

Best Audi S5 Sportback Wheel Spacers [Complete Guide]

👤 AndyBuck # Featured 💬 14 Comments



Is your Audi losing scene points due to a lack of stance? Don't have a Youtuber budget to buy a set of wider wheels?

Wheel spacers could be the perfect solution!

Keep reading for my complete wheel spacer guide to find the perfect spacers for your car.



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Well, if you've done any amount of research you'll know it's not quite as simple as you might think...

"Which size spacers do I go for?"

"Which brand?"

"Will wheel spacers affect my car's handling?"

"Are wheel spacers safe?"

These are just a few of the questions you might have. Don't worry though, I've got your back.

This article has taken 6 months to perfect and covers absolutely *everything* you need to know about wheel spacers.

One last thing before we get into it, if you find this article useful, please share it on your favourite social media site or forum, it's the best way to help me bring more content like this to you in the future :)

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1.0 - Are Wheel Spacers Safe?

Short answer - Yes.



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- they are hubcentric wheel spacers (I explain what hubcentric means below)
- the wheel spacers are from a reputable, proven brand
- the wheel spacers are fitted correctly
- the wheel spacers are TÜV approved
- the wheel bolts are correctly torqued
- the wheel bolts are the correct length



Your car is no more or less safe with correctly fitted, hubcentric spacers as it is without. Porsche actually sell wheel spacers as a factory optional extra, an automotive OEM like that would never sell a feature that could cause harm to the customer, especially in the law suit happy US.

Oddly, I really struggled to find an official image of the Porsche spacers, so I selfishly nabbed the image above from [JZM Porsche](#).

1.1 - Are Wheel Spacers Legal?

Yes, in the UK.

Yes, in Germany so long as they are TÜV approved (both H&R and Eibach wheel spacers are TÜV approved).

No, if you live in Australia (sorry guys!)



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fitting them.

2.0 - What Does Hubcentric Mean?

Hubcentric (or sometimes spaced out to hub centric) wheel spacers are machined to locate perfectly on to the wheel hub centre bore flange, just like your car's wheels do. This ensures they are perfectly central to the hub (i.e. well balanced), and makes them easy to fit as they stay in place while you put your wheel back on.







Contrary to popular belief, the centre bore flange does not provide support. It's not a structural feature, it is purely to ensure correct positioning. It's the friction between the mating faces of the hub and spacer that takes all the loading, providing the wheel bolts are correctly torqued.

P.S. If you want to learn more about my brake set up (shown in the picture above), check out my [DIY brake disc and pad replacement](#) how-to guide.

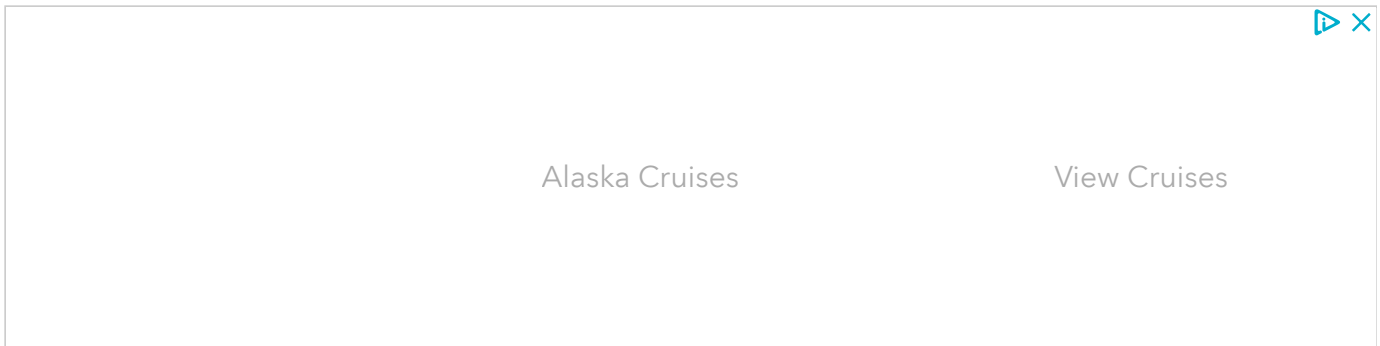
2.1 - Lugcentric

You *might* come across the term lugcentric, they are spacers centred by the torque of the wheel 

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thought I'd explain it in case you do.

I'd advise against fitting lugcentric spacers, not only will they be harder to fit, they'll likely cause issues when trying to get your wheels balanced.



3.0 - Do Wheel Spacers Affect Alignment?

