Design Your Jeep Build

Part Four Wheels & Tires

Time to work on those shoes.

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Welcome to wheel and tires in our Design Your Jeep Build class number four.

I want to start by reminding you about the absolute most important thing about your build......

This is your build and it is unique to you! There is not one way or one answer on what to get. You need to make sure that this is your taste and the look that you love. It is your hard earned money, your time, your passion, and it's your Jeep. It's a piece of you. You need to make sure that whatever you are doing for your build through all these pieces, is what you want to put on for you.

Make sure you love the rims, make sure that you really liked the tires and go with what you like the look of and is not anyone else's build but yours.

To start this section four off with, we are going to talk tires to start with.



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I know we talked about this in section number two. Your tire is going to be your platform or your foundation for this design. You pick your tire size and then you are going to design your build around that so you don not have to go back and rebuild or redo things.

I just want to make sure you have gotten really clear, like we talked about in part number two. You have done your worksheet to set your goals, get clear and make your decision on what tire is going to be your platform for your build. Especially as we start talking about tires.

I want to begin by pointing out that there are different types of tires. As well as each manufacturer tire is going to be a little different.

There are so many tire combinations that what I did for this section is I picked out the most popular and trusted types of tires for you to hear about it.

All Terrain Tire

There is the all terrain tire and typically this is what comes standard, as a factory tire on your sock wrangler. The all terrain tires are designed to be able to be your daily driver, do great on paved roads, but they are still going to be able to do light off road. They are still going to be capable, but these are going to give you a little bit better fuel mileage. They are not going to be as noisy of a tire as some of the other choices. There are different manufacturers that make all terrain tires.

I know for my JKU, the BF Goodrich is the all terrain tire that came stock from the factory on my JKU. But there are other tire manufacturer companies out there who are making a little more aggressive built all terrain tire. It does sacrifice a little bit of the benefits for the road performance. Like you are getting it a little bit more noise, and you are not gonna get as good of fuel economy. Let's be honest ladies, I would not call anything on that thing good fuel economy. It just gets bad and worse gas mileage. That is a choice for you to make, but for me you are looking at a very slight difference in fuel mileage. These companies are making like a little more aggressive all terrain tire so that the tire is going to do a little bit better off road. You are still going to have a little bit better on road capability as well compared to some of the other tires that are available.

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Mud Terrain Tire

Next, we have the mud terrain or mud tires. I do not want to age myself, but it used to be if you did any off-road driving or four wheel driving, you had mud tires. In talking about the mud terrain or mud tires, they have changed a lot over the last 10 years. The mud tires or the mud terrain, are generally kind of big chunky tread so that they will have more bite. That is especially important in the mud or in wet surfaces. The chunky tread helps to give you a little bit more grip. They have the big large gaps in the tire treat which also allows for the mud to clear out quickly so that if you have been out on a wet trail or where there is a lot of mud the mud will not stick inside the tire for as long. That gives you the ability to "clear the tire out" before you come to another obstacle. That means it is suppose to help keep the tires from building up with mud and then being slick for the rest of the trail ride.

These mud terrain tires are going to be beneficial because once they do fill with mud., as you go to drive, they are going to clear out quickly so that you're not just going to have the mud caked in the lugs and the grooves of your tire. The mud terrain is going to give you a little bit more off-road capability especially if you are somewhere that you have a lot of muddy terrain. Some of the manufacturers make more aggressive tires then others. So the deeper the groove, the chunky the tire, the more aggressive they are. The mud terrain sacrifice your on road performance just a little bit. The biggest thing is going to be the amount of noise. What they are going to sound like on the road is a lot of tire and road noise from those tires as you are driving. The solution is to just blast your music louder and you just get used to the "Wah Wah Wah Wah Wah" sound of a your mud terrain tire going down the road.

Rock Crawler

The mud terrain is one example of a tire that is going to perform a little bit better off-road than it is for your daily driving. As we start to talk about offered capabilities, they have the rock crawler tires and these have different names based on the manufacturer.

