

# Tracking/Racing the Audi A4/S4

## Definitions:

**Tracking:** HPDEs, Time Trials, Track Events. Driving a car at a race track and at high speeds, but without fender to fender racing. Some people call it racing, it is not – I will call it Tracking.

**Racing:** What you see on Speed Channel, many cars never make it through the day.

*I will focus on the first one – Tracking your S4.*

## Tracking the Audi A4/S4:

If you are going to track your S4 there are few things that you need to worry about. I will organize this article into stages. The stage will be based on your experience and how much money you would like to spend on your Audi. Keep in mind that a true Audi S4 Race Car costs about 150K.

### Stage A – Novice

You have spend less than 5 days at the race track. You do not even know if you will like it, and do not want to alter you car to participate. *At least not yet.*

#### Driver:

##### *Helmet:*

If you are buying a new one SA 2000 is what you want. Get the best helmet you can afford. Make sure it fits.

- <http://www.thebellstore.com/>
- <http://www.simpsonraceproducts.com/catalog/catalog.asp>

##### *Skill:*

At this point you are the bottle neck. Buy books, go to driving schools.

- [Going Faster: Mastering the Art of Race Driving](#)
- <http://www.skipbarber.com/>



### *Information:*

You probably need to communicate with others, try the AudiWorld racing forum.

- [AudiWorld Racing Forum](#)

### *Car:*

#### Wheels/Tires:

Use whatever wheels/tires you use on the street\*. Make sure that the wheels are mounted properly, and securely – torque them to manufacturer’s specifications. All-season or street high performance tires will work best. These tires will not provide you with competition levels of grip, but they will give you the feedback you need for learning. The P6000 that came on many new S4s is PERFECT! At limit is loud and predictable, great for learning. (\*If you are using a very aggressive street tires like Falken Azenis, you will not be allowed to use them at Audi Club events. I would not recommend them either at this stage.) Before you enter the track you should add air to your tires, start with extra ~3 PSI over Audi’s recommendation. (I like 39 in front and 38 in the rear on the B5 S4.)

#### Engine Performance:

If you already have a chip, but have the option of running in stock mode – do it. Chips like the GIAC X, which make great boost and torque at low RPMs are difficult to control. You will get tired of the instructor telling you to be smoother with the throttle. I hear that the Stage I MTM chip is quite smooth; I know that the Stage II AMD chip is very smooth. By smooth I mean easy to modulate power with the throttle. Turbo cars are inherently more difficult to control, and most chips make it worse.

I actually would recommend an exhaust and down-pipes. Your car will be spending a lot of time at high RPM’s, and better air flow will only help. I would also recommend a better (higher-flowing) intake, but I have not found one that I liked yet.

#### Brakes:

As long as they are in a good condition the stock A4/S4 brake rotors and calipers are fine. No matter if you have stock or upgraded brakes the following applies. You should have fresh brake fluid – less then 6 months old. Preferably one with higher boiling point, like Motul 600. You should upgrade your front brake pads to either something like Hawk HP+ (compromise of street and track) or to true racing pads like Hawk 9012. If you go with racing pads, you will need to change them before and after the event., as you should not use them on the street. If you go with the compromise you Brake dust and noise on the street and decent heat resistance at the track.



### Suspension:

Use whatever you have, stock suspension will be fine. Actually, I think that stock at this point is optimal but no one will ask you to swap springs before a driving event.

### Alignment:

At this stage I would stay within manufacturers street recommendations.

### Seats/Belts:

Use whatever you have. I do not recommend 4 or 5 point belt systems without a roll bar.

### Tools:

At minimum you should have these tools.

- Tire-pressure gauge – good one.
- Window cleaner.
- Torque wrench – you will need to check torque on your wheel bolts.
- Tool required for changing brake pads - if you will be changing them.

## **Stage B – Beginner/intermediate**

You have spent less than 15 days at the race track. You are starting to run in the Intermediate group. You use your car on the street regularly and do not want to alter it too much for the track.

### *Skill:*

At this point you are getting better. Therefore you should understand the car little better.