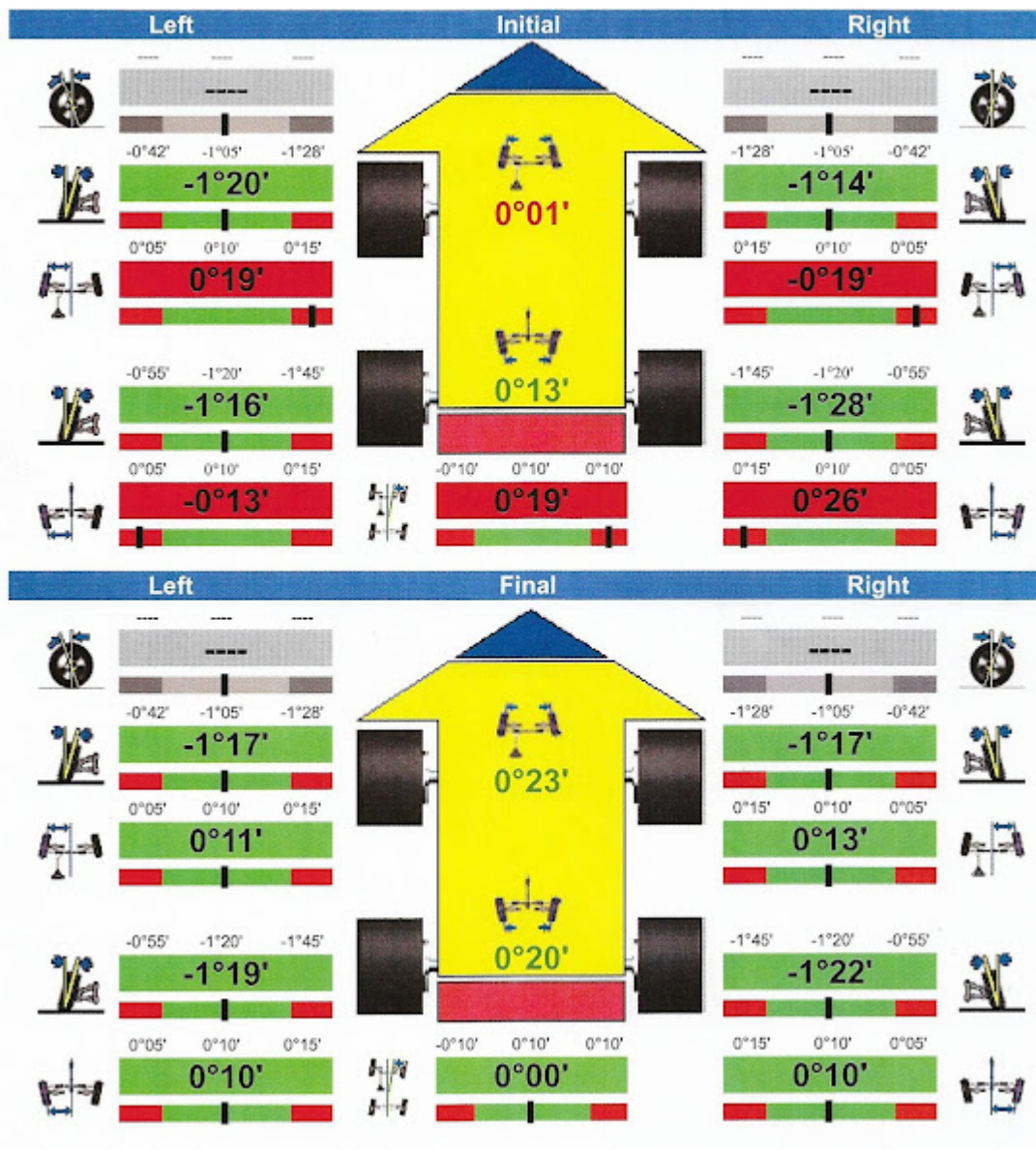
Yes.

You will need to have your car's alignment checked and corrected when you fit wheel spacers. I recommend waiting a couple of days and driving steady for around 50-100 miles, so the suspension settles, before taking your car to get the alignment checked.

Below is an example of a before and after wheel alignment on my B8 Audi S5 Sportback, unfortunately I only got an after report when I fitted spacers.



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4.0 - Do Wheel Spacers Affect Bearings?

Yes.

They will increase the loading on your wheel bearings and cause them to wear slightly quicker. Depending on the size of the spacers you fit, this additional load could be negligible or it could be more significant. The larger the spacer the larger the increase in load.

A common misconception is that buying wheels with a wider offset won't cause wheel bearing

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To avoid increasing the load on the bearings, you'd need to fit a wider wheel, maintaining the same centre contact point.

4.1 - Audi B8 S5 Wheel Bearing Replacement Cost

To give you an idea of whether you're willing to take the risk of increased bearing wear, my front left wheel bearing went, prior to fitting spacers I might add (I noticed problems at ~78k miles). I was quoted £145 for a replacement wheel bearing and £149 for a replacement wheel hub (including a discount) direct from Audi. The guy didn't state what discount had been applied, but I assume it was no more than 10%.

I was, however, able to pick up an SKF bearing and febi bilstein wheel hub for £155 total delivered from carparts4less.



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Without going into too much detail in this post, (I'll do a separate post in future), replacing the wheel bearings can be a nightmare job, the bearings get stuck fast to the suspension arm, and pressing the old bearing out of the hub can be problematic.

To save time, and a fair bit of swearing, I decided to replace the hub at the same time as the bearing, so I didn't have to waste time separating the old bearing from the hub.

Start to finish, the job took just under 6 hours and was an absolute \$!@?&. There'll be a separate post coming soon detailing the job.

Having said that, to give some confidence, I've been running 10mm front and 15mm rear spacers for over 8 months / 5000 miles and haven't needed to replace any bearings that weren't already toast.



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5.0 - Do Wheel Spacers Affect Handling?

Yes.