But if you really are focused on your off-road capabilities and you are not as concerned or focused on your on road capabilities these are a tire to look at. So maybe your Jeep is not your daily driver, then you can start looking towards these more specialized types of tires. The rock crawling tires are really good if you are going to be tackling boulders, rocks and you want the tires to have that large side lug and good flex on them.

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These are also the type of tire you want for the optimal air down performance. The rock crawler tires are going to be the tires that you are going to see on, I call them "rigs". The Jeeps that are built as trail rigs, but you are not going to see them driving down the road as often. The ride down the road is not going to feel as smooth, you will feel the vibration of the larger lug patterns and grooves as well as have more road noise from the tire themselves. The off-road capabilities are going to be the largest bonus on the rock crawler designed tire.

They have also come out with a rock crawler designed tire with a compound material. These tires are called the rock crawler "stickies". Again, these tires are in the rock crawling tire category in the stickies, just a sticky compound tire that is specifically designed for rock crawling and it is for off-road use. You do not want to use those on your daily driver. They need to be on trails and on rocks and out off-roading. The benefit is the sticky compound helps to stick and grab at the slick rock surfaces for more traction. You will see these tires on rock crawling buggies and race buggies, as well as specifically build "trail rigs" who are out crawling the rocks. You can drive them down the road, just know these are expensive tires and the pavement and asphalt will wear them down significantly faster. I lean towards calling these tires trail tires only for that reason, though you can drive them on the road if you decide too. Just know you won't get as much life out of this tire due to the sticky compound design of the tire itself.

I will share, I do have stickies on my Yj, which is one of the things that keeps me from driving it down the road. But the trade off is that the offered capabilities are amazing.

Tire Choice and Ratings

I looked up a couple different surveys that had been done, with different ratings, to get the top rated tires and I did it based on price. We are going to go the least expensive to the most expensive. And these were the top rated tires. And actually they were in all three of the different,write ups.



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I pulled the ones that were all the way across the board and these had the best ratings and out of all the tires.

The Falken WildPeak A/T Jeep tires. These tires actually have a 70,000 tread warranty on them. They come with a great warranty as well.

The Dick Cepek, Extreme Country tire for the Jeep wrangler. These tires have a 45,000 tread warranty on them as well. They are not quite as popular. What I do like about these two tires and these brands in particular, is that they have a really good tread warranty on both of these.



Of course there was the BF Goodrich all terrain. Both the BF Goodrich T/A KO2 and the KM3 were the most popular out of all these tires on the lists and across the board. If you are thinking about upgrading, getting new tires, I will say they had the best ratings across the board from everybody. Now they did not anywhere show a mile warranty on these. That is something I would definitely look into if you are thinking about getting these tires so that you know, up front. But again, these were the most popular across the board.

Those first three tires were the lower price point tires. Now we are jumping to the next price point. This is the secondary price point.

The Toyo Open Country Jeep Wrangler Tires were one of the top picks on that price point and they have a 65,000 mile warranty as well.

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For me personally, I really like having a mileage warranty on my tires, on my daily driver. If I was just going to have an off-road vehicle, that wouldn't be a concern. But I know for me, having that warranty on those tires where it is my daily driver is really important to me. Keep in mind that everyone is different. You can make your own decisions.

Just for an added opinion the Nitto Trail Grappler Jeep tires were very popular and I actually know some people that are running these two types of tires and absolutely love them. Love them for their on road as well as their offered capabilities. But remember again there was no warranties listed for these tires. All three were very popular tires and had great reviews.



Of course there is the Pro Comp A/T Sport Jeep wrangler tires. They had really good ratings as well. These were the most expensive three. However they came across in all three of the different write ups and surveys. And that is the Mickey Thompson, Baja Mtz p three. Those had great reviews.

Moving up to the next price point. These would be the highest prices tires out of the group.

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You know you cannot talk off-road tires without seeing Interco. They had a couple different tires available that made the cut, but the most popular of them all is the Super Swamper, TSL, LTB Tires for Jeeps. They had really good write ups. I know the Interco Company were the original super swamper that I was kinda talking about back in the day when I was joking about mud tires and everyone had super swampers. This Interco tire that they are making, the TSL LTB tire, had really good reviews, really good write ups.