- [How to Make Your Car Handle](#)

### *Information:*

You probably need to communicate with others, try these links:

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### *Car:*

### Wheels/Tires:

I would still stick with street tires, but only high performance ones. You will be beating them up pretty badly, I recommend you get the least expensive Max Performance tire you can.



### Engine Performance:

You will appreciate the extra power that the chip will offer. I would recommend a chip that does not make too much boost/torque at lower RPM. I do not like the GIAX X chip for track use. I find it difficult to modulate power with this chip, which may lead to spins or worse accidents. I would stick with chips that make less boost.

Just like above, exhaust and Downpipes will not hurt!

### Brakes:

At this stage you will be pushing the stock brakes. Use race-only pads, and switch them at the track. If you are doing this gradually, you may want to invest in improved rotors. Slotted, but not drilled. Many clubs prohibit drilled rotors as they are more prone to cracking, and falling apart. In next stage I will recommend a brake upgrade, you may want to start thinking about it here. Change brake fluids every 5 events or 6 months.

### Suspension:

You will want less body roll and stiffer shocks. If you do not think that you will graduate to next stage, a "street" coil-over set-up will be fine. But just like with brakes above, if you are going to use the car for track events regularly you should start thinking about a serious suspension.

### Alignment:

At this stage I would run maximum camber allowed by the suspension, and 1/32 toe in at both front and rear.

### Seats/Belts:

Use whatever you have. I do not recommend 4 or 5 point belt systems without a roll bar.

### Tools:

At minimum you should have these tools.

- Tire-pressure gauge – good one.
- Window cleaner.
- Torque wrench – you will need to check torque on your wheel bolts.
- Tool required for changing brake pads.
- Painters tape for protecting lights.



## Stage C – Intermediate/Advanced

You have spent more than 15 days at the race track. You are starting to run in the advanced group, AND you will be doing this often. You must be willing to sacrifice some of the street comfort to make your car handle at the track.

### *Skill:*

At this point you should have attended a serious racing school, as well have a library of racing books.

- [www.SkipBarber.com](http://www.SkipBarber.com)

### *Information:*

You probably need to communicate with others, try these links:

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### *Car:*

#### Wheels/Tires:

You will need a set of track only wheels and tires. I recommend the smallest diameter wheel that will fit over your brakes (see below). Often smaller diameter tires are less expensive, and you will be going through these fast. As to the tire, DOT approved racing tire is what you need. I would also recommend that you install wheel bolt to stud/nut conversion. This will allow you to change wheels quicker and more reliably.

#### Engine Performance:

More power the better. Though remember the fun is in the corners.

#### Brakes:

You need a serious brake upgrade. First thing that you should decide is the size of rotors you will install. 14" rotors will require 18" wheels. If you already invested in couple sets, this may be prohibitive. There are many excellent 13" sets there that will work with 17" wheels. (Also, see tire prices above.) Also remember that smaller rotors tend to weight less, going 14" for A4 maybe overkill. Use race-only pads, and switch them at the track.

#### Suspension:

Just like above, you need a serious suspension. If you have gotten to this step, you must be pretty serious about tracking your Audi. You should get the best suspension you can afford at least double-adjustable if not triple-adjustable set of coil-overs. Make sure that rebound



and compression can be adjusted independently, and that there is a good range of adjustment. Speak to your shop or call us about spring rates, but in my opinion you need a minimum of 700 pound springs on the S4 and 600 on the A4.

#### Alignment:

At this stage I would run maximum camber allowed by the suspension, and 0 toe in at both front and rear. If you do not drive the car on highways and at high speeds much - try very little toe out.

#### Seats/Belts:

I recommend that you get a one piece lightweight seat. It will hold you in corners, and make a day at the track more enjoyable.

- <http://www.sparcoUSA.com>

#### Tools:

At minimum you should have these tools.

- Tire-pressure gauge – good one.
- Window cleaner.
- Torque wrench – you will need to check torque on your wheel bolts.
- Tool required for changing brake pads.
- Painters tape for protecting lights.

### **Stage D –Advanced/Instructor**

Yeah, this gets more expensive. I am not here yet so I will not comment. I would say weight reduction is the big thing here when it comes to the car, maybe racing license for the driver.