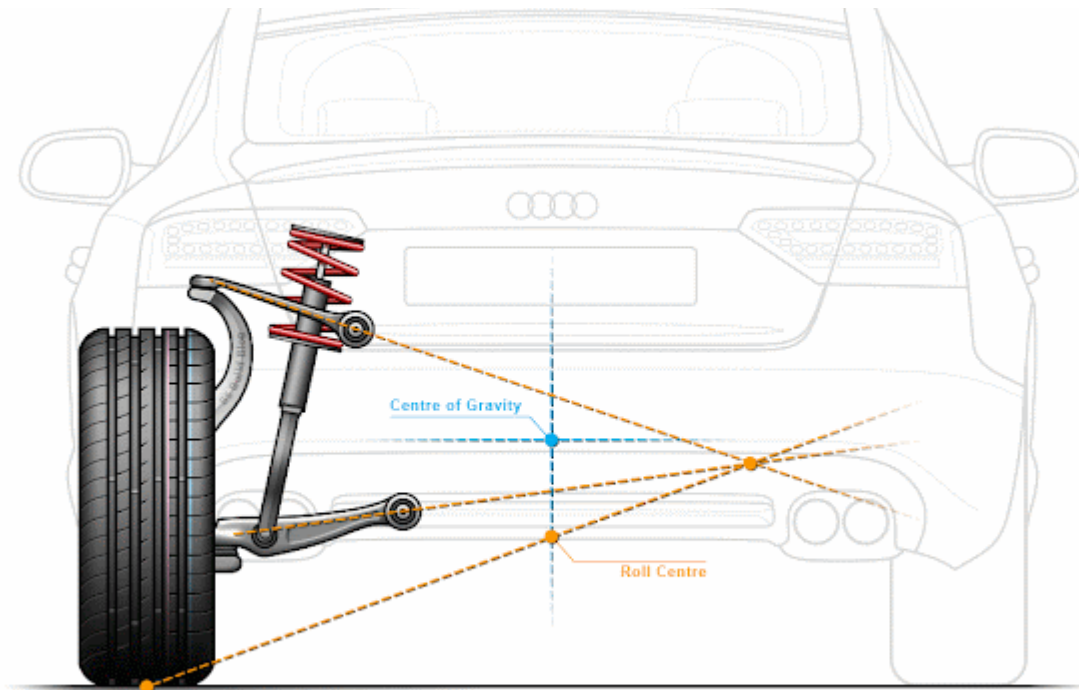
Wheel spacers affect handling in a number of ways, the wider the wheel spacer the larger the affect on the handling will be. Here's three ways that spacers affect handling:

5.1 - Roll Centre

Wheel spacers increase the track width of your car which, at the same time, alters your car's roll centre.

All else being equal, widening the track width will raise the roll centre of your car, bringing it closer to the centre of gravity. The closer the roll centre is to the centre of gravity, the less your cars body will roll.



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5.2 - Under Steer and Over Steer Characteristics

As a general rule of thumb, when you widen an axle's track width, you increase the grip at that axle i.e.

Wider front track = Reduced under steer

Wider rear track = Reduced over steer

The B8 and B8.5 Audi's are renowned for suffering from under steer. It's a function of the engine's position in relation to the centre line of the front axle. If you're looking to counteract under steer, your best bet would be to widen the front track only, and fit a rear sway bar, such as the [034 Motorsport Solid Rear Sway Bar](#).



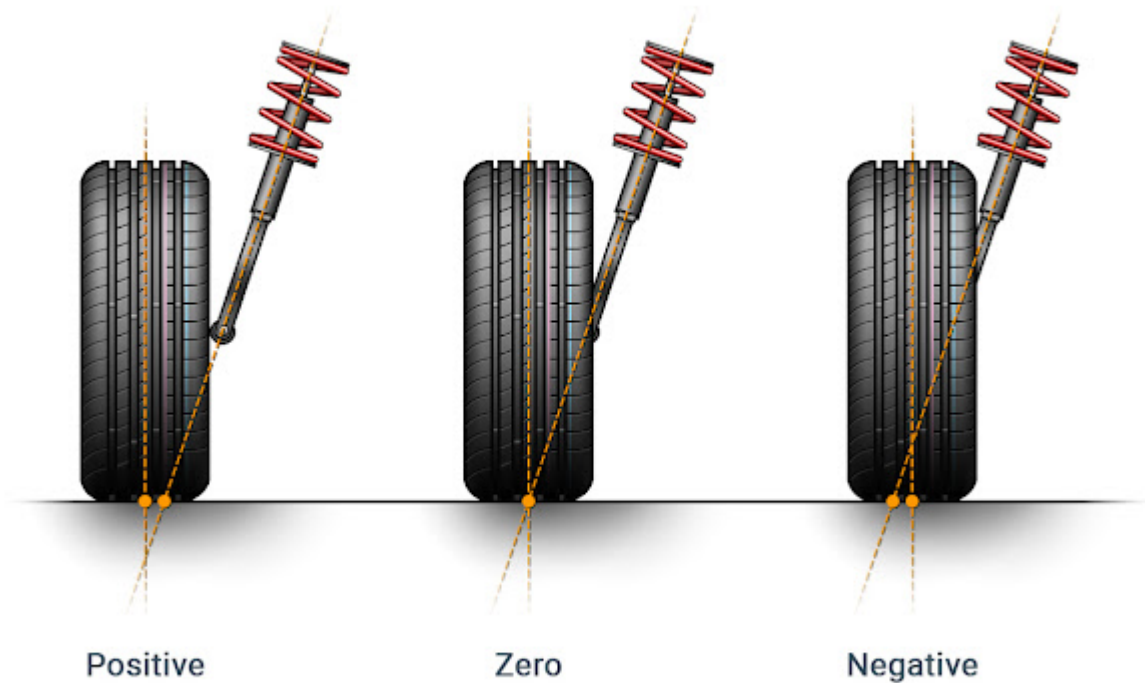
**034 MOTOR SPORT**

5.3 - Scrub Radius

Wheel spacers alter the scrub radius, which is not necessarily a good thing, so you should understand what characteristics you may be introducing by fitting them.