Next on the list there is the Maxxis tires. They make multiple different tire types. The all terrain, the rock tires, rock crawlers, they make a high end tire across this spectrum for multiple different genres out of those different categories. They make a really good quality tire. They had great reviews. That also makes them the most expensive out of all the ones on the list. Uh, uh, you know, kind of across the board. As a company they had great reviews, the longevity and then the replacement and warranty of the company had really good rankings as well. They are known for their Sticky compound rock crawler tire as their star.

There are so many different types of tires out there. And then of course everyone has their likes and their dislikes and their own opinions on tires. Take your time and do some research.

I recommend watch the performance yourself when you are out at rides. When you see a tire that can really perform well, or you notice a difference between one jeep and another jeep, just notice what tire they are running. Ask them questions about that, how they like it. It helps if you can get honest feedback, sometimes you might learn things about what people don't like about the tires that can help be beneficial as well. Then decide which tire you want for you. So again, there is no right or wrong answer. This is where you get into personal preference.

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Wheel Talk

On a stock wrangler, your wheel size is usually going to range from about 15 inches to 18 inches, depending on what model Jeep you got and what options that you opted for.

I want to start by going over some of the basic choices and understanding for what wheels you want to get.

The first big question is going to be steel or ally.

Steel is usually the choice you are going to see somebody make if they do a lot off-road driving or trail riding. A lot of times they are going to opt for the steel. Now, they are heavier, but that does make them more durable and they are lesser price.

Another thing that makes them a little higher on the priority for an off-road trail rig is they are easier to repair if they are damaged because they are steel. So depending on what is damaged or how they are damaged, sometimes you can actually repair them yourselves because they are steel. The material is different than the alloy.

Alloy is usually several pounds lighter then the steel. This is going to be a better option if you are looking for your daily driver. The lighter weight is going to be easier to start and stop with the alloy wheels. That is going to help with the fuel economy and it's gonna really help with your handling. Another thing about alloy that I'm not sure everybody knows, is it can actually help to reduce the heat from your brake pads from your brake parts as well. Alloy though is usually a little more expensive.

Yet again, this is a personal preference.

What you like the look of? Do you like this steel wheel?

Do you like the alloy wheel?

What is your focus going to be?

Are you me doing more off-road driving?

Is it going to be more of a daily driver?

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Moving to the Beadlock Wheels.

This can be a little bit of a controversy to have Beadlocks or non-Beadlocks.

Beadlocks have become very popular. It used to be, you didn't see them on daily drivers or on jeeps driving down the road very often. That has changes a lot! Now you are seeing a lot more Beadlocks running down the road. This is because more of the off-road build has carried over into our daily driver. The same Jeep is the daily driver and also taken trail riding.

The Beadlock has become more popular and you are seeing them on more and more Jeeps.

But I want to talk about Beadlocks themselves for a minute. The Beadlock are used on trail rigs and Jeeps that we see off-road driving. What it really does is it allows for you to air down your tire pressure to a lower PSI and not risk the tire coming off the wheel or bead because of how the tires are mounted. The tire is almost kind of sandwiched on your wheel, for lack of a better kind of visual. That is really the true design behind the Beadlock was for trail rigs and off-road vehicles to gain traction and more ground surface by airing the tires down to the lowest PSI they could run in them. It was developed to enhance the off-road capabilities of your trail rig. (The entire Beadlock section is next to go in depth on the Beadlock and how they work in detail.)

Th raises the question, do you need a Beadlock in your daily driver? You don't need a Beadlock if you are not going to be going off-road or doing any trail riding. Does that mean you shouldn't or can't run a Beadlock wheel? Of course not! This is your build so you can do whatever you feel you like.

Keep in mind though, you need to look into what the laws are in your particular area because in fact some Beadlocks are not street legal. It used to be the Beadlocks were illegal. There are more and more now that are street legal. If you are thinking about, you would like to run a bead locked. You need to look into your laws and find out which ones are and are not street legal in your area so you know for sure.

