working at its most efficient improved gas mileage and since it doesnt have to build back up to its torque band after a shift its already there, it accelerates faster. This means the top speed is going to be about the same. The top end power is what is going to limit you, all other things being equal.Lower fuel consumption means lower emmissions. When you have a vehicle with say 7 speeds, you will find the engine RPM at 70 MPH on the motorway is down to around 1500 RPM. This slower engine speed allows the engine controls to fully optimise power, fuel consumption and the all important emmissions. The slower engine speed gives the designer of the engine more time per revolution to implement a greater degree of control. They are counting in milliseconds today. A vehicles performance, ie acceleration, is increasingly becoming irrelevant in todays cities. In LondonUK a ten mile journey by car during a working day will take at least an hour.

A car for primarily city use today would be better gauged by cost of ownership, annual tax band, insurance band and projected maintenance costs. However, this is easy to check look up the gear ratios for the gearsets. If all other properties are identical, an identical top gear ratio will give you an identical top speed. The higher number of gears allows the designer to ensure that, after a shift, the engine will return to a productive place on the torque curve in my car, this means keeping the revs up. It would have to chug up from idle speed, eventually reaching its peak torque somewhere around highway speed, finally running out of breath at top speed. This low end performance is why you want as many gears as possible they allow you to select the best torque for the situation. If the number of gears is so high and the changing gears time becomes too extreme, you could eventually see a reduction in the costbenefit ratio of a many gears transmission. However, that doesnt sound relevant to your situation. An automatic in the city, may feel much smoother and may give you better mileage. Depending on how the automatic is programmed, it may be quick to go to a high gear reducing the revs and therefore the fuel consumed. Earn 10 reputation in order to answer this question. The reputation requirement helps protect this question from spam and nonanswer activity.Browse other questions tagged engine automatictransmission manualtransmission or ask your own question. The site may not work properly if you dont update your browser. If you do not update your browser, we suggest you visit old reddit. Press J to jump to the feed. Press question mark to learn the rest of the keyboard shortcuts Log in sign up User account menu 2 ELI5 Why are manual transmissions typically 5speed while automatic transmissions are traditionally 4speed An automatic transmission has a liquid coupling to the engine, AKA the torque converter. This allows the engine to spin faster that the transmission.

Since engines typically make their torque above the low rpm range they can transmit more torque into the transmission while moving at slower speed. This is useful for launching from a stop, towing, hill climbing, etc.Most of the efficiency loss in an automatic was and still is through the torque converter. An extra gear wouldnt help too much to justify the extra cost and complexity. With modern engineering and mechanical technology we can bridge these gaps and now 6 speed automatics are practically the norm. The very short version is simply tradition. Everything about automotive manufacturing revolves around cutting costs as much as possible, and the four speed automatic transmission is a very well understood basic design that has been mass manufactured for something like a hundred years, and therefore employing one even if it involves building one in a new form factor, application, or size from scratch incurs the lowest research and development costs

and is therefore the path of the least resistance. The same is true of 5 speed manuals, which use a proven and easily reproducible mechanical layout. The less simple explanation is that a traditional modern automatic transmission uses a planetary gear system, a planetary gear system using two sun center gears, two sets of planetary intermediate gears, and one outer ring gear will inherently have four operating speeds, due to the laws of physics. A set of planetary gears in that configuration will only ever have four running configurations excluding reverse Everything locked, first sun gear locked, second sun gear locked, or everything unlocked. This is the best tradeoff between complexity weight, cost, reliability and performance appropriate range of gear ratios to enable to the car to actually work.

The reason a car has a transmission at all is because cars can operate at a wide range of road speeds ranging from stopped to highway speed but a combustion engine can only properly operate at a relatively narrow range of speeds. In recent times, the quest for fuel efficiency has made it economically viable for manufacturers to research and develop transmissions with more gears. Automatic transmissions with 6, 7, 8, or even more gears are appearing in vehicles now. Likewise, the 4 speed auto and 5 speed manual have not historically been set in stone. It was common for early automatic transmissions to have only three gears. The Ford Model T, which had a primitive manual transmission, only had two gear settings available. Because manual transmissions directly couple the engine to the wheels via a clutch. Traditional automatic transmissions use a fluid coupling called a torque converter, which allows for a wider range of engine input speeds relative to the output of the transmission. Some power is always lost in the fluid coupling, but it enables the transmission to have a considerable degree of tolerance for varying engine speeds up to and including allowing the engine to spin without stalling when the wheels are stopped. A side effect of this is that engine speed RPMs are sacrificed for greater output torque, which in turn allows a fluidcoupled automatic transmission to behave as if it is geared lower than it actually is. Manual transmissions mechanically lock the wheels to the engine with the clutch, and do not enjoy this luxury. This typically necessitates a first gear with more gear reduction than in an automatic so that the car can be started from a standstill without stalling, even though the top gears of both transmissions may be of equivalent gear reduction. I thought automatic transmissions were generally a lot heavier than manual. All rights reserved Back to top. It’s a more interactive experience and you have more control over the car.

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