Scrub radius is the distance between the centre of the tyre's contact patch with the ground and where the Steering Axis Inclination (SAI), sometimes referred to as Kingpin axis, would intersect with the floor if extrapolated. The point where the SAI intersects the ground is the fulcrum pivot point, about which the wheel and tyre turns. If the SAI intersects the ground at the same point as the tyre's contact patch centre point, then the scrub radius is zero.



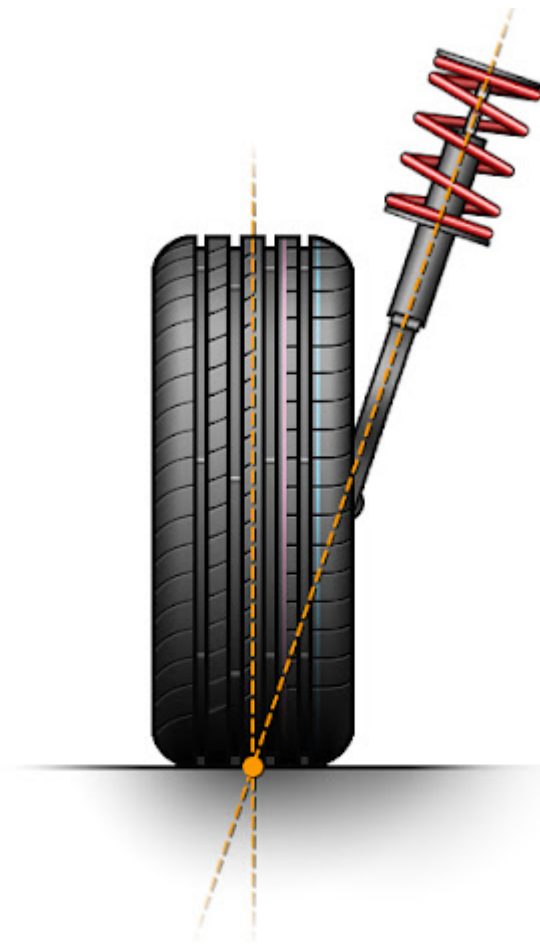
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If the tyre contact patch centre point is outside where the SAI intersects the ground the scrub radius is positive, and conversely if it's inside then the scrub radius is negative. It's generally advised to have a 'little' scrub radius, either positive or negative depending on your cars geometry and layout (front engine'd RWD, front engine'd FWD etc).

5.3.1 - Zero Scrub Radius

As mentioned above, a zero scrub radius is where the SAI and the tyre contact patch centre point intersect the ground in the same spot. Whilst travelling in a straight line the car will track well.





Zero Scrub Radius

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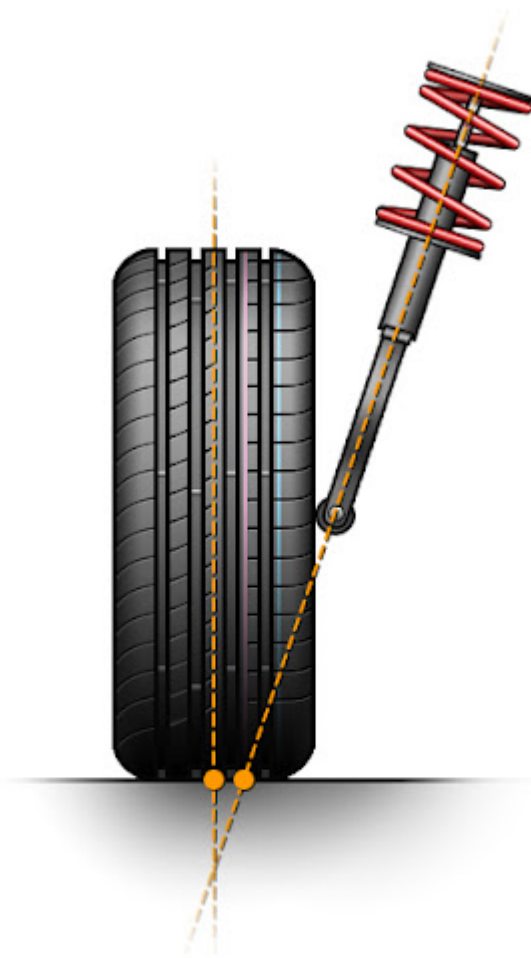
However, when cornering the car will act like a car with a welded differential, displaying a characteristic called squirm. As the tyre contact patch spans both sides of the SAI equally, the half of the contact patch on the outside of the SAI will be travelling faster than the half on the inside of the SAI, i.e. the forces on the tyre contact patch vary. This will unsettle the steering, the tyre will fight itself and 'snatch' grip, increasing tyre wear.