Really evaluate what you are building your jeep to do. What is the purpose and make your decision from there. Also keep in mind that the Beadlock is going to be much more expensive than your non-Beadlock wheel. That is just another thing you want to take into consideration as you are picking out your wheels.

Make sure you get the correct bolt pattern as well. That means you need to know your bolt pattern for your particular vehicle as well. Most of the wranglers are usually 5 x 4 1/2 or 5x5. When you are looking to go ahead and upgrade and get new wheels, you do need to make sure that they are going to match your bolt pattern and be able to work on your vehicle. For example our CJ is 5 x 5 1/2 bolt pattern.

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For the Cherokees, so the Xj, Zj and Wj, you will have to look at your current wheels or look up the specs of your vehicle to see what your bolt pattern is going to be. I wish I could say there was a little more similarity, but they definitely vary considerably.

This is something you will want to look up or know. That way whatever wheel that you buy will match your bolt pattern on your vehicle.

Here is where things seem to start getting a little trickier.



Moving into putting the tire and wheel together it is about a size and width. The larger tire, such as any tire that is going to be a 35 inch or bigger is recommended to go on a 17 inch rim or larger.

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If you are going to run a 35, 37, 40 or 42, you need to be on a 17 to 20 inch wheel. The larger the tires, the bigger the wheel needs to be. (Within reason of course.)

If you are going to run a 37, it is recommend that you be on an 18 inch wheel.

An example is a 35 inch tire on a 15 inch rim. The bigger tire is on the smaller wheel can lead to a Jeep that is going to be more squirrely. The tire can actually roll and flex during breaking and turning when you are on the road. By staying on a smaller wheel with a bigger tire you are losing some of the stability and driveability. This will also feel like your Jeep is not handling as well.

That is another part of this to think about. When you start thinking about what size tire with what size wheel and what kind of stress is that going to put on all the other components.

If you are going to do a 35 inch tire, you need to have a 17 inch rim.

Be thinking about when we were talking about picking your tire size and that is the foundation for your build.

If you are going to go do at 35 inch tire, you are going to want to upgrade to a bigger wheel and it is going to be safer for you as well.

All right ladies head spinning time.

Maybe not for you, but I will say for me some of this was head spinning time for sure as I was learning. I am still working on wrapping my head around what we are about to get into. If you have any questions on any of this information as we are moving forward as it comes up, please post a comment in the Private Facebook Group or shoot us an email *@* ladyjeepers*@*gmail.com and I will help you.

Below you will see an example diagram of the three measurements we are going to be talking about. It shows you great examples on based on where the hub is located on the wheel as to what the measurements and offset is.

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We are going to start with backspacing.

Backspacing truly is just a measurement. If you hear someone talking about backspacing that is what that means, backspacing is a measurement. It is actually the measurement that is going to determine how far inboard the hub the holes are that you are going to bolt on the wheel. The measurement tells you how far those holes are from the outside of the wheel.

How to measure backspacing? Measuring the backspacing can get a little bit confusing.



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Time to measure for backspacing.

* You need a wheel that is not mounted on a tire for this.

* Take the wheel, and lay it face down so that you are measuring the back part of your wheel. (That is going to be the part that mounts the wheel that is closest to your vehicle when you are putting it on.)

* Put something straight across the top of the wheel, a piece of steel or wood, anything that you can lay across.

* Measure from that edge of material that is flat across you wheel to the hub to get the backspacing measurement.

So why do you need to know this measurement?

We are talking about wheels, tires, tire width. When you want to run a little bit wider and bigger tire, that is when backspacing becomes crucial.

We need to know this measurement because you need to know the mounting surface and measurement to get the right distance to clear all your parts with your tire.

The tire, once mounted on the wheel needs to be at a distance from your axle.

Why?

What you do not want to happen is to get a new wheel and a new tire and have it put on your jeep to have the edge of your tire hit or rub up against any suspension or any of the parts. You don't want it to interfere with your brakes. So that is why backspacing is so important.

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By changing that measurement on the wheel, you can actually use that to bring the tire in closer to the jeep or out farther away from the Jeep just based on what that measurement is and the amount of backspacing that you have on the wheel. Because where that wheel mounts to the Jeep is going to determine where the tire is going to ride and how much clearance you are going to have.