5.3.2 - Positive Scrub Radius

A positive scrub radius is when the centre of the tyre contact patch is closer to the middle of the car than where the SAI intersects the ground. Classic cars used to have positive scrub radii of 100mm (completely unseen in modern production vehicles). The benefit being when parking



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Positive Scrub Radius

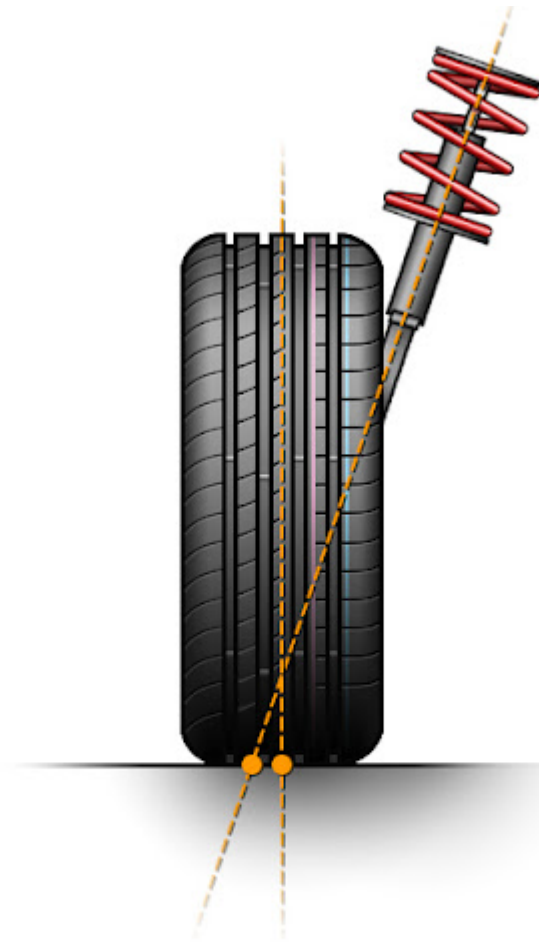
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The downside of positive scrub radius is that if one wheel experiences resistance to forward motion, the car will pull towards that wheel, i.e. if you hit a puddle at the side of the road, the car will pull towards it (and potentially into the curb or ditch).

5.3.3 - Negative Scrub Radius

A negative scrub radius is when the SAI intersects the ground closer to the middle of the car than centre of the tyre contact patch. On front wheel drive cars (i.e. non quattro Audis), a negative scrub radius will cause toe out during acceleration and toe in during braking.





Negative Scrub Radius

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The more powerful the car the more force will be trying to toe out the wheels whilst accelerating, and the heavier the car the more force will be trying to toe in the wheels during braking.

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6.0 - How To Measure For Wheel Spacers

There are 3 measurements you need to know before buying wheel spacers;

1. Wheel Centre Bore - (Audi S5 = 66,5mm)
2. Wheel Bolt Pattern - (Audi S5 = 5 x 112)
3. Width of Wheel Spacer Required - (See below)

6.1 - Audi S5 Wheel Centre Bore

The B8 and B8.5 Audi S5 wheel centre bore is 66,5mm, it's the same for the B8 A4, S4, RS4, A5 and RS5 too. The wheel spacers you buy should be designed specifically for this size bore, any smaller and they won't fit, any larger and the hubcentric design would be redundant.



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6.2 - Wheel Bolts

6.2.1 - B8 Audi S5 Wheel Bolt Pattern

Firstly, you're going to want to measure, or look up, the wheel bolt pattern of your car. To save you some time, the B8 Audi S5 wheel bolt pattern is 5 x 112. If you've got a different car you'll want to either Google the bolt pattern for your specific vehicle, or grab your vernier and go take some measurements.



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Number of Bolts (or Studs) x Pitch Circle Diameter (PCD)

e.g. 5 x 112

PCD is the diameter of a theoretical circle struck through the centre of each bolt (or stud). Sounds really complicated, but it's dead simple.

Using your vernier caliper measure X as per the diagram below. (If you haven't got a vernier caliper, or heaven forbid, don't know what one is, it is essential man cave equipment, get one [here](#), and make sure you learn to use it one handed too for extra man points).

Then just multiply that number by 1.7012. (Note: this method only applies to 5 bolt/stud patterns).

For us S5 owners, X should measure 65.832mm, multiply that by 1.7012 and you get 112, hence 5 x 112.



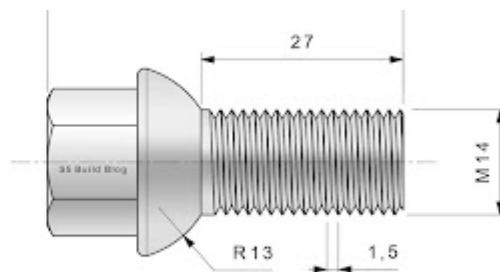
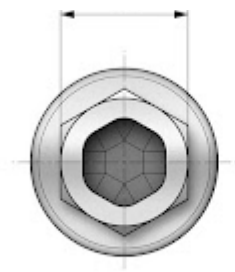
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6.2.2 - Standard Audi S5 Sportback Wheel Bolt Size

The standard B8 and B8.5 Audi S5 wheel bolt size is M14 x 1.5 x 27mm with a R13 round seat and 17mm AF hex head.



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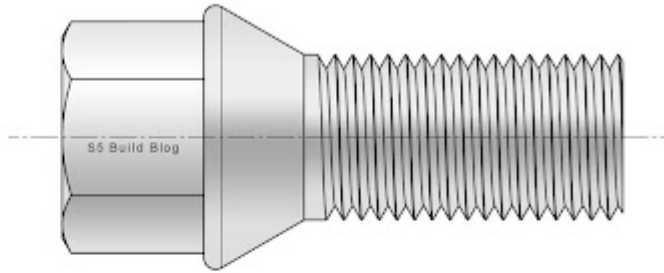
- M14 refers to the thread diameter
- 1.5 refers to the thread pitch
- 27mm is the length of the shaft (measured from the seat to the end of the thread)
- R13 round seat refers to the shape of the back of the head of the bolt (the bit that contacts your wheel)
- 17mm across flats (AF) means you'll need a 17mm socket to tighten or loosen them

WARNING! - Aftermarket wheels are likely to need tapered seat bolts, it is very important you make sure you get the correct seat to suit your wheels.

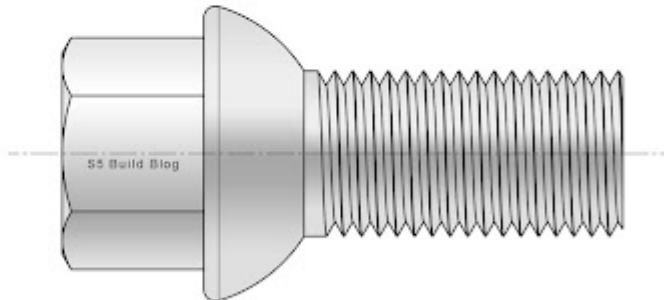


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Aftermarket
Tapered Seat



OEM
Round Seat



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6.2.3 - Do I Need Extended Wheel Bolts When Fitting Wheel Spacers?

Yes - If you are using H&R DR or Eibach System 2 spacers.

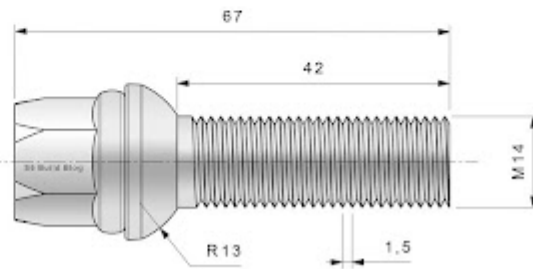
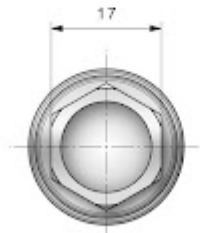
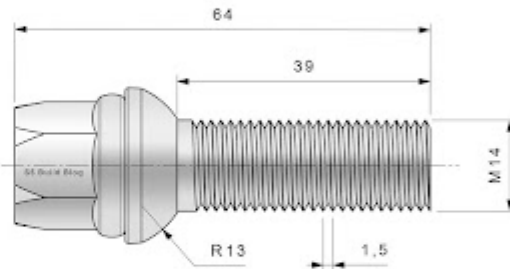
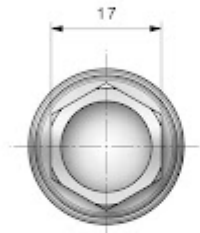
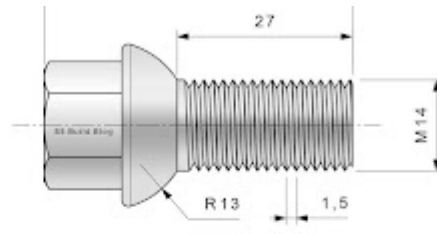
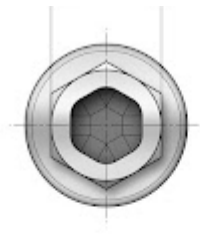
No - If you are using H&R DRA or Eibach System 7 spacers.

If you need extended wheel bolts, to get the correct size, simply add the width of the spacer you've selected to the length of the standard wheel bolt. If you can't get exactly the right length, get slightly longer rather than shorter.

e.g. I fitted 10mm spacers on my front axle, the original Audi wheel bolt shaft measures 27mm, so I'd need 37mm bolts. I couldn't get 37mm so I ordered 39mm. I fitted 15mm spacers on my rear axle, meaning 42mm bolts were required.



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6.2.4 - H&R Extended Wheel Bolt Sets

By far the most tedious part of fitting wheel spacers is finding the right wheel bolts to go with them. It's fairly simple to find normal extended wheel bolts the right size, but it's super tricky to find the right length locking wheel bolts.

Locking wheel bolts are also typically sold in sets of 4, no good if you're fitting different size spacers front to back...