I am hopeful that I am helping to start explain some of the confusing stuff. Moving into the next measurement for the wheels is the offsets.

There are three different types of offsets that we are talking about when it comes to our wheels and tires. (They are in the graphic above)

There is the negative offset.

That is where the back of the wheel where it will bolt up closest to the inside. Negative offset means that the mounting surface is inside of the wheel. Take your wheel and with nothing on it set it on the ground and look at it from the side. The wheel bolt is closer to the inside. What that means is instead of having the holes dead center in that rim or wheel, they are going to actually be inside of the rim, so they would be farther away from you if you were at the face side.

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This makes the wheel closer to the mounting surface. When you put the tire on that wheel, and mount it on the Jeep there is going to be less room between the Jeep and that mounting service where the bolts go in. That means that the actual holes, so that mounting surface is going to be closer to the back of the wheel, which means it is going to be closer to the vehicle when you go to mount it and you are going to have more wheel from the vehicle out to the outer surface of that wheel.

Most of the time when you upgrade to a wider and/or larger tire you will hear that you need a negative offset wheel. That way it keeps more tire outside of the wheel well and fender of the Jeep. It has less tire on the inside so that the majority of the tire "sticks out" instead of "sucking it up inside."

That is what a negative offset measurement and design is.



The second offset is the positive offset.

The positive offset is where the wheel is going to bolt closer to the outside of your wheel.

That means the mounting surface, were your holes for screws are actually going to meet and mount to hold your wheel to your vehicle, is going to be on the outside of the wheels center line.

When you are looking at the wheel with no tire or anything on it, you are going to notice that the mounting surface is going to be closer to the outside. A positive offset brings more tire inside the wheel well. Usually you will not use a positive offset unless you are going to a narrower tire and want to bring it inside the Jeep more.

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OFFSET

ZERO OFFSET

THIS IS WHEN THE HUB IS EXACTLY CENTERLINE AND IN THE MIDDLE OF THE WHEEL.

Then there is a zero offset.

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It sounds like what it is......

The hub on the wheel is exactly on the center line. That means that it is exactly in the middle of the wheel.

Most of your stock or "regular wheels" as some people call them are always a zero offset.

What this means is if you are going to do a zero offset, when you mount your tire and wheel to your Jeep, you are going to have the same amount of tire inside and out. The same distance and measurement of tire towards your vehicle and the same amount of tire coming outside of your vehicle.

Know Your Backspacing.

If or when you decide to run a wider or bigger tire on your vehicle, you need to know your back spacing. That means you need to know how much room is needed for enough travel room for the tire. That means you need to measure how much room you need from the tire to the vehicle where it is not going to interfere with any components. That is how you are going to know what offset you want to go with.

Now you know if you have a wider tire, you need to bring that tire out away from the vehicle and have more tire on the outside and out of the wheel well. By changing the offset, you can actually change the amount of room that you have between the tire and your vehicle. By doing it in the wheel, you are able to adjust and allow for that tire to move over to give you more room inside or outside of the the Jeep wheel well.

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The most important part of all of this information is to set up your new wheels and tires together so that nothing rubs and you have the correct amount of room.

Remember, this is going to depend on if you are going to run a narrow tire or a wider tire.



The wheel spacers.

If you are looking at getting new wheels and tires you are going to hear people talk about wheel spacers. Especially when you talk about bigger tires or wider tires. The wheel spacer allows for you to get your correct offset with the wheels you have or if you do not adjust your offset by the wheel itself. You are going to use a wheel spacer if the offset just was not enough and there is a slight or minor fitment issue.

There is nothing wrong with using wheel spacers. Especially at the beginning of your build if you have not gotten the correct offset wheel yet.

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Wheel spacers are great depending on what the fit issue is, and what the adjustment issue is.