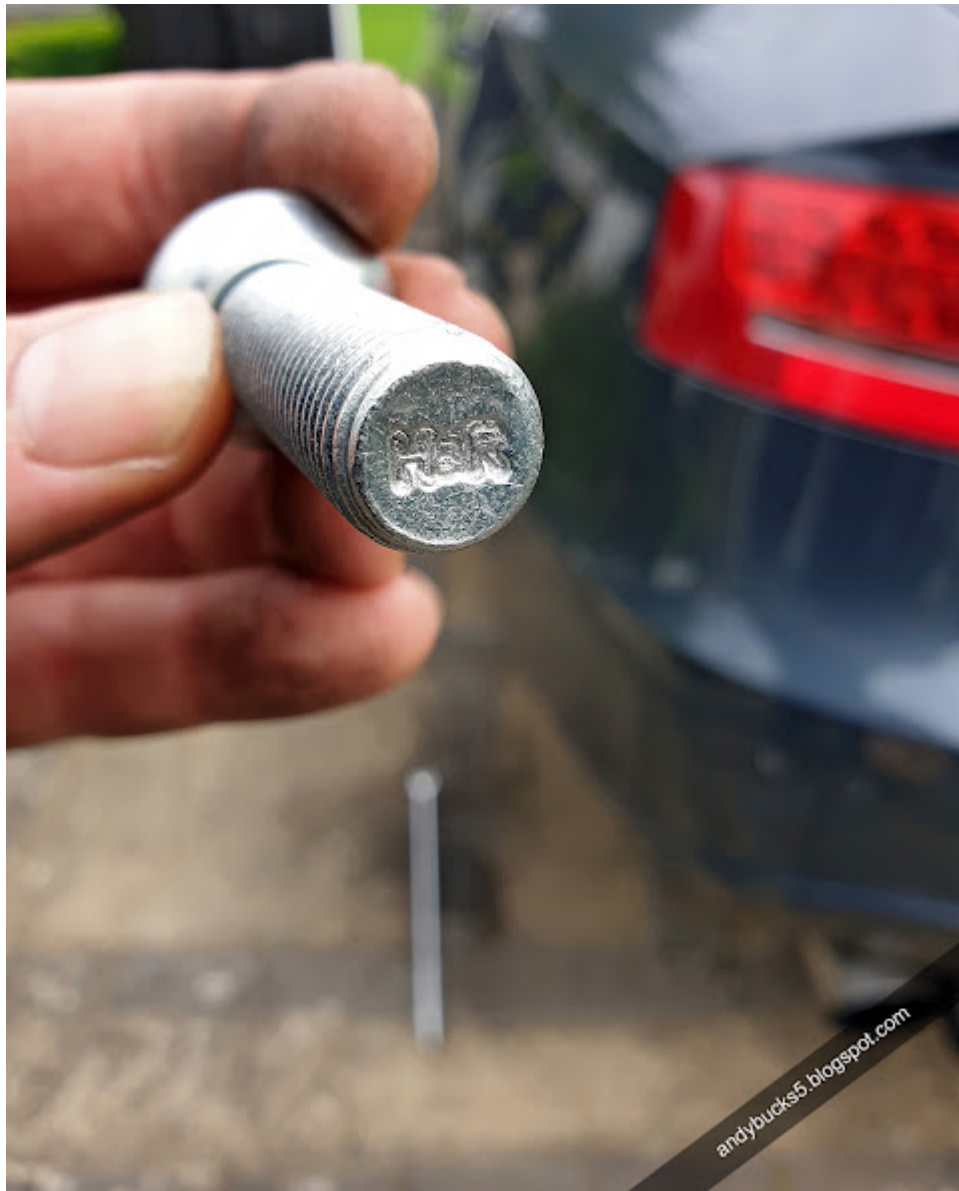
Enter H&R wheel bolt sets. Sold in axle sets including 2 locking wheel nuts!







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6.2.5 - What's The Difference Between One Piece And Two Piece Wheel Bolts?

There were apparently two types of bolt fitted at the factory, a one piece bolt made from a solid bit of metal - WHT 002 437, and one with a two piece construction with a floating washer seat - WHT 002 438 (all Porsche's are fitted with two piece wheel bolts).

My 2010 S5 Sportback had the one piece bolts, so perhaps the later cars got two piece bolts, or maybe it was region specific? Let me know in the comments if you know any more details.

Both are absolutely fine to use, but essentially two piece bolts (in theory) have the following advantages:



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the theory behind this being that during tightening the washer contacts the wheel surface, then stops spinning as the bolt gets to a certain tightness, the bolt then spins on the washer instead of your wheel paint.

- help put a more even torque on the bolts
- reduced likelihood of bolts loosening

Check out this video below for more info.

Difference between a one piece and a two piece lug bolt Otis Inc LA & RAD ...



6.2.6 - What Do The Numbers On Bolt Heads Mean?

You will likely see either 8.8 or 10.9 stamped on wheel bolts, the higher the number the better quality the bolt is. The number refers to the type of material the bolt is made from and its strength.



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Do not skimp out on the quality of wheel bolts, for reference the H&R bolts I bought are marked 10.9.

6.3 - Wheel Spacer Width

The easiest way to measure for wheel spacers width is to grab a sturdy straight edge and a small rule (a tape measure is also fine). To know how long your straight edge needs to be, measure from the floor to the top of your wheel arch, then subtract 25mm / 1 inch.

Make sure your straight edge is perfectly straight. I used some scrap bits of aluminium box



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Hold your straight edge vertically against your wheel, make sure the straight edge is touching both sides of the wheel to ensure it's parallel, then measure from the edge that's touching your wheel to the outside of the wheelarch panel. Measure in a couple of places, you should use the smallest measurement you get.

This will be the width of spacer you need. Simple.

Here's what that process looked like measuring my car:





Rear - 15mm



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Now, before I get flamed in the comments, there is another method, subtly different to this one.

Get yourself a long spirit level, let one end rest on the floor and bring one edge up against the wheelarch. Measure from the edge nearest the tyre back to the the nearest point on the tyre.

If you can't find a straight edge to use for the method above, this method works just fine but it's just a bit fiddly as you have to double check the spirit level is plumb whilst trying to measure the distance.

For completeness, here's what that process looks like (I've had to use a different car as my spacers were already fitted).



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6.3.1 - Don't Make The Mistake I Did When Measuring For Wheel Spacers

I wanted the wheels to look perfectly flush with the bodywork, I didn't want any kind of underflush, I believe 'hella flush' is the term the kids use. So, I thought if I made the radius where the tyre wall transitions to the main tyre tread flush, it would look just right.