I know some people will think that wheel spacers are the answer to fixing that. So, instead of going with an offset wheel they are going to go to a wheel spacer. Keep in mind an inch or less is an okay option. If there is a fitment or clearance issue that is wider than an inch, you need to re-adjust and look at some different options on how to fix that issue with a new wheel with the correct offset for you. Without running wheel spacers or multiple wheel spacers that are going to be thicker than an inch because it can be dangerous.

If you are running a wheel spacer, you need to remember the bolts that are holding this wheel spacer are unseen because of where they are located. The bolts for the wheel spacer need to be checked regularly because this is going to be for safety issues. You do not want them to work loose.

Safety with the Wheel Spacers.

If you are going to add a wheel spacer to cure fitment issues that you have keep these things in mind.

One, you need to make sure that that wheel spacer is installed correctly from the very beginning.

Two, those bolts are torqued down and tight when they are installed.

Three, they are going to have to be checked.

That does mean a little bit more work on your end for safety. Because you really do not ever want to let those bolts loosen and chance them working their way out of your wheel spacer. That can make them very dangerous, especially if this is your daily driver that you are driving at high speeds like on the interstate or the highway.

I am a safety patrol ladies, you are going to get to know that about me a little more.

Those who have been with us for a little bit longer probably already know I am. I am a little bit of safety patrol, and really cautious. We have to love our Jeep, we have to love our build, but we need to make the decisions in the right places so that we are safe because there is never, ever a reason to put ourselves in danger or jeopardy.

If it means you know there is a fitment issue then you might have to wait to get the bigger tires on or just put a wheel spacer on short term so that then you can do a long term fix. It is just fine to have a wheel spacer, but if you are going to be doing a lot of off-road driving you want the wheel spacer to just be a short term solution.

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If you are going to daily drive your Jeep and do much off-road driving, and the off-road driving you do is very mild, then you can run a wheel spacer no problem. Just keep in mind the three safety aspects above. Have the wheel spacers checked when you do regular maintenance and if you do go off-road have them checked after a long or hard ride.

Please remember, safety has to be more important than the build.

If you have an inch or less wheel spacer, that is totally fine. Make sure you are checking your bolts or take it in and have a shop check your bolts if you do not want to do it.

Safety, safety, safety, especially when we are talking about a daily driver that will do excessive speeds going down an interstate.

Putting our tires and our rims together.

I know that was a lot of information all at once, when we started talking about backspacing. Especially when we start talking about different offsets, wheel spacers, going into a wider tire, a bigger wheel, and that is a lot to think about and I know that can get confusing and a little overwhelming.



That is why I wanted to start with the tires first though. Think of your tires as your foundation for your entire build platform.

When things like this come up and get a little overwhelming especially when there are so many different directions you can go, try and make decisions based on the ultimate tire platform as your basic guide.

There are things that you will have to choose based on what you like, what you love, and the look you want to have.

A few of those questions will be do you want to go with alloy or steel wheels?

Do you want or need to get Beadlock wheels?

Keep in mind, once you have picked your tire size and your tire manufacturer, what brand, what kind of tire, the tire manufacturers are going to give you specs and they are going to give you recommendations for their specific tires. That helps to then decide which wheel to go with for that tire as well.

When you go to look up a tire, that manufacturer going to have specs for you for that tire. It is going to be what size wheel they recommend. They are going give you the width of the tire and they are going to have recommendations on what wheels are going together best with their specific tires. If you choose the tire first, you can then choose from what specs the tire manufacturer has given you for some of your wheel choices.

I am not saying you have to go with what brand they recommend. But what it is going to do is it is going to help give you a little bit better idea when you start looking at exact specifications. Like we talked about for the correct offset, you are going to have more of the specs that you are going to need to make the right decisions, the right choices, and know what your options are to choose from.

That then makes it easier to go forward. That way you are not trying to do all the research and figure everything out yourself.

When I first started talking about offsets and measurements, my brain kind of goes, Whoa, I'm not even gonna listen to any of that. I know sometimes it can be a little overwhelming but there are different places and people that you can reach out to to help as you are designing your build. You can always reach out to us at Lady Jeepers and we will help in any way we can.

The biggest thing I want is for you to enjoy the process of designing your build and deciding what you want to modify. This is for YOU and you have to love it.

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