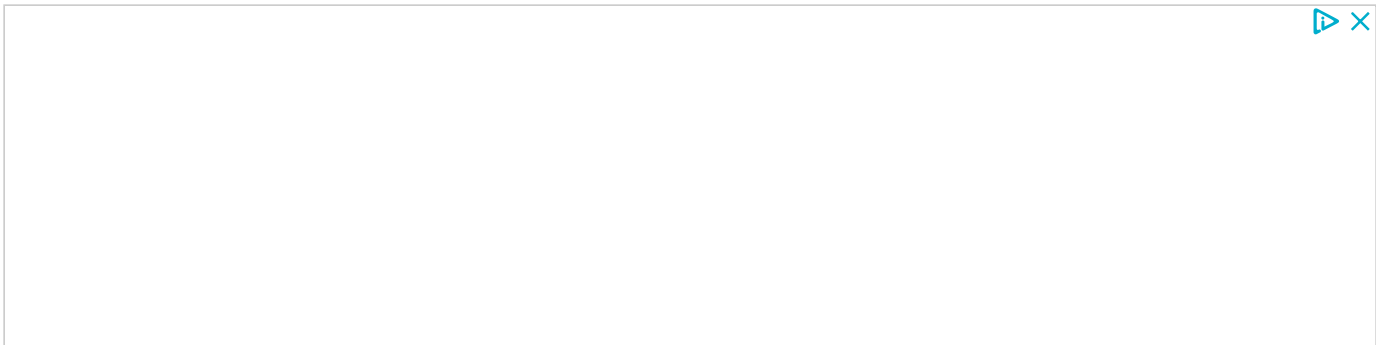
I went ahead, measured as above, then *added* to that the measurement from the back of the straight edge to the radius of the tyre.





My additional measurement was 7-8mm, depending on where I measured to, so to be 'safe' I ended up ordering 20mm spacers for the rear. When I fitted them it looked like the wheels stuck out, not a good look... (and an expensive mistake).





7.0 - Best Wheel Spacers for Audi S5



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Brand	Offset Per Side	Purchase Link
H&R Trak+	10mm	DR - 2055668
	15mm	DR - 3055665
	20mm	DRA - 40556654
	25mm	DRA - 50556651
Eibach Pro-Spacer	12mm	System 2 - S90-2-12-004
	15mm	System 2 - S90-2-15-017
	20mm	System 7 - S90-7-20-016
	25mm	System 7 - S90-7-25-016 B

7.1 - H&R DR vs DRA

The difference between H&R DR and DRA wheel spacers is that DRA spacers bolt to the wheel hub, this means you can use the original wheel bolts to secure the wheel to the spacer.

H&R DRA wheel spacers start at 20mm thick, this is because the bolts that attach them to the hub are recessed into the spacer, if the spacer was any thinner the bolts wouldn't sit sub-flush to the spacer surface, stopping the wheel sitting down properly on the spacer.

It's exactly the same difference between the Eibach System 2 and System 7's.

H&R DR





H&R DRA



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7.2 - H&R Trak+ Wheel Spacer Review

I know, I know, this article reads like an advert for H&R, I assure you I'm not affiliated to them or benefiting in any way by recommending them as a brand, I bought my spacers and bolts with my own money. (H&R if you're reading this and wish to send me many £££s or free test kits I'm good with that :P).

Anyway, back to the review. So far I've had three sets of H&R spacers and I've been impressed by the consistent high quality of all three. The spacers are really light weight, surprisingly so even though you know they are made from aluminium. H&R state their spacers are "manufactured from a special proprietary alloy specifically developed for H&R that is lighter and has a higher tensile strength than 6061-T6 billet aluminum." Can't argue with that.

The machining of the spacers is precise, no burrs, scuffs or signs of sloppy manufacturing evident. The embossed H&R logo and part number on the side of the spacers is a nice touch too, again executed well.





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The only area of critique I'd have for H&R is on the packaging, don't get me wrong, it's not bad I'm just being picky.

The spacers are wrapped in bubble wrap, so there is no risk of damage which is good, but the overall unboxing experience is a little lacking. All elements in the box are just chucked in there rather clumsily. There are a couple of warning leaflets and a book you're supposed to read before installation. If you buy DRA spacers, the bolts are all in one see-through bag with no branding on it, which is then surrounded in bubble wrap.











Ideally, I'd have the spacers set into a foam inlay and a slight recess for a pocket to hold all the paperwork. This would probably drive the price up quite a bit, and isn't overly ecofriendly, but for me they are a high end product so all elements should feel that way.

That said, I'd 100% recommend H&R spacers, all three sets I've had have been spot on.



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8.0 - My Audi S5 Sportback Wheel Spacer Set-up

To wrap up this post, here's my set up. My car's a 2010 S5 Sportback V6 with '7-arm double-spoke' 9JX20 H2 ET29 alloys (8T0601025L) and 265/30 R20 tyres (OEM size for 20" wheels, no stretching of tyres to be seen here). I have the adaptive Drive Select dampers too.

I fitted H&R Trak+ DR 2055668 10mm spacers on the front and H&R Trak+ DR 3055665 15mm spacers on the back, using H&R Trak+ wheel bolt sets 1453903SET and 1454203SET respectively.

I'm super happy with how it turned out, it looks exactly how I wanted it to. It's not hyper aggressive, I'd describe it as OEM+.



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